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

CHEESE BITS

W3CCX
CLUB MEMORIAL CALL

ARRL Affiliated Club

Volume XLIV | August & September 2002 | Number 8

Prez Sez

Is it hot enough for you? Well lets all get cooled off by attending THE PACKRAT PICNIC on August 17th I know Al and his wife Carol have been busy making the place perfect for our enjoyment. Thanks to Gary WA2OMY, El K3JJZ, and the rest of the usual crew for another successful WHITE ELEPHANT SALE. Even in the middle of a home construction project that left indoor plumbing inoperative they pulled it off.

I want to thank Ben WA3RLT for serving as VP for the past year.

If you don't have anything to do on AUG 15 [third Thursday normal meeting night] myself and others will be meeting at 8 PM at the home of ED WA3DRC for our LICK AND STICK NIGHT in other words the HAMARAMA flyer mailing night, like last year it should go very fast with electric staple machines and pre-folded flyers and your help. Ed's address is 174 Orthodox drive, Richboro Pa. That's all here 73 Brian N3EXA

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White Elephant Sale Notes

Many would say this was the best attended and most successful club auction in recent history. Thanks to Gary, WA2OMY for hosting again, and El, K3JJZ doing the auctioneering, with a working audio amp and mike. Despite a dense humidity, it got cooler with a few drops of passing rain, and the liquid refreshments. There was a compact, but eclectic set of items for sale, and no matter what your price range or interest, there was surely something to please. Since there were several items from a shack clean-out, there were parts and boxes to store them in, power supplies and cables, computers and science kits. There were antennas for 50, 144, 220, 432, 3.4, 5, 10 and 24G, waveguide and hardline. There were items that sold for a few hundred dollars (Yes!—with heavy and active bidding) and there were items that went for a buck...and some of the remainder was even free for the taking.

Multiples of the same items brought heavy bidding, and winning bidders were allowed to take as many of the items at the top price as desired, with other unsuccessful bidders able to take the remainder at the top bid price also. Some of the hottest items turned out to be test equipment (no surprise) ranging from Fluke digital multi-meters to signal generators and counters. There was also considerable action on some FM transceivers and TWT-power supply assemblies for 5 & 10G.

One of the most unique purchases that was made by a Packrat was a box of pictures and other visual materials from the collection of Harry Stein (the "father" of the Packrats). It included some of the original litho plates from Cheesebits publications from the 1970's. One included a picture of the youthful K3JJZ and was given to him as a souvenir. Everyone seemed to get something special, and members look forward to this annual event.


Pre-auction inspection of the goodies
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Pack Rats **CHEESE BITS** is a monthly publication of the
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Ron Whitsel**T 222 MHz REPEATER - W3CCX/R**
222.98/224.58 MHz, Churchville, PA
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WA3NUF (1 yr) Phil Miguelez
WA3DRC (2 Yr) Ed Finn
AA3GN (2 Yr) Joe Landis
COMMITTEE CHAIRMEN

January Contest	AA3GN	215-721-4286
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 6 digit=FN20le
9:30 PM	1296.100 MHz	WA3NUF 6 digit=FN20le
10:00 PM	903.100 MHz	AA3GN 6 digit=FN20ih

THURSDAY NIGHT NETS (1st & 4th of the month)
9:30 PM 2304.100 MHz W3KJ, & go to 3.4G & up 6 digit=FN20hg

Don N3OZO and Doc W3GAD know how to cook and dish it out!

Editor's Column

As I have a packed agenda for the summer, I'm combining the August and September issues into one special summer edition. August is filled with excitement: the UHF contest, the first 10G & up weekend, the club picnic, and the EME Conference in Prague. I hope that we can get everything into a reasonable sized electronic package and mailed edition. Every month there are more and more electronic subscribers. We like that! It gets close to the end of the month and I get many inquiries about the deadline for submissions—and usually I've gone to print with the issue—I like to get it sent before the first of the month—and the production of editing takes a while, so that if I get submissions by the 23rd or 24th of the month, it is likely they can get into the issue being sent that week...but much later and it must wait until the next edition.

Welcome to many new subscribers, and thanks to all who are using the emailed PDF version. With the increase in postage this month, 3 cents may not seem like a lot, but when multiplied by the number of subscribers, and 11 issues/yr, it adds up quickly. Now, if you still are on the fence, and haven't yet converted to the PDF version that will be e-mailed to you, there is still time: send me an email at rick1ds@hotmail.com for a sample issue—I'm sure you'll be pleased to see the full color version.

I must thank W3IY and W3HMS for their contributions to activity here in the mid-Atlantic. The two of them have taken to the road many times, and stimulated so much of the microwave activity here on the east coast.

I'm enclosing a few shots of my harmonic, Leon, N1XKT at the mike in the rover, then a shot of yours truly, checking the log to make sure I'm not working a dupe! The photo below is our 5G and 10G dishes, stowed for transit in the rear of the van, and easily mounted on the rear post from the rotor on the end brackets when we're at destination.

Since the final scores of the January contest are now posted on the come out soon in QST, I must doff my cap to the Rochester gang, who despite fewer entries as a club, garnered a higher score by about 200K than the Packrats. What does that mean for the future? Although we are in different classes, it's hard to bow to higher numbers, so let me take th for next year! Save for a drastic weather problem, we'll be out there in January seeking not only to keep the "Unlimited Class" gavel, but also the top aggregate score. It will be up to every Packrat to work a little harder and longer to make it happen! Tnx to W3GAD, K3IUV and W2PED for great photos! 73, Rick, K1DS

Correspondence

Rick, I really enjoyed reading and seeing the pictures in the Cheesebits. You guys really know how to do things right! First class all the way, Cheesebits included. Thanks for including the rain scatter report. This is a great mode which I feel we haven't used enough. I watch the weather radar maps frequently and am looking forward to possibly working into your area via this mode. 73, Dexter W4DEX" <dmcintyre@att.net>

Packrat Picnic Dates Revised: Sat Aug 17th, raindate: Sun 18th

With apologies to our host, N3ITT, we send you this notice of correction from the last edition. Location and venue remain unchanged! As most of you know last year's picnic was well attended and certainly enjoyed by all, despite the bad weather. Hopefully we'll get a better day this year and really do it up right! (just in case I do have a generator now, so I won't have to bail out the basement!) There will again be horseshoes, badminton and volleyball, and of course swimming. There will be a large canopy and the sun room for shade, and air conditioned areas in the house. The club will, as always provide hot dogs, hamburgers, and of course, the all important beverages! To complete the meal, I'm requesting everyone to bring a covered dish of their choice, I will make some suggestions here, but you can bring anything ,just let me know what it is so we don't get too many duplicates. You also may want to bring a lawn chair or two, and some sunblock. Everything else will be here for a super time!! Where? QTH of AL, N3ITT (AKA La Casa Loca Resort) Date/Time? Arrive abt. 12 noon, food will be out abt. 1:30 2:00PM on Sat. Aug.17, with Sun. Aug.18 as the rain date. **Already on the list!** K3IB Phil's famous sausage (this is great!!) W3GXB Corn on the Cob (fresh from the farm!!) 73 CU at the Picnic!!

From 432 to 50 to 144 to 222 looking westerly atop Camelback

I've been working on interfacing a 3456 transverter with one of those pyrojoe power amps, and wouldn't consider running that much power without a sequencer. in 1997, I described a "fool-resistant" sequencer in QEX that included a complete IF interface. I considered replacing the IF interface in the DEMI transverter with one of these, but decided a simpler sequencer would do just as well, so I made a new one. the simple, but still "fool-resistant" sequencer is now on my web page, http://www.w1ghz.org -- click on "small projects" 73 Paul W1GHZ

Radio Activity Schedule August, September, October

Saturday & Sunday, August 3&4 —UHF contest—222 and up—1800Z Aug 3 to 1800Z Aug 4 (see July *QST*, p 90)

Mondays, August 5,12,19,26 September 2,9,16,23,30—Nets—start at 7:30 PM on 6 meters, see page 2 for details and net control stations. Microwave net control stations now listed with their 6 digit grids for reference.

Thursday, August 8th-Board of Directors meeting—watch email reflector for location

Thursday, August 15th-Lick and Stick Night at QTH of WA3DRC—8:00 pm Please help get the 2000 mailers for the Hamarama ready to be sent.

Friday, Saturday, Sunday, Aug 16-18, EME Conference—Prague, Czech Republic

Saturday, August 17th—Packrat Picnic—QTH of N3ITT—starts early afternoon—bring the family, lawn chairs, your swimsuit and a covered dish . Rain date—Sunday, Aug 18th.

Saturday and Sunday, Aug 17 & 18 ARRL 10 GHz Cumulative Contest, Part 1 0800 local-2000 local Aug 17 and 0800 local to 2000 local Aug 18 (see Mar *QST*, p 115).

Thursday, September 12-Board of Directors meeting—watch email reflector for location

Saturday & Sunday, September 14-15—VHF Contest 1800Z Sept 14-0300 Sept 16—see August 2002 QST for details

Thursday, September 19—Monthly Packrat meeting—Southampton Free Library, 8PM

Saturday & Sunday, September 21 & 22 10 GHz Cumulative Contest, Part 2 0800 local-2000 local Aug 17 and 0800 local to 2000 local Aug 18 (see Mar *QST*, p 115).

Sunday — October 13, 2002 — HAMARAMA — Middletown Grange Fair Grounds Penns Park Road, Wrightstown, PA Info at http://www.ij.net/packrats/index.html

Thursday, Friday, Saturday, Sunday—October 24-27th, Microwave Update 2002 — Enfield CT, Hosted by N.E.W.S. Info at http://www.newsvhf.com

24 GHz Amplifiers

now making 1.4 Watts Pout

("Give me more power, Scotty…")

Paul Drexler, W2PED June 2002

Another installment in the saga of the Packrat/Update 24 GHz Amplifier Project…

We've made some more improvements to the 24 gig PA. We were seeing just under 1 Watt saturated on most units, but since the output device is rated at +30 dBm P_{1dB}, it looked as though there was some room for improvement. At Al Ward's prompting I took a look at trying to obtain more power out of the units.

I realized I had been running the output device VERY conservatively so I took a look at rebiasing the device for greater output power. Increasing the drain current has no effect on power. Voltage, however, has a *pronounced* effect. Fortunately, the amplifier bias board uses a DC-DC converter to supply the MMIC drain voltages, and the voltage is set via an external resistor, so it was a simple matter to up the voltage a bit. When I increased the output device's operating voltage by just 1 volt (from 6.5 to 7.5 volts) while operating at the same current level, I'm now seeing about +31 dBm (1.4 Watts) saturated. The P_{1dB} is approximately +30.5 dBm, so this is really saturated, but the point is we're getting almost 2 dB more power out! The output MMIC is still being operated within the manufacturer's recommended parameters, so the reliability should not be affected.

The downside to all this is that the 3.3 V regulator on the bias board gets really hot now! It was marginal to start out with, and now it's dropping an additional volt. I looked at the board area, and tried a small L-shaped copper/brass tab for additional radiant heat-sinking, but the improvement was only marginal. Then I realized that I could cut a trace on the board and use a dropping resistor before the 3.3 V regulator to knock the voltage down a bit before the regulator input. Here we go making more mods, Lloyd!! Geez, if I make one more mod to the bias board, Lloyd (NE8I) and Tom (WA8WZG) are probably going to shoot me, hi!

The dropping resistor mod worked well. A 15 ohm 1 watt resistor does the trick. Since space was a bit tight, I used a metal film resistor as they're a lot smaller than the familiar carbon comp resistors.

I've done this mod on three amplifiers now, and all three make +31.5 dBm saturated. That's about 1.4 watts, or about a 2 dB improvement over the first amplifiers. As far as I know, this is the highest solid state power level available to amateurs for 24 GHz. Hopefully, we'll be seeing some DX records set when these make it into their intended transverter homes! For those that have already received their PA, I wrote up a modification procedure; the modification takes me about 10 minutes to complete.

I've included some JPEGS of the test set-ups, etc... The power meter indicates +31.5 dBm. The sensor doesn't really see that power… if it did it would burn up! I use a 20 dB attenuator in front of the power sensor, and the meter allows you to enter an offset value, so the actual output power is displayed. Neat, huh? 73, Paul W2PED

AMSAT-OSCAR 7 Returns to Life

ARLS006

The AMSAT-OSCAR 7 satellite suddenly has come back to life after being dormant for more than 20 years. First heard June 21 by Pat Gowan, G3IOR, AO-7 subsequently has been monitored and used by several other amateurs. AO-7 was launched November 15, 1974. It remained operational for more than six years before succumbing to battery failure in 1981.

For those attempting to use AO-7, Mode A (2 meters up/10 meters down) is not a problem, but Mode B (70 cm up/2 meters down) is. Because of changes in the international Radio Regulations that went into effect in the 1970s as AO-7 was under construction, the 432.1 MHz uplink frequency is no longer authorized for space communications.

Built by a multinational team under the direction of AMSAT-NA, AO-7 carries Mode A (145.850-950 MHz uplink; 29.400-500 MHz downlink) and Mode B (432.180-120 MHz uplink; 145.920-980 MHz downlink) linear transponders plus beacons on 29.500 and 145.700 MHz. AMSAT has additional information on AO-7 on its Web site, http://www.amsat.org

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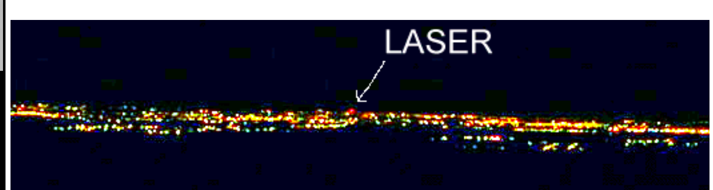
Web Site for Laser Info

Mark GM4ISM posted his website address, and as I explored it, found some neat info on his LASER communications and his alleged 44 km UK record. What I found most interesting is a timed night photo that highlights the laser beam. www.dc2light.co.uk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WA3RLT cranking out a LASER QSO

K3IUV gets his LASER QSO in the log

WA3YHO and KB3BBR handle 6m for a while together

AA3GN finding the 222 activity

KB3XG is smiling, though his foot is hurting

WA3RLT spent most of his time on 903 and 1296

N3EXA makes a 432 tower adjustment
BUT, WHERE IS YOUR SAFETY BELT?

KF6AJ tries 432

W30R & K3DMA work 6m

W2PED on the microwaves

NE3I and W3IIT keep 2m active

1296 & 903 arrays
2-3-5G dish between 10G & 24G dishes

WSJT Update: Version 2.2.0

From: Joe Taylor, K1JT July 4, 2002

WSJT Version 2.2.0 provides several significant enhancements, a number of smaller improvements, and four minor bug fixes. To upgrade to v2.2.0 you should download the self-extracting zip file UPD220.EXE and execute it to extract its contents, directing the resulting files to your WSJT installation folder. The new version includes the following changes:

1. The JT44 mode now has an adjustable parameter called "Clip." It can be controlled with +/- buttons just below analogous ones for the "Sync" parameter. The value of Clip defaults to 0, where it has no effect. By increasing Clip to 1, 2, or 3 you can introduce "soft," "moderate," or "hard" clipping of any sudden increases in signal strength that might ruin the decoding of an otherwise usable signal. I have found that setting Clip to 2 or 3 permits me to use JT44 in the presence of summertime QRN that renders v2.0.1 useless. Clipping also helps to accommodate occasional meteor pings in a JT44 QSO, recovering the program's ability to synchronize on a weak residual signal. You can leave the clipping turned on; note, however, that using hard clipping on a signal that does not require it can cost you about 1 dB in message S/N. I recommend generally leaving Clip set to 0 and increasing it only when necessary.
2. JT44 mode has a new checkbox labeled "Zap Birdies." It does just what you would hope such a command would do -- and it can turn a totally spoiled signal into good copy! (In the upgrade file I've included an example wave file recorded via EME from W7FG, in the presence of a strong birdie at my station. To become a believer, try decoding this file both with and without "Zap Birdies" checked. He was sending me the message "K1JT W7FG EM26 ".) The Zap algorithm works best with birdies that are steady in both amplitude and frequency. A sure indicator that you have a birdie problem is a persistent extra spike (or spikes) in the red-line plot, in addition to the one corresponding to the JT44 sync tone. If the birdie is higher in frequency than the sync tone by 20 to 465 Hz, you will probably see a number of identical garbage characters in the line of decoded text. If this happens, check the "Zap Birdies" box and hit "Decode Again", and your copy should improve. Do not expect miracles! Keeping birdies out of your receiver or QSYing to avoid them will always work better trying to deal with them in software. Nevertheless, this birdie-killer can make the difference between a successful QSO and one that fails miserably.
3. The JT44 mode has a second new checkbox labeled "Fold Msg." For messages having identical content in the first and second half, this feature can yield a signal-to-noise improvement of 1.5 dB. The JT44 default message formats have been modified slightly to maximize the opportunities for useful message folding. For example, if K1AA is working G2ZZ, the first EME-style message will now be generated as "G2ZZ K1AA G2ZZ K1AA ". (Notice the two spaces in the middle of the message and at the end.) If the "Fold Msg" box is checked, the message will be decoded simply as "G2ZZ K1AA ". Try decoding a marginal signal both with and without the "Fold Msg" box checked. QSB conditions might make one or the other preferable at a particular time.
4. In WSJT versions 2.0.0 and 2.0.1 the JT44 decode algorithm produces a single-character average of the last four character positions in a message. In Version 2.2.0 the averaging limit has been changed to equal the number of "O" characters (for EME messages) or "R" characters (for non-EME messages) at the trailing end of default TX message #2. For example, if clicking "Generate Std Texts" produces "G2ZZ K1AA OOOOOOOOOOO" for message #2, the program will produce a single-character average based on the last 12 received character positions. This choice gives you the best possible chance of properly decoding an "O" or "R" report in message #2, and it also gives you a good chance at snagging the "RRRRRRRRRRRRRRRRRRRRR" message under very marginal conditions. For steady signals the procedure can yield a 5.4 dB S/N advantage over single characters and a 2.4 dB advantage over the four-character average.
5. WSJT now remembers whether you were using FSK441 or JT44 mode when you last exited the program. On startup it restores the most recently used mode, including values of W, S, and Sync, as appropriate.
6. All decoded text in JT44 mode is now written to the cumulative file DECODED.CUM. In previous versions of WSJT, text was saved only in FSK441 mode.
7. The default Sync setting in JT44 mode is now 1 rather than 2. I believe nearly everybody runs with Sync = 1.
8. WSJT v2.2.0 is more complete and more consistent about saving information about the starting directory and the form size of the "File | Open" dialog box.
9. The displayed azimuths for "Hot A" and "Hot B" (direction headings to use for optimal sporadic meteor reflections) now wrap correctly at 0 and 360 degrees. You will no longer see, for example, values like 368 or -8 degrees if you are working someone to your north.
10. In JT44 mode the program now displays the local hour angle of the Moon, in degrees. You will appreciate this if you have a polar mounted EME array.
11. The UTC Offset may now be specified as a floating-point number -- that is, with significant digits after a decimal point.
12. The count of available records displayed in the average message window behaved illogically when "Decode Again" and "Include" were used. This has been fixed.
13. There was a bug in the JT44 display routine that caused error messages to appear when the moon's right ascension was very close to 00:00. The error could appear at most once a month, and it would persist for an hour or so. The bug has been fixed.
14. There was an apparent logical inconsistency in program behavior if "Exclude" was clicked after "Clear Avg" had been executed. This has been fixed. 15. In V2.0.1 if you hit F8 more than once and then hit F7, the "Width" parameter in FSK441 mode would be set to 200 ms. This has been fixed.

Version 2.2.1 ---------- This is a minor maintenance release. You can download it from the WSJT web page, http://pulsar.princeton.edu/~joe/K1JT. In addition to the short update file, a new full distribution of WSJT Version 2.2.1 is available, as well as a new version of the manual addressing the new program features. Version 2.2.1 fixes the following minor bugs in Version 2.2.0: 1. When first started without a valid INI file, the v 2.2.0 would fail to "Generate Std Messages" when asked to do so. Once you have switched modes, say from FSK441 to JT44, the program worked correctly. 2. Local hour angles greater than 180 degrees are now displayed as negative angles. 3. If you did not check the menu item "File | Save text in File DECODED.CUM", the v 2.2.0 would create an unwanted file named "fort.21" and write all decoded JT44 text there. 4. If WSJT was terminated when in the "minimized" state, it could get "stuck" on your Windows taskbar. If you are stuck in this mode you should fix it as follows, and then upgrade to Version 2.2.1: A) Start WSJT. It should appear in minimized form on the taskbar at the bottom of your screen. B) Right-click on the WSJT taskbar label and select "Move". C) Press the "left arrow" and/or "up arrow" keys a few times and then move the mouse. You should start to see a "dotted frame" indicating the location of the WSJT screen. D) Click the left mouse button, and you should be back in business. As always, I will be pleased to receive comments and suggestions at email address k1jt@arrl.net. Please note, however, that I will be on vacation and not reading email from July 7 through 21. -- 73, Joe, K1JT

Call	Grid	NEWS Club Score?	Class	Total Points	Band QSOs/Grids 6m	2m	222	432	903	1.2G	2.3G	3.4G	5.7G	10G	24G	47G	75G	LAS	
AA1VL	FN42	Y	L	17050	123/27	107/20	-	40/8	-	-	-	-	-	-	-	-	-	-	-
AA1YN	FN43	Y	S	19136	71/23	58/14	27/12	40/11	-	12/4	-	-	-	-	-	-	-	-	-
AA2UK	FM29	N	H	334125	223/73	233/53	73/36	93/39	31/18	46/23	25/14	15/11	-	9/8	-	-	-	-	--
AA4ZZ	EM96	N	L	376259	407/116	398/81	113/42	154/42	-	-	-	-	-	-	-	-	-	-	--
AA7A	DM43	N	H	15168	113/48	33/17	-	17/11	-	4/3	-	-	-	-	-	-	-	-	--
AF1T	FN43	Y	S	94170	144/49	105/19	52/16	60/16	21/7	22/7	11/5	7/3	6/3	7/3	-	-	-	1/1	
AI3Z	FM19	N	S	26700	76/23	88/22	41/15	40/12	-	10/3	-	-	-	-	-	-	-	-	--
K1DS	FN20	N	R	6464	7/2	12/5	10/4	9/3	7/2	8/3	7/2	7/2	5/1	5/1	-	-	--	1/1	
K1GX	FN31	Y	H	120840	76/27	178/36	57/22	73/28	27/12	32/11	10/6	6/4	3/3	7/3	-	-	-	-	--
K1LPS	FN34	Y	S	3040	22/8	22/9	11/5	4/3	3/3	4/4	-	-	-	-	-	-	-	-	--
K1TEO	FN31	Y	H	481399	277/81	374/62	110/38	148/39	41/20	59/25	20/12	16/10	-	8/6	-	-	-	-	--
K1UHF	FN31	Y	S	127798	165/41	184/33	63/28	78/27	-	29/14	13/8	-	-	11/6	-	-	-	-	--
K1WHS	FN43	Y	U	328440	412/95	323/44	79/30	126/32	24/12	29/14	9/5	6/3	4/3	-	-	-	-	-	--
K1WTK	FN42	N	S	2378	16/11	24/8	10/7	11/3	-	-	-	-	-	-	-	-	-	-	--
K2BAR	FN31	N	L	350316	575/98	415/53	94/34	200/37	-	-	-	-	-	-	-	-	-	-	--
K2QO	FN02	N	Q	5280	33/17	35/21	3/2	18/8	-	-	-	-	-	-	-	-	-	-	--
K2SMN	FN20	N	H	171644	95/33	233/49	66/30	102/34	26/14	41/19	12/9	-	-	-	-	-	-	-	--
K2UOP	FM09	N	H	97120	112/48	92/32	45/22	57/26	16/8	21/12	12/6	-	5/3	5/3	-	-	-	-	--
K3DNE	FM19	N	H	235445	197/59	187/42	70/29	108/35	37/18	46/20	24/14	-	-	-	-	-	-	-	--
K3YTL	FN11	N	L	606825	625/102	600/72	190/50	285/55	-	-	-	-	-	-	-	-	-	-	--
K3ZO	FM18	N	H	54500	282/92	154/33	-	-	-	-	-	-	-	-	-	-	-	-	--
K5AM	DM54	N	H	62205	334/147	17/10	5/2	8/6	-	-	-	-	-	-	-	-	-	-	--
K5LLL	EM10	N	H	60030	97/49	82/28	17/14	42/24	14/12	9/8	11/9	1/1	-	-	-	-	-	-	--
K5TR	EM00	N	L	78000	209/91	143/30	22/14	52/21	-	-	-	-	-	-	-	-	-	-	--
K5VH	EM00	N	H	5430	13/11	8/2	1/1	5/4	-	-	37/12	-	-	-	-	-	-	-	--
K7CW	CN93	N	U	39627	183/61	65/24	19/10	24/11	1/1	4/2	2/2	-	-	-	-	-	-	-	--
K7RAT	CN85	N	H	80325	287/111	92/19	28/11	45/12	-	-	-	-	-	-	-	-	-	-	---
K8CC	EN82	N	L	169644	302/97	220/52	34/24	107/38	-	-	-	-	-	-	-	-	-	-	--
K8WW	EM75	N	S	48776	182/73	70/27	20/13	36/21	-	-	-	-	-	-	-	-	-	-	--
K9AKS	EN42	N	Q	65685	112/63	97/32	42/23	53/23	-	12/10	-	-	-	-	-	-	-	-	--
K9EA	EN71	N	H	79680	98/50	144/47	49/33	70/36	-	-	-	-	-	-	-	-	-	-	--
K9PW	EN52	N	Q	145908	161/62	164/40	56/29	71/17	16/11	23/13	6/5	3/3	4/4	6/5	-	-	-	-	--
KA1EKR	FN42	Y	S	5400	-	44/14	17/10	21/12	-	5/4	-	-	-	-	-	-	-	-	--
KA2FIR	FN20	N	H	48	2/2	2/2	-	2/2	-	-	-	-	-	-	-	-	-	-	--
KA6AMD	DM15	N	Q	5890	10/4	65/11	11/5	30/6	2/2	9/3	-	-	-	-	-	-	-	-	--
KB1DFB	FN41	N	L	63936	279/56	133/24	27/9	63/19	-	-	-	-	-	-	-	-	-	-	--
KB1EPQ	FN34	N	S	152	6/3	13/5	-	-	-	-	-	-	-	-	-	-	-	-	--
KB5MY	DM13	N	H	13014	148/37	93/17	-	-	-	-	-	-	-	-	-	-	-	-	--
KB9WZJ	EM69	N	S	4784	23/17	41/25	-	14/10	-	-	-	-	-	-	-	-	-	-	--
KC0HFL	EM17	N	S	22050	127/51	47/28	7/6	14/11	-	3/2	-	-	-	-	-	-	-	-	--
KC6TEU	CM98	N	S	23579	88/29	77/19	12/5	46/14	-	14/6	-	-	-	-	-	-	-	-	--
KE8FD	EM84	N	H	95400	192/83	122/39	29/17	54/27	4/4	10/8	2/2	-	-	-	-	-	-	-	--
KG4BMH	EM76	N	S	14475	62/28	117/43	-	7/4	-	-	-	-	-	-	-	-	-	-	--
KJ1K	ROVER	Y	R	15700	33/9	29/7	15/3	29/6	11/4	13/3	7/3	9/3	6/3	1/1	-	-	-	-	--
KN4SM	FM16	N	H	49232	126/63	116/42	-	60/31	-	-	-	-	-	-	-	-	-	-	--
N0LL	EM09	N	S	65667	178/99	51/32	25/17	34/21	-	8/8	-	-	-	-	-	-	-	-	--
N0QJM	EN13	N	L	171798	359/150	94/57	45/35	42/32	-	-	-	-	-	-	-	-	-	-	--
N0UK	EN34	N	U	236188	297/134	157/51	46/27	71/32	13/8	21/12	11/8	-	-	5/1	-	-	-	2/1	
N1MU	ROVER	N	R	43516	27/14	81/21	29/8	32/12	17/4	19/5	15/5	12/3	10/2	5/3	-	-	-	-	--
N1OFZ	FN31	N	H	1254	39/14	10/6	-	4/2	-	-	-	-	-	-	-	-	-	-	--
N1XKT	FN20	N	R	14300	34/15	21/9	15/7	15/6	7/2	8/3	7/2	7/2	5/1	5/1	-	-	-	1/1	
N2DY	FN30	Y	H	33453	90/27	88/19	48/15	53/14	-	11/6	-	-	-	-	-	-	-	-	--
N2FKF	FN30	N	H	12042	29/12	56/15	22/11	35/11	-	8/5	-	-	-	-	-	-	-	-	--
N2JMH	FN13	N	R	123571	117/23	155/33	104/22	58/13	24/5	27/8	20/5	13/3	14/4	9/3	-	-	-	-	--
N2MCY	FN30	N	H	3196	31/14	37/14	-	13/6	-	-	-	-	-	-	-	-	-	-	--
N2MH	ROVER	N	R	2430	23/11	22/8	8/3	10/3	-	-	-	-	-	-	-	-	-	-	--
N2YEV	FN34	Y	S	3627	33/12	42/10	-	21/9	-	-	-	-	-	-	-	-	-	-	--
N4IS	EL96	N	S	7392	51/24	49/16	-	27/8	-	-	-	-	-	-	-	-	-	-	--
N6MU	DM05	N	S	47724	244/42	150/23	-	94/17	-	-	-	-	-	-	-	-	-	-	--
N7AU	DN07	N	H	93052	276/123	67/18	25/8	41/14	8/4	14/5	-	-	-	-	-	-	-	-	--
N7IR	DM43	N	S	6164	60/31	21/7	4/1	12/4	-	7/3	-	-	-	-	-	-	-	-	--
N8BJQ	EN80	N	S	13197	70/40	89/43	-	-	-	-	-	-	-	-	-	-	-	-	--
N8CJK	EN84	N	S	3626	74/49	-	-	-	-	-	-	-	-	-	-	-	-	-	--

This data reprinted from the New England Weak Signal June 2002 Contest Rumored Scores Page and is not a confirmed or official listing

					Points	6m	2m	222	432	903	1.2G	2.3G	3.4G	5.7G	10G	24G	47G	75G	LAS	
N8UM	EM75	N	R		49560	86/30	95/33	36/18	43/18	7/7	15/8	2/2	-	-	-	-	-	-	-	-
N9DG	EN53	N	S		59498	111/60	116/33	41/24	55/25	-	-	-	-	-	-	-	-	-	-	-
NI9E	EN63	N	L		124560	265/92	181/42	49/20	74/26	-	-	-	-	-	-	-	-	-	-	-
NJ2F	EL96	N	H		12258	80/34	63/10	16/3	26/7	-	-	-	-	-	-	-	-	-	-	-
NL7CO	EM04	N	S		3451	-	119/29	-	-	-	-	-	-	-	-	-	-	-	-	-
NN5DX	ROVER	N	R		5400	19/3	42/7	-	28/4	9/3	-	14/2	-	-	-	-	-	-	-	-
NW5E	EL98	N	U		37962	180/70	48/21	14/7	28/13	-	7/3	-	-	-	-	-	-	-	-	-
VE7DXG	CN88	N	H		45360	184/71	94/16	18/5	59/13	-	-	-	-	-	-	-	-	-	-	-
W1ATT	FN31	Y	S		3330	36/10	33/10	-	18/8	-	2/2	-	-	-	-	-	-	-	-	-
W1GHZ	FN42	Y	H		47628	81/16	131/24	45/14	69/16	19/6	18/6	-	-	-	4/2	-	-	-	-	-
W1PM	FN41	Y	S		60024	102/37	110/32	41/19	55/19	13/8	15/8	-	-	-	-	-	-	-	-	-
W1RZF	FN42	N	H		42528	71/21	162/35	42/18	63/22	-	-	-	-	-	-	-	-	-	-	-
W1ZC	FN42	Y	H		13113	-	143/26	-	68/21	-	-	-	-	-	-	-	-	-	-	-
W2FU	FN13	N	H		206540	104/47	122/41	59/30	76/35	27/18	35/23	22/15	13/9	11/7	8/5	-	-	-	-	-
W2NNY	FN24	N	L		31460	52/29	74/32	39/24	41/25	-	-	-	-	-	-	-	-	-	-	-
W3EP	FN31	Y	H		55842	276/72	99/27	-	35/22	-	3/2	-	-	-	-	-	-	-	-	-
W3IY	FM19	N	R		253032	113/24	202/28	124/22	148/22	56/13	69/13	42/8	21/6	14/4	18/4	2/1	-	-	-	-
W3SO	FN00	N	L		332904	388/103	345/67	100/42	164/52	-	-	-	-	-	-	-	-	-	-	-
W4EUH	EM74	N	H		59600	141/71	113/42	28/17	45/19	-	-	-	-	-	-	-	-	-	-	-
W5SXD	EM02	N	S		21424	109/63	27/14	13/10	14/10	-	6/6	-	-	-	-	-	-	-	-	-
W6KBX	CM98	N	H		37100	103/43	69/19	25/13	46/16	-	19/9	-	-	-	-	-	-	-	-	-
W6OAL	DM79	N	H		52029	210/86	43/11	12/5	31/8	8/3	12/5	3/2	1/1	1/1	1/1	-	-	-	-	-
W7EW	CN84	N	H		46331	187/61	94/20	27/12	49/14	-	-	-	-	-	-	-	-	-	-	-
WA2CLV	FN30	N	S		2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WA2IID	ROVER	N	R		59415	114/18	102/15	53/10	67/12	20/8	13/6	6/1	6/1	6/1	10/4	8/3	-	-	-	-
WA3EOQ	FM09	N	S		48642	32/14	93/38	44/26	54/29	-	27/14	-	-	-	-	-	-	-	-	-
WB2SIH	FN31	N	S		33852	53/17	107/26	46/17	59/18	1/1	10/5	-	-	-	-	-	-	-	-	-
WB9Z	EN60	N	H		223486	379 /134	156/48	46/30	86/37	-	18/13	-	-	-	-	-	-	-	-	-
WD5K	EM12	N	S		14322	186/77	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WZ1V	FN31	Y	H		36828	67/24	53/22	-	44/20	14/10	18/10	9/7	8/6	-	-	-	-	-	-	-

CLASSES: H=SingleOp Highpower, S=SingleOp Lowpower, L=LimitedMulti, U=UnlimitedMulti, Q=QRPPortable, R=Rover

June Rover Notes from ND3F

Hi all. Good show, especially from the new King of Rovers, W3IY, who had well over 800 Qs on the "southern route". I heard more rovers than ever, and even worked 8 different ones, some several times. Microwave activity was up up up! After some recent serious mechanical problems with the rovermobile (a converted ambulance), we had made several repairs and upgrades to the truck--it worked great! However, we made 2 big mistakes–shared later. The first site, FN10bc, has always been good for me...but this time the foliage was very thick. Worked K8GP on some microwaves before they shut down, and had several long distance microwave "runs". Bands seemed flat, but activity high. N3EMF was booming from about 20 miles, but their microwaves were not up yet! Before the test, worked W3IY on 2.3/3.4G in FM15--well over 250mi/400km rover to rover! Stayed for my usual 100 Qs and headed down the road to FM19aw...as usual, a good site, and also quickly worked many stations on microwave and moved to FM09, just a tad behind schedule. Was great to hear K2UOP with new 5.7 and 10G, K1RZ with new 5.7G, and K3DNE with new 2.3G--worked each of them several times over good distances. Also ran with N3NGE, Len, who was very loud in FN20....got VUCC on 10G from this site! Now the first mistake...stayed at FM09vx a bit long looking for some easy runs that didn't come--FN00rg Blue Knob closes at 1100pm with out prior permission (I didn't have it). There was a large bluegrass music festival on the knob, and I got stuck in the traffic. Some fast moving truck squeezed me off the road and I suffered some (minor) antenna damage, and was getting late! I arrived at the top at 2230, got setup by 2235, and worked 45 stations before the guard came at 2300 to boot me off! Since the bands were hopping, I begged to stay, and the guard agreed--with one caveat--he would lock me in until morning by chaining up the gate...I agreed, and it worked out OK--discovered a nice tropo opening to the west and worked some W0s on 2M--most didn't have higher bands! Also a few long distance microwave runs--about 200 QSOs from the grid before I slept at 230-430...then the guard came, opened the gate, and woke me up so I could leave! The FN01 site was the best I've been at...worked K1RZ in FM19 on all his bands, and several others...but some of the big guns who usually look for this grid didn't find me, and after 80 Qs in 2 hours I moved on to FN11. Also an 80 Q site in 95 minutes... notable was W2FU (ex-rover?) thru 3.4G easily, but not above... too bad. On to FN21 (long drive) for mistake number 2...The site I had selected, Pimple Hill, is just across the street from the Pocono speedway, and Guess What! The big NASCAR race was in town...aside from astronomical gas prices ($1.91 for high test that the truck uses--I skipped that despite being very low on fuel!), the traffic was intense!! Took an extra half hour to go the 6 miles from the Interstate to the site, and an extra hour to get to the FN20 site, and an extra hour plus after that! So I had to change my route en route (my permission in FN30 ran out at 530 when they close the site I had planned--I would never have made it)...Pimple Knob is only a fair site, but had some decent runs and worked 85 Qs in 2 hours and another 65 in 90 minutes from FN20. Then the very long drive to FM29, where I arrive back on schedule at 830 local after skipping FN30 (next page)

and using an alternate FN20 site...I missed all the northeast grids above FN32/FN41 and only worked 32 on a few bands and 41 on 144/432...not my original plan! The FM29 site seemed very poor at first, but eventually got many station's attention and had some nice runs...still only 65 Qs in 100 minutes...then had to leave in a rush to get to the border of FM28/18 by contest end. Got there at 2225 local, just enough time to work 55 more stations before contest end and to activate those pretty rare grids. I didn't work several of the grids I activated, but thanks to N2JMH rover I got a few key ones (FN10, FN00)... only 1 band in FN01, only 2 in FM18, none in FM28, missed the microwaves in FN11, etc...wish I could work myself!! Lesson learned--I had shortened my 903 and 1296 MHz antennas with the intent of saving setup time. This was a mistake...I need more antenna on these bands. Look for phased pairs in August! Final score, 728 Qs (not deduped or band corrected) 1876 QSO points (more than 2.5 QSO points/contact--a personal record for outside of January) 168 multipliers (thanks, guys!) total 315.2K ...could have been much higher!!
73! brian the rover nd3f@aol.com

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Hi Guys, Thanks for the compliment, Brian, but you will always be the king! Brian has done an incredible amount to help us all out, and his enthusiasm continues to inspire many high-banders. The microwave activity keeps growing, and operating as a rover in the contests is getting to be more fun than ever. We had a great time in the contest, to say the least. Thanks to all who got on, especially the guys who kept me awake all nite running the bands from the bridge-tunnel. It was awesome. Condx were poor at the start in FM15. The 20km winds from the subsiding nor'easter in NC were taking a toll on propagation. A few Es QSOs on 6 were fun, but short-lived. K4EFD showed up from the mtns in FM07 and blew my socks off on all bands thru 10G...vy loud! We deviated significantly from plans since wrestling up the big antenna telescoping mast was hard labor in the winds...I was reluctant to take it down too quickly. FM25 was also below average from stormy propagation condx. By the time we got to FM26, the wx was getting calm, and the coastal ducting became highly apparent. Had a blast working K1TEO, K1UHF etc S9 SSB on 10G! This propagation continued all nite thru FM16,17, es FM27. AA2UK, K2SMN, K1GX, es others kept us hopping. Tnx guys!! We missed most of our schedules, as it's just not a good idea to break off a band run with a station, after finally getting the microwave antennas properly trained. This contest convinced me more than before that schedules really suck for rovers. I think the best answer is for rovers and stations seeking rovers to put a separate 2m rx es antenna up, and monitor a prearranged freq. Worked lots of stations on the lower 4 bands whilst driving...great fun, but as I got tired, I slacked off on this for safety reasons. Working guys is easy, but logging becomes tedious and dangerous while flying solo. Had a good site in FM28, but as usual, we didn't find all the stations we

N3FTI's 5G & 10G TWT rig helped the score.


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were looking for. had good runs from here with K1RZ, N3NGE, etc. The FM18 site was unexpectedly filled with 3000 joggers doing a benefit run for some better cause, so we left them to their resources, and never stopped in this grid. FM29aa was pretty clear in the corn fields, but again, missed most of the expected stations, even though we made noise on 144.247 alot. W3CCX was much louder from here, es we got them thru 5.7G FB. Usually we operate from the Chesapeake bay bridge, but the sleep deprivation and beach traffic required too much attention after the all-nighter, so we just listened for the most part, and stayed out of trouble. It was awesome working K1RZ es K3DNE thru 2.3G mobile on tree scatter. They sounded like Au at 55 mph! Lots of mobile ops en route to FM19, where we stopped for 90min. It was great running bands here with K9OYD/R es W4RX. Worked W4RX on 24G with LOUD sigs hr. Then on to FM08us at 3350ft. Great site, but we got so busy running locals, we never cashed in es gathered the needed grids to the west. Another W4RX 24G QSO hr. On the way home, in Front Royal, some derelict tried to hop into my van with ill-intentions. Fortunately, the rover-mess prevented him from fitting in the seat. We floored it es left him on the ground where he belonged. Made multiple looper repairs due to errant trees. Lost the AC compressor. New DC power system worked great. Totals 812 QSOs in 146 grids~~ 253K Great contest~ tnx fer all the activity! CU on the bands. 73, Bill W3IY/R

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An interesting tid-bit is that W3CCX worked 277 rover QSOs during the contest. Amazing! Rover activity is increasing! Thanks go to you and Leon for taking on AND completing an excellent rover task this year! W3KM

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(I'm checking the logs to see how many grids and bands we worked them in from the mountain—rovers are a great source of points! —and thanks for the rundown Brian and Bill! I am convinced that a 222 liaison freq is ideal for microwaves, as fewer stations on that band, ant it won't interfere with a 2m IF or other bands that are multiples of 144. The way I have it figured, Leon and I account for 120 of those rover QSOs. Rick, Ed)

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The CY9DH DXpedition (St Paul Island) has now ended. Here is a preliminary report from W7XU: (via the HSMS website) "I got the 2m antenna (a single M2 18XXX) assembled on July 1st. The antenna was only 10 ft. or so above the ground, but the ground dropped rapidly away so it was basically 150 ft. or so above the ocean. We ran 400 to 500 watts output. My location was FN97we. Almost all of our contacts were randoms. What was probably the best DX on 2m via MS was a random with K9MRI, at just over 1300 miles. UTC Date - Stations worked (all on 2m WSJT unless otherwise noted)

1 July: N3RN, K1JT, WA8CLT, WF4R, WB2SIH, N8OC, AK3E, VE1RG, W3MRG, W1ZC, K1SIX (6m JT44), W7GJ (2m JT44 via EME)
2 July: K3IB, KU2A, WA8CXI, W8PAT, N1JEZ, VE1ALQ & VE9AA via JT44 on 2m, both in FN65.
3 July: K2TXB, KN4SM, K2OVS, K3IB
4 July: K2SMN, K1UHF, K3TV, W3CMP, W5KI, VE9PA, WA4PGM
5 July: WB2SIM, W1JJM, VE3SXE
6 July: VE2PEP, W3MRG, NA1CW, W1JJM, K9MRI, N8OC, WZ1V, W7GJ (6m JT44 via EME); partial with W7MEM 2m JT44 via EME
7 July: K1JT, N3NGE

Thunderstorms (with at least one lightning strike within 100 yards of our tent on the 4th) kept us off the air on the evenings of the 3rd, 4th and 5th, local time. I got the above information leafing through my paper log. If you feel you worked us but don't see your call sign above, I may have just missed it while turning through the pages of the log. QSL's go to me for all contacts with CY9DH. It will likely take a couple of months to get the cards printed and in the mail -- please be patient. 73, Arliss W7XU"

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I have been busy performing 47 GHz Sun Noise Tests in recent weeks and comparing notes with Al W5LUA, Gary AD6FP and Will W0EOM. There are not many people looking at sun noise or even capable of doing so at this frequency. There is a real shortage of large antennas rated for this frequency. Measurements were taken using 1, 2, 3, 4, 6, 8 and 10 ft dishes and all receivers are believed to have Noise Figure of about 4.5 dB. Cold sky to ground measurements are about 1.3 dB using the feedhorns alone. Here are the Sun Noise results:

W5LUA 15" Prime Focus 39 GHz Dish 1.4 dB Sun Noise
VE4MA 30 inch Offset Metal 2.4 dB
W5LUA 24" Prime Focus 39 GHz Dish 2.5 dB Sun Noise
VE4MA 4 ft Offset Plastic dish 3.6 dB
W0EOM 2 ft dish 4.1 dB
VE4MA 6 ft Offset Fibreglass dish 5.0 dB
AD6FP 3 ft Precision (95 GHz) dish 5.2 dB
W5LUA 10 ft (24 GHZ EME dish) 5.7 dB Sun & 0.4 dB Moon Noise
VE4MA same 4 ft Offset Plastic dish with Aluminum foil on surface 6.4 dB
VE4MA 8 ft (24 GHz EME dish) 6.9 dB

The remarkable thing is the 3.3 dB gain improvement in the 4 ft offset dish performance with the addition of aluminum foil. The plastic/ fibreglass offset dishes seem to be reasonably accurate but the reflecting material imbedded in the surface is not very effective at this frequency (designed for 14 GHz) . The 30 inch metal offset dish does not seem to be efficient, nor are the 39 GHz dishes. The 4 ft dish I was using was part of a General Instrument 12 GHz receiving system and has 8 large 5/16 inch bolt heads sitting on the surface. I will be modifying this for rounded heads. The foil was attached with wallpaper cement (temporary) and subsequently painted with white latex paint to reduce the heating of the feedhorn! Best 73 Barry VE4MA ve4ma@shaw.ca

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Movin' Your Cheese (For Sale)

TOWERS: Rohn 25G tower - 11 straight sections, 1 top section – tapered, 2 base plates. Six sections are up the remainder are on the ground. Glen Martin Engineering Hazer for Rohn 20/25G type tower. Universal Manufacturing aluminum tower - 64' - 7 straight 8' sections, 1 top – tapered 8' section. This tower is 12" across face for the top 2 sections and taper up to about 2' for the base section. AB-105 tower - 60' - 24"face, steps on one side, galvanized. 50' of this tower is up.
ANTENNAS – HF: Mosley 7 element – 10/12/15/17/20/40 meters.
Hy-Gain TH6DXX - 6 element tribander, 10/15/20 meters.
Cushcraft A3 - 3 element tribander, 10/15/20 meters.
Hy-Gain 204BA - 4 element, 20 meters.
Hy-Gain AV-18HT - vertical, 10/15/20/40/80 meters.
TET 2 element 40 meter.
ANTENNAS – VHF: Hy-Gain 4 element 6 meter.
KLM 13LB 13 element, 2 meters. I have 4 antennas and elements only, no booms, for 4 more antennas.
Cushcraft 15 element 2 meter.
Cushcraft dual, 10 element, satellite antenna.
Cushcraft 15 element (3 reflector elements), 222MHz.
Cushcraft 11 element, 222MHz, mounted vertical.
Cushcraft 7 element, 222MHz, end mount.
ANTENNAS – UHF: Home brew 19 element, 432MHz. 4 antennas, power divider and "H" frame.
Home brew 7 element, 440MHz, end mount.
Antennaco 10 element, 440MHz, end mount.
Down East Microwave 45 element loop Yagi, 1296MHz.
Down East Microwave 52 element loop Yagi, 2304MHz, 2 antennas and power divider.
RADIOS: Icom IC-260A 2 meter all mode transceiver, 10 watts.
Kenwood TW-4000A dual band, FM, 144/440MHz, 10 watts.
Yaesu FRG-9600 Receiver, scans, 60 to 905MHz with NTSC video unit.
Microwave Modules MMT144/28 transverter, 144MHz – 28MHz IF, I have 2, one needs work. Microwave Modules MMT220/28 transverter, 222MHz – 28MHz IF. Microwave Modules MMT50/28 transverter, 50MHz – 28MHz IF plus KLM 1296MHz – 144MHz IF, transverter with preamp.
AMPLIFIERS: KLM 6 meters – 80 watts. Mirage B1016 144MHz – 170 watts, preamp, I have 2, one needs work. KLM 222MHz – 120 watts

K3GYS Gus Nicolella 128 Raymond Avenue
Evesham, New Jersey 08053-7038
(856) 767-3628 Day (215) 323-2488 k3gys@pics.com
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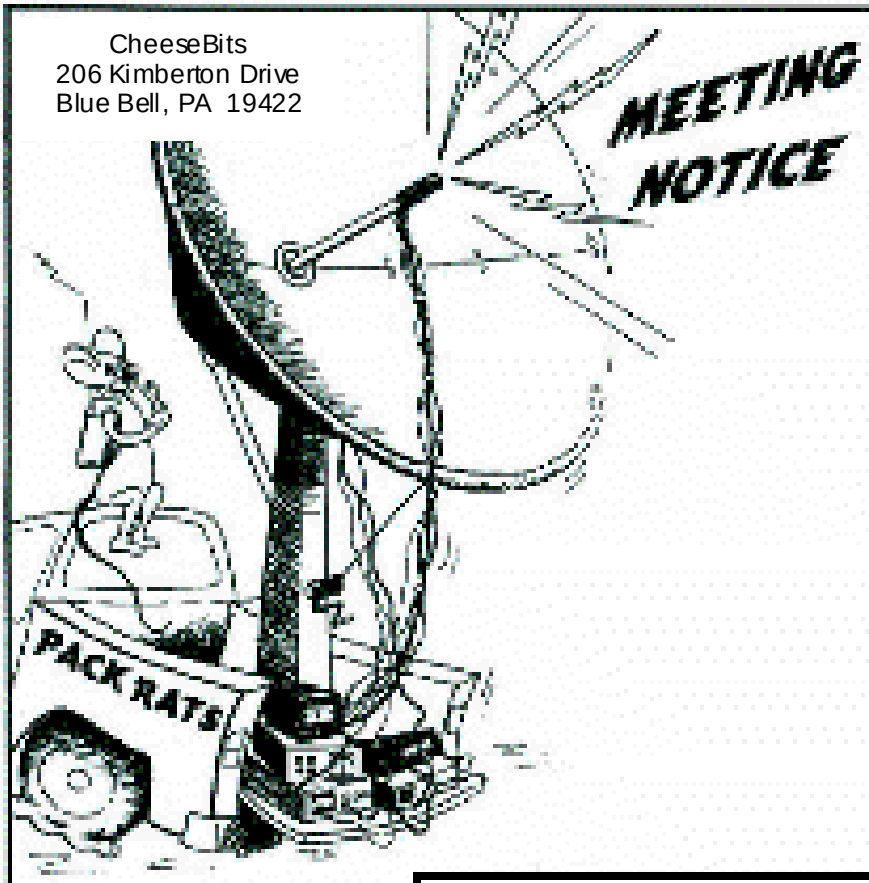
CheeseBits
206 Kimberton Drive
Blue Bell, PA 19422



Packrat Picnic Sat, Aug 17th at QTH of N3ITT

FIRST CLASS

MT. AIRY VHF RADIO CLUB, INC.