



**INDIAN
RIVER ARC**

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

VOLUME XLIV, NUMBER 9

SPURIOUS EMISSIONS

SEPTEMBER, 2018

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ARMANDO DELGADO
KN4JN

President Dave KU0R started the meeting at 7:38 PM with the Pledge of Allegiance. Following the Pledge, visitor August, N6TYE was introduced.

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

The Treasurer's report showed \$1717.82 in checking and \$1777.60 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.

Dave reported for the Technical Committee and told the group the repeaters have had lots of changes and the repeaters are up and running on the Bridgecom repeaters. The 220 repeater working great on the air using a 123 Hz tone and has great range and reaches into Orlando. The 88 repeater has a little noise on the carrier. The Fusion repeaters have been

returned. A question about the link between the repeaters was asked and all three repeaters link up for the ARES net. A question about using digital modes and we are not using digital at present.

No VP report because Viron is in Atlanta. On October 13th at the Melbourne hamfest they are going to issue ARES badges which will augment or replace the old ARES badges.

Red Cross news: they changed the locks and we can not access the club station.

Next Dave directed discussion toward the go kits. The go kit is here to be examined and there are other priorities delaying the construction of the other kits. We have the antennas for the hospital and the Red Cross building and we are not sure who is running the hospital since it has changed hands so many times recently.

New Business: Christmas party. We have the Olive Garden reserved for the 6th of December.

Sky Warn: advanced training next door at the EOC and we

need to have another standard course too.

Dave next discussed the improvements to go kits in the area of power. The kits now have GMRS capability and a metal headset. The FT8900 has been programmed using the BEARS / ARES frequency set. RFI was getting into the headphones so some ferrites were added to eliminate the problem. Dave explained what GMRS is all about. GMRS requires a license and costs \$70. Dave showed a cheap GMRS radio. There is a GMRS repeater on the roof of Courtenay Springs. GMRS repeaters are generally not open to the public and users must typically get the permission of the repeater operator to use the repeater. GMRS repeaters recognize a travel tone so that travelers can key up local repeaters. GMRS license holders can allow everyone in their family to use that call sign.

The 50-50 winning ticket was found to be in the hands of Dave K4UZM.

HAPPENINGS

From ARRL:

One way to improve operating skills in general, polish mode-specific skills, make new radio acquaintances, and have fun, is to participate in a weekly or monthly contesting event. The weekly [Phone Fray](#) can hone your SSB operating. For CW, there are a number of weekly or monthly events put on by the [CW Ops](#), the [Northern Cali-](#)

[fornia Contest Club](#) (NCCC), [Straight Key Century Club](#), the [QRP Fox Hunt](#) group, and the [North American QRP CW Club](#)

A [recent edition of ARRL The Doctor is In podcast](#) discusses Zero Beat. The Zero Beat term originated from the time when receivers and transmitters were

separate and the receiver frequency was brought to the same frequency as the transmitter by listening to carrier signals at the two frequencies simultaneously. As the frequencies become closer and closer together, the difference frequency can be first heard as a tone, but as they become nearly identical, a difference of a few cycles per minute is heard as more of a varying in loudness of one of the signals, eventually a

thump, or beat. Hearing no beat indicates that the frequencies are identical

The Pontefract and District Amateur Radio Society (PDARS) in the UK has been assigned special event call sign GB250CC (GB25ØCC) to mark the 250th anniversary of the first voyage of explorer Captain

HAPPENINGS

James Cook. Visit the [GB250CC.QRZ.com profile](http://GB250CC.QRZ.com-profile) for more details.

The FCC has launched a new podcast series, [More Than Seven Dirty Words](#), that will feature interviews with FCC officials and staff in addition to others in the communications arena. The podcast aims "to share untold stories, explain important policy issues, and maybe even do the impossible — make telecom interesting," the FCC said in announcing the new media outlet.

The latest edition of *The 5 MHz Newsletter* (No 21 – Summer 2018) is now available for free pdf download from the 'External Links' section of the Wikipedia 60m Band page

https://en.wikipedia.org/wiki/60-meter_band#External_links or the RSGB 5 MHz page <http://rsgb.org/main/operating/band-plans/hf/5mhz/> This edition includes 5 MHz news from 8 countries, features the World of 5 MHz, the Wikipedia 60 Meter Band page, CEPT, Do you monitor the UK 5 MHz Beacons, Useful propagation sites or 5 MHz and Reader's Feedback from G4DWV.

The 19th annual Route 66 On the Air special event, celebrating the storied highway between the west coast and the US heartland, gets under way on September 8 and continues until September 16. The Citrus Belt Amateur Radio Club ([CBARC](#)) of San Bernardino, California, sponsors the event, which will feature 21 stations — including two rovers — operating from sites along or near the path

of US Route 66. Sporting W6-prefix 2 × 1 call signs, the stations will be active on CW, SSB, and digital modes, as well as some VHF and UHF repeater operation. Several Amateur Radio clubs will participate in making the event a reality by sponsoring stations set up along the original US Route 66 or in cities nearby. Listen for W6A – W6U during the event period.

CW operation will center on or near 3.533, 7.033, 10.110, 14.033, 18.080, 21.033, 24.900, 28.033, and 50.033 MHz. SSB operation will focus on or around 3.866, 7.266, 14.266, 18.164, 21.366, 24.966, 28.466, and 50.166 MHz. For digital modes, look for Route 66 stations around 3.580, 7.070, 10.140, 14.070, 18.100, 21.070, 24.920, and 28.120 MHz. Commemorative

QSL cards and certificates will be available.

K9YC wrote a rather comprehensive analysis and comparison of HF bandpass filters for multi-station operations at his web site k9yc.com.

[The Sun, The Earth, and Near-Earth Space: A Guide to the Sun-Earth System](#) by J. A. Eddy is a readable and accessible textbook that explains the dynamics of the Sun and its interaction with the Earth's ionosphere. It's available as a free download, courtesy of NASA and the International Living with a Star Program. Anyone using the ionosphere as a medium for radio wave transmission and wants to better understand propagation should find this book of interest. (Ward, NOAX)

ON THE AIR

9-11 New York City Memorial Station
Sep 7-Sep 12, 0000Z-0300Z, WA2NYC, Staten Island, NY. Wireless Association of New York City. 21.350 14.265 7.200 D-STAR REF020C. QSL. Wireless Association of New York City, 233 Wolverine Street, Staten Island, NY 10306. This station will commemorate the 17th anniversary of the attack on the World Trade Center in New York City. We remember the over twenty nine hundred people that lost their lives on that day. wa2nyc@yahoo.com

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 participat-

ing 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!! www.w6jbt.org

POW MIA Recognition Day
Sep 14-Sep 23, 0000Z-2359Z, K4MIA, Loxahatchee, FL. PBSE Radio Society. 28.466 18.150 14.265 7.185 . QSL. Michael Bald, 6758 Hall Blvd., Loxahatchee, FL 33470. Observances of National POW MIA Recognition Day are held across this country on the third Friday in September each year. This year it will be on September 21. This will be the 10th year this special event station has been activated..The day was established to honor our prisoners of war and those who are still missing in action. There will be sister stations K4MIA/5 K4MIA/7 K4MIA/8 in operation some days. Also contacts will be

made on the LEO satellites. See QRZ for a copy of this years QSL and for additional information. Because of volume of requests you MUST SEND SASE to get a returned QSL. Please take time to remember our POW's and MIA's as well as their families. www.qrz.com/db/k4mia

Most Western Point in North America by Road
Sep 23-Sep 24, 1900Z-0400Z, KL7HOM, Anchor Point, AK. South Peninsula Amateur Radio Club. 146.910. QSL. Fred Trielmann, P.O. Box 15271, Homer, AK 99603. Amateurs from the southern Kenai Peninsula, Alaska, will have a field station set up at the Halibut Campground at the edge of Cook Inlet. Anyone interested is invited to participate. Logs will be uploaded to LoTW, QRZ, and eQSL shortly after the event. Look for spots on DX summit and other spotting network and give us a spot if you hear us to help others find

us. www.kl7hom.org

The pending [VP6D Ducie Island](#) DXpedition sponsored by The Perseverance DX Group (PDXG) is set for October 20 – November 3.

CZECH REPUBLIC, OK. Special event station OL100CSR is QRV until October 31 to celebrate the founding of Czechoslovakia 100 years ago. QSL via bureau.

Flying Scotsman special event station A first for Bury Radio Society?....We will be holding a special event station from a moving train carriage being pulled by the **Flying Scotsman**. This event will take place on the 15th of September this year. Look out for further info here and on both our Facebook and Twitter accounts. <https://www.buryradiosociety.org.uk/>

Radio Astronomy by Armando Delgado, KN4JN

Radio astronomy is a subfield of astronomy that studies celestial objects at radiofrequencies. The first detection of radio waves from an astronomical object was in 1931 when Karl Jansky at Bell Telephone Laboratories, while studying radio noise that interfered with short wave transatlantic voice transmissions, observed radiation coming from the Milky Way. Following the publication of Jansky's findings in 1933, a number of researchers in different parts of the world began their own research into radio emissions from space, and in the ensuing years determined that there is radiation in multiple frequencies reaching Earth from space and from the sun.

In 1955 mysterious signals from space were discovered by radio astronomers at the Carnegie Institution in Washington, DC. Some thought the signals were local interference, perhaps a noisy ignition system of a pickup truck whose driver was returning home from a late night date. However, analysis revealed that the planet Jupiter was in the beam of the Mills Cross antenna the research center used each time that signals were heard. Unlike many radio astronomy dish antennas, the huge Mills Cross comprised over 100 dipoles strung between wooden poles planted in a Maryland field. The dipoles were phased to produce a narrow, steerable, pencil-thin beam some 2.5 degrees in width. That is an amazingly narrow beam considering the operating frequency was 22.2 MHz. Ever since this accidental discovery, researchers have aimed shortwave antennas at Jupiter as they attempt to understand the source of these powerful signals.

In more recent years radio amateurs have joined the ranks of those studying space radio waves. Modern radio equipment and computers facilitate the process of evaluating the sounds emanating from space. One such amateur radio astronomer is Blair Hearth, KD2EPA, of Oceanport, New Jer-

sey, a member of the Garden State Amateur Radio Association and the Society of Amateur Radio Astronomers. Hearth was the recipient of the ARRL Hudson Division Technical Achievement Award in 2015 for his work in radio astronomy and RFI. He declares, "I use a low-frequency receiver to collect data that indicates sudden ionospheric disturbances. My venerable Kenwood R-600 receiver is dedicated to receiving Jovian radiation at 20.1 MHz. I also monitor and count meteors via radio reflection using a NooElec 2 dongle, SDR#, and HDRFFT software. I attempt observations of extrasolar radio objects in the 408 MHz 'band' using GNU Radio, an excellent LNA, and a DB8 bow-tie antenna."

For those interested in radio astronomy, the Stanford Solar Center and the Society of Amateur Radio Astronomers produce and distribute the SuperSID (Sudden Ionospheric Disturbance) monitor which uses a preamp that feeds a signal into a sound card, which records at up to 96 kHz to collect data at very low frequencies, mostly emanations from the sun. The preamp is connected to a one meter loop antenna made of 400 feet of solid copper wire. The software can be easily configured to monitor multiple frequencies. Commonly monitored frequencies used in the US range from 21.4 kHz to 25.2 kHz. The unit can monitor from 7.5 kHz to 43.7 kHz. For more information their web site will help: <http://www.radio-astronomy.org/getting-started>.

Today we know that extraterrestrial radio emissions cover the entire radio spectrum. There are practical limitations to our ability to receive many of these frequencies, especially from our protected position beneath the shield of the earth's atmosphere. Frequen-

cies below 15 Mhz or so, are rarely used due to absorption of these waves by the ionosphere. At the upper end of the frequency range, limitations are imposed by the technology needed to receive signals with such tiny wavelengths. Almost all amateur radio telescopes fall between 18 Mhz and 10,000 Mhz. The exact choice of frequency for a given amateur will depend on the technical abilities of the experimenter, the types of observations being sought, the radio interference pattern in the area, the amount of room available for antennas, and possibly the availability of commercial equipment which can be pressed into service.



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.



CONTESTS

This particular contest is held at the same times each Wednesday, every month. It offers an opportunity to practice CW with good operators. Their web site below gives more details.

[CWops Mini-CWT Test](#), Sep 5, 1300z to Sep 5, 1400z, Sep 5, 1900z to Sep 5, 2000z, Sep 6, 0300z to Sep 6, 0400z; CW; Bands: 160, 80, 40, 20, 15, 10m; Member: Name + Member No., non-Member: Name + (state/province/country); Logs due: September 8.



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	TO NE	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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