



## INDIAN RIVER ARC

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

VOLUME XLII, NUMBER 7

# SPURIOUS EMISSIONS

JULY, 2021

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ARMANDO DELGADO  
KN4JN

## CLUB MINUTES

The meeting was called to order by President Viron, N4VEP at 7:23 PM. Other members present: Sandy, AK4BZ, Steve, N4UTQ, Ernie, K1CPO, Sam, KJ4VGR, and Del, AK4EY. This month there was no Zoom meeting.

Following the Pledge of Allegiance Viron summarized the Treasurer's Report: after expenses of Field Day and antennas for the new club site, the checking account stands at \$773.67.

Next, Steve, N4UTQ discussed the club's nets, the Wednesday net every week. The 31 of June will be the next simplex net. Steve will email notices prior to the event. Discussion also involved the NBEMS net and the benefits of those digital modes. Viron added that JS8CALL may be added to the training program in the future.

Technical committee report: All repeaters are working. The PA of the 146.88 MHz repeater

came back from repair and had a blown fuse. The drive issue is corrected now. EMCOM op center has a dedicated Winlink node in place but there is an issue with software that bypasses the need for a Pactor modem. There is a free version of the software, but a fuller version can be had for \$65.

During Field Day, the Flex radio had some problems. Dave, KU0R determined that the computer cabling was inadequate because they are unshielded and allowed interference from adjacent radion, so all computer cables will be replaced with shielded CAT-6 and the grounding will be improved. New Business: August 14 commemorates the date that Japan decided to consider the terms of surrender for World War 2. It falls on a Saturday this year and the club plans to have a special event station. Following the business meeting there was a presentation on

NVIS antennas and their propagation. There will be a club experiment on NVIS antennas using 80 meters on a future Sunday at 12 PM using 3.8 MHz. Steve will provide notice of the date and more details.

The meeting adjourned at 8:30 PM.

Respectfully submitted for the Secretary by Armando Delgado, KN4JN

## HAPPENINGS

Club Log DXCC Most Wanted countries (Top 10)

1. P5 DPRK (NORTH KOREA)
2. 3Y/B BOUVET ISLAND
3. FT5/W CROZET ISLAND
4. BS7H SCARBOROUGH REEF
5. CEOX SAN FELIX ISLANDS
6. BV9P PRATAS ISLAND
7. KH7K KURE ISLAND
8. KH3 JOHNSTON ISLAND
9. 3Y/P PETER 1 ISLAND
10. FT5/X KERGUÉLEN ISLAND

Joe, K1JT, announces: "WSJT-X and MAP65 Users: We are pleased to announce that a public Release Candidate WSJT-X 2.5.0-rc3 is ready for download by beta testers. On Windows the installation package also includes MAP65 3.0.0-rc3. See the [Release Notes](#) for changes since WSJT-X 2.5.0-rc2. We are especially interested in feedback from users of the new mode Q65

and the separate program MAP65. If you have been using Q65 with WSJT-X 2.4, 2.5, or MAP65 3.0, please send us a summary of your experiences. If you have found bugs, please send us details..." For more information, please see the [WSJT-X Home Page](#).

Set for August 21 - 22, the 24th annual International Lighthouse Lightship Weekend ([ILLW](#)) will be

back. Each year, typically on the third weekend of August, [participants](#) set up portable stations at or near lighthouses and lightships around the world. The ILLW typically attracts entries for some 500 lighthouses in more than 40 countries. The event has few rules and is not a typical contest-type event. The ILLW will begin at 0001 UTC on August 21 and continue through 2400

## HAPPENINGS

[Fedor Konyukhov](#), ROFK, recently left Murmansk on an icebreaker, and when he reaches the North Pole, he will be on a drifting polar ice station for 10 days, conducting scientific research. Listen for him on 14.333 MHz, starting at 0400 UTC.

The Canadian American Net ([CANAM](#)) aims to unite hams in the eastern US and Canada. Some 40 amateurs from Canada and the US typically check in for each session, and the net accommodates CW and SSB. The Canadian-American Net operates 7 days a week on 7.153 MHz, with check-in starting at 1300 UTC.

Roy Lewallen, W7EL, says that after 31 years of "developing, selling, and supporting [EZNEC](#) and its predecessor, [ELNEC](#)," he is retiring. Starting on January

1, 2022, EZNEC Pro/2 will be free, and may be copied and distributed. He will no longer support the software.

Ham Radio Outlet, the nationwide amateur radio retailer in the US, has announced that its ongoing expansion plans will include a store in the state of Florida. The closest Ham Radio Outlet to Florida is in Atlanta, Georgia. The company, which calls itself the world's largest supplier of amateur radio equipment, is also known for shipping internationally. The final location of the store has not been announced yet.

In June of 2021, the FCC in the USA issued the experimental call sign **WL2XUP** to conduct tests on the 40 MHz band. The owner of the call, Lin Holcomb (N14Y) reports that the station is now on air. The license allows for operation between 40.660 MHz to 40.700

MHz with a maximum output of 400-watts ERP. The license was issued on the 17th of June 2021 and it lasts until the 1st of July 2023.

As of mid July 2021, WL2XUP is intermittently transmitting WSPR on 40.662 MHz (1500Hz). For FT8 skeds and tests, an ERP of 100-watts can be used. More info... <https://ei7gl.blogspot.com/2021/07/new-us-experimental-station-wl2xup-now.html>

Electronics Notes Virtual Vintage Radio Museum and Directory In recent weeks at Electronics Notes, we have started adding a virtual museum and directory of various vintage radios of all sorts from old crystal antiques radios to vintage valve / tube radios, ex-government communications radios, ham radio equipment through to early transistor radios and the like.

Each radio is given a description, details of the specification and circuit where possible, so a good amount of interesting information is available on each type.

<https://www.electronics-notes.com/articles/history/radio-receivers/classic-vintage-radio-receivers.php>

The EmComm Training Organization (ETO) will continue the popular Winlink Thursday exercises to foster Winlink-knowledgeable operators across the country leading up to a nationwide drill November 13, 2021. Procedures will include a weekly exercise for routine practice with a fourth Thursday exercise of a more challenging nature. Exercises will almost always include a Winlink Express Check-in form.

Please [send questions about Winlink Thursdays](#). Questions about the ETO group can be sent [here](#).

**POLAND, SP.** Special event stations 3Z1980LL, HF1980LL, SN1980LL, SO1980LL, SP1980LL, SP1980LS and SQ1980LL are QRV until July 31 to commemorate the strike actions of 1980 in the Lublin region. Activity is on the HF bands. QSL via operators' instructions.

**JAPAN, JA.** Members of the Sendai Tuning DX Club are QRV with special call sign 8N7SPORT until October 31. QSL via bureau.

**GUATEMALA, TG.** Steve, K4IM is in Guatemala City until August 15 and plans to use his TG9AWS call. He operates CW, SSB and digital modes on 40 through 6 meters. QSL via W3HNK or direct to K4IM.

**SVALBARD, JW.** The JWOW team of EA3HSO, LB1QI, LA5GI, LA7GIA, LA7THA and LA8OM plans to be QRV from Prins Karls Forland (EU-063), from July 21 to 26. QSL via MOOXO's OQRS and LoTW.

## ON THE AIR

JWOW Team will be active from **Prins Karls Forland Island**, (Prince Charles Foreland), IOTA EU - 063, Svalbard, 21 - 26 July 2021. Team - LB1QI, LB2HG, LA7GIA, LA7QIA, LA8OM, LB5GI. They will focus on 40, 30, 20m and will be active also in RSGB IOTA Contest, 24 - 25 July 2021.

Aug 1-Aug 31, 0000Z-2359Z, 4A2MAX, Diamond, **MEXICO**. Asociacion de Radioexperimentadores de Nuevo Leon. 28.420 21.220 14.180 7.160. Certificate & QSL. Jose de Jesus Lopez V , 5914 San Bernardo Ave, Suite 4-135, Laredo, TX 78041-2506. a2max@xe2n.org or [www.qrz.com/db/4a2max](http://www.qrz.com/db/4a2max)

**US Coast Guard 231st Birthday** Aug 4, 1400Z-2300Z, K1CG, Port Angeles, WA. CG CW Operators Association. 21.052 14.052 7.052 3.552. QSL. Fred Goodwin , 424 N. Bagley

Creek Rd, Port Angeles, WA 98362. [www.qrz.com/db/k1cg](http://www.qrz.com/db/k1cg)

**Pluto - Countdown to the 100th Anniversary of the Discovery of Pluto** Aug 6-Aug 8, 0000Z-2359Z, W7P and W7P/O, Flagstaff, AZ. NADXA - Northern Arizona DX Association. 14.290 14.090 21.290 7.290. Certificate & QSL. Bob Wertz, NF7E, 6315 Townsend/Winona Rd., Flagstaff, AZ 86004. Back by heavy demand - Countdown to the 100th Anniveresy of the Discovery of Pluto" - Last opportunity for contact in the inaugural year. See our web site [NADXA.com](http://NADXA.com) for Certificate and QSL information. The Ninth Planet? [nadxa.com](http://nadxa.com)

Jeje, F8FKJ will be active as J2OEE from **Djibouti**, during June - July 2021. He will operate on HF Bands. QSL via F4DXW direct, LoTW, eQSL. Direct QSL: STEPHANE VAN LANGHENHOVEN, 24 bis rue de Anter Hent, 29830,

PLOUDALMEZEAU, France.

C6AHA Team will be active from **Bimini Islands**, IOTA NA - 048, The Bahamas, 14 - 21 July 2021. Team - N4RRR, K4KSW, N4QBS, NN2T. Alex, DD5ZZ will be active as OA7/DD5ZZ from Cusco region, **Peru**, 30 July - 17 September 2021. He will operate on HF Bands, SSB, FT8, FT4 and some CW. QSL via DD5ZZ, ClubLog OQRS, LoTW. Direct QSL: Alex Krings, Waldstr.12, 65719, Hofheim, Germany.

**URUGUAY, CX.** Special event station CW60ATS is QRV until December 31 to mark the 60th anniversary of the enactment of the Antarctic Treaty System. QSL via LoTW.

**ITALY, I.** Special event station I10LXXV is QRV until December 31 to celebrate the 75th anniversary of ARI Roma. QSL via bureau.

## The Skywire Loop Antenna by Armando Delgado, KN4JN

The Skywire loop antenna is a full wavelength horizontal loop antenna. It is probably the best amateur all-band antenna possible. It is quieter than a dipole or a vertical antenna, has greater gain than a dipole or vertical, and at higher frequencies offers low angles of radiation that rival those of vertical antennas. Unfortunately, loop antennas are not more popular with hams because in today's world of space restrictions they create practical difficulties in erecting them, since they require multiple supports and, at the lower frequencies, a lot of real estate.

The ARRL Antenna Book summarizes this wire antenna thus: *"There is one wire antenna that performs exceptionally well on the lower HF bands, but relatively few amateurs use it. This is a full-size horizontal loop. The Loop Skywire antenna is that type. It is fundamental and simple, easy to construct, costs nearly nothing, and eliminates the need for multiple antennas to cover the HF band. It is made of wire and coaxial cable, and often needs no Transmatch. It is an antenna that is omnidirectional over real earth. It is noticeably less susceptible than dipoles and verticals to man-made and atmospheric noise. The antenna can also be used in harmonics of the fundamental frequency, and it fits on almost every amateur's lot."*

Being full wave antennas, the dimensions of the loop will depend on the fundamental frequency chosen. The general formula is  $1005/f$  (MHz) to give the length of the antenna in feet. The final gain of the antenna depends on the area encompassed by the loop, reaching a maximum with the shape of a circle. Since the circular shape is difficult to construct due to the supports required, the favored shape for loop antennas is the square, with a minimal loss in gain from the ideal shape.

Like other wire antennas, the angle of radiation of the loop is dependent on the height of the antenna

with respect to the frequency of operation. The loop, like the dipole, will have lobes on the sides with a null upwards at heights  $\frac{1}{2}$  the wavelength of the frequency of operation. The main difference from the dipole is that the loop is omnidirectional and thus has four lobes instead of just two as in the dipole. At lower frequencies, where  $\frac{1}{2}$  wavelength heights are impractical, the loop like the dipole will perform as an NVIS antenna with a stronger vertical lobe growing as the frequency lowers, in proportion to the height of the antenna.

The feed-point impedance of the loop is about 100 ohms, but it varies with the shape of the antenna, the height, and the frequency. The location of the feed point is not critical, but as a rule it is fed at a corner. Generally, a 2:1 or 4:1 balun or matching stub will pair the antenna to the usual feeding coax of 50 ohms, thus eliminating the need for a tuner; although, if the antenna is used as a multiband antenna, a tuner will fine tune any imbalances with frequency change. Overall, the loop antenna is broadband in most frequencies, so that SWR variations will be minimal across the resonant bands.

Interestingly, a 160m loop will perform in all the amateur bands. Normally, these types of antennas are associated with HF operations, but a loop will do very well in 6m, and there is no reason it could not perform in 2m and even 70cm. A 160m loop will have a circumference of about 560 ft and in a square shape each side about 140 ft. That is a lot of real estate, but if a ham can build it, he will have an excellent all-band antenna.

One other factor about loop antennas is that they can be operated as a vertical antenna with the loop being a capacitive hat. Vertical operation is

achieved by changing the feed line and operating against ground. (Figure 1)

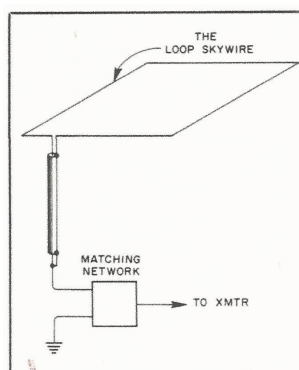


Figure 1. Feeding arrangement to operate a loop as a vertical antenna.

This YouTube video by Callum McCormick of DXCommand shows an extensive computer modeling of the radiation pattern of loop antennas at different frequencies.

[https://youtu.be/s\\_CdzvEF34w](https://youtu.be/s_CdzvEF34w)



### 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



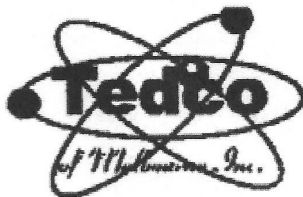
### Editor's Note:

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

[olardelga@aol.com](mailto: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
<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	W4NLS	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	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.	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 user 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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