

**Mt. AIRY V.H.F. RADIO CLUB, INC.**



# CHEESE BITS

**W3CCX**

**CLUB MEMORIAL CALL**

ARRL  
Affiliated  
Club



*CELEBRATING 50 years of VHF/UHF and MICROWAVE  
DEVELOPMENT and COMPETITION in 2006*

Volume XLVII

JULY 2006

Number 07

## DON'T PANIC .. It's PICNIC TIME

**PACKRATS  
ANNUAL  
FAMIL PICNIC**



**SATURDAY  
JULY 29 - 12  
NOON UNTIL  
AFTER DARK  
RAIN DATE:  
SUNDAY 30 JULY**

**WHERE: AT THE HOME OF AL (N3ITT) AND CAROL SHEPARD  
77 FOELLNER ROAD, OTTSVILLE, PA JUST OFF US ROUTE 611**



**WHAT? FOOD: HOT DOGS, HAMBURGERS AND BEVER-  
AGES SUPPLIED PLUS YOUR DELICIOUS SALADS AND  
DESSERTS**

**FELLOWSHIP: BRING YOUR FAMILY, OR BEST FRIEND  
AND MAKE A FEW NEW FRIENDS, TOO.**

**GAMES TOO: BADMINTON, VOLLEY BALL, HORSESHOES  
AND GAMES FOR KIDS OF ALL AGES PLUS SWIMMING**

Pack Rats **CHEESE BITS** is a monthly publication of the  
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**SUBSCRIPTION and ADVERTISING MANAGER:**

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

**EDITOR:**

Doc Whitticar W3GAD 28 Twining Bridge Rd, Newtown, PA 18940  
 215-968-6397 info@docstech.com

**CLUB TREASURER:**

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

**TRUSTEE OF CLUB CALL - W3CCX**

Ron Whitsel, W3RJW  
 (215) 355-5730 W3RJW@aol.com

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

222.98/224.58 MHz, Churchville, PA

**OFFICERS 2004-05**

PRESIDENT K1DS, Rick Rosen rick1ds@hotmail.com

VICE PRES: KB3HCL, Dave Fleming kb3hcl@arrl.net

CORR. SEC: WA3EHD Jim Antonacci  
 Antonacci@worldnet.att.net

REC. SEC: K3EGE Bill Shaw K3EGE@aol.com

TREAS: W3KM Dave Mascaro dmascaro@motorola.com

**DIRECTORS:**

(2007) K3TUF Phil Theis phil@k3tuf.com

(2007) N0YMV David Willmore willmore@optonline.net

(2008) K3JJZ Elliott Weisman etw@compu-simple.com

(2006) W2SJ Bob Fisher bobw2sj@comcast.net

**COMMITTEE CHAIRMEN**

January Contest N3FTI n3fti@yahoo.com

June Contest: N3ITT & KF6AJ

HAMARAMA: WA3DRC

VHF Conference: WA3EHD 215-659-4359

Awards Chairman WA3GFZ 215-884-3116

QUARTERMASTER: K3IUU, Bert Soltoff, soltoff@uscom.com

**PACKRAT BEACONS - W3CCX/B**

FM29jw Philadelphia, PA

50.080, 144.284, 222.065, 432.295, 903.071, 1296.251,  
 2304.037, 3456.220, 5763.190, 10,368.140 MHz (as of 3/1/01)

**MONDAY NIGHT NETS**

TIME	FREQUENCY	NET CONTROL
7:30 PM	50.150 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	WA3GFZ FN20kc
9:30 PM	1296.100 MHz	WA3NUF FN20le
10:00 PM	903.125 MHz	AA3GN FN20ig
10:30 PM	2304.085 MHz	W3KJ FN20hg

& go to 3.4G & up after

Visit the Mt. Airy VHF Radio Club at:

<http://www.ij.net/packrats>

**Editor's Column**

Well it is mid-month once again and I am just getting this edition finished. Just a few interruptions here and there, a few trees removed and the resulting clean-up. My son visiting from for a week, my wife's scheduled vacation week and assorted commercial demands. Couple that with my usual computer ineptness (Where are those JUNE CONTEST pictures anyway?) and bingo... another late issue. At least I found lots of pictures from KF6AJ, K3IUU, K3JJZ, K1DS and W3GAD to help tell the story.

We are looking forward to putting up a new tower. It is still "under discussion" as to whether this will be an additional tower or a replacement. If I had my 'druthers it would be another tower not a "new" tower. I will try to have the added height in place for the September contest. This is a good time to see what else needs fixing before the rush to prepare for the January Club effort

Speaking of contests—check the calendar on page 10. There are plenty of sprints, VHE/UHF and Micro-wave activities to fill your lust for competition this fall. Use them to test improvements in your station and don't forget to send in you logs. September is a club contest and it would be great if the PACKRATS made a serious showing.

There is the EME Contests, too. Double check as the time gets closer—I could not confirm the September date by press time but I seem to remember seeing or hearing that the date had changed again so it would not conflict with the September contest.

The Special October meeting with Astronaut Greg Olson promises to be really interesting. Talk it up, bring your friends and invite other to attend too. We have arranged for a much more spacious and more accessible site for the meeting with seating for up to 200. It would be terrific to have a full house for this special evening.

Roger Rehr, W3SZ, shares another of his computer based solutions to vexing problems that pop up when using lots of transverters with a single IF rig. His article starts on page 4

Did you get one of those "SOFTROCK 7" SDR Receivers mentioned by Roger a few months ago? How about a few line for the readers on how it was to build and how you have integrated it into your station. Mine is "Still in the box" another victim of the clock.

Well I guess I had better get crackin' on planning the August issue and look seriously into how to put this up on a members only site so you can download it at your leisure rather than have to deal with attachments that slow you e-mail. 'Nuf said.

Listen for the WEAK ONES

73

W3GAD Doc



# PACKRATS DEFY MOTHER NATURE



OFF to a great beginning with this terrific crew for loading Friday morning at W3GXB's Barn

Despite wind gusts of near 50 miles per hour the towers stood and the RF flew along the 'E' - Skip on 6 and 2 meter, the rovers, roved all over the north country and the PACKRATS under the leadership pf KF5AJ and-N3ITT stood forth for their best ever performance from CAMEL BACK MOUNTAIN.

From Early Friday morning with the arrival of many members to help with the loading of the trucks at W3GXB's; to setup, maintenance and operation to cooking and cleanup we had a terrific crew and, despite the wind, some minor pre-contest antenna damage, and a couple of nasty spills by K3MD and W3GAD it was a rather uneventful and productive weekend.

The band Captains, Contest leadership and operators all know what has to be done to improve operations next year and, if this year is any indication, you can count on those changes being followed upon and implemented. N3ITT did a terrific job rallying the troops via e-mails and at the meetings. The tele-conferencing was a definite plus for band captains and contest committee members to discuss problems and progress in the preparations. With the equipment spread all over three states it certainly takes a lot of planning to have it all arrive at Camelback at the same time so we can put forth the splendid effort like we did this year.

I'll let the photos on the following pages tell the rest of the story.

*continued on page 5*

# A SIMPLE CIRCUIT FOR SETTING TRANSVERTER IF LEVELS

by Roger Rehr W3SZ

This is a description of a little circuit that I thought some readers find useful. I built it on Monday since I had off after 1 pm or so from work. We had done all of our family festivities for the Holiday Weekend on Saturday and Sunday, and I therefore had some 'truly free time' for radio stuff.

One of the 'issues' for me operating all bands from 50 MHz thru 24 GHz with a common IF rig and automatic band switching, and with some of the transverter electronics up on the tower where adjusting signal levels can be difficult has been how to set things up so that I could easily achieve for all bands:

1. 'optimal' signal levels coming into the IF rig on receive and
2. 'optimal' signal levels entering each of the transverters from the IF rig on transmit.

Also; although a variable noise floor is an annoyance on receive with the FT1000MP as an IF rig, it is even more of an annoyance with the Linrad SDR [and with any SDR-type receivers with a spectrum display] due to the fact that the noise floor of the spectrum can actually jump off-screen if there is considerable variation in noise floor between bands. Of course, any 'excess' in the level of the noise floor potentially reduces system dynamic range.

Finally, I want to enter some of the contests as 'low power' which means reducing my power output on some bands from current levels. This is best achieved, given my hardware configuration, by cutting back on the drive to the transverter for certain bands. Would I be able to do this accurately, quickly and consistently manually when in the throes of a contest? No way!!

The question was how to achieve these goals easily, so that all tasks were automated.

PageNameZWDVWQQrdZ1QQcmdZViewItm

It turns out that this was easily accomplished.

The entire project took me just an afternoon to build, test, and install. I am already using the Pack-Rats Club Project N3FTI automatic software

-controlled band switch. Among its many outputs, it gives DPDT relay outputs for each of the A, B, C and D band control bits coming directly from the parallel port of the computer. It was natural to use these to provide the hardware control I needed.

As I was thinking about the best way to do this, I went to the Parallax website a week ago, just after I returned from Dayton, and it turned out that they were having an 'end of life' sale on their BS2p24/40 demo boards, and the BS2p40 was on sale for half price. The demo boards are back-ordered, but still available for \$29.00, a savings of \$60. The BS2p40 is currently back at full price, but these do go on sale periodically. You could also use one of the many BS 'knockoffs' that are about half-price to begin with, or roll your own with a basic PLC and accomplish the same thing.

[http://www.parallax.com/html\\_pages/products/basicstamps/basic\\_stamps.asp](http://www.parallax.com/html_pages/products/basicstamps/basic_stamps.asp) [http://www.parallax.com/detail.asp?product\\_id=45187](http://www.parallax.com/detail.asp?product_id=45187)

The control hardware used in the project consists simply of a BS2p24/40 demo board with a BS2p40 and two ULN2803a Darlington transistor arrays. These receive the ABCD bits from the the N3FTI board and control the 24V inputs to a couple of NOS Alan programmable attenuators which I picked up at Dayton for \$35 each [these are also frequently available on eBay].

My system is set up so that I use separate transmit and receive IF lines to/from the IF rig, which of course made things easier.

[http://cgi.ebay.com/Alan-DC-1000MHz-0-63-dB-Programmable-atrtenuator\\_W00QitemZ762](http://cgi.ebay.com/Alan-DC-1000MHz-0-63-dB-Programmable-atrtenuator_W00QitemZ762)

192911QQihZ017QQcategoryZ36316QQss  
These relays are controlled by placing 24 Volts on any combination of the 1-2-4-8-16-32 bit poles to set the desired amount of attenuation from 1 to 63 dB.

It was a simple matter to just plug the two ULN2803a's into the demo board, wire the circuit up on the demo board with the test-jumper wires supplied by Parallax, and write some very simple Parallax Basic code that sets the programmable attenuators placed in the transmit and receive IF lines to the attenuation values necessary to optimize input and output IF levels for each band from 50 MHz thru 24 GHz independently. To set the IF levels, I just had to observe the noise floor level on Linrad and the transmit output level on each band as I varied independently the receive and transmit attenuation values via the software. Then once I had achieved the desired results for all bands,

CONTINUED on PAGE 9





And the Wind did blow but by the dawn's earl light the towers stood with only one slight injury to the 1296 array—fixed and “ON THE AIR” (notice the leaning of the masts)



↑ ABOVE: W2PED and WA3RLT work on one of the towers on the ground .

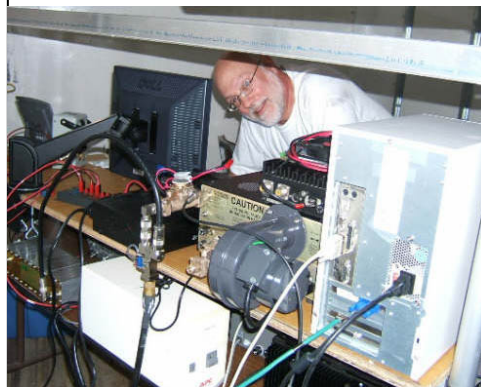


← W2PED also spend more time up on the towers doing minor adjustments and final installation work on the microwave gear despite the wind the flag is straight and just flapping a bit in the ever present wind on the hill.

Thanks to rigorous staking, guying and frequent inspections all towers remained up and if necessary safe to climb



Having the right tools for the job certainly helped us make sure the towers stayed up with all the wind. Here are WA3NUF and KB3XG using the electric jackhammer to set anchor stakes for one of the microwave towers.



K3TUF is having fun with the 222 MHz “Wireless” installation. From here you can see the serious blower used to cool the the LUNARLINK power amp.





KB3XG's microwave gear all racked up and ready for John's guiding hands to get it on the air. This was Friday afternoon and the IF rigs are still boxed for transit.



New member Mike Davis KB1JPY trying out his 432 station

Sara, KB3BBR the lone LADY PACKRAT endures the entire weekend.

During setup time some of the crew catch their breath—for the Middle of June they are dressed like it's winter. Well the way the wind blew it got chilly out in the open. Looks like they may be ready to hoist the big dishes into place.



The "Pack-up" Ready to leave on Monday morning.

Most went their separate ways leaving a less than adequate, tired few to unload the trucks and put





# N4HY HONORED

Congratulations to Bob N4HY for being awarded the highest civilian award from the national security community. To bad they chose the contest week for the celebration ed



This is the Deputy Director of the CIA giving me the Intelligence Community Seal Medallion.

The Saturday of the contest was fun. I went the to the Spy Museum downtown as a guest of several friends (har har), to dinner, and then to the D.A.R. to hear Bill Maher to hear his stand up routine. I thought it was going to be a taping of his show. He was funny but he would have made Richard Pryor blush.

Saturday was filled with wondering how it was going with the antennas, etc.! It sounds like the gang had a great year and WOW, W2SZ beaten at long last.

73's Bob

AMSAT VP Engineering. Member: ARRL, AMSAT-DL, TAPR, Packrats, NJQRP/AMQRP, QRP ARCI, QCWA, FRC. ARRL SDR Wrk Grp Chairman  
Time for a new motto, what should I choose?



They say an army travel on it's stomach—true also for the PACKRATS. Plenty of food, snacks and drinks for the crew



PACKSRATS and guest ops from FRC keep W3CCX on the air for the entire contest.



They swarmed like bees to do emergency repairs to the 6 meter array during the contest. Down, repaired and back in the air in under 30 minutes. Luckily there was no opening during the down time.

# PREZ SEZ

The June effort was a huge success, thanks to all who pitched in to help. Kudos especially to those who chaired the effort, and those whose dedication to four days on the mountain, plus advance preparation time paid off well. Steve, KF6AJ, as usual, went above and beyond in his supply of gear and planning. Al, N3ITT managed the trucks and tower hardware, including our new base and guy rods. Doc, W3GAD, despite adverse weather conditions and an excess of hungry ops, managed to keep the gang well fed. Bill, K3EGE, facilitated communications between the stations and made sure the rover QSOs got into the logs. John, KB3XG was there with his great microwave set-up. Our band captains made strides in improvements, Drex, W3ICC, with 6m, Steve, KF6AJ on 2, Phil, K3TUF on 222, and Len, N3NGE on 432. As the soapbox and scores will show, with all the great Es on 6m and 2m, the microwave QSO numbers were down, but overall, this looks like an increase in score over the past two years for us. Our rovers, WA3GFZ, N0YMV, NR6CA, NE3I, K1DS and N1XKT covered some new grids and were quite successful in their efforts.

Our post-contest meeting at Otto's Brauhaus was a delightful and delicious evening in the Biergarten. We had elections and I appreciate all of your support for my third term. Dave, KB3HCL will move from his board position to the vice-presidency, and Bob, W2SJ and El, K3JJZ will fill the two vacated board positions. I am grateful and thank Dave, W3KM, Bill, K3EGE and Jim, WA3EHD for maintaining their officer spots. We welcomed our newest member, (Please add his name and call ?N3RG? here), and look forward to his active participation in the club's activities.

As we look forward to the balance of 2006 and 2007, we have lots on our agenda. Our summer fun starts with the White Elephant sale on July 20<sup>th</sup> at Gary's WA2OMY, the club picnic on July 29 at Al's, N3ITT, and several operating activities including the CQWW VHF contest, the ARRL UHF contest, the 10GHz and up cumulative weekends and the September ARRL VHF QSO party. HAMARAMA will be October 1<sup>st</sup> at the Wrightstown Grange, and October 19<sup>th</sup> we have Tourist Astronaut Ham, Greg Olsen as our speaker at the Ben Wilson Senior Center.

Due to problems with booking an affordable site for the VHF conference, we have decided to postpone it. Further efforts will be applied in the future in order to re-establish a multi-year contract for this event. We are still seeking a membership chairperson, as this is becoming an important function for a focused effort. Please see any one of the officers if you can serve in this capacity. 73, Rick, K1DS



## OPEN MOUTH - INSERT FOOT

Well, UHH! Sorry to Bill Edgar N3LLR—Atlantic Division Director for the slip of the memory in the June issue. Doc Whitticar, editor

**Joel Knoblock W3RFC**

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A PROFESSIONAL CORPORATION

12th Floor, Two Logan Square

Philadelphia, Pennsylvania 19103-2736

(215) 567-7857

FAX: (215) 567-2737

e-mail: ragriffiths@klettrooney.com



## ELECTION NIGHT AT OTTO'S



In recent years the June meeting has been moved to OTTO's BEIR GARTEN in Horsham as a way to wind down from the June contest (Which is typically the weekend before) and to help all the candidate relax before they get moved into their new responsibilities.

The results of the 2006 elections sees only a few changes to the leadership:

**PRESIDENT:** Rick Rosen, K1DS

**VICE-PRESIDENT:** Dave Fleming, KB3HCL

**CORRESPONDING SECRETARY:**

Jim Antonacci, WA3EHD

**RECORDING SECRETARY:** Bill Shaw, K3EGE

**TREASURER:** Dave Mascaro, W3KM

**DIRECTOR 2008:** Elliott Weisman K3JJZ

**DIRECTOR 2008:** Bob Fisher, W2SJ

**DIRECTOR 2007:** Phil Theis, K3TUF

**DIRECTOR 2007:** Dave Wilmore N0YMV

**TRUSTEE OF W3CCX and the repeater**

Newly appointed and registered with the FCC as station trustee is: Brian Taylor N3EXA.

**EDITOR** of this untimely missive CheeseBits until someone steps up to "do it better" or "more timely"

Doc Whitticar, W3GAD

**JUNE CONTEST Co-CHAIRS:**

Al Shepard N3ITT and Steve Simons KF6AJ

All these fine people deserve your support.

At the next meeting be sure to thank them for the jobs they have done for the PACKRATS and wish them well with their new responsibilities.

The best way to show your support is by coming out for the meeting and being active as a member of the PACKRATS.

## GETTING ON THE AIR AT THE LAST MINUTE K3IUUV STYLE...

Burt was schedule to move into a new adult community last December. Alas, it didn't happen until June so the with the January contest just a few day's away Burt decided to get on the air from a firm foundation to thrust bearing to antennas Burt rigged it up and turned in a decent score with only 3 bands on the air.



Lots of rope and creativity got Burt rotatable arrays on 2 bands 432 with a Squalo for 6 meters—no beauty awards—but it worked.

I wonder how he'll disguise this at his new home.

# WHATS HAPPENING

## A LISTING OF INTERESTING EVENTS

- 13 JULY 2006**—*Board of Directors meeting at the QTH of K1DS*—Come early for a cook out before the meeting or check your email or contact K1DS for tele-conference instructions.
- 20 JULY 2006**—*ANNUAL WHITE ELEPHANT SALE AT QTH OF WA2OMY GARY HITCHNER, 39 West Mount Kirk Avenue, Norristown. PA*
- 29 JULY 2006**—*ANNUAL PACKRATS FAMILY PICNIC at the QTH of N3ITT, Al Shepard, 77 Foellner Lane, Ottsville, PA RAIN DATE 30 July*
- 5 AUGUST 2006** *MICROWAVE ACTIVITY DAY—8 AM to Noon or so—evict the spiders, warm up those TWTs and create a stir in the atmosphere before the contest.*
- 5-6 AUGUST 2006**—*ARRL UHF CONTEST*
- 19-20 AUGUST 2006** - *ARRL 10 GHz and UP CONTEST—Part ONE - Part TWO on 16-17 September 2006*
- 9 TO 11 SEPTEMBER 2006**—*ARRL September VHF QSO PARTY*
- 9 TO 10 SEPTEMBER 2006**—*ARRL International EME COMPETITION*  
also 14 to 15 October and 11 to 12 November 2006 *This date may have changed*
- 18 SEPTEMBER 2006—MONDAY**—*Fall 144 MHz Sprint (See Announcement on Page— Rules will be published in the August CheeseBits.)*
- 26 SEPTEMBER 2006—TUESDAY**— *Fall 222 MHz Sprint*
- 30 SEPTEMBER 2006** - *MID ATLANTIC VHF/UHF/MICROWAVE CONFERENCE*
- 1 OCTOBER 2006**—*PACKRATS ANNUAL HAMFEST*—Once again it will be held at the Middletown Grange Fair Grounds in Wrightstown, PA
- 4 OCTOBER 2006—WEDNESDAY**—*Fall 432 Sprint*
- 14 OCTOBER 2006—SATURDAY**—*Fall 903 and up Sprint*
- 19 OCTOBER 2006**—*Special Meeting of the MOUNT AIRY VHF RADIO CLUB with special Guest Tourist Astronaut Greg Olson. This meeting will be held at the Ben Wilson Senior Center, Delmont and Street Roads in Warminster, PA Talk-in on the 147.09 repeater.*
- 19 TO 22 OCTOBER 2006** *MICROWAVE UPDATE 2006—DAYTON OHIO*
- 21 OCTOBER 2006—SATURDAY**—*Fall 50 MHz Sprint*

All meetings are announced on the regular Monday Evening Nets. (See Page 2) - Board meetings of the Mount Airy VHF Radio Club are open to all members. Teleconferencing for members is usually available. Regularly scheduled meetings of the PACKRATS are held at 8 PM in the basement meeting room at the Southampton Public Library on Street Road in Southampton, PA. Meetings are open, not only to the membership, but to any party interested in VHF/UHF/Microwave contesting, equipment design and construction for use on the VHF/UHF and Microwave Frequencies or amateur radio in general

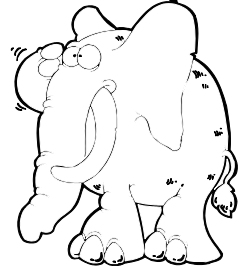


# ★ ★ ★ ★ ★ ★ ★ ★

# AUCTION



## PACKRATS ANNUAL WHITE ELEPHANT SALE



Now is your chance to take some of those treasures from the closet and share them with your fellow PACKRATS. It may even be possible to find a few new treasures as replacements.

**WHEN?** 20 JULY at 8PM

**WHERE?** At the QTH OF WA2OMY—Gary Hitchner  
39 West Mount Kirk Avenue, Norristown, PA  
610-539-6409

*Just to the west of Germantown Avenue and north of US Route 202 (Plenty of Parking too)*

**WHAT?** Bring you donations and consignment items to put on the block during a fun filled evening with your fellow PACKRATS and guests. Proceeds help finance the annual W3CCX trek to Camel Back mountain in June and other PACKRATS activities

#### CONTINUED FROM PAGE 4

I disconnected the demo board from the serial line and left the code in the EEPROM as is. You can have several sets of code with one set for general use where all bands have zero attenuation on transmit, and another set where sufficient attenuation is added for transmit to certain bands as necessary to keep their levels within the range necessary to permit 'low power' operation on all bands as defined by the rules for that particular contest.

Now when I switch from band to band I have a constant noise floor, with 13-15 dB added to the noise floor by turning on the tower receive preamp for each band, and I have the optimal amount of transmit drive on each band. If I change rigs or something else changes that requires a change in drive level or an adjustment of the receive input level to the IF rig I just download a new set of attenuation values to the Basic Stamp.

This was so easy to do I had to share it, hoping that it would be of help to someone else. I suspect some out there are already doing much more sophisticated things in a much better way, but this works for me.

The code is my usual "I don't really know how to program but it works" type of code. I put it at:

<http://home.comcast.net/~w3sz/iIFLevelSet2.bsp>

The hardware is so simple that no schematic is required. PS if the links don't work for you, just make sure you remove any line breaks added to the URL by the email process.

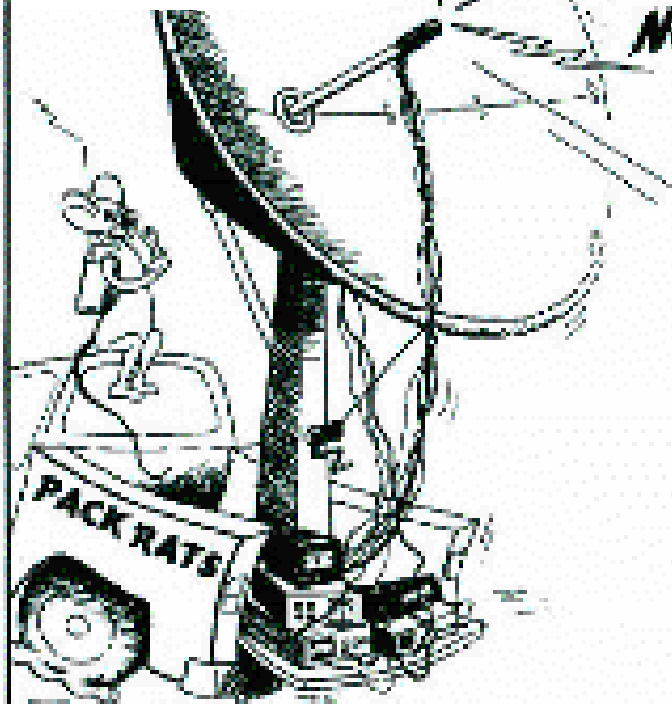
73, Roger Rehr W3SZ

<http://www.nitehawk.com/w3sz/>

I found my CW abilities were going from bad to worse. I decided to write my own Windows program and make it available to the ham community. A unique feature is voice prompting of characters in the learning sequences. I called the program CPwin. It is freeware. Here is the link for anyone who is interested: <http://www.xertech.net/Projects/CPwin.html> Hope it is helpful to some of you. Rex, KK6MK

CheeseBits  
c/o Doc Whitticar W3GAD  
28 Twining Bridge Rd  
Newtown, PA 18940-9704

## MEETING NOTICE



### LOOKING AHEAD:

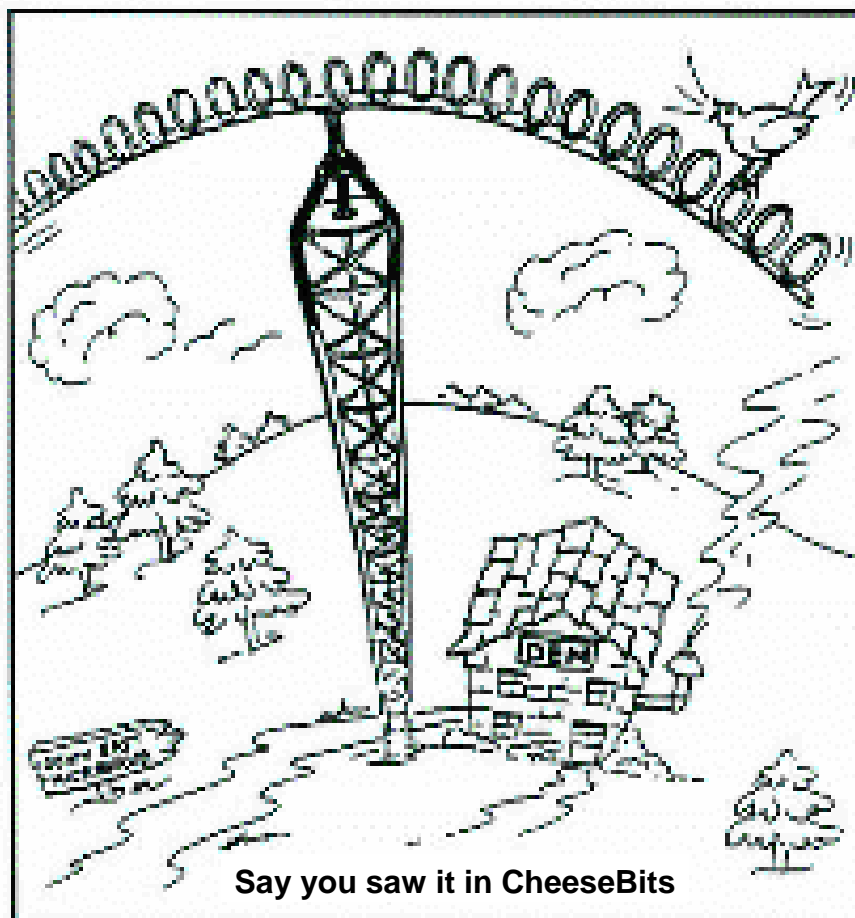
August UHF CONTEST  
September VHF SWEEPSTAKES  
SPRINTS  
EME Contest

### INSIDE:

Report on Elections  
Meeting notices  
JUNE CONTEST  
N4HY receives Special Award

FIRST CLASS

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Say you saw it in CheeseBits

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