VOLUME XLV, NUMBER 10

SPURIOUS EMISSIONS

OCTOBER, 2023

INDIAN RIVER ARC

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

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CLUB MINUTES

President Steve Luchuk, N4UTQ called the meeting to order at 7:15 PM. Following the Pledge of Allegiance, Steve called for visitors. Present was Jim who is interested in ham radio and came to the club to find out more about amateur radio.
President's Report: The club's Christmas party this year will be on Tuesday, December 5 at 6:00 PM at the Red Lobster restaurant on Merritt Island. Steve requested members let him know if they will attend to let the restaurant know how many people will be there.
The club conducted the Simulated Emergency Test (SET) on Saturday, October 5. In preparation for the test, Steve sent all club members separate messages with a designated time of transmission. Many members transmitted their message on time and Steve thanked all those participants by name. He also sent a summary of the club's activity to the ARRL.
The next Simplex Exercise will be on Saturday, October 28 starting at 9:00 AM on the simplex frequency of 147.42 MHz.
Next, Steve discussed the election of club's officers for the new 2 year cycle of 2024-2025. He asked for nominations from the floor; there were none. Steve then mentioned that two club members had suggested the nomination of the current roster of officers for the new cycle. There were no objections to the proposal and the slate was accepted to be presented for voting during the November meeting.
Vice-President Report: Sam, KJ4VGR mentioned that he enjoyed the HF activity following the SET on October 5.
Treasurer Report: The checking account stands at $1472.09 and the Equipment Fund at $1903.65. The report was accepted for audit. The minutes of the September meeting were approved.
Technical Report: Dave, KU0R indicated that the 220 MHz repeater is again not syncing with the 145.37 MHz repeater. The problem is due to the clock in the 145.37 MHz machine malfunctioning, the cause not being clear at this point, but Dave will address the issue when he has some time off from work. The 146.88 MHz repeater also seems to have a clock issue, but that one will be addressed this coming weekend.
Past President Report: Viron, N4VEP announced that this next Saturday, October 21, there will be a QRP event at Osteen Park, located at 425 S. Tropical Trail on Merritt Island. The event will run from 10:00 AM-2:00 PM.
Following the business meeting, Steve gave a presentation on HF marine radios and frequencies. Initially, he listed common marine frequencies used for distress calls and then frequencies used for sailing nets.
He also related the history of shore stations that were important in the early days of maritime communications and showed pictures of shore stations from around the country. Then he proceeded to discuss a plan to salvage the radio from the RMS *Titanic*. Since the radio room on the ship was located uppermost on the deck, the planners intended to cut a hole on the roof of the cabin to access the radio. Unfortunately, a combination of the COVID-19 pandemic and legal issues put a stop to the project. Steve also showed pictures of the radio room and the equipment prior to the sinking and pictures of the actual state of that equipment after over 100 years under water.
Steve then followed with pictures of commercial and military ship radio rooms through the years, much of the equipment in the earlier ships being foreign to modern amateurs. Then he covered modern civilian marine radios in current use with a discussion of their capabilities.

Following the presentation, the meeting adjourned at 8:26 PM.

Respectfully submitted,
Armando Delgado, KN4JN
Secretary

HAPPENINGS

The FAA wants to modify the 60m band to new standards. ARRL is asking all radio amateurs to join it in urging the Federal Communications Commission (FCC) to continue the existing use of the band. A public period is open until October 30, 2023 for radio amateurs to comment on proposed changes. An opportunity to reply to comments ends on November 28, 2023. Comments should be submitted in FCC Docket No. WT 23-120.

Currently, radio amateurs in the US have use of five discrete channels on a secondary basis on which they are permitted an effective radiated power (ERP) of 100 watts ERP in the 60m band. In the Notice of Proposed Rule Making the FCC solicits comment on reducing the secondary allocation to 15 kHz of contiguous spectrum between 5351.5 - 5366.5 kHz with a power limit of 15 watts EIRP (equivalent to 9.1 watts ERP). Doing so would result in amateurs losing four of the discrete channels they have been using on a secondary basis and having the maximum permissible power reduced by more than 10 dB, from 100 watts ERP to 9.1 watts ERP.
The FCC seeks comment on the proposed 15 kHz of contiguous spectrum, but also on whether the existing channels should remain allocated to amateur radio on a secondary basis, and whether the maximum power limitations should be reduced from 100 to 9.1 watts ERP. The FCC also requested comments on whether the power limitation should be expressed as EIRP as the WRC-15 recommends or as ERP as in the current rules.

HAPPENINGS

The ARRL is upgrading the National Traffic System to advance it to the 21st Century traffic handling standards. As noted in the NTS Manual on the ARRL website (www.arrl.org/chapter-one-national-traffic-system), the National Traffic System (NTS) is "a structure that allows for rapid movement of traffic from origin to destination and training amateur operators to handle written traffic and participate in directed nets. These two objectives...are the underlying foundations of the NTS."

Currently, the NTS consists of voice and CW traffic nets as well as digital systems that operates 24/7.

The ARRL has created a website, nts2.arrl.org, as a source for information on these and other completed work items of the new system. All amateur radio operators are encouraged to participate in the traffic system, not just ARRL members. Traffic handling can be a lot of fun and at the same time allow for developing operating skills that could not be obtained otherwise.

November brings one of the oldest and most interesting ARRL radio contests, the November Sweepstake. The contest has two portions, a CW segment that this year will take place on the weekend of November 4-6, and a phone section that will happen on November 18-20.

This contest originated at a time when the ARRL wanted to train hams in traffic handling and the format of the contest exchange resembles the format of the ARRL radiogram. It consists of an exchange number, a Presedence which is a letter designating the type of station, the operator's call sign, a Check which is the last two digits of the year the operator was first licensed, and the ARRL section. Compared to other contests, this is a complex and lengthy exchange.

Besides providing training, one other benefit of this contest is that due to the broad participation, those seeking to complete their WAS certificates can do so in one weekend.

Jamboree-on-the-Air is on October 20 - 22, 2023
Jamboree-on-the-Air (JOTA), the largest Scouting event in the world, takes place on the third weekend of October (10/20 - 10/22). This annual global operating event allows Scouts to use amateur radio to connect with hams around the world. The event is supported by many local amateur radio clubs and individual operators. JOTA starts Friday and ends Sunday, but there are no official hours of operation, so you have the whole weekend to make JOTA contacts. More information about JOTA may be found on the Scouting website, at https://www.scouting.org/international/jota-joti/jota/

ON THE AIR

The Liga Colombiana de Radioaficionados (the Colombia Amateur Radio League, LCRA) will host a worldwide special call sign activation for their 90th anniversary. The event will begin at 17:00 UTC on Saturday, November 18, and will conclude at 23:59 UTC on Sunday, November 19, 2023. Female hams will activate 11 official stations with the following special call signs: 5K0LR, 5K1LR, 5K2LR, 5K3LR, 5K4LR, 5K5LR, 5K6LR, 5K7LR, 5K8LR, 5K9LR, and 5J3L. QSL card information and more information on the bands, frequencies, and modes can be found at Liga Colombiana de Radioaficionados - LCRA - Alma mater of Colombian amateur radio since 1933.

Eisenhower Birthday Special Event Oct 14-Oct 22, 0000Z-2359Z, W5*/K5*/N5*, All over USA. Grayson County ARC. 14.250. QSL. Grayson County ARC, PO Box 642, Sherman, TX 75091. *We'll be using the following call signs... W5E, W5I, W5S, K5E, W5N, W5H, W5O, W5W, N5E, W5R Questions? email lee.n5sly@gmail.com grayson-countyarc.org

Operation Able Archer '83 40th Anniversary
Oct 20-Nov 3, 0000Z-0000Z, W9A, Salem, WI. W9AFB. 3.996 5.357 7.225 14.323. Certificate. Scott Grams, 26233 90th St, Salem, WI 53168. Midwest station of the Operation Able Archer '83 40th Anniversary special event. See W3A special event station, W9AFB on QRZ, or website for more details. Will operate from the former Richard Bong Air Force Base in Wisconsin on October 21-22. Other days will be holiday style, multiple bands and modes. Email for sked. www.ablearcher83.com

Air Force MARS 75 Years **Nov 5-Nov 11, 0001Z-2359Z, W1A-K***, All USA. Air Force Military Auxiliary Radio System. Technician and General portion of the 80 - 10 meter bands; SSB, CW, and digital modes. Certificate. See website, for e-certificate, information. Call signs W1A through W1K, K4AF and KE6UEU. See website for updates on bands and modes, and how to receive a certificate. https://community.apan.org/wg/air-force-military-auxiliary-radio-system-afmars/afmars-75-years

Commemorating USMC birthday (11/10/1775) and Veterans Day **Nov 11, 1700Z-2359Z, NI6IW**, San Diego, CA. USS Midway Museum Ship. 14.320 7.250 14.070 PSK31 DSTAR on Papa system repeaters. QSL. USS Midway Museum Ship COMEDTRA, 910 N Harbor Drive, San Diego, CA 92101. www.qrz.com/db/ni6iw

TRISTAN DA CUNHA AND GOUGH ISLANDS, ZD9. Yuris, YL2GM will be QRV as ZD9W from Tristan da Cunha, IOTA AF-029, from September 24 to October 22. Activity will be on 160 to 6 meters using CW, SSB, and FT8. QSL via LoTW.

MAYOTTE, FH. A large group of operators will be QRV as TO8FH from October 10 to 22. Activity will be on 160 to 6 meters using CW, SSB, RTTY, and FT8. QSL via F5GSJ

NORTH COOK ISLANDS, E5. Janusz, SP9FIH is QRV as E51JAN from Manihiki, IOTA OC-014, until November 6. Activity is on the HF bands. QSL to home call.

The International Beacon Project by Armando Delgado, KN4JN

As solar cycle 25 progresses, solar activity remains high. Lately, the sunspot number hovers around 100 on most days and the solar flux runs around 150 on average. With these numbers, radio propagation in the upper frequencies should be excellent during the daytime. Regrettably, in the past few months the increased solar activity has generated many coronal mass ejections (CME) as well.

CMEs unfortunately tend to produce intense radiation that saturates the ionosphere causing an adverse effect on radio propagation. They do this in two separate ways. First, when the initial solar blast occurs, a tremendous amount of electromagnetic radiation consisting of gamma rays, x-rays, and ultraviolet radiation streams from the solar surface at the speed of light and reaches our planet in a few minutes. Although the peak effect of this radiation on the ionosphere only lasts a few minutes, lingering radio propagation interference may hang around for hours as the ionosphere recovers from the radiation onslaught. The second effect of CMEs happens two to four days after the initial blast as slow-moving particles composed mostly of hydrogen atoms reach the Earth. These energetic particles align themselves with the Earth's magnetosphere to produce intense electrical currents that cause geomagnetic storms with resulting auroras and other celestial phenomena. To aggravate the interference by CMEs, many CMEs will occur sequentially, causing the adverse propagation effects to last for days.

For hams, this propagation seesaw effect makes it very difficult to determine when bands are open and in what bearing they need to look. The standard propagation prediction programs, like VOACAP, rely mainly on the solar flux to make their predictions. With the interference from the CMEs, these predictions may be off on any particular day, at any particular time. Hams trying to find band openings have a more difficult problem in their hands. Of course, the old standby method of listening for band openings by scanning the bands is still a primary tool for the ham, but it is uncertain and inefficient since no one may be transmitting at the time we are listening to a given frequency. The reverse of this method, calling CQ on different bands, suffers from the same drawback in that no one may be listening in that particular band when we make our call, even if the band is open.

An alternative tool that is more precise in detecting band openings and that is not based on theoretical predictions but actual propagation at any given time is the International Beacon Project. This project was started by the International Amateur Radio Union (IARU) in the 1990's and has operated 24/7 since then. It consists of 18 radio beacons distributed around the world and located in all the inhabited continents of the world. They transmit sequentially in all the higher frequency bands: 20m, 17m, 15m, 12m, and 10m in a specific frequency in each band (See Note 1). The transmission, that lasts 10 seconds for each station, consists of the station call sign in CW at 22 wpm sent at 100 watts and followed by four one second dashes. The first dash is at 100 watts, the second at 10 watts, the third at 1 watt and the fourth at 0.1 watt. This pattern allows listeners to gauge not only the presence of a band opening, but also the intensity of the opening. After completing its transmission, the station moves on to the next higher band while a sequential station begins its 10 second broadcast.

The best way to use the beacon project is to tune to a beacon frequency in any given band and listen for three minutes. Since each beacon station transmits for 10 seconds and there are 18 beacon stations, it takes three minutes for all the stations to cycle through a particular band. Thus, if after listening for three minutes no signal is heard, that means that the band is dead and is time to move on to a different band. To cycle through all the beacon bands would take only 15 minutes. On the other hand, if a particular station is heard in more than one band, it suggests that the propagation opening in that direction is not only good but probably long lasting.

Hams not versed in CW may be unable to copy the station call sign. However, the Beacon Project website will show on their home page the call sign of the active beacon in each band as they transmit. By tuning to a beacon frequency on the radio while monitoring the website, it is possible to see the active station call sign and identify it.

Generally, finding propagation openings can be a time consuming affair, especially during unstable solar activity times such as the present. Combining propagation prediction programs, like VOACAP, with the Beacon Project may give hams a more refined tool to detect propagation openings during these times of uncertain ionospheric activity.

Note 1.
Beacon Frequencies
14.100 MHz
18.110 MHz
21.150 MHz
24.930 MHz
28.200 MHz

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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C.B.RADIO
CALRAD
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CELLPHONE AMPS
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FLUKE (WAVETEK)

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HITACHI
HYGAIN

ICOM RADIO

JSC WIRE
JW DAVIS SOUND
JVC PARTS

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MOTOROLA

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