



VOLUME XLII, NUMBER 12

# SPURIOUS EMISSIONS

INDIAN  
RIVER ARC

DECEMBER, 2021

P.O. BOX 237285, COCOA  
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## HAPPENINGS

View the [2021 Virtual National Hurricane Conference Amateur Radio Workshop](#) of presentations and discussions conducted by leading SKYWARN, ARES, National Hurricane Center amateur station WX4NHC, VoIP Hurricane Net operators and other practitioners.

The 2022 ARRL National Convention, will take place at [Orlando HamCation](#) on February 11-13.

A day-long workshop on emergency communications is scheduled as one of the training tracks that will be offered as part of the National Convention program that will precede HamCation on Thursday, February 10. The training presentations will feature current protocols, techniques, and responsibilities for the modern volunteer radio operator serving partner agency and organizations. The presenters are all subject-

matter experts. Topics to be covered include the ARES, AUX-COMM and Florida Emergency Communicator Position Task Books, an overview of amateur radio responses to disasters, basic voice traffic handling with hands-on voice traffic net/message transfer practice, using the ICS-213 form, Winlink's AR-DOP (Amateur Radio Digital Open Protocol) and VARA protocols, and the Radio Mail Server

(RMS) hybrid internet/HF radio gateway system. The event will be held on Thursday, February 10, 2022 at the Doubletree by Hilton Orlando at SeaWorld. Participants should arrive at the hotel, check in at 8 AM, and be in seats by 8:30 AM. A National Convention Luncheon (for everyone) runs from noon to 1 PM in the banquet room. The track ends at 5 PM. [Registration for the ARRL](#)

## HAPPENINGS

### [National Convention at Orlando HamCation is now open.](#)

A bit of trivia from the ARRL:

#### CQ

"Calling any station" is the general call when requesting a conversation with anyone. Like many other telegraph terms that originated on the land-lines, CQ was brought over into radio and used as a general call to all ships by the Marconi Company. Other companies used "KA" until the London Convention of 1912, which adopted CQ as the international general call or "attention" signal.

But why the letters CQ? From the French, *sécurité* (which means "safety" or, as intended here, "pay attention"). The pronunciation of the first two syllables sounds like the Eng-

lish letters C and Q, which led to "CQ" becoming a call to attention for all stations.

December is [YOTA](#) Month, celebrating and encouraging Youth On the Air. Amateur radio operators who are 25 years old and younger will be on the air as special event stations around the world throughout December in celebration of youth in amateur radio. YOTA Month stations will be on all bands and modes at various times. In the US, the call signs will once again be K8Y, K8O, K8T, and K8A. Three new DXCC entities will be participating for the first time. Argentina will be active as LR1YOTA, Cuba as COOYOTA, and Peru as OAOYOTA. Other countries may be added. Listen for these stations, as well as all call signs with YOTA suffixes.

The Radio Society of Great Britain (**RSGB**) is planning to activate special call signs in 160 meters to commemorate the centenary of the Tests. Stations from the UK and Crown Dependencies will use up to seven different call signs, each having a "6XX" suffix: G6XX, England; GD6XX, Isle of Man; GI6XX, Northern Ireland; GJ6XX, Jersey; GM6XX, Scotland; GU6XX, Guernsey, and GW6XX, Wales. In addition, listen for UK stations appending the suffix "/ZEE" to the station's call sign. Use of this commemorative suffix has been authorized for use December 1 – 26 by Ofcom, the UK's communications regulator. On December 12 ARRL and the RSGB will jointly sponsor the [160-Meter Transatlantic Centenary QSO Party](#). This 6-hour event will run from 0200 to 0800 UTC. The event coincides

with the 100th anniversary of the successful Second Transatlantic Tests. Participating stations will operate only on CW, trying to contact the two official call sign activations, W1AW and GB2ZE. At times the stations may listen for callers 1 kHz above their transmitting frequency, to shift the pile-up from their transmit frequency. They may also periodically ask for DX callers only. The exchange is call sign and signal report. W1AW will be active for all 6 hours. Stations operating as GB2ZE will follow this schedule: 0200 UTC, from the commemorative station at Ardrossan, Scotland 0300 UTC, from GM3YTS. 0400 UTC, from GMOGAV. 0500 UTC, from MMOZBH. 0600 UTC, from MMOGPZ. 0700 UTC, from GM4ZUK until 0800 UTC or until the band closes at sunrise.

## ON THE AIR

**Quebec Parks On The Air (QcPOTA)** Apr 1-Dec 31, 0000Z-2359Z, all, all. VE2GT and VE2NCG. ALL. Certificate. no QSL, no QSL, no QSL, CANADA. [qcpot.ca](#)

**Celebrate Christmas Time and Holiday Cheer through Ham Radio - Christmas Train** Dec 23-Dec 26, 1500Z-2359Z, NOT NOR NOA, Bates City, MO. Area Amateurs. 10 20 40 80 meters; operating as time permits. QSL. Randy Booth, 7562 Copenhaver Rd, Bates City, MO 64011. [rwb22311@outlook.com](mailto:rwb22311@outlook.com)

**16th Annual Straight Key Month** Jan 2-Jan 31, 0000Z-2359Z, K3Y/0-9 +, worldwide. SKCC - Straight Key Century Club. 3.550 7.055 14.050 21.050. Certificate & QSL. SKCC c/o Jeremy Downard - K8JAD, 511 W. Pottawatamie St., Tecumseh, MI 49286. K3Y/0 thru 9 plus KH6, KL7, KP4 and DX member stations

in six WAC areas operating straight key, bug and cootie keys. QSL card confirms one QSO per area, up to 19 for all-area sweep. See URL for op sched/map, stats, etc. <https://www.skccgroup.com/k3y>

**Winter Field Day** January 29/30, 2022. Winter Field Day runs for 24 hours during the last full weekend in January each year

from 1900 UTC (2pm EST) Saturday to 1900 UTC (2pm EST) Sunday. For 2022 the dates are January 29th and 30th. Station set-up may commence no earlier than 1900 UTC (2pm EST) on the Friday before. Station setup may consume no more than 12 hours total. How & when you schedule/spend those 12 hours is up to you.

Bands: All Amateur bands, HF, VHF, & UHF except 12, 17, 30 and 60 meters.

For rules go [here](#)

**W2W Pearl Harbor Day Commemoration** Dec 3-Dec 13, 1300Z-2200Z, W2W, Baltimore, MD. Amateur Radio Club of the National Electronics Museum. 14.241 14.041 7.241 7.041. Certificate & QSL. W2W-Pearl Harbor, P.O. Box 1693, MS 4015, Baltimore, MD 21203. Amateur Radio Club of the National Electronics Museum (ARCNEM) will operate W2W in commemoration of the anniversary of Pearl Harbor Day and the role of electronics in WWII. Primary operation will be Dec 3-Dec 7 with additional operation possible during the Dec 8-Dec 13 period as operator availability permits. Operation on 80M (3.541, 3.841) and digital modes possible during event. Frequencies +/- according to QRM. QSL and Certificate available via SASE; details at [ww-2.us](http://ww-2.us)

**Comoros Islands** Members of the **F6KOP Radio Club** are planning to activate Comoros Islands (AF-007) with a multi-national 12 operator team sometime between

mid-to-end January in 2022. Activity will be on 160-10 meters, using CW, SSB, RTTY, and FT8/FT4, with 5 stations as well as QO-100 satellite operations. Their call sign is pending. Look for more details to be forthcoming. A Web page (under construction) is available at: <https://comores2022.wordpress.com>

**AU2JCB India** AU2JCB is a special event call-sign to commemorate the birth date (30 NOV) and to pay homage and to tell about the great INDIAN scientist Acharya JAGADISH CHANDRA BOSE who is recognized as the "Father of Wireless Communication" by the scientific community of our world. VU2DSI- Datta Deogaonkar will operate with this AU2JCB special event call-sign. Period---19 NOV 2020 to 14 DEC 2021 Frequencies 10 M-- 28545, 28510, 28490. 21 M--21235, 21310, 21350. 20M--14210, 14250, 14310. 40 M--7040, 7150. 80 M -- 3710. QSL--- Direct to VU2DSI, "SURABHI" MEHERABAD. AHMEDNAGAR. 414006. INDIA.

## A Low Noise Receiving Antenna by Armando Delgado, KN4JN

An old amateur radio saw says that “to work them you have to first hear them”. Strong stations can usually be easily heard but weak signals are a different story and for some strange reason those weak, hard to copy signals, are the important ones we are trying to get. They are the rare dx, or the one-in-a-lifetime dxpedition we want to contact.

Common, natural interference with radio signals depends on the frequency involved. In the higher frequencies, fading is usually the culprit. A signal is clearly heard, but the next minute it is gone; sometimes it returns, but other times it is gone not to be heard again. In the lower frequencies, atmospheric noise is the main culprit, and it is more intense as the frequency gets lower, especially in the summer months.

In the early days of radio, the frequencies used were very low and thus vulnerable to intense atmospheric noise. In 1921, Harold Beverage patented a receiving antenna design that could minimize the atmospheric noise interference. The Beverage antenna achieves this task through three means.

First, the antenna has to be very long; generally, no less than a full wavelength for the frequency intended. In the lower frequencies, this translates into rather significant lengths. For example, a Beverage antenna for 160 meters would be no less than 480 feet long for just one wavelength size.

Another important factor in the Beverage antenna performance is that its height above ground must be very low. This creates an effect similar to the NVIS antennas, where the preferred received signals are ones coming at a high angle, just off the vertical. Most atmospheric noise has a lower angle of propagation and thus do not induce currents in the antenna. Since the Beverage is a long wire antenna, induced currents would tend to travel back and forth along the length of the wire, causing peaks and nulls in the current and

induced voltages. To counter this effect, the Beverage antenna is terminated at the far end with a resistor connected to ground that matches the impedance of the antenna. Usually, long wire antennas have an impedance of about 500 ohms. Signals reaching the grounded resistor end are absorbed by the resistor to ground and do not return back towards the end of the antenna connected to the receiver. This end also eliminates skywave signals coming from the receiver end of the antenna, thus making the Beverage an unidirectional antenna. The adjacent figure from the November, 2021 QST illustrates the radiation patterns of 1 and 2 wavelength Beverage antennas.

The radiation angle  $\Theta$  of the Beverage is dependent on the length of the antenna is defined by the formula

$$\Theta = \arccos(1 - \lambda/2L)$$

where  $\lambda$  is the wavelength of the signal and  $L$  is the length of the antenna. Thus, as the antenna length increases, the radiation angle gets smaller and approaches the direction of the wire.

The magic of the Beverage antenna happens when skywaves approach at an angle off the vertical over a poorly conducting ground. Signal reflections from the ground induce a horizontal electrical component parallel to the wire. This horizontally induced current reaches a maximum at antenna lengths of 1-2 wavelengths.

As the antenna gets longer than 2 wavelengths, the radiating angle reduces, so that the induced ground currents diminish and the antenna efficiency drops.

In spite of its great performance, Beverage antennas have some drawbacks.

Probably, the main drawback is its size. Not many hams have the real estate to spread a straight wire for several hundred feet. A Beverage antenna for higher frequencies could be much shorter, but atmospheric noise is generally not a problem at the higher frequencies. A second potential drawback of the Beverage antenna is the issue of antenna reciprocity. In a single transmitting/receiving antenna, stations that are heard can be expected to hear a response, since the radiation pattern for receiving and sending would be the same. On the other hand, the Beverage antenna has its own radiation pattern that could be very different from the chosen transmitting antenna. In that case a heard station may not copy the return signal.

In spite of its drawbacks, the Beverage antenna may give an edge to those wanting to look for dx stations in the low bands.



### 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

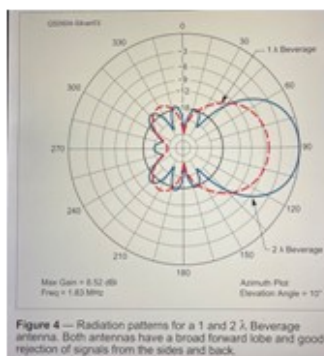


Figure 4 — Radiation patterns for a 1 and 2  $\lambda$  Beverage antenna. Both antennas have a broad forward lobe and good rejection of signals from the sides and back.

### 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 INCLUDING DMR, PACKET & SIMPLEX							RACESBRE0008 REV B
Repeaters & Packet are open for all licensed amateur radio operators to use.							
OUTPUT FREQ.	STD. NAME	OFFSET	TONE/CC	CALL	LOCATION	OWNER	NOTES
<b>WBFM</b>							
145.130	130 VB	-600	107.2	AB4AZ	VERO BEACH, INDIAN RIVER	AB4AZ	
145.350	350 SC	-600	103.5	K4OSC	St. CLOUD, OSCEOLA	K1XC	Radio Science Club, FI Club
145.370	370 CO	-600	156.7	W2SDB	COCOA-BROADCAST CT.	IRARC	Yaesu Repeater replaced with Bridgecom FM
145.470	470 ME	-600	107.2	K4HRS	MELBOURNE- RIALTO PL.	HIRAC	
145.490	490 TI	-600	100.0	WN3DHI	TITUSVILLE SR405 & Fox lk rd.	WN3DHI	
146.610	610 ME	-600	None/107.2	W4MLB	MELBOURNE- HOLMES HOSP	PCARS	Tone Downlink only
146.625	625 MM	-600	100.0	KE4NUZ	NW of MIMS NEAR HARRISON RD.	KE4NUZ	Limited coverage
146.775	775 MM	-600	100.0	K4KSC	NW of MIMS Hog Valley , W of I95	K4KSC	
146.850	850 ME	-600	None/107.2	W4MLB	PALM BAY- Port Malabar Rd.	PCARS	Tone Downlink Only
146.880	880 RO	-600	107.2	W4NXL	ROCKLEDGE- WUESTHOFF HOSP.	IRARC	FUSION Repeater replaced with Bridgecom F
146.895	895 PB	-600	107.2/107.2	K4EOC	PALM BAY- DeGroot Library	EOC	TSQL as of 5/2018
146.910	910 TI	-600	107.2	K4KSC	TITUSVILLE Water Tower on south st.	TARC	
146.940	940 RO	-600	None	K4GCC	ROCKLEDGE Carver Rd.WLRQ Tower	LISATS	
146.970	970 TI	-600	107.2	K4KSC	TITUSVILLE-T'VILLE TOWERS	TARC	
147.075	075 SC	+600	107.2/107.2	K4EOC	SCOTSMOOR Near US1-Aurantia Rd	EOC	TSQL as of 5/2018 Relocated 4/2019
147.135	135 RO	+600	107.2/107.2	K4EOC	ROCKLEDGE-EOC	EOC	TSql as of 5/2018
147.240	240 DE	+600	123.0	KV4EOC	DELAND	VARES	
147.255	255 PB	+600	107.2	K4DCS	Near Babcock & Palm City S City limi	PBARC	
147.330	330 TI	+600	107.2	K4NBR	TITUSVILLE-PARRISH HOSP.	NBARC	
147.360	360 TI	+600	107.2	N4TDX	TITUSVILLE-PARRISH HOSP.	NBARC	DSTAR Gateway in work
442.850	850TI4	+5000	107.2/107.2	N4TDX	TITUSVILLE-PARRISH HOSP.	NBARC	TSql;FUSION/WBFM/WIRES-X
444.325	325ME4	+5000	107.2	K4DCS	MELBOURNE-TRINITY TWRS-E	PBARC	
444.375	CNLBRE	+5000	107.2		I95 FDT Twr 1/2 Mile N of County Lin	SARNET	"SARNet Sebastian Repeater"
444.425	425ME4	+5000	107.2	W4MLB	MELBOURNE- RIALTO PL.	PCARS	
444.525	525RO4	+5000	103.5/103.5	K4EOC	ROCKLEDGE-EOC	EOC	TSql; VOICE/NBEMS
444.650	CNMBRE	+5000	107.2	W4NXL	COCOA-FHP SR520	IRARC	"SARNet Cocoa Repeater"
444.750	750TI4	+5000	156.7/156.7	N4TDX	TITUSVILLE- TGO WATERTOER 230 ft.	NBARC	TSql
444.875	875MI4	+5000	107.2	KC2UFO	MERRITT IS. COURTNEY SPRS.	K4UJZM	
444.925	925KS4	+5000	131.8/131.8	N1KSC	KENNEDY SP. CTR.-VAB	KSCARC	FM Tsql ; P25 capable
224.120	120CO2	-1600	123.0	AA4CD	COCOA Broadcast Ct.	AA4CD	
<b>DMR</b>							
444.150	150TI4	+5000	CC1	K2JO	TITUSVILLE-PARRISH HOSP.	KC2CWT	DMR FL
444.575	575CO4	+5000	CC3	K4DJN	COCOA BROADCAST CT.	AA4CD	DMR Brandmeister
444.675	675TI4	+5000	CC3	K4DJN	TITUSVILLE-T'VILLE TOWERS	AA4CD	DMR Brandmeister
<b>ATV</b>							
427.250	250CO4			K4ATV	COCOA BROADCAST CT.	LISATS	NTSC INPUT 439.25 See www.lisats.org
<b>PACKET STATIONS:</b>							
145.090	W12KPB	WINLINK		W2PH-10	PALM BAY-W2PH QTH	PBARC	WINLINK GATEWAY
145.090	090 ME	PCARS		W4MLB-2	MELBOURNE-TRINITY TWRS-EAST	PCARS-K1YON	BBS W4MLB-4 EASTNET
145.770	770 PB	SEDAN		K4EOC-7	PALM BAY	N2DB	http://www.fla-sedan.com
145.770	770 TI	SEDAN		KD4MWO-4	TITUSVILLE	N2DB	INACTIVE NODE
<b>BREVARD RACES/ARES SIMPLEX</b>							
146.480	CENTX	SIMPLEX		N/A	CENTRAL REG	IRARC	CENTRAL NET SIMPLEX BACKUP
146.550	SOUTHX	SIMPLEX		N/A	SOUTH REGION	PBARC	SOUTH NET SIMPLEX BACKUP
146.580	MLBX	SIMPLEX		N/A	MELBOURNE REGION	PCARS	MELBOURNE REGION NET SIMPLEX BACKUP
146.595	NORTHX	SIMPLEX		N/A	NORTH REGION	TARC	NORTH NET SIMPLEX BACKUP
147.540	EOCROX	SIMPLEX		N/A	RACES Bay	EOC	EOC VOICE/NBEMS
<b>SIMPLEX</b>							
146.520	CALL52	SIMPLEX		N/A	Station to station, anywhere		VHF national simplex calling freq
146.490	TAC A	SIMPLEX		N/A	Station to station, anywhere		Standardized tactical option since 2006
146.560	NBRX	SIMPLEX		N/A	NBARC -Club/Parrish Hosptial Activities		
146.580	TAC B	SIMPLEX		N/A	Station to station, anywhere		Standardized tactical option since 2006
147.420	TAC C	SIMPLEX		N/A	Station to station, anywhere		Standardized tactical option since 2006
147.420	IRARCX	SIMPLEX		N/A	IRARC "FUN NET" and CLUB ACTIVIES		
147.450	TAC D	SIMPLEX		N/A	Station to station, anywhere		Standardized tactical option since 2006
147.570	TAC E	SIMPLEX		N/A	Station to station, anywhere		Standardized tactical option since 2006
446.000	CALL46	SIMPLEX		N/A	Station to station, anywhere		UHF national simplex calling freq
446.500	TAC A4	SIMPLEX		N/A	Station to station, anywhere		Standardized tactical option since 2006
446.600	TAC B4	SIMPLEX		N/A	Station to station, anywhere		Standardized tactical option since 2006
446.700	TAC C4	SIMPLEX		N/A	Station to station, anywhere		Standardized tactical option since 2006
2 Meter & 70 cm WBFM repeaters use CTCSS; if one frequency is listed it is for uplink (user Tx) , if two are listed the repeater is set for uplink and downlink (user Tx and user Rx)							
Repeater Call Signs in bold are owned by Brevard Emergency Management and are maintained by the county. Repeater Trustee: Ron K2RJ							
NOT ON AIR							
Standard Names in Bold are recommended for Emergency Radio in Brevard *							
PBARC= Palm Bay Amateur Radio Club (Replaces DCS for South Brevard) See Ed W2PH for more info							

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BUD

C.B.RADIO  
CALRAD  
CORNELL DUBILIER  
CELLPHONE AMPS  
CHICAGO MINIATURE  
CINCH JONES  
CLOVER  
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HARADA  
HITACHI  
HYGAIN

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MACOM  
MAXON  
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