Mt. AIRY V.H.F. RADIO CLUB, INC.

CHEESE BITS

W3CCX
CLUB MEMORIAL CALL

ARRL Affiliated Club

Volume LXIV | October 2021 | Number 10

PREZ SEZ:

What's the difference between a farmer and a Packrat who is also a farmer? Ask Al, KB3SIG and he will tell you that the Harvest Moon has come and gone giving him a few extra hours of daylight to harvest his crop. He will also tell you that the frost will soon be on the pumpkin, a traditional sign to all 'Rats that it's time to start strategizing our club plans for the January Contest 2022!

The November Meeting will be all about the January Contest. Our Contest Chairman Mike, N2DEQ is already working on the latest draft of his presentation, similar to the September contest, but with a few different twists. **Be sure to attend** to add your ideas and thoughts to what makes our combined efforts so rewarding each year.

Speaking of operating, I was on the 432 Sprint October 6th and had a good time. Some of you may have tuned around hearing little activity, and decided to do something else for the evening. This, as well as many of the other contests have changed and will never be exactly the same as in past years. So, I decided to apply the techniques that some of our most successful members have been using like N3RG, K1TEO, K1RZ and others. Call CQ on SSB and work as many of the locals as possible. When that dries up after beaming to all the compass points, try listening for and calling CQ on CW. Even if you are a little rusty on receive we are all familiar with who operates these contests and it's surprisingly easy to get contacts. Of the many methods of "assistance" introduced over the last few years, I find the ON4KST chat page very productive. I use it as a "grid mining" expedition. And lastly, don't forget to look for contacts on FT8. The above can be applied to all the contests we operate through the year. Remember to mix up the modes frequently and don't stay on just one. In the 432 Sprint I worked 24 Q's & 16 grids. The grids per mode were very interesting: SSB grids-4, CW grids-8, & FT8 grids-4. For example, some grids worked were: FN44, FN34, FN54, EN92, FN43, FN12, FM17, FM06, & EM96.

BTW, How good did it feel to attend a live, in-person meeting, at the Ben Wilson Senior Center again in September? The October meeting will also be in-person featuring a program presented by Dean Hedin, KC3JXT on the 3D Printing process. This is not your grandfather's old lithograph press with plates and ink! Come out to the meeting as this is really neat to see! The BOD is working towards having hybrid meetings available in-person as well as on WebEx or Zoom for those who can not attend. This does not happen magically. Bruce, WA3YUE has agreed to be technical advisor

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Pack Rat Web Site: http://www.packratvhf.com

SUBSCRIPTION/ADVERTISING MANAGER:
Bob Fischer, W2SJ 23 Morning Glory Circle, Mullica Hill, NJ 08062 (609) 440-2916 bobw2sj-at-gmail.com

EDITOR:
Lenny Wintfeld W2BVH 709 Lincoln Av., Cranford NJ 07016
(908)-272-0559 lennyw-at-comcast.net

TRUSTEE OF CLUB CALL - W3CCX
Mike Gullo WB2RVX
(609)-743-6643 MGullo3-at-comcast.net

W3CCX QSL CARDS:
Bill Shaw K3EGE

PACKRAT 222 MHz REPEATER - W3CCX/R
222.98/224.58 MHz (PL 136.5) Hilltown, PA

OFFICERS 2019-2020

PRESIDENT	W2SJ Bob Fischer	president -at-packratvhf.com
VICE PRES:	W3GAD Doc Whitticar	vicepresident-at-packratvhf.com
CORR. SEC:	WA3EHD Jim Antonacci	correspondence-at-packratvhf.com
REC SEC:	KB1JEY Michael Davis	secretary-at-packratvhf.com
TREAS:	W3KM Dave Mascaro	

DIRECTORS:
K3JJZ El Weisman
KB3MTW Michelle London
KC3BVL Jim Huebotter
K3GNC Jerome Byrd
Honorary Director George Altemus KA3WXV

COMMITTEE CHAIRMEN

January Contest	MikeN2DEQ andraym2-at-comcast.net
June Contest 2020:	MikeN2DEQ andraym2-at-comcast.net
June Contest Technical Chair	Phil K3TUF phil-at-k3tuf.com
VHF Conference:	
Awards Chairman	OPEN
Quartermaster:	Bert K3IUV bsoltoff-at-comcast.net
Membership Chairman:	Michael KB1JEY kb1jey-at-arrl.net

PACKRAT BEACONS - W3CCX/B
Located at FN21be except 2304 which is at FN20dh
50.080 144.300 222.062 432.290 903.072 903.3 1296.264 2304.3 3456.200 5760.3 10,368.3 MHz (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	224.58R MHz	WR3P FN20kb Ralph
7:30 PM	50.150 MHz	N3RG FM29ki Ray
8:00 PM	144.150 MHz	K3GNC FN20ja Jerome
8:30 PM	222.125 MHz	KB1JEY FN20je Michael
9:00 PM	432.110 MHz	WB2RVX FM29mt Mike

Microwave Tuesday:
7:30 Coordinate QSO's on 144.260 for all Microwave bands you'd like to work. Also setup Q's at w4dex.com/uhfqso or **Packrat Chat Page W3SZ.COM**
Visit the Mt Airy VHF Radio Club at: www.packratvhf.com or www.w3ccx.com

and we will need 2 or 3 people involved to make this happen at each meeting. If you have some expertise in this area or "just want to help out", please contact Bruce to let him know. Progress will be announced on the club reflector to all members.

With our return to in-person meetings we will begin serving refreshments again like coffee, soda, water and donuts. For this month's "**The Prez Shouts Out"**, I would like to thank Guy Gibbs, WA3JZN for heading up our refreshment committee for several years. As Guy said to me, "the opportunity to quench the thirst of a fellow Rat has been a very special experience". Thanks Guy for all your hard work and service to the members of the club as refreshment chairman!

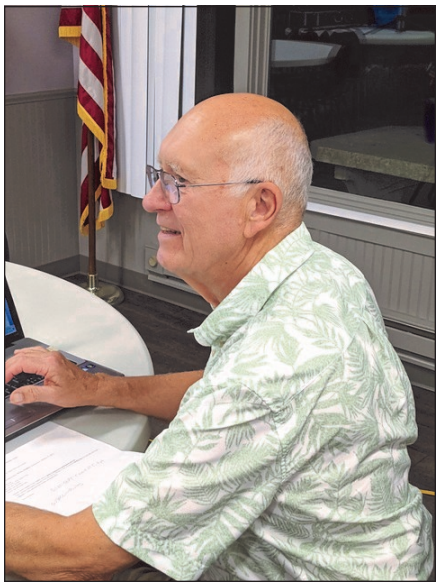
The 224.900 MHz FM analog repeater that our club member Jeff, WN3A has installed in the Roxborough section of Philadelphia has been tested and is working well with great coverage in Packrat territory. All we need now is some Packrats to get on and have some fun! The output is 224.900 Mhz. It's a (-)1.6Mhz offset with an input frequency of 223.300 MHz. The PL tone is 77 Hz. Please get your rigs set up for this repeater. We will have the first 224.900 MHz Packrart Net on Monday, November 1st at 6:45 PM local time. If you have your radio set up already, please try it out anytime.

Meanwhile, finish a project on the bench, keep one ear "listening for the weak ones", and the other on the "Magic Band"!

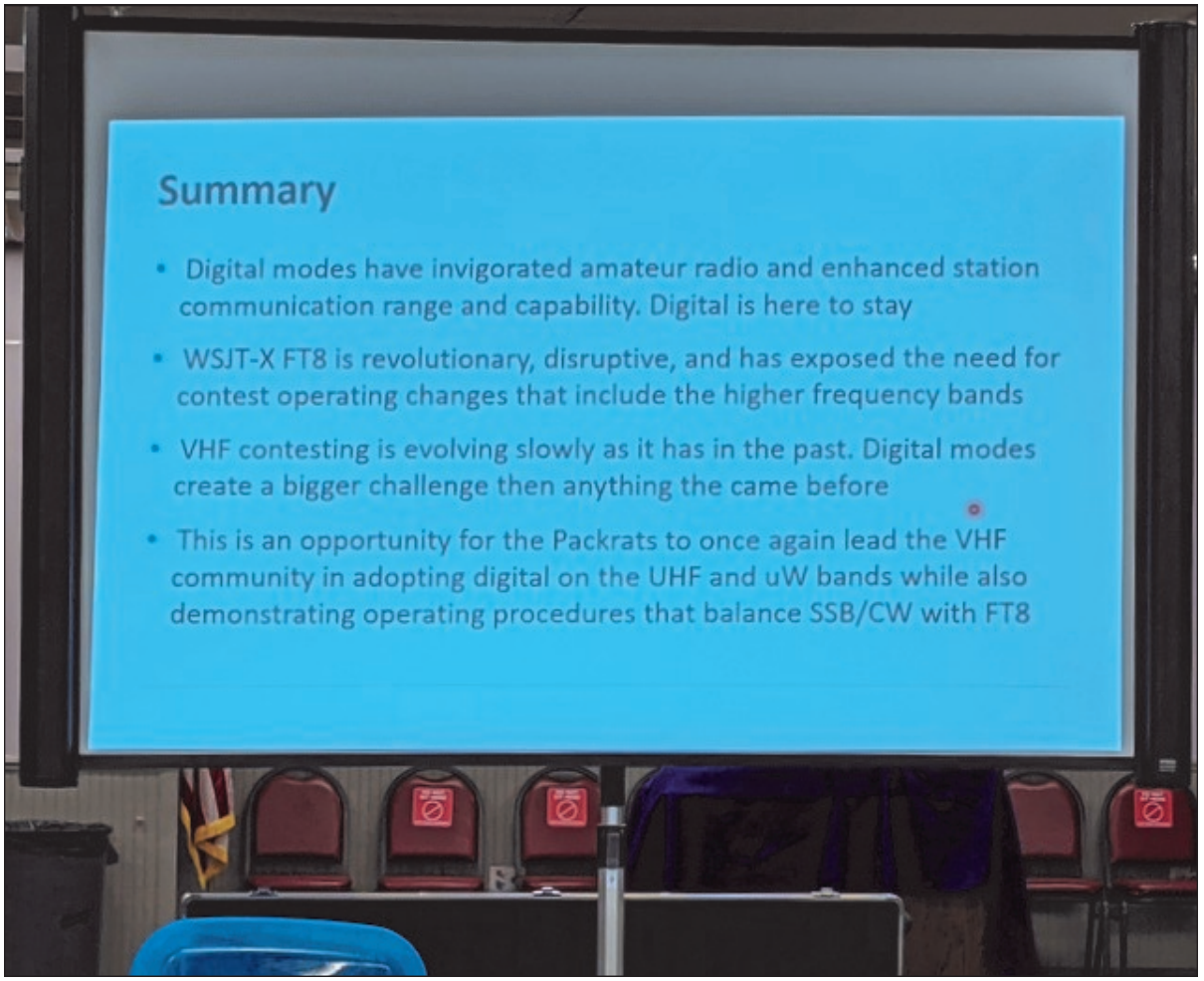
Vy 73,
Bob W2SJ

SEPTEMBER MEETING PICTURES


Jim
WA3EHD




Proposals to Save the UHF and Above Bands


Summary
• Digital modes have invigorated amateur radio and enhanced station communication range and capability. Digital is here to stay
• WSJT-X FT8 is revolutionary, disruptive, and has exposed the need for contest operating changes that include the higher frequency bands
• VHF contesting is evolving slowly as it has in the past. Digital modes create a bigger challenge then anything the came before
• This is an opportunity for the Packrats to once again lead the VHF community in adopting digital on the UHF and uW bands while also demonstrating operating procedures that balance SSB/CW with FT8

Mt. Airy VHF Radio Club, Inc.
`The Packrats`
September 2021 VHF Contest

Total Logs: 29 (Not all submitted) **Club Claimed Score: 852,037**

Here's the results of the September Contest **as compiled by W3KM (thanks Dave!).** . How did you do? Check it out below. Each frequency cell shows Q's and Grids for that frequency. What can you do to improve for next year? Start planning soon!

Nr	Call	QSO's	Total-Grids	Score	6M	2M	222	432	902/3	1.3 GHz	2.3 GHz	3.4 GHz	5.7 GHz	10 GHz	Laser
1	K1TEO	931	259	327894	250 64	234 51	222	109	32 22	44 21	24	13 11	3 3		
2	K1RZ	506	176	156112	99 29	160 39	52 21	96 35	31 17	33 14	20	7 5	2 2	6 3	
3	WA3NUF	262	97	38024	89 24	86 30	26 12	29 12	9 6	12 6	9 5	2 2			
4	WN3A	314	92	31004	131 39	160 39	7 5	16 9							
5	N3RG	197	97	29779	48 21	73 28	23 13	29 15	7 6	7 5	5 4	3 3	1 1	1 1	
6	W2KV	231	77	21483	64 21	119 31		48 25							
7	W2SJ	179	65	18850	62 16	43 13	21 10	26 10	6 4	11 6	9 5				1 1
8	KA2LIM	141	79	16432	35 19	41 22	32 19	31 18		2 1					
9	N2SCJ	231	58	14790	105 22	105 26	4 2	14 5		3 3					
10	W3ICC/R	192	42	14700	38 7	51 9	32 7	34 6		19 5	18 4				
11	W9KXI	194	68	13872	82 29	103 35	4 2	4 1		1 1					
12	K2TXB	160	63	10080	50 21	110 42									
13	AA2UK	147	61	10004	52 19	81 30		11 9		3 3					
14	W3GAD	118	53	9964	46 15	20 10	19 10	19 9	7 4	3 2	4 3				
15	N2DEQ	138	45	7605	54 14	60 17	5 3	12 5	4 3	3 3					
16	KC3BVL	106	52	6916	20 9	59 27	13 8	14 8							
17	KC2TN	110	47	5781	45 19	52 20	5 3	8 5							
18	K1JT	151	38	5738	151 38										
19	KC3ACQ	120	42	5418	57 17	54 21		9 4							
20	K2LNS	104	48	5040	43 20	60 27		1 1							
21	N2CG	42	20	880	28 11	12 7		2 2							
22	KB3MTW	34	10	550	8 2	8 2	8 2	7 2	2 1	1 1					
23	K1DS/R	9	4	44	5 2	2 1		2 1							
24	NE3I	4	2	8	1 1	3 1									

Notes: K1DS in EL98, K2LNS in FN01. These scores and log counts were not added to the club Totals.

Multi-OPS

Nr	Call	QSO's	Total-Grids	Score	6M	2M	222	432	902/3	1.3 GHz	2.4 GHz	3.4 GHz	5.7 GHz	10 GHz	24GHz	47 GHz	Laser
1	**N2NT**	578	151	106153	227 54	226 48	59 25	66 24									
OPS	**N2NT N2NC WW2Y**																

SEPTEMBER VHF CONTEST REPORTS

From Pete K0BAK

Even though I wasn't going out roving in this contest, I decided to go out to my township park to get on the air at the start of the contest with the backpack 2M & 6M halo station I used in the two-band July contest. It's the same station I used with my beloved Subaru WRX, but with the vehicle that replaced the WRX, a Forester small SUV. Just a 90-minute portable operation, no roving. Even though I was not near water nor dense woods, I got bitten many times by some kind of fly; not as bad as Jersey greenheads, but mighty annoying. Still itching. Also the SAE battery connector I use for DC to the radio was so hot I got burned when I touched it, and later it was soft and giving intermittent power. It's time for a new DC cable in the backpack! It took three log submissions before I found the magic combination to enter as SO3B. Good luck to all of you who are putting in a real effort (unlike me).
31 Qs, 15 grids, 465 pts

From Herb K2LNS

What a surprise when I tried to go on 432 MHz over the weekend and found a tremendous amount of interference coming from my generator. I knew in the past I had had low band problems, such as 40 and 80 meters, but 6 and 2 meters are totally clean. I switched over with Dave K1RZ and we worked with no problem on 432 SSB. But at that time, I knew I was in trouble. With no cell service at this location "In God's Country" 432 became a big fat bust. Thanks for all the Q's gents. I operated a total of 9 hours, and by far 2 meters running 50 watts, was my big performer. Hope everyone had a blast. Funny story. The rough road to the top is 2 1/2 miles of very steep incline. Very heavy wooded area. The top has a massive field for grazing elk. Never saw anything until I descended the mountain, and saw a bull, about 1,000 feet behind a local bar. Great weekend

From Dave K1RZ

Conditions remained average / normal in my part of Maryland. I saw several operators in the southwest part of my FM19 grid and adjacent south and west grids working great tropo to Texas, Louisiana and Florida. My best enhanced propagation contacts were with Todd N4QWZ EM66 on 900 km using 144 and 432 MHz FT8. Rovers worked include AB4CR, KD3PD, W3ICC, KF2MR, KG4ITT, VE3OIL, N2XRE and K3XY. We know it is a lot of work to Rove, both on the road and in preparation before the contest, but please know we all really appreciate the effort you put in, and the results you get. My 222 MHz amplifier went out early Saturday afternoon, so ended up a little light on the 222 QSOs and grids. But at the same time had a good time making CW and FT8 contacts on 222 MHz running 12 watts. My QSO breakdown by transmission mode: CW - 67 (13.2%), FM - 25 (4.9 %), FT8 - 112 (22.1%), MSK144 - 3 (0.59%), and USB - 299 (59.1%). Total 506. [I did not keep track of any statistics for contacts where stations called me on CW while I transmitted in USB, as occasionally is the case]. Thanks to ARRL for their excellent sponsorship of these VHF contests and to everyone who got on and made contacts on any transmission modes in the contest

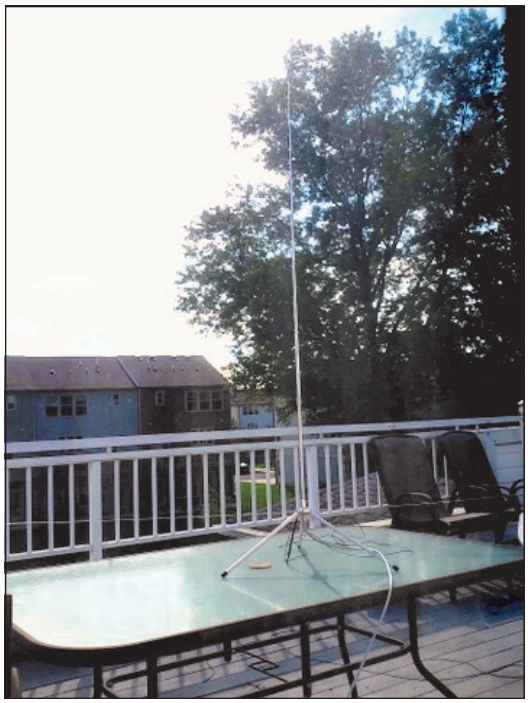
From Bill K1DY

Finally got my rotor fixed. What a relief to be able to turn the antenna. (The fact that I live waaay up Northeast says something, though, about how well I did with the rotor stuck SW! pretty much everyone is in the same direction!) Having some new QRO helps as well! QSO's were probably half SSB/CW

and half digital (FT-8 and MSK144) I did not keep track of which was which, I just went where I needed to go. Very many SSB/CW qso's were arranged via ON4KST, less so on digital modes but the chat was helpful there as well. I got moved to another band a few times on FT8 but I find that

quite clunky to do. Conditions were pretty flat. Best DX on 2 was W3SO in FN00 around 550 miles. A few EM and EN stations popped in and out on 6 FT8 on Sunday but not long enough to work them. Not sure what the propagation mode was. I was pleased to see many VE2 stations on 6 and 2 FT8 and of course stalwart VE1SKY in FN75. That was pretty much it for east and north of me. Worked very few contiguous Maine grids! Anyway I had fun. Thanks to all who got on and pointed north!

From Michelle KB3MTW
Claimed score = 550. But at least I participated. Need to improve my antenna situation and get ready for the January contest.



From K1JT
Lots of fun, as always, even now that my VHF setup has been downgraded to 6m only. A few SSB QSOs at the start; after that all QSOs were with FT8 or Q65-30A.

From John N2NC (for N2NT Team)
We spent way too much time in the run up to the contest "improving" a 6m beam fixed to the NE. The main 6m beams are plagued with solar panel noise when pointed NE. The fixed antenna is an old M2 6M7 suspended between trees, far from the shack. When we replaced the 350' coax run with 7/8 hardline, high SWR above 50.300 was causing the amp to trip out on FT8. Rain made the SWR issue worse. I won't go through the unsuccessful iterations to lower SWR. In the end, I dusted off my old copy of K6STI's Yagi Optimizer (YO) and came up with a better design that simply shortened most of the element lengths. SWR is now very low up to 50.700 and YO says pattern and gain is better. We usually use Win-Test for VHF contests. It has some features that would be missed if we changed logging software. Win-Test's lack of integration with WSJT-X requires a manual process to check for FT8/MSK dupes and log WSJT-X contacts. To help with that, I wrote a Perl script that uses the WSJT-X UDP interface to change colors of messages directly inside WSJT-X. It was great to have dupes grayed out and new grids highlighted. By late Sunday, most of the decodes were grayed out. New QSOs and new grids were easy to spot. An AutoHotkey script was used to automatically log WSJT-X contacts to Win-Test. All equipment worked without issues. A pleasant change from June. I took some time out Saturday night for a quick drive home to operate (2 of 4 hours) in the HF NCJ CW Sprint. I think I'll try and do this every September. We were hoping the nice weather would bring some enhancement, but conditions were flat for the most part. Fun to read about the big tropo in other parts of the country. Thank you for the QSOs.

From Al W9KXI
Worked around 200 Q's. I heard little to no activity here on 222 and 432. Conditions were poorer than I had hoped for on both 6M and 2M. I operated almost exclusively FT8 on those bands when it became apparent that was where everyone was at. Best 2M DX - K9MRI in EN70, over 500 miles on FT8. This in spite of the hills between Central New

York State and his central Indiana location. It was nice to have him in my log again. One new 2M grid - FN36, VA2WA. I am pleased with this especially when you consider the considerable impediments between my FN12ne location and FN36. To work VA2WA, my beam points at a brick school house with a hill directly across the street from it.
With nothing new being heard, I pulled the plug shortly after 10pm on Sunday. I am still sorting out how to efficiently operate four radios, three microphones, one keyer, one voice keyer, two rotor controllers, two computers and five computer monitors…without blowing anything up. Two of the radios use 10M as the IF for the 222 and 1296 transverters which they are connected to. Imagine my surprise when I saw an FT8 decode on (a normally quiet) 1296, this turned out to be a decode of my own 222MHz FT8 transmission! Thanks to everyone who operated the contest.

From Phil WA3NUF
Did not put in a full blown effort on this contest but used it to test out changes in the shack and figure out what else needs to be done before January.
Decent activity although relatively flat conditions with no enhancement the entire weekend. Increased activity on 222 and 432 FT8. Also happy to see more stations using SSB/CW than the past several major VHF contests. It appeared that operating procedures are finally evolving from the stay on 50.313 the entire weekend mentality. But SSB signals were clustered within +/- 10KHz of the calling frequency because it was pretty much dead air outside of that window. Hope the budding revival in SSB/CW continues.

WHAT DID I FORGET THIS TIME?

I thought that I'd try to participate in the ARRL September VHF Contest again from Florida. Since my home QTH has the CCR antenna restrictions and it's a poor location anyway without a 40' tower, I threw a few things into the car and headed for the only local hill, the parking lot of Park Ridge Golf Course. It was warm Saturday afternoon, and when I started up the car, the outside temperature gauge was reading 103°. Not to be deterred, I turned on the air conditioning and drove a few miles to the lot. When I got to the lot, the usual far corner was empty, but parking in the sun would continue to bake the car, so I opted for a spot in the shade of a tree. I'd have to stretch out the coax cables to the two tripods that I was using so that the antennas would not be compromised with the tree.

I tried to put up the 6m omni, using a fiberglass military 4' mast atop of the 6' tripod. Yes, here is what I forgot. The mounting bracket of the omni antenna does not open up wide enough to mount on the military mast—yes, about 1/8" difference. The only option was to leave it partially clamped around the ½" top section of the collapsible tripod. For the record, I didn't make any Q's on 6m from that location. I did detect some strong FT8 signals, but I did not plan to operate digital from the rover this time.

I erected the 2M 4-element beam on the 7' tripod and heard a rag-chew on 144.200. I tried calling them to

Forget cont'd no avail. I played a CW CQ on the frequency and was answered by AB4AB in my EL96 grid on SSB. I quickly worked him and then we went to 432.100 as I took down the 2M antenna and switched it for the 70cm antenna. I remembered that the FT100D that I was using had a common antenna jack for both of those bands and without a switch handy, I made the manual antenna and coax change. With 2 QSOs in the log, I poked around for another 30 minutes, calling CQ and tuning to no avail.

Here in southern Florida, the activity is thin. I was just about to take the antennas down and head home after an hour when I heard Carlo N4IS calling CQ on 2M. Everything down here seems to happen on the calling frequencies. We exchanged grids on 2M and 70cm. Six was way too noisy to hear anything more.

Happy with 4 QSOs in the log, I packed up and headed home, planning to put up the omni and try to work some FT8 on 6M. But then there was the call from the XYL who was finished shopping and we made plans to eat dinner with my sister who lives nearby. I enjoyed the company and the take-out meal and managed to get home just before dark and set up the omni at 12' with mosquitoes buzzing all around me. The birds across the lake had all settled in for the night and they were groaning their evening lullabies. I tuned across the band and checked 50.313 but things were dead.

Sunday morning was quiet, but I did find a few stations in my own grid calling CQ. As you can imagine, about half of the hams down here in Florida have calls from the 1st, 2nd and 3rd call districts. All but one of my QSOs was with my own EL96 grid. What was the exciting part? At 9:30AM I see a decode of K1JT signing 73 to KS1PPY. Then not another decode. I see W4PR in EL29 pop in—gone as quickly. And one more decode of K8GP; funny how the propagation works for a few seconds. I even saw another FL station sending to an SV3 station, but didn't complete.

By 5PM there was the rumble of thunder. We had been having afternoon and evening rain almost every day this month. I quickly disconnected the coax, lowered the antenna, and disassembled it all back to storage in the garage. September VHF contesting was over with a grand total of 9 QSOs in 2 grids. Five contacts on 6M, two on 2M and 2 on 70cm. I'm waiting for George, WA2VNV to head south so that we can revitalize the VHF station at our local club, the Boca Raton ARA. There's a separate station for 50MHz up to 1296MHz with a nice set of antennas up at about 60'. Perhaps we can get it all up and running for the January. — Rick **K1DS**

September from FN01

About five years ago, due to a back/leg injury, I pretty much packed in VHF contesting. I knew I had to do a major sell off, since I didn't want my kids to deal with the unknown. Back in August, I acquired an old 3 element 6 meter yagi, and decided to take a four hour trip west to activate FN01. At that point, I realized what I've been missing :"FUN".

September VHF

So I borrow a 10 element 2 meter yagi, and Warren WB2ONA was kind enough to give me an old K2RIW design 432 yagi. The week before the contest, I tested antenna's on my small portable tripod tower. One big problem with the three antennas on the small tower, I could not safely use a rotor. The antennas, rotor and mast were far too top heavy, and the three legged base, was coming up off the ground.

I drove out to Emporium on Friday and stayed in a small motel. Very nice clean place, but I will add, the mattress was so hard that on Saturday night, I slept on four pillows! Saturday morning I had breakfast and headed for the "Top of the World": Driftwood, Pa. The dirt road is about 2.5 miles of rough terrain. Ten miles an hour bouncing all over . When you approach the top, it's a ham radio ops dream. The game commission spent a fortune to clear 99% off of all the trees and planted grass of some sort. I presume the type that Elk love to eat.

With plenty of time, I slowly started getting my little station set up. The top antenna was probably fifteen feet but in the clear for 360 degrees. Pre contest I worked a few stations and all looked great until I turned on 432 mhz. The generator was quiet on 6 and 2 meters but 432 was worse than 160 meters in a summer rain storm. With only 50 watts, I had set a goal of 100 QSO's. Since they don't allow camping at this location, I operated only four hours on Saturday. The road is so hard to descend I wanted no part of it at night. I might add that Saturday was the first day of small game and bow hunting for elk. At times there were so many cars on the summit, people were parking on the side of the road going back down. I was totally amazed how many very nice people came over to my truck, asking what I was doing. Giving them a small education about ham radio contesting, and grid squares was fun.

The only station I worked in the contest on 432 was Dave K1RZ. We worked easily on SSB but I knew it would be futile with anyone else. Sunday I didn't even put the 432 yagi back on the mast. I had asked many people if they saw any elk on their trip up the mountain, and everyone had the same response: "No". When I took the drive down on Saturday, there is a country bar in Driftwood. Might I add, nothing else.

drove by the bar, and about 1,000 feet past, I see a male elk climbing up the side of the road. Maybe he stopped at the bar for a brewski.

Sunday I again drive the bumpy dirt road to the top of the mountain. This time I put on the mast 6 and 2 meters. The gnats on Sunday were brutal. Coming at me in clusters. But that's to be expected, in God's country. So the only difference in propagation on both days, was quick decodes on Sunday to the west, on 6 meters. But no contacts due to the speed of signal's instantly disappearing. On Friday I purchased a 21 foot crank up military tower that I don't think will need any guying. My buddy Steve N2CEI is working on an old 222 and 902 MHz transverter, that I can drive with my TS2000 on 28 mhz. My new theory is keep it simple and fun. No more transmit amps nor preamps. Thanks to Joe Taylor, I will never run more than 50 watts on VHF again while portable. Lastly my highlight was working 27 grids on 2 meters with a small yagi hand rotated. I was on the air for about 9 hours total. Thanks for the fun gents. Herb **K2LNS**

If you do SOTA POTA ops there are pitfalls in logging your QSOs. A discussion and some suggestions for logging programs that work well with these ops can be found at: https://www.amateurradio.com/tips-and-tools-for-managing-logs/ —W2BVH

Here's a nice YouTube video by our friend Gedas W8BYA on how he homebrewed an elevation mount for his 10 GHz dish. It goes –11degrees to +11 degrees from horizontal. But the same basic idea could be used for greater swing of the dish. https://www.youtube.com/watch?v=Ps_PRXaByz4

2M Sprint Report from K1RZ

The 2M Band was definitely up this time. 73% of stations worked on SSB, no CW and 27% on FT8. A good division I'd say. Worked Bill K1DY in FN54 at 892 km on USB for Best DX, plus N1ZR, also in
FN54 at 841 km. So good to work Dick K1HC FN53 at 602 km. Worked JR KC4AAW in EM85 at 645 km, plus AA4DD EM86 at 541 km. I also worked John VE3IPS in FN03FV, out portable, running 25W to 4 element yagi at 20 ft, activating a Parks-on-the-Air VE-1368 for his "Best DX Ever"! This hobby is sooo FUN!

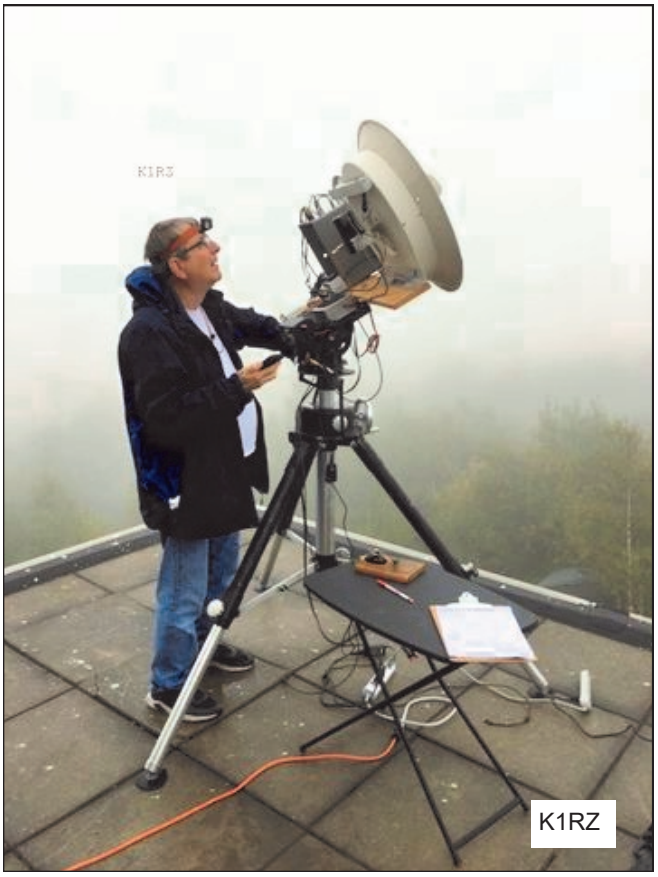
Most significant, by my rough count, 28% of the stations I worked were NEW Callsigns to me. Very cool. Yes the band was up, but so good to know new people are on 144 MHz in the region.

Thanks to the Southeast VHF Society for their sponsorship of these fine activities. Thanks to all who got on and made some noise, talked to people and had Fun!

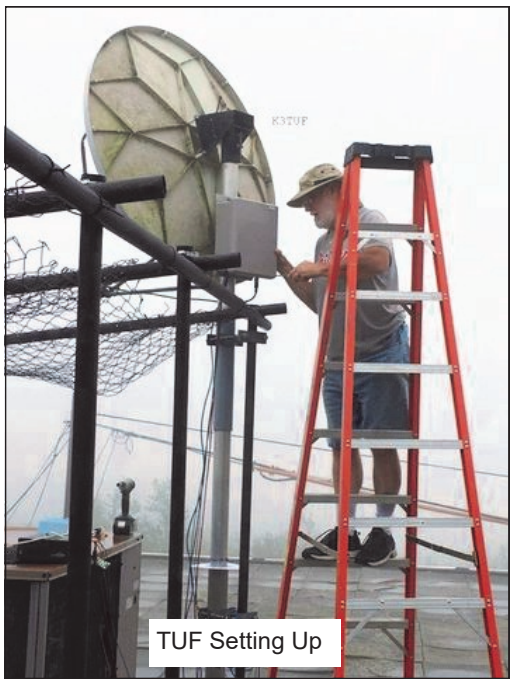
10 GHz and Up Contest at Mountaintop PA

During the second weekend of the ARRL 10 gig and up contest (Sept 18, 19, 2021) three Packrats ventured to one of the Packrat beacon sites at FN21be in Mountaintop PA. It is much better location than Camelback. The secret is the 30 foot high concrete roof surface with 360 degree view. We have devised an improved method for slugging gear to the spacious roof for a clear view of the RF landscape. The weather was entirely reasonable, although we could have done without the occasional rain and would have enjoyed a lower dew point for 24GHz work. On Saturday we were joined by rover, W2RMA. Results were 74% better from last year's adventure. Next year will be the third year for 10 gig. operations at FN21be. Results were Nothing like what they get up around the Great Lakes, but we had 39 contacts last year, and 68 this year.
K3WHC, K1RZ, K3TUF

The Three Amigos



K1RZ



TUF Setting Up

W2RMA set to go

K3WHC

A trip to the Project Diana site with KA6U

by Russ K2TXB

When Peter Van Horne, KA6U, announced that he was going to move his portable two meter EME operation to the site of Project Diana, I immediately volunteered to meet him there and help with the operation. He accepted and this is the account of that activity.

Project Diana Background

The site is located in Wall, NJ, part of the Information Age Science Learning Center. In 1946 the site was part of the US Army's Camp Evans. There, scientists discovered that they could bounce radar signals off the moon, and receive the echoes. It was the forerunner to the US Space program. Project Diana was named for the Roman goddess of the Moon, and that began the trend of naming space projects after Roman and Greek gods, like Mercury and Apollo.

The building to the right, under the dish (above) houses the control station for the dish, an Amateur Radio moonbounce station, and some pictures and equipment that was used in the original tests.

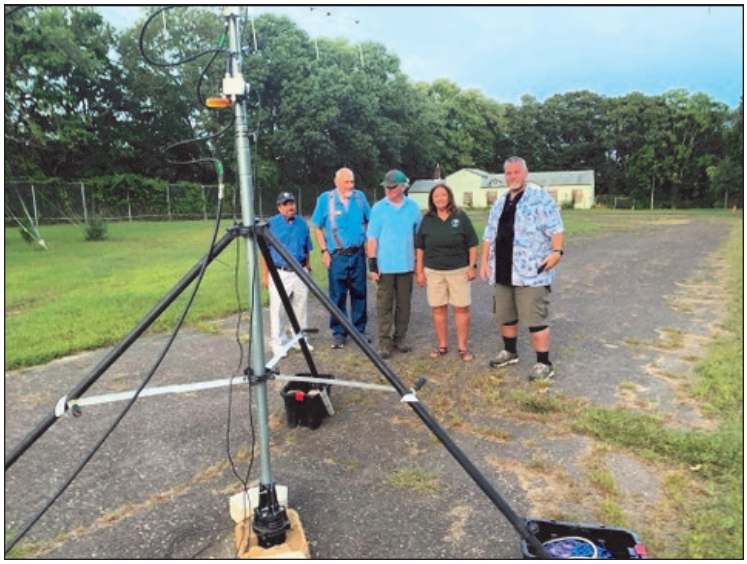
Below are pictures of the original Diana radar antenna, and today's control center.

The left screen shows the control program and live views of the dish and parking lot. The screen to the right has summary data from signals received from various celestial objects, and an SDR receiver display at the bottom. To the far right is the 1296 MHz. ham station, a Kenwood TS-2000X. The TS-2000's 1296 signal feeds a 250 watt amplifier mounted at the dish feed. It produces very loud echoes!

KA6U Background

I first met Peter in March of 2020 (on the air), when he lived in California. He was traveling around to some of the rare grids on the west coast and I was able to work him in several of them. The next thing I knew, he had moved to Florida and before long started an incredible odyssey. He started in the south, moving each day or two to a new, but rare, grid square. In each grid he set up his portable EME station and worked many stations around the world. He took pictures and published descriptions of the places he went, the contacts made, and people he met. His latest trip started in early July and ended just a few days ago on September 28, 2021. I don't have a full account of all the states he visited or grids he activated. I mostly only worked him in grids I did not have, allowing others to more easily work him, but I worked him in 12 states and 31 grid squares. I know his state count is at least double that, and his activated grid count may be as well.

Below are some pictures of the Project Diana activation, showing his setup and some of the people that were there on September 21, 2021.

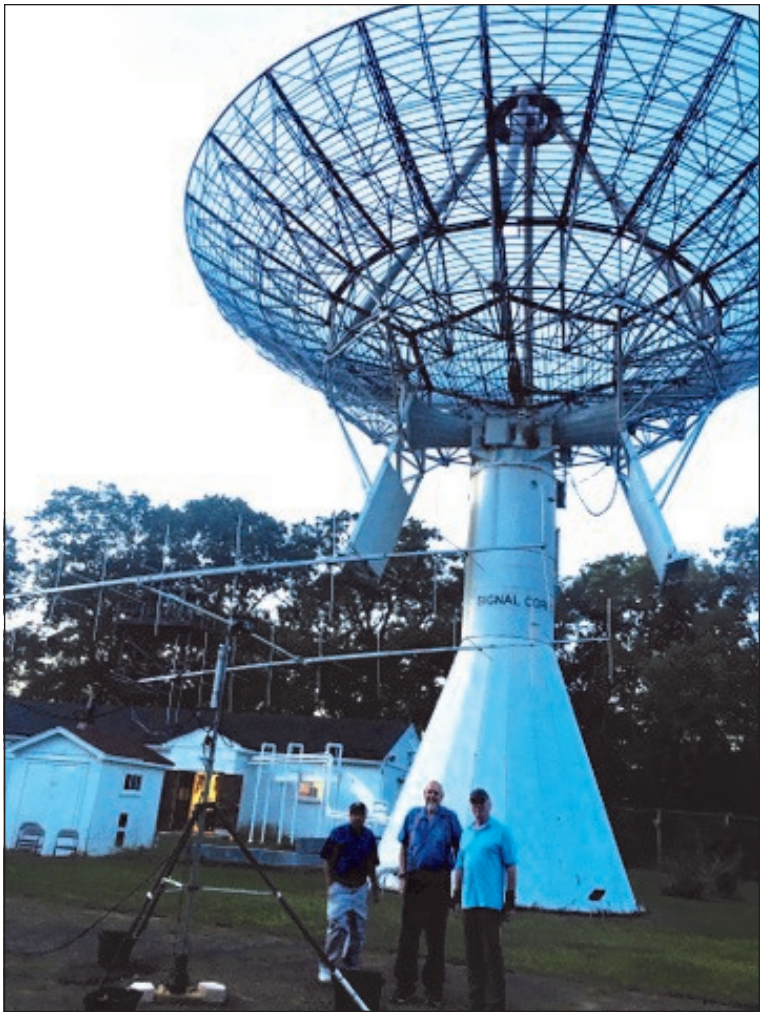


From left, Charlie Cebula AC2ZU, Russ K2TXB, Peter Van Horne KA6U, Lori Lauber KD2OMA, and an unknown gentleman.

Lori is the control operator for the Dish, she opened the site for us and stayed around for most of the night.

Charlie is one of the operators who came up to operate 1296 EME with the big dish. Those operations were carried out at the same time as Peter and I were working 2 meter contacts.

Here is a view as we first saw the moon peeking out above the eastern trees. Peter was checking the alignment of the rotator, making sure we were pointed at the moon. To the right, is Peter, placing one of the 2 Meter crossed Yagis on his mount. Peter has made a science of being able to setup and take down quickly. He did it all himself, and setup was about 40 minutes. Tear down is about 30 minutes.



To the left is a view of Charlie, Peter, and myself standing under the two antennas! Below is Peter, operating 2 meter EME (JT65) from the passenger side seat of his Ford Pickup. We made about 2 dozen contacts on 2 meters that night. There is not much demand for the FN20 grid square, so most of the callers just wanted to work the Project Diana site. In a normal (rare) grid Peter usually works around 70 stations each Moon pass. For more information about Peter and his setup, see his QRZ page.

Looking at the moon through paired crossed yagis

This dish is awesome! It is about 60 feet in diameter (18 meters), and has a gain of about 46 dBi, on 1296 MHz. The echoes we heard returning from the moon were reading S9 on the TS-2000X S meter.

The 1296 MHz operation that day was not well publicized and there was not much activity. They did make a SSB contact with a station in Russia, and I copied K5DOG in Texas calling CQ on CW at S5. Unfortunately Steve was operating remote and could not easily tune around, so he missed our calls and no contact was made.

I think it would be a lot of fun to operate there during the EME contest!

The Wayback Machine
In CHEESE BITS, 50 Years Ago

Nibbles from October 1971. Vol. XIV Nr 10
de K3IUV Bert
(*author's comments in italics*)

"**Our Prez Sez"**. Prez Don, **W3CJU** thanked the hosts for the two recent outdoor meetings:

- Bert, **K3IUV** and xyl Harriet for the annual Packrat Film Festival (slides by **K3GAS, W3GEW** and **W3ELX**). (*Did you know that most of these old slides still exist. Mounted in "Carousels", they are currently being reviewed, identified and inventoried by El, K3JJZ*).
- Dave, **W3ZD** and his xyl Jane, for hosting the July Packrat auction, and for El, **K3JJZ** for his proficiency as second auctioneer.

He noted that the January contest chairman Ron, **WA3AXV** (now **W3RJW**) has been working with his committee and established the cadre of "coordinators." Watch for more info soon.

Technical Article. "6-meters and BC on the same antenna." Authored by **K3HNW**. This article showed how to use the vertical "whip" antenna on your car, to operate on 6-meters. It included the design and construction of a simple frequency diplexer to permit use on both bands simultaneously. Performance details were not included.

Amateur TV. Paul, **WA3HIT** provided a lengthy (two page) article, detailing his ATV receiving tests. Working with RON, **K3ZKO** who provided the test signals, Paul chronicles a number of tests they conducted, which achieved success when he copied both video and sound. He used a "retuned" UHF converter to accomplish this. (*Recall several months ago when we reported the Cheese Bits article on the status of UHF signals in the Philadelphia area at that time, and suggested you "save that converter." Now you know* why*! A bit of humor in the article, which you will enjoy*.) Operation of the then ATV enthusiasts was at 439.25 MHz. Paul listed the known local stations (17) that were operating with TV signal outputs. Mostly club members, they included still active Dan, **WA3NFV** and Bert, **K3IUV** (*both no longer on TV*).

2 Meter / 432 Report. Joe, W2EIF, provided a brief summary of recent band conditions. Notable nightly operation and contacts on two meters included contacts from Virginia, New Hampshire and Toronto, CA. On August 17, an opening occurred as a result of a duct that extended from Iowa and Kansas into New England, lasting about two hours. A new record was established on 432 when Pete, **K1PXE** (***recognize the call***?) worked **W0DRL** in KS with good signals.

New Products of Interest. From Lynn, **W3NSI.** 1) FM Transmitter Kit. From the RMV Electronics Company, this was a 5-watt, 4 crystal, 2-meter transmitter kit. Built on a double-sided pc board, it featured separate oscillators for each channel, to avoid tuning difficulties with wafer switches. 16 transistors and 9 diodes used, and priced at $59.95. 2) A Light Weight (only 7 oz including power cord) 150-watt soldering gun from ERSA of Germany. Unlike the Weller

gun, this unit used a straight tip that required no shaping or filing during its life. Price $8.55. (*I'd like to have a couple now*!) 3) A collection of aluminum hardware for antenna construction is available from PAL Marketing in CA. These include brackets, tubing size adapters, and other items useful for homebrew projects. Instructions included. Prices vary.

Contest Prep. In preparation for the January contest, Ron, **WA3AXV** published the new list of coordinators and teams. The 11 coordinators listed were charged with the task of ensuring all team members were prepared and ready for the January contest. Technical or other help would be provided as needed. (*This was one of the successful techniques used to keep the Packrats as the number one club in the contest over the years*.)

Calendar. October 6, Warminster Amateur Radio Club Auction. (1971. Y*es, the WARC was around 50 years ago.*) October 20, first indoor meeting of the new season (*sounds like today*!). Speaker will be Bert, **K3IUV** (*that's me*). Topic was the design and operation of the TV camera used on Apollo 15. A model will be available. Also expect a discussion on a new "club project." November 17, next Packrat meeting. Topic will be Antenna adjustments before the ice and snow set in. Some new antenna designs will be presented. October 24, Gaithersburg Hamfest. (*Just as today, Hamfests were a popular activity*.)

Swap Shoppe. By W3ZRR. *(Always nostalgia. Now we use the club reflector.*): For sale by Doc, **K3GAS**, a 6-meter SSB package which included a modified HW32A, an Ameco converter, a preamp, Dow Key relay, and interconnecting cables, for $110. Also, a converted APX-6 xmtr-receiver for 1296, with meter (I *don't know what the meter did*.) Price $20. From Joe, **WN3QNS**, a TA-33 Jr. Beam. $40. And last, from John, **W3TMJ**, was a Hy-Gain 3-element full size 20-meter beam for $50.

Ads. *Just as today, Cheese Bits at the time incorporated ads to help defray the cost of postage, and to augment the club treasury. Although Internet distribution of most current copies reduces the postage costs, treasurer Dave, **WA3JUF** appreciates the added revenue now used for club projects. The October '71 issue included 30 business card size ads, plus the half page cover ad from club member Ham Buerger (Drake TR-22 for $199.95). In addition to skills or merchandise offered, these included a number of greetings from members wishing to contribute (I was there). An interesting one I noted was for Tower Service, from member "Deke," **W3AJF**, offering services from the "Jack Hassler Co. Steeplejacks!" Deke used to build his own antennas from copper tubing, with all joints soldered, to avoid common intermittent problems. If you'd like to join them currently, contact the ad chairman, Bob, **W2SJ**.*

Miscellany. *Postage for this issue was still a single 8-cent flag stamp. (7 double sided, 8-½ x 11" sheets). As usual, many "folksy" comments about members, their families, and activities were included in this edition of Cheese Bits. If interested, or for more detail on*

Events

For inclusion, please direct event notices to the editor.

Oktoberfest - Hamfest - October 23, 2021. Sponsored by HRAC. Harrisburg PA. Details at: http://www.w3uu.org/oktoberfest/

EME - 2.3 GHz & Up – Wknd 1 - Contest - October 23-24, 2021. See http://www.arrl.org/eme-contest for details.

EME - 50—1296 MHz – Wknd 2 - Contest - November 20-21, 2021. See http://www.arrl.org/eme-contest for details.

EME - 50—1296 MHz – Wknd 3 - Contest - December 18-19, 2021. See http://www.arrl.org/eme-contest for details.

Winterfest - Hamfest - January 8, 2022. Sponsored by HRAC. Harrisburg PA. Details at: http://www.w3uu.org/winterfest/

Firecracker - Hamfest - July 2, 2022. Sponsored by HRAC. Harrisburg PA. Details at: http://www.w3uu.org/firecracker/

Once again I worked Gary KC8YJJ (EN90pl) on 1296 9/13/21 using Q65C 30 sec seqs. What makes this contact interesting is that Gary only runs 10 watts from an ICOM IC-9700 to a 25 element loop Yagi.

130100 -16 0.8 1407 : AA2UK KC8YJJ EN90 q3

130500 -23 0.8 1485 : AA2UK KC8YJJ R-03 q3

130600 -21 0.8 1478 : AA2UK KC8YJJ 73 q3

Bill AA2UK

Been too distracted by repairs in the basement from Hurricane IDA to work any of the sprints. But I got a call from Warren WB2ONA asking If I could get on the air and give out a Q on 1296 to his friend AC2OBI in the 902 and Up. Ended up working him plus K1PXE,and WZ1V also. And worked K1RZ on 902, 1296 and 2304. A nice distraction! —W2BVH

…. Wayback cont'd

*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 **W3SO**, 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. Have 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**)

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

222 MHz Activity Night

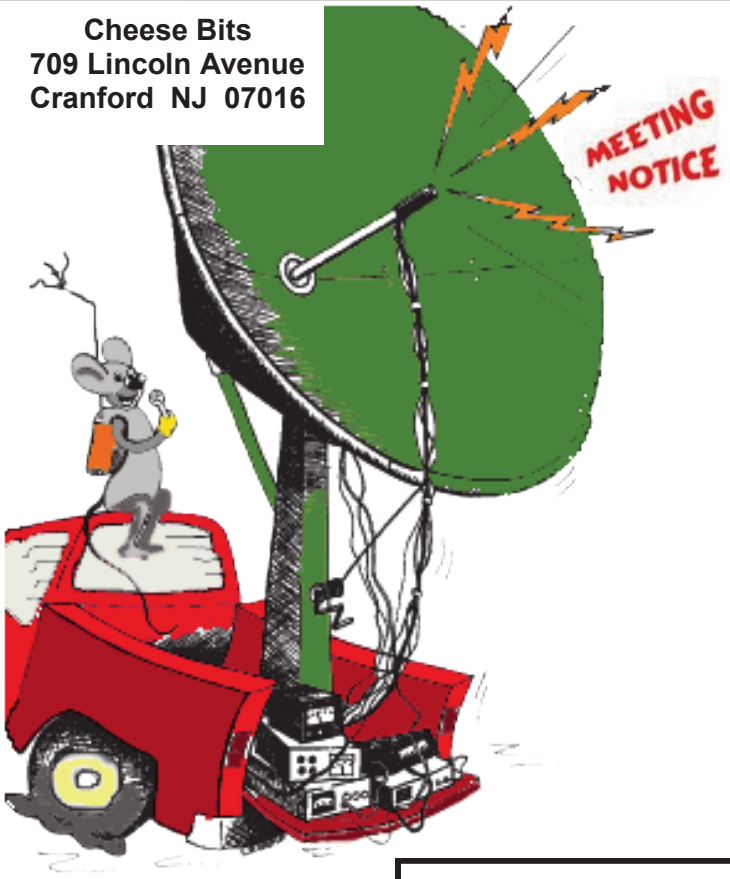
There's been an informal 222 activity night in the Northeast (and beyond) every Tuesday night starting around 7 pm (or so) Eastern Time. ON4KST is being used by some to coordinate Q's when direct CQ's are weak. —W2BVH

Beautiful Photos of Aurora Taken from the ISS

Breathtaking photos can be found at https://www.cnet.com/news/earth-glows-green-in-epic-aurora-image-from-the-international-space-station/

K1RZ Microwave Sprint :The activity was about normal and the propagation on 902 and Up was marginal at best, especially when compared to how good propagation was Wednesday night for the 432 Sprint. With the marginal propagation conditions it took time to complete some of the contacts, waiting for a peak - be it airplane scatter or other QSB peak. Rover N9ZL was out on his usual perch atop Hogback Overlook on Skyline Drive northern Virginia. John and I worked five bands while he was on Hogback and three from the driveway at his home QTH in Winchester VA. I worked Marco KD3PD (usually roving) from his home QTH on 902 and 1296. Also worked VA3ELE and VE3DS in FN03 on 902. I further learned that VA3ELE is building up his home station again after being off on the microwave bands for a couple seasons. N1JEZ FN44AR was my Best DX at 742 km. Thanks to everyone who got on and worked some stations, and to the sponsor for organizing this activity. Overall I worked 21 unique stations for 44 contacts.

Cheese Bits
709 Lincoln Avenue
Cranford NJ 07016



TO:

MT. AIRY VHF RADIO CLUB, INC.