



CHEESE BITS

W3CCX
CLUB MEMORIAL CALL

ARRL
Affiliated
Club



Volume LXVI

October 2023

Number 10

It's me again, and it's October already. Fall festivals and apple cider. Foliage road trips. This is the start of my favorite season of the year... Halloween to New Year's: the Food Season.

It is also a time that is great for POTA and SOTA activations. So when you travel for leaf-peeping, see what Parks and Summits are in the area, or along the way. (There are drive-up summits in the region.) The heat of summer has faded, the mosquitoes are gone, and it hasn't gotten wintery yet, so take that small 2m Yagi and get out there.

And for those who chase us on the air... *Thank you* for making contact.

Bill
WS3O
(and sometimes /R)



Packrats CHEESE BITS is a monthly publication of the
Mt. AIRY VHF RADIO CLUB, INC. –Abington, PA.

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PACKRAT 222 MHz REPEATER - W3CCX/R

222.98/224.58 MHz (PL 136.5) Hilltown, PA

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PACKRAT BEACONS - W3CCX/B

144.300 (FN21be), 222.300 (FN20tk), 432.300(FN20tk), 903.300 (FN21be), 1296.300 (FN20dh), **2304.300** (FN20dh—under repair), **3456.300, 5760.3** (FN21be under repair), 10,368.017 (FM29jw) **Note: red = temporarily off the air;** see <https://www.packratvhf.com/index.php/on-air> for details)

MONDAY / TUESDAY NIGHT NETS

VHF/UHF Monday:

TIME	FREQUENCY	NET CONTROL
7:00 PM	224.900 MHz	KB3MTW FN20le Michelle / K3JJZ FN20lb El Even/Odd Mondays
7:30 PM	50.150 MHz	N3RG FM29ki Ray
8:00 PM	144.150 MHz	K3GNC FN20ja Jerome
8:30 PM	222.125 MHz	KC3BVL FM29jw Jim
9:00 PM	432.110 MHz	WB2RVX FM29mt Mike

Visit the Mt Airy VHF Radio Club at: www.packratvhf.com or www.w3ccx.com

TVI, but in Reverse...

By Tom, KA3FQS

When we hear the letters TVI we usually think of an unhappy neighbor knocking on our door and telling us that our radio is disturbing their TV viewing. Recently I discovered that it can work in reverse except that none of us would think of going to a TV broadcaster and telling them that their signal is interfering with our radio. For some time now I have had a severe noise problem on the 222 MHz band whenever I pointed my antenna south as shown by the band scope screen capture in Figure 1.

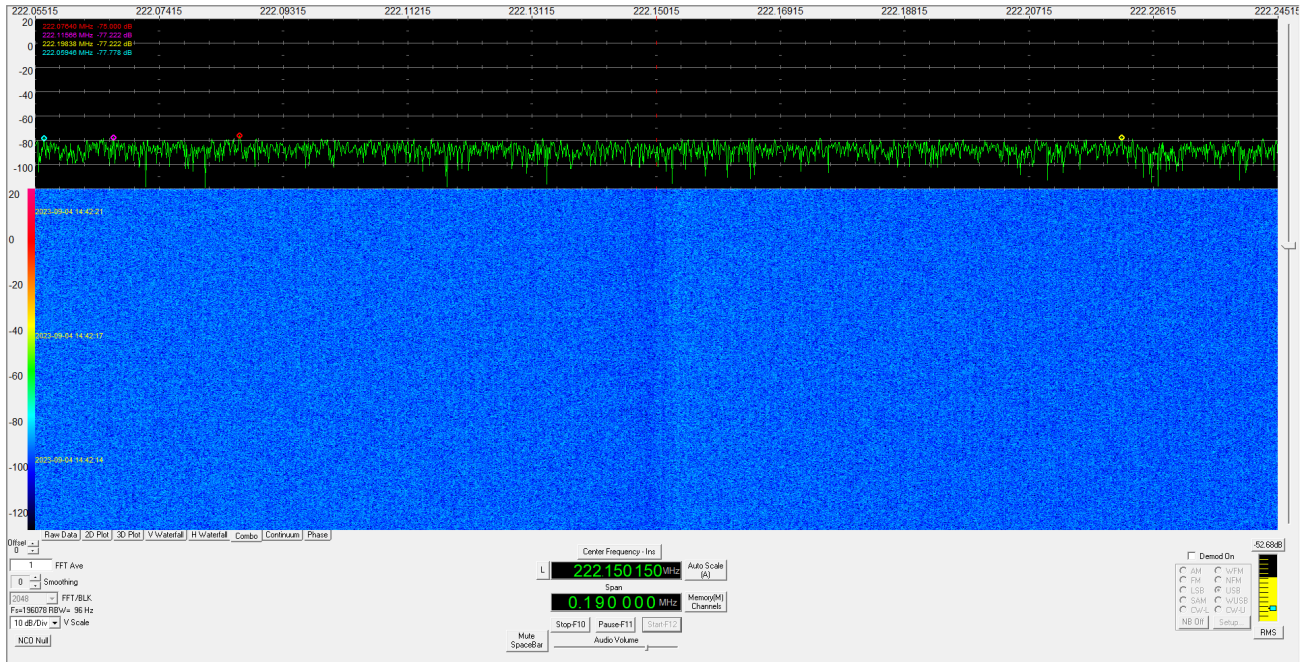
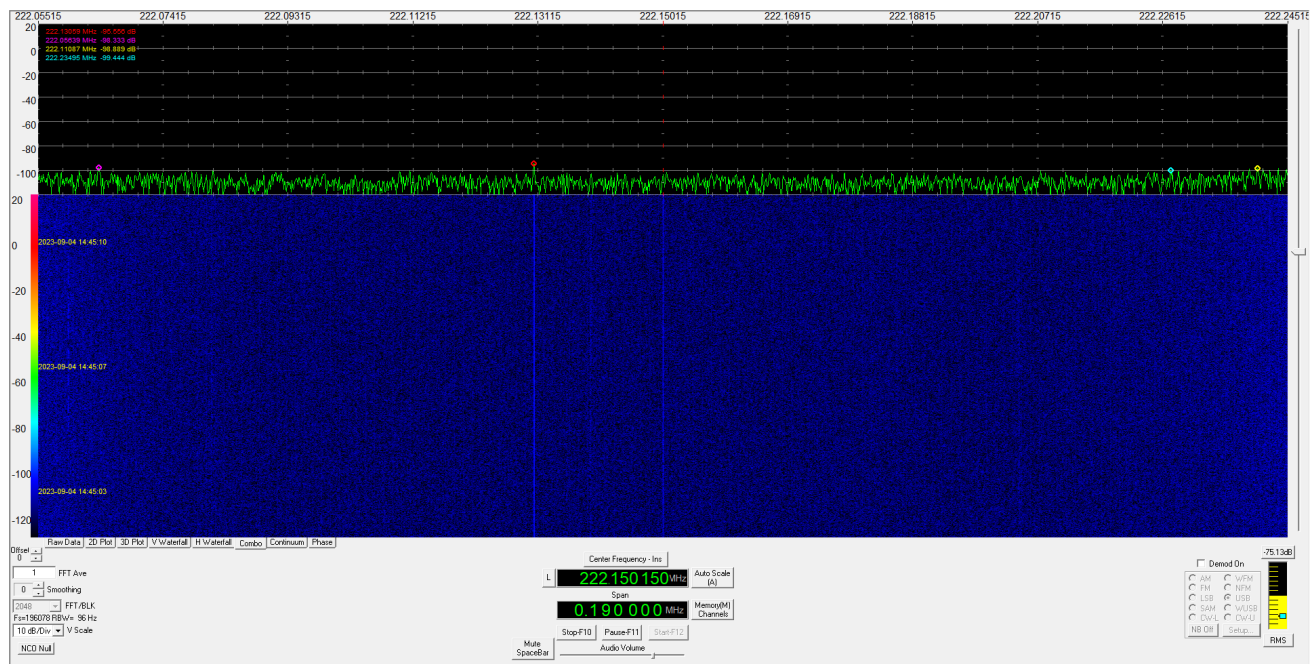


Figure 1

This is a solid S7 noise level across the weak signal portion of the band. Aiming my antenna in any other direction reduces the noise level to S1 or below effectively eliminating it as shown by the band scope screen capture in Figure 2.



I was surprised by the narrow range of azimuths on my antenna over which this noise appeared and the abruptness that the noise disappeared when I rotated the antenna away from these azimuths. Since my antenna is not that sharp it appeared as if there was a nonlinear phenomenon at work here.

For some time I had resigned myself to live with this noise and avoid pointing my antenna to the south on the 222 band. I made a mental note to, sometime in the future, get out my old Kenwood HT that has a general coverage receiver and walk around the neighborhood in an effort to find the source of the interference but that time never came. Then recently I saw an email exchange between Herb, Bill, and Alex on the club reflector regarding interference from Penobscot Mountain which caused me to wonder if the source of my interference might be a commercial TV transmitter. This idea gained credence as it occurred to me that the bearing where I was picking up the interference was the bearing from my house to the Roxboro antenna farm.

In an effort to further investigate I got out my old SDRPlay RSP2pro and connected it to the feedline from my 222 Yagi. Sure enough there was a very large signal just below the bottom end of the 222 band when my Yagi was pointed to the south as shown in the screen capture in Figure 3.

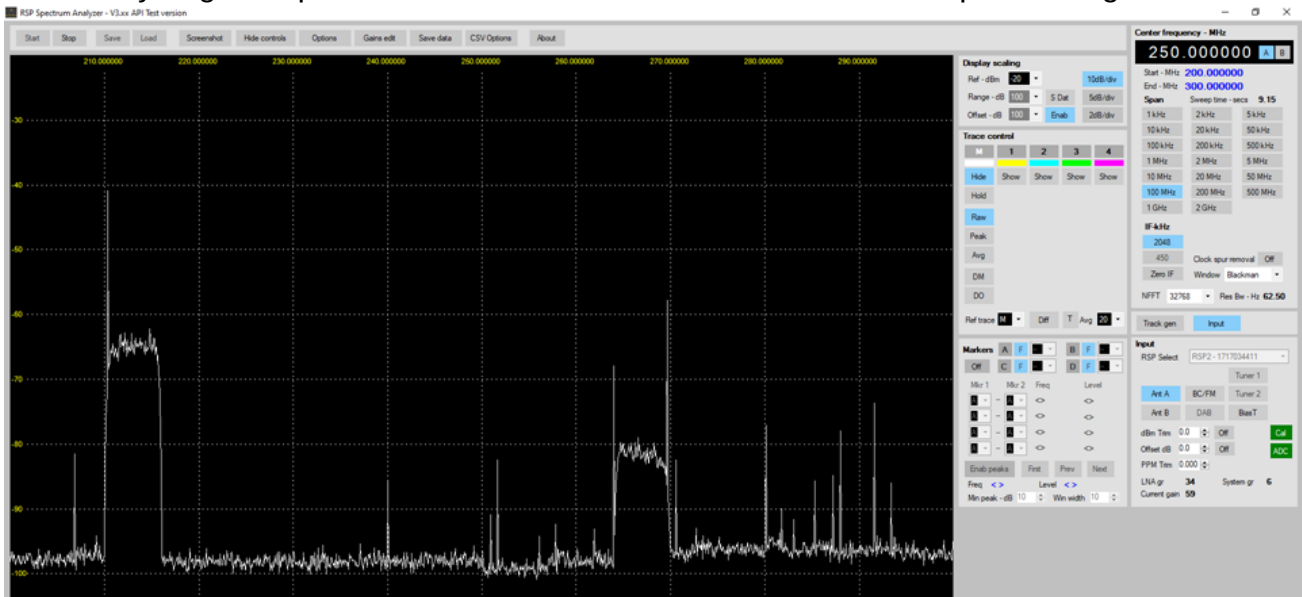
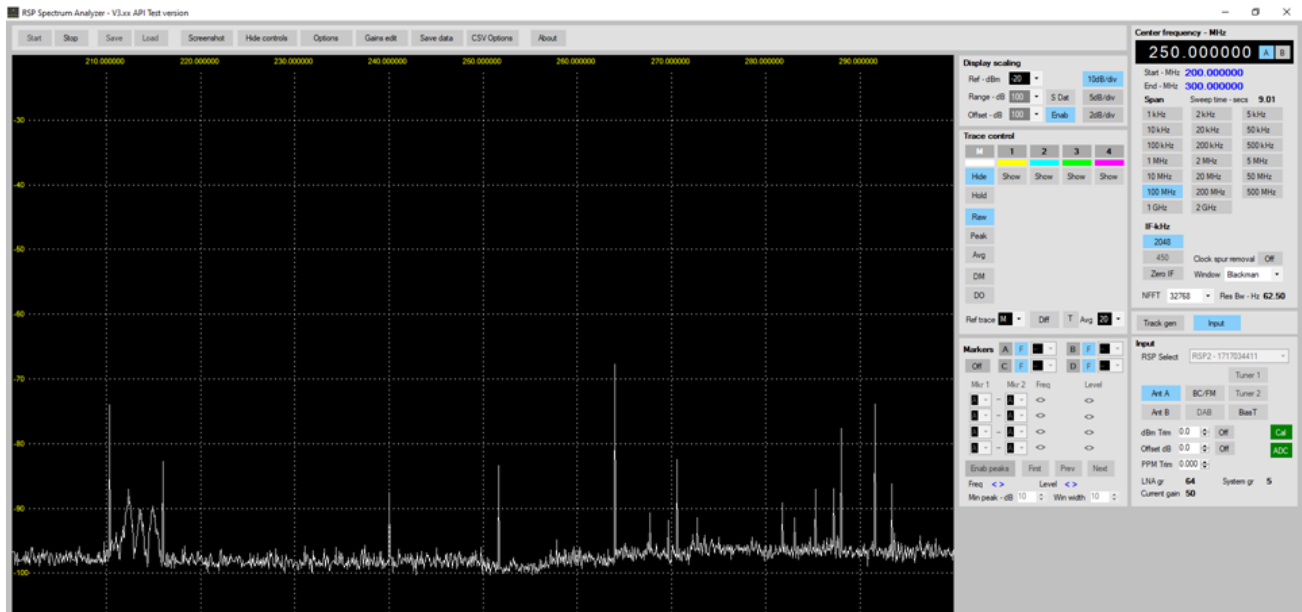


Figure 3

Turning my Yagi to the east the signal dropped significantly as shown in the screen capture in Figure 4.



Referring back to figure 2, the noise that I am receiving disappears when the antenna is turned to the east as does the large signal shown in Figure 3 leading me to the conclusion that this signal is the source of the interference I am experiencing.

Examining the signal, it appears to be a vestigial sideband signal typical of a TV broadcast signal. The carrier level is about -40 dBm at my house. It occupies the frequencies from 210 MHz to 216 MHz, TV broadcast channel 13. I did not think that there was a TV station broadcasting on channel 13 in the Philadelphia area but then I found out that WHYH TV12 had moved its broadcast frequency to channel 13 in 2020. WHYH, like many TV stations these days, identify with their old pre-HD channel designation but actually broadcast on a different channel. It is up to the tuners in the new TVs or the set top boxes to locate the channels and to put them where we expect them to be.

I began looking around for a filter to eliminate this signal in an effort to solve my interference problem. The appropriate filter would have to have steep skirts as the offending signal was only 6 MHz away, ~3%, and would have to have low loss in the pass band because any insertion loss from the filter would directly add to the noise figure of the receiver (transverter). I contacted Par Electronics because they sell TV channel reject filters but they estimated that the pass band loss would be around a dB and it would take a while to deliver the filter.

Seeking a more immediate solution I began looking around my shack. My eyes fell on an old tunable filter that has been under my bench for years. I don't know where I got it, perhaps N3AOG gave it to me, Fair Radio probably sold them at one time and still has similar filters on their website but for different frequency bands.

This filter has two tunable cavities of modest size each adjusted by a vernier dial on the front panel. As luck would have it the one I found covers the 205 MHz to 226 MHz band, precisely what I need. Sweeping the filter using the NanoVNA while doing some careful tuning resulted in a S21 Magnitude trace shown in Figure 5.

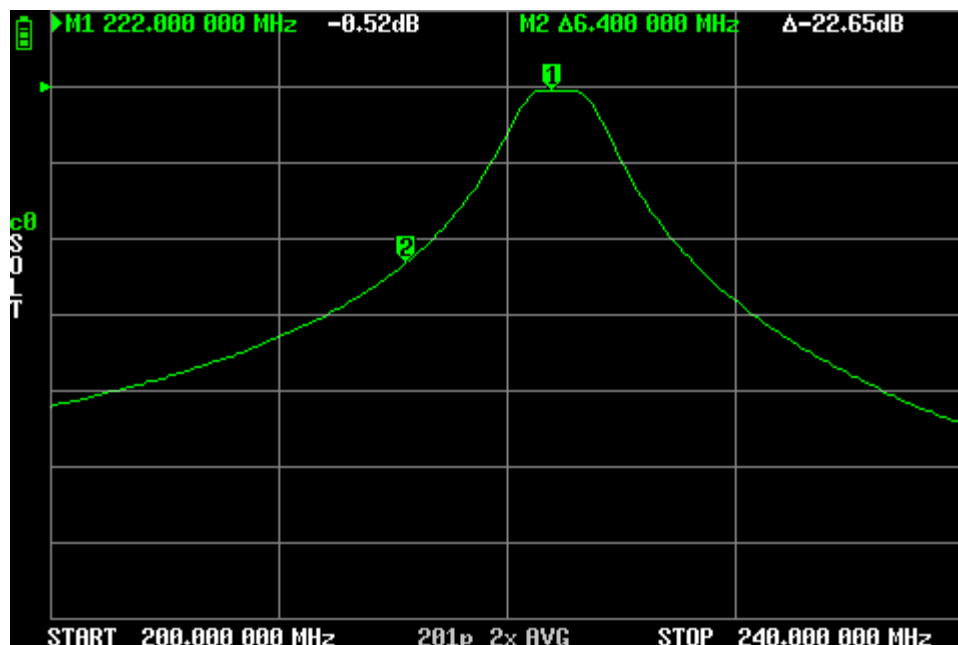


Figure 5

I was able to get the insertion loss down to about 0.5 dB, not too bad of a noise figure hit, and to get almost 23 dB of rejection at the highest modulation sideband frequency of channel 13. The carrier and the rest of the modulation sidebands will be attenuated even further as the filter skirt rolls off. Reconnecting the SDRPlay RSP2pro to the 222 Yagi through the filter reduced the amplitude of the channel 13 signal significantly as shown in the screen capture in Figure 6.

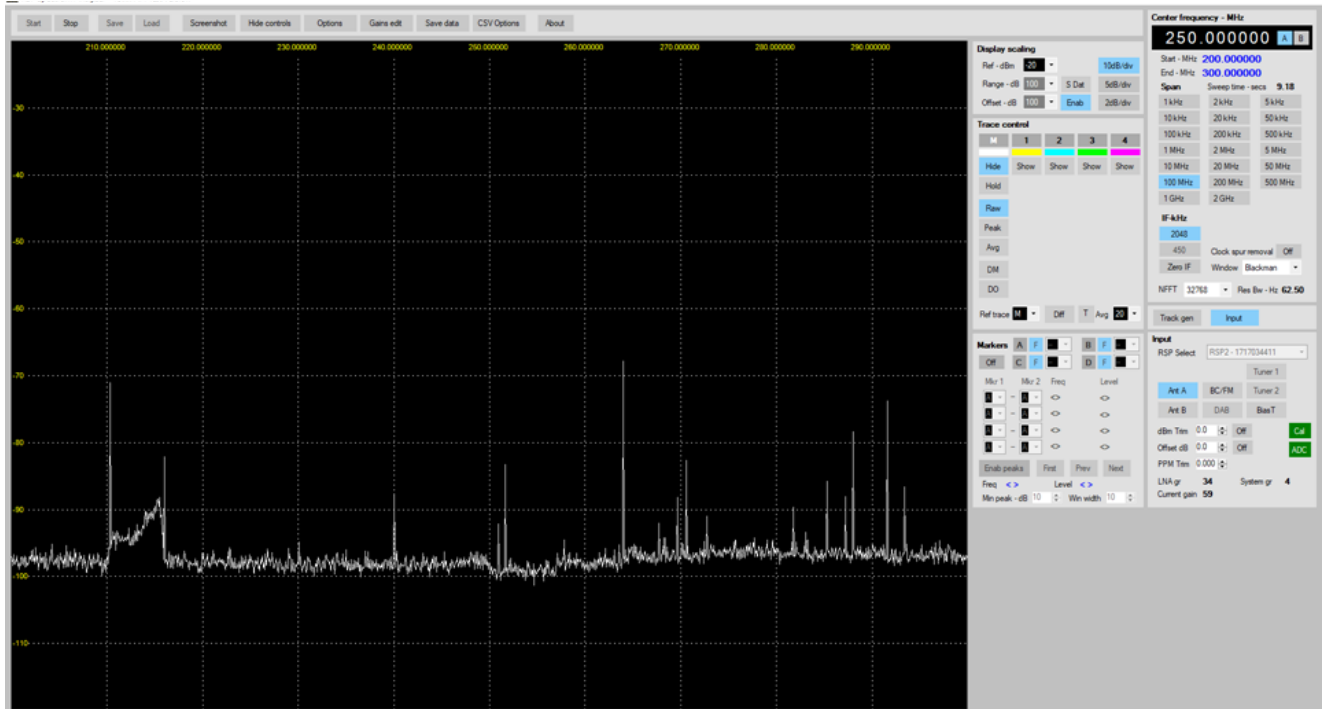
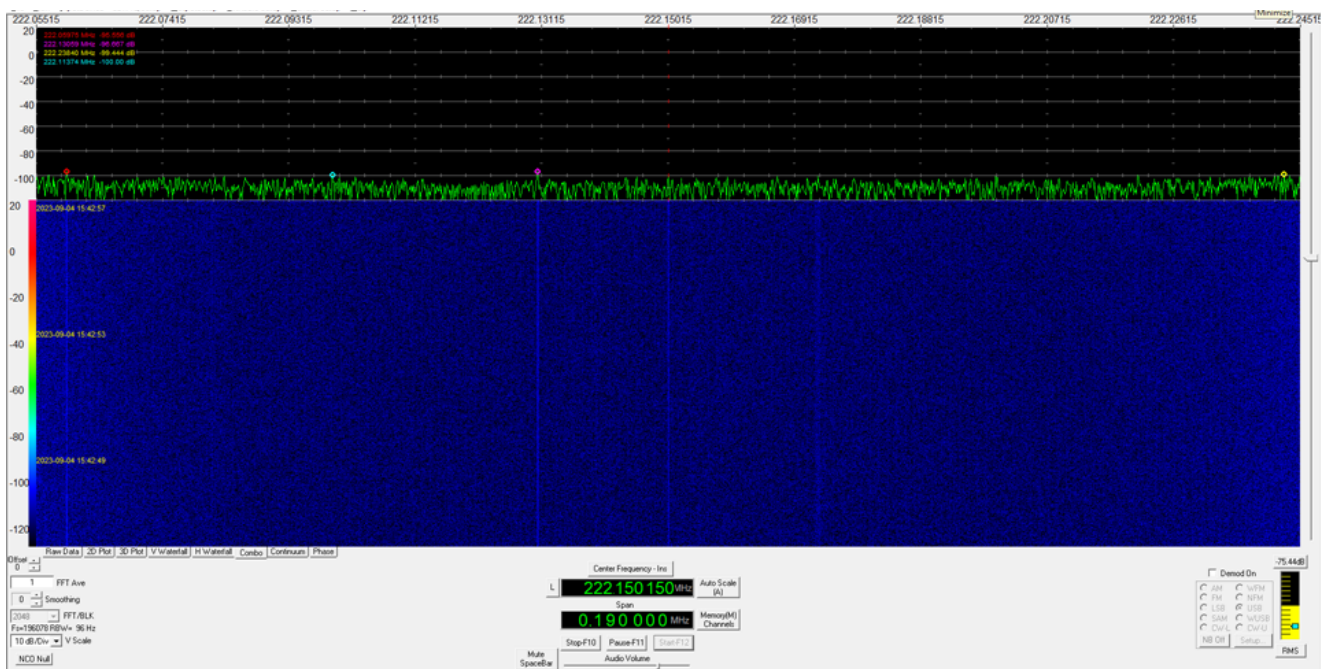


Figure 6

Note that the carrier level has been attenuated by about 30 dB, about the same attenuation as achieved by turning the antenna to the east. This led me to believe that this filter would probably solve the interference problem. The modulation sidebands slope off following the lower filter skirt as expected.

Now connecting the Yagi to the transverter through the band pass filter and pointing the antenna south there is no trace of the noise as seen in the screen capture shown in Figure 7.



My conclusion is that the broadcast signal from WHYY TV overloads my transverter when my Yagi is pointed south. I don't plan to knock on WHYY's door to complain because they would probably only ask me for a pledge and not do anything about their signal which is very likely well within specifications, instead I'll just stick with fixes on my end. My 222 transverter is an older model (more than 20 years) from Down East Microwave. The fact that it is being overloaded would explain why the interference disappears so rapidly when the antenna is rotated away from the south causing the interfering signal to drop below the overload point of the transverter. I am considering buying a new Q5 Signal transverter as it should have better overload characteristics than my antiquated DEMi unit and it is nice to get new equipment. However, on a Friday night net a participant told me that the Q5 222 transverter that his club is using in their club station may be suffering from an overload issue. I will give a new transverter a try anyway as I always can put the filter back in line.

I mentioned the problem and my findings on another Friday night net. A participant on the net pointed out that there is a TV station broadcasting on channel 2 in the Philadelphia area, this is WDPN, and wondered if it too could be a source of interference. Channel 2 occupies the frequency band from 54 MHz to 60 MHz right adjacent to the top end of the 6 m band. According to what I could find on the web WDPN has about the same ERP and transmitter location as WHYY so I would expect that I might see a similar issue with 6 m as I do with the 222 band.

To test this theory I tuned my 6 m radio to 54 MHz, pointed the antenna south and watched the bandscope. The results are shown in Figure 8.

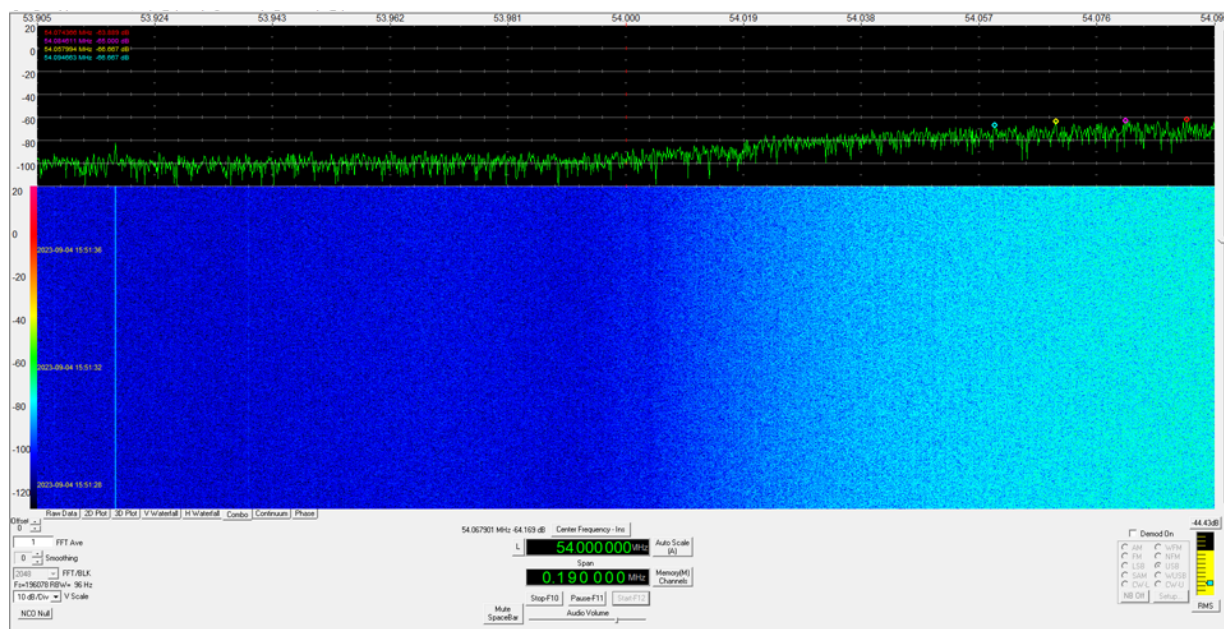


Figure 8

The center of the screen is 54 MHz so it can be seen that there is very little if any interference in the ham band on my receiver from this transmitter even with the preamp turned on. Looking at the channel 2 signal using the SDRPlay it appears that the carrier level for channel 2 is about 10 dB lower in amplitude than the channel 13 signal at my QTH. The lower signal level of channel 2 and a more robust front end on my 6 m receiver perhaps explains the lack of interference on this band. Tuning down to the bottom of the band where most of us work there was no sign of this signal. Rotating the antenna when tuned to 54 MHz showed nulls in the out of band interference at certain azimuths but since channel 2's signal doesn't cause any interference to begin with this should be of no concern to us. TVI from VHF transmitters might be something that others in the area might look out for if they are having unexplained noise problems especially on the 222 MHz band.

Tom
KA3FQS

Satellite Rig

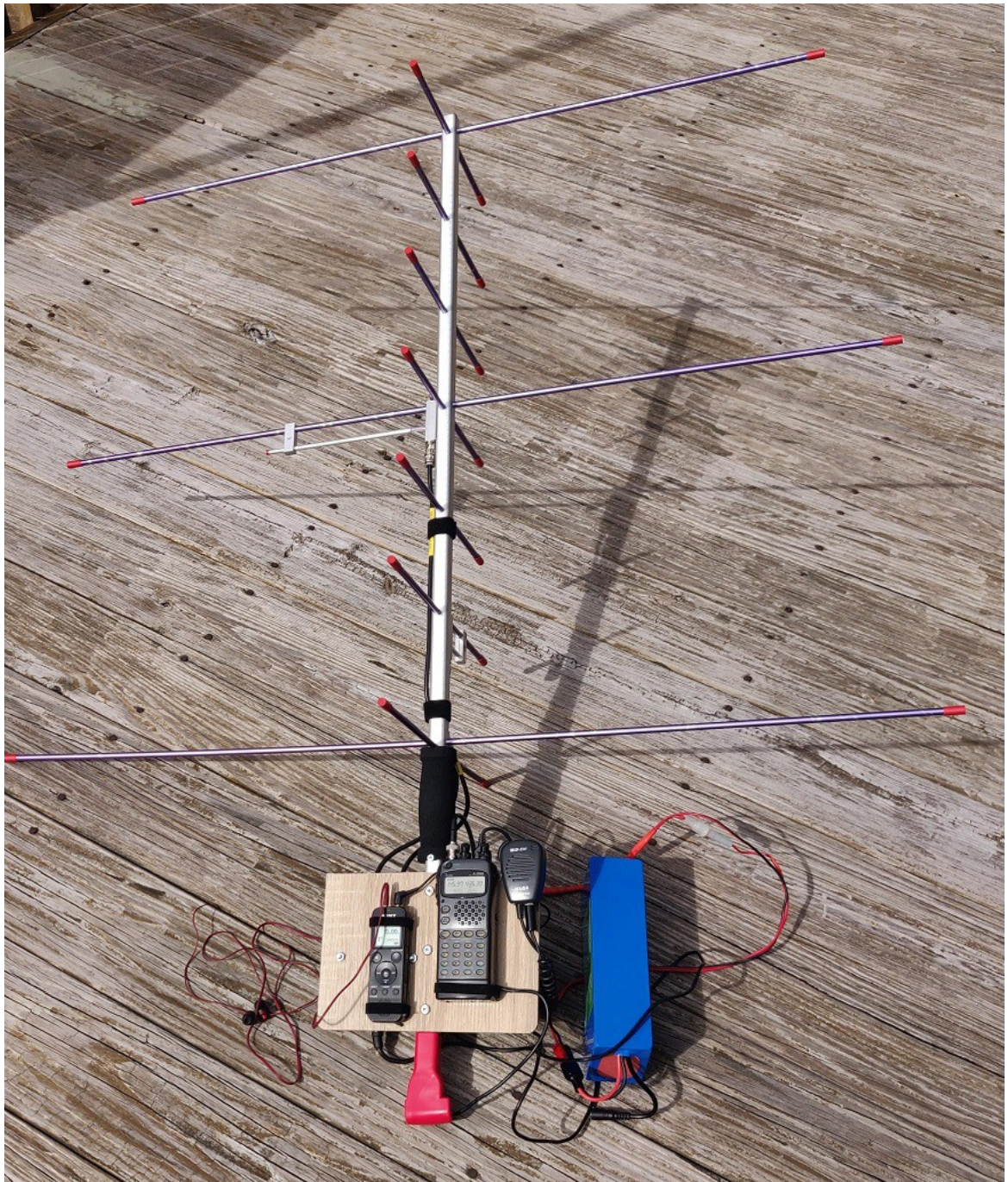
By Alex Krist, KR1ST

I just finished my portable satellite setup. It seems to work fine. I just need to get a smaller Bioenno battery for it that's pocket friendly!

Here are some pictures and a recording. Since the IC-W32A is full duplex you can hear my voice on the downlink while I'm transmitting. The QSO with W1AW was with just 2 Watts. I was using just using some NiMh cells in an AA case at the time of that recording. On the Bioenno battery the radio does 5W on both bands.

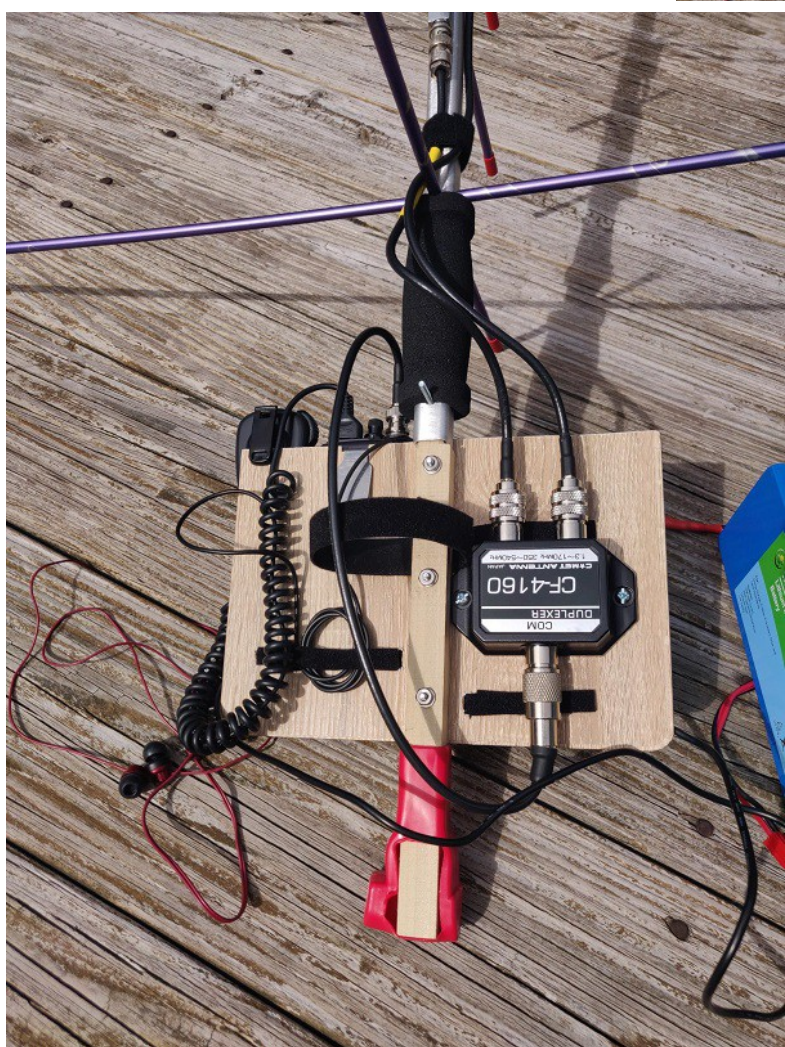
73.

--Alex KR1ST



Audio file can be found at:

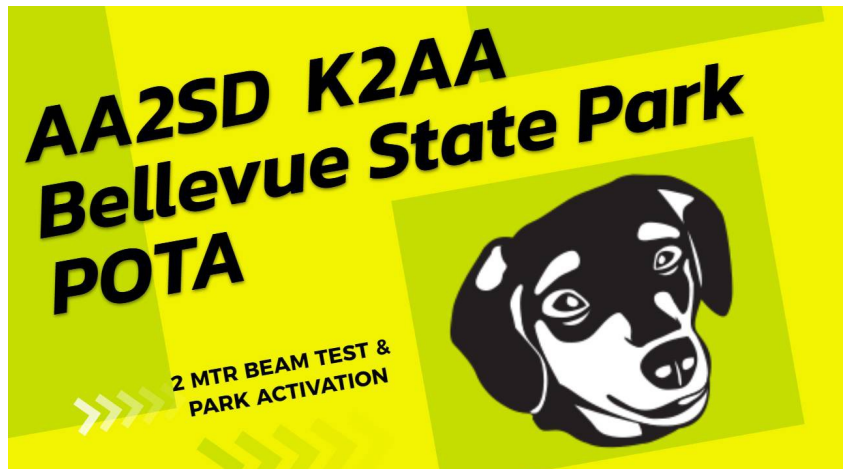
http://www.packratvhf.com/audio/KR1ST_W1AW_3_SO50_231010_2333.mp3



POTA Outings By Scott, AA2SD

Outing 1, Bellevue State Park, DE

Thank you for taking the time to hunt me Sunday afternoon during the Delaware Parks on the Air activation. I activated Bellevue State Park in Delaware and successfully tested a 5 element Cushcraft 2M/70cm Wideband Yagi Beam for 2 Mtrs and a power amp. I also activated this park for K2AA on 40 Mtrs



Follow along with me on You Tube during this Activation:

<https://youtu.be/iCVTbCT2nK0?feature=shared>

Outing 2, Pinelands Preserve National Conservation Area, NJ

Dear Fellow Club Members and Friends

Thank you for taking the time to make contact with us in the NJ Pinelands at the Amatol NJ historic speedway location this past Sunday. We activated this unique park location on the ground remnants of the first turn of this abandoned oval speedway. A special thanks to the following SJRA members "Joe" KC2SGV and "Jim" KE2AYY for joining in on this very unique and historic location in the Pinelands of NJ. All that remains today of this track is the faint ground footprint outline in the NJ Pinelands.

Follow along with me on You Tube during this Activation :

<https://www.youtube.com/watch?v=djgary6jUTc>



1927 - Atlantic City Speedway. Photo: unknown.

New Member Application

Ray, N3RG

Call W3RFC	Class TECH	License Expiration date 02/23/29	Application date 10/10/23
Name JOEL KNOBLOCK		E-mail address -----	
Address -----		Spouse Name*	Call*
City -----			
State MD	Zip -----	*(optional)	
Phone -----		ARRL Member? <input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> Life (check one)	
Business THE R.F. CONNECTION		Other Radio Clubs PVRC	
Bus. Addr. -----		Other Hobbies* FISHING, RESTORING BOAT ANCHORS	
Cellphone -----		Grid Locator: FM19HD (6 digit)	

Station Equipment

Band MHz	Radio	Output power	Antenna
A 50	K3, W /LUNA-L1NK	1.5	5 ELEMENT
B 144	K3, DOWNEAST TRANSVERTER, LUNA-LINK	1.5	K1FO
C 222	K3, DOWNEAST TRANSVERTER, LUNA-LINK	1.5	K1FO
D 432	K3, DOWNEAST TRANSVERTER, LUNA-LINK	1.5	K1FO
9 903	K3, DOWNEAST TRANSVERTER W/AMP	150	K1FO
E 1296	K3, DOWNEAST TRANSVERTER, DOWNEAST AMP	150	LOOPER
F 2304			
G 3400			
H 5760			
I 10368			
Low Band	K3	200	BEAM

Applicant's reasons for joining this club:

Need to have more VHF/UHF family . We have few in PVRC club here

Reasons for Sponsoring

I have known Joel W3RFC since 1985 when I last returned to Maryland and set up my VHF + station. As proprietor of The RF Connection Joel has always provided excellent recommendations on my coax / hardline / connector / equipment / configuration questions and my needs. Joel always asks me for my detailed requirement so he can explain in detail alternate solutions. W3RFC, as both single-op and multiop op, is always on for every contest, and I have worked Joel for decades. My friend Joel will make an excellent addition to the PackRats Club. K1RZ

Joel has been a friend of the Packrats since well before my tenure as a member. He showed up at every rat sponsored hamfest with consistent contributions to the prize table. He is in my log for just about every contest, a very reliable contact in FM19 all the way through 1296. I am quite surprised that we haven't invited him to membership long ago. Joel will be a significant asset to the club with his ultimate knowledge of connectors and practices for weatherproofing. I am grateful that I can call him a friend and am confident that he will indeed make an excellent addition to the club. K3TUF

The Wayback Machine In Cheese Bits 50 Years Ago October 1973, Vol XV #10 de Bert, K3IUV

(Author's comments in Italics)

“Our Prez Sez”. Prez Dick Huntzinger, **W3FQD** noted “our club has received a 220-MHz repeater and a duplexer from the Clegg Division of ISC. The machine has an output of 11 watts to the antenna. A repeater license has been applied for, and the repeater will be installed at the QTH of Ron, **WA3AXV** (now **W3RJW**) in Churchville. This is the first repeater on this band, in the area.” *(This was the beginning of the Packrats long operation on the 220 band, continuing to this day, 50 years later.)* Dick also reminded the members to support the second Hamarama, scheduled for later this month at the Warwick Fire Hall.

Calendar. The Packrats 2nd annual Hamarama is scheduled for October 7. “The biggest Hamfest in the greater Philadelphia area.” *(Another “things that aren’t there anymore!”)* October 18, first meeting at the new location, the Southampton Fire Hall. Refreshments to be served, of course. November 22nd, Club meeting with guest speaker Walt Maxwell, **W2DU** *(Walt was a good friend of the Packrats, and a known expert on the topic of SWR, and all aspects of RF matching.)* December 20, Club meeting with topic “January contest preparation.”

VHF Report. Joe, **W2EIF** reported the Es season about over, with Dx contacts scarce on 6-meters. A great Aurora session occurred during the September contest, and provided many section contacts from the Midwest on 6 and 2. **K8III**, the strong signal from Ohio that is always on at the low end of 2-meters operated the whole contest and worked 31 **ARRL** sections and over 200 contacts. Joe also reported that “so far I have worked 8 states on 1296 with my 15-watts and Yagi antenna.”

New Products of Interest to Hams. W3NSI, Lynn’s always interesting article offered up the following new items: 1). The Regency Co. introduced an FM Transmitter-receiver for 220 – 225 MHz. The unit provides selectable 1- or 10-watt output and choice of 12 frequencies. Price \$239. 2). MITS Co. introduced a new kit that provides a waveform generator (sine, square wave, triangle, and others from 1 Hz to 150 kHz), and also includes a frequency counter that covers 1 Hz to 10 MHz. Looks like a versatile piece of test gear. Price \$140. 3). Midland introduced a 4-channel pocket scanner that covers 150 – 174 MHz. Easily moved to the FM portion of 2-meters. About the size of a pocket calculator, the unit costs \$130.

A 220-MHz J-Pole Antenna. A construction article contributed by Joe, **W2EIF** provided the design and construction details for this antenna. Intended for use with the *(coming)* club repeater, Joe reported less than 1.1 to 1 VSWR. *(I used one of these for years, with excellent performance. Still a good design if you need one).* Precise dimensions for the parts were included.

Membership. Visitors to the September meeting included **W3WMB**, Paul, **WA3QNS**, Joe and **W3CIL**, Elmer.

The Delaware 1296 Expedition. In May, the Packrats sent a group of members to Delaware to foster 1296 activity. Tony, **K1SFF/3** (later **W3HMU**) provided a somewhat humorous article on some of the events during that sojourn. You can read the full details on our web site. A few highlights – Bill Olson, **K1JDY/3** (now **K1DY**) balancing himself on a ladder installing a second dish, Doug, **WA2LTM** using trial and error to tame their oscillating preamp ahead of **K2UYH**’s converter, and the group “muscling the 100-watt transmitter built by **K3UJD** 100 feet up the fire tower. In addition, they struggled for a while with reception of what appeared to be malicious interference, only to find it was the output of a transmitter that Walt, **K3BPP** was trying to tame! The list of 10 stations in 5 states that they worked including yours truly, **K3IUV** (that’s me).

The Wayback Machine (cont)

Tidbits. Rich, **K3ACR** will be the chairman for the January VHF sweepstakes. You'll hear from him soon. Ron, **K3ZKO** and Ron, **WA3AXV (W3RJW)** appeared in an ATV article published by the Philadelphia Inquirer on September 21st.

Swap Shoppe. By W3ZRR. *(Always nostalgia. Now we use the club reflector.* From the estate of **K3MEH** via **W3CL**, a Hammarlund HQ-110A receiver with Ameco 2-meter converter, \$80. Also, a 6-meter (50 watt) AM transmitter with Astatic Mike, a 2-meter (25 watt) AM rig with a D-104 mike and a 10-meter ARC-5 transmitter, with VFO and power supply for all. \$75 as a package. And 2-meter and 10-meter beams with a CDR Rotor "easy to remove from roof," \$10 for all! From Bob Moore, **WA2EMR**, an Onan gas operated generator, electric start, 120 vac, 42 amps for \$450.

Hamarama Flyer. A full-page flyer touted the Hamarama scheduled for October 7, 1973 at the Warwick Fire Company in Jamison, PA. Registration \$1 per adult. Flea market, Auction, door prizes and an ATV demonstration will be featured. Talk-in by **W3CCX/3** on 52.525 and 146.52 FM.

Ads. *This issue included the half page back cover ad from club member Ham Buerger. (A HAM-M rotor for \$109.95 and a TR-44 rotor for \$69.95 "both with 100' of cable"). The usual 23 business card ads were included in this issue. (I noticed several parts supply houses that are no longer – Resco Electronics, A.G Radio parts, Kass Electronics and Lafayette. Sad that we have no more now.) I also note the current Cheese Bits Ad complement includes only 4 small ads, a ¼ page from Beko and a ½ page from Down East. If you'd like to join them, contact the ad chairman, Bob, **W2SJ**.*

Miscellany. *Postage for this issue was a single 8-cent "Eisenhower" stamp. 6 double sided, 8-½ x 11" sheets). (Don't forget, current postage went to 66-cents in July), and a penny postcard now costs 51-cents!) As usual, many other "folksy" comments about members, their families, and activities were included in this edition of Cheese Bits. If interested, or for more detail on any of the above items, visit our website (www.W3CCX.COM) and read the full issue scanned by K3IUV (me), and posted on the website by WS3O, our webmaster. I have also posted the club Officers history, club Membership history, and Packrat Inventory (updated frequently) on the W3CCX website. These files are password protected, and only accessible to registered members. Are you registered? I hope you enjoyed reading these bits of nostalgia as much as I did in writing the article. If yes, you might let me know. Thanks to those that did.*

*thirty, de **K3IUV** (comments or corrections to: K3IUV@ARRL.net)*



Remembering the Packrat Ham-A-Rama

From Bert, K3IUV and Ron, W3RJW

Ron found a JPG of the Hamarama flyer that happened in October 1972, 51 years ago. That was the first Packrat Hamarama, and it would be followed by one in 1973, mentioned in the prez sez extract in this month's Wayback Machine.

He also dug out a more recent one (October, 1980). This one is of interest because it was held at the Bucks County Drive-in Theater which was located a few blocks from the current meeting venue, at Street Rd and Rt. 611. What is particularly poignant about this one is that the ashes of one of our members (Lee, K3MXM) were scattered on the Drive-in grounds when Lee died. He had been a staunch promoter of the flea market, and had requested it. So now his memory is near the meeting location frequently! Of course the drive-in is long gone, replaced by what else? - A shopping center.



Events

For inclusion, please direct event notices to the editor

Jamboree on the Air, there may be scout groups trying to make contact, possibly on 2m FM, but please be out there for them.

<https://www.scouting.org/international/jota-joti/jota/>

October 21, 2023

Jamboree on the Air, W2S operated by WREAT, Wayne, NJ. Will be operating on HF as well as 6m SSB and 2m FM.

http://wraet.com//Docs/Jota_2023_Flyer.pdf

October 21, 2023

ARRL EME 50 MHz to 1296 MHz Contest

<https://www.arrl.org/eme-contest>

October 28-29, 2023
November 25-26, 2023

ARRL January VHF Contest

<https://www.arrl.org/january-vhf>

January 20 –22, 2024

1296 MHz Activity Night

There's an informal 1296 activity night in the NY/NJ/PA/CT region (and beyond) every Monday night starting around 9:30 pm (or so) on 1296.110. No coordination, just jump in and say hello W2BVH

KC3BVL UHF+ Wednesday Net

Packrat, Jim KC3BVL conducts a Wednesday night net with schedule as follows: 7:30PM—903.100, 8:00PM—2304.100, 8:30PM— 432.160, 9:00PM—1296.100

KC3BVL VHF Friday Net

Packrat, Jim KC3BVL conducts a Friday night net with schedule as follows: 7:30PM—144.160, 8:00PM—50.160, 8:30PM— 222.150

Reminder: there are 3 FT8 VHF / UHF Activity Contests each month. For info see:

<http://www.ft8activity.eu/index.php/en/>

For those interested in an online "Contest Only" event calendar for VHF+, see <https://www.qsl.net/n2sln/contestcalendar.html>

Meteor Shower Calendar

Here's a Meteor Shower Calendar showing the dates for all the Meteor Showers in 2023. They're correct for our location in the Northeast. <https://www.timeanddate.com/astronomy/meteor-shower/list.html>

222 MHz Activity Night

There's been an informal 222 activity night in the Northeast (and beyond) every Tuesday night starting around 7 pm (or so) Eastern Time. ON4KST is being used by some to coordinate Q's when direct CQ's are weak. W2BVH

Bob Fischer

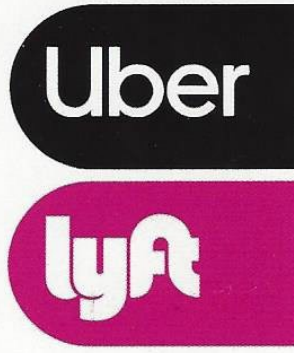
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Mullica Hill, New Jersey
bobw2sj@gmail.com

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Please call, text, or email

Uber promo code **ROBERTF1107UE**

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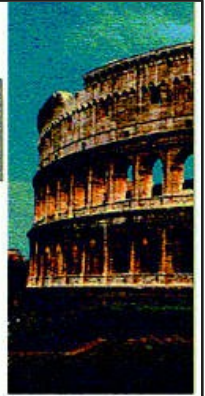
XYL, K3IUJ

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PLEASE SEND IN 2023 DUES

Club dues are due as of Jan 1st, 2023. Go to
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use the "check here" link to see if you already paid.
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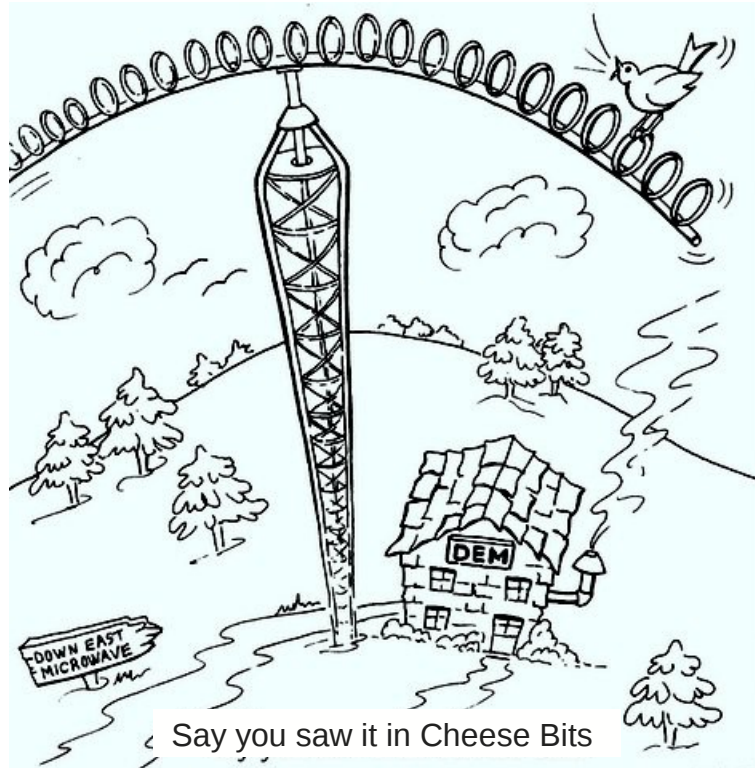
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