



CHEESE BITS

W3CCX
CLUB MEMORIAL CALL

ARRL
Affiliated
Club



Volume XLIX

November 2008

Number 12

PREZ

SEZ:

I always like to wrap up the end of the year with a bit of reflection of where we have been in 2008. There was a fantastic January VHF contest with about 60 logs that supported our retention of first place among the Unlimited Clubs. As I remember, the weather even cooperated. We had fun in February as Mike WB2RVX won the annual Crying Towel, but now I forgot what his problems were, but I remember he had us all in suspense and laughing. Our homebrew night had a number of exciting entries, and I was happy to be recognized with the "Most Ambitious" award for my EME dish construction efforts. I have heard from Al, that my trailer is now ready to have the business end mounted on it. You'll all get a look or at least a picture of it soon. And I hope to start making some more of my own EME contacts soon. Mike KB3GJT handed out awards in the spring. June was another super club activity on Camelback mountain. We had several new band captains and lots of new gear and we downsized our antenna efforts, saving lots of energy for operating the radios. Everything ran extremely smoothly and there was plenty of participation for all. Chow was great thanks to Doc, and except for the thunderstorms on Saturday, there were no complaints. Even breakdown went well with lots of helpers. Now what we need to add back are a few rovers...are you interested? The July auction at Gary's WA2OMY was a boon for all the buyers and sellers as a lot of useful items changed hands including a four-band set of power amps, brandy-new N adapters, and miles of hard-line. The summer picnic at Al N3ITT was a nice relaxing afternoon of food, drink and friendship. August's UHF contest had several Packrat participants and September brought another VHF contest for several to get their gear on the air. Our annual VHF conference went off without a hitch and was thoroughly enjoyed by all attendees. The raffles and door-prize tables were exquisite. Hamarama was a plus, despite the wet weather 300 attendees made it a fun morning. Ed WA3DRC got us all working to make it happen. We

had great October and November meeting speakers, and as always, excellent refreshments supplied by Drex, W3ICC.

Our activity chairpersons have been doing a great job. Officers and Board members have stepped up to manage many of the bigger events. We added Rich, KB3NRL as our new secretary, after Bill K3EGE moved way out of town. Lenny, W2BVH took over the publication of Cheese Bits, and Ed WA3BZT is helping get articles. Please—feed the editor with a write-up about your tech tips, construction efforts or operating activities. Our VP Phil K3TUF has planned and executed a great meeting program so far, and there is a lot more to come. Michael KB1JEY and Jim WA3EHD are doing a great job with 2009 Conference plans and W2PED Paul is continuing to provide a lineup of speakers. Net leadership by WA3EOD has kept things on-the-air for Monday nights and our hats are off to all our past and current net-controls. Griff has coordinated membership outreach for newcomers and the club has added new members. Ernie W3KKN has been a great host for several of the board of directors meetings. Our website is constantly updated thanks to Ron W3RJW and our Packrat gear is safely stored thanks to Bob W3GXB. Our January contest chairs Bill K3EGE and Phil K3TUF are right on top of getting everyone to their maximum potential. Randy NR6CA has supplied the club with some net contest loaner rigs. Our June contest co-chairs Phil K3TUF and Al N3ITT continue to provide the backbone for that activity. Michael KB1JEY has kept us well outfitted with orders from our logo clothier. Doc W3GAD runs the Mario auctions to keep our parts (don't you call that junque!) boxes full. Thanks to all who contribute. Dave W3KM has kept the books and the treasury in a solid state (yes, pun intended). Elections are over, the country is faced with economic challenges, as are each of us. Surely 2009 will hold many new opportunities for everyone, and as we enter our 53rd club year, may we enjoy peace and good health, and great propagation. Have a joyous, happy and safe holiday season. I am especially grateful for all the fine support from you.

73, Rick K1DS

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FM29jw Philadelphia, PA
50.080 144.284 222.064 432.286 903.072 1296.245 MHz
2304.043 3456.207 5763.196 10,368.062 MHz (as of 1/08)

MONDAY NIGHT NETS

<u>TIME</u>	<u>FREQUENCY</u>	<u>NET CONTROL</u>
7:30 PM	50.145 MHz	K3EOD FM29II
8:00 PM	144.150 MHz	N3ITT FN20KI
8:30 PM	222.125 MHz	K3TUF FN10we
8:30 PM	224.58R MHz	W3GXB FN20jm
9:00 PM	432.110 MHz	WA3EHD FN20kd
9:30 PM	1296.100 MHz	K3TUF FN10we
10:00 PM	903.125 MHz	W2SJ FM29LW

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

Editor's Column

Next Meeting: December 18, 2008 7:30 pm. At our usual site: the Ben Wilson Senior Center, 580 Delmont Av, Warminster PA. The last meeting of the year may also be the best. We're going to have a load of professional lab quality test equipment all set up and available to check out whatever you bring in that needs testing. This will be an ideal way to see how well your stuff is working, well in advance of the "Big One" in January. So, bring what needs bringing: cable, rigs, LNA's, amplifiers, etc.

If you have something that needs testing, PLEASE try and get to the meeting promptly since some stuff takes a bit of setup time to test properly and give you a valid reading.

Also, PLEASE send an email to Paul Drexler, W2PED (pdrexler@hotmail.com) or Phil Theis, K3TUF (phil@k3tuf.com) and let them know what sort of tests you'd like done. Most of the test equipment is large and heavy so we want to make sure every piece that's needed is brought in and nothing that isn't!

Bill, K3EGE has been coordinating the exchange of spare equipment for the January Sweepstakes. He's already matched up many donors and recipients. If you have equipment to lend out, let him know about it. If you need equipment to add a band or make yourself heard better let him know about it. The more capable each of us is the better it will be for all of us.

Let me once again ask you to consider doing a Cheese Bits article. Whatever you're interested in, whatever you've learned over the years will be of interest to your fellow 'Rats. Whether it be contesting tips and methods, how to repair/rebuild a rotator, how to work safely 80 feet up, how to rove effectively or info about something you designed or built. If you find it interesting, so will the rest of the membership. And if you don't think you can write well enough, write it as well as you can and we'll whip it into shape.

In This Issue: Michael Sabal, KB3GJT presents an article on how he was able to get slow scan TV pictures **live** from the International Space Station; Joe Taylor and friends present the complete results of their hard fought ARRL EME Contest operations, and we have a photo essay on the dismantling of a new used tower for KB1JEY's shack. As usual we also have plenty of tidbits of news of interest to the VHF+ community.

Finally, please accept wishes for peace, health and joy during this holiday season to everyone from the editors and contributors

Sincere 73's, Lenny W2BVH

Receiving Slow Scan Images From the International Space Station on 2-Meters

By Michael Sabal KB3GJT

On October 12, 2008, Richard Garriott, W5KWQ, followed the legacy of his father, Owen (W5LFL), into space for a 10-day visit aboard the International Space Station. One of his primary activities, of great interest to the ham community, was the transmission of images from space over SSTV. Slow-scan TV is a set of digital radio modes that enable the communication of still-frame photography or other single images over the air. Richard's visit to the ISS marked the first time SSTV was transmitted from the space station.

Like many digital modes, SSTV is a great SWL activity to set up when you want to be active in radio, but don't necessarily have a lot of time. It took me about half an hour to install a program on my computer, set up the audio connection between the radio and PC, and tune and lock the radio to 145.800, the ISS downlink frequency. What follows is a more detailed description of what I did to capture the images Garriott sent, and the results of my week of unattended listening.

First, let me give you an idea of what my station looks like. I live only a few miles west of the Delaware River, at less than 100 feet above sea level. That's strike one. I have no antenna towers, so I have way to improve my elevation. That's strike two. I live in an antenna-restricted development, so the only antennas I can put up are in the attic. That's strike three. And my attic is built so there's no clearance for rotating antennas. Whoa, I'm out

of strikes! But we're hams; we don't give up because of a few engineering difficulties.

For 2 meters, I have two antenna options set up in the attic. There is a 6m half-wave slanted dipole that tunes well on 2m, and there is a 5-element Yagi directed at 77 degrees. Both of these are a total of about 18 feet above the ground. The radio is a Yaesu FT-817, with the internal speaker at the top of the radio. Since this operation was receive only, the transmit power wasn't an issue. It was also in a part of the band free from nearby interference, so selectivity wasn't a problem either. Since my desk doesn't have enough space for a permanent computer, I used the ultra-mobile PC from Samsung, model Q1. Different versions of the Q1 have different features. Mine is the original version, and includes a pair of high-quality internal microphones just under the LCD screen. The Q1 is small enough that it can sit on top of the FT-817 with just a small amount hanging over each side of the radio, so that the mics on the PC are just above the speaker. The one drawback with the Q1 is that there is no separate microphone jack, but this method was effective enough.

To get SSTV running, I just downloaded the MMSSTV program from <http://mmhamsoft.amateur-radio.ca/mmsstv/> and double-clicked the EXE file to install it. For receive, there aren't any settings that need to be fixed, all the defaults work just fine. To test the program installation, if there isn't any VHF activity for SSTV, you can try the 20 meter frequency 14.230 which is a common place to trade SSTV images. It's usually fairly active. Because the images are digital audio, and the software is decoding the signal, it doesn't matter if the underlying modulation is AM, SSB, or FM, as long as the sending station and receiving station are using the same mode. On 14.230, stations use USB to comply with the band plan, while 145.800 is used as an FM frequency.

After determining that the software and hardware would work well together, the next trick was figuring out how to get the signals from the International Space Station without the benefit of any kind of rotor, much less those fancy az-el ones used for EME. Knowing that my beam was pointed at 77 degrees, I wanted to find passes that peaked in that direction, with the highest elevation not much above 45 degrees. Usually you're looking for the highest pass, which gives you the longest communications window. In this case, I was looking for the clearest signals.

Using heavens-above.com, I selected "Select from map" under "Configuration" on the front page to tell the program where to report pass results for. After centering and zooming to find my exact location, I clicked the "Submit" button at the bottom of the page. If you already know your decimal latitude and longitude (aa.bbbb degrees, as opposed to grid square or minutes and seconds notation), you can enter it directly at the bottom of the page. Second, I clicked the ISS option under "Satellites", which only shows visible passes. To get all passes, which is what I needed for communications, I needed to click "Orbit," then "Passes (all)" just below the ad at the top of the page. This told me that the first half of the mission would have good passes off the beam, but the second half would be in the wrong direction.

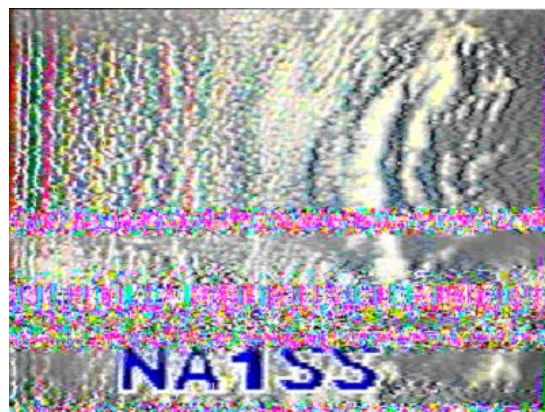
Leaving the computer and radio on, with MMSSTV listening on 145.800 while I went to work, I was able to save 8 images on the first day, some better quality than others. I was expecting severe Doppler shift to degrade most of the pictures, but that never materialized to the extent I was expecting. I did learn from my earlier tests on 20 meters that MMSSTV only saves 32 pictures in its history folder, so each night when I got home, I moved the images captured that day to another folder where they

wouldn't be overwritten. Because there were other activities he wanted to complete, and because the space station crew needed to sleep sometimes, some pictures were transmitted several times, and there were periods where no images were transmitted at all.

As the passes started to fall out of my beam's line of sight, I tried switching to my dipole. This gave me more images, but none of them were high enough quality to satisfy me. So I switched back to the beam, and the quality of the last few pictures was far better than I had predicted based on the pass reports.

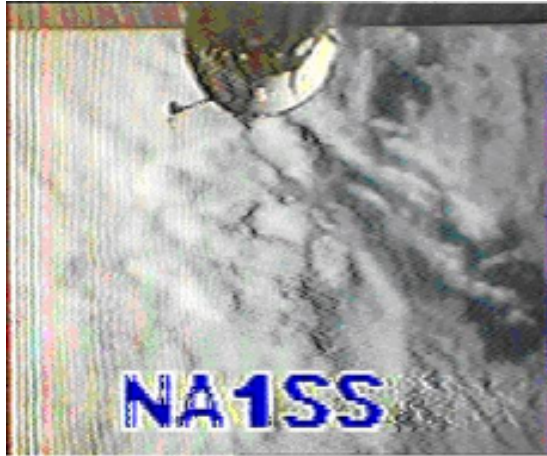
All in all, I thoroughly enjoyed the excitement of coming home and finding Richard Garriott's pictures waiting for me. This has renewed my desire to explore digital modes in more detail, and to complete the interface allowing me to transmit as well as receive. Though I haven't yet had the opportunity to speak with any of the space shuttle or ISS astronauts by radio, I hope the things I learned during this experience will improve my chances in the future.

Here are some examples of slow scan pictures I was able to receive directly (and automatically!) from the ISS.



Pic 1: NA1SS transmission on 10/15/08

Pic 2: Captured on 10/16/2008.



Pic 3: Captured on 10/22/08, this is one of the clearest pictures I received.



Pic 4: Captured on 10/23/08, one of W5KWQ's farewell pictures.



If you are interested in checking out some additional details, please look at the resources at the following web sites:

<http://www.arrl.org/news/stories/2008/11/06/10437/?nc=twiartdotorg>

<http://www.richardinspace.com/>

<http://heavens-above.com/>

73,
Michael Sabal, KB3GJT

The 2008 ARRL EME Contest at K1JT and K2UYH (Part 2)

I promised an update to the interim report in last month's Cheese Bits, on our combined multi-op, multi-band effort in the ARRL EME Contest. You'll recall that the EME contest runs for three weekends: one in September for the bands 2.3 GHz and up, and one each in October and November for the bands 50–1296 MHz. We operated on 144 MHz at the K1JT station and 432, 1296, 2.3G, and 10G at the K2UYH station.

The third and final weekend of the contest is now history. Activity during the contest weekends was generally excellent, especially when the moon was up in Europe. Our final summary sheet looks like this:

Band	CW	JT65	Total	Mults
144	10	175	185	65
432	35	10	45	31
1296	81	13	94	37
2.3G	24	0	24	20
10G	8	0	8	7-
Total	158	198	356	160

Claimed score: $356 \times 160 \times 100 = 5,696,000$ points.

continued...

...EME Contest continued

When the dust settles, we hope to be at or near the top in the world-wide multi-multi category. Our claimed score would itself be a new all-time record for this contest... but we also know that at least one other station is close to our totals and may have beaten us. Time will tell! Either way, we had great fun operating together and hope to be back next year.

From team members K1JT/Joe, K2UYH/Al, K1DS/Rick, K2BMI/Jack, K2LNS/Herb, K2TXB/Russ, and W2KV/Dave.

Editors Note

Joe, K1JT recently sent out a short list of questions / issues he thinks are worth pondering on the structure and rules of the ARRL EME contest. There have already been some thoughtful replies. These issues are certainly worth a discussion. Please check your email in-box for Joe's "EME Contest" email that was sent on 11/22/08 via the Packrats reflector. If you have comments send them to Sean Kutzko, the ARRL Contest Branch Manager. I'm sure a copy of your comments to the Packrat reflector would also be welcome.

Textured Paint Finish for Radio Cabinets

Our own Mike Davis had the following published in the "Hints & Kinks" section of this months QST:

"A way to generate a textured finish for a radio cabinet is to apply a coat of an automobile rocker panel coating (e.g. 3M Rocker Panel Spray, 05910) after the cabinet is primed but before the color coat is sprayed. This technique avoids spouse ire that can occur

...Painting continued

when you heat the cabinet in the family oven before painting to make the paint wrinkle. Even better, make friends with the folks at the local auto body repair shop and let them paint the cabinet for you between other jobs."

73,
Michael KB1JEY

Pennsylvania Legislature Passed The PRB-1 Law

Numerous web and print sources including QST recently reported that Pennsylvania has passed the PRB-1 law! This will allow hams to put up an antenna support structure (e.g. a tower) as high as 65 feet without having to apply for and obtain a Special Use Permit. It passed the House by 195-1 and the Senate by 49-1. Governor Rendell signed it and it will go into effect next Monday.

The bill **requires** towns to "reasonably accommodate amateur radio service communications and to impose only the minimum regulations necessary to accomplish the legitimate purpose of the [town]". Limitations may be imposed "to ensure the safety of amateur radio antenna structures, but must reasonably accommodate amateur service communications."

No doubt the contribution of ham radio to emergency communications and homeland security and the visibility of hams at public events and sites (like Camelback) was part of the success.

Packrats who wrote their state Senators and Representatives earlier this year should be justifiably proud.

For a copy of the actual text of the Senate version of the bill go to <http://k3eko.com/prb1.html>

Photo Essay

The last few months have been a very busy time for some club members. Three towers have been taken down and found new homes; we also had the Mid-Atlantic Conference and Hamarama. All of these activities resulted in lots of photos being taken. I hope in the next few months, as space permits, to present some of the photos with a bit of narrative thrown in. Next spring when towers (hopefully) go back up, well have even more material to present.

This month we have some of the photos from the disassembly of the tower at the



Al eases the tower down the last few feet. A sturdy well maintained crane and winch made this a safe operation.



The "business end" of the tower with some nice antlers attached. All in fine condition. Very few bolts were broken removing them.

QTH of Gene Shillingford, KB3IB (SK).



2 Meter and 432 antennas submit willingly to some WD-40 and elbow grease



Removing a stubborn piece of feedline from the 432 antenna. Vise Grips conquers all!



Shearing off the base mounts flush with the concrete leaves nothing to trip over.



Tower, poles and feedline set to schlep over to the trailer



Microwave antennas were too delicate to put on the trailer. They went by themselves on the truck bed.

Tower and antenna removal was uneventful. Enough people and tools made the job go smooth and safely. Not shown in the pictures was a chunk of 4x4 lumber with a trailer tongue on it. This was securely strapped to the tower which acted as part of the towing setup. Not a recommended procedure if towing on the highway, but the tower made its way to its new home, slowly on local roads.

Mike KB1JEY will have quite an imposing antenna setup next spring!!

Geminids Meteor Shower in 2 Weeks

The 2008 Geminids are in 2 weeks. For those 'Rats who work or are interested in learning to work Meteor Scatter, this is an ideal time to get on the air with WSJT or HSMS. The WSJT group is sponsoring a Geminids **contest** that runs from December 11-15. Contest rules can be obtained at http://www.sportscliche.com/wb2fko/w08/rules_w08.html. For info on how to work random (rather than scheduled) meteor scatter QSO's an excellent guide is at <http://www.ykc.com/wa5ufh/Misc/RHActivityPeriod.htm>

HAM RADIO URL OF THE MONTH

Check out the WSJT "Ping Jockey" web site at:
<http://www.pingjockey.net/>

Although a bit disorganized, this site has links to many of the resources you might need to set up and operate meteor scatter with WSJT. The "Ping Jockey Central" page which is a hotlink from the Ping Jockey page has a real time chat feature that you can use to solicit and coordinate WSJT meteor scatter QSO's. You have to register before you can use the realtime chat, but it's a simple and painless process. For those who are new to WSJT, the site links through to Joe Taylor's pages where you can obtain the software required and installation instructions for the WSJT software.

The link to the WB5APD site has additional links on how to set up and operate WSJT. It too is somewhat disorganized, with some dead links but the live one are quite useful.

2009 Packrats Meeting Agendas

With 2008 winding down, now's a good time to review what Phil, K3TUF, has in store for us at Packrat meetings in the new year. We cap off 2008 with the December meeting on the 18th with Tech Night. Professional grade test equipment will be available for testing your equipment. See the "Editors Column" at the front of this issue for further details.

For 2009 the following activities are already planned:

Jan - 01/15/09, Ben, WA3RLT Presents an analysis of last January's contest.

Feb - 02/19/09, Combination Crying Towel and Homebrew Night

Crying Towel: Members and guests are encouraged to describe their January contest woes and dealings with Murphy. A Towel is awarded to the best story of the night to help sop up the tears.

Homebrew Night: Everyone is encouraged to bring in and describe their latest homebrew project. A panel of select judges will review the projects and award prizes.

Mar - 03/19/09, ARRL Night. Contest Manager Speaks: KX9X, Sean Kutzko, ARRL Contest Manager is special guest

Apr - 04/16/09, Down East Microwave Night; N2CEI, Steve Kostro, Owner DEMI, will speak on the latest and greatest products cranked out by the gnomes in Live Oak, Florida.

May - 5/21/09, Program TBD

June - 6/18/09, The June Pack Rat elections meeting will be held at Otto's Brauhaus 233 Easton Rd, Horsham, PA, in the Biergarten. Dutch treat dinner starts at 6:30PM and meeting will commence at 8PM. Come early, have fun, discuss the VHF contest results and enjoy some liquid refreshment, German style. Open to spouses, significant others and guests.

July - 7/16/09, The July Pack Rat meeting and White Elephant sale/auction will be held again this year at the QTH of Gary Hitchner, WA2OMY. 39 West Mount Kirk Avenue, Norristown PA. Opens at 7PM for inspection, meeting and auction starts at 8PM. Bring your radio or computer related stuff to sell at auction, money to buy other's goodies and a lawn chair for seating. Refreshments provided. Open to guests.

Aug - Date TBD, The Packrat annual picnic. Will probably be held in late July.

Sept - Dec Dates and programs TBD

Joel Knoblock W3RFC

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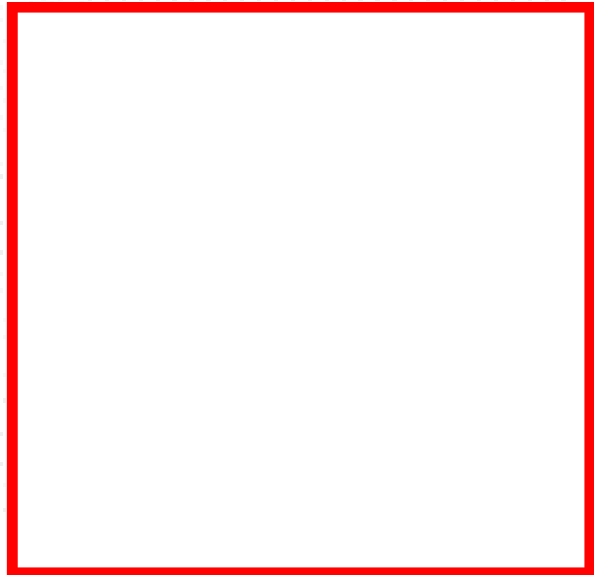
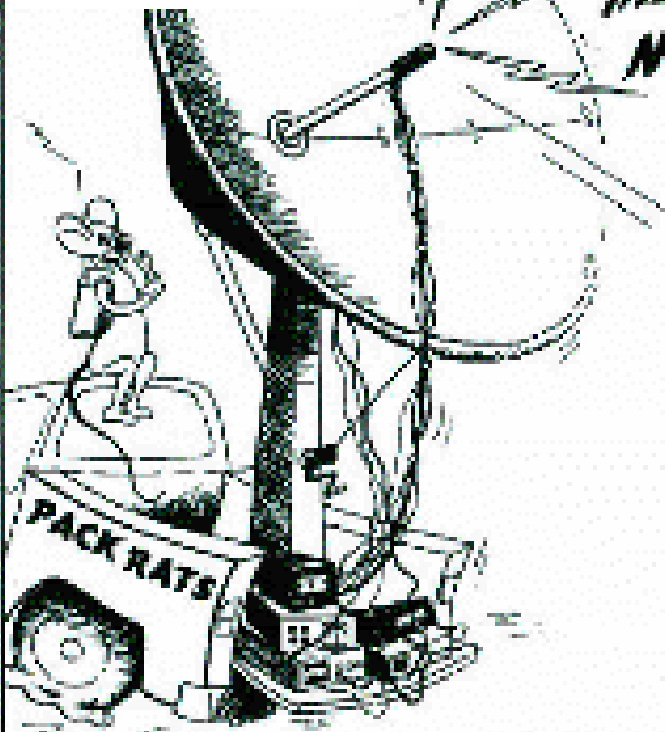
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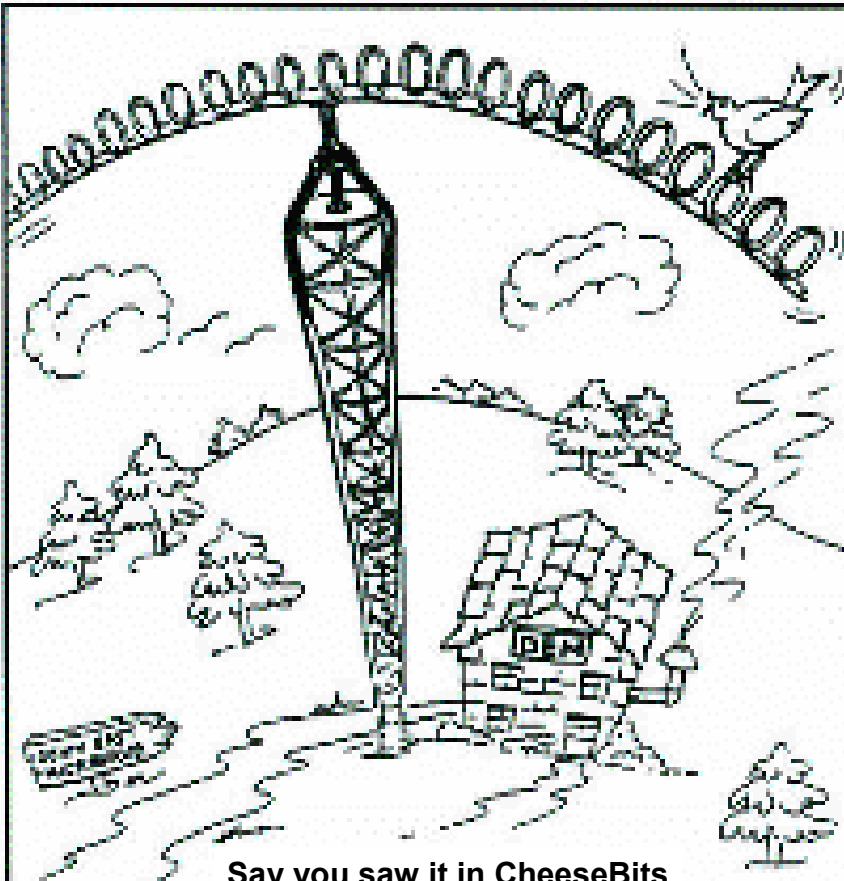
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