VOLUME XLVII, NUMBER 7

SPURIOUS EMISSIONS

JULY, 2025

INDIAN RIVER ARC

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

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N4UTQ

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KJ4VGR

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KN4JN

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KU0R

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PAST PRESIDENT
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N4VEP

CLUB MINUTES

President Steve Luchuck, N4UTQ called the meeting to order at 7:15 PM.
Following the Pledge of Allegiance, Steve proceeded to the President's Report where he showed pictures of the food that he prepared for Field Day and that all participants enjoyed, particularly the bacon.

Vice-President Report: Sam, KJ4VGR discussed his activities on 2 meter SSB and advised the members of a net active every evening at 7:30 PM on 144.2 MHz based in the Brandon/Lakeland area. He also mentioned another net active on Monday nights at 7:00 PM on 144.21 MHz run by a ham in Titusville who talks to multiple stations in the state.
Treasurer's Report: The club's checking account increased last month by $40.00 in dues to a total of $1249.89. The Equipment Fund remains steady at $2013.65. The Treasurer's report was approved for audit.
Next, the minutes of the June meeting were approved.
Technical Committee Report: Dave, KU0R reported that the timer on the 146.88 MHz repeater is off and will be corrected. All other repeaters are working well.
Dave then commented on Field Day. He filed the results with ARRL. The club had 157 CW QSOs worth 2 point each and 90 SSB QSOs worth 1 point each. There were 250 additional bonus points for a total final score of 654 points in the 2A category.
Dave then reviewed the good, the bad, and the ugly of the club's event. The good was primarily the food, particularly the bacon; also, the cooperation in the take down after the event. The bad was the set up of antennas in bands that we did not get to use during the event. We operated 15m, 20m and 40m but set up an antenna for 80m that we didn't get to use at all. The ugly was the fact that only 4 people operated while many participated. Also, we had one radio operating with an amplifier at 500 watts while the other radio was only barefoot at 100 watts; yet, the rules of the contest determine that all radios have to submit to the maximum power used in any of the radios, for scoring purposes. This means that we handicapped ourselves because the scoring limits power above 150 watts to a multiplier of 1, while those below 150 watts get a multiplier of 2 for the final score. This snafu unfortunately resulted from the idea of members bringing their own radios to the event. In the future we need to keep in mind that if an amplifier is used in one station then amplifiers will be needed in all stations.
Past President Report: Viron, N4VEP said that next Saturday, July 19, will be the QRP activity at Tom Statham Park starting around 9:00 AM until about 1:00 PM.
In other business, it was discussed that Hamshack Hotline will cease operations by the end of next month. Viron, N4VEP mentioned the possibility of using a mesh network system to replace the services that Hamshack Hotline provided.

Following the business meeting, Steve, N4UTQ made a presentation on military radios used during WW2. Steve went on to show pictures and comments on different radios used by American forces, the German military, and the Japanese.

Following the presentation, the meeting adjourned at 8:05 PM.
Respectfully submitted,
Armando Delgado, KN4JN
Secretary

HAPPENINGS

Many Technician class amateurs miss out on fun and skills learning of traffic handling because they reside in areas of the country where local traffic nets on VHF repeaters don't exist. The Virtual NTS Training Net (VNTN) seeks to address this problem with the creation of a Zoom-based local traffic net that can be accessed by anyone with an internet connection.

VNTN will accept check-ins and radiogram traffic utilizing standard phonetics and pro-signs; in short, participants will enjoy the same experiences as those who check into conventional "RF" traffic nets. The net will incorporate a "hands-on" training approach in traffic procedures, radiogram creation, and relay.

It is our hope that new amateurs who participate in VNTN will be motivated to join section and region nets on HF after upgrading to a higher license class.

The Net meets Wednesdays at 7:00 PM ET. In future, it is hoped that a west coast version will be established at around 7 PM PT. The VNTN URL is: <https://us02web.zoom.us/j/86491065054?pwd=gbTrHVL9VIDfLweTgaleF8LyLxUssh.1>.

[Monitor this site for updated information and Zoom URL changes.]
For more information on the NTS visit their website https://nts2.arrl.org/

The ARRL has a number of postcast and webinars that run on a regular basis. One of them, a live event using Zoom,

HAPPENINGS

has an interesting topic for this month.
On the Air LIVE Join Wayne Greene, KB4DSF, to learn about operating in the field. You'll learn about everything you need to take your operating out of the shack including antennas, power, and radios. Whether you are interested in POTA, SOTA, or just operating in the outdoors, this is the session for you! Registration is open now! learn.arrl.org/webinars/83549
Up Next:
Date: July 22, 2025
Time: 8 PM Eastern / 5 PM Pacific
Register Now

Some comments on CW for emergency communications:
The ARRL is trying to revamp the radio traffic system to accommodate served emergency agencies and also trying to create a transcontinental net capable of relaying emergency messages in under 30 minutes.
In the NTS Letter of July 1, 2025 an article referenced an emergency exercise called Cascadia Rising conducted in 2016 to compare different amateur radio modes for sending messages across the country. The results, summarized below were quite interesting although unsurprising.
"During Cascadia Rising, FEMA asked NTS and RRI volunteers to test connectivity between a simulated disaster area in the Pacific Northwest and the National Response Coordination Center (NRCC) in Washington, DC. The goal was to test the ability of these networks to provide timely and accurate emergency messaging under a wide range of propagation conditions using various radio-only modes and methods. The exercise was also conducted in three phases to simulate variable high frequency propagation conditions (e.g. morning, afternoon, and night).
The objective evaluation results were quite positive, with some valuable insights gained:
Despite making voice circuits available, RF propagation conditions were such that HF SSB proved insufficient for the task.
In all cases, participants chose not to use this method.
CW circuits performed very well, achieving an accuracy score of 99.998 percent against over 13,000 data points.
The Digital Traffic Network achieved an equivalent accuracy score of 99.997 percent against slightly over 10,000 data points.
The Alaska ARES intrastate digital network achieved an accuracy score of 100 percent. These messages were then transferred to a point-to-point CW circuit between Alaska and the Pacific Northwest for transcon relay to the NRCC.
A superior message propagation time was achieved by the CW nets, with an average time elapsed of 11 minutes, providing better message propagation times than digital methods."

From the ARRL Ares Letter:
ARRL Simulated Emergency Test on the Horizon: Start Planning Now ARRL's Simulated Emergency Test (SET) is October 4-5, 2025. This nationwide exercise is the chance to test your personal emergency operating skills and the readiness of your communications equipment and accessories in a simulated emergency-like deployment. ARRL Field Organization leaders at the Section and local levels, and many other volunteers who are active in public service and emergency communications, are developing emergency-like scenarios in consultation with a variety of agencies and organizations for whom radio amateurs are known to provide service during emergencies.

The best method for hams interested in learning CW is to get on the air as soon as they get basic control of the code. To facilitate that effort there is a weekly code activity sponsored by the K1USN Radio Club that encourages participants to use slow speed transmissions. The contest runs for one hour twice a week, every Monday from 0000 UTC to 0100 UTC and every Friday from 2000 to 2100 UTC. More details here.

ON THE AIR

MOROCCO, CN. Michel, F5LRL will be QRV as CN2DX near Kenitra from June 25 to August 30. Activity is on 40 to 6 meters using CW, SSB, and FT8 generally during his early morning and evening hours. QSL via home call.

WEST KIRIBATI, T30. Members of the Rebel DX Group are QRV as T30TTT from North Tarawa until September 8. Activity is on 160 to 6 meters using CW, SSB, FT8, and FT4 with up to 10 stations active. QSL via LoTW.

Viet Nam Veterans Memorial Wall Replica Jul 18-Jul 20, 1400Z-2200Z, W4L, Antioch, IL. Wisconsin and Illinois Radio Enthusiasts (WI9RE). 7.250 14.250. QSL. QSL will be sent via FCC ULS, or, WIRE , c/o 25395 W. Richmond Ave., Antioch, IL 60002. July 18 and 19, 1400Z-2200Z daily, and July 20 1800Z-2200Z.

Commemoration of Apollo 11 Live TV From the Moon that Allowed the World to See Mankind's First Steps on the Lunar Surface Jul 18-Jul 21, 1300Z-2200Z, W3A, Hunt Valley, MD. Amateur Radio Club of the National Electronics Museum (ARCNEM). 14.269 14.069 7.269 7.069. Certificate & QSL. ARCNEM, 338 Clubhouse Road, Hunt Valley, MD 21031. Amateur Radio Club of the National Electronics Museum (ARCNEM) will operate W3A commemorating live TV from the moon that allowed the world to see mankind's first steps on the lunar surface. One of the remaining Westinghouse cameras is on display at the National Electronics Museum. Operation on 80M (3.869, 3.569) and digital modes possible during event. Frequencies +/- according to QRM. QSL and Certificate available via SASE; details at ww-2.us

36 th anniversary of SATERN (Salvation Army Team Emergency Radio Network) Jul 19-Jul 20, 1500Z-1500Z, KD9NJR, Hoffman Estates, IL. Salvation Army SATERN . 3.820 7.265. Certificate & QSL. Salvation Army Central Territory Headquaters. SATERN TEAM Don Dewar, 5550 Prairie Stone Parkway, Hoffman Estates, IL 60192.

Alcatraz Aug 2, 0130Z-0830Z, W6P, Vacaville, CA. Vacaville Amateur Radio Club (W6VVR). 7.200 MHz 14.250 MHz 28.500 MHz. QSL. Art Aronsen, 7319 June Bug Lane, Vacaville, CA 95688. There will be 3 stations on Alcatraz Island during times stated. All stations will be on SSB on battery. w6vvr.net

I nternational Lighthouse Weekend - Eagle Harbor Lighthouse, Mi. Aug 16, 1300Z-1800Z, K8L, Eagle Harbor, MI. KCRA, CCRAA Copper Country Radio Clubs. 14.270. QSL. Jeffrey Stricker W9GY, 59624 Dextrom Rd., Calumet, MI 49913. SASE Please. https://kcra-mi.net

The Magnetosphere by Armando Delgado, KN4JN

In the novel *Voyage to the Center of the Earth* Jules Verne describes an ocean deep inside the Earth. Although the novel is entertaining and became the source for multiple motion pictures, its premise is illogical and contrary to scientific facts, which is surprising considering that the writer was very knowledgeable of natural science.

Today, we know that the Earth's interior is composed of multiple layers, mostly molten magma, and that it has a solid iron-nickel core. The Earth's rotation creates a dynamo effect on the solid core that induces the Earth's magnetic field. Like all magnets, the Earth's magnetic field has opposing poles, north and south, and between these poles there are magnetic lines of force aligned in a north-south direction. The streams of charged particles that compose the solar wind interact and align with the Earth's magnetic field to form the magnetosphere, a region where the solar wind is mostly deflected from entering our atmosphere, a deflection that results in variable and strong electric currents and further magnetic fields induced by these currents. The magnetosphere is a chaotic environment with significant effects that reach down to the surface of the Earth.

Generally, when we think of radio wave propagation we look at the ionosphere, where solar radiation interacting with the upper atmosphere creates ionic particles that refract and reflect radio waves back to Earth. Yet, above the ionosphere there are powerful electric and magnetic forces that also affect radio waves and could benefit or inhibit the propagation of those waves.

There are principally three types of solar events that can affect the magnetosphere. The largest and most significant are coronal mass ejections, or CMEs. These massive explosions of plasma originating from magnetically unstable sunspots when directed to Earth have a double punch. First, there is a burst of electromagnetic waves encompassing the entire spectrum that reach Earth in a matter of minutes. This radiation, particularly the X-ray, gamma ray and UV portions of the spectrum, ionize atmospheric molecules in the upper atmosphere causing intense ionization to the point that radio waves are absorbed or suppressed, interfering with radio communications.

The second part of a CME is an eruption of plasma composed of high energy electrons and protons that break through the solar corona. These particles have mass and move more slowly than the initial electromagnetic waves, requiring several days to transit the distance from the sun to the Earth. Upon reaching the magnetosphere, these charged particles align with the Earth's magnetic field and produce powerful electric currents that generate strong magnetic fields. These magnetic fields not only disturb the magnetosphere, interfering with radio propagation, but will extend to the surface of the Earth, inducing electric currents in any conductive material. These induced currents can be intense, as illustrated by the Carrington Event in 1859 that caused telegraph lines to melt and triggered fires in some telegraph stations.

Other phenomena that can affect the stability of the magnetosphere are corotating interaction regions or CIRs. These happen when fast moving solar plasma runs into slow moving plasma ahead of it. This interaction causes the combined plasma stream to twist and churn so that on reaching the magnetosphere it will destabilize it. The end result is powerful currents and magnetic fields, but not as intense as those from CMEs, so that the K_p index may not reach storm levels; yet, there is enough magnetospheric instability to interfere with radio propagation. Generally, the manifestations triggered by these events are weak radio signals with marked fading cycles.

One other solar activity that can affect the magnetosphere and radio signal propagation is coronal holes. These are sections of the solar corona that disappear, thus allowing energetic solar plasma to flow into space unimpeded. When a coronal hole faces Earth, the fast moving solar wind, just like CIRs, can produce strong currents and magnetic fields that can disrupt the magnetosphere, affecting radio propagation. The manifestations are invariably similar to those of CIRs; that is, weak signals and signal fading, while the K_p index may not rise to storm levels. As a rule, solar wind speeds over 500 Km/s will cause magnetospheric disturbance.

When planning operations, most radio amateurs look at the solar flux reading, the K_p index, or consult websites, like VOACAP, that primarily use information based on ionospheric activity to make their projections. However, those parameters only present one part of the picture. It is also important to consider the magnetosphere to get a more complete picture of radio propagation.

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