



**INDIAN  
RIVER ARC**

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

VOLUME XLV, NUMBER 8

# SPURIOUS EMISSIONS

AUGUST, 2019

## OFFICERS

### PRESIDENT

DAVID LERRET

KU0R

### VICE-PRESIDENT

VIRON PAYNE

N4VEP

### SECRETARY

STEVE LUCHUCK

N4UTQ

### TREASURER

LARRY HENDERSIN

KK4WDD

### DIRECTOR

DAVID SLAWSON

K4UZM

### NEWSLETTER EDITOR

ARMANDO DELGADO

KN4JN

## CLUB MINUTES

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

The meeting was called to order at 7:30 PM

After the Pledge of Allegiance, Viron started the meeting.

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

The Treasurer's Report showed \$1475.02 in checking and \$1778.15 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.

For the Technical Committee, Viron reported that the 146.88 repeater antenna was replaced with a new one because the old antenna suffered damage from water intrusion due to inadequate sealing from a manufac-

turing defect. The new antenna cost \$900 dollars, but the good news is that the manufacturer of the old antenna provided an update kit for the damaged antenna at no cost. We refurbished the old antenna and it passed all tests. Now we have an excellent back up antenna for both 2m club repeaters.

Next, Viron discussed the progress made in the club station refurbishing, where wall openings were provided for access for generators, to provided power during emergencies. Also, the committee has a request for donation of an all-band vertical antenna to replace the dipoles we lost due to the EOC construction behind the Red Cross facility.

Saturday, August 3, is Coast Guard Day and the club will operate a special event station at the Coast Guard Station at Port Canaveral. The BEARS-1 vehicle will provide support for the activity. All interested in participating contact Viron. Access to the Coast Guard base

is limited to those registered to participate in the event.

Dave, K4UZM, for the Educational Committee, next discussed his plans to have exams once a month on the third Thursday of the month, and his hopes of creating a panel of volunteer members willing to elmer new hams. He hopes to be able to provide training classes for prospective hams on both theory and practical, hands-on amateur projects, like basic dipole antenna construction, soldering, etc. Those willing to become elmers for specific aspects of amateur radio, like antennas, power supplies, etc. contact Dave.

Next was the 50-50 drawing. Viron, N4VEP won the price.

A motion to adjourn occurred at 8:11 PM and was moved and approved.

Respectfully Submitted

Steve N4UTQ

## HAPPENINGS

This year marks the 150th anniversary of the birth of ARRL's first president and cofounder Hiram Percy Maxim (HPM), W1AW, born on September 2, 1869. ARRL will hold an operating event this summer to celebrate HPM's legacy from 0000 UTC on August 31 and continue until 2359 UTC on September 8. It is open to all radio amateurs. More details [here](#).

"Selecting Coaxial Cable" is the topic of the July 4 episode of the [ARRL The Doctor is In](#) podcast, "Antenna Polarization" is the topic of the July 18 episode and "Noise Blankers and Noise Reduction" is the topic of the new August 1 episode.

Language in the Federal Aviation Administration

(FAA) **Reauthorization Act of 2018** will exclude all but a small number of Amateur Radio towers from marking requirements. The bill's original language was amended to the extent that amateur towers, as well as residential towers used for over-the-air TV reception, were effectively exempted from marking requirements. While a few Amateur Radio towers will fall under the Act's marking requirements and

will have to be registered, towers in residential yards or within farmland are specifically exempted. More details [here](#).

The [WSJT Development Group](#) has announced the "general availability" release of WSJT-X version 2.1.0. This major upgrade formally introduces FT4 as a finished protocol for HF contesting. More information [here](#).

## HAPPENINGS

*TechRepublic reports* that the Raspberry Pi Foundation has confirmed that the recently released Raspberry Pi 4 will not work when powered using *certain* USB-C cables.

### FT4 contests announced

The RSGB Contest Committee have announced a series of contests using the new digital mode FT4. There will be a series of three short duration events on 80m (dial frequency 3575 kHz USB) to allow entrants to experience this new mode. As this series is experimental, there are likely to be changes as we de-

velop experience with this mode, so please check the rules prior to each event. The objective is to score as many points as possible based on the distance between stations (subject to a maximum score per QSO).

The contests will take place on:

- (1) Monday September 2, 2019, 19:00 - 19:59 UTC
- (2) Monday October 7, 2019, 19:00 - 19:59 UTC
- (3) Monday November 4, 2019, 20:00 - 20:59 UTC

Full details at [https://www.rsgbcc.org/hf/rules/2019/r80m\\_ft4.shtml](https://www.rsgbcc.org/hf/rules/2019/r80m_ft4.shtml)

Here is an interesting video about a "new" Chinese radio.

<https://forums.qrz.com/index.php?threads/looking-at-a-chinese-clone-of-a-fantastic-open-source-sdr-project.666986/>

### ARRL Membership Benefits

#### QST Digital Edition

View monthly, online digital editions of QST at no additional cost (web and app versions).

#### FREE E-Newsletters

ARRL weekly Letter, ARRL ARES e-Letter, Division and Section news, special offers, and more.

#### QST Archive and Periodicals Index

Browse ARRL's extensive online QST archive, and a searchable index for QEX and NCJ.

#### Product Review Archive

Download and view QST Product Reviews from past to the present.

#### E-Mail Forwarding Service

YourCallSign@arrl.net E-mail sent to your arrl.net address will be forwarded to any email account

## ON THE AIR

**PANAMA.** HP1AVS. 21.074 14.074 10.136 7.074. QSL. Victor Sierra, P.O.Box 0830-00338, Panama City 0830, PANAMA. The special call sign H31A is being used to commemorate 500 years of the foundation of Panama City, Panama. The station will be available until August 15th 2019. We will be operating on 80 m to 10 m specially in digital modes (RTTY, PSK31 and FT8) and some SSB. QSL manager is HP1AVS. More information on QRZ. <https://www.qrz.com/db/h31a>

**US Coast Guard 229th Birthday** Aug 4-Aug 5, 1400Z-0400Z, K1CG, Port Angeles, WA. USCG CW Operators Association. 21.052 14.052 7.052 3.552. QSL. QSL to , operator, contacted. fgoodwin@olypen.com or [www.qrz.com/db/k1cg](http://www.qrz.com/db/k1cg)

**D-Day Conneaut**  
**Aug 15-Aug 18, 1600Z-0400Z, W8D,** Conneaut, OH. Conneaut Amateur Radio Club. 14.285 7.190 3.996 3.885. QSL. Garret Scott W8D, 10236 Birch Hill Ln., Knoxville, TN 37932. D-Day Conneaut recognizes the 75th anniversary of the World War II Allied

D-Day Landings on the beaches of France in 1944. Event will include the country's largest reenactment of the D-Day landings with more than 1,800 WWII reenactors from around the world participating. Radio operations will include vintage WWII equipment. <https://www.facebook.com/W8BHZ>

**Burnt Coat Harbor Lighthouse International Lighthouse/Lightship Weekend** Aug 17-Aug 18, 0001Z-2359Z, W2DAR, Swans Island, ME. W2DAR. 40 meters, SSB, near 7.240 MHz, power level 100 W. QSL. Ronald

Jocher, W2DAR, 24 Park Terrace, East Hanover, NJ 07936. #US0232 ILLW, Burnt Coat Harbor Lighthouse, 433 Harbor Rd.

The **CY9C** DXpedition team will arrive in Dingwall, Nova Scotia, in preparation for the DXpedition to **St. Paul Island**. The dates for the DXpedition are July 31st-August 8th. Updates will be provided to the bulletins by Murray/WA4DAN or Randy/NOTG as well as at [www.cy9c.com](http://www.cy9c.com).

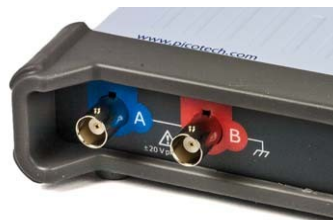
## RF Connectors by Armando Delgado, KN4JN

There is a large host of different types of RF or coaxial cable connector. Some are in widespread use whereas others are less widely used. Some of those in widespread use and likely to be encountered in the standard electronics laboratory or by the hobbyist are:

**BNC** The BNC coax connector is widely used in professional circles being used on most oscilloscopes and many other laboratory instruments. The BNC connector is also widely used as an RF connector,

being used on RF test equipment, transmitters, receivers and almost any RF equipment. The BNC connector has a bayonet fixing to prevent accidental disconnection while being easy to disconnect when necessary. Electrically the BNC coax cable connector is designed to present a constant impedance and it is most common in its 50 ohm version, although 75 ohm ones can be obtained. It is recommended for operation at frequencies up to 4 GHz and it

can be used up to 10 GHz provided the special top quality versions specified to that frequency are used.



**TNC connector:** The TNC connector is a threaded version of the BNC. It was developed to provide low noise reliable connections especially in environments where there may be vibration.

**N-type** The N-type connector is a high performance RF coax cable connector used in many RF applications. The N-type RF connector is larger than the BNC connector and it has a threaded coupling interface to ensure that it mates correctly. It is available in either

50 ohm or 75 ohm versions. These two versions have subtle mechanical differences that do not allow the two types to mate. The connector is able to withstand relatively high powers when compared to the BNC connector. The standard versions are specified for operation up to 11 GHz, although precision versions are available for operation to 18GHz.



**SMA connector:** The SMA connector is a sub-miniature RF connector suitable for frequencies up to 12 GHz and more. The connectors are small and provide a reliable RF connection in view of the threaded attachment method. Although the specification depends upon the manufacturer and the actual part, these connectors are being used in many areas associated with RF and microwave circuitry.



**SMB connector:** The SMB connector is a smaller snap fit connector that can be used where a fast and easy form of connection is required. The connector is available in 50Ω and 75Ω versions and has a top frequency of around 4 GHz.

**Precision, PC series of connectors:** The precision series RF connectors are often designated by PC followed by the inner diameter of the outer conductor. They are normally used for very high very high frequency operation, with the top end being able to carry signals at 110 GHz. In view of their performance and the cost of manufacture,

these RF connectors are not cheap.

**UHF connector (SO239 / PL259):** The UHF connector is also sometimes known as the Amphenol coaxial connector. The plug may be referred to as a PL259 coaxial connector, and the socket as an SO239 connector as these were their original military part numbers. These coax cable connectors have a threaded coupling, and this prevents them from being removed accidentally. It also enables them to be tightened sufficiently to enable a good low resistance connection to be made between the two halves. The drawback of the UHF or Amphenol connector is that it has a non-constant impedance. This limits their use to frequencies of up to 300 MHz, but despite this these UHF connectors provide a low cost connector suitable for many applications, provided that the frequencies do not rise too much. Also very low cost versions are available for applications such as CB operation, and these are not suitable for operation much above 30 MHz. In view of their non-constant impedance, these connectors are now rarely used for many professional applications, being generally limited to CB, amateur radio and some video and public address systems.



**F-type connector:** The F-type connector is a low cost coax cable connector suitable for use up to 2 GHz and developed for domestic TV applications. The RF connector uses the coax centre conductor as the

main pin, and maintains a constant impedance across the connector, providing a combination of low cost and good performance.



**MCX connector:** The MCX connector is one of a number of micro-miniature RF connectors have been developed by a variety of manufacturers. The MCX connector name comes from the words MicroCoax and it was developed in the 1980s by Huber and Suhner of which MCX is a trade name. The MCX connector has many similarities with the construction of the SMB connector.

The MCX connector is normally specified for operation up to 6 GHz, and it finds applications in a variety of arenas including equipment for cellular telecommunications, data telemetry, Global Positioning (GPS) and other applications where size and weight are important and frequencies are generally below 6 GHz.

**MMCX connector:** Another connector which is being widely used is the MMCX connector. Being some 45% smaller than an SMB connector, the MMCX is ideal where a low profile outline is a key element. It is therefore ideal for applications where board height is limited, including applications where boards may be stacked. As such it is being widely used in many cellular telecommunications applications. The connector provides a snap fitting and also utilizes a slot-less design to minimize leakage.

A more extensive coverage of connectors is found at

[https://www.electronics-notes.com/articles/electronic\\_components/rf-connectors/coax-cable-connectors.php](https://www.electronics-notes.com/articles/electronic_components/rf-connectors/coax-cable-connectors.php)

W1AW CODE PRACTICE

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							RACESBRE008 REV 8
Repeaters & Packet are open for all licensed amateur radio operators to use.							
OUTPUT FREQ.	STD. NAME	OFFSET	PL	CALL	LOCATION	OWNER	NOTES
<b>WBFM</b>							
145.130	130 VB	-600	107.2	A84AZ	VERO BEACH, INDIAN RIVER	A84AZ	
145.350	350 SC	-600	109.5	K4Q5C	St. Cloud, Osceola	K1XC	Radio Science Club, Ft Club
145.370	370 CD	-600	156.7	W2SD8	COCOA BROADCAST CT.	IRARC	Yaesu Repeater replaced with Bridgecom FM
145.470	470 ME	-600	107.2	K4HRS	MELBOURNE- BIALTO PL.	IRARC	
145.490	490 TI	-600	100.0	W43CH	TITUSVILLE SHOPS & Etc & rd	W43CH	
146.610	610 ME	-600	None/107.2	W4MLB	MELBOURNE- HOLMES HOSP	PCARS	Tone Downlink only
146.625	625 MM	-600	100.0	KE4NLZ	NW of MIMS NEAR HARRISON RD.	KE4NLZ	Limited coverage
146.775	775 MM	-600	100.0	K4K5C	NW of MIMS Hog Valley, W of 895	K4K5C	
146.850	850 ME	-600	None/107.2	W4MLB	PALM BAY- Port Malabar Rd.	PCARS	Tone Downlink Only
146.880	880 RD	-600	107.2	W4NLX	ROOKLEDGE- WUESTHOFF HOSP.	IRARC	FUSION Repeater replaced with Bridgecom FM
146.895	895 PB	-600	107.2/107.2	K4EOC	PALM BAY- DeGroot Library	EOC	TSOL as of 5/2018
146.910	910 TI	-600	107.2	K4K5C	TITUSVILLE Water Tower on south st.	IRARC	
146.940	940 RD	-600	None	K4GCC	ROOKLEDGE Carver Rd. WLRQ Tower	LSA1S	
146.970	970 TI	-600	107.2	K4K5C	TITUSVILLE-TVILLE TOWERS	IRARC	
147.075	075 SC	+600	107.2/107.2	K4EOC	SCOTTSMOOR Near US1-Aurantia Rd.	EOC	TSOL as of 5/2018 Relocated 4/2019
147.135	135 RD	+600	107.2/107.2	K4EOC	ROOKLEDGE-EOC	EOC	TSOL 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 5 City limit	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	OSTAR Gateway In work
442.850	850TH	+5000	107.2/107.2	N4TDX	TITUSVILLE-PARRISH HOSP.	NBARC	TSol-FUSION/WBFM/WIRES-X
444.325	325ME4	+5000	107.2	K4DCS	MELBOURNE-TRINITY TWIS-E	PBARC	
444.375	375BRE	+5000	107.2		895 Fdt Ter 1/2 Mile N of County Line	SARNET	"SARNet Sebastian Repeater"
444.425	425ME4	+5000	107.2	W4MLB	MELBOURNE- BIALTO PL.	PCARS	
444.525	525R04	+5000	109.5/109.5	K4EOC	ROOKLEDGE-EOC	EOC	TSol; VOICE/NBEMS
444.850	850BRE	+5000	107.2	W4NLX	COCOA-FHP SRS20	IRARC	"SARNet Cocoa Repeater"
444.750	750TH	+5000	156.7/156.7	N4TDX	TITUSVILLE-TGD WATERTOER 230 ft.	NBARC	TSol
444.875	875M04	+5000	107.2	KC2UFO	MERRITT IS. COUNTRY SPBS	K4U7M	
444.925	925K54	+5000	131.8/131.8	N1K5C	KENNEDY SP. CTRL-VAB	K5CARC	FM Tsig ; P25 capable
224.120	120C02	-1600	123.0	AA4CD	COCOA Broadcast CT.	AA4CD	
<b>DMR</b>							
444.375	375TH	+5000	CC3	K4DJN	TITUSVILLE-TVILLE TOWERS	AA4CD	DMR Brandmeister
444.875	875TH	+5000	CC3	K4DJN	TITUSVILLE-TVILLE TOWERS	AA4CD	DMR Brandmeister
<b>ATV</b>							
427.150	250C04			K4ATV	COCOA BROADCAST CT.	LSA1S	NTSC INPUT 439.25 See www.lsa1s.org
<b>PACKET STATIONS:</b>							
145.090	W2KPB			W2PH-3D	PALM BAY-W2PH QTH	PBARC	WINLINK GATEWAY
145.090	090 ME			W4MLB-2	MELBOURNE-TRINITY TWIS-EAST	PCARS-K1YCN	BBS W4MLB-4 EASTNET
145.770	770 PB			K4EOC-7	PALM BAY	N2DB	http://www.f4-sedan.com
146.770	770 TI			W43CH-2	TITUSVILLE	K2G6	04/27/14 DCS
<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	IRARC	NORTH NET SIMPLEX BACKUP
147.540	EOCBOX	SIMPLEX		N/A	RACES Bay	EOC	EOC VOICE/NBEMS
<b>SIMPLEX</b>							
146.520	CALLS2	SIMPLEX		N/A	Station to station, anywhere		UHF national simplex calling freq
146.480	TAC A	SIMPLEX		N/A	Station to station, anywhere		Standardized tactical option since 2006
146.560	NBRX	SIMPLEX		N/A	NBARC -Club/Parish Hospital 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 A6	SIMPLEX		N/A	Station to station, anywhere		Standardized tactical option since 2006
446.800	TAC B4	SIMPLEX		N/A	Station to station, anywhere		Standardized tactical option since 2006
446.700	TAC G4	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 Rx] TSol							
Repeater Call Signs in bold are owned by Brevard Emergency Management and are maintained by the county. Repeater Trustee: Ron K2RU							
<b>W2KPB</b>							
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							

437 S. BABCOCK ST.  
MELBOURNE, FL 32901  
Ph) 321-727-2311  
Fax) 321-727-2312



## DISCOUNT ELECTRONICS

HAM&CB EQUIPMENT  
SECURITY SYSTEMS  
BATTERIES(ALL TYPES)  
REPAIRS(ALL TYPES)  
ANTENNAS - TOWERS  
2-WAY RADIO EQUIPMENT

"SALES AND SERVICE"  
TELEPHONE SERVICE  
COMPUTER REPAIR  
STEREOEQUIPMENT  
POWER SUPPLIES  
TUBE EQUIPMENT

2013 LINE LISTINGS \*\* THE ONLY REAL PARTS STORE LEFT IN SOUTH BREVARD \*\*

AIM  
ALINCO  
ANTENNACRAFT  
ANTENNA SPECIALISTS  
ARRL  
ASTATIC  
ASTI

BEARCAT  
BECKMAN (WAVETEK)  
BUSSMAN FUSES  
BUD

C.B.RADIO  
CALRAD  
CORNELL DUBILIER  
CELLPHONE AMPS  
CHICAGO MINIATURE  
CINCH JONES  
CLOVER  
COBRA  
CUSHCRAFT

DALBANI  
DECIBEL PRODUCTS  
DENNISON  
DURACELL  
DANTONA IND.

ECG (SEE NTE)  
ELECTRONIC RESOURCES  
ELECTROVOICE  
EVEREADY

FANON-INTERCOMS  
FLUKE (WAVETEK)

GC ELECTRONIC  
GALAXY  
GOLDLINE

HAM RADIO  
HARADA  
HITACHI  
HYGAIN

### ICOM RADIO

JSC WIRE  
JW DAVIS SOUND  
JVC PARTS

KENWOOD RADIO  
KOSS  
KESTER

LITTELFUSE  
LOWELL

M & G  
MALLORY  
MACOM  
MAXON  
MIDLAND  
MOTOROLA

NTE TRANSISTORS  
NELLO TOWERS  
NTE ELECTRONICS  
NORMAN LAMPS

PANASONIC  
PANAVISE  
PHILIPS ECG (SEE NTE)  
PHILMORE  
PIONEER  
POMONA  
POWERSONIC  
PRB  
PROAM ANTENNAS

QUAM  
QUEST

RANGER RADIO  
RAYOVAC BATTERIES

RUSSELL IND.

SR COMPONENTS  
SANYO BATTERIES  
SHURE BROTHERS  
SONY PARTS

### SPECO SWITCHCRAFT

TEI  
TNR BATTERIES  
TELEX - HYGAIN  
TRIPPLITE  
TUBES - ALL TYPES  
TV ANTENNA'S

UNIDEN  
UNIDILLA  
UNION CARBIDE

VARCO  
VALOR  
VECTOR  
VIDEO EQUIPMENT

W2AU BALUNS  
WALDOM - MOLEX  
WAHL-CLIPPER  
WAVETEK (BECKMAN)  
WILSON ANTENNAS  
WILSON ELECTRONICS

YAESU

WEB PAGE:  
[www.tedcoelectronics.com](http://www.tedcoelectronics.com)

EMAIL:  
[tedco@bellsouth.net](mailto:tedco@bellsouth.net)

Hours:  
MON - FRI 9 AM - 5 PM  
SATURDAY 9AM-3PM

TED - W4LR - GENERAL MGR.

DOTTIE - OFFICE MANAGER