



INDIAN RIVER ARC

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

VOLUME XLV, NUMBER 1

SPURIOUS EMISSIONS

JANUARY, 2023

CLUB MINUTES

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KN4JN

HAPPENINGS

The Bouvet Island DXpedition
"The most remote uninhabited place on Earth"
Clublog #2 Most Wanted Entity

The Bouvet Island dxpedition will begin in mid-January, after years of planning. The current arrangement is to set sail from the Falkland Islands on January 13 and arrive at Bouvet Island on January 26. In the past, the expedition transmitted from the ship on the

President Steve Luchuck, N4UTQ called the meeting to order at 7:15 PM. Following the Pledge of Allegiance, Steve mentioned in his President's Report that the Christmas party in December was a success.

There being no Vice-President Report, Steve gave the Treasurer's Report. It showed a gain of \$158 from membership renewals so far, that brought the checking account to \$1071.11 from a previous amount of \$913.11. The Equipment Fund remains unchanged at \$1883.65. The Treasurer Report was accepted for audit.

Next, the November meeting minutes were approved.

Past President Report: Viron N4VEP reminded all of the QRP activity at Manatee Park. He also mentioned an NVIS test that he and Steve, N4UTQ conducted from different parks on 80m using digital modes and 100 watts. They deemed the test a nearly 100% successful.

Viron also mentioned an NVIS operation he conducted from his apartment in Cocoa using an 80m dipole and a wire fence as a counterpoise. He operated QRP (10w) and made several contacts ranging in distances between 25 miles and over 200 miles.

New Business: Winter Field Day will be on the weekend of January 28-29. Steve will provide the food. However, the event starts at 2:00PM on Saturday and the club may not be able to use the church facility after 2:00 PM on that day. If that is the case, we may go to a park to operate, maybe rent a pavilion. Final determination will be determined in the near future.

Following the business meeting, Steve gave a presentation to explain "What Happened to BEARS", the name being an acronym for Brevard Emergency Amateur Radio Service. Historically, after

way to the island using a different call sign. Upon arrival to the island and set up, they will use the call sign **3Y0J**. The intent at present is to operate from the island for 22 days using 12 stations. Below is an outline of their operating plan and their web site offers more detailed information on their operation and planned frequencies: <https://www.3y0j.no/bandplan>

hurricane Andrew Bob Lay, the then Director of Emergency Management for Brevard County and a supporter of amateur radio as part of the team of emergency communicators, proposed in 1996 a consolidation of all the amateur radio clubs in the county by creating an organization that represented all the clubs and coordinated emergency operations. In its capacity, BEARS was a 501 (c) 3 organization, which allowed it to collect donations and own equipment. In 2004, BEARS applied and obtained a government grant to purchase a mobile home to be converted into an emergency support vehicle. After 2-3 years of hard work and equipment donations by many hams, BEARS-1 came into existence. It was a magnificent vehicle capable of operating in all the radio service's frequencies and all the amateur frequencies, with backup units for all radios: it was the pride of BEARS. The vehicle also had a support trailer with backup generators and other support equipment.

Unfortunately, BEARS depended on donations to maintain their wonderful vehicle. They turned to the clubs regularly asking for financial support, but the clubs, not being rich, resented the repeated requests for donations, particularly as the maintenance expenses and insurance premiums of BEARS-1 continued to increase. Also, the vehicle was not being used for its planned purpose. Actually, in all its years of existence it was used only once for a real emergency situation. Many BEARS member clubs began to see the BEARS-1 vehicle as a liability and there were increased calls for getting rid of it.

Then COVID-19 struck and the Brevard County EOC did not allow group meetings at its facility, where BEARS Board used to meet. Without a place to meet and coordinate operations, BEARS went into disarray. In January, 2022, new bylaws

3Y0J will always listen up (using split) so it will be useless to call us on our transmission frequency. Please be sure to double check your settings to make sure you are not calling us simple. Always give your full callsign. Listening is the key so sure we call you before replying. CW MAX 15 kHz split (operators chose QRG within a certain bandwidth)

were proposed for the organization, but since no group meetings could occur, after the bylaws were disseminated the leadership decided that dissemination meant approval and implemented those bylaws. Then in June 2022 BEARS was legally dissolved and its assets went to BCAT (Brevard County Ares Team), BEARS successor.

It seems that a primer to the dissolution of BEARS was a determination by the local ARRL Emergency Coordinators that BEARS had too many clubs participating and that those clubs did not provide enough support for emergency activities.

Steve went on to indicate that IRARC has a solid set of emergency operations capabilities and that the club is presently capable of dealing with any type of emergency and provides leadership to other clubs in the county.

The club planned to participate in the ARRL SET in October, 2022, but hurricane Ian postponed that test and it has not been rescheduled yet; however, IRARC plans to hold its own SET in the near future, particularly using digital modes such as NBEMS and Winlink.

Steve also mentioned that the club does not have an Emergency Coordinator at present and queried if we want to have one.

Following Steve's presentation, Viron showed a YouTube video of his motorcycle radio go-kit. To view it, Google Viron Payne in You Tube.

The meeting adjourned at 8:10 PM

Respectfully Submitted,
Armando Delgado, KN4JN
Secretary

SSB MAX 30 kHz split (operators chose QRG within a certain bandwidth)
Lowest 10 kHz spectrum on regular bands NO TX to allow regular DX traffic
Lowest 5 kHz on WARC band NO TX to allow regular DX traffic
We're aware of US band plans for E/A/G/N/T
FT8 40-10m, with focus on 20-10m yagis.

HAPPENINGS

We will transmit:

100W on FT8

1500W on CW/SSB (special permit to transmit up to)

This expedition offers a unique challenge to contact an entity that may not be available again for many years. It also will be a test of operator skill considering the distance to the remote island and the pile ups that will occur. Getting through to 3Y0J will require careful planning and patient operating.

Since June 2020, ARRL VE teams have gone completely electronic by using a web-based examination system to administer online exams for remote, video-supervised sessions or in-person sessions.

The remote sessions are conducted using a video conferencing platform with [ExamTools](#) onscreen tests. Online exams can also be used at in-person sessions (candidates must have tablets or computers for fully electronic in-

person sessions). This system replaced our *ARRL VE Exam Maker* exam-generating software.

The online exam platform includes registering and tracking candidates throughout the session, onscreen exams and grading, online signing of Certificates of Successful Completion of Examination (CSCEs) and 605 forms, logging and compiling the session stats and VE participation list, and output files for upload to the coordinating VEC. The program manages almost everything needed to conduct a test session. Interested ARRL VE team leaders should email the ARRL VEC at VEC@arrl.org for details and instructions on creating an [ExamTools](#) account and training with an experienced team.

Winter Field Day is a communications exercise. WFD is held on the last full weekend in January. WFD can be worked

from the comfort of your home or in a remote location. You can participate by yourself or get your friends, family, or whole club involved. Winter Field Day is open to participants worldwide. Amateur radio operators may use frequencies on the HF, VHF, or UHF bands and are free to use any mode that can faithfully transmit the required exchange intact. Similar to the ARRL's Field Day, bonus points are earned in several ways, including using non-commercial power sources, operating from remote locations, satellite contacts, and more. Winter Field Day is always held the last full weekend in January. For 2023, it will be held on January 28th and 29th. The 24-hour operational period starts at 1900 UTC on Saturday, the 28th and ends at 18:59 UTC on Sunday, the 29th. Stations may begin setting up no earlier than 19:00 UTC on Friday before. However cumulative set-up time shall not exceed 12 hours. Full rules can be found [here](#).

ARRL Volunteers On the Air Event is Underway ARRL's year-long operating event, Volunteers On the Air, or VOTA, began January 1, 2023. The event is organized as part of ARRL's 2023 theme, "Year of the Volunteers," which recognizes the contributions of ARRL member volunteers, and offers opportunities to become more active and involved in amateur radio and ARRL. VOTA encourages participants to make contacts with ARRL members and volunteers, earning points for each contact. Point values have been assigned (see the Points Table at vota.arrl.org). As part of the event, there will be week-long activations by W1AW portable stations operating in all US states and territories. W1AW/# portable operations are worth 5 points for each contact, and they can be contacted on all bands and modes. Only two-way contacts qualify for points, using any mode (CW, phone, or digital) - including EME and satellite operations - on 160, 80, 40, 20, 15, 10, 6, 2, and 1.25 meters, as well as 70 centimeters.

ON THE AIR

QuartzFest Distance Challenge

Jan 22-Jan 28, 1500Z-2159Z, W7Q, Quartzsite, AZ. Northern Arizona DX Assn. 14.266 7.266 21.266 28.266. QSL. Tom Luther, 7690 W Derry Dr, Kirkland, AZ 86332. The 4th annual DISTANCE CHALLENGE (DC) competition will be held at QUARTZFEST(QF), 2023, in January and you are invited to participate. More information [here](#).

Western Mass Council Scouts

BSA WHOA Saturday Jan 21, 1400Z-2000Z, W1W, Russell, MA. Western Mass Council Scouts BSA. 7.190 10.115 14.060 14.290. QSL. Tom Barker, 329 Faraway Road, Whitefield, NH 03598. Monthly outdoor skills and activity weekend open to

scouts and the general public. Qsl via eqsl and sase.

169th Anniversary of the Gadsden Purchase from DM31, Organ Pipe National Monument and Winter Field Day Jan 27-Jan 30, 2000Z-1400Z, KT7RC, Tucson, AZ. Tortolita Radio Club. 14.230; CW, SSB; FT8 on the WARC bands and 6 meters. Certificate. Email, contact@tortolita-rc.com, for certificate. No paper QSL. Operating from the fairly rare DM31 Grid Square! DM31 occupies the southern border with Mexico that the Gadsden purchase set. www.qrz.com/db/kt7rc or tortolita-rc.com

74th Anniversary of Merci Train Boxcar- Feb 1-Feb 28, 0000Z-0000Z, NV7AL, Las Vegas, NV.

American Legion Paradise Post 149 and 40&8 Voiture 306. 7.074 7.250 14.074 14.250. QSL. Robert Bencsko - AD7J, 2548 Fort Lauderdale Drive, Las Vegas, NV 89156. This special event station is set up to raise awareness of the 40&8 "MERCY Train Boxcar" 74th Anniversary Watch for us on DX Summit QSL with SASE to AD7J <https://www.qrz.com/db/NV7AL>

9U4WX Burundi Vlad, OK2WX will be active as 9U4WX from Burundi, 4 - 27 February 2023.

He will operate on 80-40-20-17-15-12-10 meters CW and SSB with 100 W power.

2023 Daytona 500 Speedweeks

Feb 14-Feb 19, 0001Z-2359Z, N4DAB, Daytona Beach, FL. Daytona Beach CERT ART. 14.074 14.055. Certificate & QSL. Steve Szabo, 536 Central Park Blvd, Ponce Inlet, FL 32127. See webpage for QSL details. www.n4dab.com

HL Hunley Commemoration and Special Event

Feb 17-Feb 19, 1400Z-1900Z, N4HLH, Sullivans Island, SC. Trident Amateur Radio Club. 7.262 14.262. QSL. QSL Manager, N4HLH, P.O. Box 60732, North Charleston, SC 29419. Check website for specific day and times/frequencies. <https://www.tridenthams.org/hl-hunley>

Antenna Impedance Matching by Armando Delgado, KN4JN

The common denominator of the best amateur radio stations is an efficient, impedance-matched antenna system; the antenna system being the combination of transmitter, feed line and radiator, or antenna proper.

In modern amateur radio equipment, the great majority of transmitters use a 50 ohm output impedance, and the most commonly used feed lines are 50 ohm coax. Thus, the first two components of the antenna system generally are well matched, which leaves the radiator as the unknown variable, the trouble maker, so to speak.

A horizontal wire dipole, the most popular amateur antenna, at $1/2\lambda$ elevation theoretically has a 72 ohm input impedance at the resonant frequency. This antenna, fed with a 50 ohm coax will have a slight impedance mismatch that most hams will accept. Yet, as the frequency changes from resonance, the impedance will increase, causing reflected currents and voltages that soon may reach levels that activate the output power shut down in the transmitter, reducing the radiated signal strength.

Most modern transmitters are unhappy with SWR's above 3:1. An impedance matching method at the antenna feed will diminish the mismatch and maintain the SWR in a range that keeps the transmitter happy and allows a more efficient and stronger signal radiation.

Many commercial antenna designs incorporate a matching component to minimize impedance mismatch intrinsic to the type of antenna. Beam antennas generally have input impedances in the 35 ohm range at resonance and commonly are equipped with gamma matching sections on the driven element. Beam antennas usually have sturdy antenna elements that mechanically lend themselves well to this type of impedance match. Quarter wave verticals also have low input impedances, in the 35 ohm range as well, but loading

coils and variable capacitors at the feed point are preferred in this type of antennas to bring about the impedance match. Horizontal dipoles can use several types of matching systems, such as the delta or the T match, but many of these recourses complicate the feed point connection or add extra weight at the feed point and thus may not be practical for many circumstances.

There is, however, a very simple type of impedance matching system that many hams are unfamiliar with and that can give excellent matches to low reactance single band antennas. This is the $1/4\lambda$ stub. Generally, this consists of a section of 75 ohm coax (although other coax impedances can be used) cut to the electrical length of $1/4\lambda$; that is to say, the technical $1/4\lambda$ of the resonant frequency multiplied by the velocity factor of the coax matching segment.

The marvel of this matching scheme is that at resonance it should give almost a perfect match, and as the frequency shifts from resonance, it will still maintain reduced impedances throughout the range of the band so that the SWR will remain relatively low and allow the transmitter to do its job without much reduction in power, due to reflected voltages.

Thus, a horizontal dipole cut for the center frequency of the band could maintain a reasonable, functional SWR through the entire band range without having steep SWR rises at the edges of the band, as would happen without the matching stub.

Some would argue that a tuner would fix the mismatch problem. Unfortunately, all a tuner does is keep the transmitter happy. It doesn't fix the losses

associated with the feedline-antenna mismatch. Matching the transmitter to the antenna system by using a tuner will allow the transmitter to continue to put out most of its power, but what gets radiated and where to is anyone's guess.

The concept of the $1/4$ wave length stub is not new, but it is greatly ignored. It is a simple solution that can give a failing antenna new life.



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



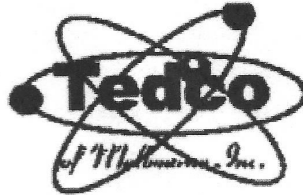
Editor's Note:

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, 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	W4NLX	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		195 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	
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 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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GC ELECTRONIC
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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

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NELLO TOWERS
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