



# CHEESE BITS

**W3CCX**  
CLUB MEMORIAL CALL

ARRL  
Affiliated  
Club



Volume LVIII

January 2017

Number 1

PREZ  
SEZ:

The new year is upon us and so is the snow. I would have been off to FL late last year but my first granddaughter chose to get married in the Dominican Republic on January 2, so the family all went to the DR on New Year's eve for a five day adventure. Now that we're back, and ready to leave, the snow has stranded us home with the 10 ton camping gear until the roads are clear. Such is life.

Many important things to cover this month: Meeting news and Contest news among them. But first I have to talk about what a great meeting we had in December. It was so nice to see so many members come out for a fun night talking and catching up on old times. Recently we had a meeting with over 50 in attendance, this time we beat that with nearly 60 coming to enjoy fun, food and fellowship. Everyone started to dig into the new PackratFinder program, presented by W3SZ. Since the January meeting is so close to the contest, we thought it would be good to get everyone thinking about how to use this new assistance tool in our arsenal for greater scores and participation.

**A most important item to note is the change in the meeting place this month. We will hold the meeting at Giuseppe's Pizza. Starting at 6 PM we'll have our normal dinner time with each**

**ordering individual meals or pizza, then at 7:30 the formal meeting will begin. It seems that, on relatively short notice, we received word that the meeting room at the Senior Center would be closed for construction in January.**

**We'll try to get the word out by every means possible, fortunately if you go to the wrong place, it won't be hard to correct the error. We'll put a sign up at the Center. This is the meeting where we will prepare everyone for the Contest, please be in attendance.**

The weekend following the meeting is the **ARRL January VHF Contest**, the weekend that we've all been waiting for. At this time it's a little late to put up antennas, but we sure can perfect our assistance methods. Make sure you can get the **spots generated** and participate in the **chat pages** for when it's time to dig up that distant grid and multiply your score. You can also make sure that a **CW key** is connected and working to every IF rig that you use. CW is the mode needed for weak signal work.

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**PACKRAT 222 MHz REPEATER - W3CCX/R**

222.98/224.58 MHz (PL 136.5) Hilltown, PA

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**PACKRAT BEACONS - W3CCX/B**

FM29jw—Philadelphia, PA  
50.080 144.284 222.062 432.290 903.072 1296.264 2304.043  
3456.200 5760.195 10,368.034 MHz (as of 1/16)

**MONDAY / TUESDAY NIGHT NETS**

**VHF/UHF Monday:**

| TIME    | FREQUENCY   | NET CONTROL           |
|---------|-------------|-----------------------|
| 7:30 PM | 50.145 MHz  | N3RG FM29ki Ray       |
| 8:00 PM | 144.150 MHz | K3GNC FN20ja Jerome   |
| 8:30 PM | 222.125 MHz | KB1JEY FN20je Michael |
| 8:30 PM | 224.58R MHz | W3GXB FN20jm Bob      |
| 9:00 PM | 432.110 MHz | WB2RVX FM29mt Mike    |

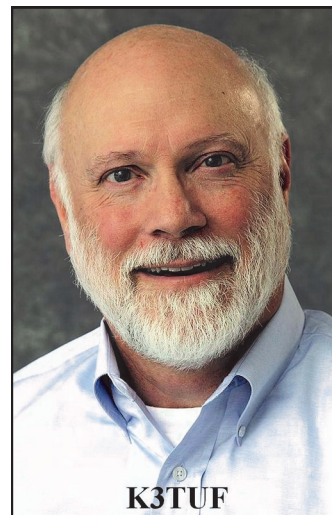
**Microwave Tuesday:**

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](http://www.packratvhf.com) or [www.w3ccx.com](http://www.w3ccx.com)

Get ready to use the **Packrat Finder**, you will find instructions at this link: <http://www.nitehawk.com/w3sz/PackRatFinder.html>. It will take a few minutes, so get ready before the contest.



For those who would like to take a break from the weather after the Contest is over, please consider joining a nice group of packrats for Hamcation in Orlando being held the weekend of February 10, 11 and 12. We will have a special gathering of Packrats on Thursday the 9<sup>th</sup> for a southern MWL meeting at the Holiday Inn Express noted on the Hamcation website: <http://www.hamcation.com/travel-accommodation/>.

Get ready for some **HF fun** with the **CW ARRL DX Contest** in February, another great way to hone your CW skills for weak signal work

I'd like to thank Ed, WA3DRC and Guy, WA3JZN for joining forces and co managing the Mid Atlantic VHF Conference coming up this year.

I know it's cold now, but it will soon be time for the Spring Sprints and the thaw will be upon us.

Until then, lets talk on lots of bands,

**Phil, K3TUF**

# Some December Meeting Photos

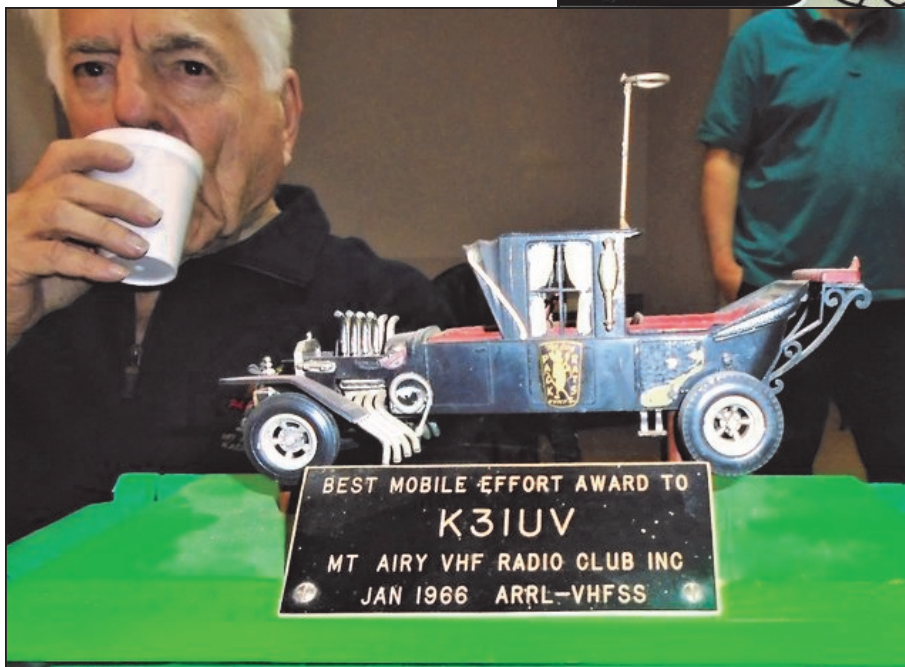


Our 60th Anniversary! Food was catered in at the Ben Wilson Sr. Center





Meeting Photos cont'd...



Note 2M  
Halo on the  
buggy



Roger explains the PackratFinder program



Tnx K3JJZ for pictures



# KOBAK'S TV VAN ROVER PROJECT

By Pete Kobak, KOBAK

## **Purchase**

I've been using our family minivan for roving in VHF and HF contests since mid-2014. Though it's financially smart to re-use existing family resources, there is considerable inconvenience for my wife with me taking over the van for 2-4 days at a time (not that she complains), and a lot of effort for me to build up then tear down the van for each contest. This inconvenience increased quite a bit this year with **intensive participation in NPOTA** as an activator going to as many unique parks as possible.

I had been casually looking online at TV vans that became available from time to time, but not seriously pursuing them; it was somewhat a fantasy. Part of the reason I wasn't serious was because they always seemed to be in Texas, or California, or some other long distance seller. My buddy Rob W2HYW, a fairly new but more casual rover op, had also been looking on my behalf because we had talked about partnering up on operating a more serious rover. Rob found a dealer only a couple hours away offering a 2001 van from a TV station in Albany at what seemed a great price. He offered to go up with me to check it out since I know next to nothing about vehicle mechanics and Rob is a real gearhead.

Rob gave the van a good going-over when we went to see it in October. He gave it a thumbs-up from the standpoint of not having obvious immediate flaws, but of course having normal wear and rust from being out in the Albany weather. The dealer demoed the 5kW generator and the pneumatic mast, and we both drove the van (a truck really). Although the van seemed to be an excellent value, seeing it live made me realize **how much work I was taking on**. Though I was planning to retire, I wasn't sure if I wanted to dedicate the amount of time necessary. Even though it was everything we were hoping for, I took back my deposit to think about it a little more.

After a couple weeks of reviewing the pros and cons, I decided to delay my retirement a couple months to pay for the van and picked it up with the help of my future son-in-law. This was also my first vehicle purchase from out of state so I had to do the PA inspection, title and registration stuff myself for the first time. Did you know the registration fee is a function of gross vehicle weight, and you can chose to register a lower weight than the maximum rating? Truck registration is different, and a lot more expensive. The van now sits in my driveway, an eyesore with tarp over it because I wanted to avoid water freeze cycles on all the mechanical and radio stuff on the roof. Does anyone have a garage for rent with an 11-foot door (seriously)?

## **Features**

The two top features of this van are the generator and the (supposedly) 50-foot pneumatic mast. The air compressor runs off of AC unfortunately. There is a hydraulic stabilizing system (when parked), but when Rob and I flipped the switch, oil leaked underneath ... I've been told it isn't a safety issue with the mast extended, but mostly is there to keep the van from rocking too much with wind. The electrical distribution system is impressively complex, but between Rob and our club members we have wiring diagrams. There are four racks, a desk area at two of the racks, and external door access close to the back of one of the racks. The generator fuel is tied to the main tank and can be started remotely. There is a main and secondary battery, a large untested inverter still installed on the bottom of one the racks, and a physically large

alternator, all indicating likely good DC capability.

There is a permanent ladder to the flat walking area on the roof, though not much room to walk with the equipment up there. The mast has a terrestrial microwave link antenna and electronics in a fairly large package, with a large coiling cable bundle. I hope to use the existing cable and maybe antenna frame to hold my own microwave box (only a dream so far). At the front of the roof is a larger circular dish (around 4-5 feet) and offset feed for satellite link. Looks like it has azimuth and elevation motion, but I think the controls were ripped out from the rack along with everything else, so don't know what if anything is operable.

### ***Plans and Questions***

With all those racks there should be plenty of room for the electronics for both HF and VHF operations. I couldn't justify getting the van just for routine VHF ops, but when the VHF contests and HF contests and events are included, a dedicated van is a reasonable "investment". I'm only a Limited Rover currently in VHF contests (besides the special low power microwave box in January), and have Limited Rover RF power (200/200/100/100) and antennas for the four low VHF bands. On HF, I have a medium power amplifier (500w) that runs on 14v. Right now, I think it would be smart to use my existing minivan complement of equipment before trying to run more power or more UHF bands.

I'll probably use my high power screwdriver antenna for HF, though I don't have a place to mount it yet. I'm also interested in experimenting with a random-length horizontal loop around the roof that might be good for NVIS for state QSO parties, or maybe at least it would be a good receive antenna. My biggest antenna question in the short term is whether and how to use my short (10 foot) yagis for 144-222-432. My initial VHF antennas might just be small horizontal loops for VHF.

Supply power is a major question that has to have a definitive answer before getting electronics installed. I don't know yet whether the generator is sufficiently RF and AF quiet. I'm used to using a deep cycle battery and voltage booster to supply up to 80A peak, which eliminates all vehicle engine (or generator engine) noise concerns while stopped, as well as not worrying about supplying those peak current demands. On the other hand, 120 VAC power would be more convenient and (with 50 VDC power supplies) allows amplifiers up to about the 1kW class ... but I don't know if I want to have to rely on AC power. Another question is the generator voltage. If I want to be capable of legal limit amplifiers particularly on HF, I need 220v, which the generator is capable of with modification.

Another issue is operator position. There is no chair installed for an operator position in the back, but I would like to be capable of having both an operator and a driver so the rover can make contacts in motion. So I'll have to make a choice between outfitting the existing front passenger position to be able to run a remote radio (SDR terminal with a couple of monitors), or (better but more expensive) installing an operator's chair in the back that's safe while driving.

Rick K1DS is selling me his microwave bands at a Packrat price (thanks Rick) and he plans to get those to me in February. My priority now is getting the van ready for HF and low VHF first, so I have no expectation of getting on microwave bands before 2018. I want to get all the microwave bands' electronics in and antennas on a box that can be mounted at the top of the mast, so I only have 28 MHz I.F. running up to it, along with power and control cables ... hopefully all available via the existing self-coiling cable bundle. That microwave box will be a major project by itself, and I want to spend my time on getting my existing capabilities into the new van.

Could that front dish be modified for amateur EME ? That's an exciting possibility, but no idea if it's



possible. I might have to take the whole thing off as a unit to make room for other antennas for now.

### The Ask

I will probably have a whole bunch of questions for Packrats as I work through this huge project. I'll have specific technical questions and requests for testing I can't do, as well as soliciting opinions based on your practical experience. **Thanks in advance for your help**, which I know I can count on ... otherwise I wouldn't have gotten this thing.

--KOBAK



Drivers side rear view. Air compressor is behind door closest to you. On top closest to you is the framework holding the terrestrial dish and camera, all mounted to the pneumatic mast. The ring for the coiled cable bundle is just visible.

Vans Vans Vans

Interior between the front seats and the rear area. The rack to the right is accessible from the outside via an exterior door. The racks to the left are accessible from the back via the rear van doors. Electric distribution and controls are at the center black panel. Below the black electrical panel is an electric heater; barely visible at top right is the AC-power air conditioner.



Vans Vans Vans Inc. - Powered by AutoCorner

# KOBAK IN NATIONAL PARKS ON THE AIR

by Pete, KOBAK

I was excited to see the announcement of the National Parks on the Air (NPOTA) event by the ARRL around October 2015. The event was to celebrate the 100<sup>th</sup> anniversary of the National Park Service, by operating from NPS units during the 2016 centennial year. Having already built a pretty decent 500w mobile station for HF contests such as state QSO parties, I already had a good way to operate from most NPS units, and my experience in roving in QSO party contests would serve me well in running from park to park during my limited time on weekends.

In addition to the “easy” NPS units where I just had to outfit the minivan rover and park in NPS visitors’ parking lots, I set a goal of activating all units in the ARRL Eastern PA section. This was not going to be easy due to the units in Philadelphia, almost all of which did not have outdoor parking on property. (The ARRL was being strict in only counting activations on NPS property, so for instance one could not park on the street to activate a city house.) While doing NPS roves in the minivan rover on weekends, I was also scheming for ways to operate from urban parks using some type of pedestrian portable station.

## ***NPOTA Station Designs***

For drive-up activations, I used my standard HF minivan rover configuration, which includes a screwdriver antenna, Flex 3000 radio, separate operating AGM battery with voltage booster, and remote controls and indicators for power/SWR meter, screwdriver control, and amplifier. The station can also use a 27’ elevated ground plane antenna, but that was only deployed a couple times; its main advantage is better long distance contacts.

For pedestrian activations, I settled on two designs that used the same antenna system: a pair of hamsticks in a dipole configuration that could be oriented either vertically or horizontally depending on the space available. The hamstick dipole mount electrically isolates both sticks from the metal mount. Because I could not depend on being able to use the resonant frequency of the hamsticks, both stations used an automatic transmatch.

The medium power 500w pedestrian portable station was basically the rover station in a heavy duty pull wagon containing: the car battery, a 14v 80A voltage booster; and a minirack with the Flex 3000, Ameritron 14v 500w amp, and an LDG 600w autotransmatch. The hamstick dipole was mounted on a 2” mast system with a large foldable tripod with a height of 15’ to meet the NPS max height restriction. A horizontal handtruck brought in 300lbs of sandbags for the tripod legs and guy ropes, again conforming to NPS requirements not to penetrate the lawn with stakes. The NPOTA Facebook group dubbed this the “**Nerd Wagon**”. This system was used to activate Independence Nat’l Historical Park and Edgar Allan Poe Nat’l Historical Site, and was also brought in to operate on the roof of the Franklin Institute to activate the Benjamin Franklin Memorial.

The second station had to be able to be carried by one person through city streets, and set up at locations with small footprints (like a row-house stoop) and have limited height or width. I bought an aluminum rack from China via eBay designed to be fit into a medium sized backpack. Although meant for a specific Yaesu radio, through some adaptation and hillbilly engineering, the core of the station fit into a backpack altogether weighing about 40 pounds. There were four components mounted in the

rack: the main unit of an ICOM 7100 radio (separate control head), 100w LDG autotransmatch, 20Ah LiFePO battery, and a 14v 20A voltage booster. The same hamstick dipole antennas were mounted on a photographer-type tripod + telescoping mast system that brought the antennas to about 10' off the ground under ideal conditions. I dubbed this my "**Stooper Station**". It was used to activate tight urban units in Philly and Manhattan, and brought by foot and Uber to activate 18 of 22 units in Washington DC.

## ***NPOTA Operation Highlights***

Some highlights of my NPOTA efforts include:

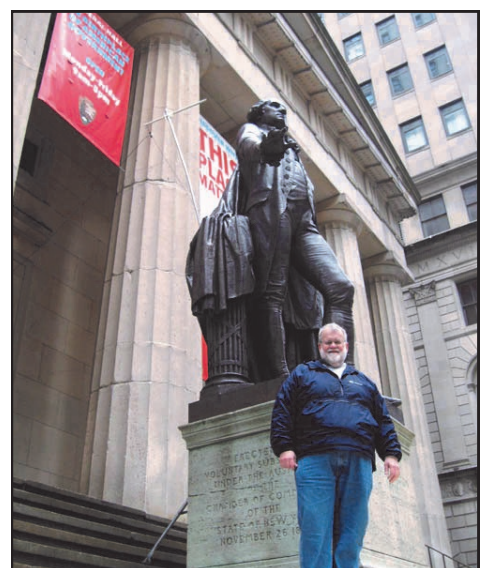
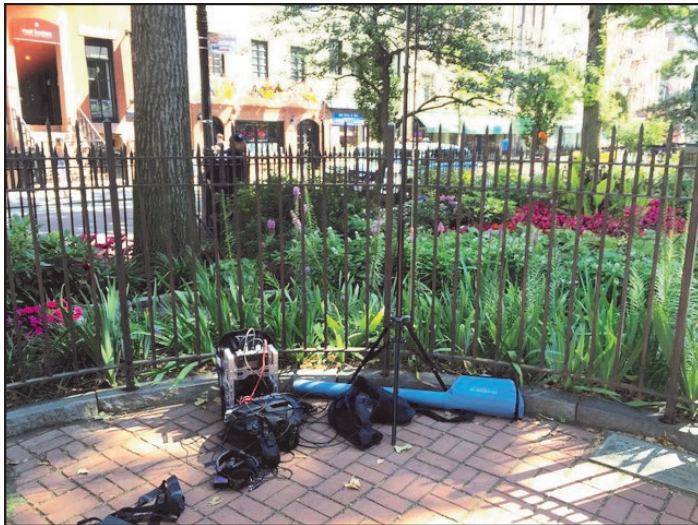
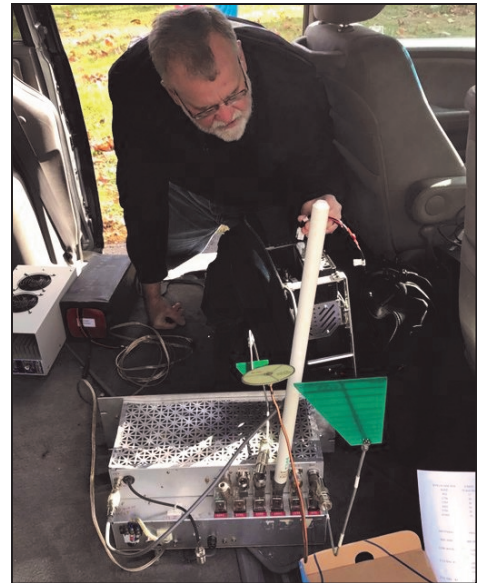
- First activation (of only two) of the Statue of Liberty. This expensive activation was 90% funded by donations.
- First and only activation of the Ben Franklin memorial from the roof, as previously mentioned. I organized a team of 4 operators and two radio stations.
- In the Philadelphia area: first activations of Valley Forge, Edgar Allan Poe, Independence Hall, Old Swedes Church, and the challenging Thaddeus Kosciuszko house.
- In Washington DC: first activations of Ford's Theater and the Sewell-Belmont House. The activation at Ford's at the Petersen House set off alarms in the house from my RF; I had visions of fire trucks converging from all directions to save "the house where Lincoln died".
- In Manhattan, first activations of Federal Hall, Stonewall, Teddy Roosevelt's Birthplace, and Governors' Island.
- Altogether, almost **8,500** contacts from NPS units in **150** activations in **104** unique units from the Martin Luther King Site in Atlanta, up to Saratoga Park in upstate New York, and as far west as the William Howard Taft site in Cincinnati.
- Made about 700 contacts to NPS units from home, netting 345 unique park contacts.
- Activated all NPS units in Pennsylvania, New Jersey, and Delaware (far exceeding my original goal of all in Eastern PA). Activated all but one in Maryland. 18 out of 22 sites in Washington DC and 8 out of 10 in Manhattan.
- 

Although this was almost completely an HF operation, there were some Packrat-related highlights:

- Leon Rosen N1XKT introduced me to Derrick Pitts, chief astronomer at the Franklin Institute, and well-known ham. I then emailed, phoned, and met Derrick to get detailed agreement for our rooftop activation Oct. 30. Thanks Leon!
- Joe Fischer KC2TN agreed to a stunt activation because Joe lives within the boundary of the Pinelands, an "associated area" recognized in NPOTA. We contacted on **6m through 23cm, plus laser**. I'm confident that they will be the only verified NPOTA contacts on 33cm, 23cm, and <1mm bands; plus may be the only weak signal contacts on 2m and 70cm. Thanks Joe!
- Before, during, and after the VHF Superconference, I activated sites in the periphery of Washington DC and at night activated Shenandoah National Park on Skyline Drive.

Even with all this NPOTA activity, I still managed to outfit the VHF rover for the major VHF contests, although I had a disaster on Camelback in the July contest!

Here are some pictures from the 2016 NPOTA :



## *N2CX NPOTA*

Here's another perspective on NPOTA from my friend Joe, N2CX, a member of the NJ QRP Club. It has relevance to the Packrats, since Joe cooperated with Packrat, Pete K0BAK on a couple of activations. Joe's activations were QRP. --W2BVH

I was honored to be invited to join Emily KB3VVE in her world-class activation - only the second serious one of MN67. With the help of the earlier event by Pete K0BAK, she finally got a Special User Permit after a long period of attempts. At way too early in the morning we took the staff ferry over to Liberty Island with great anticipation, escorted by our NP contact, Paula. In the shadow of the Bronze Lady we set up our twin stations of KX3s and W4OP loops about 30 feet apart, and agreed to split bands with approximate half-hour swaps. Business was brisk to say the least! 40 meter cw was hot early so I had a pileup almost immediately. 20 SSB had poor propagation, so she chose 30 CW first. Keep in mind that she is relatively new to CW, but did a bang-up job! We swapped out periodically and finally ended up with a combined total of 210 Q's for some very happy people. We had zero interference as long as we were not on the same band proving the efficacy of our station equipment and setups. Alas the special use permit was only good for 2 hours so we had to leave many stations unworked. Not completely bad for us though, since we were frozen!

All in all this was a great way to wind down NPOTA. Thanks are due to K0BAK for his ground-breaking earlier setup and advice on ours and to Larry K5RK for constant motivation to pull it off and for tirelessly spotting us since we were too busy for that! We were also greatly aided by Emily's friend Doreen and my son Kevin who aided and abetted our efforts and shouldered the task of providing photographic services.

72/73, Joe E., N2CX

On December 31, Joe wrote:

It's been a great year operating NPOTA! After over 200 activations in more than 130 individual NP units, and more than 6000 Q's, it's time to take a rest. Immense thanks to all the local operators and loyal QRPers for seeking out my activities this year. Gotta find a new obsession for 2017.

## Large Collection of Callbooks Online

Steve, KB9MWR has a huge collection of callbooks scanned page by page and available to view online. Great for researching your callsign or someone else's.

Its at  
<http://kb9mwr.dyndns.org/tmp/callbooks.html>

## Bruce Kelley 1929 QSO Party

Here's something to think about for next December: The Antique Wireless Association's Bruce Kelley 1929 QSO Party. Participants get on the air with transmitters that use tubes that were in production in 1929 or earlier. No crystals! The transmitters are typically self excited single tube Hartley or Colpitts power oscillators making 5-15 watts. Tubes that qualify are readily available on the internet for as little as \$10- \$30 and the power transformers should not cost much more (if you don't already have one in a corner of the cellar as a doorstop). Once the parts are in hand construction wouldn't take more than a day.

Sounds like a lot of fun. Lots of clicky / whoopy signals on the air during 2 December weekends. Check out additional details and resources for building your own rig at

[http://www.amateurradio.com/1929-qso-party-weekends/?utm\\_source=feedburner&utm\\_medium=feed&utm\\_campaign=Feed%3A+amateurradiocom+%28AmateurRadio.com%29](http://www.amateurradio.com/1929-qso-party-weekends/?utm_source=feedburner&utm_medium=feed&utm_campaign=Feed%3A+amateurradiocom+%28AmateurRadio.com%29)

And

<http://www.antiquewireless.org/bruce-kelley-memorial-cw-qso-party.html>

# On The Bands

By Jerome Byrd – K3GNC

## Stan The Man KA1ZE/3

What challenge is there for one who routinely works a station 587 miles away and numerous 400+ miles away seven days a week? When you have a 100'+ high tower on top of a small mountain and 4 x KW Beko amps hooked up in various permutations to fixed and rotatable antennas with a clear horizon in all directions, how does one not succumb to boredom? Some would be satisfied with just being the "BIG DOG" – but not STAN The MAN. He decided for the month of December he would try and work 1000 2 meter qso's between his operating hours of 6 am to 10 am (often less; rarely much more). That goal was achieved by Christmas and he went on the gather ~ 300 more for ~ 1300 qso's on 2 meters operating only in the four-hour period each morning. Obviously you need plenty of repeats to get 1300 Q's, but he did manage ~ **150 unique stations in 53 grids and 23 states**. For most it would have been mission accomplished and a well-deserved pat on the back, rest on one's laurels – one and done. That is not in the nature of STAN The MAN. For the year 2017 he is shooting for 17,000 2 meter qso's between those same four hour periods. Please note that Stan does not just sit on the frequency greedily gobbling-up qso's to the exclusion of others. He is still facilitating contacts between smaller stations, getting people to point their antennas at stations who would never be known to be there, etc. **The pursuit of excellence is contagious**. Many, including myself, have set our own operating goals for 2017, inspired by Stan. You don't need to be a big dog station to pursue operating goals on the vhf/uhf/microwaves, just a commitment to be more active.

**Nets and Scheds:** 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 sched with WA2LTM, K1PXE, WZ1V, N2SLO, WA2ONK, WB2SIH, K3GNC and others. All are welcomed.

Tuesday: 2000 local – "Mudtoads Net", KD8UD fm17uv net control. 144.175, all are welcomed.

Wednesday: 2030 local - 432,150 – group sched, 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

Saturday: 144.205 – Chesapeake Net, W3BFC net control. All are welcomed

Sunday: 1030 local – 144.250, Sunday Morning Memorial Net, Bill N2FKF fn30br net control, All are welcomed.  
2030 - - 432,150 – group sched, WA2LTM, K1PXE, WZ1V, N2SLO, WA2ONK, WB2SIH, K3GNC and others.  
All are welcomed.

## The Luna-Tic Fringe:

There were poor to mediocre conditions for eme in December for a small station such as mine. I did however manage to get two new stations on 432: PA2V, UT6UG and five new ones on 144: DK5LA, IK1FJI, YL2GD, OK1DIG, UA4AQL. I have been off 1296 eme for more than a month now waiting for a new preamp. I hope to have a new 1296 eme contact or two for February's report.

EME Tidbits – For the first 6 hours of a moon-pass Europeans stations are available. The next 3 hours are limited to NA and SA. The final 3 hours feature the Pacific islands, AU, ZL, Japan and the far east at the very tail end of moonset.

**Please .. please .. please:** I want to encourage all Packrats and other vhf/uhf/microwave types to edit their QRZ.com pages to include what bands they are qrv and what equipment they are using on said bands. Please see my QRZ page for an example.

**Get Ready To Rumble!** – January Contest 21<sup>st</sup> – 22<sup>nd</sup>. I will be qrv on 7 bands. Cu in the test!

**73, Jerome**

# A CHEAP AND EASY PANADAPTER

BY MARTEN K3HUW

After the last June contest, I was wanting a way of monitoring a larger section of the band visually, instead of tuning around. I had obtained one of those "RTL-SDR dongles" available for \$10-\$20 from various sources and had heard of people using it to monitor an IF in their radios. The first IF of my FT-100 is 69.985 MHz, within the tuning range of the basic RTL-SDR. From the service manual of my radio, I used the Block Diagram and Parts Layout to find a spot to tap into the 1st IF.

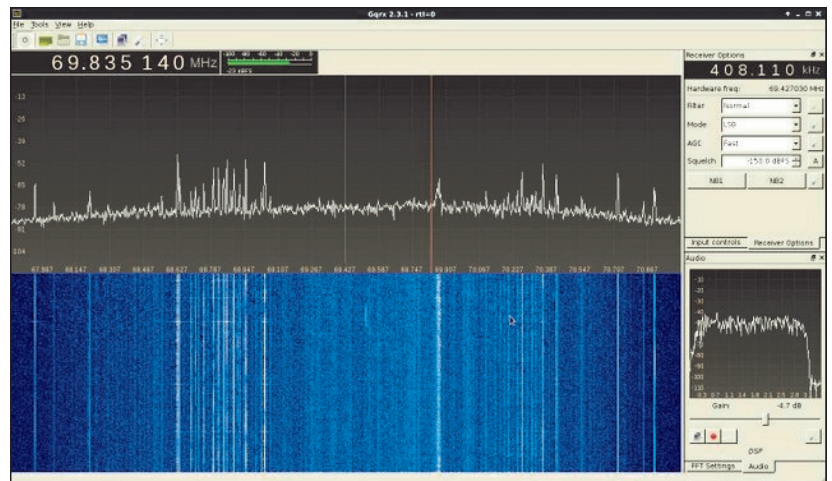
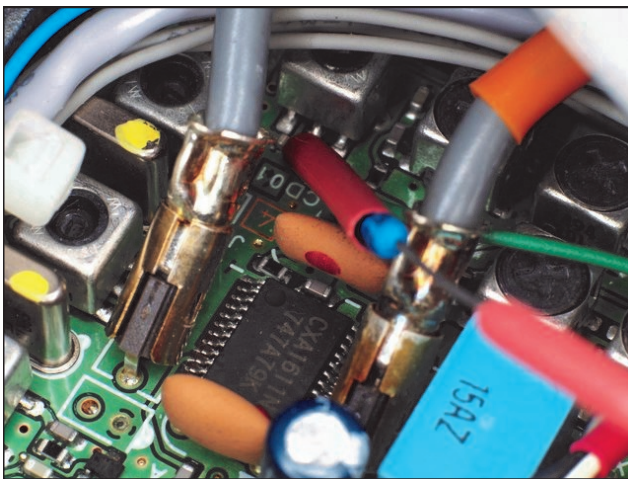
I then opened up the FT-100 and soldered a small jumper with a 0.01 uF capacitor to the spot I had chosen. The capacitor is blue in the photo, and I used red heat shrink over the leads to protect from shorts. I then drilled a small hole for an SMA connector in the case of my radio.

Then with a short SMA jumper, I could connect to the RTL-SDR running GQRX on my computer. When tuned to my 1st frequency, I can see a very large section of the band, up to **3.2 MHz**. The included screenshot shows **all of 40m, plus the SWBC on either side**.



It isn't perfect, I see some birdies, and a few images but it does visualize a lot of spectrum that I wouldn't hear through the radio.

-- Marten K3HUW



It's nice to see there are still people around who aren't shy about making some holes in commercial equipment in pursuit of enhanced functionality and features. I still have a DX-60 downstairs with an octal socket glommed on to its side so an external plate modulator could be attached. Of course that mod wasn't as successful as Marten's (it over-modulated and at the time, I wasn't aware that 6146's were not the best tube to plate modulate). You live and learn. --W2BVH

# K3S Assembly Adventure Begins

I purchased Elecraft K3S and P3 kits back in November 2015. I had every intention of assembling them before now but a little problem crept into my plans. Mr. Drake, my 9 month-old orange tabby, arrived at about the same time. I noticed that everything not secured became a cat toy. The parts of a K3S transceiver are probably more expensive than anything I might obtain from PetsMart. It has taken about a year, nearly constant nudging from KA3FQS, and a bout of unemployment but I have cleared my projects table for the assembly. I have also figured out how to secure the kit parts from Mr. Drake during assembly. The K3S assembly is firmly underway. The K3S / P3 combination will serve as my 6 meter rig and as the IF rig for my 2 meter, 222 MHz, and 432 MHz transverters.

73,  
Michael KB1JEY



My favorite Christmas Present! Want more time for Ham Radio? Don't argue, just keep quiet, sit down and drink your coffee :-))

--W2SJ



## Reverse Engineering Calculator For Parallel Resistors

Suppose that you needed (as I did) an 83 Kiloohm  $\pm 2\%$  resistor-- what paralleled resistor combination would provide that value? Plan A would be to use your calculator to plug resistor values into the formula and iterate the process until you obtain the right values.

Plan B would be to use the handy calculator published here...

<http://www.sengpielaudio.com/calculator-parallel.htm>

...Which in this instance produces 18 resistor pairs that provide the right resistance and tolerance. In about two seconds. 73 --Brad AA1IP

## EME IN THE '80s

Here's a nice article on what it was like to do 2 Meter EME in the 1980's from VE7 land:

<http://www.amateurradio.com/eme-in-the-80s/>

## Gordon Kittel W3GK - SK

I'm sure Gordon had many friends, both near and far, as he frequented multiple hamfests throughout the year as a seller. Personally I've known Gordon for more than 10 years as he repaired my father's radio in 2003. Debbie and I got to know Gordon and Carol (second wife) since they married in September 2014. Many "old timers" will remember his ham radio shop on Main St in Soudertown back in the 70's. Since then Gordon has worked for Honeywell and setup his repair equipment in the basement - and repaired or checked out many, many radios for almost everyone.

Gordon will be sorely missed by all of us. RIP  
--Mark WA3QVU

<http://www.legacy.com/obituaries/timesherald/obituary.aspx?n=gordon-kittel&pid=183062755&fhid=13081>



## **SUPER CONFERENCE PICTURES**

Lots of pictures to be found, but start out at:

[http://www.w4dex.com/gallery/VHF-Super-Conference-2016/IMG\\_1245](http://www.w4dex.com/gallery/VHF-Super-Conference-2016/IMG_1245)

## **W2BVH QRV 2304 MHZ**

From the Packrat reflector 12/13/16:

“Just got off the air with WA2LTM on 2304.100. My first QSO ever on that band & I'm thrilled to have a new band on the air at W2BVH. I anticipated having to make iterative changes to the trimpot of the 10 MHz TCXO reference to net the transverter's frequency. I told Doug I've set the IF rig to 144.100 and he said key it up and I'll go find you. When I keyed it his immediate reply was "oh, there you are" ... less than 1KHz off with no adjustment needed. Signals around 54-55 both sides at a distance of 35-40 miles. Not earth shaking but more than usable in the January contest. Rig is one of the MMDS boxes the club picked up 4-5 years ago. Finally completed and working here. Better late than never.”

The following day I completed a 180 mile CW QSO with Dave K1RZ in FM19. I'm glad Dave was interested in trying because I never would



have considered the possibility that the QSO was possible. My antenna is at 38' on a pole sticking through the roof and I've got trees in around 270 degrees of the compass. At least the first trees in Dave's direction are around 2 blocks away. The K1IIG beacon is audible maybe 10% of the time: in that direction trees are about 15 feet away!

1296 MHz is now in the works thanks to WB2ONA & WA2LTM. Hope to do an aircheck in the next few days.

# **43rd ANNUAL EASTERN VHF/UHF/ MICROWAVE CONFERENCE**

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

Nibbles from January 1967. Vol. IX Nr. 10 &  
11

de Bert, K3IUV  
*(author's comments in italics)*

- Why the double number identification above (issue 10 and 11)? Helen made no comment, but my guess is other time conflicts. We also note that the Prez Sez is absent. I'll try to split the issue into two month's column.
- **"Our Prez Sez"**. No report this month. In it's absence Helen extracted some comments from the "Bandspread", a club paper from Cedar Rapids, Iowa. A Mr. Ben Waple of the FCC was the speaker at their 10/20/66 meeting. Among Helen's abstracts were the following:
  1. Recording an amateur station and playing it back on the air is not illegal, even without permission, *(Is this still true today?)*.
  2. The names of all persons speaking from your rig, even on Phone Patch, must be included in your log (*Log, what's a log? Who still maintains one? And how many of you recall what a Phone Patch was / is?*).
  3. You may not use amateur frequencies for any remuneration activity whatsoever. Section 97.111 of the Amateur service rules prohibits.... For Buying, Selling or Swapping of any equipment.
- **ARPSC**. The Amateur Radio Public Services Corp was supported by a number of Packrats. The Philadelphia Inquirer, edition of 12/12/66 reported that "A Ham message center was set up in room 121 of City Hall to send messages of up to 20 words, free to servicemen at home and abroad". Three City officials held an opening ceremony in City Hall. Participating as part of the ARPSC were Packrat members K3WEU (Paul Behrman), W3PST (Woody Haldeman) and W3ELI (George Van Dyke, Jr.). Several additional ARPSC members also participated. Over 2000 messages were sent during the brief period of operation of the station.
- The club lost another member. W3GLI, George Reid died on Jan 10, 1967. A memorial box on the first sheet memorializes him, and notes "Silent, but not forgotten".
- A heart-breaking story was related by K3KDF, George "Bud" Smyth who had spent a month in Temple Hospital. While there he met an old ham buddy, K3KPB, Ted Bridges, who got his first ticket in 1924. Ted has very serious medical issues, and had no income other than social security of \$107 / month. From that he had to pay \$80 for rent for he and his XYL. A lot of other details in the story, but the financials were his immediate problem. Even scaled to current figures, it was a tough situation. He appealed to the group to lend support to Ted.

- **ARRL Bulletin NR 90.** Issued 12/8/1966. Quoted verbatim, as follows: "Attention VHFers. The long continued moonbounce efforts of VK3ATN paid off on November 28, 1966, when a 6 minute QSO was completed with K2MWA/2, the Crawford Hill Radio Club. The distance was 10,300 miles on 144 Mc (MHz), almost double the previous record, and set a new moonbounce record, regardless of band. Antennas were a large stacked rhombic at VK3ATN and a 60-foot dish at K3MWA/2. Further information will appear in January and February QST. AR
- **Members.** K3MSV, Jules Bernoff was moved to retired status.

*Postage remained at 10c this month (5 sheets 8-1/2" x 14"). As in previous editions, many "folksy" comments about members, their families, and activities were included in this edition of Cheese Bits. If interested, or for more detail on the above items, visit [www.W3CCX.COM](http://www.W3CCX.COM) and read the full issue posted there by our Webmaster, Ron, W3RJW).*



*thirty, de K3IUUV*

## Exploding Caps

I've got a 1296 transverter / amplifier / LNA just about finished and set to go. It's been bench tested and will be put on the air soon after this issue of Cheese Bits is put to bed. I got it from WA2LTM (**thanks Doug!**). It came more-or-less set to go. Missing was a sequencer and a switchable I.F. power attenuator capable of lowering the I.F. rig's output to a level suitable for the transverter.

It was easy enough to make a sequencer from an Arduino board and a handful of 2N7000 fets. Similarly it wasn't much trouble putting in an I.F. power attenuator with RF relays.

The transverter as-delivered used the 13.5 V main power to actuate the 28V antenna relay. I measured the antenna relay actuation voltage and it was 12.5 V. Though it worked fine for Doug, its kind of marginal. Since I was adding other 28V relays for the I.F. attenuator, I decided I'd get a "boost switching regulator" to convert the main 13.5 V power to 28V just for the relays.

These modules go for \$3.50 - \$7.50 each, and are available all over the internet (I got mine from Amazon). Their output is adjustable from 4-35V, using an on-board trimpot.

When mine arrived I hooked it to a bench supply to adjust it's output to 28V, before installing it in the transverter. I was adjusting the trimpot and getting no change in output voltage when -out of the blue- there was an explosion like a firecracker going off. It was followed quickly by a puff of smoke and a sharp pain on my hand. I looked down and found a half-moon shaped blood blister.

What happened was, the output filter cap on the regulator exploded and the case hit my hand. I didn't find the case until the next day. It had flown around 5 feet. I assume the cap failed because it had been soldered in backwards (maybe it was just defective, I'll never know).

In the past, when I've had an electrolytic let go, it either pushed out the rubber seal on the end or cracked the score marks on top (which are put there on purpose to prevent an explosion). In all these cases the failure was completely un-dramatic.

...cont'd next page

BTW, after cleaning out the debris from the exploded cap, I ended up soldering in a replacement and the regulator works fine. The output ripple is around 400 mV peak-to-peak at ~ 50 KHz with a 400 mA load and is sort of sine-ish. So it shouldn't be making any rf interference. This part was one of the \$7.50 ones, and it has an L-C filter on its output. I tested one of the \$3.50 regulators just out of curiosity. It has just a cap as its output filter. With the same 400 mA load it makes around 1.5 V ripple, and the ripple is very sharp spikes with plenty of ringing in the waveform. I'd expect this one to cause rfi.

So my advice is if you buy one of these things, get the more expensive one, but stand back and wait a minute or so after you power it up for the first time, before trying to adjust it!!



It's worth noting, there's a reasonable alternative to using a boost regulator. Look at the circuit at <http://www.ko4bb.com/getsimple/index.php?id=how-to-operate-24v-relays-from-12v>. This circuit uses only the 13.5 V main power to the transverter. It voltage doubles the 13.5 V to 27 V for around 25 ms. The voltage then drops back to 13.5 V over 50-75 ms. The extra voltage over a short time is enough to reliably pull in the relay(s) and then the 13.5 V should hold the relay(s) in. It's a clever design and there's no chance of it making any rfi. But its not much less complex than one of the boost regulators. Worth considering for sure.

--Lenny W2BVH

## Events

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

**ARRL January VHF Sweepstakes - Contest** - January 21-23, 2017. See <http://www.arrl.org/january-vhf> for details

**WARC Hamfest - Hamfest - May 7, 2017.** Details to follow

**ARRL June VHF QSO Party - Contest** - June 10 - 12, 2017. Details to follow.

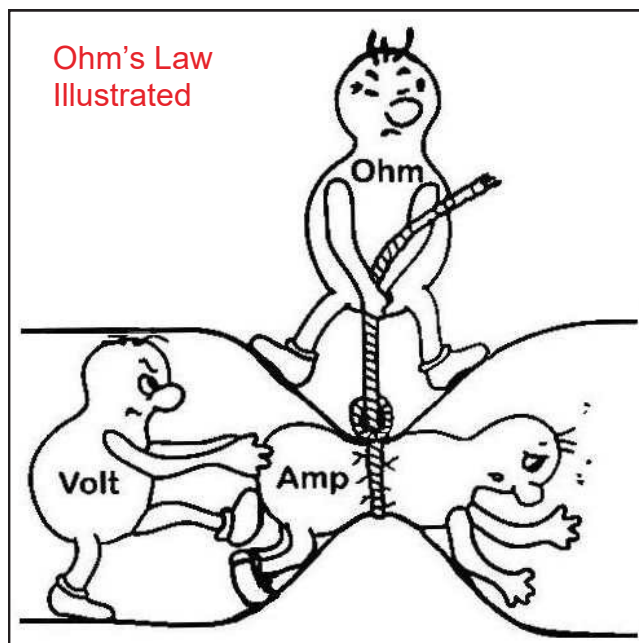
**CQ WW VHF - Contest** - July 15-16, 2017. Details to follow.

**Sussex County (NJ) ARC Hamfest - Hamfest** - July 16, 2017. Sussex County Fair Grounds, 37 Plains Road Augusta, NJ 07822 . URL to follow.

**Proposed 222 MHz and Up Distance Contest - Contest** - August 5-6, 2017. Info on whether this will be held, to follow.

**10 GHz and Up – First Round - Contest** - August 19-20 , 2017. Details to follow.

**September VHF QSO Party - Contest** - September 9-11, 2017. Details to follow.



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## Packrat Finder Bug Fix

Dave K1RZ discovered a bug in how the PackRatFinder scored contacts, which cropped up when I did a sloppy cut and paste when adding the frequency spotting, and that has been corrected as of this past weekend. So if you downloaded PackRatFinder before December 29, please discard your old version and replace it with the new version. The download is at the same link as before: (email me for the URL of the fixed PackRatFinder program). My email is [w3sz73@gmail.com](mailto:w3sz73@gmail.com)



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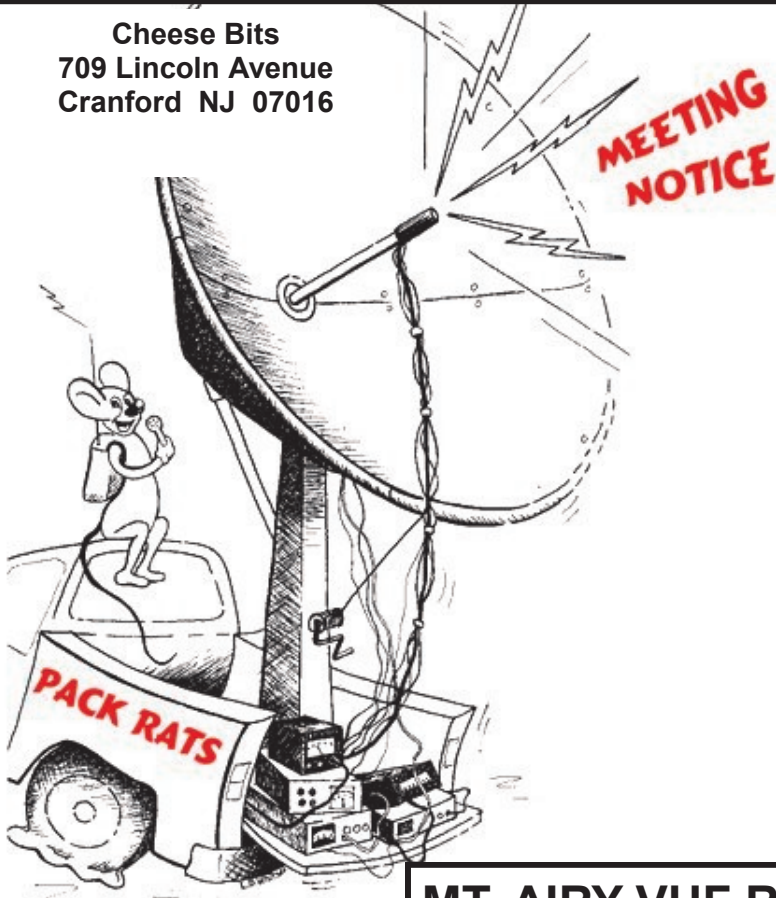
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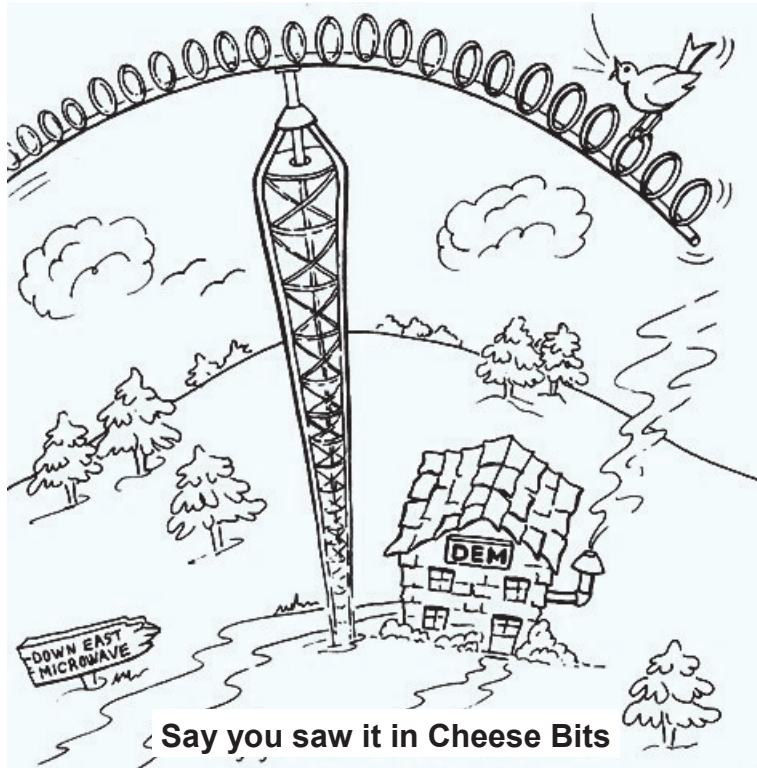
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