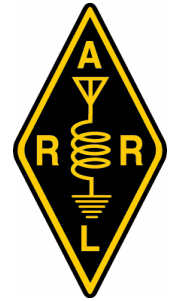




CHEESE BITS

W3CCX
CLUB MEMORIAL CALL

ARRL
Affiliated
Club



Volume L

December 2009

Number 12

PREZ

SEZ:

Here we are at the end of another year. In this holiday season there is a lot for which we should be thankful. The PACKRATS are blessed with an active Board of Directors who are striving to keep the Club moving forward.

We have been without our microwave beacons for several months. Thanks to the efforts of Phil Miguelez, WA3NUF they are being repaired and will be placed back into service at their current location (at FM29jw) as soon as proper operation has been verified. Plans are to replace these very reliable but very old beacon transmitters in the near future with three new modular units so each beacon will be a complete system with its own power supply. That way if one system fails it will not cause the remaining beacons to be off the air while any one is being repaired. It will also make removing the beacons from the their penthouse location for repair or maintenance an easier task.

On another the technical matter: Brian Taylor, N3EXA has been making strides with getting the 224.85 repeater back into full service. TPL tone is 131.8 and is on as needed to allow access by those with older 222 FM equipment. The unreliable parts have been replaced and the bad connections have been repaired. With the repeater being in full service at the QTH of Bill, K3ESJ, Bill has taken steps to increase the usage by

linking the repeater to his 442.900 repeater. The 442.900 repeater will be linked full time to the 224.85 repeater unless the membership objects. Access to the 442.900 repeater requires a PL 123 Hz tone. If you are using a full tone squelched radio the receive tone is the same.

In case you missed the e-mails and the announcements at the meeting and in QST there is VHF Contest on January 23rd and 24th. Bill Shaw, K3EGE has been sending out e-mails and will be calling all those who have not responded to be sure everyone with a station will get on the air. He will also be following up to be sure your logs have been properly submitted to the ARRL. If you need help to get your station on the Air for January 23rd and 24th please contact Bill. He has a list of resources and equipment and personnel that can help meet your needs.

You can also solicit help at the December meeting where **Ben Kelsall, WA3RLT** will give us his **very informative analysis of last years' contest**. It is very interesting to see the impact that even a small effort has on the overall club score.

There are also handouts of the 2010 pocket directories to keep you abreast of the current telephone and e-mail addresses of the membership. The meetings have moved up to 7:30 at the Ben Wilson Senior Center. The Center is fully handicapped accessible. If you want to grab some dinner there is

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

SUBSCRIPTION/ADVERTISING MANAGER:

Bob Fischer, W2SJ 7258 Walnut Avenue, Pennsauken, NJ 08110
(856) 665-8488 bobw2sj@verizon.net

EDITOR:

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

ASSOCIATE EDITOR:

Ed White WA3BZT 809 Seymour Rd., Bear DE 19701
(302)-322-9076 wa3bzt@verizon.net

CLUB TREASURER:

Dave Mascaro, W3KM 1603 Mink Road Ottsville, PA 18942
(215)-795-2648 dmascaro@motorola.com

TRUSTEE OF CLUB CALL - W3CCX

Brian Taylor N3EXA
(215)-257-6303 n3exa@verizon.net

PACKRAT 222 MHz REPEATER - W3CCX/R

222.98/224.58 MHz (PL 136.5) Hilltown, PA

OFFICERS 2008-09

PRESIDENT: W3GAD, Doc Whitticar	w3gad@arrl.net
VICE PRES: K3TUF Phil Theis	phil@k3tuf.com
CORR. SEC: WA3EHD Jim Antonacci	jjantonacci@verizon.net
SEC: KB3NRL Rich Enwright	renwright1@verizon.net
TREAS: W3KM Dave Mascaro	dmascaro@motorola.com
DIRECTORS:	
(1Yr) N3PLM Chris Getman	chris.getman@comcast.net
(1Yr) KA3WXV George Altemus Jr.	altemus@drs-c3.com
(2 Yr) WA2OMY Gary Hitchner	ghitchner@trueposition.com
(2 Yr) WA3BZT Ed White	wa3bzt@verizon.net
PAST PRESIDENT: K1DS, Rick Rosen	rick1ds@hotmail.com

COMMITTEE CHAIRMEN

January Contest	K3EGE
June Contest:	N3ITT & K3TUF
HAMARAMA:	WA3DRC
VHF Conference:	W2PED pdrexler@hotmail.com
Awards Chairman	KB3GJT
Quartermaster:	K3IUV bsoltoff@comcast.net

PACKRAT BEACONS - W3CCX/B

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

TIME	FREQUENCY	NET CONTROL
7:30 PM	50.145 MHz	K3EOD FM29II
8:00 PM	144.150 MHz	N3ITT FN20kl
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

usually a gathering at 6PM at Giuseppe's in the mall across the street from the Ben Wilson Center.

I am looking forward to your smiles at the December meeting. Remember to start 2010 off right by attending the January 21st meeting. We will have Bob McGwier, N4HY bring us all up to date on **SOFTWARE DEFINED RADIO**. Also, remember that all PACKRATS general meetings are open to the public so bring your fellow hams and spread the word.

Arlene and I wish you all our very best wishes for a safe and joyful holiday season.

"LISTEN FOR THE WEAK ONES"



Editors Column

Our next meeting will be at our usual meeting site, the Ben Wilson Senior Center, 580 Delmont Avenue, Warminster PA., on December 17, 2009. The meeting starts at 7:30 pm with a pre-meeting dinner for anyone who cares to attend. Dinner this month is at Giuseppe's Pizza 1523 West Street Road, Warminster, PA 18974 (at the shopping center diagonally across from our meeting site). The Packrats usually are in the back dining room.

This month we feature the annual contest analysis meeting. Presentation given by **Ben, WA3RLT** to prepare everyone for the upcoming January Contest. Come down for an incisive analysis of last years activity and brainstorming on how to increase this years score. There is still equipment available for loan. Please let your needs be known.

New articles for Cheese Bits are needed! Please consider doing a piece for next months issue. Don't worry about the form, it's the content that matters. I'll whip it into shape. That's why they call me an editor.

Best wishes for the Holiday Season from Wendy, Ben and myself, Lenny W2BVH

Joe Taylor K1JT Interview from CQ Magazine

The following is an abridgement of the October interview of Packrat Joe Taylor by CQ Magazine . It was written by Rich Moseson. "Excerpts reprinted with permission from the October, 2009, issue of CQ magazine; Copyright CQ Communications, Inc. "

The Big Picture...

.... We asked Joe what he sees -- from his perspective as both a scientist and a ham -- about how the relationship between the two has (and has not) changed over the years, and about perceptions of science in society today.

K1JT: It was great that in the 1950s and early 60s, when you took apart a television set of those times, you basically could make out what everything was and what it did. Even the vacuum tubes -- we actually used to take a couple of the tubes that we knew we were not going to be able to use, wrap them in a towel or something and tap them gently with a hammer so that we could get the glass off and then take them apart, and you know, you could actually see that, here's the filament, here's the grid, here's the plate. This must be how it works. This was great. You can't do that with modern solidstate electronics but, and of course, you can't open up your automobile engine and see how it works the way we could in those days, either. That was, I think, I *know*, was one of the things that used to make it fairly easy for kids who were technically inclined to learn enough to get them started. You have to do it different ways today.

CQ: What are some of the different ways that you see?

K1JT: Well, I think that one of the reasons that is always given for it being more difficult to get kids into ham radio these days is that they play with computers instead. Basically the same kind of kids that I think I was. Of course, there's nothing incompatible between that kind of technology and the kinds that we now use in ham radio as well, so I've been encouraging kids that I know that are into that kind of thing to do both. By all means, learn about computers - those are fascinating, they are a very central part of today's economy and commerce, but so is radio frequency electronics, with your wireless iPhones and everything else. And if you are interested in those sorts of things as a youngster and would like to learn more about them, a very good way to do that is to get yourself involved in this hobby of amateur radio.

It's still quite possible to build crystal sets, as we did, and it's very exciting to put together just a very small handful of parts and an earphone and run a wire out to a tree and pick up a radio signal, and once you've done that, you can discover that there are more complicated things you can do as well, and that often turns on a kid...

When I was a graduate student, if I was in a group, say at a scientific meeting with five or six radio astronomers present, typically half of them would be, would have ham licenses. That's less true today, but I think it's less true largely because of the phenomenon I mentioned earlier that means kids who are interested in technical things are much more likely to be computer-savvy these days than RF electronics savvy. We still get some of it in ham radio, and I definitely see the evidence of cross-pollination between the amateur interests and what become

professional interests for some young developing scientists...

I fear that there has been, across the country, in at least a portion of the population, a kind of anti-intellectual, antilearning, sort of undercurrent in recent years. I would like to see that reversed. I would hope that the government can do things to somehow, not only improve the educational system but somehow improve the attitude toward what can be gained, what benefits are available to us if we can generate learning in all areas that will improve our economic competitiveness and be better for the overall well-being of the country.



Dr. Joe Taylor, K1JT, in his office at Princeton University

Cheese Bits will try to cover more of the fascinating CQ interview with Joe in future issues as space permits. Especially some of his observations on WSJT. -Ed.

Pix from the November Packrat Meeting



Chris Patterson W3CMP presents details on the recent 6 Meter DXpedition / Beacon project in Guyana



The November "Mario Raffle" & snackfest

Thanks to WA3BZT for the photos

Strays

W3KM asks anyone who has not yet reviewed his entries in the 2010 Club Directory and pocket Phone Card to do so by editing the files in http://mysite.verizon.net/dmascaro1/2010_PackRat_Directory.zip. Dave can send you the document password via email. If your email address has changed please include the new one.

K3EOD Tower Renewal Project

The K3EOD tower renewal project was started about a month ago. Initially El, K3JJZ and Bob, W2SJ detailed Al's needs and El presented a scope of work to the BOD. El and Bob made 3 trips to Al's and reworked the main tower from 50-3456 MHz installing new or upgraded antennas, feedlines, jumpers, a cross arm, and a new balun for the 5 element 6M beam.

On Sunday 11/22/09, a team including Ed, WA3BZT, Ray, N3RG, Bruce, WA3WUL, and Bob, W2SJ finished the main tower with Ed climbing the tower to install the 7/8" hardlines for 2304 & 3456 MHz. This team also lowered the 6 meter telescoping tower to secure a loose element on the 7 element beam.

The line up on the main tower includes from the top, "blowtorch" loops - 76 elements on 2304 & 112 elements on 3456, 45 element loops on 903 & 1296, 33 elements on 432, 16 elements on 222 SSB/CW, 12 elements on 223 FM, 15 elements on 144, & 5 elements on 50 MHz.

This is what our club is all about: Pack Rats helping other Pack Rats!

-- Bob, W2SJ



52 Ft Main fold-over tower (Left). 50-3456 MHz. 42 Ft tubular telescoping tower for 6 meters (Right)



6M7JHV, 7 element 6M beam @ 42 ft



Ed, WA3BZT putting the finishing touches On the 7/8" hardlines for 2304 & 34356

Trenton Computer Festival 2010

The Trenton Computer Festival, to be held April 24th and 25th 2010 has a strong Ham Radio aspect tied to it for the first time. On Sunday April 25th, the Festival will be hosting the ARRL's New Jersey State Convention. It will take place at the beautiful College of New Jersey campus in Ewing.

The Festival is in it's 35th year and is one of the largest and most well known independent gatherings of computer mavens, both amateur and professional, in the US.

The program consists of speaker presentations on many aspects of computing, programming and many Ham Radio topics. In addition there will be a large vendor area, both indoor and outdoor, similar to a Hamfest.

The computing speakers programs (mainly held on Saturday) will be run in multiple "tracks" each with its own theme. So there will be something of interest to computer users, programmers, Hams and electronics enthusiasts. In addition a separate "computer professionals only" conference sponsored by the IEEE and ACM (Association for Computing Machinery) will be held on Friday.

The scope of the computing presentations is planned to be very broad, including tutorials, and demonstrations. So there will be plenty of material to interest everyone from casual

users to dyed-in-the-wool geeks and computing professionals.

Some examples: Robotics, home electronics (including home environment control), computer communications, computer video, gaming, electronic/computer entertainment, digital imaging, computer networking, wireless services, and more.

The keynote speaker this year will be computer visionary and free software advocate, Richard Stallman. Mr. Stallman is the creator of the Emacs software editor (one of the most flexible editors around), the GCC language compilers, and other programs around and through which Linux was created. In addition Mr. Stallman is the founder of the GNU Project and the Free Software Foundation. His keynote is sure to be a thought provoking and dynamic presentation indeed.

Similarly, the Ham Radio presentations are planned to be given in multiple "tracks" (mostly on Sunday). Some of the topics the Festival / State Convention plan on presenting are DXing, homebrewing, contesting, digital communications, emcomm, antennas (including design), VHF/UHF operation, SDR, QRP and many others. In other words a large cross section of ham radio interests. Some very well known and well respected hams have already signed up to make presentations on Sunday.

The indoor and outdoor vendor area for the Festival / Convention is very large and it's expected that it will be filled. Befitting the combined programs,

computer, electronics and ham vendors will be present.

The cost of attending the TCF / ARRL Convention is quite modest considering all that the attendees will be getting. The exact cost of admission has not yet been "set in stone" by the events organizing committee, but it's anticipated that it will be around \$12-\$15 for both days and less than that for those attending Sunday only. This does not include the Friday, "IT Professionals Only" program, which is much more money.

The Packrats will be part of the TCF / ARRL New Jersey Convention, not only as individual attendees but as participants in the convention itself. Our Board of Directors has signed us up to assist in conducting the festival. We will be responsible for Vendor Operations. For both days of the TCF / Convention, the Packrats will be in charge of checking in registered vendors, registering new vendors at the gate, assigning spots and conducting vendors to their locations. In addition, we'll be liaison between vendors and TCF Convention management, resolving any issues that arise (and they do arise!). In exchange for providing this help to the TCF/ARRL Convention the club will receive a pretty decent percentage of the net proceeds from the event. It should be well worth the effort both monetarily and as a service to people with interests common to ours.

Here's what you can do to help make the TCF / ARRL New Jersey Convention a success:

Plan to attend. It will be a great experience for anyone interested in computing, electronics and especially

radio communications.

Volunteer to help in fulfilling our obligation to conduct Vendor operations. It is an interesting experience and will help the club both in prestige and monetarily. We need about 4 volunteers to work the vendor operations for each of the 2 days. If you're not sure about it, you can ask Rich Enwright KB3NRL, Michael Davis KB1JEY or your Editor about what it was like at last years' TCF and what you might expect this year.

Consider putting together a presentation for one of the Ham Radio "tracks" There are still quite a few time slots open. For the right person it can be a very fulfilling experience, presenting information in an area of ham radio that you enjoy and have become a bit of an expert in. From the list of presenters who have already registered or have shown a strong interest in participating, you will be in very elite company!

There is a single position still open for an individual who would be interested in doing Vendor pre-registration over the next 4 months. Besides being an integral part of the success of the TCF, this position pays a commission on vendors registered, so it will be monetarily rewarding as well. Contact Al Katz, Steering Committee Chairman at a.katz@ieee.org, or your editor if you'd like a rundown on the details of this position.

The web site for the TCF is still in "Beta Test" but you can check it out for further details. It's at <http://www.tcf-nj.org/>. The web page will be refined and polished over the next few weeks.

Hope to see you at the TCF in April!

--Lenny W2BVH

Heathkit Memories (and a Contest)

By Michael KB1JEY

Long before I became a licensed radio amateur, I was an avid Heathkit builder. My dad and I built a GR-24 portable AM radio for my grandparents so they would have a working radio during blackouts. It had a silver grill with black leatherette trim and a slide rule dial. I saw one in beautiful condition on eBay recently and put a low bid on it. Someone else wanted it more. It is just as well since a battery only AM radio would probably become a dust collector.

I used to lust for the Heathkit GR-43A 10 band AM/FM/Shortwave radio modeled after the Zenith Transoceanic. I see them eBay or at hamfests but have stayed away for two reasons. If a band switch or other part goes, it would be miserable to repair. Also, I have an AM/FM/Shortwave radio made for Radio Shack by Sangean which probably performs better anyway.

The first Heathkit shortwave receiver that my dad and I built was the GR-81 “Economy” Regenerative LW/AM/SW radio. At that point, money was tight in our family so **economy** was one of the attractions of this kit. We put up a long-wire antenna and I did pretty well listening to international broadcasters. If you tweaked the regeneration, **you could make out amateurs** using SSB phone. I eventually sold it to a neighborhood friend so I could buy a GR-64.

A couple of years ago, I was feeling very nostalgic for my GR-81. When I found one on eBay, I put in a bid and won. After a lot of cleaning and changing the three tubes, I was able to get it working. My efforts to paint the outside shell and to come up with substitute plastic feet have been detailed in a couple of QST *Hints and Kinks*. I don't listen to it very often but I have it on display on my stereo bench.

I moved up from the GR-81 to the GR-64 AM/Shortwave radio. I also bought a used GD-125 “**Q**” **Multiplier**, fixed it up and got it working with the GR-64. I added a Pi Network antenna matching unit following a schematic from the ARRL Handbook. The variable capacitors were cannibalized from a pair of old AM radios.

Nowadays, you can find GR-64 everyday on eBay but the GD-125 is pretty rare. If you look on eBay, many of the GR-64 radios have cracks on the dial where the control nuts on the knobs were over-tightened. I thought that the **anemic performance** on the higher bands was my imagination until I read a review that confirmed that deficit.

When I went to college, I soon found myself in a dorm room with no stereo. During Christmas break, I headed down to the local Heathkit store and bought an AR-14 stereo receiver kit (“only your budget can tell the difference”) and quickly soldered it together

over break. I still have it and use it. Every decade, it breaks and I have to tear it apart to fix it.

Since **the AR-14 pre-dates phase-locked loops**, there is a knob that adjusts phase of the 19 kHz oscillator that separates the two stereo channels. I also built an SCA (Subsidiary Communications Authorization) adapter and hooked it into my AR-14. SCA functioned like a primitive version of FM “High-Definition” radio. **It was more exciting to get it to work than to listen to it.**

Ever since I watched the **Outer Limits** television series, I wanted an oscilloscope so I could make Lissajous figures. When I finished graduate school, I built the IO-4105 5 MHz oscilloscope. To keep it company, I built the IB-5281 RCL Bridge, the IG-5280 RF Oscillator, and the IG-5282 Sine/Square Wave Audio Oscillator. Recently, I bought the IT-5283 Signal Tracer. I’ve been tempted to buy the IM-5284 Multimeter to complete the set. However, since you can buy a digital multimeter for a few dollars, the temptation goes away quickly.

I have admired the “look” of Heathkit SB series of amateur radio gear. However, given that I am a recent vintage ham, I am more drawn to the capabilities of more modern factory assembled radios. A friend recently gave me a SB-500 2 Meter Transverter. If I can find the matching HP-23 power supply, I’ll see if I can put it on the air.

I do have a few other pieces of Heathkit amateur gear. I bought a HD-15 Hybrid Phone patch just in case disaster strikes. I won an AM-2 SWR Bridge at an estate auction with the dial that shows an SWR of 3 aligned with 25 percent reflected power.

If I was ever to buy an HF linear amplifier, I would be in the market for an SB-220.

One of my guilty pleasures is to go on eBay and see what Heathkits are being offered along with the disclaimers for their true condition. Another guilty pleasure is to flip through **Heathkit: A Guide to the Amateur Radio Products** by Chuck Penson WA7ZZE.

Now that I have shared my Heathkit memories with you, how about helping our Cheese Bits Editor out by sharing your Heathkit memories? I would be interested in hearing about Pack Rats with more experience with Heathkit amateur radio products. To coax contributions, I would like to offer a little incentive.

The best contribution (as judged by our editor) will win a Heathkit IM-2215 hand-held multimeter. Modeled after a Fluke meter, it was sold from 1979-1984 for \$99.95. It features side range buttons for one-handed operation (if you have big hands). Supply a set of banana plug test leads and you are in business. So send **your** memories to Lenny and be in the hunt for this classic multimeter!

Member News and Comments

From Paul, WA3QPX: Hi All. I worked my first 432 eme last night (11/28/09) using WSJT. DL7APV, I1NDP, UA3PTW, and the important one K3MF, Wayde, who now has his first Delaware on 432. Done with four M2 9wl at 12 feet, 500watts and AR2 preamp aimed through the trees!

And **Dave, W3KM** replies: Yes, the Pack Rats are on the air - even though some of us are on HF.

The bands were alive this weekend in the CQ WW DX Contest. I worked 200 Qs, 136 multipliers and 54 countries. Earlier this month in the Nov SS - 271 Qs and 73 sections. Sometimes I hear/work other PackRats.

Propagation is getting better as we come out of the solar cycle slump. I use 100W and an OCF dipole. Get on the bands and have some fun!

Your activities sound like fun too Paul.

.... Member News and Comments continued

Finally, here's a hint on computer screen resolution submitted by Dave W3KM. It's useful in general and it may help when you're using your computer logging software.

Some software does not have Windows type screen re-sizing available. So when the PC is set for 1024 X 768 for example, the program is only half-screen and hard to see. You can set the PC's video resolution to 800 X 600, but that means you have to constantly change back and forth.

In the newer OS at least, you can change the video mode of individual executables. The program runs in the new video size. When you close the program, the PC reverts back to the original video mode.

In MyComputer, find the executable. Right-mouse click on the file and select Properties, then the Compatibility Tab. Select `Run in 640 X 480 screen resolution`. This is `BIG` compared to the other resolutions!

Ham Radio URL of the Month

This month we present a couple of URLs that provide some insights into the Smith Chart. This rather daunting looking graph, invented in the 1930's by Phil Smith is still routinely used by RF engineers and Hams alike when solving a variety of problems including (but not limited to) impedance matching with series sections and stubs, splitters/combiners, amplifier stability calculations and many others. Check out the ham-oriented article at <http://www.ycars.org/EFRA/Module%20C/TLSmith.htm> which has a very clear explanation of the chart and removes much of the "fear factor". A very nice java applet that you can run right from the site at education.tm.agilent.com/index.cgi?CONTENT_ID=5 shows exactly the pattern of standing waves on a transmission line as you change the terminating impedance in real time. Very instructive indeed!

ENJOY!

— Lenny W2BVH

Events

For inclusion, please direct event notices to the editor.

Harrisburg RAC Winterfest Hamfest— Jan 16, 2010. See http://hrac.tripod.com/Winterfest_2010_flyer1.pdf for details

ARRL VHF Sweepstakes Contest - Jan 23-25, 2010. Details to follow at <http://www.arrl.org/contests/rules/2010/jan-vhf-ss.html>, when available. See email reflector message from Bill K3EGE January Contest Chairman for additional information

JCDXA Hamfest - April 10 and Sept. 11, 2010. Details to follow. See <http://nadxa.org> when available.

Eastern VHF/UHF Conference - Sponsored by the Eastern VHF/UHF Society and the North East Weak Signal Group. Tentative date April 16-18 2010. Details to follow.

Trenton Computer Festival / NJ State ARRL Convention— April 24-25, 2010. A combined event. Computer and ham radio presentations, hamfest and computerfest. Details to follow. Don't miss this one!

ARRL June VHF QSO Party Contest - Jun 13-14, 2010 Details to follow at <http://www.arrl.org/contests/rules/2010/june-vhf.html>, when available

CQ WW VHF Contest— 3rd full weekend in July. Details to follow.

ARRL UHF Contest - Aug 1-2, 2010. Details to follow

... Events continued

ARRL 10 GHz and Up Contest—Aug 15-16, 2010. Details to follow

ARRL September VHF QSO Party Contest - Sept 12-13, 2010. Details to follow

ARRL 10 GHz and Up Contest— Sept 19-20, 2010. Details to follow

ARRL International EME Competition Contest— Oct 10-11, 2010. Details to follow.

ARRL International EME Competition Contest— Nov 7-8, 2010. Details to follow.

VHF Spring & Fall Sprints Contest - Dates and rules to be announced

Joel Knoblock W3RFC

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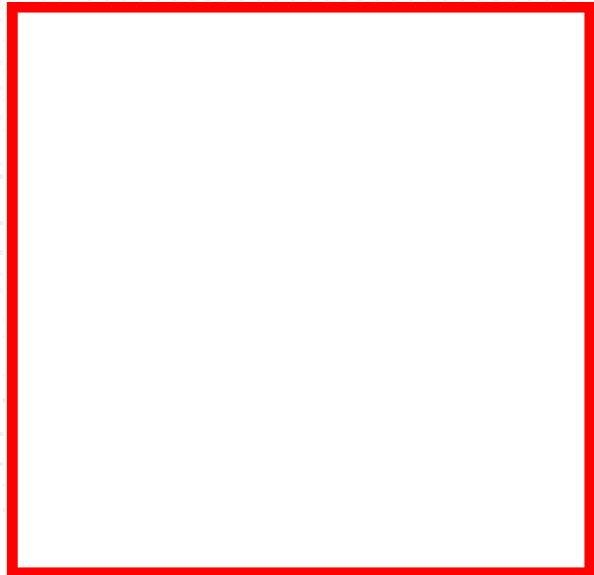
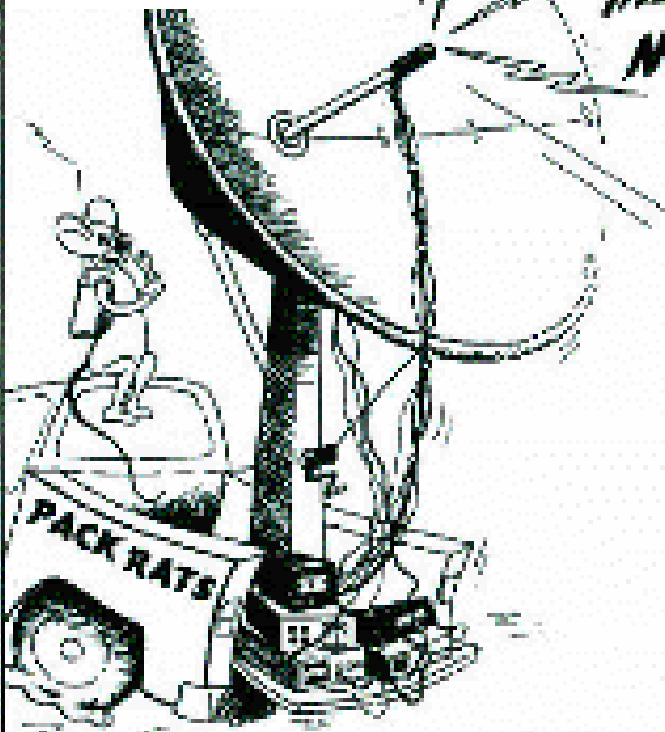
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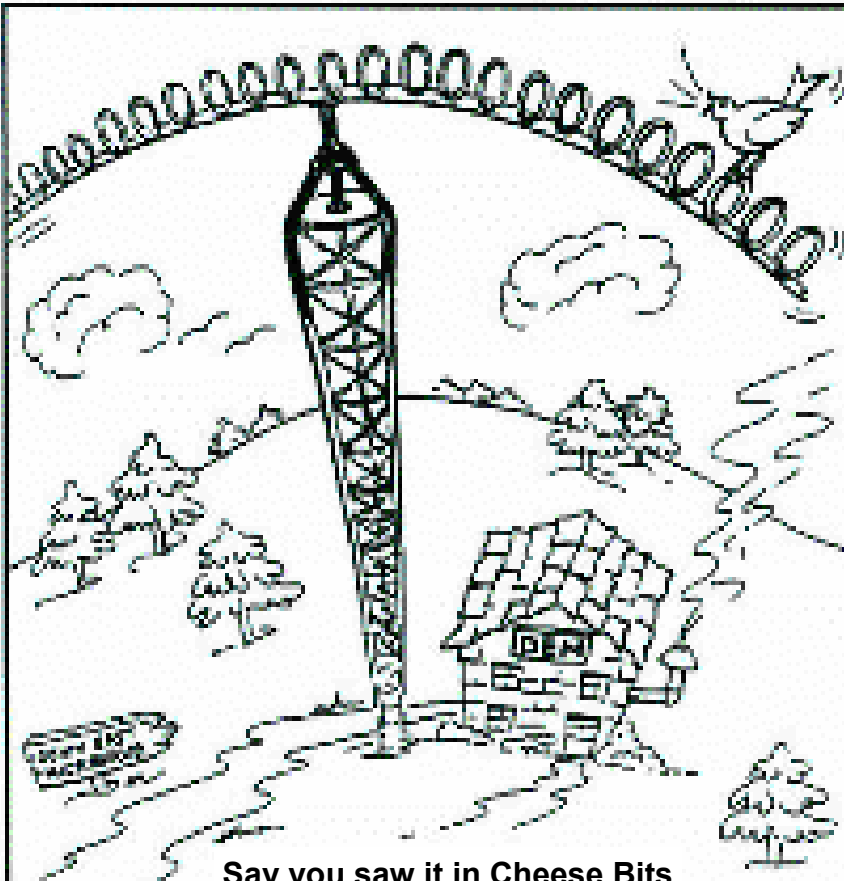
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