



INDIAN  
RIVER ARC

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

VOLUME XLII, NUMBER 3

# SPURIOUS EMISSIONS

MARCH, 2021

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ARMANDO DELGADO

KN4JN

## CLUB MINUTES

President Viron, N4VEP called the meeting to order at 7:15 PM. There were 8 members in attendance at the site and others participated via Zoom. Following the Pledge of Allegiance, the members approved the minutes of the February meeting.

The Treasurer's Report indicated \$1796.62 in the equipment fund and \$1537.39 in the general fund. The report was approved for audit.

Technical Committee Report: Dave, KU0R said that all repeaters are operational. The emergency communication center at the church is operational and the work now is geared to route power cables for a solar panel at the roof and a microwave system to create an internet access separate from the one belonging to the church.

ARES Report: Hylan, W4UTD was not present. Viron summarized the ARES activities: monthly net on 147.135 MHz

repeater, and the Saturday training class at the Mims Volunteer Fire Department from 8AM-12PM.

President's Report: the antenna farm work party should begin in 1-2 weeks. The plan is to create a grounding system, set up antennas, and open a 4" penetration port on the east side of the club building for cables' access. Potential antennas to set up are a 160 meter off-center fed dipole, a 10-80 meter end-fed long wire, and Hustler vertical covering 80m-10m with a 17m adapter. The club currently has all these antennas. One other possibility to consider is a 2m beam for SSB operations. Viron added that a mystery donor facilitated financing of some of the items for the antenna farm.

The Simplex Exercise will now occur on the last Saturday of every month. The next one will be on March 27. Check-in begins at 9:00 AM on the 145.37 MHz repeater and then QSY to

147.42 MHz for simplex communications. Everyone will evaluate each other's signals in order to set up a baseline understanding of potential simplex activities in case of a massive repeater failure. Following the simplex test, there might be a digital HF messaging exercise using fldigi.

There is consideration of having a work party on March 27, as well.

Following the business meeting, Viron gave an informative and practical presentation on emergency preparedness requirements, particularly in relation to portable antenna masts and emergency power, specially using solar panels and batteries for power generation and storage.

The meeting adjourned at 8: 15 PM.

Respectfully submitted for the Secretary by Armando Delgado, KN4JN

## HAPPENINGS

Josh Tanner, the Australian filmmaker who produced the thriller [Decommissioned](#) by Perception Pictures, has explained how he came up with the idea to develop the movie short. In the approximately 6-minute film, SuitSat returns in the future to haunt International Space Station commander "Diaz," played by Joey Vieira, who spots SuitSat, the surplus Russian Orlan spacesuit that was turned into an amateur

radio satellite several years ago by Amateur Radio on the International Space Station (ARISS). An exclusive ARRL [video interview](#) premiering on Saturday, February 27, brings together Tanner, who directed the sci-fi horror film about an eerie ham-radio-in-space reencounter, and ARISS-International Chair Frank Bauer, KA3HDO. In the interview, conducted by ARRL volunteer Josh Nass, KI6NAZ, of the popular

YouTube channel Ham Radio Crash Course, Tanner described the uniquely creative and technical aspects of the filmmaking involved in Decommissioned and its connection with the real-life SuitSat-1.

The spring 2021 Red Cross Nationwide Emergency Communications Winlink Drill will be held on May 8, which is [World Red Cross and Red Crescent Day](#)

2021. Details and instructions are available. [Sign up for email updates](#)

Interesting article titled *Mitigating RFI from a Large UPS System* by Gary, NAG0 on dealing with RFI from a commercial level UPS system can be found [here](#).

With Solar Cycle 25 in the upswing, soon 6 meter openings

may happen with regularity. Here is a website that lists many of the active [6m beacons in North America](#).

The 10th anniversary of Maritime Radio Day (MRD) will take place from 1200 UTC on April 14 to 2200 UTC on April 15. The annual event commemorates nearly 90 years of wireless service for seafarers. Radio amateurs and short-wave listeners are welcome and should [register](#) in advance by April 1. All traffic must occur around the following international naval frequencies on amateur radio bands: 1824 kHz; 3520 kHz; 7020 kHz; 10,118 kHz; 14,052 kHz; 21,052 kHz, and 28,052 kHz. The primary working frequency is 14,052 kHz. There is no power limit. Participants exchange QSA

(signal strength, 1-5), QRK (readability, 1-5), name, call sign of last or favorite ship/aircraft/maintenance company, and "additionally a tr, msg and/or a QTC, if you like."

Submit an email or letter detailing stations worked to Rolf Marschner, Narzissenweg 10 53359, Rheinbach, Germany.

[14 common phone mistakes in ham radio](#) presents an interesting YouTube video commentary on ham radio phone transmissions. These fellows remind me of the famous anecdote about Samuel Johnson, the notable English writer and lexicographer:

*"As Samuel Johnson paused to rest on a London park bench one hot summer's day, his profusely sweating bulk caused a young woman sitting next to him to accuse him of smelling. 'No, Madam,'*

*he replied. 'You smell, I stink.'"*

### ARISS Ham Station in Columbus Module Is Once Again Operational

Some 6 weeks after going silent following a spacewalk that installed new antenna cabling, the Amateur Radio on the International Space Station (ARISS) ham station in the Columbus module is once again operational. The Columbus station, which typically uses the call sign NA1SS, is the primary ARISS amateur radio station used for school contacts and other activities. A January 27 spacewalk replaced a coax feed line installed 11 years ago with another built by the European Space Agency (ESA) and Airbus.

While the specific cause of the

problem has not yet been determined, a March 13 spacewalk that restored the antenna cabling to its original configuration provided the cure. The plan to return the ARISS cabling to its original configuration had been a "contingency task" for a March 5 spacewalk, but the astronauts ran out of time. The ARISS work was appended to the to-do list for astronauts Mike Hopkins, KF5LJG, and Victor Glover, KI5BKC, to complete a week later.

On March 14, ARISS was able to confirm the operation's success when Automatic Packet Reporting System (APRS) signals on 145.825 MHz were heard in California, Utah, and Idaho as the ISS passed overhead

## ON THE AIR

**Quebec Parks On The Air** (QcPOTA) Apr 1-Dec 31, 0000Z-2359Z, all. VE2GT and VE2NCG. ALL. Certificate. qcqpot.ca

**USS Midway Museum Ship Special Event: Doolittle Raid** Apr 10, 1600Z-2300Z, NI6IW, San Diego, CA. USS Midway (CV-41) Museum Ship. 7.250 14.320 14.070 (PSK31) DSTAR via PapaSystem repeaters. QSL. USS Midway CV-41 COMEDTRA NI6IW, 910 N Harbor Dr, San Diego, CA 92101. Please include SASE. [www.grz.com/db/ni6iw](http://www.grz.com/db/ni6iw)

**Maritime Radio Day 2021** Apr 14-Apr 22, 1200Z-2200Z, various, GERMANY. Maritime Radio Day. CW only. Certificate & QSL. Rolf Marschner, Narzissenweg 10, 53359 Rheinbach, GERMANY. This is an operating event. Please see website for [rules](#).

**Texas State Parks On the Air** (TSPOTA) Apr 17-Apr 19, 1400Z-0200Z, K5LRK, The Colony, TX. Lake Area Amateur Radio Club. CW Phone VHF. QSL. See website, for, Information. Times are daily. K5LRK on as a special event station. Contest: Activate as many Texas parks as possible. [www.k5lrk.com](http://www.k5lrk.com) or [www.tspota.org](http://www.tspota.org)

VK9CE Team will be active from **Cocos Keeling Islands**, IOTA OC-003, 16 - 23 March 2021. Team - Steve VK6SJ, Wayne VK6EH, Stu VK6SSB, Gerald VK6XI, Chris VK6LOL, Brian VK6BMA, Tim VK6EI, Alex VK6KCC, John VK6NU and Brian VK6MIT. They will operate on 80 - 10m, CW, SSB, FT8.

Take, JG8NQJ will be active again as JG8NQJ/JD1 from **Marcus Island**, IOTA OC-073, Minami Torishima, during 3 month, starting 10 March 2021. He will operate on HF Bands CW. QSL via JA8CJY. Ads for direct QSL: Susumu Sanada, 5- 4- 5- 17, Shin-Ei, Ki-

yota, Sapporo, Hokkaido, 004-0835, Japan. DXCC DXCC Country - Minami Torishima. QTH Locator - QL64xg. WAZ Zone - CQ 27.

Just as we are in the middle of winter, the Southern Hemisphere is in the middle of summer and Antarctic hams are active again.

**American Amundsen Scott Station**, KC4AAA, on SSB around 14,243 MHz.

**McMurdo Station Ross Island**, KC4USV, same frequency as above.

**Palmer Station**, KC4AAC, same frequency as above. QSL all three stations via K7MT.

**Progress Base**, RIO1ANT, active from Christmas 2020 to May 30, 2021.

**Syowa Base**, 8J1RL, active in CW and FT8 on 40, 30, 17, and 15 meters. QSL via buro.

**FEDERAL REPUBLIC OF GERMANY**, DA. Special event stations DQ100JL and DR100JL will be QRV from March 1 to May 31 to commemorate the founding 100 years ago of Junkers Luftverkehr, an early airline in Germany. QSL via bureau.

**ST. MAARTEN**, PJ7. Thomas, AA9A will be QRV as PJ7AA from February 27 to March 28. Activity will be on 80 to 10 meters using CW, SSB and FT8. QSL direct to home call.

**GREECE**, SV. Members of the Radio Amateur Association of Western Peloponnese will be QRV with special call signs SZ21AD, SZ21GK, SZ21LB, SZ21PF, SZ21TK and SZ1821P from March 1 to 31 to commemorate the 100th anniversary of the Revolution of 1821. QSL via LoTW.

## The Spark Gap Transmitter by Armando Delgado, KN4JN

The first successful commercial radio transmitters used the spark gap technology. This concept arose from the experiments of Heindrich Hertz in 1886 when he demonstrated that an electric spark would produce another induced spark across the room some distance away. In his experiments between 1886 and 1889 Hertz performed for the first time in history applied science research as he set to prove Maxwell's theory of electromagnetic waves. He succeeded and showed that radio waves followed Maxwell's equations and were closely related to light.

A few years later in Italy Gugliermo Marconi reasoned that if radio waves could be detected across a room, they might also be detected at longer distances. He also surmised that if the timing of the radiating spark could be changed, signals like Morse code could be sent across space. After numerous experiments, in 1894 Marconi successfully sent a Morse code message over a distance of a few miles. Then in 1901, he sent the letter "S" across the Atlantic Ocean, thus starting the age of radio and wireless communications.

Following Marconi's Atlantic transmission, radio became a very popular activity. Spark gap transmitters showed up everywhere, mostly because of their simple structure (Figures 1 and 2) many aficionados built their own transmitters and receivers. The earliest versions of the spark gap transmitters did not use a loading coil prior to the antenna but used the aerial wire itself as the matching inductor to set the transmission frequency. Of course, at that time the concepts of capacitance, inductance and resonance were not well understood and all developments depended on empirical trial and error research. Early experimenters found that antennas of 200-300 meters in length could provide the longest distance transmissions.

In the subsequent years, the spark

gap transmitters improved in performance. The first improvement consisted of the addition of a loading coil in the final of the transmitter that provided a match to the signal generated and limited the frequencies being broadcast, thus minimizing the interference caused by earlier spark gap transmitters. Later improvements included more precise capacitors for the matching circuit and a rotating spark gap device that helped control the frequency of the signal. (Figure 3.)

When the United States entered World War I in April, 1917 the government suspended amateur radio operations and even revoked amateur radio licenses that had been issued since 1912, when the first radio regulations went into effect. Amateur radio activities did not resume until late in 1919, over a year after the armistice signing ending the war.

In the intervening years vacuum tubes, invented in 1904, became a component of radios, introducing the continuous wave method of generating radio signals and revolutionizing radio transmitting and receiving, soon replacing the spark gap radios in existence which became obsolete and then illegal in 1929.

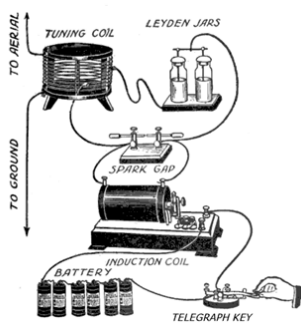


Figure 1. Spark gap transmitter



### 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

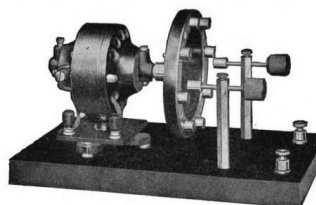


Figure 3. Rotary Spark gap.

### Editor's Note:

Send comments about the Newsletter or to contribute information or articles to the Editor's email address:

[olardelga@aol.com](mailto:olardelga@aol.com).

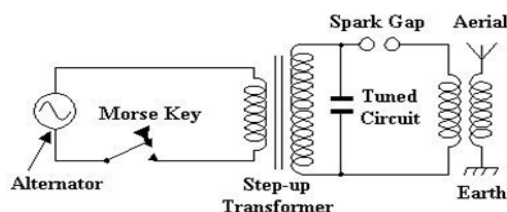
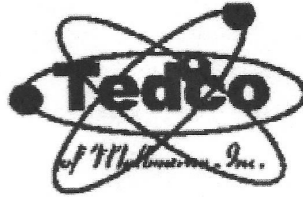


Figure 2. Spark gap transmitter circuit.

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	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	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	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
<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 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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