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SPURIOUS EMISSIONS

SEPTEMBER, 2019

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CLUB MINUTES

HAPPENINGS

A new web tool can tell how active you have been over the past 12 months. Plug your call sign into this website to review your station activity. This tool from DJ1YFK uses the Reverse Beacon Network (RBN) data to generate an activity report (a "heat map") showing the activity for any call sign.

"The Legendary G5RV Antenna" is the topic of the August 15 episode of the ***ARRL The Doctor is In*** podcast. And"Different Types of Grounds" is the topic of the August 29 episode.

Logic Switch Uses No Electric Current Researchers at New York University say a new method of controlling magnetic circuits is energy efficient, promising lower heat and energy costs in applications such as large server farms or in the artificial intelligence arena, which requires massive amounts of memory. Find more information here and here.

LightSail 2 Demonstrates Flight by Light. The Planetary Society's crowd funded LightSail 2 spacecraft is successfully raising its orbit solely on the power of sunlight. Using the Experimental License call sign WM9XPA, LightSail 2 automatically transmits a beacon packet on 437.025 MHz (9,600 bps FSK) every few seconds, which can be decoded into 238 lines of text telemetry describing the spacecraft's health and status -- everything from battery status to solar sail deployment motor state. Every 45 seconds, the spacecraft transmits "LS2" in CW on 437.025 MHz. More information is on The Planetary Society website.

HAPPENINGS

The 2018 Federal Budget contained a proposal to discontinue the time radio stations WWV and WWVH. Now the National Institute of Standards and Technology (**NIST**) is doing a survey to gage the public utilization of these broadcasts. Everyone who uses these practical time and frequency standards should complete the survey.

A major **ARES Plan** has been adopted, providing new direction going forward. In addition, a standardized training plan has been adopted and a new ***ARES Emergency Communicator Individual Task Book*** approved and published. More information here.

Melbourne Hamfest
October 11-12. Melbourn Auditorium, 625 E. Hibiscus Blvd. Talk in: 146.25. Tickets: advance $8, at the door, $10.

Take a look at the article "CW Contesting (Part 1): Getting Started" by Ward, N0AX, on the DX Engineering blog. It is comprehensive and begins with the basics.

Rise Time
As applied to transmitted CW signals, the amount of time taken for the signal to go from zero amplitude to full amplitude. The rise time determines bandwidth of the CW signal. It is good practice to use rise times of 5 milliseconds or longer. On some modern transceivers the rise time can be set in a configuration menu.

The Citrus Belt Amateur Radio Club of San Bernardino, California (W6JBT), will host the 20th annual Route 66 On the Air Special Event, September 7 – 15. More details, including frequencies of operation, here.

Listed are the most important emergency traffic nets on 20 meters:

14185.0 USB Caribbean Emergency
14200.0 USB Atlanta Interisland
14215.0 USB Pacific Inter-island
14222.0 USB Health & Welfare
14245.0 USB Health & Welfare
14265.0 USB Salvation Army Team Emergency Radio (SATERN)
14268.0 USB Amateur Radio Readiness Group
14275.0 USB Bermuda
14275.0 USB International Amateur Radio
14283.0 USB Caribus (health & welfare)
14300.0 USB Intercontinental Traffic
14300.0 USB Maritime Mobile Service
14303.0 USB International Assistance & Traffic
14313.0 USB Intercontinental Traffic (ALT)
14313.0 USB Maritime Mobile Service (ALT)
14316.0 USB Health & Welfare
14320.0 USB Health & Welfare
14325.0 USB Hurricane Watch (Amateur-to-National Hurricane Center)
14340.0 USB Louisiana (1900)
14340.0 USB Manana (1900)
14340.0 USB California-Hawaii

September is National Preparedness Month. The Federal Emergency Management Agency (FEMA) sponsors National Preparedness Month each year to promote family and community disaster and emergency planning throughout the year.

The Canadian National Parks on the Air, CNPOTA, operating event runs for the entire year of 2019, with special stations active from Canada's parks and historic sites.

ON THE AIR

Look for special event station **PA75OMG** to be active between September 12-22st to commemorate **Operation Market Garden** (OMG) in World War II. Paratroopers of the allied forces, such as American, British, Canadian, Polish and Dutch troops, landed in the Nijmegen region on September the 17th, 1944.

9-11 New York City Memorial Station
Sep 6-Sep 12, 0000Z-0300Z, WA2NYC, Staten Island, NY. Wireless Association Of New York City. 28.450 21.350 14.390 7.238. QSL. Wireless Association Of New York City, 233 Wolverine Street, Staten Island, NY 10306. This station will remember the 18th anniversary of the attack on the World Trade Center in New York City. We remember the over twenty nine hundred people that lost their lives on that day.

K4MIA - National POW MIA Recognition Day
Sep 13-Sep 22, 0000Z-2359Z, K4MIA, Loxahatchee, FL. PBSE . 18.150 14.265 7.180. QSL. Michael Bald, 6758 Hall Blvd, Loxahatchee, FL 33470. Observances of National POW MIA Recognition Day are held across this country on the third Friday in September each year. There will be sister stations K4MIA/5 K4MIA/7 K4MIA/8 in operation some days. www.qrz.com/db/k4mia

Scout Camps on the Air
Sep 21, 1300Z-1900Z, W1M, Russell, MA. Western Mass Council-Scouting BSA. 14.290 14.060 7.030 7.190. QSL. Tom Barker WA1HRH, 329 Faraway Road, Whitefield, NH 03598. WHOA outdoor adventure weekend.

Grand Canyon Centennial Event
Sep 28-Oct 6, 0701Z-0700Z, K7G, Grand Canyon, AZ. Northern Arizona DX Association. 14.225 14.074 7.175 7.074. Certificate & QSL. Jack Lunsford, P.O. Box 3840, Flagstaff, AZ 86004. Celebrating Grand Canyon National Park Centennial 1919-2019 from Historic Desert View Watchtower www.nadxa.com

WWV Centennial
Sep 28-Oct 2, 0000Z-2359Z, WW0WWV, Fort Collins, CO. WWV ARC, NCARC. 7.038 7.238 14.038 14.238. QSL. WWV ARC, 1713 Ridgewood Rd, Fort Collins, CO 80526. Planned operations will be from 160 - 6m, no 60m or 12m, 24 hours/day. Please see the website for specifics, also on Facebook (WWV100) and Twitter (@WWV_100) WWV100.com

WESTERN KIRIBATI, T30. Operators Yuris, YL2GM, Jack, YL2KA, Kaspars, YL1ZF and Kristers, YL3JA will be active as T30L from September 6 to 15. Activity will be on 160 to 6 meters, and possibly 60 meters, using CW, SSB, RTTY and FT8. They will also operate from **NAURU,** C21 as C21W from September 16 to 25, after their Western Kiribati operation. QSL via YL2GN direct or via ClubLog.

LIBERIA, A8. The Italian DXpedition Team of 11 operators will be active from September 28 to October 11. They plan to use two call signs: A82X for CW, SSB and RTTY and A82Z for FT8 only.

Software Defined Radio is fundamentally a different way of looking at radio spectrum by Onno VK6FLAB

We think of radio as operating on a specific frequency. We select an antenna resonant on a single band. We configure the radio for that same band and then turn the dial or the VFO, or Variable Frequency Oscillator to a particular frequency within that band.
All of our language is geared towards this concept of tuning, of picking out, selecting one special tuned, resonant frequency and listening to it.
I've said this before, but that's not actually what's happening.
Your radio is receiving all RF frequencies, all of them, all at the same time, all the time. Your antenna is better at hearing some frequencies than others, but that doesn't stop it from hearing everything at once. Your radio is getting all that RF information at the antenna connector. After that, every step along the way is removing unwanted information, first it removes all the bands you're not listening to, then the VFO selects which part of what remains to let through to the decoder and the result finally arrives at the loudspeaker.
Ultimately, all your radio lets you play with is what's left over. Say about 3 kHz bandwidth. Using traditional radio, if you want to listen to two repeaters, you either need to switch back and forth quickly, or you need two receivers.
Now without going into how precisely, imagine an SDR with a bandwidth of 3 MHz, one thousand times larger than your traditional radio. Before you think I'm being fanciful, a $25 gadget can do this. This means that you could process most if not all of the 2m amateur band and then pick out which bits you'd like to decode. You could decode all the local FM repeaters, an overflying satellite, the International Space Station SSTV, a beacon, Morse, Packet, RTTY and simplex contacts, WSPR, APRS, EME, whatever is happening on 2m, all at the same time.
Let me say that again. All of the 2m band, all at the same time.
The point is that all this information is there, all the time. We can opt to decode or ignore the information. In a traditional radio, you can only decode one signal at a time, but on an SDR, you can extract as much or as little as your computer can handle. Some SDR language talks about using multiple receivers, but a better description is multiple decoders.
This means that software defined radio is fundamentally a different way of looking at radio spectrum. Instead of filtering out everything we don't want to decode, we select which decoder to apply to which part of the spectrum.
With an SDR you could represent the 2m band as a 3 MHz slice of spectrum as a series of measurements. There is no loss if you reuse the numbers, so if you process the same data multiple times, you have no loss of signal, no deterioration, no extra noise.
All we do is feed the same data into each decoder, pick out the bit we want to decode and have at it.
There is a misconception that you need serious computing power to do this. That's not strictly accurate. A $5 Raspberry Pi single board computer is more than powerful enough to do this. You can argue that this is serious computing power, compared to what we used to land on the moon it is, compared to your mobile phone, it isn't.
I fully intend to go into the maths behind this, but it's not scary, despite what you might think or have been taught. My week has been about the maths and it's become clear to me that there are lots of explanations around, each trying harder than the next to scare you away.
If you feel the need to run screaming for the hills when you hear the words Nyquist, Shannon and Fourier, then get it out of your system and come back when you're ready.
I'd like to mention that I've been working on how to explain this over much of the week, I've lost count of the number of drafts I've written, but it keeps coming back to the words that are almost as old as I am: My god, it's full of stars.
No doubt you might be convinced that I've lost my marbles and that I'm going well outside the Foundations of Amateur Radio, but I have to confess, this is what radio is today, and I'm thrilled to be here learning more about how this all works. Hopefully you are just as thrilled.

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

W1AW Qualifying Runs are sent on the same frequencies as the Morse code transmissions. Underline one minute of the highest speed you copied, certify that your copy was made without aid, and send it to ARRL for grading. Please include your name, call sign (if any) and complete mailing address. The initial certificate is available for a $10 fee. Subsequent endorsement stickers are available for a $7.50 fee.

Dates:

September 6, 2019 10 PM
10 - 35 WPM

September 18, 2019 7 PM
10 - 40 WPM

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 AND SIMPLEX FREQUENCIES (FM ANALOG)

REV 5/25/2018

OUTPUT FREQ.	OFFSET	TONE	CALL	LOCATION	OWNER
145.130	-600	107.2	AB4AZ	VERO BEACH, INDIAN RIVER	AB4AZ
145.350	-600	103.5	K4OSC	St. CLOUD, OSCEOLA	K1XC
145.370	-600	156.7	W2SDC	COCOA	IRARC
145.470	-600	107.2	K4HRS	MELBOURNE	HIRAC
145.490	-600	100	WN3DHI	TITUSVILLE	NORTH NET
146.610	-600	None	W4MLB	MELBOURNE	PCARS
146.775	-600	100	K4KSC	MIMS	TARC
146.850	-600	107.2	W4MLB	PALM BAY	PCARS
146.880	-600	107.2	W4NLX	ROCKLEDGE	IRARC
146.895	**-600**	**107.2/107.2**	**K4EOC**	**PALM BAY**	**EOC**
146.910	-600	107.2	K4KSC	TITUSVILLE	TARC
146.940	-600	None	K4GCC	ROCKLEDGE	LISATS
146.970	-600	107.2	K4KSC	TITUSVILLE	TARC
147.075	**+600**	**107.2/107.2**	**K4EOC**	**TITUSVILLE**	**EOC**
147.135	**+600**	**107.2/107.2**	**K4EOC**	**ROCKLEDGE**	**EOC**
147.240	+600	123	KV4EOC	VOLUSIA	VARES
147.255	+600	107.2	K4DCS	PALM BAY	DCS
147.330	+600	107.2	K4NBR	TITUSVILLE	NBARC
147.360	+600	107.2	N4TDX	TITUSVILLE	NBARC
444.325	+5000	107.2	K4DCS	PALM BAY	DCS
444.375	+5000	107.2		SEBASTIAN	SARNET
444.425	+5000	107.2	W4MLB	Melbourne	PCARS
444.525	**+5000**	**103.5/103.5**	**K4EOC**	**ROCKLEDGE**	**EOC**
444.650	+5000	107.2	W4NLX	COCOA	IRARC
444.925	+5000	131.8	N1KSC	KENNEDY SP. CTR.	KSCARC
442.850	+5000	107.2/107/2	N4TDX	TITUSVILLE	NBARC
444.750	+5000	107.2/107.2	N4TDX	TITUSVILLE	NBARC
224.520	-1.600	107.2	N4TDX	Titusville	NBARC
PACKET STATIONS:					
145.010	WINLINK		W2PH-10	PALM BAY	DCS
145.090	PCARS		W4MLB-2	MELBOURNE	PCARS
145.770	SEDAN		K4EOC-7	PALM BAY	N2DB
145.770	SEDAN		KD4MWO-4	TITUSVILLE	N2DB
146.550	SIMPLEX		K4DCS	SOUTH REGION	DCS
147.540	SIMPLEX		K4EOC	RACES Bay	EOC
146.520	SIMPLEX			GENERAL CALL	
146.580	SIMPLEX		W4MLB	MELBOURNE	PCARS
146.480	SIMPLEX		W4NLX	CENTRAL REG	IRARC
146.595	SIMPLEX		K4KSC	NORTH REGION	TARC
146.560	SIMPLEX		NBARC	NBARC General Simplex	NBARC

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