VOLUME XLI, NUMBER 11

SPURIOUS EMISSIONS

NOVEMBER, 2020

INDIAN RIVER ARC

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

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NEWSLETTER EDITOR
ARMANDO DELGADO
KN4JN

CLUB MINUTES

The meeting was called to order by President Viron, N4VEP AT 7:18 PM. Members participated via Zoom and in person at the meeting site River of Life Assembly of God Church.

After the Pledge of Allegiance, Viron called for approval of the minutes of the October meeting. A motion was made, seconded, and the minutes were approved.

Next was the Treasurer's Report: Larry Hendersin, KK4WDD was absent and Viron gave the figures. The Equipment Fund totaled $1778.62, Checking Account, $906.39, for a total of $2685.01 at of the end of October, 2020. A donation of $40.00 was made to the club at the beginning of November and with $10.00 cash on-hand brings the club's total funds to $2735.01.

A call was made to accept the Treasurer's Report for audit, seconded, and approved.

For the Emergency Coordinator Report: Hylan Boxer, W4UTD gave an explanation of what ARES is, its mandate, and function, and then asked for volunteers to join and participate in ARES. He has plans to provide training, including in building Go-Kits that could be used in emergency communications. Also, the NBEMS training continues every Sunday at 4:30 PM and Tuesdays at 7:30 PM on the 145.37 MHz repeater.

For the BEARS Report Viron mentioned that there had not been a meeting since last March but that the EOC repeaters at 145.135 MHz and 444.525 MHz are fully operational.

On the President's Report Viron said that the club now has a Facebook page and encouraged all members to take a look. He further mentioned the club's Christmas party that will be held at the club's meeting site in the River of Life Assembly of God Church at 1890 N Courtenay Pkwy on Merritt Island. The date is December 17 and the time 6:30 PM. Participants are asked to bring a side or dessert dish to serve 6-8 people. The club will provide a spaghetti dinner.

On new business Viron mentioned that our Treasurer, Larry Hendersin, KK4WDD was moving out of the state and presented his resignation. Steve Luchuck, N4UTQ was nominated to become Treasurer for the remaining of the term. The nomination was seconded and Steve was elected by unanimous vote.

Next Viron brought up the previously tabled issue of Winter Field day participation by the club. After some discussion, it was decided to wait until the January meeting to decide on the matter, and the topic was tabled. One other tabled issue then followed, the proposed Field of Dreams Antennas Farm to build in the field behind the church. Viron had suggested investing $500 to rent a 35' lift ($350) and $150 for 500 feet of 5/16 antenna rope. Steve, N4UTQ suggested that there was no need for these expenses since the club already has some of this equipment and the antennas could be placed by the use of sling shots, being that they are only wire dipoles. After some discussion, it was opted to reassess the back lot and decide if special equipment would be needed. The issued was tabled for further discussion next month.

Following the business meeting, Viron presented an APRS Playlist of YouTube videos on that subject.

The Zoom meeting closed at 7:55 PM.

Respectfully submitted for the Secretary by Armando Delgado, KN4JN

HAPPENINGS

The National Interoperability Field Operations Guide (NIFOG) is a national treasure of federal emergency communications reference information. Check it out. See also the DHS Auxiliary Communications Field Operations Guide (AUXFOG).

SKYWARN Recognition Day 2020 will be held from 0000 UTC to 2400 UTC December 5. Radio amateurs who wish to participate may sign up for a SKYWARN Recognition Day number by completing the form found on the SRD 2020 website. During the event, operators are encouraged to exchange their name, QTH, SRD number, and current weather conditions with other participating stations. See the event website for the full operating guidelines.

ARRL Learning Network Webinars. ARRL members may visit the Learning Network website to register for upcoming sessions and to view previously recorded sessions. The schedule is subject to change.
How to Get Started in Amateur Radio Contesting: Anthony Luscre, K8ZT
Tuesday, November 3, 2020, 10 AM PST/1 PM EST (1800 UTC)
Learn and Have Fun with Morse Code: Howard Bernstein, WB2UZE, and Jim Crites, W6JIM
Learn, practice, and enjoy CW with the methods used by the Long Island CW Club.
Thursday, December 17, 2020, 5 PM PST/8 PM EST (0100 UTC on Friday, December 18)

The University of Western Australia is set to install an optical communications station capa-

HAPPENINGS

ble of receiving high-speed data transmissions from space. The communications station will be able to receive data from spacecraft from anywhere between low-Earth orbit, i.e. between 160km and 1000km above planet green to as far away as the surface of the moon - some 384,000 km. The ground station is expected to be operational from as early as next year (2021). More details here.

Pittsburgh radio station KDKA will celebrate 100 years of radio broadcasting in November, and Pennsylvania radio amateurs will honor that milestone in a multi-station special event. The special event, which will involve the operation of four stations, will run through the entire month of November. Special event stations K3K, K3D, K3A, and W8XK will set up and operate at several locations in Pennsylvania during November. Stations will determine their own modes and schedules. Visit the W8XK profile on QRZ.com for information on certificates and QSLs. More details here.

An interesting and informative graph comparing the last four solar cycle's sunspot activity is found here.

New NIST System Detects Ultra-Faint Signals Using Quantum Physics Principles. Researchers at the National Institute of Standards and Technology (NIST) have devised and demonstrated a system that could dramatically increase the performance of communication networks while enabling record-low error rates in detecting even the faintest of signals. This has the potential to cut the total amount of energy required for state-of-the-art networks by a factor of 10 to 100. The proof-of-principle system consists of a novel receiver and corresponding signal-processing technique, entirely based on the properties of quantum physics and able to handle extremely weak signals with pulses that carry many bits of data. Details here and here.

ON THE AIR

MALAWI, 7Q. Don, K6ZO is QRV as 7Q6M until mid December while working at the Embangweni Mission Hospital in Northern Malawi. He is active in his spare time. QSL via operator's instructions.

WEST MALAYSIA, 9M2. Yoshida, JE1SCJ is QRV as 9M4DXX from Penang Island, IOTA AS-015, until the end of December 2020. He operates FT8 on the weekends. QSL via bureau.

AUSTRIA, OE. Members of the VIC Amateur Radio Contest are QRV with special call sign 4U75A from Vienna until December 31 to celebrate the 75th anniversary of the United Nations. Activity is on 80, 40, 20 and 15 meters using CW and SSB. QSL via UA3DX.

Pearl Harbor Day Commemoration
Dec 4-Dec 14, 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, PO 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 4-Dec 7 with additional operation possible during the Dec 8-Dec 14 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

Celebrating the 21st Amendment to the US Constitution
Dec 5-Dec 6, 0500Z-0500Z, W8A, Kent, OH. Breweries On The Air. 14.240 7.240. Certificate. Thomas R Sly, WB8LCD, 1480 Lake Martin Dr., Kent, OH 44240. www.breweriesontheair.com

UNITED NATIONS, 4U. Special event station 4U75UN is QRV until the end of 2020 to celebrate the United Nation's 75th anniversary. QSL via HB9BOU.

COSTA RICA, TI. Special event station TI200I is QRV to mark the bicentennial of the independence of Costa Rica. QSL via LoTW.

The "Best" Random Wire Antenna Lengths by Jack Clarke, VE3EED--SK

Random wire lengths you should and should not use
A Communicator Reprise: February 2014

A random wire is exactly that—a piece of wire that's as long as you can possibly make it. One end of the wire attaches to a tree, pole or other support, preferably at a high point. The other end connects to the random-wire connector on a suitable antenna tuner. You apply a little RF and adjust the antenna tuner to achieve the lowest SWR. That's about all there is to it. Random-wire antennas seem incredibly simple, don't they? The only catch is that your antenna tuner may not be able to find a match on every band. The shorter the wire, the fewer bands you'll be able to use. And did you notice that the random wire connects directly to your antenna tuner? That's right. You're bringing the radiating portion of the antenna right into the room with you. If you're running in the neighborhood of 100W, you could find that your surroundings have become rather hot—RF hot, that is! We're talking about painful "bites" from the metallic portions of your radio, perhaps even a burning sensation when you come in contact with the rig or anything attached to it.
The random wire antenna is probably one of the least expensive,

easiest and cheapest HF antennas to use if you have a tuner and you want to get the "most" out of a length of "random" wire without having to pull out that calculator, doing the math, getting the center insulator built or bought, running the feedline, and all the rest that goes with putting up a more elaborate antenna. All you need for a random wire antenna is some wire, your tuner, one or more supports up as high as you can get them to string the wire from the supports to the tuner, at least one or two insulators and a little time.

One single wire, no solder connections, very simple... all the way from the tuner to the end support. That's it in a nutshell... or is it? Many hams have tried till they are blue in the face to install the random wire antenna that works on most; if not all of the HF bands with terrible results.

SWR usually is all over the place and the tuner will just not do it's job. You can get good loading and low SWR on sometimes 2 or 3 bands, but one or more of the bands that you want, just will not cooperate with an SWR that can be adjusted with the "tuner".

So after much frustration, down it comes and you go on to a totally different type of antenna... all that time just wasted in your opinion... until now!

We recently found some good information about random wire lengths that you should and should not use.

Jack, VE3EED, hopefully has solved a major headache we all have when we attempt to go thru the trial and error and frustration with getting the random wire to work where WE want it to work.

He knew that in order for the tuner to "see" a fairly low SWR to work within it's range, that the antenna had to be NOT A HALF WAVE ON ANY FREQUENCY that we wanted to use, because a half wave will give us a very high impedance and the resulting high SWR into a 50 ohm transmitter!

So Jack took most of one day, did the math with the aid of his trusty calculator, several cups of coffee and came up with, in Jack's own words... "Here's the word on random-wire antennae." Presented for your consideration by Jack, VE3EED, the table (next page) represents half wave lengths and multiples that you DO NOT WANT TO USE!

You have to stay away from a half wavelength on any frequency. Therefore, we came up with the following numbers to avoid (IN FEET):

These lengths in the table are the culprits that cause all of the trouble when using random lengths.

So those are the numbers above that we have to stay as far away from as possible when building a long-wire antenna.

Here they are in order: 16 19 22 26 32 33 38 44 46 48 52 64 65 66 76 78 80 88 92 95 96 99 104 110 112 114 123 128 130 132 133 138 144 152 154 156 160 165 171 176 182 184 190 192 195 198 208 209 220 224 228 230 231 234 240 242 246 247 256 260 264 266 272 276 285 286 288 297 304 308 312 320 322 323 325 330 336 338 342 352 361 363 364 366 368 369 374 380 384 390 396 399 400 414 416 418 429 432 437 440 442 448 455 456 460 462 464 468 475 480 484 494 495 496.

Some of these numbers are too close to squeeze in between them. Here are the final numbers (in my opinion) in green below that would be good for a long-wire antenna: (You may want to make a note of them)

29 35.5 41 58 71 84 107 119 148 203 347 407 423

REVISION NOTE: James, KB5YN, points out that one of the so-called GOOD numbers was 220 feet. That is the 10th multiple of a half wave on 15 meters. His radio didn't tune up very well on 15 meters. So, having nothing better to do one day, I re-did the calculations going out to 500 feet. That meant calculating all the way to 32 multiples of a half wave on 10 meters. I won't bore you with all that so the first portion of this still only shows up to the 4th multiple. There are so many new frequencies to stay away from, that it gets pretty tricky for the longer wires. However, the list has been revised and is good for wires as long as 500 feet.

Mike AB3AP wrote a small C program that does just what Jack did, but used the band edges. Because he's more visually oriented, he then plotted the many overlapping "red zones" and ended up with the page at:

http://udel.edu/~mm/ham/randomWire/

He plotted the results for the U.S. CW band edges for use with his 4 band Elecraft K1 QRP rig.

You will note that when comparing Mike's results with VE3EED that some of the results are a bit different.

Article from *The Communicator Digital Edition*

https://ve7sar.blogspot.com/2019/01/the-best-random-wire-antenna-lengths.html

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

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
WBFM							
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, Fl 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	W4NLX	ROCKLEDGE- WUESTHOFF HOSP.	IRARC	FUSION Repeater replaced with Bridgecom Fl
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**	SCOTTSMOOR 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	W4NLX	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.	K4UZM	
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	
DMR							
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
ATV							
427.250	**250CO4**			K4ATV	COCOA BROADCAST CT.	LISATS	NTSC INPUT 439.25 See www.lisats.org
PACKET STATIONS:							
145.090	**WL2KPB**	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
BREVARD RACES/ARES SIMPLEX							
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
SIMPLEX							
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 a

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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