



CHEESE BITS

W3CCX
CLUB MEMORIAL CALL

ARRL
Affiliated
Club



Volume LXV

February 2022

Number 2

PREZ

SEZ:

How did everyone enjoy the January Contest this year? I remember the weather last year was much more mild than we had this year.

Conditions this year seemed better on Saturday with a short 6M band opening. Sunday most members reported high noise levels on 6 & 2 meters, but the microwaves worked better than on Saturday. Go figure... Last year was the reverse with Sunday providing more DX and contacts. Whatever the roadblock, the Packrats step up to battle all conditions, last minute visits from Murphy, and even a pandemic the last 2 years. We mount an impressive showing year after year. One of the most enjoyable events we have each year is the January Contest Wrap-Up meeting that has been a tradition for many years. It's so much fun sharing the experiences we had during the contest and to learn from others how to improve our operations next year. A full breakdown of activity and scores can be found elsewhere in this issue. Thanks to Dave, W3KM for compiling the data for Lenny to publish, and a big thanks to Mike, N2DEQ for all the hard work he does each year as Contest Chairman. All participants can be proud that the Packrats did a good job again.

The "Prez Shouts Out" this month goes to our member and good friend Joe Taylor, K1JT for

giving us a new tool to use within WSJT-X. The tool provides a way to move operators up the bands on FT8 as well as to additional modes and bands to maximize contacts and points. The new tool accomplishes this by using operator pre-entered and selectable macros in WSJT-X's, TX5 message, along with the band and frequency codes developed by Bob Lear, W4ZST. Thanks guys!

Now that the January contest is over, don't forget the Spring Sprint contests starting in April. These are the 4 hour short fun contests on one night or day. They are listed in this Cheese Bits issue in the "Events" section. A good way to make sure your equipment is working well before the Sprints is to check in to the Packrats Monday night nets each week as well as the 5 Friday Night Nets run by our member Jim, KC3BVL.

Speaking of contests, we had our first Camelback June Contest planning meeting last week and coordinators for each band have been either confirmed or suggested and in process. Setup, logistics, food, computers and internet, software, antennas, towers, and other items have been discussed. Please remember that this is a traditional club function and all members of the club are invited to take part in this fun time if you can make it. It's not necessary for you to go for the entire weekend if your schedule does

Pack Rats **CHEESE BITS** is a monthly publication of the
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222.98/224.58 MHz (PL 136.5) Hilltown, PA

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Awards Chairman OPEN
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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:

<u>TIME</u>	<u>FREQUENCY</u>	<u>NET CONTROL</u>
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

not permit. Come up for a day or two and operate a first class station, 50 MHz through 10 GHz, with good power and antennas, on top of a 2000 ft mountain with a great 360 degree view. We are always looking for more member participation. "It doesn't get any better than that" for VHF & Up!

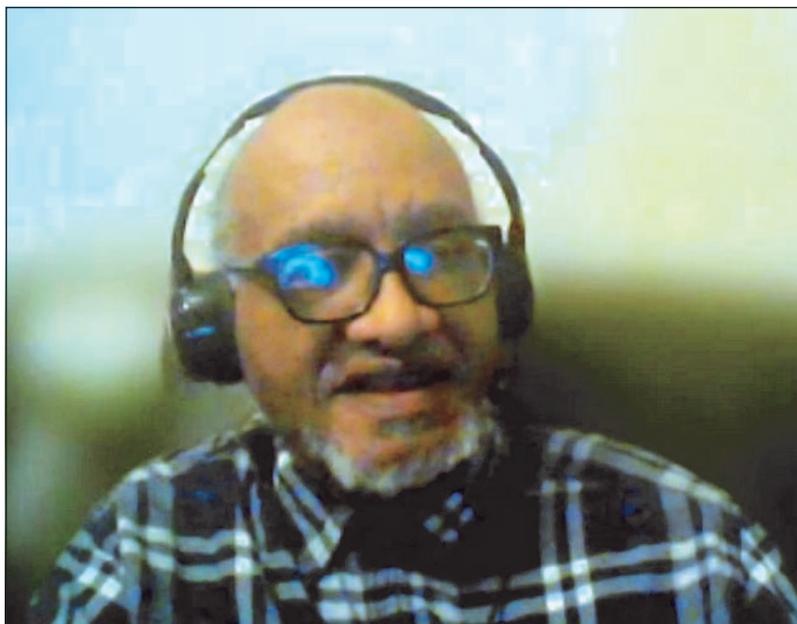
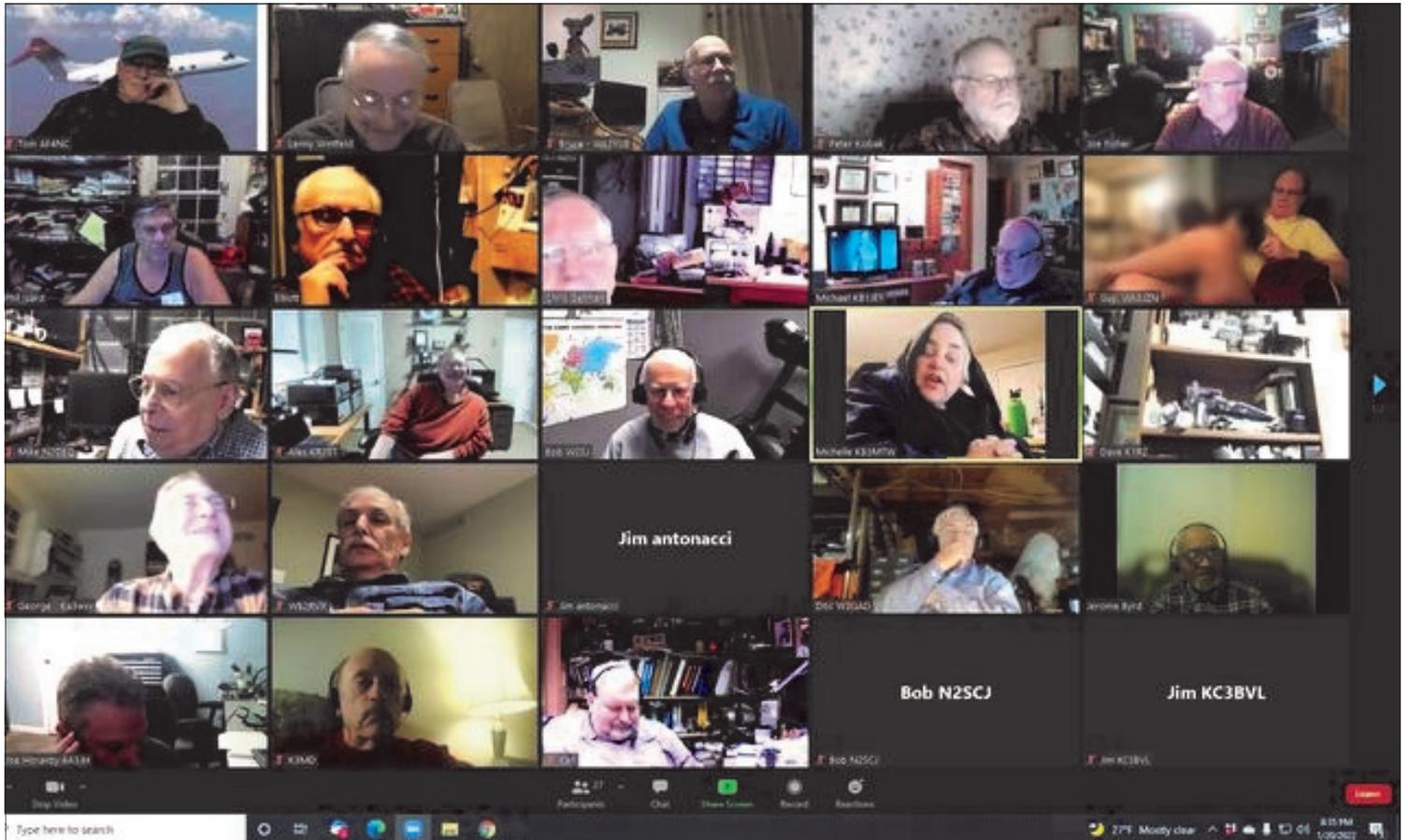


Our meeting this month is our traditional Homebrew Night showcasing what you, our members, do to keep the art of Ham Radio homebrewing alive. As of this writing the meeting will be on Zoom and possibly in-person also. Please stay tuned for updates after the BOD meeting on February 10th. What will you be bringing to the meeting to enter the competition and share with everyone in person or over Zoom? Will your project exhibit technical genius like Lyn W3NSI, a fantastic new antenna design from copper or aluminum scraps like Joe W2EIF, a project enclosed in a homebrew box made from an old fender off a 1908 Model-T like Tony W3HMU, or a miserable failure like Harry, W3CL produced a couple of times? You too can become a "legend in your own time" next!

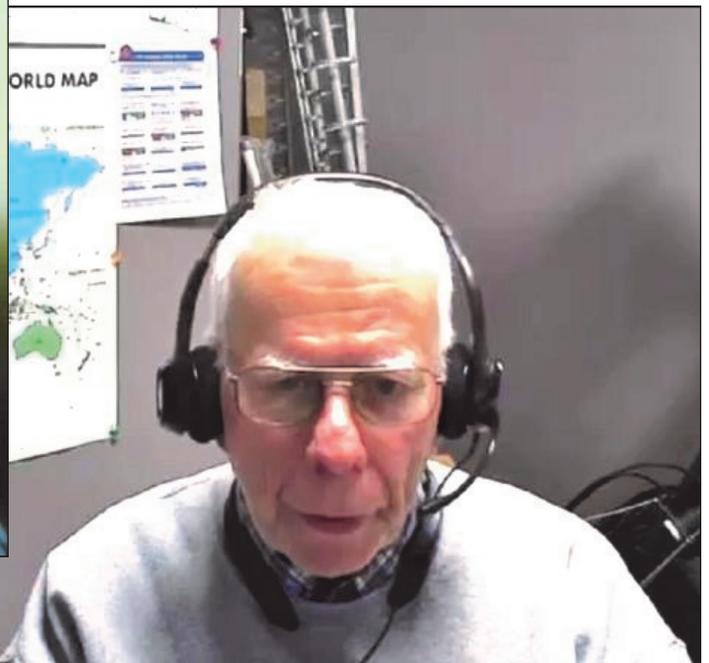
Meanwhile, finish a project on the bench, keep one ear "listening for the weak ones", and the other on the "Magic Band"!

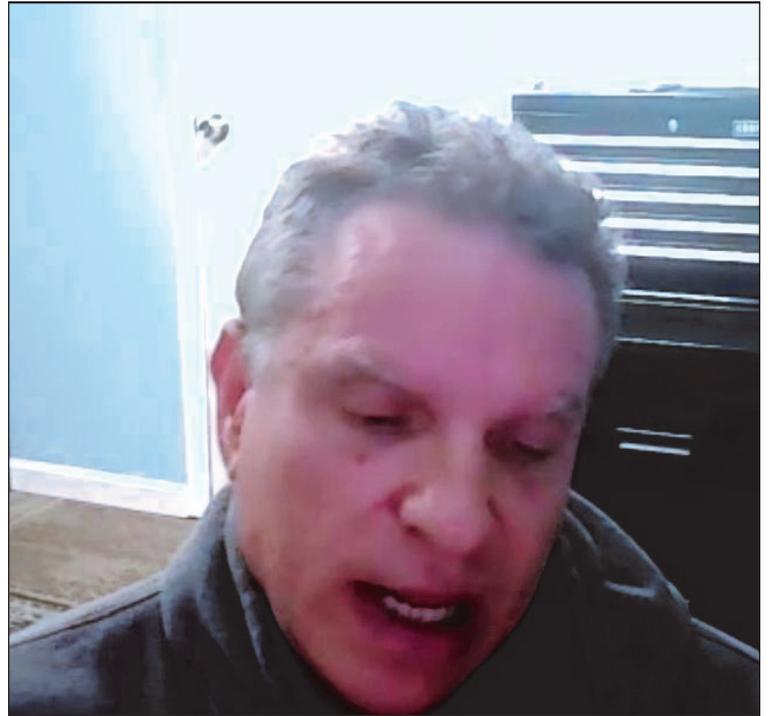
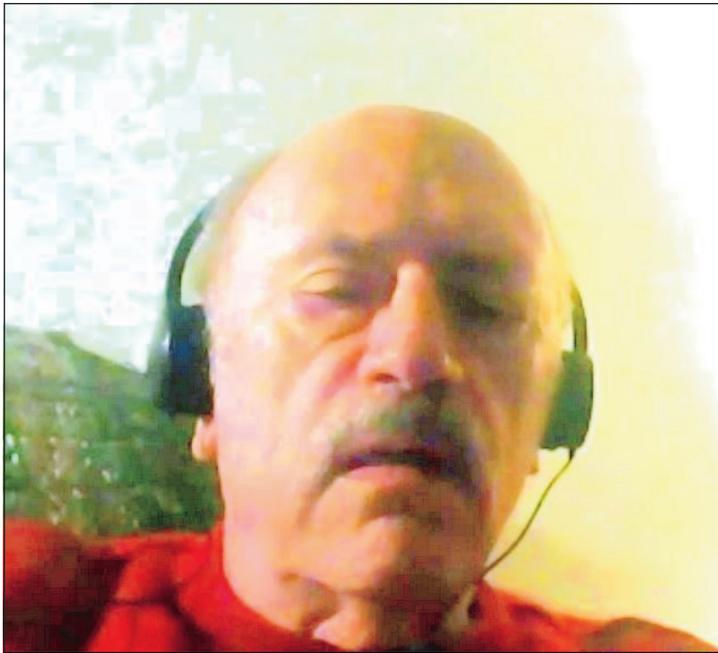
Vy 73,
Bob W2SJ

JANUARY (ZOOM) MEETING PICTURES

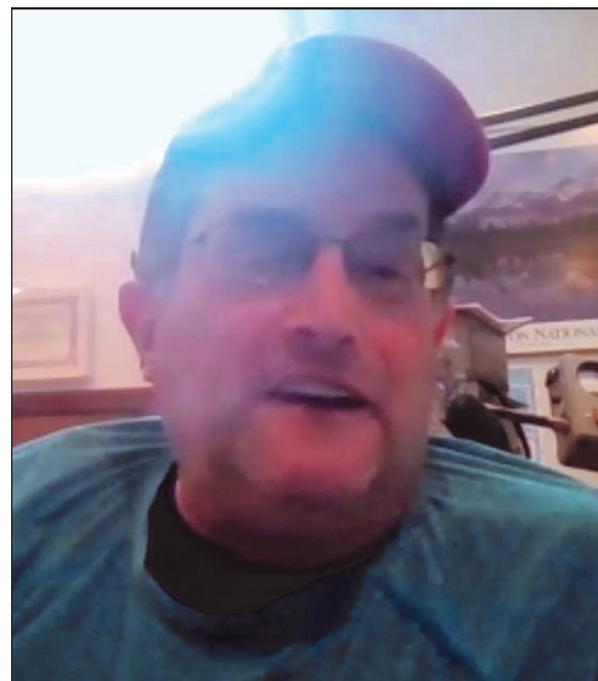
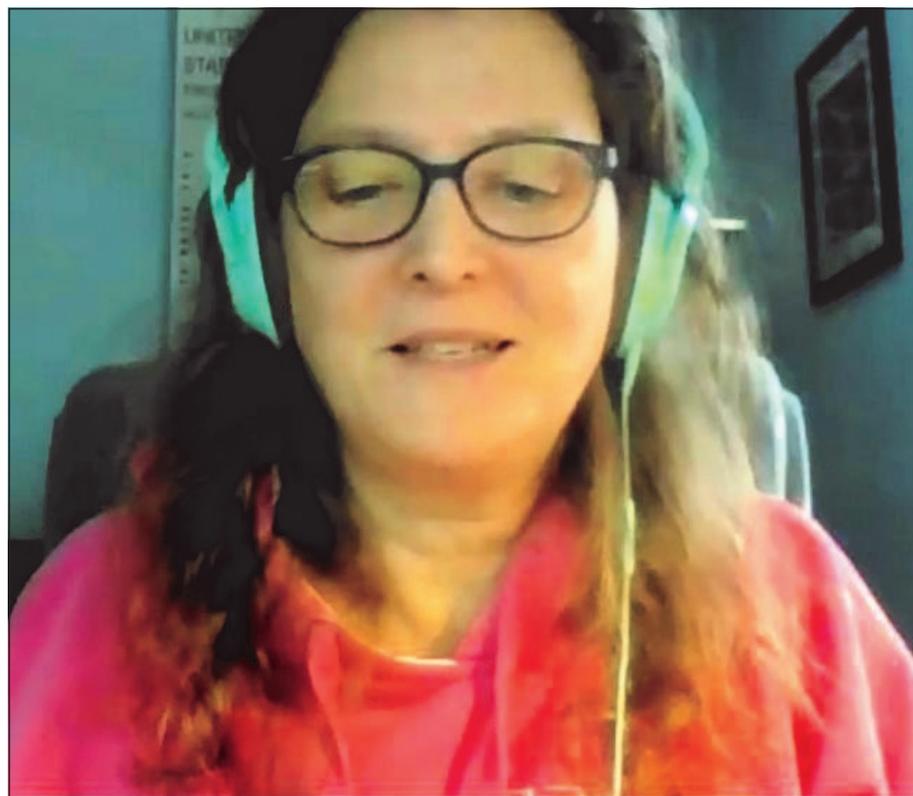


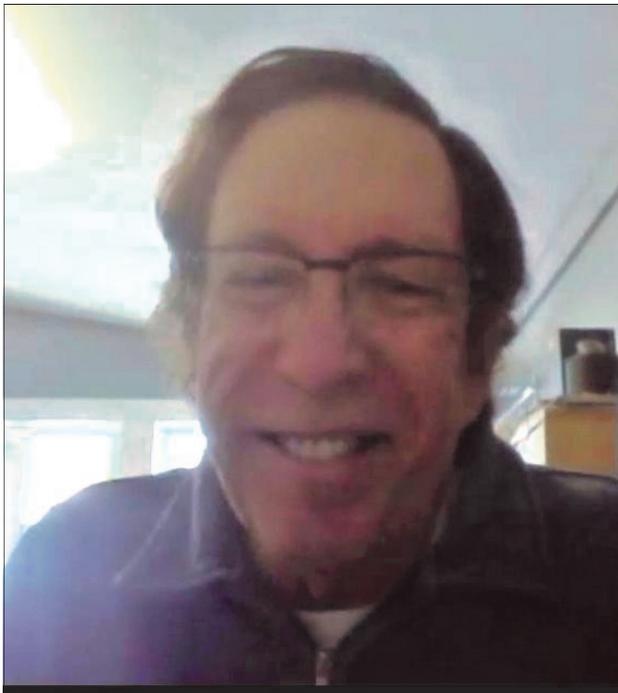
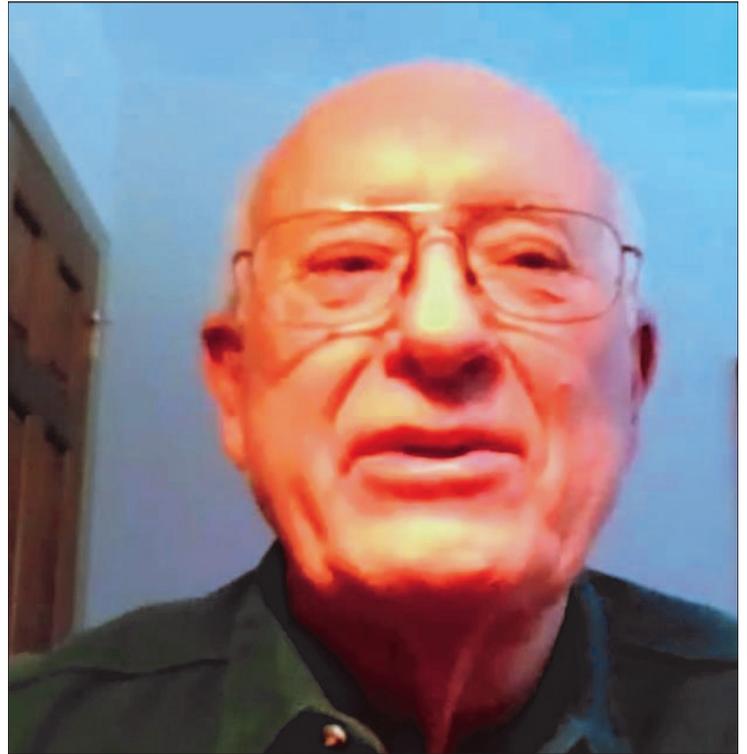
Jerome K3GNC Crying Towel Winner





JANUARY (ZOOM) CONTEST WRAP-UP MEETING PICTURES





Mt. Airy VHF Radio Club, Inc.
'The Packrats'
January 2022 VHF Sweepstakes Contest

Total Logs: 59

Club Claimed Score: 1,370,915

Here's the results of the January Sweepstakes as compiled by **W3KM**. 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	24 GHz	Laser
1	K1TEO	822	235	322185	310 70	238 47	75 30	105 35	25 17	46 19	16 10	4 4	1 1	2 2		
2	K1RZ	437	157	145068	84 25	126 38	55 23	90 32	25 12	33 13	13 7	2 2	2 2	7 3		
3	WA3NUF	420	95	78090	127 24	127 27	41 11	59 12	16 4	24 7	17 6	6 2	2 1	1 1		
4	N3NGE	348	99	56529	133 36	120 33	36 6	29 6	2 1	11 5	9 5		5 4	3 3		
5	KC2TN	378	91	52689	169 37	108 27	30 7	33 8	13 4	19 6	6 2					
6	N3RG	273	94	52640	76 27	64 19	36 10	44 12	14 6	27 10	6 4	2 2	2 2	2 2		
7	WA2OMY	314	65	39390	98 15	108 26	27 3	29 7	11 2	21 5	13 4	5 2	2 1			
8	WA3DRC	295	103	37389	147 54	80 26	25 10	43 13								
9	N2SCJ	356	69	31464	141 24	145 31	19 2	36 7		15 5						
10	W0RSJ	230	64	26944	88 22	47 13	29 8	34 8	9 4	15 5	5 3	3 1				
11	NN3Q/R	229	44	26460	39 7	55 9	29 5	35 4	20 5	20 4	14 3	5 1	6 2	6 2		
12	N3FTI	313	78	24414	313 78											
13	W3ICC/R	237	41	21566	57 6	57 6	35 5	43 6		26 5	16 5			1 1	1 1	1 1
14	W3KM	274	60	19980	108 22	119 27	21 4	20 4		6 3						
15	W2KV	263	59	18467	70 14	143 30		50 15								
16	W2BVH	189	54	16632	63 15	67 12	14 6	23 7	6 4	12 6	4 4					
17	WB2RVX	166	45	16290	40 8	30 7	28 8	30 8	11 3	21 7	3 1		1 1	2 2		
18	WA3QPX	192	68	15640	111 25	47 20	12 11	20 10	1 1	1 1						
19	KA3FQS	202	38	15618	47 7	54 8	32 7	37 7	6 2	15 5	7 1	4 1				
20	W3HMS	170	63	13734	107 30	27 13	11 9	21 8	2 1	1 1				1 1		
21	N2DEQ	190	47	13019	64 13	73 18	18 5	22 5	6 3	5 2	2 1					
22	K3MD	179	64	12935	97 30	68 23		12 9		2 2						
23	WA3YUE	156	49	12593	57 14	50 17	16 6	17 6	4 2	7 3	5 1					
24	W2SJ	158	36	11052	42 7	33 6	25 6	31 6	7 3	17 5	2 2					1 1
25	KR1ST	165	42	10794	44 8	59 18	20 5	27 7		15 4						
26	K2TXB	170	57	9690	66 16	104 41										
27	WA3GFZ	139	42	8022	87 19	16 5	14 6	14 6	4 3	4 3						
28	KB2AYU	129	35	7280		68 18	20 7	32 7		9 3						
29	WX3K	133	44	6776	58 19	54 15	9 4	12 6								
30	N3ITT	158	38	6422	61 14	86 22	8 1	3 1								
31	K3JJZ	156	27	6399	48 8	41 6	25 5	35 5	4 2	3 1						
32	K2WB	143	32	6195	62 14	47 14	10 2	24 2								
33	W3GAD	125	25	5825	42 10	27 4	20 3	22 2		8 2	3 1			1 1	1 1	1 1
34	NE2U	153	34	5508	77 16	67 15		9 3								
35	K1JT	150	32	4800	150 32											

Mt. Airy VHF Radio Club, Inc.

`The Packrats`

January 2022 VHF Sweepstakes Contest (cont'd)

Total Logs: 59

Club Claimed Score: 1,370,915

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	24 GHz	Laser
36	N3PLM	154	29	4727	82 12	63 14		9 3								
37	K3GNC	110	31	3844	43 10	53 17		14 4								
38	KB3MTW	131	14	3094	37 3	34 3	18 2	27 2	7 2	8 2						
39	KB1JEY	141	16	2976	66 6	30 3	17 4	28 3								
40	W9KXI	64	41	2952	48 27	10 8	2 2	3 3		1 1						
41	N8MP	72	34	2448	47 22	25 12										
42	KC3ACQ	0	0	2120												
43	K2LNS	72	28	2016	72 28											
44	N2CG	70	23	1748	39 12	25 7		6 4								
45	AA3JH	66	22	1716	19 6	41 12	1 1	4 2								1 1
46	KC3BVL	41	24	1656	14 9	11 5	3 2	9 5		3 2	1 1					
47	K3TUF	29	17	1564	6 3		4 2	9 3	1 1	4 3	2 2		1 1	2 2		
48	KA3WXV	85	14	1540	33 8	27 3	10 1	15 2								
49	K1DY	37	26	1430	4 2	15 10	10 8	8 6								
50	W3SZ	18	18	1368	2 2	2 2	2 2	2 2	2 2	2 2		2 2	2 2	2 2		
51	K0BAK	75	11	825	75 11											
52	WS3O/R	35	9	369	6 2	23 2	1 1	5 2								
53	WB2ONA	25	10	330	8 3	9 3	1 1	7 3								
54	WF3W	40	7	287		39 6		1 1								
55	NE3I	18	4	96	1 1	11 1	4 1	2 1								
56	KB3SIG	3	3	72							1 1	1 1				1 1
57	WA3WUL	9	4	36	9 4											
58	K3EGE	3	3	15		1 1	1 1	1 1								
59																
60																
61																
62																
63																
64																
65																

NOTES:

K1DY operated in FN54

N8MP operated in EN91

For the above, score and log count not added to the club totals.

THANKS, AS ALWAYS, TO W3KM for processing the log data for these grids!

Mt. Airy VHF Radio Club, Inc.
`The Pack Rats`
January 2022 VHF Sweepstakes Contest (cont'd)

Total Logs: 59

Club Claimed Score: 1,370,915

Multi-OPS

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	24G Hz	47 GHz	La-ser
1	N2NT	766	153	145503	293 57	288 47	73 24	112 25									
OPS	N2NT N2NC WW2Y																
2	WA3EHD	274	48	23424	99 19	91 13	18 2	27 5	12 2	14 2	7 2	5 2					1 1
OPS	WA3EHD KB3SIG																
3	N3EXA	233	37	10138	113 18	79 13	22 3	19 3									
OPS	N3EXA KS3Z																
4																	
5																	

Mt. Airy VHF Radio Club
January VHF SS
Previous Aggregate Claimed Scores

Year	Logs Submitted	Score
2022	59	1,370,915
2021	60	1,499,501
2020	70	1,260,661
2019	71	1,138,372
2018	60	1,911,495
2017	65	1,998,637
2016	70	2,238,450
2015	68	2,065,073
2014	68	2,277,747
2013	65	2,659,242
2012	77	2,491,702

Previous Aggregate Claimed Scores
(Continued)

Year	Logs Submitted	Score
2011	67	2,156,784
2010	70	2,699,809
2009	58	1,891,225
2008	63	2,232,731
2007	63	2,055,259
2006	57	2,724,560
2005	53	1,459,052
2004	56	2,856,837
2003	61	3,127,678
2002	49	2,113,624

Mt Airy VHF Radio Club Current + Previous 5 Years Scores by Station

CALL	2022	2021	2020	2019	2018	2017
K1TEO	322185	370744				
K1RZ	145068	190806	85767	124540	316470	201684
WA3NUF	78090	44506	59428	49632	5712	90902
N3NGE	56529	34510	285196	220704	490154	441350
KC2TN	52689	43758	33330	17289	33428	13962
N3RG	52640	78210	35471	75440	115062	90200
WA2OMY	39390	29205	23892	16992		25929
WA3DRC	37389	19240	46425	57868	55407	58880
N2SCJ	31464	14440				
W0RSJ	26944	26136	28426		27218	29341
NN3Q/R	26460	29800	15213		57525	66177
N3FTI	24414	1743		10962	22500	42316
W3ICC/R	21566	25536	24432	10920	20727	30549
W3KM	19980	19275	4887	8388	15839	12012
W2KV	18467	20888	20280	21505	5848	28420
W2BVH	16632	20648	19264	10647	23142	25592
WB2RVX	16290	9744	40887	21935	49593	
WA3QPX	15640	19762	15813	13650	37920	30415
KA3FQS	15618	15912	14911	17696	14630	19795
W3HMS	13734	7650	6480	3360	72	7740
N2DEQ	13019	8126	8340	4840	4200	5050
K3MD	12935	13104	8415	6204	16244	26979
WA3YUE	12593	8816	6665	6960	9144	14315
W2SJ	11052	41920	33609	21156	50556	14945
KR1ST	10794	13398	27612	5985		
K2TXB	9690	8946	11387	17020		
WA3GFZ	8022		29150	23453	50386	41608
KB2AYU	7280			15	8399	270
WX3K	6776	160	7304		5439	
N3ITT	6422	2025	72	4810		
K3JJZ	6399	6525	6900	7944	8618	13299
K2WB	6195	1440	5432	1190	1498	
W3GAD	5825	25218	18964	10908	10461	19424
NE2U	5508				5363	4185
K1JT	4800		5400	13068	4898	988

**Packrat QSOs and Pack Rats Worked
2022 January VHF Sweepstakes
Total Rats 68 Total Logs 53**

Call	Op Cat	Pwr Cat	PR Q's	Nmbr 'Rats
WA3NUF	SO	LOW	228	49
W3ICC/R	RO	HIGH	220	23
N2NT	MO	HIGH	190	54
WA2OMY	SO	HIGH	186	52
N3RG	SO	LOW	175	32
KC2TN	SO	HIGH	174	47
W0RSJ	SO	HIGH	163	41
WA3EHD	MO	LOW	158	50
N3NGE	SO	HIGH	156	44
KA3FQS	SO	LOW	156	38
WB2RVX	SO	HIGH	143	29
K1RZ	SO	HIGH	129	23
N2SCJ	SO	LOW	128	44
W2SJ	SO	HIGH	128	30
K3JJZ	SO	HIGH	119	35
W3KM	SO	LOW	115	45
N2DEQ	SO	LOW	112	42
WA3DRC	SO	HIGH	112	41
W2KV	SO	HIGH	108	44
WA3YUE	SO	HIGH	102	36
KR1ST	SO	HIGH	100	30
N3EXA	MO	HIGH	99	43
W3GAD	SO	HIGH	96	28
W2BVH	SO	HIGH	94	33
KB1JEY	SO	LOW	91	29
WA3GFZ	SO	LOW	76	30
KA3WXV	SO	LOW	64	32

Call	Op Cat	Pwr Cat	PR Q's	Nmbr 'Rats
KB2AYU	SO	LOW	62	26
WX3K	SO	LOW	62	33
N3ITT	SO	HIGH	56	34
WA3QPX	SO	HIGH	53	32
N3PLM	SO	LOW	51	34
N3FTI	SO	HIGH	47	47
NE2U	SO	LOW	46	27
K3GNC	SO	HIGH	43	26
W3HMS	SO	LOW	38	27
K2TXB	SO	HIGH	35	27
AA3JH	SO	LOW	30	20
K0BAK	SO	LOW	28	27
K3TUF	SO	HIGH	27	7
WB2ONA	SO	LOW	24	8
WS3O/R	RO	LOW	23	16
WF3W	SO	LOW	22	20
KC3BVL	SO	HIGH	19	6
W3SZ	SO	LOW	18	1
N2CG	SO	HIGH	15	13
W9KXI	SO	HIGH	12	12
K2LNS	SO	HIGH	10	10
NE3I	SO	LOW	7	5
N8MP	SO	HIGH	5	5
KB3SIG	SO	LOW	3	1
K3EGE	SO	LOW	3	1
WA3WUL	SO	LOW	3	3

JANUARY CONTEST REPORTS

From John K3MD

Fun. Everyone has made the transition to FT8. Conditions on 1296 were not good but everything worked. Got kind of burned out, only operated until 2200Z. 222 feedline open. Some are having problems with their IC-9700's drifting too much for FT8 on 432. The FT-726R has no problem. 12,935 pts.

From Pete K0BAK

I did what I could, which wasn't much: 50w into 40m doublet on 6m FT8 only for about half of Sunday. Too darn cold to bring out the mini rover (6&2 halos up 20') Sunday morning, and was traveling on Saturday. 75 Qs, 11 grids, 825 claimed score.

From Bill WS3O

I did terrible, WS3O/R: 41 Qpts x 9 Mults = 369 points. Or... I did great! I wasn't planning to be on at all due to a family vacation, so any points above zero is a good thing.

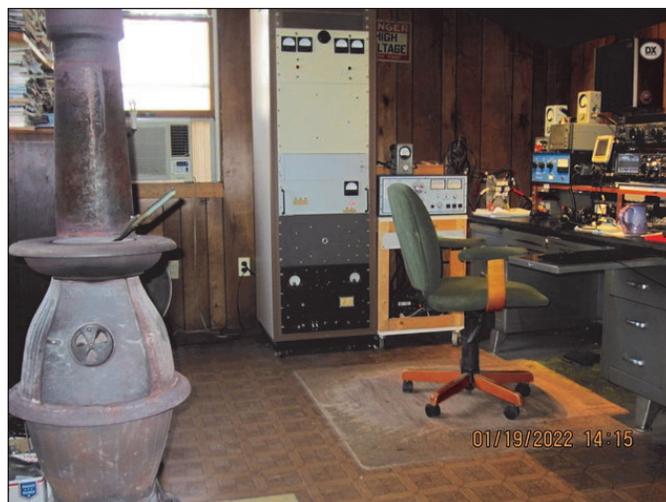
From Ray N3RG

My goal was to work as many Packrats as possible on VHF/UHF/MW using PH/CW and digital modes for grid multipliers only. I hear far too many complaints about the digital modes taking over the bands which didn't turn out to be true in my case. One problem is loss of participation by the bigger stations in the club and that's fine... everyone needs some time off! I only ran up to 10ghz with two stations this year but realize it takes a lot of extra effort to keep this stuff on the air! This year I tried to make as many skeds as possible and test with those stations before the contest and it paid off. I worked every station I was scheduled to work! I lost several contacts because my 2.3 GHz gear wasn't working properly and hope to have everything back in operation by the June contest. I realize we all will get to the point where we'll need a break but hopefully we'll return with some new guys to help out. I was pleased to see Bill Murphy back in the saddle again and hope to see a few more Packrats return to action next year. The rovers are to be commended but the only one I was able to work from more than one location was W3ICC/R and that

father and son team deserves a lot of credit for working through everything to get to the end! I didn't make it, I got sick and threw in the towel late Sunday afternoon. I lost my voice, ate dinner, took my medications and fell asleep in my easy chair. When I woke up it was over! One last thing, don't complain about the lack of activity on the bands... get on and make some noise!!

From Dave W2KV

I did 18.4K, about 2K less than last year. Mostly due to less Q's on 2 meters. A real bluebird was an FN11 on 2 and 432 at the end on Sunday night. I quit around 10 o'clock. I even did about 20 Q's on FT8 to show I'm not a complete luddite. Best DX was N1GC EM95 on 2 CW and KE8FD EN80 on 432 SSB. 2 meters had an intermittent TX that came and went. I traced it to a relay in the transverter which I could spray out and whack on it but I will have to pull the transverter out of the rack to fix it correctly. It wouldn't be a contest if something didn't break. Attached is a photo of the W2KV shack with the primary heat source, which was working overtime Saturday night and Sunday morning at 4 degrees!



From Dave W3KM

I have operated in the January Contest every year since 1973. I have seen poor propagation and good propagation. 2022 was average, no real openings to speak of. My shack is off the kitchen, so I try to operate so I don't disrupt the household. I spend most of the evening hours on CW with headphones or on WSJT. FT8, MSK144 and CW are where I get most of my grids. 22 grids on 6m and 27 on 2m. I did use

the WSJT QSY macro feature 5-6 times and it produced results 3 times. I have always had good results with the Contest dial Clock, but somehow it seems we have gotten away from using it.

From Al W9KXI

This was to be a contest very much smaller than I originally expected. Bullet points:

Saturday -

There was no contesting on Saturday as we visited with our older son, daughter-in-law and granddaughter. Their, unplanned, exposure to COVID prevented our getting together at Christmas. What can I say - 5 year olds are Fun.

Sunday -

- 6M...no problems. FT8 only because that's what I was hearing.
- 2M - the PTT line to the amplifier was broken... somewhere. This was the wrong time to go looking for where it was broken. FT8 became the mode of necessity and.."Yes Virginia, FT8 can be effective on 2M, from here in the valley of FN12ne, at only 40 watts."Oh!!! Lest I forget. The kitchen oven's element burned out 5 days ago. And then... Amazon delivered the replacement on Sunday!!!! Would't you know it! Can you guess who wanted to have the oven fixed ASAP?? Yup! You guessed correctly.
- 222 - The amplifier is still out for repair. Therefore less than 50 watts to a single yagi here.
- 432...no problems. I was busy enough on 6M that I did not spend an awful lot of time 432.
- 1296. One contact and just One word. EXHILARATION!! I was able to work my cousin Ron, WZ1V, 232 miles away, Q5 on CW. This... in spite of the hills that are between us. Both of us were running less than 50 watts to a single Looper.

I went QRT about 8pm on Sunday. My wife and I have been organizing for a trip. We leave for Florida, Texas and Arizona in just two days. Frankly, I needed the time to get some things in order. So: Disappointment, Frustration & Exhilaration

From John W3HMS

For me best contest ever in terms of score from a modest station. It is not on a hill nor with much height nor aluminum in the sky nor power.

All the gear worked well. I concentrated on 6M and 2M FT8 but was surprised with the number of stations whom I worked on 432 FT8. My #2 highlight was working VE in FT8 on 6,2 & 432. My #1 highlight was working K1RZ on 10 GHz snow scatter where the signal jumped around in frequency so that I had to follow it like bad drift to copy the CW. Had I not been using my IC 705 SDR with waterfall, it would have been the one that got away, HI!!.

From Paul WA3QPX

Not as good as last year. I had to lower the 2M tower due to rain and wind Sunday losing quite a few grids on 2M. Contacts are nice but need multipliers for a good score. M2 MXP28'S do not work well in rain. High vswr. I was still recovering from the flu. Worked N3RG six bands. He sounded terrible catching it at the beginning of contest and had to shut down early. 15,640 pts.

From Tom KA3FQS

I did about my average score for a January contest but would not have made this score without the help of Warren and his helper who replaced my defective rotator **the day before** the contest. Thank you Warren. It was nice to work N3NGE as a single op station as this allowed me to run the bands with Len, something that I don't always get to do when the station is run as a multi-op. NN3Q/R usually starts out at a location very close to my house so I get to run my eight bands with them. In the past I could run all of the bands with DRC but since Ed moved I can probably only hope to run him on the bottom four bands which I did. Phil, WA3NUF, can always be counted on to work all of my bands probably without even lining up our antennas. I am indebted to the efforts of Bob and Ray for their patience with me on the microwave bands and my nearly nonexistent CW skill. For some reason I did not work very many New England stations and the ones that I heard were not as strong as usual. Next contest I have to focus more on FM and on digital modes. It was a nice contest.

From Joe KC2TN

Score was up again this year by about 10K. Mostly due to FT8 on 6M. My split between SSB/CW and FT8 was 50%. Station was basically the same as last year with the Flex 6600, PG-XL Amp, KW on 2M, small 100w or less on the other bands.

From Alex KR1ST

I only dabbled a little in the contest to give out points. I spent less than an hour on FT8 and only looked for some DX. I get the impression that soon this will be a FT8 6 and 2m contest only. It's funny to see locals working locals on FT8. I wonder how many people used the new band switching feature in the WSJT-X software. It would be nice to hear their experience. Anyway, I had a lot of fun working folks on SSB and CW. I did not use the KST chat page, but did use the club's Slack page a little although that didn't net very many QSO's. The vast majority of the QSO's were made using the old fashioned way of calling CQ and rotating that big knob on the front of the radios. The conditions of Saturday were downright bad for me, but Sunday was much better. Thanks for all the Q's, and see you in the Spring Sprints! 10,794 pts.

From Phil WA3NUF

After a mediocre score in last year's VHF SS, I was determined to make improvements both in the hardware and contest operation of my station. I GPS locked the VHF / UHF transverters to make them rock stable for FT8 use. I checked and aligned the microwave bands after too many years of neglect. Most importantly, I made a conscious effort to spend more time on CW / SSB and less time on FT8. The results were worth the effort. I worked 60% of my contacts on analog and 40% FT8 and achieved my best score since WSJT took over the contest three years ago. Band conditions were generally good, but no significant openings touched eastern PA even though DX Maps indicated there were openings to the north and south of us. Many more stations were available on 222 and especially 432 FT8 this year which helped the QSO and grid counts. Too many operators still don't know how to configure or use WSJT in a VHF contest. It's getting better but more practice and a basic quick start guide is needed to get more operators up to speed. Many thanks to the rovers that braved the cold weather. I chased them for multi-band contacts in each grid. Spending more time on phone provided many more multi-band contacts. The higher band point score advantage still beats pounding out 1-point contacts. The contest ended early in the last hour as my antennas gradually iced up and the receiver noise slowly got quieter. Hope everyone had a good contest.

From Joe K1JT

It was fun, as always -- even though a 6m Yagi is the only antenna remaining on my tower, and my ACOM 1000 is already packed away for transport. My station is mostly disassembled; this will be my last contest from this QTH, where we have lived for more than 40 years. We're moving next month to an HOA-restricted townhouse that's more suitable for octogenarians. There's always remote operation, and I'm exploring possibilities...

From Lenny W2BVH

It was a fun contest (very few aren't). It started out slow and I wondered how I'd even get close to last years Q count. I didn't, but I wasn't that far off as I thought I'd be.. These contests are like potato chips: "maybe just one more Q" ;-). Q's were about evenly divided between FT8 and Phone/CW. I had fewer 2.3 GHz Q's than I would have liked since they yield many more points, but the 4 I had did give me 4 grids. Sorry to have missed W2SJ on 2.3 but so it goes. My 7 band run with K1RZ went quicker and easier than it normally does. He's usually S1 or 2 on 2.3 and this year he was S5 the whole time and that's at a distance of 180 mi ... and I'm "shooting through the trees" at my end, with the antenna at around 35 ft.. I'm slowing down a bit as time goes on and I ended up having a couple of 1/2 hour chats on 2M and 432 right in the middle of the 'test. But it made it more fun — if not more productive. My 2 Meter amp had the plate current jumping around a bit late on Sunday. I'll have to figure out why. It could have been the rain/snow or maybe the 4CX250's are worn out. If I have to change the tubes it's not going to be an easy job. Joe's new macro feature in WSJT-X worked well: I decided to try and move WZ1V to 6M phone from 2M FT8, never having used the macro feature, when I discovered that the macro's are not pre-entered in the WSJT setup. It took me 3-5 minutes to figure out where to enter it. I figured by then WZ1V would be long gone, but tried it anyway. And it worked. We did a 6 band run. Needless to say the macro feature will be getting a more rigorous workout in the future. Next time I'm going to try and use the contest clock more. Also, I think we ought to settle on a default qso coordination/assistance method in the future (maybe Slack?). Thanks to Mike N2DEQ for chairing the contest committee. Getting everyone organized is probably like herding cats, but it pays off. 16K+ pts.

From Dave K1RZ

Stayed on SSB/CW calling CQ's TOOO long. I did very little FT8 compared to what is needed today. Lesson Learned. Moving forward now to June - somewhat different philosophy: Maximize FT8, with strategic interludes to SSB/CW increased reliance on assisted Inputs from texting, cell phone, KST, others... Special Note: "No (Animals) Amplifiers were harmed during this production". Two years ago I burned two amps due to Ice /high SWR. Took a year to recover. I was iced out the last 4.5 hours. [Turned ALL Bird 43 Slugs to Reverse after started snowing at 2pm]. Anyway, I Worked some amazing contacts for January. Matt KU4XO EM84 670 km on 432. Mike KK4MA EM93 679 km on 144 and 432. Ray VE3FN FN25 695 km on 144 and 432. Very unusual. Contacts like these kept it really interesting throughout. Lots of Rovers out: Marco KD3PD, Scott KO4ARL, Jerry KN4SYO, Gil KM4OZH, Kevin W8BRY, Michael KG4Y, Drex & Paul W3ICC, Jarred KF2MR and Russ & Al NN3Q. Everyone in the contest really appreciates the point that it was really cold out there, and you were all out there. Many, many thanks to all of you. 145,068 pts.

From George N2CG

I participated the 2022 ARRL VHF January Contest on 6m, 2m, and 70cm operating only on digital FT8 mode. Having a limited amount of time to work in the contest I managed to work 40 QSOs on 6m, 25 QSOs on 2m and only 6 QSOs on 70cm. I guess 6 QSOs on 70cm is better than 2 QSOs which I had in the last VHF contest. If I remember correctly, several years ago prior to the beginning of a VHF contest our club would provide a document that looked like a clock (I'll call it a Contest Operating Time Clock for lack of what I remember it actually was called) that covered the entire 33 hours of the contest and indicates suggested time segments when to operate on particular bands and modes. I don't know what ever happened to this "contest operating time clock", but I would like to see a new form of this "clock" rejuvenated and in addition to SSB and CW modes; add suggested times and bands/frequencies for operating on FT8 and FT4 digital modes and perhaps other WSJT digital modes. This "contest operating time clock" is even more important and useful for operating on the UHF and higher bands. For example, in the last three VHF contests when I went on 70cm and started calling

"CQ TEST" on FT8 mode, I basically found myself operating on what seemed like a "dead band" with no one answering me. However, the 70cm band was NOT dead because while simultaneously transmitting; the PSK Reporter Website was indicating my 70cm signal was actually being received in nearby and adjacent grids! So having a rejuvenated "contest operating time clock" with the inclusion of digital modes FT8, FT4 (and possibly other WSJT digital modes) will give fellow 'Rats a greater opportunity to increase their contest scores especially on the UHF and higher bands.

WM2XCS 8m Experimental Band CW Beacon Recently Activated

A few months ago the FCC granted me a two year 8m band (40.660 to 40.700 MHz) experimental license with the call sign WM2XCS. I'm allowed to transmit CW, SSB, FT8 and WSPR modes with a maximum power of 150 Watts ERP from my home QTH.

Last week I started operating. WM2XCS has a CW beacon at 12 WPM on 40.685 MHz. The power output is 10 Watts into a 8m 5/8 wave vertical antenna and transmits from ~ 8 AM to ~ 7 PM daily. The CW message takes 50 seconds to send followed by 60 seconds off time and then the cycle repeats.

I would appreciate receiving signal reports which you can send to me at my email address n2cg@verizon.net . I am particularly interested in the frequency accuracy, stability and signal tone. A few local hams have already monitored my 2nd and 3rd harmonic frequencies and informed me of not hearing anything which I'm very glad to hear.

Thanks and 73,

George N2CG/WM2XCS

For those of you interested in [antenna modeling software](#), it was just announced that the creator of EZNEC is retiring and has decided to stop selling his software, but is making it available for FREE! EZNEC Antenna Software by W7EL

<https://www.eznec.com/>

73 Rick, **W2JAZ**

Sent to Cheese Bits by Bob W2SJ

W3ICC/R CONTEST REPORT

Observations and problems of a rover

Having successfully solved a series of problems experienced during the June and September contests, and with everything checking OK, I was convinced that we would perform much better during the January contest.

On Friday, the afternoon of New Year's Eve, I took the rover to the hill top to run air checks with N3RG. When I powered up, smoke poured out from behind the fuse panel. I killed the power and as Ray patiently waited for me to show up on frequency, I examined everything I could think might have smoked. Finding no charred wires, and with everything looking normal, I started the generator and raised the mast. Holding my breath, I hesitantly turned the DC power on. Everything looked normal, so we continued the air checks. With good power out, no reflected power and good signal reports, on the lower four, I thanked Ray and took the rover home.

New Year's day, my partner Paul W2PED came over and tested the MW. The weather was cloudy and cold, in the 20's. 1296 and 2304 received OK from our weak signal source, but 2304 had no Tx Power Out. It's no fun working on top of the rover in the cold, and when he opened the door of the equipment enclosure, **water ran out**. 24 volts feeds the antenna relay and an Astron mast-top DC-DC converter to provide regulated 12 volts to the microwave equipment. The voltage out was low, apparently due to the cold. Using the heat gun on the converter raised the output somewhat, but we still had no Tx. Paul took the MW package home to dry out and troubleshoot on his bench.

Monday, while on top of the rover, I spotted the red and black twisted pair which carries 24V to the top, crimped between segments of the nested antenna mast. Thus the cause of the smoke. Supports for the rotor loop had degraded and broken over time, allowing the cable to chafe on the mast. Too cold and dark to correct, I spent most of the next day reconstructing the rotor loop.

Tuesday Paul ordered a TRC DC-DC converter, (24V-12V 12A), an improvement over the Astron with higher current out and improved cold weather specs. I picked it up in Doylestown, and ran it over to Paul's workplace, and he took it home and mounted it on a new enclosure door.

Thursday Paul mounted the new door with the new converter, and hooked up the microwave package. Microwave air checks with Ray were successful.

The morning of the contest, it looked like everything was in order, so we set out for FM29bx. Luckily, there were few cars in the National Guard parking lot so we set up to operate, and didn't get chased out this time. Not long into the contest, the 120VAC inverter went dead. Losing the rotor, video monitor and lap top chargers caused some hasty reconfiguring of the power source, bypassing a suspected defective booster. Luckily the use of power pole connectors allowed rapid change to power the inverter directly from the battery.

Moving on to FM19wx, operation returned to normal until we were no longer working stations on 222 that had good signals on the other bands. I found high reflected power while it had been negligible at home. I spotted the coax pulled out of the connector at the relay.

We finished the evening at FN10xc, working familiar calls without the benefit of the 222 band.

Sunday morning I discovered that I had crossed the 222 coax with the rotor control cable while I was rebuilding the rotor loop. As the antennas turned through and beyond the 360 degrees rotation, the coax

pulled out of the connector. Lucky for us, the rotor control cable won the tug-of-war. The morning was spent fighting a new N connector onto the 222 coax. Did I mention it was cold? Getting a late start, we had to deviate from our published schedule. No time was left to operate from the grange.

The weather forecast was for a nor'easter storm coming on shore with winds increasing as the day wore on. Again we decided to deviate from our published schedule and proceed to Sea Bright, right at the surf. FN30ai was productive, but less stations than previous visits yielded disappointing results. Basically, the stations we texted were worked. The wind got heavy as predicted and rain began as we departed Sea Bright.

To work some of the die-hard Packrats we hadn't worked from Lancaster FM29bx on Saturday, we spent the time driving to FM29vx Tom's River. The electrical noise was bad with S meter full scale and band conditions were lousy. By now the wind and rain were very heavy.

Since we had not operated in FN20, we proceeded to Paul's home, FN20se to finish out the remaining contest. We arrived about 2115. While backing up to turn the rover and its antennas north, we heard an unusual noise. Still raining, with deep puddles everywhere, Paul jumped out to find the 1296 loop yagi with one end on the ground behind the rover. While some loops were no longer round and at right angles to the mast, it was still reasonably intact. Using zip ties and tape he jury rigged it back in place and somewhat aligned with the antenna above it. By now, the radio batteries were tired and would kick down to 10V on Tx peaks.

Our score was only half of our best. We determined that many of the repairs and improvements that must be made will wait until the weather gets nice. The new TO DO list is longer than ever. Still, roving is a kick when we're working lots of stations, and it can only get better next time.

73, Drex **W3ICC**

NN3Q/R JANUARY 2022 CONTEST ROVE REPORT

Many thanks out there for all the stations we worked from FN20, FN10, FM29, and FM19, and those that we missed. Russ and I had a fun rove despite the downright cold and wind. Great to work AF1T in FN43, from FM19xx, our "rural" stop surrounded by Amish homesteads, horse and buggies. Thank you Dale.

We had many great microwave contacts some with a number of strong signal reports and some that were marginal but workable. Most of the weekend saw the upper microwaves not existing over long paths, or deep QSB to hinder the QSO. Our FN20 site in Montgomeryville, did not yield any 3, 5, or 10 GHz points from New England. Maybe next year Jeff, K1TEO.

We knew it would be chilly for the weekend rove with mostly dry roads, but never expected what happened Sunday morning. Saturday went well activating FN20if, and FN10xi as per our plan. The 10 band rover was parked awaiting the morning.

It was a cold and gray Sunday morning when I stepped outside to start the rover van, really cold I thought as I turned the key to start the Ford van. I hurried to get back in the house to warm up and also let the van do the same. Fifteen minutes later I returned to the van to fire up the circuit breakers putting power to the laptops, and radios. Returning to the house I saw Russ, NN3Q coming in the driveway. After about ten minutes I returned to the van. Russ was already sitting at the console and working through a

NN3Q/R cont'd
problem.

A rover van's ambition in life is to keep you busy with many of the onboard systems, and antenna hardware. Today would be no different. The radio we use for the lower four bands did not want to start but the frozen K3 was a real surprise. Powering the K3 seemed to give every indication it wanted to fire up but instead went into transmit mode. WHOOPS! Meanwhile the micro K3 was fully responsive. I dialed up the internal temperature sensor and Yikes, -9C!

Heat was the solution but the rover van was as cold as the K3. The heat gun immediately came to mind. A great tool to have when you have to heat up shrink wrap and unfreeze K3's.

On site operations went well. Our only issue was the time we had to be out of the van to raise and lower the antennas masts. We did feel the SSB/CW activity on the lower four has been compromised by FT8 and subsequently has lowered the number of available workable stations. Fewer and fewer 10 band fixed stations are available to work so again this is cutting into our scoring.

Our final score will be a little above 27,000 points, activating 4 grids and outrunning the Sunday snow storm getting back to the home QTH one half hour before flurries were falling from the sky.

73 to All de **NN3Q** Russ, and **K3WGR** Allen

N2NT Contest Report

Between Christmas and New Year's, we checked status of the N2NT VHF/UHF station. Everything looked good, except high SWR on 2 meters, which tripped out the trusty Larcen amp. A quick scan with an AIM-4170 in TDR mode told us the problem was at the antenna. Andy climbed the tower and isolated the issue to the lower antenna of the stack. We lowered that antenna and its feedline to the ground. While up the tower, another problem was found. The EMOTO rotor shelf needed to be replaced and re-drilled. The 2 meter stack is on a mast that also has 40, 20 and 10 meter HF yagis!

Less than a week later, we had the antenna fixed (new feedline) and the parts to replace the rotator shelf. Luckily, there was some mild (for January) weather and Andy was able to fix everything before the contest.

Peter, WW2Y, and I really enjoyed the contest. Conventional SSB and CW kept us busy for the first several hours. Peter especially gets a workout moving between 6/222/432 from one radio. Didn't spend much time on FT8 until late the first night. Bands seemed good to the west most of the time. We even had some VE3's call in on 432 SSB, which is not normal. The first day/night, Andy operated the NAQP CW while we did VHF. Wish there wasn't a conflict. 6m opened to W4 (AL/FL/GA) for a little bit Sunday, but it didn't last long and signals never got very strong, except a half hour around 1700Z. I doubt we would have made this many QSOs without FT8. Lots of really weak stuff on 6 and 2. Wave's of "DX" decodes popped up on 6M FT8 all day on Sunday. Don't know what that is -- brief (minutes) periods of sporadic E? Strong local signals make it hard to squeeze the digital stuff into 3 kHz and still decode the weak ones. As SDRs become the norm, I think we should learn to spread out a bit more instead of cramming it all into the bandwidth of an SSB channel. WSJT-X can decode 5 kHz at once. Why don't we at least start there?

Thanks for all the QSOs and thanks to the rovers, which were out in some really cold WX!

73, John, **N2NC**, for the N2NT VHF team

WX3K Contest Op

Life kind of handed me the entire weekend for the 2022 January VHF contest. I did announce my intentions on operating the contest to a few folks on the reflector. I did not update the database like I should have. Ok, you can yell at me for that.

The ice that had accumulated on my antennas earlier in the week had melted off by Saturday. Great ! The weather was just too COLD that weekend to do anything else but sit in a cozy shack and operate.

I was a little behind in updating logging programs and WSJT. I also wanted to setup my voice memories in case I did some SSB during the weekend too. Friday night, Saturday morning and early Saturday afternoon was quickly consumed by software updates and last minute setup. My station was a little disjointed again because I had the odd 222 transverter station using my KX3 with the other fully interfaced rigs. What would I do when I ran 222 ? Well, it took a while, but I got used to switching COM ports as I QSYed there and back to the other rig for 144 and 432. It was a rather disjointed way to handle things but I had little choice.

I was ready to dig in and get going by 3pm, a later start but at least I was ready. The first couple of runs of the bands made me chuckle as I swapped headphones and COM ports back and forth from rig to rig. I was laughing at myself and this was a good thing. Six meters showed a couple of brief openings and I managed to snag some additional grids here and there.

I tried to make a better effort of working the rovers. I reached out to one rover via text a couple times on Saturday because I heard them in their grid but got no response back. Not sure why. When I tried to text them again on Sunday, I got a ALL CAPS text response, WORKING SSB NOW AND RUNNING. OK got that. I shared my 6 digit grid square but we just never worked each other. The other rover I texted, we did run the bands and that was good ! At least I worked one as best I could.

Ran into a number of folks on SSB. Bill W0RSJ and Alex KR1ST and I ran the bands too on SSB. Also Ed WA3DRC and I ran the bands. I eventually found W3KM, W2KV, KB1JEY, K3JJZ, KA3FQS, and K1TEO to add to the band runs for my log. I tried some off the cuff SSB calls on 6 and 2 meters. Got texted by N2NT and we ran the bands. More folks need to text me and I certainly tried to text others but sometimes there was no response.

I was determined to use my nicely recorded voice memories. I was pleased as I got several calls in a relative short period of time on SSB. I really enjoyed that. Wow, I miss the rapid fire SSB contacts.

I managed to snag a number of CW contacts also. Now that is when things are fun for me. Lots of good CW contacts all in a row. Later on Sunday I signed into ON4KST to check out some possible contact action. I managed to work N8LRG in EN80 on 432 ! That was cool. I tried to pick up others on ON4KST but I guess they were too busy making other contacts.

My tally for the contest was 133 Qs, 44 grids working out to a score of 6776. Not too shabby. All in all, this January contest weekend was fun to operate with minimal equipment issues.

Stephanie **WX3K**

There are an interesting series of YouTube videos showing how some enthusiasts were given an opportunity to revive the S-Band Transponder and Power Amplifier used in the Apollo Command module to relay video from the Moon to Earth. First installment at <https://youtu.be/v49ucdZcx9s> Very technical, but fascinating. —**W2BVH**

Radiolyubitel -Here's a soviet tv "advertisement" for ham radio made during the cold war era:

https://www.instagram.com/tv/CYXKNO8g-KW/?utm_medium=copy_link

Sent to Cheese Bits by Dave **W2KV**

K1TEO Contest Report

In the days before the contest my noise issues were really bad on 2 and to a slightly lesser extent on 6. With very cold temps and high winds expected during the contest (it was 1 deg Sunday AM) I anticipated very difficult operating condx. That was correct as on Saturday my noise was s7 and higher in all directions on 2. For a couple of hours Sunday morning it dropped to about s5 to the NE while remaining high elsewhere. It went back up by mid-Sunday morning making me a real alligator on 2 and was almost as bad on 6.

All of this made operating 6 and 2M ssb/cw really frustrating. At least on FT8 the computer either decoded or not, making it a little less frustrating, though obviously I could be heard better than I could receive there too. We need 6 and 2 meter beverage ants, hi! I spent more time on FT 8 this time because it was less frustrating and in the end 70% of my 6M Q's and almost 50% of my 2M Q's were on that mode.

Condx were so-so throughout but seemed well below average on 3, 5 and 10 G. 902 and 1296 and to some extent 2304 seemed to be typical microwave condx for January. Many times stations difficult to work on 2M because of noise were easy copy on 222 - 2304 because noise was not an issue.

On Saturday we had very limited Es for a few minutes to Florida. I could see on FT8 the guys SW and W of me working lots of Es. I must have been right on the edge as once in awhile stations I could see working would pop in for me. W5PR was in for awhile as was K5QE but I never worked them despite repeated calls. MS condx Saturday night were pretty good on 6 which helped the grid total. Sunday mid day there was some more Es to Florida. I actually worked about a half dozen stations on SSB that were loud. My XYL needed some help so I stepped out and when I came back 15 minutes later it was gone.

Like others I had numerous stations 600 - 1200 miles away call on 6M FT8. Some were no doubt MS but others were probably brief Es. I have an awful lot of unworked grids that called and we weren't able to complete.

The gear worked fine until mid afternoon Sunday. Then my keyer stopped working and it took a half hour to find the problem. Then the 3456 amp wouldn't key and since it's tower mounted there wasn't anything I could do about it. Next a fuse blew on the 432 amp supply and it was a bear to remove since it seemed to be welded into the fuse holder. It was a relief when everything worked fine once the fuse was replaced. All of this in about 2 hours.

Once it started to snow Sunday evening my 222 antenna became unusable with a very hi swr. All the other antennas worked fine except the M2 on 222. I thought it might be a feedline issue but when the temperature went above freezing Monday morning everything was fine.

Tnx for the Q's and Cu next time. Jeff **K1TEO**

Moving DEMI 3.4 GHz Transverter Frequency

I asked Steve Kostro of Down East Microwave, about moving the DEMI transverters from 3456 MHz to 3400 MHz, IF this is where the amateur radio community is moving to. Here's what he had to say:

Yes, They can be moved and it is our busy work now.
Yes, 3400 looks like where we are heading.
You can pass this around.

<http://01895fa.netsolhost.com/PDF/DN038.pdf>

<http://01895fa.netsolhost.com/PDF/DN039.pdf>

<http://01895fa.netsolhost.com/PDF/DN040.pdf>

All found on our website in the "Design Note" section. Warren **WB2ONA**

NO TEARS JANUARY VHF CONTESTING FROM FLORIDA-N4BRF

Rick K1DS EL96

George WA2VNV and I are members of the Boca Raton ARA and we have a neat VHF station at the clubhouse. Together we operated the contest on 5 bands and amassed a score of 190 Q-pts x 71 Mults = 13,490. The main score was derived from 111 6m contacts and 56 grids, 90% of which were via FT8 and the rest on SSB when the conditions seemed favorable to the Midwest. One of the highlights of the weekend during the opening on Saturday night to the northeast, was putting 3 Packrats in the log: K1TEO, N3FTI and N3RG all using digital on 6M. Another exciting moment was a contact with XE2KK in DL96. We have very little VHF activity in south Florida and QSOs on 144, 222, 432 and 1296 were few and far between. Despite having over 100 club members here, only a handful made contact with the club station on whatever bands they had—mostly 2M FM.



The club station is housed in a 60' trailer in a public park in Boca Raton. The grounds of the club including the towers and antennas are enclosed in a chain-link fence. The park is huge and also has areas for overnight camping by permit, Frisbee, golf, RC planes, boats, cars and trucks and general biking and hiking areas. It was also used when they were distributing Covid testing kits as there are paved roads throughout.

The VHF station is a collection of radios, amplifiers and transverters that were acquired over the years and maintained by WA2VNV. Most recently, the IC-706 that was used for 6m appeared to have a problem, so I used my TS2000, computer and RigBlaster Nomic to fill in. The tower is 40' and has decent beams for those 5 bands and a discone atop it all for the local FM contacts. I operated the 6M position while George manned all the other bands—144, 222, 432 and 1296. Everything operated well without any hiccups or glitches. We shed no tears, and made the highest score for the past few years for the BRARA (N4BRF) club (although George was only single-op in the past).



MIDWESTERN 10 GHZ BEACON PROJECT

This article by Mike KA8ABR is from the current issue of “Anomalous Propagation” the newsletter of the Mid-West VHF/UHF Society (MVUS). Used with permission. A good description of the good and bad things that can happen when getting 3 cm and up projects built and deployed.. Thanks Mike! —W2BVH

In early 2020, Mike, KA8ABR purchased a derelict AT&T Long Lines microwave site located west of the city of Hamilton in southwestern Ohio. Constructed in the early to mid 60s, the site includes a spacious reinforced concrete, single story building and a rather stout tower that is 120 feet tall at the upper work platform. During its operational days, the building contained lots of C and Ku band microwave transmitters and receivers used to provide long distance telephone communication for the Bell System network. The tower supported four large, enclosed horns that were aimed at adjacent stations. The site was called “Shandon” after a nearby town that lies along the boresight of the westerly aimed horns, and it connected a site to the west in Lawrenceburg, Indiana with a site called Blue Ball located to the east of the Shandon site.



View of the building and tower at the former AT&T Long Lines Shandon site. The tower is 120 feet tall to the top work platform and the building measures 55 by 55 feet. The beacon is located on the left side of the tower in this view, on the top platform.

These stations in chains like the one described above were constructed to provide continued telephone communication in the event of nuclear war taking out telephone exchanges in larger cities, and they operated into the early 80s when fiber optics took over the Long Lines function on the Bell System network. The sites were eventually sold as surplus, and many were incorporated into the new cellular telephone networks or used for commercial two-way radio service. With the advent of internet and mobile telephone service, many sites became obsolete a second time, and some have fallen into the hands of amateur radio operators. A few sites still retain their horn antennas, but many, like the Shandon site, have been stripped of many items for scrap, including the horns. If you see horns on the tower, the site is probably still being used for cellular telephone or two-way radio service. All sites lost the waveguide that fed the horns when copper prices exploded on the run up to the financial issues in 2008. A fortune in copper once hung on every AT&T tower.

The Shandon site was purchased from a ham who is active on HF and who used the site as a remote since he lived in Cincinnati. Mike and Jim, N8ECI, helped this amateur keep the station on the air by maintaining the fan dipole used on HF and shepherding the internet connection that allows remote operation. Since

Jim and I are interested in VHF/UHF and microwave operation, we immediately began to discuss methods to use the site to support the higher end of amateur operation. One idea that germinated quickly was to install a 10 GHz beacon on the tower to promote activity on the band by providing a live, on the air signal for locals and a propagation indicator for more distant amateurs.

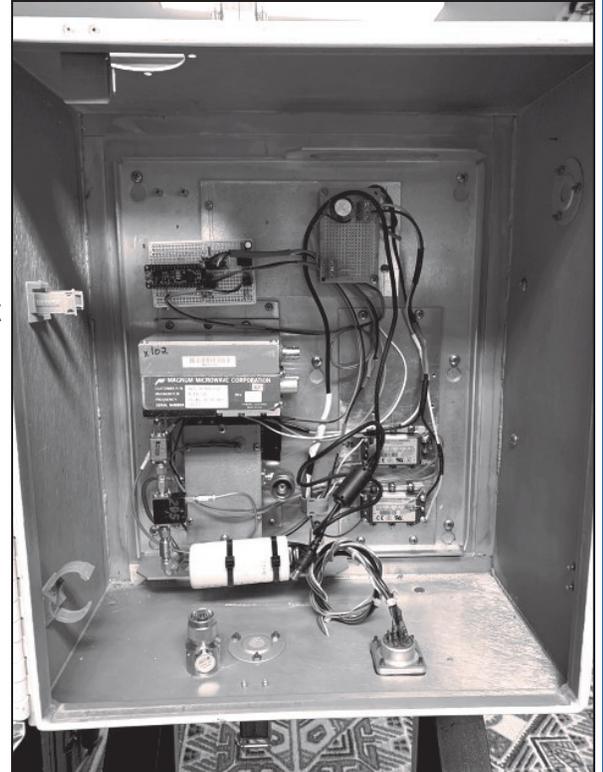
Our original plan would have seen the electronics and microwave components being snugly situated in the building on the site, so a length of EW90 elliptical waveguide was procured to feed the microwaves to an antenna on the tower. In years past, Jim had machined a section of WR90 waveguide into a slot antenna, and it was available for use with the beacon. The elliptical waveguide had once been used on a Ku band telephone system set up between local offices of a Cincinnati industrial outfit, but it had been stored out of service for quite a few years. During that time, moisture had entered the waveguide and accumulation had led to a bulge in one portion of the line due to freezing. That section was cut out, leaving two lengths of waveguide. The longer section looked good, so Andrews fittings were attached and about 75 feet of the waveguide was installed on the tower.

Corrosion had been noticed in portions of the waveguide, so the shorter section was tested to determine if it was lossy. Unfortunately, the waveguide would not pass microwaves at 10 GHz! Theorizing that the corrosion was an issue, muriatic acid was used to clean the inside and remove the corrosion. The line was then flushed thoroughly with tap water, and a wire fishtape was run through to ensure that no lossy material was stuck inside. Denatured alcohol was then flushed through the waveguide to remove water, and this was blown out using a leaf blower. Setting up for testing again, the waveguide still would not transmit microwaves! The line was swept from 8 to 12 GHz, but the reflection was very similar on any portion of that band. Strange! After trying four methods of testing the waveguide, Jim and I had to give up and arrange an audience with the Guru of Microwaves in Morehead, Kentucky.

Traveling to Kentucky over the Thanksgiving weekend, unfortunately, even the Guru (Jeff Kruth, WA3ZKR) was also stumped over why the commercial waveguide, that readily accepted Andrews fittings, would not transmit microwaves. This waveguide was branded "Flexwell", and even a ten-foot section exhibited no ability to transmit microwaves through its length. A great mystery!

Methods tried in Cincinnati and Morehead included measurement with power meters, square law detectors and spectrum analyzer, slotted line attenuator and vector network analyzer. We felt that a thorough assault had been mounted against this problem, but the issue remains. Since the waveguide was not usable, the long section was removed from the tower and another plan of attack was concocted.

Without waveguide, the lion's share of the equipment would have to be mounted at the top of the tower, with power and any reference signals being fed to the beacon electronics. I had the large commercial enclosure left over from the 10 GHz "White Box" project initiated by the MVUS (Midwest VHF/UHF Society) in our area over 20 years ago, so that was used to weatherproof the electronics. Jim built up a structure to hold the enclosure using material salvaged from the destruction of the transmitters at the defunct VOA short wave station near Cincinnati, and he



A look inside the former "White Box" enclosure showing the various components described in the text. Not all the wiring and plumbing is installed in this view.

configured the aperture on the white box to receive the antenna and waveguide adapter hardware.

The beacon is on 10368.325 MHz and the "ground segment" consists of an HP Z3801 GPS disciplined oscillator (from cellular telephone service) feeding a 10 MHz stable reference signal to a PTS250 synthesizer followed by a small gain block to overcome VHF feedline loss. The power supply, 24Volts DC, plus the 101,650,245.1 CPS reference signal from the PTS250 are fed via 250 feet of LMR400 coax to the top of the tower. The equipment box contains a modified PLO (Phase Lock Oscillator) brick followed by an isolator, then an absorptive PIN diode switch, a 3dB pad and finally a 3W DEMI (Down East Microwave) amplifier. The antenna is a 32 slot waveguide antenna (16 slots on each broad face) made from a piece of WR90 with a CNC mill being used to cut the slots. There is a three-screw tuning section at the input of the antenna and the antenna's slots are covered with Kapton tape. An adjustable back short was temporarily used at the end of the waveguide and once the best length was found using S11 on a network analyzer, a brass plug was then machined and permanently soldered into the end of the antenna. All of the tune-up with the back short and tuning screws was done with an HP 8510 Vector Network Analyzer.

The keyer is an Arduino microprocessor board that Jim had sitting around. The transmitted message is "KA8ABR/B EM79pi" followed by 15 seconds of carrier. Every fifth message contains a couple of temperatures - one being the ambient temperature inside the box and the other the temperature measured from a sensor glued to the top of the DEMI PA case; this "verbose" message is "KA8ABR/B EM79pi66 T1 <temp1 T2 <temp2 10368.325" and then 15 seconds of carrier is sent. The keyer monitors the phase lock status output from the PLO brick and if lock is lost then the PIN switch will be held in absorptive state in order to avoid spewing spurious signals across the band while the brick searches around trying to lock its PLL.

The 24VDC sent up the coax is extracted via a homebrew bias tee and connected to two Vicor DC-DC converters configured to provide -20VDC to the brick and 13.8VDC for the keyer and other future loads inside the enclosure.

Jim assembled the whole system rather quickly, and the enclosure was promptly hoisted to the top of the tower and mounted to the hand railing around the work platform on December 15th 2021. The LMR400 coax was run up a tower leg and secured, and the antenna was installed on the enclosure. The PTS250 synthesizer was set up in a rack inside the building, and it was connected to the reference signal coming from the Z3801. The first attempt to get the beacon on the air was not successful, because Jim determined that there was not enough drive level for the reference signal at the PLO. Adding a gain block to the feed end of the coax in the building promptly brought the beacon on the air once the PLO brick locked up and enabled the PIN switch.

Jim was able to monitor the beacon using a DEMI 10 GHz transceiving converter feeding an Icom IC-705, and the signal around the site was very strong. On our way back to Jim's QTH after leaving the site, we stopped at several locations to check the signal strength. The beacon was booming in wherever we



This photo shows the beacon enclosure installed on the top work platform of the tower. The enclosure mount is strapped to the railing, and the LMR400 feedline carrying the 100 MHz reference signal and DC power to the enclosure can be seen lower left. The slot antenna extends out of the top of the enclosure, clear of the railing via various fittings and adapters. Since this photo was taken, a plastic pressurization line was fitted to the AT&T waveguide adapter between the enclosure and slot array to keep moisture out of the antenna and plumbing.

stopped, and it could be heard on a pyramidal horn, flat panel radar phased array and a couple of small, central focus dishes with shepherd's hook feeds. I had purchased a waveguide-feed 10GHz preamplifier from DB6NT for the EME project at WC8VOA on the site of the defunct VOA station, and it was used to bring the signal to immense levels.

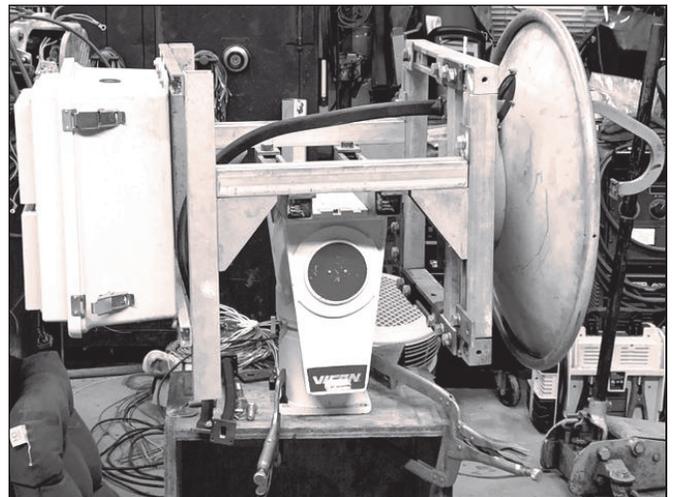
Jim's QTH is about 13 miles straight line distance from the site, yet the beacon came in loudly on the direct path as well as along reflection paths from buildings and towers in the area. Everything was working well, and the temperature telemetry indicated that the amplifier was staying cool. Gedas, W8BYA near Ft. Wayne, Indiana, could hear the beacon clearly on the direct path, even though he is behind high ground near Lynn, Indiana.

Of course, all good things come to an end. A day and a half after the beacon went on the air, rain passed through the area, and the beacon promptly fell to a rather weak silence. The enclosure was removed from the tower, and Jim found that water had invaded the waveguide between the antenna and the inside of the enclosure. This created a rather large attenuation, on the order of 13 db, essentially knocking the beacon off the air.

The water apparently entered the system at a homemade flange in the waveguide plumbing, so the sealing in the area was improved and we decided to apply pressurization to the waveguide and antenna at the enclosure. Plastic tubing was run up the tower and attached between a pressurization port on an AT&T waveguide adapter near the antenna, and a commercial air-drying compressor set up in the building. An old portable air tank was used as a reservoir, and a simple light timer was used to control and limit operation of the compressor in case a large leak develops. The pressure drops rather slowly over time, so the compressor is enabled for a half hour every day so it can restore system pressure. If a large leak develops, the compressor will only run for a half an hour maximum per day, so it should not burn up before the leak is discovered. System pressure in the waveguide and antenna is held at about six inches of water column by a small propane regulator rescued from a scrapped barbeque grill.

As of this writing in mid-January of 2022, the beacon is on the air, but it appears and disappears due to an unknown problem that we are still trying to discover. We think the PLO is losing lock due to low signal levels coming up the coax from the synthesizer, but the search continues. The building is not heated, so the temperature inside does vary, but slowly due to the thermal mass of the concrete structure. More gain will be added to the reference signal source to increase its level at the PLO.

Jim and I hope that the beacon will encourage more activity in the Midwest. Jim is already constructing a movable antenna system that we will install on the tower, so we can make two-way contacts from the site and possibly by remote control in the future. A small central-focus dish fed with a shepherd's hook will be moved by a hefty pan-tilt stand that once held a closed-circuit TV camera in a weatherproof enclosure. The enclosure on the back of the assembly will contain whatever needs to be near the feed to minimize loss and operate the mount.

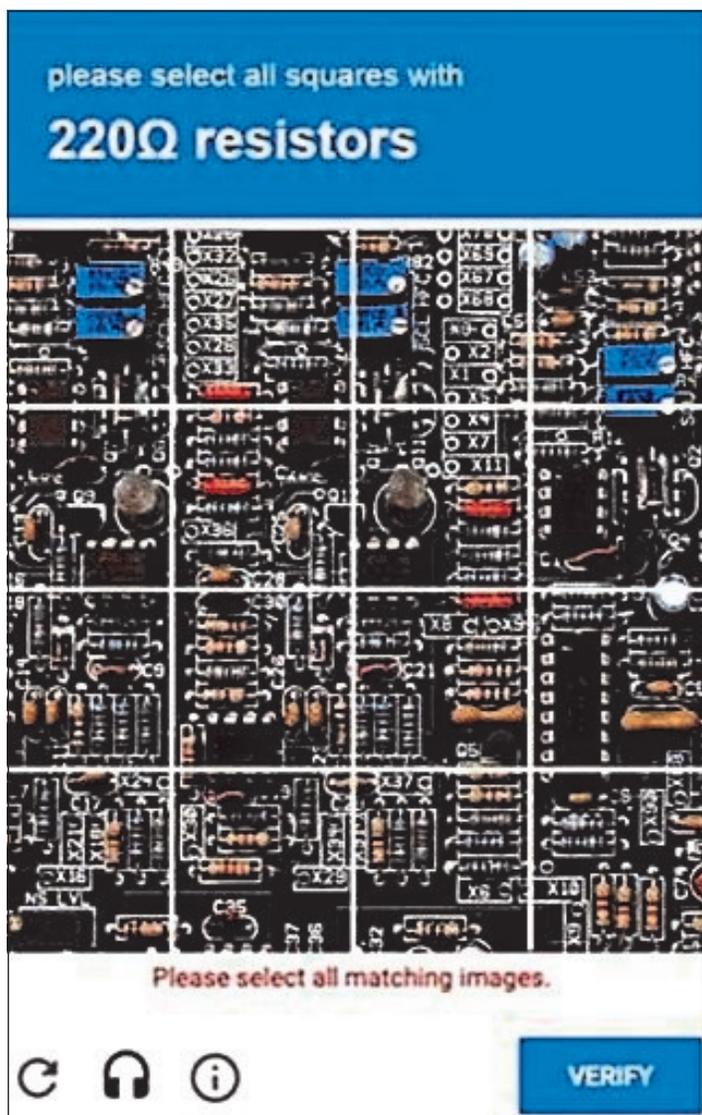


The next project is this small dish mounted on a heavy pan-tilt stand once used for a large security CCTV camera. The box on the left will contain the electronics and it is being fed by a flexible waveguide that connects to the shepherd's hook feed on the dish. The system will be operated remotely from the ground and eventually possibly via the internet. After checkout at ground and building roof level, the assembly will be installed on top of the tower.

The beacon has a good signal to the east, and we'll be aiming directional antennas that way this spring and summer, so we hope to work some Packrats when conditions pick up. Mike **KA8ABR** murph77@fiolxhilde.com, Jim **N8ECI** jmiller@jcmco.com



VA3ELE 47 GHz rig set up on Lake Ontario January 7th 2022. Brrrr!
Sent to Cheese Bits by Warren **WB2ONA**



This is what a webpage Robot test would look like if it was designed by an electrical engineer.
Sent to Cheese Bits by Phil **WA3NUF**

Food for Thought

Here are some bullet points from Mike's N2DEQ PowerPoint presentation at the contest wrap up meeting. Plenty of other opinions expressed, but this is a good jumping off point for future discussions.

- What can we do as a club to improve our score or at least maintain where we are?
- It's no secret that our club is aging which will lead to less participation. We must continue to search for younger talent to add to our club.
- We must adapt to changing technology, not complain about the old days. Digital modes are here to stay. Get used to it and make technology an advantage not a disadvantage. Learn the new tools and use them. Get smarter!
- Because of FT8, its more important than ever to make schedules, make as many as you can to insure you run the bands with club members. Make sure you can use the macro capability in WSJT-X to get other club members to move to SSB so as to run the bands with them.
- We must get as many members as possible to participate. The more logs, the more points!
- Stay in your seats. We are a contest club, spend the time!

Tropo Scatterings

By Jerome Byrd K3GNC

January 2022 VHF Contest Report and Observations

I told my tale of woe at the last general meeting, so I will be brief. Trying to operate a remote station on 5 bands has been very challenging. It has become doubly problematic, because I have had failures and intermittent problems with my two rigs – TS2000X and FT-991. The TS2000X was not useable on any bands, and the FT-991 had problems with the audio, such that I had no ssb/fm capability for the 8 hours I had to operate. I only operated 8 hours on 6, 2 and 432, because I spent 10 hours trying to get anything to work on Saturday, instead of operating.

Being limited to only FT8, I noticed the following:

- SSB gives a much better QSO rate for running local stations than FT8
- The average station can work way more grids on FT8 than on SSB/CW.
- People are starting to check 222.174 and 432.174 FT8 frequencies and calling CQ. This could work out **very well for clock activity**
- There are still many “casual” stations who will only be accessible via SSB/CW
- Having a dedicated rig running 50 MHz FT8 the whole contest will reap the greatest success on that band.
- Purists will hate this BUT – running the bands on FT8 frequencies through 1296, is the best band moving up procedure. You don’t have to coordinate a frequency and it doesn’t matter if other stations are working QSOs. Any stations who want to follow you up don’t have to get your attention, they just call you on the move up band.

**** Please edit your QRZ.COM page to at least list your station rundown (see Aa2uk, K3tuf, Wb2rvx, etc.)**

Nets and Schedules: The following is a rundown of the nets and group meetings in the ‘local area’ (<= 250 miles, only nets that don’t conflict with the Packrats nets are shown).

Mondays: 2130 local – 1296.110 (group schedule with K1PXE, WZ1V, K3GNC, W2BVH, KC3BVL and others. All are welcomed.

Tuesday: 2000 local – “Mud-Toads Net”, KD4AA/KD8UD FM17uv net control. **144.250**, all are welcomed.

Wednesday: 2030 local - 432.150 – group schedule, WA2LTM, K1PXE, WZ1V, N2SLO, WA2ONK, WB2SIH, K3GNC and others. All are welcomed.

Thursday: 2030 local - 144.250 – N.E.W.S club net, W1COT FN31st net control. All are welcomed.

Friday: The 5 Band Net – 144.160 7:30 - 8 pm local. 50.160 8 pm – 8:30 pm, 222.150 at 8:30 – 8:45 pm local. 1296.160 8:45 – 9 pm local. 432.160 9 pm. All are welcomed.

Saturday: 144.205 – 2100 local - Chesapeake Net, W3BFC (fm28) net control. All are welcomed

Sunday: 1030 local – 144.250, Sunday Morning Memorial Net, Bill NC2I FN30br net control, all are welcomed, 2030 - - 432,150 – group schedule, WA2LTM, K1PXE, WZ1V, N2SLO, WA2ONK, WB2SIH, K3GNC and others. Mobile 6ers net – 50.550 pm. All are welcomed.

The Lunatic Fringe:

I participated in the second and final weekend of the 50 – 1296 MHz EME Contest. Conditions were very poor for my small station so I only made 2 contacts on 432 mhz. Note that I was only running 100w to 2 x 12 el (7ft) Yagi. The antennas are compromised, sharing a boom with a 7 el 2 meter yagi. Anyone with a fo22 up and 100w can work several super 432 stations.

Until next time please stay/get radioactive! -K3GNC

The Wayback Machine In CHEESE BITS, 50 Years Ago

Nibbles from February 1972. Vol. XV Nr 2
de K3IUV Bert
(author's comments in italics)

“Our Prez Sez”. With the January contest just past, Prez Don, **W3CJU** gave his thoughts on why the Packrats do so well each year. He highlighted: 1) Our club members are constantly working to improve their equipment. You'll always hear members working on a new converter, transmitter or antenna; 2) Antennas are always being fine-tuned, and added for new bands; and 3) we have experts in all phases of amateur radio always willing to take the time to Elmer any of us. *(To which I might add “organization.”)* He noted that the Crying Towel meeting elicited a few tears, and the “Towel” was won by Dan, **WA3NFV** *(Dan, do you remember what happened?)* And he noted that John, **K3KTY** has started preparations for Ladies Night. “Mark May 6th on your calendar.”

2 Meter Report. Joe, **W2EIF**, reports the 2-meter band picked up in activity about mid-December *(folks getting ready for the contest)*. It is quite common to work VE3s, **W8DGF**, other stations in VA, and up the coast to Boston and New Hampshire. His nightly schedule with **W8DGF** “paid off handsomely” during the contest.

Contest Results. The contest scorecard was published, and showed 71 logs submitted, 67 members participated, and 40 logs were over 5000 points. *(Remember scoring was different then.)*

Highest number of (ARRL) sections was 26. Highest number of contacts was 731. Top scorer in the club (and probably the country) was Stan, **K3IPM** (now SK), with 52,632 points. I noted 6 stations in the list that are still around after 50 years. **WA3AXV** (now **W3RJW**), **K3BPP**, **K3IUV** (me), **K3JJZ**, **WA3NFV**, and **K1SFF/3** (now **W3HMU**). A quote from the crying towel lament of Lee, **K3MXM**, “We should have a course in identification of burning smells!”

Membership. Sadly, two members recently became Silent Keys. Bob Elmer, **K3ZPQ** died right after the contest. John Houser, **W3JSD** died after several years of declining health. During the early club years, John was very active, hosting the club at many summer meetings, and frequent Board meetings. He organized many of the early ladies-night events. His phonetic call, Jig Sugar Dog still rings in my head. Visitors to the January meeting included later member Walt, **WA3AQA**.

Technical Topics. A short description and summary of a mod to the RCA CMU-15 rig was provided by Doc, **K3GAS**. *(The CMU-15 was the “NYC taxicab rig” that many of the members converted to use on 432.)* Doc's mod provided a way to make small frequency adjustments from the front of the rig.

New Products of Interest to Hams.
From Lynn, **W3NSI**. 1) Parabolic Reflector Antenna from T.J. Associates. This 7' diameter extruded rim dish is available in kit form. It has 10 aluminum petals mounted in a rigid frame. Rated at 26-Db gain at 1296 and 31-Db at 2400 MHz. Price \$150. 2) Battery Boost Regulator from Mark Products. This gadget is intended for

use with the small 2-meter FM units that were getting popular. Output settable between 12 and 16 vdc, with an input range of 11-15 vdc and a 2-amp current rating. Price \$30. 3) Q-Check Transistor Checker, from J & J Electronics Lab. This unit provides an output on a small CRT (*probably the 1" tube that was common then*). Tests Diodes, SCRs and other semiconductors. Price \$130.

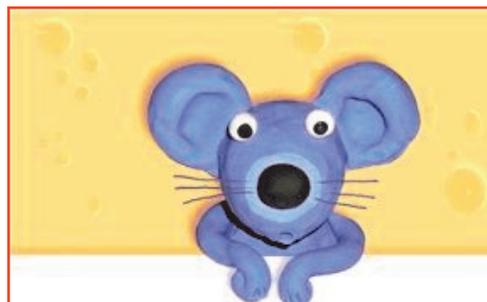
Calendar. February 16, regular meeting, topic Home-Brew night. Your chance to compete in one of the 5 categories: Most Unique; Outstanding Surplus (conversion) Project; Solid State Project; Measuring Devices; and Most Ambitious Project. In addition, a 15-minute auction of "well worth while" items will be held, the silent auction will be open, and Mario's "famous" raffle will take place. March 15, regular meeting, topic to be announced. May 6, Ladies Night at the Buck Hotel in Feasterville. August 13, Packrat Picnic at Ft Washington State Park, and "Sometime in September," a Packrat sponsored Flea Market.

Swap Shoppe. By W3ZRR. (*Always nostalgia. Now we use the club reflector.*): For sale by Jack, **W2AXU**, a Johnson Invader SSB transmitter, 200 watts on SSB or CW, and 90 watts on AM. Excellent condition, \$225. From Harry, **WA3NGK**, a Heath Seneca, 6 and 2-meter transmitter (with spare driver and final), \$25. From Conrad, **W1QDB**, a 432 Linear with two 4CX250s in a cavity. "A bargain" at \$125. From Ron, **WA3AXV** (now **W3RJW**), a Drake 2C with speaker, mint condition, \$175, and an SX-99 with manual, \$45.

Ads. *The February 72 issue again included*

*30 business card size ads, plus the half page back cover ad from club member Ham Buerger (the all-new Clegg 22'er MK II). I 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 currently, contact the ad chairman, Bob, **W2SJ**.*

Miscellany. *Postage for this issue was a single 8-cent Eisenhower 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 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. 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)*

Events

For inclusion, please direct event notices to the editor.

Orlando Hamcation and ARRL National Convention - February 11-13, 2022. Orlando FL. See hamcation.com for details.

QSO Today Virtual Ham Expo -Convention- March 12-13, 2022. A well attended zoom based conference with parallel tracks of presentations. Dozens of presentations on all aspects of Ham Radio. See <https://www.qsotodayhamexpo.com> for details and registration.

2M Spring Sprint -Contest- Monday April 11, 2022, See <https://sites.google.com/site/springvhfupsprints/home/2022-information> for details.

222 MHz Spring Sprint -Contest- Tuesday April 19, 2022, See <https://sites.google.com/site/springvhfupsprints/home/2022-information> for details.

432 MHz Spring Sprint -Contest- Wednesday April 27, 2022, See <https://sites.google.com/site/springvhfupsprints/home/2022-information> for details.

Warminster ARC - Hamfest- Sunday May 1, 2022. Bristol PA. Includes ARRL EPA Convention. See <http://www.k3dn.org/hamfest/> for details.

Microwave Spring Sprint -Contest- Saturday May 7, 2022, See <https://sites.google.com/site/springvhfupsprints/home/2022-information> for details.

6M Spring Sprint -Contest- Saturday/Sunday May 14-15, 2022 (2300Z—0300Z) See <https://sites.google.com/site/springvhfupsprints/home/2022-information> for details.

June VHF Contest - Contest - June 11-13, 2022. . See <http://www.arrl.org/june-vhf> for rules and details.

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

Murgas ARC - Hamfest - July 3, 2022. Plains PA. See <http://hamfest.murgasarc.org> for details.

222 and Up Contest - Contest - August 6– 7, 2022. Details to follow.

10 GHz and Up Contest (Round 1) - Contest - August 20 –21, 2022. Details to follow.

September VHF Contest - Contest - September 10-12, 2022. Details to follow.

KC3BVL Friday Net

Lately Packrat Jim KC3BVL has been conducting a Friday night net with schedule as follows:

7:30 pm	144.160
8 pm	50.160
8:30 pm	222.150
8:45 pm	1296.160
9 pm	432.160
9:15 pm	1296.160

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>

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

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PLEASE SEND IN 2022 DUES

Club dues are due as of Jan 1st, 2022. Go to https://www.qsl.net/w3km/MtAiryRC_Dues.htm and use the "check here" link to see if you already paid. If not, enter your callsign and click on "PayPal"

Dave **W3KM**

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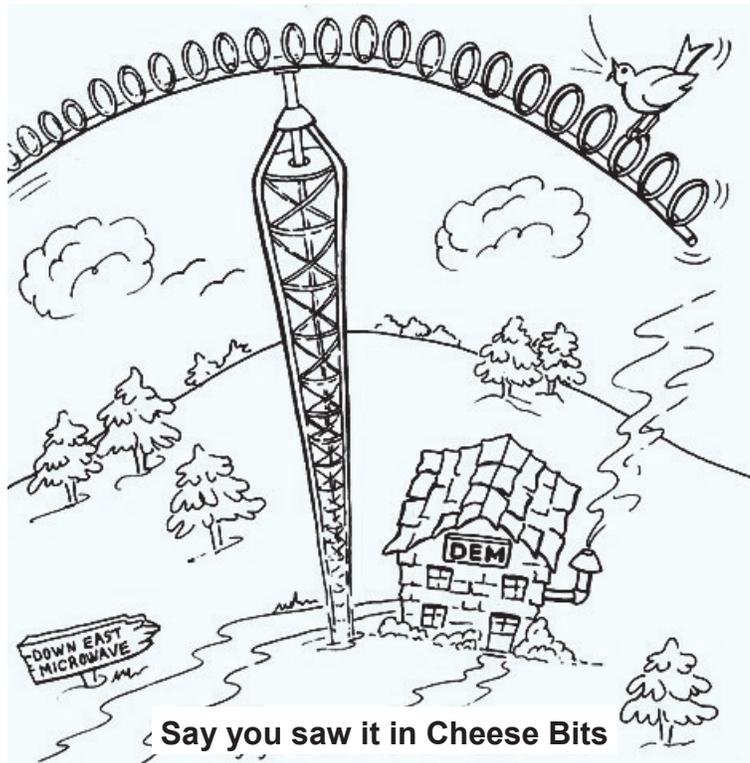
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