



# CHEESE BITS

**W3CCX**  
**CLUB MEMORIAL CALL**

ARRL  
Affiliated  
Club



**Volume XLVI**

**OCTOBER 2004**

**Number 10**

PrezSez

This has been one of the most radio-active summers I have ever experienced, having roved in the ARRL June VHF, operated the CQ VHF, ARRL UHF, 10GHz, ARRL Sept VHF, attending the EME Conference and all the Packrat Board of Directors meetings, the White Elephant, picnic, and now looking forward to October with Hamarama, followed by Microwave Update in Dallas. And it's been a lot of fun! How did your summer measure up? Several Packrats are mentioned in the current issue of QST with their Es experiences during the July openings. There were lots of great contacts for those on the 10GHz weekends, and of course, all participants still enjoying the after-glow of the June effort on the mountain. Our Hamarama plans are complete, thanks to Ed, WA3DRC and his magnificent crew. We need to continue to build our efforts, as the general hamfest attendance has been shrinking for all venues. Not only are these events a great opportunity to buy and sell, but also represent the only significant fund-raiser for the club to support the mountain efforts, and other club operating costs. Let's have EVERYONE there for this event, to handle all the needed tasks of gate, parking, and vendors. Thanks in advance for playing your role. And just in case you may still need more info, check the Packrat Web site, or call Ed directly at 215-322-2105.

Our September Club Contest entries need to be sent in to ARRL—make sure you submit in a timely fashion and specify Mt Airy VHF Radio Club for club competition. Thanks go out to Joe, W3KJ, for stimulating the activity. This was a great opportunity to see what needs to be done on your station before January. And while we're at it, October is the month when we collect station info, needs, and equipment available for January. Please make your status known.

Steve, KF6AJ was our September meeting speaker, enlightening us on the uses of non-radiated RF for various manufacturing and cleaning processes. Nice job! Look forward to seeing some of this new power generating technology available for hams in the near future. Doc, W3GAD is doing a fantastic effort with his first 3 issues of Cheesebits, and also picked up the Mario Raffle duties this month, with a great display of items brought by the members—Thanks all!

Lastly, welcome to Bernie, KF3DO, the newest Packrat, and we'll look forward to seeing you all at Hamarama, and the October meeting, where Joe, K1JT, will fill us in some more on practical aspects of getting on with WSJT, and the latest and ultimate of the communications suite: "JT1". 73, Rick, K1DS



Bernie—KF3DO

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**PACKRAT BEACONS - W3CCX/B**

FM29jw Philadelphia, PA

50.080 144.284 222.065 432.295 903.071 1296.251 MHz

2304.037 3456.220 5763.190 10,368.140 MHz (as of 3/1/01)

**MONDAY NIGHT NETS**

<u>TIME</u>	<u>FREQUENCY</u>	<u>NET CONTROL</u>
7:30 PM	50.150 MHz	K3EOD FM29II
8:00 PM	144.150 MHz	N3ITT FN20kl
8:30 PM	222.125 MHz	K3TUF FN10
8:30 PM	224.58R MHz	W3GXB FN29jm
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

## REMINDER

HAMFEST 10 OCTOBER Middletown Grange Fairgrounds  
Everyone come and help make this the best

## Editor's Column

Well time sure has a way of flying by - here it is early October and I am finally getting this issue of CHEESEBITS to press.

I see lots of activity and special efforts have gone into the September contest with some really impressive scores along with some really serious efforts in the rover area.

We produced over 46K ourself in the September contest with all 6 bands operating well despite a late into the contest construction project to build a better headphone, microphone and key interface. There is still plenty of room for improvement in the station but this is a big step towards less complicated band switching when using multiple IF rigs. I am *finally* working on repairs to the AM6155 for 222. Installing new K2AW diode packs should help keep the power supply healthy for some time.

There have been some new microwave records set. I have snatched a few announcements from the reflectors to help bring you up to date.

The main focus in October, of course, is our HAMFEST. This is the main fund raiser and all members are requested to lend a hand during Saturday set up and/or Sunday operations and clean up.

Our friend Peter Day G3PHO from the UK sent us some snippets from SCATTERPOINT including an article on the using 24vdc relays.

I would love to see more articles from within the PACKRATS. Notes on your projects and your station, with pictures too, really help keep the newsletter interesting.

Thanks to John KB3GX for his article on his rover adventures with Pat W2SK.

Check out the *MYSTERY PHOTO*. See how many of the questions you can answer. Bring your answers to the October meeting.

Do you have any historical or hysterical PACKRAT photos or tidbits to share? Get the goodies to me. I can scan the images - lots of pictures help fill the pages when we are a little short in the word department.

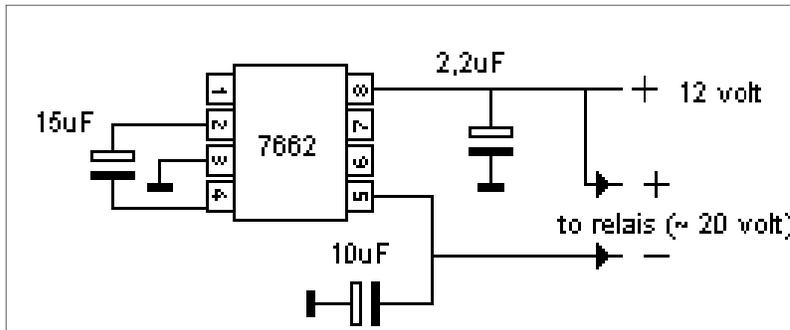
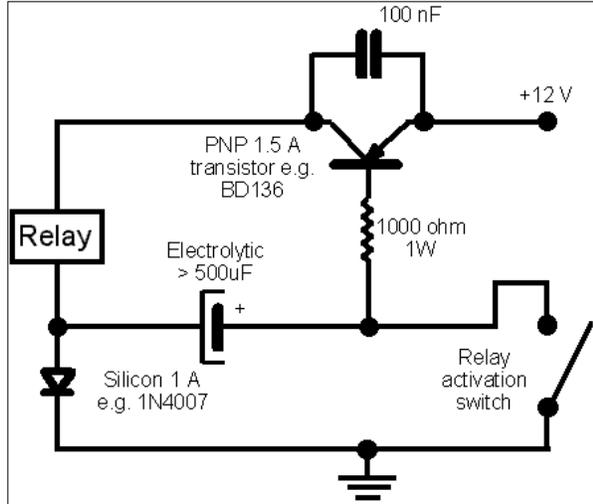
E-mail the editor direct:

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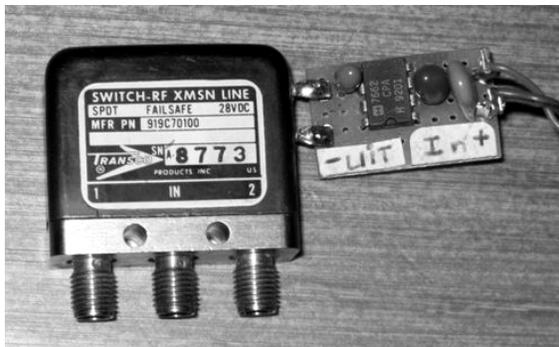
Put for CHEESEBITS in the "SUBJECT" line  
If you need help preparing your articles let K1DS or I know and we can help get your information ready to share 73 de W3GAD - DOC - editor

## USING 24-28VDC COAXIAL RELAYS WITH 12V SUPPLIES

Recently, there's been quite a flurry of postings on the UK Microwave Group reflector concerning relay power supplies. Your scribe has had no problems whatsoever with a simple DC to DC upconverter using an NE555, a couple of diodes and a Darlington transistor pair which supplies a healthy 22 volts DC on load, easily enough to operate the ubiquitous Transco and Dynatech microwave relays. For those who have not had much success with such a circuit, here's one based on the fact that all relays, once activated, need a much lower voltage to remain active. The circuit originates from one by Tony, IOJX.



**Here's a simple one based upon an IC7662 chip.**



With just four components, it is easily assembled and can be attached directly to the relay as shown here on the left.

**(Thanks Hans, ON4CDU for this one)**

## KB3XG/R Rover Report.... roving in Northern Maine during the September contest

Pat, W2SK and I got off to a good start by departing Pennsylvania Thursday evening. We were able to avoid all traffic problems in NYC and Hartford.

We were up at a reasonable hour on Friday and had time to stop off at K1WHS's to inspect and admire the awesome 144 MHz VLVA. We left Dave's right after lunch and arrived in Presque Isle around 11pm. Lucky for us we arrived before the bar closed.

We left for our first site around 9am on Saturday. We drove about an hour north to FN67 just a little south of VanBuren. This gave us time to practice setting up and to check out some of our equipment with the hill. We had a slight problem with the PTT circuit on 903 and 1296 but we were able to work around it. We worked the hill up through 3456. The signals on 2304 and 3456 were extremely weak even with Dave's blow torches. It was good to have Pat with me since he a much better operator. We were a little disappointed that 6 or 10 gig did not work but as Steve said "Hey, We tawkin 300 miles here" As a side note Pat was tuning around on 6 and 2 while we were waiting in que for the hill... only one other station heard on the band. Sure is remote in these parts! We had a pizza in VanBuren before we left for FN57.



We arrived in FN57 around 6pm. Setup was a lot easier at this stop. Once again Mr. Ploorde allowed us to setup in his backyard. This site is not much better than FN67 elevation wise but fortunately we were able to squeak out a contact on 6gig.

We were up at a reasonable hour on Sunday and departed for Moosehead Lake. It was difficult to maintain the speed limit on Rt. 6 since the antennas forced the truck into a low frequency oscillation. It took us about 7 hours to get to FN46 including a quick lunch stop in Howland. When we had just about arrived at our high spot in FN46 we found that the conservation people had dug a ditch across the road and declared it "Forever Wild" We inspected the area surrounding the ditch and determined that we would need a Bradley Fighting Vehicle to get through.

We spent the next 2 hours searching for an alternate spot. Topo USA was somewhat useful but many of the roads shown on the map do not exist at the site and vice versa. At one point we were less than 0.1 miles from Canada. All of the spots we looked at that

were as high as Hurricane Hill were surrounded by trees. Driving through this type of terrain is difficult. We hit a weed covered ditch and all of the equipment in the truck went airborne. We bent the 1/4" steel plate on the front trailer hitch. We needed to put the truck in 4WD to drag the mast plate out of the ditch. The front and back masts were both bent out of shape. We laughed about how it would be a miracle if any of the equipment still worked.

We were running out of time and decided to setup north of Hurricane Hill, still in FN46. The tree cover was somewhat thinned at this spot but we were pointing into the downward slope of the western side of Hurricane Hill. The rear mast was so badly damaged that we had to hack saw 1" off the bottom so we could extend the array. Only signal on the band was K1whs...we managed to squeak out contacts up through 1296. K1WHS said they heard us on 2304 but we didn't hear a peep. They had trouble hearing us at times on 222.222 even though we were 112 miles closer. To add insult to injury it poured on us just as we were tearing down. Navigating through the dirt roads in the dark and in the rain would have been impossible without TopoUSA.

*CONTINUED on Page 6*

# OPERATING NEWS—Assorted Bits & Pieces

From: "Dexter McIntyre W4DEX"  
<dmcintyre@att.net>  
Sent: Saturday, September 25, 2004 1:40 AM  
Subject:  
K1WHS / W4DEX Microwave Contacts 3456 MHz  
thru 10 GHz

Tonight between 0415 and 0438 UTC perfect Q5  
contacts were made between  
K1WHS in FN43mj and W4DEX in EM95tg on 10,  
5.7, 3.4 and 2.3 GHz. BD  
calculates the path to be 1213.562 KM or 754.073  
miles.  
Dex

---

## New 47 GHz world record

Mon, 20 Sep 2004 20:35:42 -0700

This past Sunday afternoon during the "10  
GHz and Up Cumulative Contest" W6QI and  
AD6FP completed a 47 GHz contact over a 290 Km  
distance to set a new world record. W6QI operated  
from Shuteye Peak DM07GI just south of Yosemite  
and AD6FP operated from Frazier Mountain  
DM04MS north of Los Angeles.

W6QI had to brave 30 degree temperatures  
and snow while modifying the radio in order to com-  
plete the contact.

Signal margins were >40 db on the W6QI end  
and about 8 db on the AD6FP end.

The contact was completed using a combina-  
tion of narrow band FM and CW.

The station details are as follows:

W6QI: 36" cassegrain dish, 10dbm xmit, 8 db nf,  
ocxo locked

AD6FP: 12" splash plate dish, 45 dbm xmit, 4 db  
nf, Rb locked

The weather conditions were quite unusual for  
September with scattered rain showers in the central  
California valley between Shuteye and Frazier. More  
details to follow.

Frank W6QI  
Gary AD6FP

## TEAM K3EOD SEPTEMBER 2004 LOG FILES

Had a BLAST during the weekend.

Here is the breakdown of the FANTASTIC efforts of  
BILL K3EGE, AL K3EOD, RALPH WR3P, BOB W2SJ  
AND BRUCE WA3WUL.

Respectfully

Al K3EOD

BAND	Q's	GRIDS
50	217	28
144	230	39
222	91	30
432	108	27
903	35	17
1296	42	16
2304	11	7
LASER	4	1
TOTALS	738	165 = 187,440

To borrow the words of our host "May your name be writ-  
ten in the book of life for yet another year".

Ralph, WR3P Allen L Boblitt K3EOD

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## RESULTS OF THE 2004 2GHZ AND UP WORLD WIDE CLUB CONTEST SPONSORED BY THE S.B.M.S. CLUB

Entries Score 2003 2004

SAN BERNADINO MICROWAVE SOCIETY 16 16 48,275;  
FRONT RANGE MICROWAVE SOCIETY of COLORADO 0  
10 32,375; MT AIRY VHF CLUB "PACKRATS" 8 10 25714;  
SAN DIEGO MICROWAVE GROUP 7 7 17674 and  
MIDWEST VHF UHF SOCIETY CLUB 4 0

These were the only logs I received; we lost one club but gained  
another I hope there is more participation next year any sugges-  
tions comments please contact N6rmj@sbcglobal.net N6RMJ  
PAT DM14cp

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## NE3I Rover... August UHF Contest Results

I was out in the rover only on Saturday with low power  
and short antennas. The trailer hitch with rotor worked  
with a borrowed inverter from K1DS. I did not hear many  
stations but pretty much worked those I did including  
FN31 and FN32 on 1296 with 10 watts and the short  
looper. With some added bands and higher ground I it  
looks like it will be fun in September.

220 (FM 5w 5 ele)	6	3
432 (30w 8 ele)	14	5
1296 (10w 14ele)	7	3
Grids activated	2	FN20,FM29
Score	1326	

Thanks for the contacts - Griff, NE3I

## KB3GX Rover... *Continued from page 4*

We eventually found ourselves at an all night Denny's in Augusta drinking coffee at 1am. Pat said all of the coffee made it seem like it was only 10pm. We found a hotel to crash at around 2am.

Things that worked well:

Aircraft compass: I replaced my Ford flux gate compass with an old AirPath compass that I got from the airport shop. The shop even offered to calibrate the compass after it was installed. With the calibration card we were able to point the truck to within a couple of degrees based on a magnetic heading.

Additional telescopic mast sections: I added another telescopic section to my dual mast assembly. Now each antenna is on it's own section of pipe making deployment easier.

Extra battery: Up until this year I had been running all of my equipment from the car battery. I drop more than 1 volt even though I run #10 wire from the engine compartment to the rear of the vehicle.

During transmit the voltage drop is worse. (I draw 36A on 2304 and 3456) I put another 110A gel cell in the rear of the truck in parallel with the car battery. This really helped to hold the nominal voltage close to +12V.

Things that need work:

Frequency accuracy: I normally use a 12V ovenized HP frequency counter to monitor my base crystal frequency on each band. Unfortunately my counter is permanently mounted in the 24 GHz rack which was installed in Warren's van. I'll have to come up with another counter before I venture out again next year.

uWave dish: I use a 2' dish with replaceable feeds for 5.7 and 10.4. Pat noticed that my dish is severely warped. I remember it had 1 bend in the lip when I bought but I don't recall how the 2nd bend got there. I need to consider buying a new dish for next year.

Trailer hitch mast plates: The mast plates hang too low. The guy who built these plates for me did it with the truck unloaded. My springs really sag once I put all of the radio equipment in the back. I'll have the guy weld the plates on another 6" higher.

Looking forward to another adventure in 2005.

73, kb3xg and w2sk

## Almost free dc-dc converters!

Liberated from September 2004 SCATTERPOINT

I was chatting on the phone tonight to Carl G6NLC about a PSU problem, and he reminded me that old ethernet cards (10base2 ones) often have dc-dc converters on board.

I went and looked in the garage and sure enough on the old Novell NE2000 16bit ISA cards I found, there were Valor PM7102 dc-dc converters. These are 5 volts in and -9 volts out.

The output is completely isolated so it can easily be added to the 5v supply to give you 14V which is enough head room for a 7812 regulator as in Andy JNT's stabilized PSU for beacons etc. They will do about 200mA also, so that's enough to run a ovened oscillator too.

btw, they also make nice negative voltage bias generators for your favorite IMFET PA.

The Valor PM7102 spec is as follows;

Input Specifications:

1. Input Voltage: 4.75-5.25Vdc.
2. Input Filter: Capacitor Type.
3. Input Current:

No Load: 25mA.

Full Load: 480mA.

Output Specifications:

1. Output Voltage & Current: -9Vdc/200 mA.
2. Voltage Accuracy: +/-5% max.
3. Line Regulation (full load): +/-5%max.
4. Load Regulation (full load to 1/2 load)+/-10%
5. Temperature Coefficient: +/-0.05%/ max.
6. Ripple & Noise(20MHz BW): 90mV max.
7. Short Circuit Protection: Momentary.

General Specifications:

1. Isolation Voltage: 500Vdc.
2. Efficiency: 75% typical.
3. Switching Frequency: 25KHz min.
4. Isolation Resistance: 1000M ohms

Pin outs are;

1,24 = 5v input

12,13 = input GND

15,18 = output GND

11,14 = 9V output

22 = enable

2,3 = Not connected.

Paul Marsh - M0EYT [pauljmarsh@yahoo.co.uk]

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# WHATS HAPPENING

## A LISTING OF INTERESTING EVENTS

Thanks to Harry W3IIT for his input

**1-2 Oct 2004 \* Pacific Northwest VHF+ Conference** sponsored by the Pacific Northwest VHF Society, <http://www.pnvwvhfs.org/events.htm> or contact Jim Aguirre, W7DHC, PO Box 527, Preston, WA 98050, Phone: 425-222-6149 , Email: [secretary@pnvwvhfs.org](mailto:secretary@pnvwvhfs.org)

**6 Oct 2004, 432 MHz FALL SPRINT** 1900 to 2300 Local time

**9-10 Oct 2004—International EME Competition** (Part 1)

**10 Oct 2004 Hamarama at Wrightstown, PA.** For information, check <http://members.ij.net/packrats/latest.htm> or Ed Finn, WA3DRC, Email: [packrats\\_w3ccx@yahoo.com](mailto:packrats_w3ccx@yahoo.com)

**14 Oct. Packrat BOD meeting**—at the home of Ed Finn WA3DRC

**15 & 16 Oct 2004, MICROWAVE UPDATE 2004**, Dallas Texas ( *for details see article starting on page 5 of September 2004 CHEESEBITS*)

**16 Oct 2004, MICROWAVE FALL SPRINT** 0600 to 1300 Local time

**17 Oct 2004 + RF Hill ARC Hamfest at Sellersville, PA** . For information check <http://www.rfhill.ampr.org> or Cathy Soete, PO Box 336, Perkasio, PA 18944, Phone: 215-723-7294. , Email: [wa3ylq@comcast.net](mailto:wa3ylq@comcast.net)

**21 Oct 2004 Packrat Meeting**—K1JT -Joe Taylor more on DIGITAL WEAK SIGNAL PROGRAMS

**23 Oct 2004, 50 MHz FALL SPRINT** 2300 on 23 Oct to 0300 24 Oct

**23 Oct 2004 Amateur Radio Emergency Communication Conference** sponsored by the Susquehanna Valley EmComm Organization (Snyder Co. ARES/RACES & Northumberland Co. ARES) at the PA Career Link Building, 713 Bridge St. Selinsgrove, PA. 17870 from 9:00 am until 5:00 pm.

**30-31 Oct 2004 International EME Competition** (Part 2)

**29, 30 and 31 January 2005 JANUARY VHF SWEEPSTAKES 2005** (*That's right the last weekend in January*) We have a tradition to uphold—get going on all those repairs, construction and antenna projects. AA2UK Bill Lentz, Chairman.

---

### [Mw] 10 GHz BEACON!

The WA1VVH beacon is back on the air at last !

Location is FN42eq,

500 mW into a 20 slot waveguide antenna at 150 feet

AGL ( about 670 ft ASL).

FREQ = 10368.20 MHz

Sends ID and grid by FSK, 420 Hz shift ( in case you are wondering, this number "fell out" of the synthesizer configuration I am using to run it! ). The keying is phase-continuous ( no burps on the transitions) and the carrier is on always.

The freq reference is a good oven XO, but it may be \*slightly\* off of .200 exactly now; will cal it later if it needs a tweak --- those of you with GPS or rubidium standards, please listen and let me know how far off it may be... Enjoy!!

Harry WA1VVH <[wa1vvh@net1plus.com](mailto:wa1vvh@net1plus.com)>

**"NE3I"**

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Attorney at Law

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PrezSez:

## “Roving is FUN”

As usual, the September QSO Party brought plenty of opportunity for fun in the hills. Although I had limited time in FM29 on Saturday, I spent all of Sunday covering 4 grids, with 6 hrs of it on Camelback. New England stations were out on all the mountains, and stations were active in the Mid-Atlantic, allowing everyone to fill their logs with plenty of QSOs.

On the way up to the Poconos, two deer decided to play "chicken" with the van as I zipped up Rte 33--luckily, they made it across the road before we had to jam on the brakes. Perhaps the site of my "antlers" on the rover were too much for them!

All the equipment started out fine, but the 3G transmitter died after the first contact.

I had only one opportunity for a 24G QSO with W3SZ, but again, no success, despite S9+SSB signals on 10G over the 60mi path. The new 903 transverter and amp did a great job, but I do need to make a more permanent mounting of the at rig and get a better switching arrangement for the latching real. Perhaps this is hwere my spare DEMI sequencer board will come in handy.

I got up to the mountain by 9AM and on the air within 15 minutes, after erecting the 3el 6m beam. I also met W3HOA, who was there seated at a picnic table, in his ski jacket, working folks on 2m with an FT290 and a 5el beam at 4' above the table. Luckily we got along just fine, as I tried to minimize calling on 2m, and we stayed out of each other's hair...or was it that our rigs are just not that sensitive?

I was hoping to have several contacts with K1WHS, but only found them for a total of 3 QSOs when I was in FN11. When I saw their 1 million+ score on the rumors list, I realize how busy they were without working me! I continued to complain to W2SZ that I never get the opportunity to work them on bands above 432, and one of their nice ops did make a point of passing me up to 903 and 1296. I also worked them on 2304, tail-ending the QSO between them and Roger, W3SZ. I'm still waiting for the 5&10G opportunities.

Although I did manage to invite myself to the K3YTL site in FN11, I was on a tight schedule as Sunday wore on, and opted to head south back to FN20 for the final hours of the event, catching several more QSOs with the gang, and a sweep with AA2UK and K1TEO (again).

Thanks to everyone for all the QSOs. My score was 81K, and I now well appreciate what those single ops have to do to make scores in the 300+ range. Leon was on the overnight shift at work for the weekend, but he did manage to put a few QSOs in his log from the home station.

Thanks to W3KJ for stirring up the interest and getting so many folks on for the 'rats. 73, Rick, K1DS

Received this note and attachment from a slightly confused engineer:

**Doc: Would you please post this photo in Cheese Bits to help me identify this person. Maybe some of the members can help answer my questions?**

**73xg**

**Who is this PackRat?**

**Why is he working inside what looks like a tent?**

**When was the last time he had a haircut?**

**Why does he need so many pens in his pocket protector?**

**What is the strange looking box he is working on? There's no PC boards so I know it's not radio gear.**

**Are the hand tools he is using approved for SMT components?**

**What is that black instrument on the bench top that looks like a gun?**

**What is that square black box behind the gun? Ammunition?**

**Is the 2 prong AC plug hanging over the edge of the bench GFI protected?**

**LOOK ON THE FACING PAGE** →

**Can you answer Johns questions?**

Please bring your answers to the October meeting.

Meet K1JT and learn more about digital communications using the K1JT software for EME, Meteor Scatter and weak signals.

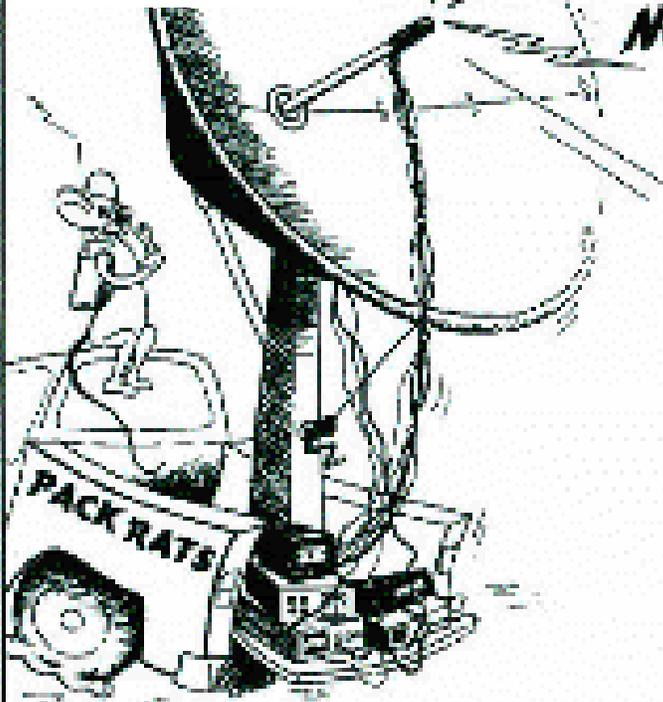
Remember we have Coffee and donuts, MARIO'S AUCTION and a chance to meet some of your fellow hams face to face.



## MYSTERY PHOTO

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

**MEETING  
NOTICE**

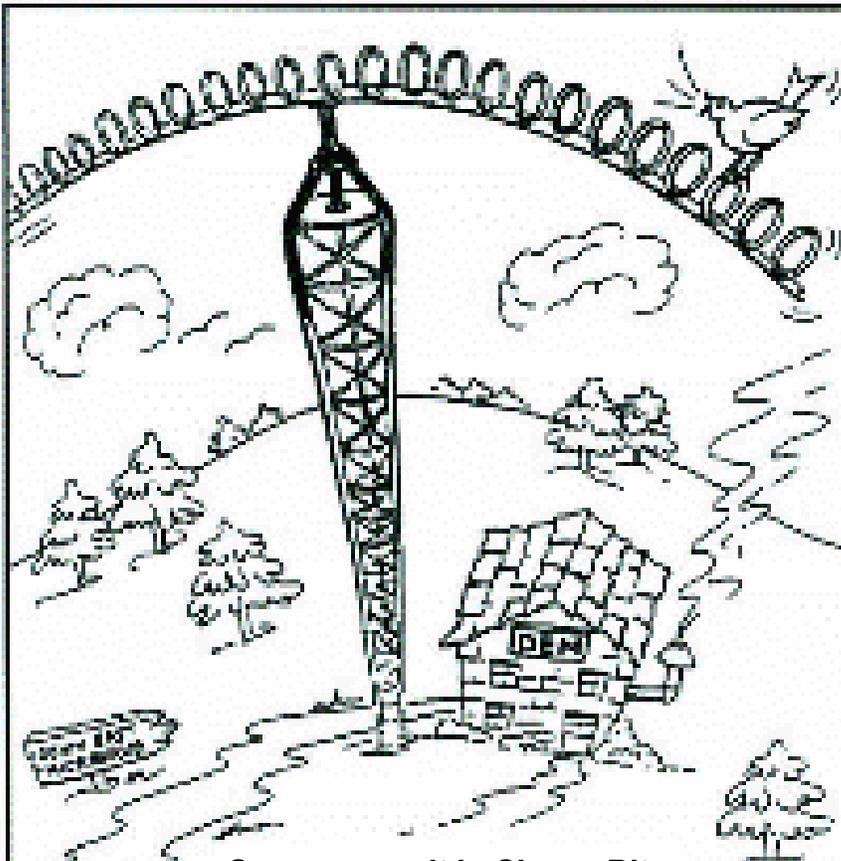


**REMEMBER  
THE HAMFEST  
OCTOBER 10, 2004**

Help is needed on Saturday for setting the tables and installing the PA and Sunday from early morning parking to mid-day clean-up. Contact Ed—WA3DRC to let him know how you will be doing your part for this, our annual fund raising event.

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