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SPURIOUS EMISSIONS

JANUARY, 2026

INDIAN RIVER ARC

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

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CLUB MINUTES

President Steve Luchuk, N4UTQ called the meeting to order at 7:15 PM.
Following the Pledge of Allegiance Steve introduced visitor Carson Sims, KR4IJQ, a recently licensed ham.
President's Report: Steve mentioned that on the Saturday tests NBEMS seems to be the most difficult mode to master. The next test will be on Saturday January 24 since this coming Saturday will be for a QRP event.
Treasurer's Report: The checking account stands at $1316.38 after a gain of $235.00 from dues and a bank adjustment. The Equipment Fund remains at $2013.65. The report was accepted for audit.
The minutes of the November, 2025 meeting were approved.
Technical Committee: All repeaters are working.
Past President Report: Viron, N4VEP mentioned that next Saturday, January 17, the QRP event will be held at Osteen Park on South Tropical Trail on Merritt Island. He advices to go south on Courtenay Parkway to Cone Road, turn right on Tropical Trail and then immediately turn left as the park is just north of the intersection. Steve emailed all members a satellite map showing the location of the park.
Following the business meeting, Eric Berger, N4WQB gave a presentation on the variable time fuze, a WW2 proximity fuze used in anti-aircraft artillery. Eric clarified that electrical fuses are spelled with an "s" but fuzes used in explosive devices are spelled with a "z". Prior to the use of the fuze, anti-aircraft success in striking a target was very poor, requiring over 1000 rounds to achieve an impact. After the introduction of the fuze, that used a Doppler radar to detect proximity to the target, the success rate in striking enemy aircraft improved by a factor of 10. The triggering mechanism was activated when the Doppler shift reached zero, indicating the closest approach to the target. Eric expanded on the details of the system, including exploded diagrams of the actual shell portion containing the fuze and diagrams of the control center that tracked the targets. He also mentioned that the electronics in the shell included vacuum tubes that had to tolerate 20,000 Gs.
Initially, the variable time fuze was used only in naval artillery due to concerns about reverse engineering by the enemy if an unexploded devise was recovered, but by the end of the war, it was also used in land artillery.
Following the presentation on the variable time fuze, Eric gave a brief talk on the Fu-go incendiary balloons used by the Japanese to attack North America. The balloons were to ride the jet stream across the Pacific and drop on the forested areas of the Pacific Northwest to trigger forest fires. They launched about 9300 balloons, but only about 300 were detected in North America. They were a total failure due to a number of factors, the most important being that the launches occurred between November 1944 and April 1945, a period that marked the rainy season in that part of North America. Unfortunatelly, there was a human casualty. A pastor and his wife after Sunday services went for a walk and found a balloon. Not knowing what it was, they approached it and the balloon exploded, killing the wife.
Following the presentation, the meeting adjourned at 8:03 PM
Respectfully submitted,
Armando Delgado, KN4JN
Secretary

HAPPENINGS

New 60-meter amateur radio allocation:
The Federal Communications Commission (FCC) on December 9, 2025, released a long-awaited Report and Order adopting a new amateur radio spectrum allocation in the 60-meter band that was approved for world-wide use on a secondary basis in the WRC-15 (World Radiocommunication Conference 2015) Final Acts. The Commission also agreed with a petition from ARRL The National Association for Amateur Radio® to continue to allow amateur operations on four existing 60-meter channels outside the international allocation with a full 100 watts. The new rules will go into effect 30 days after publication in the Federal Register, when amateurs may then begin using the allocation.
Specifically, the Commission allocated 5351.5 - 5366.5 kHz (60 meters) to the amateur service on a secondary basis with a permitted power of 9.15 watts ERP. The Commission also authorized amateurs to continue using four existing channels outside of the 5351.5 - 5366.5 kHz band centered on 5332, 5348, 5373, and 5405 kHz on a secondary basis with a permitted power of 100 watts ERP. There are no antenna restrictions but antenna gain must be used to calculate ERP.
The 60-meter allocation is available to amateurs holding a General Class or above license. The maximum permissible signal bandwidth is 2.8 kHz.

A new **Bouvet Island** dxpedition is planned for next February. After multiple failed expeditions in the past, with a partially successful one in 2023 that had to be cut short, a more ambitious

HAPPENINGS

one is planned for this year.
Two camps are planned, according to team leaders, operating all HF bands, with one camp focusing on high band propagation to North America when conditions allow. Plans call for the team to leave for Bouvet from Cape Town, South Africa, on February 1. Past expeditions operated a station from the ship on the way to Bouvet; possibly they will do likewise during this operation. Weather permitting, 3YØK plans to use helicopter airlifts to transport personnel and equipment between the vessel and the island. The group expects to spend three weeks on and around the island and will attempt to contact as many other ham radio operators around the world as they can, using up to 8 stations operating on CW, SSB, FT8, RTTY and the QO-100 geostationary satellite. More information can be found at their website.

ARDC Introduces "44Net Connect"
There is now an easier way for ham radio experimenters to secure a static IP address specifically designated for amateur radio use. ARDC, the Amateur Radio Digital Communications organization, has introduced "44Net Connect," which it describes as "a service that makes it easy for hams to begin using 44Net IPv4 addresses through a simple, modern setup." The group explains that "(w)hether you're experimenting with digital modes, improving repeater infrastructure, setting up a home lab, or just curious to see what 44Net is all about, this new service lowers the barrier of entry to get you started." The group says 44Net Connect offers four especially useful features: Simple setup; a static IPv4 internet address that doesn't rely on your commercial internet service provider (ISP); bypassing carrier-level network address translation (CGNAT) limitations, and a safe space to learn and experiment with networking technology without fear of "breaking the internet."
More details at their website, 44NetConnect.

Orlando HamCation will be February 13-15, 2026 at the Central Florida Fairgrounds.
Ticket Prices: HamCation tickets are valid for all 3 days of the event. Tickets are 'per person'. Online Tickets and mail-order tickets purchased (postmarked) till December 1st, 2025: $25. Tickets purchased after December 1st and at the gate: $30. Children 12 and under get FREE admission when accompanied by an adult with a ticket. Scouts from any scouting organization, 21 and under in uniform get FREE admission. Their website has more information, including schedule of events and presentations.

Winter Field Day is on the last full weekend of January. This year it will be on January 24-25, 2026. The 30-hour operational period starts at 1600 UTC on Saturday (11 am EST), the 24th, and ends at 21:59 UTC on Sunday, the 25th (4:59 pm EST). Stations may begin setting up no earlier than 16:00 UTC (11 am EST) on the Friday before. However, cumulative set-up time shall not exceed 12 hours. Exchange: The designated Winter Field Day exchange includes your call sign, a category number, a class identifier, and a location identifier.
For details on the exchange and full rules visit the Winter Field Day website.

Throughout 2026, the iconic W1AW call sign will be "loaned" to stations nationwide, activating each state twice during the year. All confirmations are handled through LoTW, making it easy to track progress and apply for awards and endorsements. Operations begin 0000z on Wednesday, and end on 2359z Tuesday (7 days total for each activation). See the complete schedule at www.arrl.org/america250-was.

ON THE AIR

2026 AM Rally Operating Event
Feb 6-Feb 9, 0000Z-0700Z, WA1QIX, National. AM Rally. 1.885 3.880 7.290 14.286. Certificate. None, None, None. amrally.com.

6th Annual Pluto Discovery Anniversary S.E.
Feb 14-Feb 22, 0000Z-2359Z, W7P, Flagstaff, AZ. Northern Arizona DX Association. 14.266 21.366 28.366 7.266. Certificate & QSL. W7P -Pluto Special Event, 6315 Townsend Winona Rd, Flagstaff, AZ 86004. www.nadxa.com

Iwo Jima Flag Raising
Feb 14, 1700Z-2359Z, NI6IW, San Diego, CA. USS Mdway Museum Ship. 14.320 7.250 14.070 PKS31 DSTAR on Papa System Repeaters. QSL. USS Midway Museum Ship, 910 North Harbor Drive, San Diego, CA 92101.

Valentines Day Special Event
Feb 14, 1700Z-2300Z, AB5ER, Romance, AR. North Central Arkansas Amateur Radio Service . 14.260. Certificate. Roger Gray, North Central Arkansas Amateur Radio Service , PO Box 166, Searcy, AR 72145-0166. http://www.ncaars.org

War Shipping Administration created 1942
Feb 14, 1330Z-2100Z, K3S, Port of Baltimore. Nuclear Ship Savannah ARC. 7,14,18,21,28 MHz. QSL. Ulis Fleming, 980 Patuxent Rd, Odenton, MD 21113. qrz.com/db/k3s.

AU7RS Team will be active from **Agatti Island,** Lakshadweep Islands, IOTA AS - 011, 10 - 22 January 2026.
Team - VU2RS, VU24DX, VU3DXA, VU3GDS, VU29AR, EY8MM, DL6KVA, YT1AD, R7KW, DJ5IW, VU2DWA.
They will operate on 160 - 10m Bands.
QSL via M0OXO, OQRS.

Mat, DL4MM will be active again as P40AA from **Aruba Island,** IOTA SA - 036, 11 - 29 January 2026.
He will operate on HF Bands, CW, SSB, FT8, including activity in CQ WW 160m CW Contest.
QSL via ClubLog OQRS, LOTW.

W5JON will be active again as V47JA from **Saint Kitts Island,** IOTA NA-104, 30 January - 3 February 2026.
He will operate on 160 - 6 m (Including 60m), SSB, FT8.
QSL via home call direct, LOTW.
QSL: JOHN V ABBRUSCATO, 22199 PINE TREE LN, HOCKLEY, TX 77447, USA.

MALI, TZ. Jeff, TZ4AM is QRV from Bamako and plans to be active until February 28 as local conditions permit. Activity is on 40 through 6 meters using mostly CW and some SSB. QSL via KX4R.

Antenna Modeling by Armando Delgado, KN4JN

Many hams enjoy building their own antennas. Invariably, these are wire antennas, such as dipoles, long wires, magnetic loops, and simple verticals; although some more enterprising amateurs will engage into more complex projects, such as multi-element directional antennas and phased arrays.
Traditionally, past builders used an empirical approach to the antenna construction: use a established formula to measure the elements for the planned center frequency and after installing the antenna then measure its performance with a radio and make final adjustments according to the noted SWR. This method many times became tedious due to complicating factors in the antenna location that affected its performance and required multiple adjustments by adding or subtracting length from the antenna elements.
More recently, with the advent of antenna analyzers, the building process has been simplified, since the analyzer allows for more accurate determination of antenna parameters, such as center frequency and SWR curve of the entire frequency range covered by the antenna under construction.
Still, the biggest drawback of the empirical process is that the antenna needs to be built before measurements can be done, be it through an analyzer or actual operating with a radio. Also, the empirical method gives no information on the radiation pattern of the antenna. The best an operator can expect in that regard is to make on the air contacts and then determine the preponderance of contacts in different directions, depending on propagation factors, of course.

Since the advent of the personal computer, hams now have access to a new tool that allows antenna design and testing without actually building a physical antenna. This new tool is the antenna modeling software, of which there are multiple versions currently available.
The first computer antenna modeling program was a FORTRAN based software developed in the 1970's and called NEC. When personal computers became practicable for the average user, J.C. Logan and J.W. Rockway in the 1980's developed a program based on the NEC concept using BASIC language called MININEC. This program quickly became popular with many antenna designers, but it had some quirks that could lead to erroneous results, if the designer was not careful.
To iron out the problems of MININEC, in the 1990's Roy Lewallen, W7EL developed a program called EZNEC. Lewallen licensed his program to users and over the years introduced modifications and improvements to the software. Then in 2023 Lewallen retired and made his program free to all users with the proviso that he would not support it any longer. This program is available for download from Lewallen's website, EZNEC.com.
EZNEC is a sophisticated program that provides a wealth of information on the antenna being modeled, including the projected radiation pattern that can be represented in a 2-D or 3-D image. It is also a relatively easy program to learn and that includes a tutorial to introduce the newcomer in its use. Included as well is a file of pre-programmed antennas of different designs that facilitate the learning of the program and the modeling of antennas.
Antenna modeling programs are not just for new antenna designs. Any antenna can be modeled, including existing antennas. Such an analysis allows a ham to know the theoretical performance of their antenna, as well as details on parameters such as input impedance, predicted SWR curve for any chosen frequency and the radiation pattern of the antenna.
The radiation pattern can be affected by objects in the vicinity of the antenna and the program allows for their introduction into the design, although this is a more complex process that requires experience with the program to achieve. And, of course, like any computer data processing app, antenna modeling programs follow the GIGO rules so it is essential that to get accurate results, the information entered should be as close to reality as possible.

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, 18.0775, 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, Fl 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 Fl
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.	K4UZM	
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 a

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