



# CHEESE BITS

**W3CCX**  
CLUB MEMORIAL CALL

ARRL  
Affiliated  
Club



Volume LXIV

April 2021

Number 4

## PREZ SEZ:

The General Club Meeting will be on Thursday April 15th at 7:30 PM. The program will be another good one: ARRL Night ! The Atlantic Division officials invited include

Director Tom Abernethy-W3TOM, Vice Director Bob Famiglio-N3RF, EPA Section Manager George Miller-W3GWM, & EPA Assistant Section Manager Tom Mills-AF4NC. There will be an opportunity to ask questions after their presentations.

The latest operating opportunity is the Spring Sprints that started with 2M on Monday, April 5th. The Sprints offer a fun time, only being 4 hours long and not an entire weekend. On 2M, conditions seemed quite good with lots of Packrats participating. Grids seemed plentiful and many contacts were made on the SSB/CW modes until about 9:30 PM, when the activity moved to FT8. Some of the more "elusive" grids were available using the FT8 tool. I was able to work N8LRG in EN80 at the end of the Sprint. The Sprints continue this month with 222 MHz on Tuesday, April 13th and 432 MHz on April 21st. The 222 and 432 Sprints will offer the opportunity for the club to test FT8/4 on their current equipment for frequency stability that is so important for decoding received as well as transmitted messages on the higher frequencies.

After the January Contest ended and just prior to our Annual Wrap Up meeting, the popular VHF+ forums were abuzz with lots of comments about how the FT8/4 modes would be "the end of VHF+ contesting as we know it" along with some similar variations. Suggestions were made to have the ARRL change the rules and point values for SSB,CW, and FT8/4 contacts. Some said the digital modes should have their own contest. Others were adamant that if FT8/4 was not taken out of the contest, they would not enter the VHF+ contests anymore. Unfortunately all of the above thinking is like the basketball player who no longer likes the rules and takes his ball home to play in his own court. Those ideas become part of the problem and not the solution.

The BOD has been having some Special BOD Meetings and has decided that the Packrats should lead the way 'out of the forest so we can all see the trees again'. The BOD believes the digital modes are beneficial, supportive, and fully within the rules and spirit of VHF+ contesting. The rules allow any mode of operation, with the scoring remaining the same regardless of mode. FT8/4 increases participation, increases workable grids, and allows low power stations, possibly with compromised antennas, to compete. We have come up with some ideas to do this including the following:

1. Discipline ourselves to switch modes every 30

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222.98/224.58 MHz (PL 136.5) Hilltown, PA

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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](http://w4dex.com/uhfqso) or **Packrat Chat Page**

**W3SZ.COM**

Visit the Mt Airy VHF Radio Club at: [www.packratvhf.com](http://www.packratvhf.com) or [www.w3ccx.com](http://www.w3ccx.com)

minutes from FT8/4 to SSB/CW.

2. When switching modes don't just listen, call CQ before returning to FT8/4.
3. Encourage the use of a standard FT8/4 messaging format to move stations up through the bands from FT8/4 to other SSB or CW modes as Bob Lear W4ZST has proposed.
4. Contact our sister clubs up and down the coast to let them know what we are doing.
5. Design a new spreadsheet based contest clock indicating the best times to work FT8/4.
6. Encourage movement to FT4 for the benefit of speed.



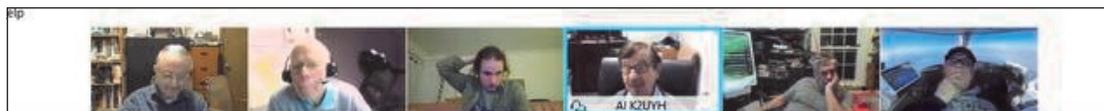
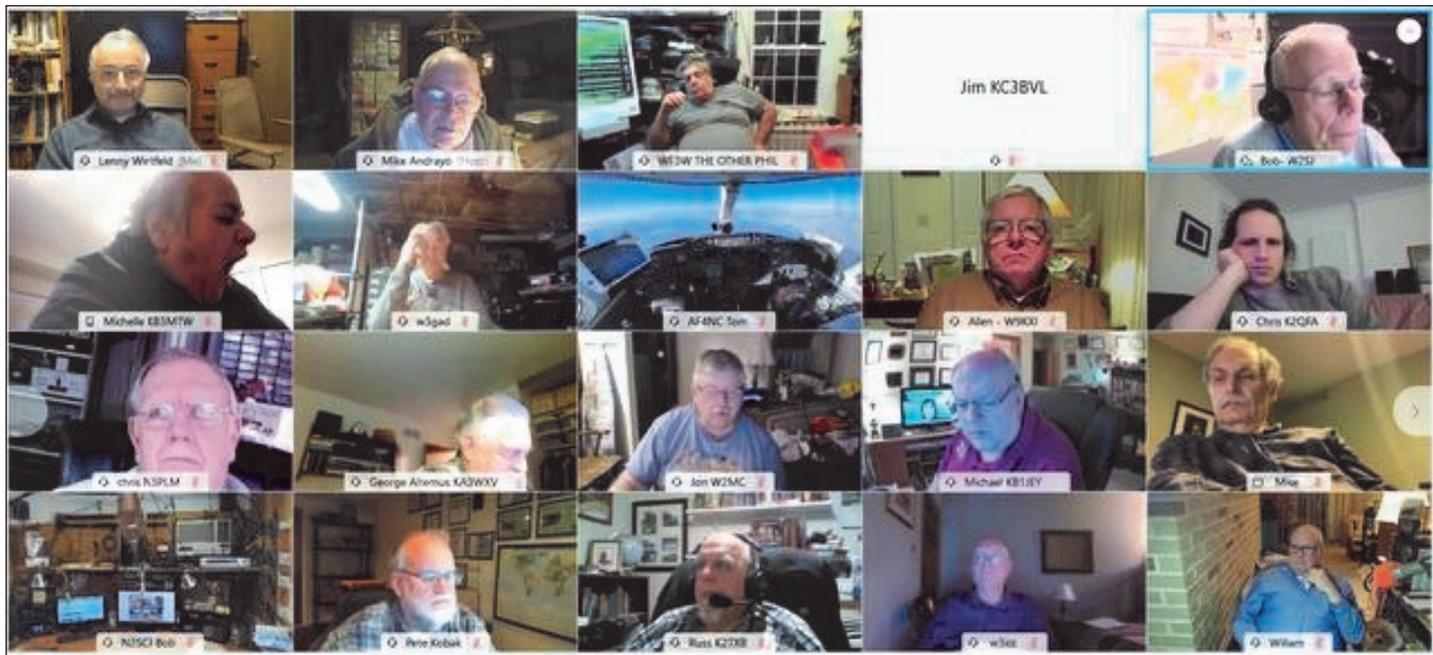
The BOD has set a goal to have as many members as possible be able to use FT8/4 on at least 50 through 432 MHz while preserving SSB/CW contacts during contests.

Lastly, I want to mention that the June VHF Contest at Camelback this year has been approved by the Big Pocono State Park officials barring any drastic change in the COVID situation. The Contest Planning Committee has been working hard on all aspects of the operation. We will be ready to set up all bands, 50 MHz through 10 GHz, in a much more streamlined manner than in previous years. It's a great place to operate from at 2,130 ft ASL. A clear, beautiful sight to behold, with it's 360 degree view of the horizon. Ham Heaven in our own back yard! Please let us know if you plan to attend as we need to get a head count for final planning.

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**

# MARCH (WEBEX) MEETING PICTURES



## WHY WORK MOONBOUNCE?

- IT IS EXCITING!
- MOST FUN IN HAM RADIO IS MAKING RARE, UNUSUAL, OR DIFFICULT CONTACTS.
- EME ALLOWS YOU TO WORK WORLDWIDE DX ON ANY BAND - 6 M UP.
- WAY TO INCREASE YOUR GRID SQUARE, STATE & DXCC COUNT.



Viewing AI K2UYH's applicat...

**EW1AA's 1.2 m 1296 DISH  
FROM APT BALCONY (CW)**



Viewing AI K2UYH's applicat...

**VP9/K2UYH IN BERMUDA**

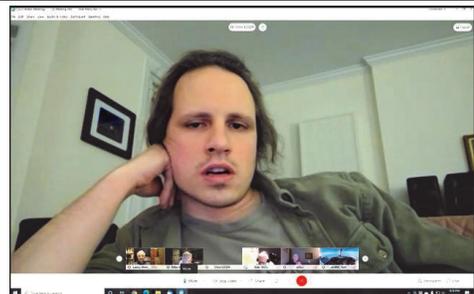
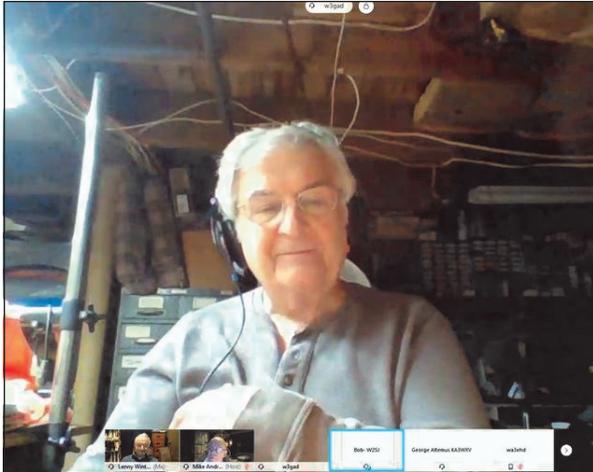


**IF FLYING NEED  
PORTABLE ANTENNA  
THAT FITS IN A  
SMALL PACKAGE!**

Viewing AI K2UYH's applicat...

**CONCLUSION**

- EME IS CHALLENGING.
- BUT ALL YOU NEED IS A YAGI OR SMALL DISH, 10~50 W, A COMPUTER AND JT65!
- IT IS PRETTY EASY WITH A BIG STATION, BUT THERE IS STILL A LOT TO IT: ACCURATE FREQ AND TIME, MOON TRACKING, DOPPLAR, POLARIZATION.
- WITH A WEAK STATION, ALL THE ABOVE PLUS MUST UNDERSTANDING HOW TO USE JT65
- ACTIVITY ~ .070
- NL <<http://www.nitehawk.com/rasmit/em70cm.html>>



# Folding Dish Antenna for 1296 MHz EME

By Paul Andrews - W2HRO

Back in 2017, I was lucky to find and purchase a Toki TA550 folding satellite dish. This was a 5.5 ft dish designed to operate up to 4.2 GHz and receive C-Band (3.7-4.2 GHz) Satellite signals. I added a linear polarization loop feed to this Toki dish and completed my first handful of 1296 MHz EME QSOs using WSJT JT65 digital mode.



While researching the folding dish, I discovered that it was invented by Bob Luly - WB6KBU (SK) and manufactured by him and by other companies in the 1980s. These folding dishes were available as large as 12 ft. Unfortunately, very few survived to today and the mesh reflectors have degraded over the years. The Luly design is basically a highly portable stressed dish as made popular by Dr. Al Katz - K2UYH. <https://tcf.pages.tcnj.edu/files/2013/12/SMALLSTATIONEME.pdf>



During the 2020 COVID lockdown, my son Timothy (BS ECE - Lafayette College - 2016) and I decided to try and build our Luly-style folding K2UYH proven stress dish for 1296 MHz. After months of trial and error we produced our first folding dish prototype in May 2020. Many of the parts were 3D printed or purchased on Amazon.

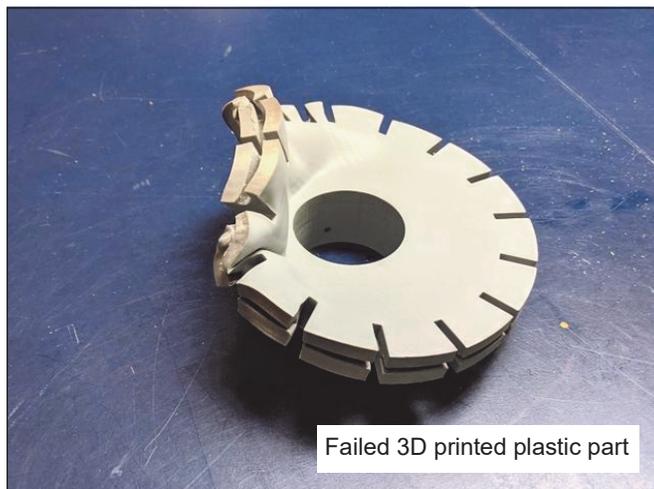


The next big challenge was finding a suitable material to use as the folding dish reflector. We discovered conductive fabrics. These are fabrics that are metalized through a process of exposing the fabric to silver (Ag) that has been heated to a plasma. The silver molecules are bonded permanently to the fabric. Conductivity and RF reflectivity is impressive, but conductive fabric is expensive at >\$100 per yard.

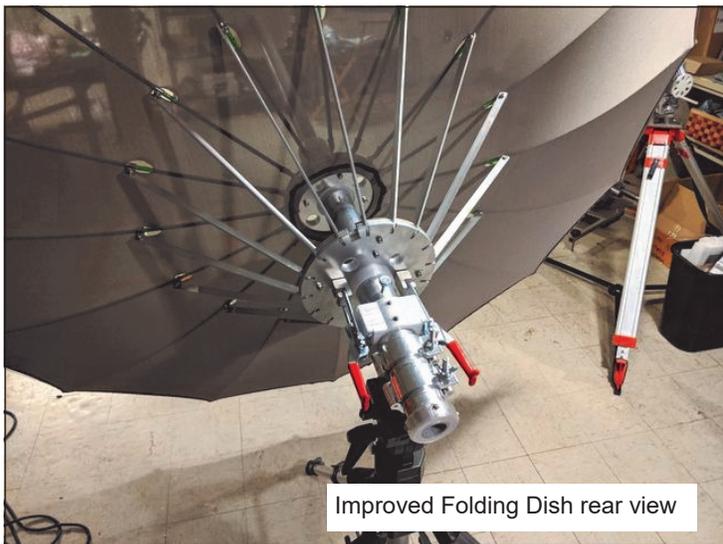


We spent the next 4 months refining the folding dish design through trial and error. The summer of 2020 was extremely hot with many days near 100F degrees. We learned a lot about 3D parts when placed under stress and exposed to heat. Ouch!

The folding dish evolved into a design that used high temperature 3D printed plastic and water jet cut aluminum parts where required. The result is a strong and lightweight folding dish.

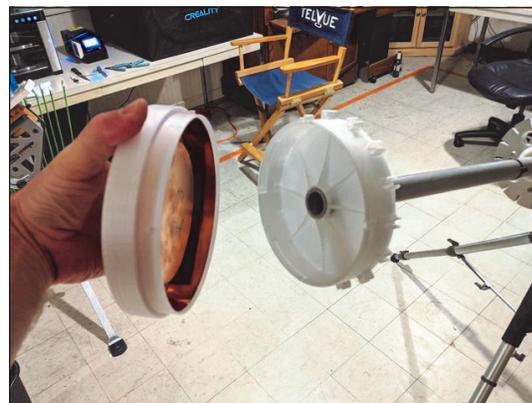


Failed 3D printed plastic part



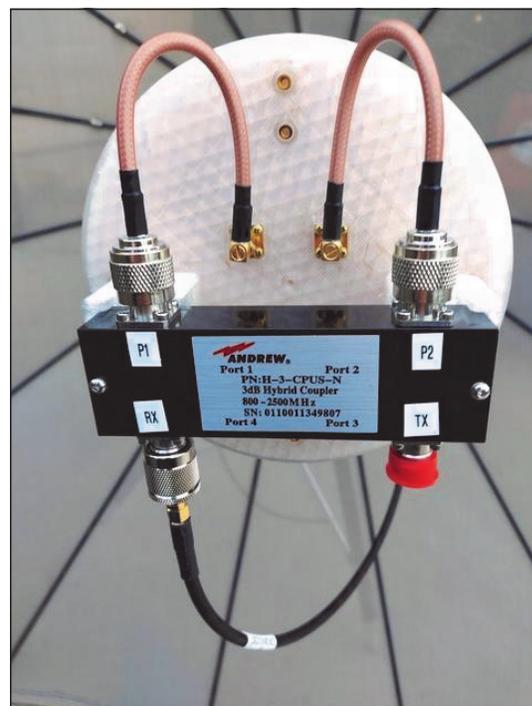
Improved Folding Dish rear view

Another important part of the folding dish design is the feed system. We are using a patch feed and a 90 degree hybrid combiner to generate RHCP for TX and LHCP for RX. The patch feed is a SM6FHZ inspired design and mounted on a single fiberglass strut and uses a bayonet style mounting system.



These hybrids are commercial quality and can be found on eBay. The hybrid is a low loss air dielectric design that can handle 300w at 1296 MHz. We are very pleased with the performance of the folding dish. We have built both 1.8m and 2.4m folding dishes. The 1.8m dish weighs just 10 lbs and the 2.4m dish weighs 16 lbs. The 1.8m dish gain is 25 dB with sun noise measured at 5 dB. The 2.4m dish is 3 dB better.

Lately, we have been using the folding dish with a 1296 MHz feed, but we have designed a patch feed for 902 MHz and 1420.4 MHz for Hydrogen Line study.



Gene - KB7Q is taking a 2.4m folding dish across the US southern states. Gene is activating relatively rare WAS on 1296 MHz with his 2.4m dish and 350w at the feed. With this setup, Gene is an easy JT65 QSO and also CW-ready. You can follow KB7Q at <http://kb7qgrid.blogspot.com/>



### Wrap-up:

I'm very happy with this first generation of folding dishes. The design continues to evolve with feedback from users around the world. We have added 902, 1420 and 2304 MHz feeds to the original 1296 MHz feed. The Icom IC-9700 has triggered a lot of new interest in the 1296 MHz band. Inexpensive low noise (0.5 dB NF) preamp devices are available. New LDMOS devices can generate 600w with a single device. WSJT-X JT65 and soon Q65 modes make low signal to noise (-30 dB S/M) QSOs possible. Hopefully we'll see a lot of new stations QRV 1296 EME!

## New 241 GHz Record

New IARU R1 record on 241 GHz. QSO 6 March 2021, 17.10 UTC between: DK5NJ at JO50TI29JN 690m ASL Schwedenwache (DK0NA) and DB6NT at JO60GJ03MN 896m ASL Aschberg (Saxe). Distance 63.987 km. Reports 559/599. Temp -1C, RH 45%.

Both receivers used a sub-harmonic mixer drive by a 120 GHz LO. Transmit power: 20 mW

Both ends used 40 cm dishes with a gain of 57 dB and a beamwidth of less than 0.25 °

This was a line of sight path, and alignment was done using riflescopes. Signal strength was around 30dB over noise, suggesting the possibility that 100 km could have been achieved under those conditions. Note: It's a Region 1 record, not world. WA1ZMS and W4WWQ have the world record at 114 km set in 2008. A full description is at <https://dk5nj.de/2021/03/08/we-did-it-again-new-new-distance-record-over-63987-km-at-the-241-ghz-band-db6nt-dk5nj/> and a YouTube video is at <https://www.youtube.com/watch?v=eVJC4lfpyuo>.

Tnx **VE4MA** and **K1ZZ** for the info!

## 2M Spring Sprint Reports

### From Bill AA2UK:

58 Q's 25 Grids I felt activity and condx were above average. 6 selective CW contacts and the balance 52 being FT8.

### From Alex KR1ST:

I think the Sprints have become my favorite operating events. The activity seemed to be pretty good, but the conditions were flat, except for some short bursts to the NW. I worked very little from the NE and missed a bunch of grids I usually work even though I called a lot on SSB and FT8 in all directions. Working VE3ZV on the back of the beam and WW2Y with 10W and the antenna on the kitchen table was a real treat! Speaking of FT8, I deleted 5 QSO's from the log because the contacts didn't complete. That is more than even during a June or January contest. All of them seem to occur in the same manner, which probably warrants checking the all.txt file to see what causes this to happen. I think what happens is that folks click to log the contact when the log window pops up and then they immediately click on the next call to work for the next sequence. I don't think it's a software problem. Rovers worked were K0BAK/R (2 grids) and N2DXT/R (1 grid). Thanks for the Q's and the SVHFS for organizing the event. 46 Q's 18 Grids 782 Pts

### From Bill K1DY:

Not my best effort! Antenna stuck pointing SW and planned QRO efforts fell a little short, so still only running 50 watts.. Of course, from here, antenna stuck SW is the best it could be. Worked many of the usual suspects on SSB and a couple on FT8. It seemed conditions were pretty good the first hour or so. I heard N2NT in FN20 calling CQ on SSB and he heard me but not enough to complete a QSO.. Later on I missed VE1SKY on FT8 off the back corner which would have been a new one, also AA2UK was "BOOMING IN" on FT8 from FM29 but he did not decode my QRP.. Tried with some of the "local" VT stations but they are pretty much down in the first null of my antenna pattern. Best DX WA2VNV in FN30, 329 miles on sideband..

Quit around 9 to watch the basketball game. Thanks to sponsors and all who got on. CU all on 220 next week.

### From Lenny W2BVH:

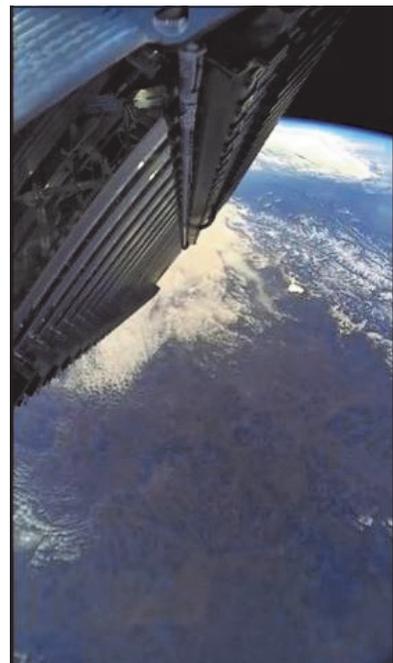
Sprint results at W2BVH. 28 Q's, 9 Grids 2 Hrs. 3 FT8 Q's the rest mostly phone but a couple of CW Q's too. Nice to hear WA3DRC up here in central NJ. Q5 from his new QTH in FN28 . It bodes well for microwave qso's from that grid some time in the future. Ran my amp at 1/2 plate current on FT8 (1/4 power). After many years the 4CX250's are showing signs of running out of electrons and I don't look forward to replacing and tuning new ones, so I'm treating them gently. All in all a good sprint. I quit in time to catch the end of the Yankee game too...

### From Ed WA3DRC:

Pretty good night here. I hung out on ssb and cw as long as possible. Then switched to FT8. 60 q's 26 grids

## SpaceX Encrypts Falcon 9 Telemetry After Amateur Radio Operators Download Data

Pesky Hams, doing what hams do! Monitoring telemetry from Falcon 9 launches at 2.23 GHz and transforming unencrypted data into photos. Full story at <https://www.extremetech.com/extreme/321671-spacex-encrypts-falcon-9-telemetry-after-amateur-radio-operators-download-data>



# K0BAK 144 Spring Sprint Mini Rove

As the Spring 144 Sprint approached, my TV Rover van was at the mechanic, again, and isn't ready for 2m anyway. Instead, I got my little Subaru WRX outfitted with my 2m halo up about 16 feet using a walk-up mast which is hand raised at each operating site. This is similar to what I used in the June contest but this time with just one band.

I used my IC-7100 backpack radio with native 144, but I wanted to use my "new" laptop/tablet computer which I had been procrastinating about outfitting for WSJT. Getting N1MM and WSJT and the radio USB drivers installed and talking successfully to the 7100 took a number of hours and is significantly harder than interfacing the Flex 6500 I use in the van and at home.

My plan was to start in FN20bi at the top of Mt. Penn (uphill from the Reading Pagoda), then drive down to the grid intersection near Gap for FN10 and FM19 in the Amish farmland. This is a route I have used quite a few times in the last 5 years, but not recently. When I got to the top of Mt. Penn, for the first time ever there were chains at the two entrances to the parking area. Although there are signs saying the park closes at sunset, I operated there many times in the dark, and in any case it was well before sunset when I arrived.

Driving past, I stopped at one of several scenic overlooks on the west side of the road and set up in time for the contest. Unfortunately, being on that side of the mountain meant I was blocked to the southeast where most Packrats live. As a result, I had a disappointing start to the sprint when the most stations would be on the air.



I packed up before it got too dark since I was not making too many contacts on FT8 after 4 Q's on SSB; if you've ever been up there, it doesn't feel completely safe after dark either. On the second half of the 40-minute drive down to the school in FN10 where I operate, I encountered at least 15 Amish buggies on the roads, but fortunately they were almost all going in the opposite direction (north). In the open without a mountain immediately between me and most Packrats, I got quite a few more contacts (on FT8) even though it was later. The short drive to a township park in FM19 yielded similar decent results. I didn't want to raise the mast at the dusty concrete plant in FM29 I usually stop at on the way home, so I was done for the evening.

With just a halo and 35 watts, and a bad luck start, overall results were OK I think. Helps to **have FT8 when operating a weak station** and CW is not an option. 21 contacts (only 4 SSB) and contacted 8 unique grids. With contacted grids counting again in each new activated grid (as it should be IMHO), I had 14 multipliers for an overall score of 294. Best "DX" was just FN12 and EN90.

# SOTA Number 3

Bill WS3O

My daughter's scout troop went on a camping trip to the Poconos over the weekend of March 19-21. This included a day of skiing at Shawnee Mountain. Due to the circumstances, I had to meet her at the hill with her equipment. So, I decided I would also take in one last day of skiing for the season.

Shawnee also happens to be one of the listed peaks for the Summits on the Air (SOTA) program. The identification is W3/PO-032. This hill does not get activated very often, as it is private property, and the management does not allow hikers. They are, however, happy to sell you a lift ticket. The snow surface got pretty rough as the day progressed, but I was very impressed at their lift-line management. They only had one lift open, and the line moved very efficiently.

The snowmobile in the picture is not mine. And this is actually not the location I tried to operate from. There is a nice deck about 50 yards off the right side of the picture, with a little bit better elevation. And picnic tables to sit at.



Since I did not know what the situation would be like, I only

took a cheap HT. I also (yet again) did not make any prior arrangements. I hate the idea of making arrangements and then failing to follow through. So, 5W and a small antenna was going to be the entire setup.

I made contact with the usual suspects, KR1ST, KG4KFV, and W2RES. I was rather impressed that they were able to hear me. The distance to W2RES's location was 20.6 miles, and we both were using verticals. KR1ST was 35 miles away, but I know he's got a much better antenna setup. Actually, his QTH is just over the horizon in the middle of the picture.

However, three contacts are not sufficient to count for my activator score. So, I will try to activate this site again. Next winter.

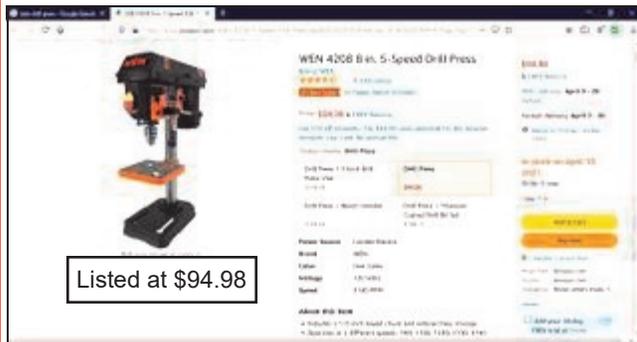
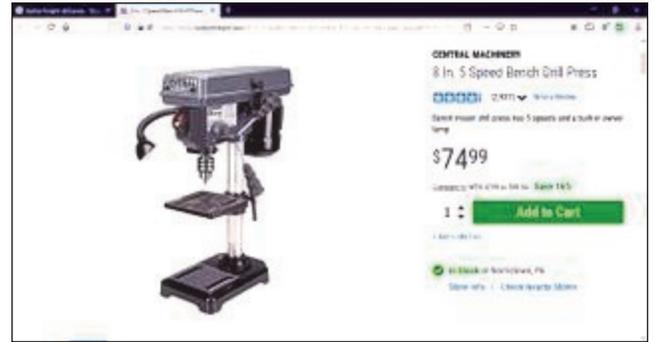
-Bill, WS3O

# Some of my favorite drill presses come from China

By Tom KA3FQS

Well not really, I have a 20 year old Craftsman that N3AOG helped me select. The purpose of this note is to point out that **anyone can afford a drill press**. Recently there has been a series of posts on the reflector discussing how to drill the boom on a Yagi and how to do it without a drill press. There is really no reason not to own a drill press; a small one can be had for a little more than the cost of an inexpensive FM handheld transceiver, and these units are small enough to fit in the smallest of workshops. Now these drill presses will not have the precision of something found in a tool and die shop but they will be plenty good enough to drill the boom of most any Yagi for VHF and above or a chassis or other small projects. And they will always do a better job drilling holes than the average person with a hand drill.

So let's take a look at a few examples of drill presses that cost less than \$100. The first name that comes to my mind when discussing low cost tools is Harbor Freight. Based on a YouTube review this unit is pretty light duty with a stamped steel base and work table but the reviewer had been using his for several years and still liked it. The thing I like about this is that it has a work light that my trusty old Craftsman doesn't. If I were to look for a new drill press a work light would be at the top of my list of features to have..



Another common source of low priced Chinese tools is Amazon. Here is a WEN 4208. I have read some pretty good reviews of this drill press on line. If you can afford its bigger brother it comes with a laser guide. This model is listed as being available at The Home Depot and at Lowes if you want a local dealer.

Speaking of Home Depot, they list a wide

variety of bench drill presses on their website. This one made by "General International" is the cheapest one listed. The base and work table appears from the picture to be similar to the Harbor Freight machine (not castings), but it does have a laser guide which sounds pretty neat. The reviews on the HD website are pretty good except for the guy in Texas whose machine got sent to Georgia. Not the fault of the drill press.



The other "Big Box" home center, Lowes carries many of the same brands of bench drill presses as Home Depot. They also carry Porter Cable and Palmgren but these are a little more than the \$100 limit that I set at the beginning of this note.

I have not personally owned or used any of the drill presses that are mentioned in this note and as such I can't personally vouch for the quality of any of the units but based on the online reviews they all seem to meet the minimum requirement of drilling holes with better accuracy than is generally possible with a hand

drill. It seems that there is no reason why any shack can't be equipped with a drill press and once your shack is so equipped there is no reason why you too can't use it to help turn out award winning antennas.



## K2TXB / VK2XN 2M EME

Just a little bragging and to show what can be done on 2 meter EME.

Last night I worked VK2XN (at almost 4:00 AM local time). He was running a single 17 element Yagi and just 200 watts (in the shack). It was a close thing, I decoded calls and OOO, saw the RRR on the screen but it did not decode, and did decode his 73 – all at -30 dB below the noise, which is the limit. I have only ever decoded a signal below that about twice in more than 600 EME contacts made from this QTH, and those were at -31. Additionally, just to make it harder, I had +4 dB excess noise at the time. Anyway he copied me at -15, so if I add the almost 9 dB power difference and the 4 dB noise, he would have been -18 here, which is reasonably close to how he heard me. Screen shot below.

As an aside, I had gone to bed, but woke up at 2 AM, couldn't sleep, so went to the radio. Worked ZL1HD and JH0BBE with no problem and was about to go back to bed when the VK appeared on the EME list. Normally I don't even try anyone running less than 300 watts, but conditions seemed good so gave him a try. It was a lot of fun, for sure, but I was so wound up that it took me another 2 hours to get back to sleep, hi hi. Anyway, not many guys can say that they woke up in the middle of the night, worked New Zealand, Japan, and Australia on 2 meters, and went back to bed. I guess these things only happen once in a blue moon ;-)

73, Russ K2TXB

Single Period Decodes					Average Decodes				
SFC	dB	DT	Freq	Message	SFC	dB	DT	Freq	Message
0749	-30	6.3	1461		0746	Tx	1450	#	VK2XN K2TXB FX10
0749	-30	2.5	1344	#	0748	Tx	1450	#	VK2XN K2TXB FX10
0751	-30	2.4	1344	#	0750	Tx	1450	#	VK2XN K2TXB FX10
0753	-30	2.4	1347	# K2TXB VK2XN QFTS OOO 73	0752	Tx	1450	#	VK2XN K2TXB FX10
0755	-30	2.9	1348	#	0752	Tx	1450	#	VK2XN K2TXB FX10
0757	-27	3.0	1347	# T3	0753	-30	2.4	1347	# K2TXB VK2XN QFTS OOO
0758	-30	4.5	1344		0754	Tx	1450	#	80
0759	-30	3.5	1370	#	0754	Tx	1450	#	T3

# KIDY "THE EARLY YEARS"

I was first licensed in Nov 1958 as KN1JDY in Durham, NH. I had just turned 12. My uncle Steve, KOIMA, in Minnesota had sent me an old WWII Hallicrafters S29 battery powered HF receiver (with AC supply fortunately). It had a leather carrying handle and a telescoping whip antenna. I ran a piece of wire from the whip out the window and soon enjoyed monitoring the ham bands, mostly 40 meters. I learned CW, got a novice license and built a Knight Kit 50 watt (6AG7/807) rig (you can see it behind me in the pic) and got a crystal for 7.183MHz (why do I remember this??), and the adventure began. I got a 40 meter folded dipole from Evans Radio in Concord and hooked it up. Twin lead went straight into the SO239 output of the rig. The pi network loaded the 300 ohms up just fine. I didn't know about antenna relays so kept the "short" long wire antenna for receive and folded dipole for transmit and started working stations.

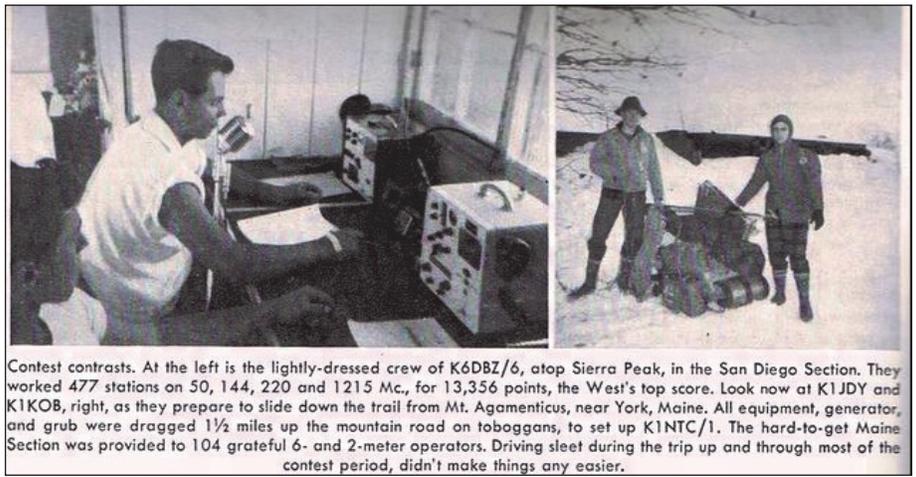


No messages to download

A school buddy's dad, Dick, W1CUZ, became my Elmer shortly after that. He was on HF and 6, 2 and 220 with a Globe HiBander, an RME VHF126 converter and as I remember several Tecraft "20" watt AM transmitters (using 6360's). I used to hang out over there and was in awe. Dick had a 40ft utility pole for a tower (he worked for the electric company) and there were VHF beam antennas mounted on the pole. I soon got my Technician license (now K1JDY) in the summer 1959 and General right after that. I inherited a Tecraft 6M transmitter and a couple crystals from W1CUZ. I filled in the 2 meter equipment list by making my parents take me back to Evans Radio. I came home with a receiving converter for 6 that ran into the upgraded receiver I had at that time (an SX28 double conversion boat anchor). This was quite an excellent receiver!! I also got a 4 element beam with a TV rotor. I just missed the big 6 Meter F2 openings to Europe in 1957/58 but there was still e-skip in the summers and I was hooked on VHF.

Then there was contesting. I think I started entering the ARRL VHF contests in 1960 or 61. BUT my first mountaintop contest expedition was for the January sweepstakes 1962. My 6M buddies, Curt, K1NTC, and Lucky, K1KOB, and I brought 6 and 2 meters to the top of Mount Agamenticus in southern Maine. Curt and I were both 15 at the time and couldn't drive but Lucky was 16 and had a car. (Not sure why my parents let

me do this!!) Anyway that January in Maine we drove to the foot of the hill where the snow plowing stopped and hauled the gear up the hill by toboggan. Up top there had been a radar station during WWII (the hill overlooked the Maine Atlantic Coast) and there were still some remnants of structures up there. One still had a roof over it and we set up in there, building a fire in the corner of the cement



Contest contrasts. At the left is the lightly-dressed crew of K6DBZ/6, atop Sierra Peak, in the San Diego Section. They worked 477 stations on 50, 144, 220 and 1215 Mc., for 13,356 points, the West's top score. Look now at K1JDY and K1KOB, right, as they prepare to slide down the trail from Mt. Agamenticus, near York, Maine. All equipment, generator, and grub were dragged 1½ miles up the mountain road on toboggans, to set up K1NTC/1. The hard-to-get Maine Section was provided to 104 grateful 6- and 2-meter operators. Driving sleet during the trip up and through most of the contest period, didn't make things any easier.

block building to keep warm. The antenna was a 30 ft telescoping mast with a 3 element 6M beam at the top a short Yagi on 2. We borrowed a couple Gooney boxes and a generator from the Portsmouth, NH Civil Defense and that was it! 10 watts (or whatever a Gonset Communicator II 2E26 final amp put out) of AM on 6 and 2!! We worked 104 stations, mostly on 6 and got our picture in QST! The pic above is from June 1962 QST. We had pictures of the gear, antennas, etc., that we sent in, but QST was obviously trying to show the weather contrast!! I asked Curt if any of the other pics survived, no way, too bad... There was a GREAT one of the 6M beam covered with ice, the ends of the elements pretty much pointing straight down!

And here's the QST contest report. Note the typo, that should be K1KOB (not COB)! Sorry Lucky! Note K1NTD on there. That was Muriel, Curt's mom, so we were in contact with the "home base" in South Berwick. maybe that's why my parents didn't freak out more!

At the same time I made friends with the gang at the UNH radio club, specifically Harvey Schow, W1ZIZ. The club had lots of gear including a Collins 51J4 receiver and multiple

Tapetone converters with 417A front ends - very low noise for the time!!). They had a Multi Elmac AF68 AM transmitter that had 6 meters and a 6146 final. I remember Harvey driving me to a fire tower in Newmarket, NH. I forget the name of the hill, but it was just off Rt 108. I had been there previously with K1GRT but in this situation, I got dropped off with the gear and a generator and I was on my own. That was June of 1962 or 63. Worked some e-skip, AM only. To say I was hooked on VHF mountaintop contesting was an understatement!

That was the beginning of a longgg ride..The local 6 M gang (southern Maine, seacoast NH) was Curt and Lucky, also K1NAT, K1KKE, K1UTC, W1CUZ, K1GRT (one good radio tube), K1OZA. There was the extended gang in eastern Mass which included Helen, W1HOY, (wife of EME pioneer Sam Harris W1FZJ), and Louie, W1KKB. And some times the band would open. These were really exciting times. Anyway, moving on, I went away to

Maine			
K1NTD	1888-	59-	6-A
W1TAM	1106-	40-	4-A
K1CXX	504-	18-	4-AB
W1ECM	48-	2-	2-
K1NTC/1	K1s COB JDY		
NTC)	3536-	104-	7-AB
K1KKK	(K1KKK,		
KN1TEU)	224-	9-	3-AB

prep school and eventually college and ham radio took a little bit of a rest. But after college, around 1968, I was living in a communal house in Gradyville, PA. I forget what contest was coming up but I got the itch to get back on VHF. Somehow I had saved a Drake 2B receiver and Janel 6M converter through all this. I don't know where I came up with a 6M beam but let's say 3 elements, armstrong rotated, and managed to scare up a Tecraft 6m AM transmitter but it only had a crystal for somewhere above 50.5!! Talk about starting off with a disadvantage! Anyway I got on and surprisingly worked a bunch of stations (over 50 as i remember), and most importantly, ran into Frank, K3ATL, in West Chester who became a long time friend and talked me into joining the (yeah I know what you're thinking here, but no).. the Mobile Sixers Radio Club. Long story short, this got me back on VHF pretty much full time and I ran into Packrats (Mt. Airy VHF Radio Club) and that's where I landed club-wise (and where I still am to this day).

More to come, we're just getting to the "good stuff"! K1DY

## NN3Q/R

After roving for a number of years you start to look back and take note of accomplishments, and ways you grew into the unique arena of VHF/UHF/MICRO contest roving. The NN3Q/r first contest entry is reported as June 2007 scoring 18,309 points The four band rover was a combination of roving and portable operation: 6 & 2 meters SSB/CW, 432 MHz SSB/CW, 222 MHz, and 432 MHz FM.

Many variations of the rover evolved with many entries in the January, June, and September contests.

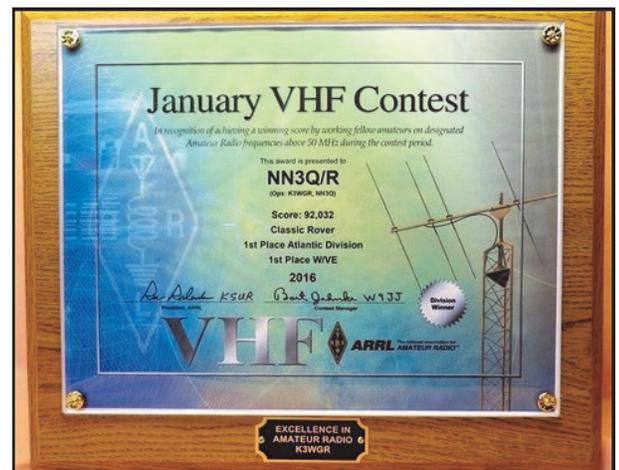
By the January 2016 contest the 10 band rover van was well equipped and many hours of experience allowed our rover to place #1 W/VE. Scoring 92,032 points was not our highest score ever but good enough to place #1 US out of all rover categories. At that point, FT8 as well as other weak signal modes were not yet available, nor were Cell phone schedules.

Our highest score was attained in the January 2013 contest 104,924! Again FT8 as well as other weak signal modes were not used. This was also done within the confines of grids FN30, FN20, FN10, FM19, and FM29.

The 2017 January VHF contest saw K1DS/r Rick, one of our great mentors, take first place W/VE rover with a score of 74,889. NN3Q/r that year placed second in Atlantic Division scoring 54,462 points. Look at this guys and gals: For two years in a row Packrats, had one of their rovers place first W/VE in the January contest, a yearly operating event with participation by many clubs.

The January contest does not have any "unique" awards that are sponsored, and I always wanted to do something special to memorialize our #1 place. In a pandemic you start to look for things that can be done at home and delivered to your home. After a quick search I found a Trophy/Plaque "kit" supplier. So here we go again with electronics, ham radio and kits coming together. Now I get to try a non-electronic kit. The order went in for enough kit components to build two recognition plaques. I made one for Russ NN3Q, and one for my shack K3WGR. This was enjoyable and now one more thing is checked off the ever growing to do list.

Very 73 to all **Allen K3WGR**



# POCONO MOUNTAIN IN WINTER

Hi Lenny,

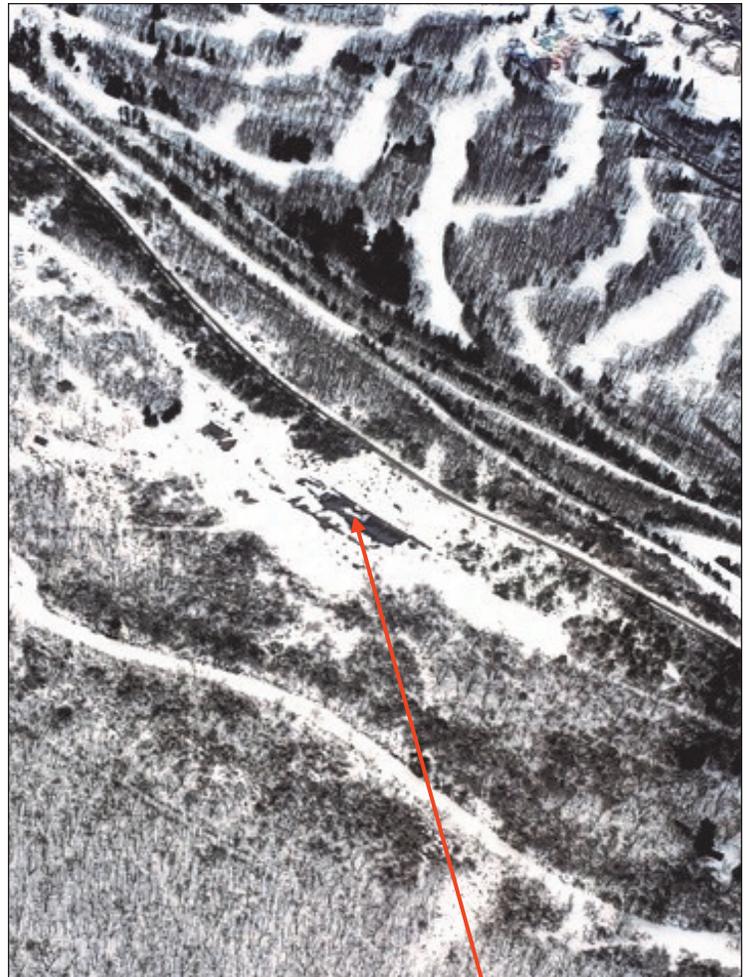
I've attached some pics that may help motivation for the June contest. A couple of weeks ago during the cold weather, I flew to Pocono Mountains Municipal Airport (KMPO). My flight path took me directly over Camelback so I couldn't help but do a 360 over it.

Pic 1 – shows Camelback Road leading to Big Pocono State Park, Pic 2 — W3CCX contesting site.

73, **Mike – WB2RVX**



Wide view of Pocono Mountain



(Partially) Snow covered contest site.

## Raspberry Pi Pico as an SDR

The "Hackaday" website has a short article on using a Raspberry Pi Pico (\$4.00) microcomputer as an SDR. The radio signal is fed directly into the Pi's analog to digital converter which only runs at 500 KHz, so the receiver can only be used at LF. Still it's an interesting stunt: a "no rf components receiver". See <https://hackaday.com/2021/03/16/the-raspberry-pi-pico-as-an-sdr-receiver/> —W2BVH

## *Inside the Summit-Obsessed World of Ham Radio*

Here's a take on SOTA operation from the point of view of a outdoors / hiking oriented web site: <https://www.outsideonline.com/2421479/ham-radio-hobby-summit>

# ***The Wayback Machine*** In CHEESE BITS, 50 Years Ago

Nibbles from APRIL 1971. Vol. XIV Nr 4  
de K3IUV Bert  
*(author's comments in italics)*

**"Our Prez Sez"**. Prez El, **K3JJZ** (*also editor at the time, and our current auctioneer*) tried to inspire greater member contributions to the club operation. His list is still apropos, and worth repeating:

Could you write an article for CHEESE BITS? Technical, or otherwise. (*Lenny would love it now.*)

Could you design a circuit to be used in a club project, and put it together as a kit? (*The technical committee would love it now.*)

Could you solicit an additional ad or two, to help defray the cost of the paper? (*The treasurer, Dave, W3KM would love it now.*)

Could you present a program at one of the meetings? Do you know someone else that could? (*The program chairman, Doc, W3GAD would love it now.*)

Do you know of an active VHF'er who would make a good Packrat? (*The membership chairman would love it now.*)

And, if the answer to any of the above is "yes," why haven't you done it already?

**Technical Article 1.** Continuation of last month's description of the UHF TV situation in the Philadelphia area at the

time. Channel 29 was expected to begin broadcasting in March. Channel 17 and 48 were expected in the fall. Lots of other details and nostalgia were described (*I endorse your reading of the full article*). More info promised for next month's issue.

**Technical Article 2.** Jack, **W2AXU** contributed an interesting article titled "*(Receiving) Converter Neutralization.*" We normally thought of neutralization when building and tuning a transmitter, but Jack made a strong point for doing the same thing with your receiving converter. Advantages to be gained included reduced "birdies" caused by regeneration, and the lowest noise figure obtainable with the front-end device used (*typical at the time were JFETs.*) Jack included detailed techniques for doing the neutralization.

**New Products of Interest.** From Lynn, **W3NSI**. The FM-2X is ready to be released by Swan. Made for them in Japan, this 2-meter unit features 10 W out, 12 selectable channels and an included ac power supply. Price is \$299. Also, now available from Janel are a series of converters for 6, 2 and 220. Prices are \$59.95, \$64.95 and \$69.95 respectively. Noise figure on 2-meters claimed to be 2.5 db.

**From the Book Rack.** Paul, **K3WEU**'s monthly column covered the book "Engineers' Relay Handbook" by the National Association of Relay Manufacturers. \$13.95 clothbound. The book "includes a complete roundup of operating principles, properties, performance, specifications and testing." This new edition includes solid-state devices, reed relays, and mercury wetted designs. In Paul's words "A

worthwhile addition to your library.”

### **Ladies Night Banquet and 15<sup>th</sup>**

**Anniversary Information.** Two pages of photo extracts from previous banquets were included, together with humorous captions. They were intended to whet the interest and encourage participation by members. To be held at the Buck Hotel (*still there, still prospering after a total re-do*), it was a great deal. \$8 per person for a Prime Rib dinner, prizes, surprises, danceable band and congenial bar. “Meet your old buddies once again, see long-lost members and rehash old times.” (*To the current Board, - think about doing it again! - Bert.*)

**June QSO Party.** Plans for the club operation were discussed. We will operate from Hilltown, and be active on 6 through 2300 (*yes Virginia, we were on 2300, 50 years ago*). Captains appointed included Ron, **WA3AXV** (now **W3RJW**) for 6, Dan, **WA3NFV** for 432, Walt, **K3BPP** and Bert, **K3IUU** (*that's me*) for 1296, and Mario, **K3UJD** for 2300. Sign-up early to participate.

**Propagation.** Bert, **K3IUU** (*me*) reported on the LDEs (long-delayed echoes) which were again mentioned in the ARLL bulletin. Recent observations were primarily in the HF bands (predominantly 18-meters), but sporadic incidences have been seen on 2-meters. Clubs are again being asked to encourage their member to report any observances (time, date, signal strength and antenna bearing) so that correlation might help analyze the phenomena. A low noise figure converter, and high-gain antenna will provide the best chance of snagging one of these rare signals. Please forward your information to Bert (**K3IUU**

@ARLL.net), who will compile it and pass it on to Larsen E. Rapp, the ARLL investigator. A copy of the data will be published in the next issue of CHEESE BITS, giving proper credit to the observer.

**Calendar.** Next meeting, April 21. The agenda will be ATV (Amateur Television) by member Ron, **W3ZKO**. May 8, the 15<sup>th</sup> Anniversary dinner at the Buck Hotel (*see separate comments*). May 16, a planned demo of ATV from an airplane. Stations from Philadelphia to NYC were expected to pick up the transmissions. June 12, the VHF contest. The club plans to operate again from Hilltown. 15<sup>th</sup> Anniversary dinner is planned for the Buck Hotel, on May 8. Save the date. Excellent food. (*See more details in the item above.*)

**Membership.** Dan, **WA3NFV** (*the “red garter kid” – ask him*) was upgraded from Student Member to Full Member. And Ed, **W3HKZ** went from full member to Retired Member (Ed was the former chief Engineer at **WCAU-TV**. He retired and moved to FL. (*Unfortunately, he died soon thereafter. Moral: Stay active.*)

**2 Meter Activity Report.** Activity this month was consistently good. Jo, **W2EIF**, and Ernie, **W3KKN** have been copied consistently by **W8YIO** who is upgrading to higher power (now only running 25 watts). New to the band is Dick, **K4KFD** in Fairfax, VA, and Ernie worked **W9YXF** on one brief aurora opening.

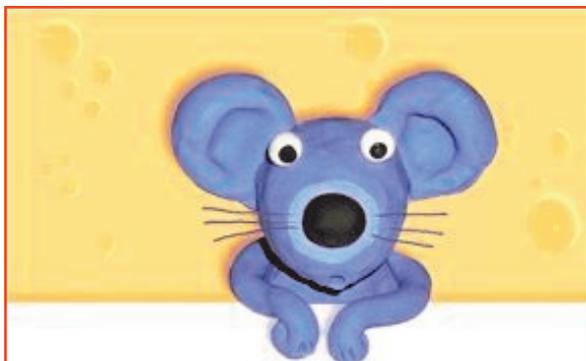
**Swap Shoppe. By W3ZRR.** (*Always nostalgia. Now we use the club reflector.*): For sale by Charles, **WA2ONK**, a Zeus Xmitter (\$275) and

an Interceptor receiver (\$275). Both were Clegg units. From George, **W2VJN**, a 75 pF, 10 KV vacuum variable, \$2. An ARC-5 xmitter, \$7 (*At the time, the surplus rig of choice to convert as a VFO*), and two traffic radar units operating at 2.4 Gc (*maybe use them on 2300?*) for \$10.

**Miscellany.** *Postage for this issue was a single 6-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](http://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**)



The picture shown is my ARRL straight key night setup for December 2002 AND **January 2021**. The Station is a Drake 2C receiver with the matching novice Drake 2NT transmitter. The out-board VFO is a Hallicrafters HA-5. This was a fine "upscale" Novice station.

This was not a re-creation of my novice station. I used a Drake 2B, and Heath Kit DX40, 40 meter dipole back then.

The straight key night station was purchased off e-bay at different times. The radios sat on a closet shelf for a good 8 years. As a note: the 2C receiver was purchased by a newly licensed ham ( I believe in 9 land) and while it may have had on air time, his brother, also a ham and who was selling the radio indicated the radio was never used to make an on the air QSO at his QTH. I found that fascinating and realized I was mostly purchasing a "new radio" and the radio was in excellent condition. Everything worked right off the bat. Manuals in hand I worked my way through setup and testing. There was some drift (remember that?), so letting the station get up to "nice and warm" temperature was needed.

I forgot how much work it is to send with a hand key. After being licensed in 1963, as soon as I could, I purchased a Vibroplex semi-automatic key, and years later moved up to a full iambic key, but the fun of making long QSO's and remembering my beginnings in Amateur Radio made it worth all the effort. Talk about entering a Time Machine!!

Very 73 to all, **K3WGR Allen**



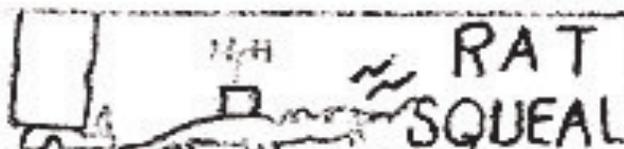
This month marks the 63rd anniversary of the first "Cheese Bits", published April 1958. Below is a picture of the first page of that 3 page issue. Page 2 included a Bio/Obit of Matt Gelardi W3CCX, namesake of the Packrat club call. You can find the whole issue (and all issues of Cheese Bits) on the club web site.

# PACK RATS CHEESE BITS

VOL. I

MT. AIRY V.H.F. RADIO CLUB, PHILADELPHIA, PENNSYLVANIA  
(50.2 & 144.2)  
APRIL 1958

NUMBER 1



## RAT SQUEAL

BY W3SAO

-----  
Congratulations to W3KKM on a new male addition to his family. His name is Michael. Of course he is a little bit different than the rest of the family. He has four legs and a tail.

-----  
Who was the "RAT" who tried for some time to work W3TNP and didn't know who he was trying to work?

-----  
W3JHT was a guest speaker at a recent Church gathering in Philadelphia. He gave a very interesting talk, and had a hard time getting away. Thank you, Doc. He and his XYL, have just recently returned from a Florida vacation.

-----  
Bon Voyage to W3AYG who will be leaving soon for a motor trip down South.

-----  
*(Due to the snow storm I  
At this writing, W3CIV is enjoying a  
vacation in warm (?) sunny Florida.  
couldn't print this sooner Helen)*

April 18th ?

A number of "RATS" attended the Bar Mitzvah of Kenny Jacoby- Jr. Op. of W3FSC, on Saturday, February 22nd. Congratulations, Ozzie. A good time was had by all, and the date for "LADIES NITE" was set at that time.

-----  
*(The snow storm in February)*  
As a result of the severe snow storm, one of our "RATS" lost a dear friend. The dog of W3JHJ froze to death. Our Condolences to Charlie.

-----  
W3SAO has finished his daily trips to the hospital and will resume as net control on 2.

-----  
W3JAY gave a talk on "SHOCK" at our March meeting. (The best way I know of to avoid shock is to keep your mitts out of the power supply while it is plugged in. Don't be a dead "RAT". I didn't hear his talk because I wasn't there. (Helen)



### FAMOUS LAST WORDS

"I didn't know the power supply was loaded."

# Events

**For inclusion, please direct event notices to the editor.**

**222 MHz Spring Sprint -Contest-** Tuesday April 13, 2021. See <https://sites.google.com/site/springvhfupsprints/home/2021-information> for details.

**432 MHz Spring Sprint -Contest-** Wednesday April 21, 2021, See <https://sites.google.com/site/springvhfupsprints/home/2021-information> for details.

**VCF Swapmeet - Computerfest and Hamfest -** April 24, 2021. Wall NJ. See <http://vcfed.org/wp/vcf-swap-meet/> for details.

**Microwave Spring Sprint -Contest-** Saturday May 1, 2021. See <https://sites.google.com/site/springvhfupsprints/home/2021-information> for details.

**6M Spring Sprint -Contest-** Saturday May 8, 2021. See <https://sites.google.com/site/springvhfupsprints/home/2021-information> for details.

**June VHF Contest - Contest -** June 12-14, 2021. See <http://www.arrl.org/june-vhf> for rules and details.

**Firecracker Hamfest and ARRL Convention-Hamfest -** July 3, 2021. Harrisburg, PA. See <http://www.W3UUu.org> for details.

**Murgas ARC Hamfest & Computerfest - Hamfest** - July 4, 2021. Plains PA. See <http://hamfest.murgasarc.org> for details.

**Sussex County ARC - Hamfest -** July 18, 2021. Augusta, NJ. See <http://scarcnj.org> for details.

**CQ WW VHF Contest - Contest -** July 17- 18, 2021. Details to follow.

**222 and Up Contest - Contest -** August 7– 8, 2021. Details to follow.

**10 GHz and Up Contest (Round 1) - Contest -** August 14 – 15, 2021. Details to follow.

**September VHF Contest - Contest -** September 11-13, 2021. Details to follow.

**10 GHz and Up Contest (Round 2) - Contest -** September 18-19, 2021. Details to follow.

**EME - 2.3 GHz & Up – Wknd 1 - Contest -** September Date TBD

**EME - 50—1296 MHz – Wknd 2 - Contest -** October Date TBD

**EME - 50—1296 MHz – Wknd 3 - Contest -** November Date TBD

## *We Rediscover Spark Gap Radio by Accident*

The above titled YouTube video shows a coherer at work. The coherer was a radio wave detector used at the dawn of radio. It even predates galena crystals (mid to late 1890's). It consists of loosely packed metal filings between 2 electrodes inside a glass tube. Every time it receives a signal (a dit or dah) it must be reset by tapping it mechanically. Interestingly, the coherer shown in the video is being manufactured now and is for sale on eBay. (though it's pretty expensive ~ \$70). So if you're really interested, you can build your own receiver from the dawn of radio. The spark signal in the video has high rf levels well into the microwaves, so its definitely Packrat material! See <https://youtu.be/9zG DlxugQ> —W2BVH

## Arecibo Redux

The collapse of the Arecibo radio telescope / radar was significant enough that it (finally) made it into mainstream media. An article on it, written to very high standards is available at "The New Yorker" web site. A very good read. <https://www.newyorker.com/magazine/2021/04/05/the-collapse-of-puerto-ricos-iconic-telescope> —W2BVH

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## Summits On The Air (SOTA) Using VHF

Here's an interesting short article on the utilization of VHF+ bands by folks activating SOTA portable stations. 2 Meters dominates. The article discusses how 6 Meters and 70 cm may be added by more stations. Take a look. <https://www.k0nr.com/wordpress/2021/03/looking-at-vhf-uhf-sota-data/> —W2BVH

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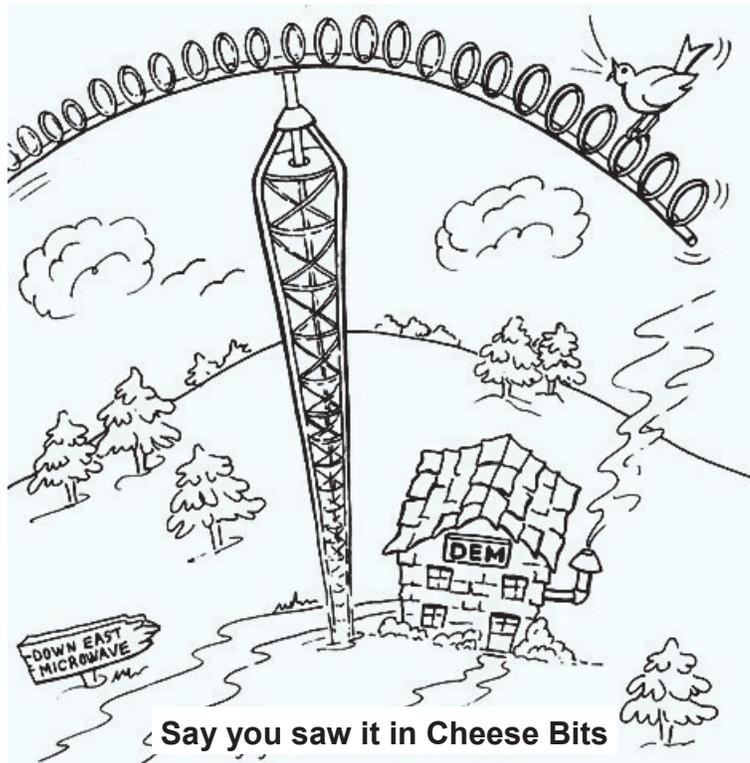
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