

CHEESE BITS



W3CCX
CLUB MEMORIAL CALL

ARRL
Affiliated
Club



Volume XLIV

March 2002

Number 3

PREZSEZ

CONGRATULATIONS TO JOE, AA3GN FOR WINNING THE CRYING TOWEL AWARD. I HOPE JOE DOES NOT MAKE THIS A YEARLY EVENT FOR HIMSELF I FEEL IT IS FAR BETTER TO SPREAD THE GREMLINS AROUND THAN TO HAVE ONE PERSON HAVE ALL THE FUN.

ALSO CONGRATS GO OUT TO JOE K1JT FOR WINNING THE QST COVER AWARD FOR HIS FINE WORK ON WSJT SOFTWARE. IT'S GREAT TO SEE SO MANY TALENTED FOLKS IN OUR CLUB.

I REALLY AM SORRY I MISSED THE FEBUARY MEETING , BUT MOTHER NATURE DECIDED TO PUT ME UNDER THE WEATHER. I'M FELLING MUTCH BETTER NOW. THE COMPANY I WORK FOR MOVED, THE LONG HOURS CAUGHT UP WITH ME.

GET YOUR HOME BREW PROJECTS OUT AND TO THE NEXT MEETING ,SHOW OFF YOUR WORK. I WILL SEE YOU THERE

73 BRIAN

300K+

N3NGE 320892 MO
+W2PED & WU3C

200K+

WA3NUF 205002 SO

100K+

W0RSJ 165760 MO
+K2GE, W3DFM, W2IX & NET
K1JT 130914 SO
W3RJW 119600 SO
N3EXA 116928 SO

50K+

WA3DRC 89270 SO
WA3GFZ 86095 SO
AA3GN 80332 SO
W3KM 71352 SO
W3KJ 69915 SO
AA2UK 54290 SO
K3IPM 53823 SO

Thanks to all!!

Packrats Contest "Clubs" January 2002 Entries (all 51!)

25K+

WA2OMY 46683 SO
K1DS 43542 Rover
K3EOD 42160 MO
+WR3P, W2SJ

KB3XG 41307 SO
N3ITT 39000 SO
N1XKT 37999 Rover
WA3EHD 35904 SO
AA3RE 34238 SO
W3OR 30394 SO

10K+

K3MFI 22800 SO
W3GAD 21976 SO
W2SJ 19448 SO
WA3RLT 17316 SO
KU3A 15951 SO
K3IUUV 13166 SO
W3KKN 12142 SO
K3GNC 10292 SO
W2UR 10206 SO

5K+

W3SZ 9880 SO
N3PLM 9575 SO
K3DMA 8998 SO
NE3I 8554 SO
W3GXB 5382 SO

1K+

K3JJZ 1500 SO
N2DEQ 1386 SO
WA3YUE1204 SO
NE3I/R 1177 Rover

Entries-Everyone Counts!

W3HMU 950 SO
N3EMY 948 Rover
K3IB 833 SO
KB3IB 682 SO
KB3GJT 160 SO
WR3P 145 SO
K3VEQ 126 SO
N3OZO 108 Rover
KA3MGB 84 SO
N3EVV 48 SO
WA3AQA 32 SO

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PACKRAT 222 MHz REPEATER - W3CCX/R

222.98/224.58 MHz, Churchville, PA

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June Contest: N3ITT 610-547-5490

HAMARAMA: W3KJ 215-256-1464

VHF Conference: KB3XG 610-584-2489

Awards Chairman WA3GFZ 215-884-3116

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

| TIME | FREQUENCY | NET CONTROL |
|----------|--------------|--------------|
| 7:30 PM | 50.150 MHz | WA3EHD/K3EOD |
| 8:00 PM | 144.150 MHz | N3ITT |
| 8:30 PM | 222.125 MHz | W2SJ/N3EXA |
| 8:30 PM | 224.58R MHz | W3GXB |
| 9:00 PM | 432.110 MHz | W3RJW |
| 9:30 PM | 1296.100 MHz | WA3NUF |
| 10:00 PM | 903.100 MHz | N3AOG |

THURSDAY NIGHT NETS (1st & 4th of the month)

9:30 PM 2304.100 MHz W3KJ, & go to 3.4G & up after

Editor's Column

It was in the mid-50's today as many of the club members did the contest wrap-up and shared some of their operating highlights. Be sure to check the "Cryin' Towel" write-up in this issue for the low-lights! Bob, W2SJ was a happy host, as we munched donuts and drank coffee, followed quickly by nice meatball hoagies (grinders, or subs, or heroes, depending where you're from). Thanks from all of us for centering this event at your home.

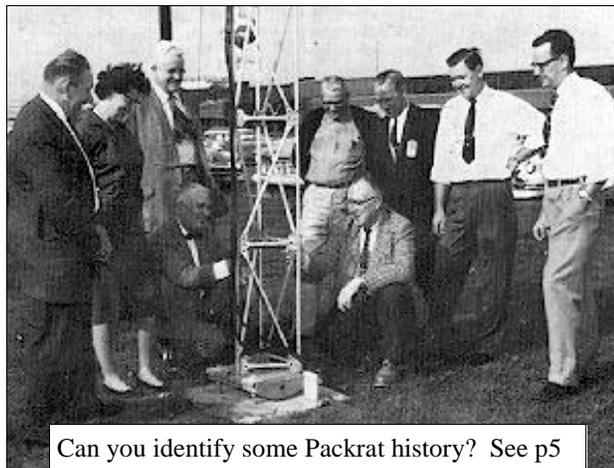
I am proud to report that we have had a steady and positive flow of material for the publication over the past several months. Rather than get on the rant that the paper is only as good as the submissions, I want to personally thank each of the club and non-club contributors for their technical, operating and station reports for inclusion in this paper. It sure makes things easier for me as the editor. I am looking to get some additional reporting help from some of the members—especially someone who has an electronic camera and can send me some low resolution JPEGs of the various club events, member stations and other neat equipment.

I also want to take this opportunity to thank all of those club members and subscribers who get CHEESEBITS in electronic PDF format via email and the web. If you haven't had the monthly experience of setting up a paper and then getting it to the printer, going back to retrieve the copies, stamping, labeling, folding and stapling, you won't be able to understand what a help it has been. We are down to less than 70 postal subscriptions, and perhaps with this reminder, more folks will be able to join the over 150 folks who get their CHEESEBITS in their in-box, about a week before the postal copies, and in full color. Adobe Acrobat version 5 is a free download from the Adobe website. Later this spring, we will be converting to publish in Adobe Acrobat version 5, as the compression settings are better, and you'll get more definition in a smaller file. I apologize to all those whose modems spent extra time downloading the last copy. I even had to take out a few pictures to get it into sendable size from my email service. If you are not currently receiving this via email, and can accept the emailed version, please send a message to rick1ds@hotmail.com so that you too can be among the "converted."

There has been a lot of back-and-forth concerning the future of the size of the QST publication, the financial status of the publication, and the potential changes of contest results and section reports being made only on the ARRL web-site. Despite the fact that we are only a 10-12 page monthly, with a limited circulation, we experience the same types of issues, and I have a great sensitivity to the constraints which we all live under in these economic times. Once we have controlled printing and postage costs, we are now able to resume some business card ads. The Packrat website, masterfully maintained by W3RJW (OK, Ron, I just figured out that your call is your initials!!) is able to host a number of older technical articles, photos and announcements, that otherwise could not be contained in this format.

March is the time when I pull the rover van out of the garage and make the improvements that I've promised from the last contest. Fix the windshield washer pump, add a charging system ammeter and voltmeter for the rig batteries, and clean up the rats nest of cabling. I have in mind a few new locations for microwave activity night and the sprints. After achieving a 4th place nationally in the rover standings for Sept '01, I'm chasing even a higher position up the ladder!

73, Rick, K1DS



Can you identify some Packrat history? See p5

Correspondence

Rick—Just got the mailed copy of CB. I had printed out the E mail edition last week. The colors are terrific, making the photos details stand out like they never did in black and white. I had tried to copy and print out the first 4 E mail issues using my HP desk top, but it all came out solid black where text or pictures would be. I tried my HP laptop and it came out great, but no printer connected to the laptop. Then used the Imac my Sally uses, and copied and printed swell. I saw the note from Bert IUV abt downloading Acrobat 5, and I finally got to it with my desk-top. It made the difference. I had been using version 4. Still had the downloads from the other months and so I checked them too, all well now. Again, what a GREAT job you are doing. Regards from Florida--**Lyn W3NSI** Ret.

PS- will be moving to Solomons, Maryland in May or June.

~~~~~  
Hi Rick, Great newsletter... You might want to announce the Sarnoff Symposium. Some of your readers maybe interested. It is at The College of New Jersey on March 13th. The flyer is can be found at <[http://www.ewh.ieee.org/r1/princeton-centraljersey/Sarnoff\\_Symposium.htm](http://www.ewh.ieee.org/r1/princeton-centraljersey/Sarnoff_Symposium.htm)>

I can provide passes of free admission to exhibits to any Pack Rats that are interested in attending. Have them contact me by e-mail at: [a.katz@ieee.org](mailto:a.katz@ieee.org)

The SETI League is running their 2nd Technical Conference at The College of New Jersey on April 27th and 28th. See the SETI League WEB page at <[www.setileague.org](http://www.setileague.org)> or contact <[n6tx@setileague.org](mailto:n6tx@setileague.org)> for details. I guess I should also ask you to put the Trenton Computer Festival on your calendar too. It is on May 4th and 5th. Its WEB page is at <[TCF-NJ.ORG](http://TCF-NJ.ORG)>. I am both director and program chair for TCF. 73, **AI - K2UYH**

WSJT runs fine on most laptops. Requirements include a mike or line input jack and a speaker or line output jack. There's no need for a physically distinct "soundcard", and this goes also for desktop machines with the sound capabilities built onto the motherboard. -- 73, **Joe, K1JT**

## Please Update Your Adobe Acrobat

Starting with the next issue we are going to move to Adobe Acrobat 5 in order to get more graphics in a smaller sized publication. I apologize for the increasingly larger file sizes in recent months, but the temptation to include all those great color pictures, maps, and comprehensive text was great. Despite the fact that we have used Adobe 4, with picture format of as little as 72 dpi, the file size has outstripped the ability of my ISP to maintain as a large file in a sent email. I have been advised by publishers of other club newsletters that the Adobe 5 format allows for better "distillation" and end result to you is a faster download.

I do appreciate having folks update their email addresses with me. After the disaster of last December, when 2/3 of the email list was "lost" we have recreated it, thanks to your support and patience.

For those who haven't yet tried the color version, fast delivery, and "saves the club treasury" mode, now is the time. Send your email address to me in an email at

[rick1ds@hotmail.com](mailto:rick1ds@hotmail.com)

and you will get a beautiful, complete Cheesebits by email PDF. Please take note of the subscription rates and club dues, and be sure to send in your renewal payment to W3KM in a timely manner. Don't miss an issue! And thanks for making the production easier for us all! Adobe Acrobat Reader 5 is a free download from their website

<http://www.adobe.com/products/acrobat/readstep.html>

# Radio Action March 2002

| SUN | MON                                                                                                                                                                                                             | TUE | WED                                                                                                                                                                                                             | THU          | FRI | SAT                                                                   |
|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-----|-----------------------------------------------------------------------|
|     | Mondays are Net Nights. See P2 for times and freqs and net control starting 7:30pm                                                                                                                              |     |                                                                                                                                                                                                                 |              | 1   | 2 <b>Microwave Activity 8am-1pm-432 &amp; up. Get on air and test</b> |
| 3   | 4 <b>Microwave Activity 7-11pm-432 &amp; up Get on air and test ur gear!</b>                                                                                                                                    | 5   | 6                                                                                                                                                                                                               | 7            | 8   | 9                                                                     |
| 10  | 11 Mondays are Net Nights. See P2 for times and freqs and net control starting 7:30pm                                                                                                                           | 12  | 13 Sarnoff Symposium, NJ See notes above                                                                                                                                                                        | 14 Bd of Dir | 15  | 16                                                                    |
| 17  | 18 Mondays are Net Nights. See P2 for times and freqs and net control starting 7:30pm                                                                                                                           | 19  | <b>Thursday, Mar 21st, 8pm Club Meeting<br/>Homebrew Night<br/>Get your handiwork ready for display,<br/>explanation and award competition<br/>Bring a guest<br/>Southampton Free Library—47 E. Street Road</b> |              |     | 23                                                                    |
| 24  | 25 Mondays are Net Nights. See P2 for times and freqs and net control starting 7:30pm                                                                                                                           | 26  |                                                                                                                                                                                                                 |              |     | 30                                                                    |
| 31  | Next Month: Timonium Hamfest, April 7-8; <b>ARRL Meeting Night, April 18th; Zach Lau, W1VT, as our ARRL Night speaker, who will present a surprise slide show;</b> Watch for announcement of the Spring Sprints |     |                                                                                                                                                                                                                 |              |     |                                                                       |

## Comments on the Yaesu FTV-1000 6 Meter Transverter W3RJW, Ron J. Whitsel

The FTV-1000 6 meter transverter is designed to be used with only the FT-1000MP Mark V low frequency transceiver. It puts out a tidy 180 Watts (200 watts advertised) on 50 to 54 MHz. It is a high-end solution to getting on 6 meters, but if you already have a Mark V it's a really nice luxury to own.



There are a couple of things that need to be mentioned up front: The unit does not match the Mark V in appearance very well. In fact, it is a throwback to the early Yeasu radios that used stamped metal housings and rather plain graphics. To the point, the lettering is a gold color totally different then the off white lettering on the Mark V. The front panel is just a flat sheet of metal much like you would use when building something in your basement. Where are the sleek cast panels we have come to expect from today's radios?



Another disappointing feature is that the Mark V display does not automatically switch to indicate 50 MHz when you turn on the transverter. This is 2002 and I know the technology exists to do this without the manual process that is currently required with the Mark V/FTV-1000 combination. These things are indeed cosmetic and do not impact operation, but when you spend \$900.00 for a six-meter transverter, you expectations tend to be pretty high.

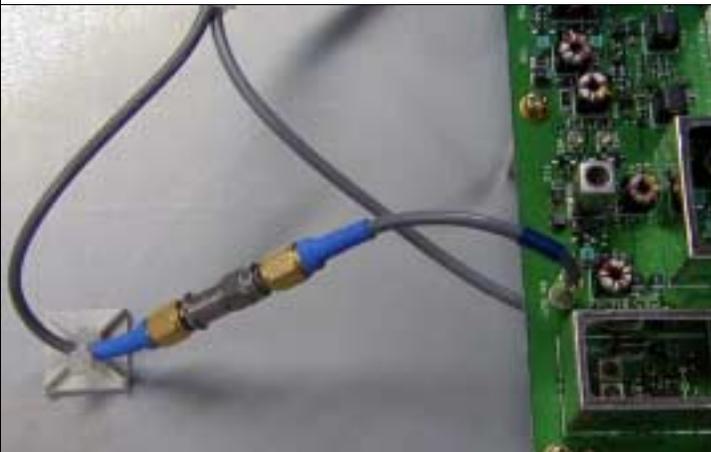
The transverter works just fine. The controls are convenient and functional. The choices of operating parameters from the front panel allow for just about any scenario you can dream up. The receive part of the transverter works well with no birdies that I could find and more then enough gain. In fact about 15 dB too much gain. That subject in a moment. The transmitter "only"

puts out 180 Watts, which seems to be limited by the ALC circuit. There is a pot to adjust the ALC feeding back to the Mark V to control the maximum power, however even with the pot at its endpoint, the full 200 watts could not be obtained. Removing the ALC cable allowed the transverter to produce well in excess of 200 watts. However, in the interest of equipment longevity, the only real difference between 180 watts and 220 watts will be apparent only to the person staring at the wattmeter. I guess the \$900.00 perfection thing just bites at you!

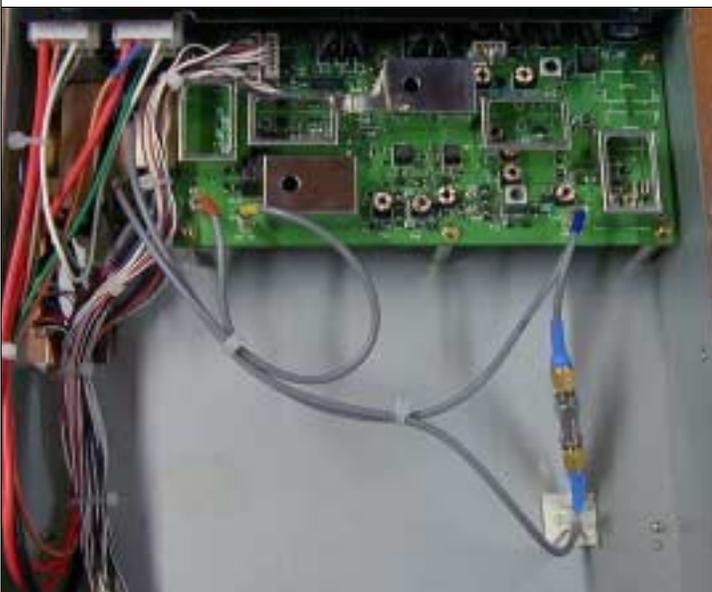
There are several diagrams in the FTV-1000 manual showing how to connect it to the Mark V. As far as I am concerned there is only one way that makes sense (that way is not shown in the 'FTV-1000/Mark V' diagram, although it is alluded to in the text). The 6 meter antenna coax should go to the "Alternate" antenna jack and the HF antenna coax goes to the "Normal" antenna jack, both on the back of the FTV-1000. A third cable comes from the Mark V antenna jack, A or B, (where you would normally connect your HF antenna) and goes to the "Transceiver" jack on the FTV-1000. This way when you turn the transverter off you return to HF operation automatically. When you turn the transverter on, the HF is disconnected and you are on 6 meters with the right antenna. One remaining problem is that if you use a linear on the low bands, the amplifier keying is not disconnected when you go to six meters. Maybe this is done this way because you are "suppose" to use the Yaesu VL-1000 amplifier that also does 6 meters. Maybe next year when I hit the lottery! In the mean time, turn off the low band amp.

On the subject of receive gain, the FTV-1000 comes well equipped. I don't know why, but the conversion gain is way more then can be handled by the Mark V. The recommended operating procedure is turn off the Mark V preamp (IPO "on") when operating with the FTV-1000. I found this to have two problems: 1) There is just not quite enough gain with the IPO on and 2) it's a pain to have to remember to change the setup on the Mark V whenever the transverter is used. Again this is 2002 and the FTV-1000 is for exclusive uses with the Mark V. Why not make it fully compatible? My solution to this inconvenience was to install a fixed attenuator inside the FTV-1000. This way when I switch to 6 meters, I don't have to do anything with the Mark V. There is already a factory built in 6 dB attenuator on the 28 MHz IF output. I added 15 dB more attenuation (are you adding things up here?) to make the Mark V happy (I use the "tuned" preamp setting in the Mark V). One may want to experiment with other values that will make you happy with your particular setup.

I cut the existing coaxial cable coming from the "RX Out" port and installed SMA cable plugs (bottom compartment). The cable is the typical gray stuff found in Japanese radios. It is



close enough in size to RG-174 that connectors made for RG-174 will work. A fixed value SMA attenuator can then be inserted between the ends to set the gain. If you know a source for the



Japanese style plug-in RF connectors (I don't), you could make an attenuator from resistors that would then not necessitate cutting the factory cable. To restore to factory configuration, replace the attenuator with a female SMA barrel.

When all is said and done, I guess it's not really such a bad deal when you figure you get a 200 watt amplifier along with the transverter and you already have the power supply for the amp with the Mark V. Maybe it's a wash. I feel much better.

## Packrat History

Here is the caption for the picture on page 2: "MEMBERS OF NADC Radio Amateurs Club inspect antenna for their station K3NAL, located in security building. Brad Algeo and Jack Power, AEEL check fittings, while standees (from left) are Harry Stein, AEEL; Martha Brooks, Administration; Stuart Wilson, AEEL; Vaughan Yates and Elwyne Mulherin, ASWL; and Art Korch and Cary Townsend, EDD."

Taken from **Johnsville REFLECTOR, February 29, 1960**

W3CL, Harry Stein was the main founder and driver behind the formation of the Pack Rats. He is known as "Father Rat". He worked at the Naval Air Development Center (Johnsville) for many, many years and was active in the Centers Ham radio station. He passed away about 10 years ago. He was very active in the club until the very end and kept us on the straight and narrow doing things the "Pack Rat Way". W2AXU, Jack Powers, currently still a member of the club, worked with Harry at the center. I don't remember who else might have been in the pictures (all were not Pack Rats), but many of the early members worked at Johnsville. Tnx to Ron, W3RJW for this.

## From the VHF Contest Reflector

Folks, I just wanted to let you know that I've finished a new version of RoverLog, my VHF contest logging program that works for Rovers AND Non-rovers. Please check it out at:

<http://2ub.org/roverlog/>.

I welcome comments and feature requests! Thanks, Tom Mayo. n1mu@yahoo.com

## New ARRL Contest Rules

There are some new ARRL contest rules that I think are favorable to the PackRats! Here's the ARRL blurb on the changes:

In accordance with the advice of the ARRL Contest Advisory Committee, five specific affiliated Club competition changes will go into effect November 1. Under the revised rules:

- \* The requirement that a member must attend at least two club meetings a year in order to be allowed to submit a score for a club in the unlimited and medium categories has been altered. The new rules will allow participation by "a member in good standing, as defined by the club."

- \* Medium and unlimited clubs now may define their club service area either as a 175-mile radius circle or as an entire ARRL section. This change will allow clubs from larger states that encompass entire ARRL sections to compete with each other.

- \* The percentage of operators who must be members of a club in order for the club to claim a score from a multioperator station has been reduced from 66% to 50%.

- \* A station owner no longer must be a member of a club in order for a guest operator at the station to claim the score for that club.

- \* Canadian clubs that are full Radio Amateurs of Canada affiliates now may participate in the ARRL Affiliated Clubs Competition.

These changes affect ARRL contests that include a club competition—January VHF Sweepstakes, the ARRL International DX Contest, the September VHF Party, the ARRL November Sweepstakes, the ARRL 160-Meter Contest and the ARRL 10-Meter Contest. 73, **Roger Rehr W3SZ**

**Editor's note:** *It is likely that these rules will affect most clubs in a positive manner, and probably create more competition, especially in the large size and unlimited club categories for all of the listed contests. Groups that have perennially been contest winners will face new challenges! Clubs will also be challenged to maintain interest and participation if they loosen their own definitions of active membership. This is sure to spark a substantial discussion at our upcoming Board of Directors meetings.*

## FT-736 Audio Tip *Via the web*

Just worked on a 736 for a friend with lo audio .. remove covers, remove the speaker plug out of the rx board , remove the cover on rx board ( break or peel the copper tape from cover edge ) remove rx board then the Fix is to locate the resistor R 161 220 ohm on the rx board between Q 36 to C40 and T 14 to Q46 , short the 220 ohm resistor on the pc circuit side .. Put all back together and ck the improved reciever audio The RX audio will jump up after this change .....best Tom W2DRZ

## Robert A. Griffiths

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## Delaware Valley Area Hamfests - 2002

Please check the VARA website for additional info;  
<http://www.qsl.net/w2vtm/hamfest.html>

**March 2 (Sat)** - Parsippany, NJ - Split Rock ARA, North Jersey Hamfest Parsippany Police Athletic League Bldg, Peter Glenn KC2KI 888-511-SARA (888-511-7272 toll-free) or 973-442-0772 Talk-In: 146.985- (PL 131.8)

E-mail: [hamfest@splitrockara.org](mailto:hamfest@splitrockara.org) (Map) <http://piggy.hsix.com/sara>  
Opens: 8:00 am, Vendors 6:30 am

**March 16 (Sat)** - Harmony Twp., NJ - Cherryville Repeater Association North Hunterdon Regional High School Randy Vance, N2MQZ 437 Vulcanite Ave., Alpha, NJ 08865 908-788-4080

Talk-In: 147.375+ (no PL, extended coverage) or 146.730-

E-mail: [w2cra@qsl.net](mailto:w2cra@qsl.net) or [n2vwl@epix.net](mailto:n2vwl@epix.net) <http://www.qsl.net/w2cra>  
VE Testing\*: Contact Marty Grozinski, W2CG, at 908-788-2644 before 10:00 pm; pre-registration requested

**April 6 & 7 - Greater Baltimore Hamboree and Computerfest Maryland State Convention Baltimore ARC (Saturday, 8 AM to 5 PM) Maryland State Fair Grounds Timonium, Md (Sunday, 8 AM to 3 PM) <http://gbhc.org> General Information: [info@gbhc.org](mailto:info@gbhc.org) Talk-In: 146.76-, 449.625- (PL 107.2) W3FT Repeater**

**Contact: James Green, WB3DJU PO Box 95 Timonium, Md 21094 Phone: 410-426-3378 Email: [w3ft@juno.com](mailto:w3ft@juno.com)**

**April 7 (TBD, Sun)** - Hamilton Township (Robbinsville), NJ - Delaware Valley Radio Association (DVRA) (Hamcomp 2001) Tall Cedars of Lebanon Picnic Grove Glenn Costello, N2RPM 609-882-2240 Talk-In: 146.67- (PL 131.8) W2ZQ E-mail: [abbott0903@aol.com](mailto:abbott0903@aol.com) <http://www.w2zq.com/> \$1 Off Coupon Cost: \$6 general; \$10 tailgate, \$15 covered table (includes 1 admission) Opens 8:00 am, vendors 6:30 am

**April 20 (TBD, Sat)** - West Orange, NJ - Roseland Amateur Radio Club West Orange High School, 600 Pleasant Valley Way, West Orange, NJ Talk-In: 46.415 +1 (PL 85.4), 224.48 -1.6 (No PL), 447.875 - 5.0 (PL 156.7), 146.52 Jim Howe, N2TDI & Liz Howe, N2WGH (973) 402-6066 E-mail: [jimm2tdi@att.net](mailto:jimm2tdi@att.net) <http://www.qsl.net/k2gq> (Map) Cost: \$5, XYL and kids under 12 free; Vendors \$12 table/\$9.00 each add. advance, \$15/\$12 at door, \$2 extra for electric (limited) Opens: 8:30 am, Vendors 6:30 am

**April 21 (Sun)** - York, PA - York Hamfest Foundation, York Springfest York County School of Technology John Shaffer, W3SST, 2596 Church Rd, York, PA 17404 717-764-8193(ph/fax) Talk-In: 147.33+, 146.52 simplex E-mail: [W3SST@yorkhamfest.org](mailto:W3SST@yorkhamfest.org) <http://www.yorkhamfest.org> Cost: \$5, non-ham spouse, kids under 16 free; Tailgaters \$3 plus admission; Indoors Table \$15 advance/\$20 day of, space only \$10 Opens: 8:00 am to 4:00 pm; Vendor setup 6:00 am VE Testing\*: Free! 1:00 pm, preregistration, limited walk-in's; Pre-register via e-mail: [w3axc@arrl.net](mailto:w3axc@arrl.net)

**April 28 (Sun)** - New Castle, DE - Penn-Del ARC -- ARRL Delaware State Convention Nur Temple, 198 S. DuPont Hwy, Rt. 13, Pen-Del ARC, PO Box 1964, Boothwyn, PA 19061

Hal Frantz, KA3TWG 302-793-1080 Fax: 302-793-1081

Talk-In: 146.955-, 224.22- (starting at 6:00AM)

E-mail: [hfrantz@snip.net](mailto:hfrantz@snip.net) <http://www.high-tech-services.com/pennndel>  
Time: 8 am to 1 pm, Vendor setup 6 am Cost: \$5, Kids under 12 free; Tables \$12, \$15 with power; Tailgate \$10, setup 6:00 am Certified Skywarn spotter training class, ARRL & club leaders forum VE Testing\*: 9:00 am, no pre-registration required; info contact Chet Thayer, WA3I, e-mail [WA3I@home.com](mailto:WA3I@home.com) DXCC Card Checking TBD

**May 4 (TBD, Sat)** - Grasonville, MD - Ann Arundel/Kent Island RC Hamfest Kent Island Amateur Radio Club and Anne Arundel Radio Club Grasonville, MD VFW Grounds, US 50/301 East to Exit 44: VFW Ave Anne Arundel Radio Club (W3VR), PO Box 308, Davidsonville, MD 21035 Ray Allen, W2KBR 410-969-8042 Talk-In: 147.105+, or 146.94-, or 448.225 (PL 114.8) E-mail: [w2kbr@bayserve.net](mailto:w2kbr@bayserve.net)

<http://home.att.net/~n3szw/aarc.html> Cost: \$4, Tailgate space free for hams; Indoor tables available

**May 4 & 5 (Sat/Sun)** - Edison, NJ - The College of NJ and various

clubs The Trenton Computer Festival - including ham classes, seminars, exams KGP Productions LLC, PO Box 37, Kendall Park, NJ 08824-0037 Marin Light 800-631-0062 (Mon-Thur 9 AM to 5 PM) E-mail: [kpg@mail.com](mailto:kpg@mail.com) or [marinlight@earthlink.net](mailto:marinlight@earthlink.net)

<http://www.pcshow.com/> (KGP Productions) <http://www.tcf-nj.org/> or <http://www.tcfshow.com/>;

Cost: \$10 advanced, \$15 at gate, Children under 12 free; Flea Market spot \$25 Opens: 10 am to 5 pm Saturday, 10 am to 4 pm Sunday; Flea Market 9 am each day

**May 5 (Sun)** - Wrightstown (Bucks County), PA - Warminster ARC Middletown Grange Fairgrounds, Penns Park Road, Wrightstown, PA Warminster ARC, PO Box 113, Warminster, PA 18974 Bill Strunk, K3ZMA, 2 South Valley View Road, Line Lexington, PA 18932 215-822-0749 [k3zma@aol.com](mailto:k3zma@aol.com) or George Brechman, N3HBT, 215-443-5656 N3HBT@juno.com Talk-In: 147.09+, 443.95+ (PL 131.8), 146.52 simplex E-mail: [k3zma@aol.com](mailto:k3zma@aol.com) <http://www.k3dn.org>

Cost: \$5 (unlicensed spouse, kids under 13 free); Tailgate \$10, Table \$15 Opens: 7 am (vendors at 6 am) VE Testing\*: 11 am, 10:30 check-in; call Tom Michaud, WA3TQJ, at 215-343-3494, e-mail [tomtj@worldlynx.net](mailto:tomtj@worldlynx.net) WAS Field Checking of QSL cards

**May 5 (Sun)** - Hagerstown, MD - Antietam Radio Association (Great Hagerstown Hamfest) Washington County Agricultural Center, MD Rt. 65 south, Sharpsburg Pike Antietam Radio Association, PO Box 52, Hagerstown, MD 21741-0052 Carl Morris, WN3DUG (chairman) 717-267-3411 Fax: 717-261-9487 Talk-In: 147.09+, 146.94-

backup (W3CWC) E-mail: [wn3dug@home.com](mailto:wn3dug@home.com) <http://www.qsl.net/w3cwc> or see flyer at <http://www.qsl.net/w3cwc/images/hamfest2.PDF> Cost: \$5, Kids under 12 free / Tailgate: \$5; Table: \$10 advance, \$15 at door; Indoor/Outdoor Opens: 6:00 am (gates), 7:00 am (building); Vendor setup Sat after 6pm VE Testing\*: 12:30 pm check-in, 1:00 exams, walk-ins OK; Info contact Greg Lanham, WA4VE 540-772-4792 or [kuan@visuallink.com](mailto:kuan@visuallink.com)

**May 14(tentative - Tue)** - West Conshohocken, PA - PARA flea market PARAFEST, St Gertrude's Church Hall, 209 Merion Ave, West Conshohocken, PA Philadelphia Area Repeater Association, PO Box 954, Valley Forge, PA 19482-0954; Gene Mitchell, K3DSM Talk-In: 146.76- E-mail: [k3dsm@amsat.org](mailto:k3dsm@amsat.org) <http://www.g-c-o.com/para/>

Directions Map Indoor flea market and tailgating prior to PARA meeting Cost: FREE for buyers & sellers Opens: 7:00 pm

**May 17 thru 19 (Fri-Sun)** - Dayton, OH - Dayton Hamvention and ARRL National Convention Hara Arena, Dayton, Ohio

Dayton Hamvention, PO Box 964, Dayton, OH 45401-0964

Fax: 937-274-8369 (General Information) or 937-454-5655 (ticket orders) Advanced tickets and reservations a must! This is an international event. Talk-In: 146.94- E-mail: [info@hamvention.org](mailto:info@hamvention.org) (general) or [exhibits@hamvention.org](mailto:exhibits@hamvention.org) (exhibitors) or [tickets@hamvention.org](mailto:tickets@hamvention.org) (tickets) <http://www.hamvention.org> Cost: Ticket Info; 3-day ticket \$17 in advance (\$20 w/bus), \$22 at door, children under 12 free; Banquet \$45 (6 May deadline) Exhibitor: \$60/single, \$125/two, \$250/three (outdoors) plus admission, \$530 indoors (adm included) Opens: 8 am (Fri, Sat, Sun); Banquet doors open 6 pm

**Board of Directors Meeting  
Thursday, March 14th, 8PM  
At the QTH of Ernie Kenas, W3KKN  
2823 OLD WELSH RD  
WILLOW GROVE PA 19090**

**Needed for CheeseBits  
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Did you get a new digital camera this past holiday season? Can you bring it to club events and send me jpegs? Have you always wanted to write your impressions of an event, activity or issue? Cheesebits wants you!

Contact [rick1ds@hotmail.com](mailto:rick1ds@hotmail.com)

## Congratulations to Joe Taylor, K1JT

on his election by the ARRL members as the recipient of the December, 2001 ARRL QST Cover Award for his WSJT article.

\*\*\*\*\*

## Motorola 903 amps

By Randy Bynum, NR6CA

I have some information for all those who got one of the 150 watt Motorola 903 amps from me. This evening I fired up a unit using the Motorola power distribution circuit and regulators. I only put 24 VDC on the amps which was convenient for me. All I had besides 24 was 28 volts without going to a lot of trouble to get the 26 volts Motorola specs these units at. Here is what I found:

Place the board on the table in front of you with the narrow dimension right to left. At the top you should have the output circuit. At the output end you will see the Motorola Copyright symbols and a date of 1995 which is upside down to you. Above that, also upside down, are the numbers 85569-P at the edge of the board. At the very bottom of the board is the bar code stick on label. Across the top as you are looking at it there is one terminal on the far left and three more on the right side. The tab on the far left and the far right (corners of the board) are 24 VDC input terminals. The smaller terminal to the left of the right corner is the RF output. The larger terminal to its left (closest one to the board center) is ground.

Now look at the bottom of the board as it is facing you. One the bottom left corner there are two terminals. The one in the left corner had 0.7 VDC on it and the second terminal from the left had the bias voltage of 15.5 VDC. There are 4 terminals on the bottom right. The smaller left most of the group is the RF input. The next one to the right is ground. The next to the right is the 15.5 VDC bias and the last one in the bottom right corner also had .7 VDC on it.

I did not drive the amp with any power but I suspect that we need not worry about the terminals that had 0.7 VDC on them. I think these are feedback terminals to match the four parallel amps or do some other control functions that we don't care about. However, this is a guess. I also think that if I had put the full rated 26 VDC on the two terminals in the upper left and right corners that the 15.5 VDC bias would have stayed the same. There are about 10 different voltage regulator circuits on the main power distribution board supplying power to everything and the bias voltage regulators are separate. Although other boards were running when I did the test, I estimate the idle current to be about 1.5 amps for the board with no drive. This of course can be adjusted with changes in bias voltage.

As Dave, W3KM, has said, the substrate is alumina and can not be soldered to. Be very careful when connecting to these tabs because if they break you may have trouble soldering to what is left. His suggestion of a G-10 interface board is an excellent one. These can be wired up without an interface board but such a board is highly recommended.

You will notice some remnants of thermal paste on the bottom of the aluminum plate the amplifier board is mounted on. I strongly suggest that you use a good quality thermal paste between this board and the heatsink. That is all the information I have right now. Let me know when one of these is up and running. Good 903 DX. 73, **Randy, NR6CA**

*Note: 903 amp owners should get together at a club meeting to exchange notes about their experiences in getting these on-the-air (Ed)*

## Another 241 GHz Record

I'd like to report what looks to be a new World, as well as North American DX record for the 241GHz band. Earlier today, myself (WA1ZMS/4) and Pete, W4WWQ set several new DX records for the band. We first worked over a distance of 3.8km, then 6.1km, and finally 7.3km at which point we ran out of signal margin for the WX conditions at the time. (Former World record was 2km by DB6NT and NA record was 1km by W2SZ/4) The details of the claimed 7.3km record are as follows: Feb 23, 2002 19:45z

WA1ZMS/4 located at 37-22-56N 79-14-43W (FM07ji)

W4WWQ/4 located at 37-21-13N 79-10-15W (FM07ji)

a location to location distance of 7.3km

WX at time of QSO was: Temperature 8.3 degs C

Dew Point -2.8 degs C Relative Humidity 46%

Pressure 1017 millibars Calculated loss of 1.70 dB/km

Photos and an audio file will be forthcoming and should be posted on [www.mgef.org](http://www.mgef.org) within the next few days.

The stations used are improved versions of the ones used in Dec of 2001 for the former North American DX record. (*previously reported in Cheesebits...Ed*)

The improvements involved the phase locking of the 80.6GHz Gunn sources back to homebrew ovenized crystal oscillators.

This allowed the use of FSK keyed CW and the use of a narrow band receiver IF. The IF receivers were an Icom R-7000 and a Yeasu FT-817. The IF freq was 439.7MHz +/- some frequency drift. The ovenized crystal oscillator frequency is effectively multiplied some 2220 times to get to 241GHz! The stations were able to maintain better than 2 KHz stability over several minutes.

Frequency drift was still a problem however and with weak signals several repeats of the exchanges were needed to complete the 6.1 and 7.3km QSOs. If dryer WX comes along, better DX may be achieved. I'd like to thank Pete, W4WWQ for his roving efforts and to WA4RTS for the loan of an R-7000 in place of him being able to assist with this weekend's QSOs, and to Jeffrey Hesler of VDI. 73, **Brian, WA1ZMS/4**

There was very little self motivated interest in my local area (Southwest VA) when I started building some mm-wave gear. But I can say now, that after just a few QSOs and some demos at the local club meetings the level of interest has increased. Guys like Geep WA4RTS, Pete W4WWQ, and others have shown great interest and are willing to go out at all hours of the day and night driving from grid to grid for VUCC and from hill-top to hill-top for better DX. Most of this has been done with little more than 24 hours notice since the WX and dew point are the real critical factors at these frequencies. Most if not all the gear has been built in pairs here at home (WA1ZMS QTH) but that's only part of what's needed to make a DX record. The other part is other hams who can take the gear out for you and give it a test drive. So build gear in pairs. Loan it out. Take the pair of rigs to a club meeting and find a partner or two who can "just do a simple 10km test shot." Once they hear how loud the signal can be. It will become a motivator itself as you push for the next grid or better DX. Don't give up. Keep trying. Even 1uW of power on 47GHz will get you across a room at a club meeting, and might even get the local HF DX'er to help you out. The ITU WRC meetings are planning for allocations above 300GHz. Let's get ready to take advantage of them when they happen! And be sure to use bands between 10 and 145GHz before the wireless LAN interests use them up with "last mile" broadband. Sorry to be long winded. Just my thoughts of late. 73, **Brian, WA1ZMS** (*from the web-visit [www.mgef.com](http://www.mgef.com) for more*)

## The Cryin' Towel 2002

I almost even shed a tear....the stories were sadder than sad, and funnier than funny. Only Ernie, W3KKN could carry off a stand-up comedy routine that had folks holding their sides in pain from roaring laughter, with his fantastical tale about his golfer cardiologist who provided him with a dacron "button" feedthrough for the ground wire of his pacemaker, so that he could run high-power during the contest, without the pacer going haywire. When the black wire with the alligator clip slipped out of his sleeve, the room was howling...and then he finished off the crowd with a shaggy dog story of how he got trapped in the men's room when the wire and clip slipped into the hopper and got sucked in with a flush!

Mike, KB3GJT, our newest member, led us off with some experiences at his first VHF contest using just FM low-powered walkies, and how he expects the "Most Improved Award" next year.

K3IUV, Bert, reported that he worked everything he heard and thanked club members for all their help. Perhaps we can give him more receive pre-amps!

Ben, WA3RLT had no hair dryers to the antenna routine this year, just the "alligator" story of being heard on 2304 but unable to hear anyone back. He forgot to tell us that his daughter Sara, KB3BBG shared the home station with him and did some great operating, giving club members additional QSOs.

K3EOD, Al, with his multi-op crew of WR3P and W2SJ, started off by saying he didn't want to become a "Procrasto-Rat" making several station improvements before the contest and having everything ready until 1 hour before the contest started—then all heck broke loose with a pulse noise, requiring all the rigs to be switched and the T-R arrangements changed in the heat of the first hour.

Bob, W2SJ told us that he planned to leave the K3EOD operation and run his home station all day Sunday...the best laid plans....

K3MFI, Bill had a great contest, bragging that this was the first time that the Yaesu 736 didn't need to go back for repair. His 903 rig blew up a week before the contest, but now, a month later, it's all fixed, not to be turned on until contest time next year!

Doc, W3GAD thanked all for their help in getting a new antenna and feed set done before the contest. His only problem was moving the entire station from the attic to the basement with the station capability expansion on bands 9,E & F. He finally figured out that the hardline for those bands would not fit through the 1" PVC channel...did that mean a new roof Doc? Finally got everything done a week before the fray, and rebuilt an interface for his 570 during the contest on Sunday.

I was next, K1DS and N1XKT in the Rover—this father-son team, Rick and Leon had great travel plans, until the 8" snowstorm focused right on the home QTH starting at noon on the day of the contest. The rotor had not cooperated in the weeks before the contest, blowing fuses in both the inverter supply, and then when a larger capacity inverter was obtained, blowing the fuses in the rotor control box. Moral of the story—keep the battery supply peaked! Sat out the storm in FN20 all day and night Saturday, sliding home on the barely plowed roads. Sunday travel was problematic, so spent the AM finding a spot in FM29, only to be chased off because "the plows are coming"...so made the rounds for LASER, and enjoyed all the hospitality.

Paul, WA3GFZ, had a great tale about trying to get a zoning variance for a substantial tower, and using the ARRL advice to "get to know the neighbors"...but it was not forthcoming, so he settled for improved roof-mounted arrays and had A thru I plus LASER running. "I only blew up three things this year."

K1JT, Joe Taylor (alright, that was easier to figure out you call and initials) had a more successful tower story, once he received the permit, no height restrictions were placed. Not only does Joe have an impressive tower, but a substantial array of antenna hardware, and a substantial station, and the secret weapon, WSJT meteor scatter, accounting for about 14 additional grids on 6&2, in addition to catching the great 6m opening Sunday AM. His 6m amp blew up the day before the contest, leaving him with a 100W brick. His 10 watts on 1296 with a llllonnnggg run to the antenna, left him with flea-power output on E. He did manage 50 QSOs on 1295, but had 200+ on 6m. "Folks say that if 6 is open, it ruins the contest, but it sure makes it a lot of fun!"

N3ITT, Al had help from Brian (the tall guy) in replacing some of the antennas before the contest, as he was able to satnd on the top plate and reach the 432 array bolts. (Did we really want to hear that story and imagine the scene?) found a bad conductor in the rotor cable, after having everything working before installation..."I slept way too much...6 hrs! It was a snowless winter—except for that weekend!"

W3MWV, Erwin returned to the airways after a lay-off since 1984, having received a Kenwood TS-2000 as a holiday gift from the XYL. It took him a day to figure out the function buttons, then put up an inverted L antenna in the attic and worked several Eu stations on 6 before the contest. He became a believer again, and had a great contest, using a hand-held 5 element 432 beam on the second floor and working over 60 QSOs on that band, including K1FO in CT. He finally found a 2X4 to hold up the beam, and when it fell over, scared the XYL! (Sound familiar?)

WA3NUF, Phil, top-scoring single-op didn't have time to shovel his walk, and left it that way as a deterrent to the neighbors, especially since the football playoffs were on TV Sunday.

Jim, WA3EHD asked, "Did it snow? So what?" (Jim is sight impaired)...He got a new 2304 xvtr, and turned in his old rock-bound loaner, with the XYL declaring, "You didn't tell me it was that small..." and played great. Never got his audio rotor indicator working, since the rotor itself wasn't moving. An open resistor was replaced and it's turning again. He also got a new 903 xvtr kit, which KB3XG promised to assemble, but he subcontracted it to Celeste, who just completed her mil-spec solder test. John reports it was truly a work of art, until he had to rearrange it all to get it working. "Everything but the LO was oscillating." Never got the 903 antenna up, so he used the 1296 antenna for it anyway. He now had 4 microwave rigs into 1 IF—switch 1,2,3,4...all worked fine during the contest—it was the Monday night net after the contest in which he forgot the sequence and blew the front end. Jim's computer reads files to him, but the new version of VHFLog was not properly registered with his reader, but that got fixed pronto. He zapped the HV line in his AM6154 amp, caught a CN85 station on 6m, and then Sunday night, the XYL reported two men at the door..."Nuts...the neighbors figured out I'm a ham" he thought...but luckily it was only Leon and Rick there to do the LASER QSOs.

KB3XG, John reported, "I got on late because of 2 promises..." One to N3NGE to put 10G and 24G on his tower, and the other to Jim for 903. I set up the tower in the snow..."I

never climbed the tower in the snow—only in the summer—the only difference is it's cold and slippery, and your hat and gloves keep sticking to the tower!" I finally got it all set up, then to get the radios on. I worked N3NGE on 10G and 24G by directing him to point 20° to the right of the Limerick Nuclear plant stacks. He was S5 over the 31 mile path. I worked W2SJ on all bands backwards—started on 10G and worked our way down. I worked W3KKN in the last 10 seconds of the contest. I got a 10K bonus on my score the day after the contest, when I discovered I had selected the wrong contest scoring format and switched to January instead of June with the logging program.

Walt, WA3AQA reports his antenna was limited to 13" of #10 wire in a UHF connector, but he did submit a log.

Walt, W3EUV told us that it was no sense to put up antennas in good weather, because when the bad weather comes you always wind up fixing them. Just wait until the bad weather to put them up.

W3KM, Dave reported that the LASER project was a bonus and he was glad to work everyone else thru 3G.

AA3GN, Joe, our contest chairperson was last to present. His body language and tone told of the disappointment with his efforts to really max out this year. He put lots of time into increasing tower height, getting the antennas up with longer feeds, and hauling a 50 pound steel box to house the 5G and 10G transverters up the tower. With all the tower work done and his confidence high, he spent time getting others on the air and their tower work done, only to be left with rig problems, RF getting into everything, including the 24VDC supply, and running low on GaAsfets for the 432 preamp as they blew regularly. The windstorm two weeks after the contest took the front third of his 2m long yagi down, an element nearly missing him as he watched.

Now that you have reached the end of the stories, do you know who the judges were and who won?

We were thrilled to have ARRL VP Kay Craigie and the OM present for the evening, and assisted by WA3GFZ, they made the judging panel, awarding the 2002 Packrats' Cryin' Towel to our Contest Chairman, Joe, AA3GN, and the runner-up to K3EOD, the non-"Procrasto-Rat." Thanks to all for getting on, and sharing your thrill of victory and the agony of defeat.

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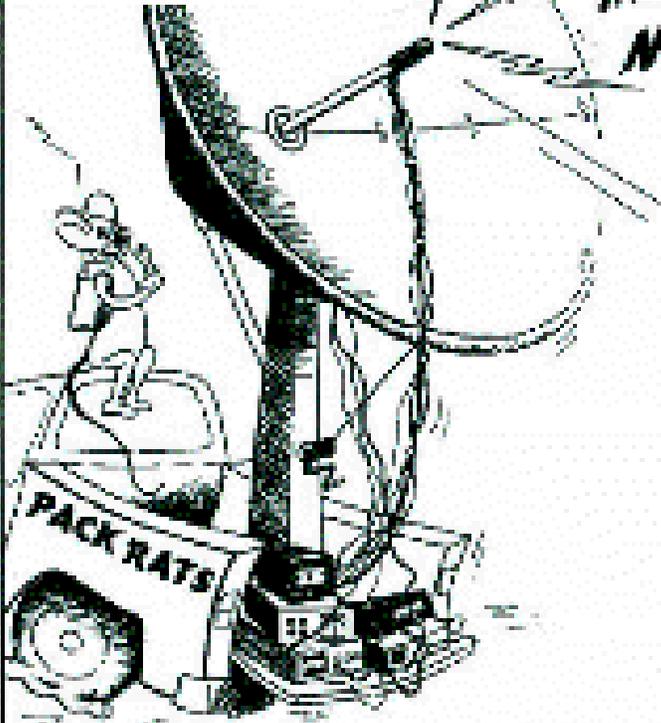
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**MEETING  
NOTICE**



**Board of Directors Meeting  
Thursday, March 14th, 8PM**

**At the QTH of Ernie Kenas, W3KKN  
2823 OLD WELSH RD  
WILLOW GROVE PA**

**Homebrew Night  
Thursday, March 21st, 8PM**

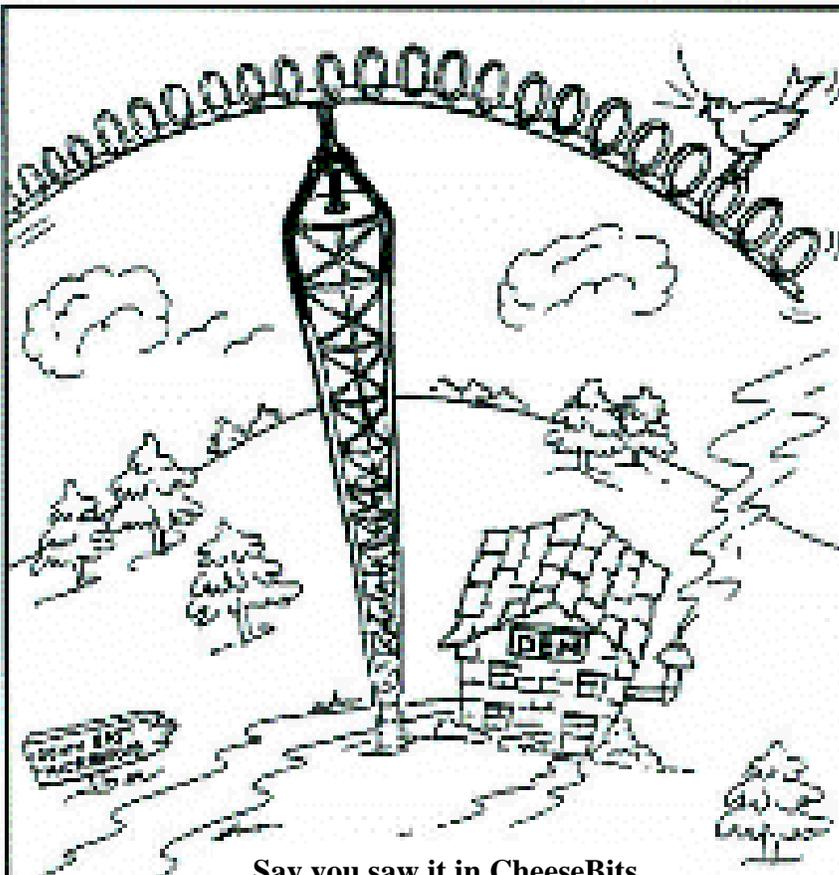
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