

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



Holiday Greetings and get ready for Jan '04 VHF SS Contest

CHEESE BITS



W3CCX
CLUB MEMORIAL CALL



ARRL
Affiliated
Club



Volume XLV

December 2003

Number 12

PREZ SEZ

Contest time is approaching quickly. The nets are a good opportunity to test your stations. We have many club members with great stations who want to get on the air to check their equipment with you. I have some antennas available for club members to borrow. A two meter beam, 432 beam and 2304 and 3456 loopers. December's meeting will feature Bill AA2UK with contest plans. As Paul W2PED points out, communications with our rovers and a good liaison frequency (perhaps 222.xxx sideband) would lead to higher scores.

I would like to welcome Steve Simmons KF6AJ to our membership. He was voted in at November's general meeting. In addition to being a great person, Steve offers a lot of enthusiasm for amateur radio contesting and also for the club. It's great to have you aboard!

One of the larger contest challenges is getting Jim WA3EHD's antennas back up after the big storm. We need some 1/2 inch hard line with connectors. More important, we need some help. Please contact Jim or me, as we will be trying to do the work in the next few weekends.

73's Paul Sokoloff WA3GFZ

Nov mtg speaker
Marv Foral,
W3QGC on
radar
development



2004 January Contest

It is once again time for the club to compete for the most coveted award, the January Sweepstakes Unlimited top spot! It is a time for all members to participate in any way they can. We have for many years enjoyed supremacy and the honors that come along with winning this award.

The last two years we have had a wake up call. The Rochester group beat us again in overall points but failed to submit enough logs for the unlimited category. Their number of logs this past year also increased. Many in the club consider this a defeat. I think it is just a wake up call. We cannot let this happen again this year!

All the members old and new need to participate in this contest to the best of their abilities. This year we must dig deep from within and attempt to break all of our previous personal goals. Those high scores are now a thing of the past, and this is the present. There are many up and coming newer members, which one of them will be our next super station? Will it be a rover, multi-op or single operator? Who is getting on a new band this year? Have you improved your station from last year?

I am in the process of a complete tear down of my existing station. Replacing all those old 28 volt relays and including sequencers on all bands. Adding a 500 watt solid state amplifier on 903. I have gone solid state on all bands above and including 903. Serious power 200 watts on 1296, 250 watts on 2.3, 55 watts tower mounted on 3.4. My 3456 stuff is going on the tower not in the shack. It always has been on the wrong end of 160 feet of the 7/8th cable! Adding high power and remote mounting of equipment requires special care. What good is 500 watts on 903 if you blow your front end? I am also in the process of building a dual 2304 and 3456 tower mounted station for Ron W3OR wouldn't it be nice to work FM-28 above 1296? I am also working on a 2304 system for K3TUF it would be nice to work his grid as well! Russ K2TXB and myself are building 24GHz stations with the help of Paul W2PED. So what is everyone else doing? How can we meaning the other members help you?

The up and coming need everyone in the club to participate. Actually we all will benefit from active participation. This was and still is a hotbed of microwave activity. I encourage everyone to get that new band working or fix the ones that used to work that are now in disarray. I often miss working many members of the club in the heat of the contest. We need to take advantage of 222 fm for co-ordination and missed stations. Having a good 222 FM station is very important and often overlooked.

There will be a good number of Rovers operating this year. It is very important to balance ones operating habits between knowing when a rover will be in a new grid and what frequency they will be operating from. It is also important to not be so consumed with one rover that your score suffers from wasting too much time trying to locate the rover.

There will also be a good group of multi-operator stations on the air. They are also important to work because many are now well equipped for long haul microwave contacts.

To wrap it up let's show the ham radio world that the Packrats are not a dieing club of old timers. We can cut the mustard and we will once again feel the warm glow of victory. Take care. **Bill Lentz AA2UK** 2004 Contest chairman.

Pack Rats **CHEESE BITS** is a monthly publication of the
Mt. AIRY VHF RADIO CLUB, INC. -Southampton, PA.

SUBSCRIPTION RATE: \$16.00 PER YEAR (USA)
 \$20.00 PER YEAR (CANADA)
 \$10 PDF only \$24.00 PER YEAR (ELSEWHERE)

We operate on a .PDF exchange basis with other non-commercial publica-
 tions. Anything that is printed in CHEESE BITS may be reprinted in a not
 for profit publication, unless stated otherwise, provided proper credit is
 given. Deadline for articles and swap-shop is the monthly meeting date.
 Non-commercial swap-shop items free of charge.

Pack Rat Web Site: <http://www.ij.net/packrats>
SUBSCRIPTION/ADVERTISING MANAGER:

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

EDITOR:

Rick Rosen, K1DS 206 Kimberton Drive Blue Bell, PA 19422
 (610)-270-8884 rick1ds@hotmail.com

CLUB TREASURER:

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

TRUSTEE OF CLUB CALL - W3CCX

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

PACKRAT 222 MHz REPEATER - W3CCX/R

222.98/224.58 MHz, Churchville, PA

OFFICERS: 2001-02

PRESIDENT: WA3GFZ Paul Sokoloff dogfaces@home.com
 VICE PRES: open TBD
 CORRESP. SEC: WA3EHD Jim Antonacci, Antonacci@worldnet.att.net
 Acting REC. SEC K3EGE, Bill Shaw K3EGE@aol.com
 REC. SEC: WA3AQA Walt Zumbach, wzumbach@bellatlantic.net
 TREASURER: W3KM Dave Mascaro, dmascaro@motorola.com
 DIRECTORS:

K1DS (2 Yr) Rick Rosen
 W3GAD (2 yr) "Doc" Whitticar
 WA3DRC (1 Yr) Ed Finn
 AA3GN (1 Yr) open TBD

COMMITTEE CHAIRMEN

January Contest AA2UK
 June Contest: "I'm not the contest chairman"
 HAMARAMA: WA3DRC
 VHF Conference: KB3XG 610-584-2489
 Awards Chairman WA3GFZ 215-884-3116
 QUARTERMASTER: K3IUUV, Bert Soltoff, soltoff@uscom.com

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 FN20le
9:30 PM	1296.100 MHz	WA3NUF FN20le
10:00 PM	903.125 MHz	AA3GN FN20ig
10:30 PM	2304.085 MHz	W3KJ, & go to 3.4G & up after FN20hg



Club members chat with Marv Foral W3QGC and check out his radar museum items at the Nov. meeting see p8

Editor's Column

This issue brings to a close my third year as editor of Cheesebits—time flies! Interestingly enough, as I look back on my 6 years as a club member, there have been many changes, but lots of maintenance of the programs and activities that have sustained the club over the years. If I sound a bit nostalgic, I just reunited with N4HY, a ham who was just getting his PhD at Brown University in Applied Mathematics when I was getting more active in VHF in RI in the late 70's. Then there is W3RJW's home page (see p7 and <http://www.users.voicenet.com/~w3rjw/>) with some excellent photos of his shack and antennas, and the OM from the 60's and 70's and 80's! Make sure you pet the cat. Perhaps I'll dig into my archives for some goodies also—then get someone to help me set up my web-page.

OK—teams are set up, captains have been selected, equipment is being checked out and stations readied for the big event—yes—VHF Sweepstakes 2004. There has been a lot said about the scores over the last two years, and how they were achieved, what the concerns are about rover activity, pack-roving, grid circling and the like, but the most important thing is being active and on the air. In this "use-it-or-lose-it" scramble for spectrum space, numbers are important. Hopefully everyone has been in contact with other Packrats to make sure that they are ready and able to contribute to the best of their abilities. What is your self-appointed task and target activity and score?? Don't be shy—send me your contest tear-off from page 3. What do you need and how can you help another Packrat?

The unofficial September VHF scores have been self-posted on the NEWS-related website, and there are three rovers in the 300K scoring level. When the official scores are published through the ARRL, we'll see what they have to say about the tactics being used to amass these scores. In the latest issue of QST, the CAC has no rule changes to respond to the activity they're seeing. Russ Healy, K2UA is the Mid-Atlantic rep to the CAC, and he can be reached through k2ua@earthlink.net if anyone wants to share thoughts for the future of contesting.

I really enjoyed our meeting speakers in the last months. The myriad of pictures of the PA turnpike microwave systems was fascinating. What impressed me the most are the redundancies that allow for failsafe operation 24 hours/day year-round without a blink for any contingency! I now understand better why the space shuttles had multiple synchronous computer controls. As a rover, those power-failure battery stacks sure looked good to me. Our thanks again to Culley Phillips for the show, and to N3EXA for arranging it.

This past month, thanks to Drex, we had a presentation on the early development of radar by Marv Foral, W3QGC. Marv asked when I was born, and he reminded me that he got his ham ticket at least a dozen years before that! Not only had he done research and teaching at Harvard and MIT, but he worked on government technical projects for about 30 years. He brought along samples of his work too, especially proud of his 3mm magnetron, "yes, that's 93 gigacycles" and it was set up in about 1970 with a small dish, projecting a 0.38 degree beam, able to see little bugs at about 1500m. If you missed the meeting, not only did you miss the education, but also a delightfully captivating and entertaining speaker, complete with a repertoire of anecdotes.

We're thinking about January: where to go, how to divide our time to maximize our effort and the results for all involved. I won't throw any additional incendiary material onto the smoldering business started by the sidebars in the June VHF Contest web-report from ARRL on captive rovers and grid-circling, but having seen and experienced both, they do little to advance the art or the pleasure of operating. An award gained by virtually all contrived point-generation is one that is difficult to point to proudly.

Happy Holidays, Healthy New Year, and above all, a prayer for world peace.

73, Rick, K1DS

SUBSCRIBERS: RENEW PROMPTLY FOR 2004 PLEASE— DON'T LAPSE!
MEMBER PACKRATS: DUES ARE DUE IN JANUARY 2004

Important Dates and Events—Be Radio-Active!!

Saturday Dec 6 Microwave Activity Morning 8AM-1PM
Monday Dec 8 Microwave Activity Evening 7PM-11PM
All bands 432 & Up, Coordinate on 144.260

Mondays, Dec 1,8,15,22,29 Packrat Net Nights Start @7:30PM, see p2

Thurs, Dec 11th PACKRATS BOD MEETING 8:00PM-Open to All Packrats
QTH –W3KKN-Ernie Kenas- 2823 OLD WELSH RD, WILLOW GROVE

Thurs, Dec 18th— PACKRATS MEETING—8:00PM
Southampton Free Library, 947 Street Road
Pre-Contest Open Discussion — Contest Chairman: AA2UK

Mark Your Calendars for the January 2004 VHF SS
Starts Saturday Jan 24 @ 19:00 UTC
Ends Monday (Sun night) Jan 26 @ 03:00 UTC

----- cut on the dotted line -----

Packrat VHF Contest Information Sheet-for ALL members

Please complete and send either via postal service or facsimile on email

Name: _____ Call: _____

Check here if you use VHF Log or KM-Rover computerized logging programs

Active on the following bands for January Contest: (circle)

50 144 222 432 903 1296 2.3 3.4 5.6 10.3 24 47 Light

This next section is optional but recommended:

Equipment needed (rigs, transverters, antennas, rotors, etc):

Assistance Needed:

**This is a repeat,
cuz ya didn't
send it in the
first time!!
Please!!**

Equipment I can lend, share or sell:

Clip and mail to Rick Rosen, 206 Kimberton Dr; Blue Bell, PA 19422 or send email message to: rick1ds@hotmail.com

 <p>SMALL STATION EME ON 70 AND 23 CM USING JT44</p> <p>BY AL, K2UYH</p> 	 <p>OBJECTIVES</p> <ul style="list-style-type: none"> ◆ GET YOU INTERESTED IN WORKING EME. (Most hams still believe exotic equipment, huge antennas, and very high power are needed to work EME.) ◆ SHOW THAT YOU CAN ENJOY THE THRILL OF MOONBOUNCE WITH A MODEST SETUP. (Basically the equipment you already have.) ◆ INCREASE EME ON 432 AND 1296 MHz. (There is already a lot of small station EME on 6 & 2 m.)
---	--

<p>WHY WORK MOONBOUNCE</p> <ul style="list-style-type: none"> ◆ IT IS EXCITING! ◆ MOST FUN IN HAM RADIO IS MAKING RARE, UNUSUAL, OR DIFFICULT CONTACTS. ◆ EME ALLOWS YOU TO WORK WORLDWIDE DX ON ANY BAND - 6 M UP. ◆ WAY TO INCREASE YOUR GRID SQUARE AND STATE COUNT.  	<p>A BIG STATION IS NOT NEEDED!</p>  <p>OH3MCK</p> <ul style="list-style-type: none"> ◆ MY 1ST JT44 CONTACT WAS ON 23 CM WITH OH3MCK. ◆ OH3MCK WAS USING 2 X 22 dBi YAGIS (LINEAR POL.) AND 40 W.
---	---

<p>2ND JT44 QSO WITH OH1FF/p</p>  <ul style="list-style-type: none"> ◆ OH FIELD DAY STATION ◆ ALSO ON 23 CM ◆ USING A 1.8 M DISH (CIR. POL?) AND 50 W ◆ WE COULD HAVE QSO'D VIA CW, BUT JT44 DEFINITELY HELPED! 	<p>1ST JT44 ON 70 CM WITH ES8X</p>  <p>144 MHz</p> <p>432 MHz</p> <ul style="list-style-type: none"> ◆ EUR. VHF FIELD DAY STATION ON KHNH ISLAND (KO18xc). ◆ 4 x 12 EL YAGIS (WITH ELEV.) AND 300 W PA.
--	---



KIHNU IS A SMALL ISLAND ABOUT 40 KM OFF THE COAST OF ESTONIA IN THE GULF OF RIGA, BETWEEN ESTONIA AND LATVIA. (IN ESTONIA)

K2TXB OPERATES JT44 ON 2 m



- ◆ RUSS USES 2 X KLM 16 LBX YAGIS ON A POLAR MOUNT AND A KW .
- ◆ WORKED 42 STATIONS IN 15 COUNTRIES AND 15 STATES

EME PRACTICE

- ◆ EME OPERATED USING CONVENTIONAL (CW & SSB) OR DIGITAL MODES
- ◆ SOME STATIONS ARE EXPERIMENTING WITH DIGITAL MODES AS PUA43 THAT PROVIDE MANY DB ADANTAGE, BUT REQUIRES SPECIAL EQUIPMENT AND TRADES TIME AND PRECISE FREQUENCY FOR SIGNAL LEVEL.
- ◆ MOST DIGITAL EME IS WITH JT44.
- ◆ JT44 USES STANDARD EQUIPMENT, WORKS IN VIRTUALLY REAL TIME AND HAS RELAXED FREQUENCY STNADARDS.

JT44 BASICS -TX

- ◆ EACH TRANSMISSION IS 30 SECONDS LONG AND CONSISTS OF MESSAGE AND SYNC INFORMATION.
- ◆ THE MESSAGE IS 22 CHARACTERS LONG AND REPEATED 3 TIMES.
- ◆ THE SYNC IS INTERSPERSED WITH THE MESSAGE AND SENT ABOUT HALF THE TIME.
- ◆ A UNIQUE FREQUENCY IS ASSIGNED TO LETTERS, NUMERALS AND PUNCTUATION CHARACTERS (43 TONES) + SYNC = 44!

JT44 BASICS - RX

AT THE END OF THE RECEPTION PERIOD
JT44:

- SEARCHES FOR TIME SYNC (SYNC PATTERN) OVER -4 TO 2 SECOND DELAY PERIOD.
- SEARCHES FOR FREQ OFFSET (+/-600 Hz).
- DETERMINES AND DISPLAYS MESSAGE.
- AVERAGES CHARACTERS IN EACH TIME SLOT OF THE 22 CHARACTER MESSAGE.

AVERAGING

- ◆ WHEN A SIGNAL IS STRONG CAN GET FULL COPY IN A SINGLE SEQUENCE - (QSO in < 2.5 min!)
- ◆ OFTEN SIGNALS ARE WEAK AND THE MESSAGE GARBLED - (This is where JT44's averaging pays off.)
- ◆ IF THE SAME MESSAGE IS SENT EACH SEQUENCE, JT44 WILL AVERAGE THE RESULTS OF ALL PERIODS.
- ◆ THE MESSAGE WILL CORRECT ITSELF WITH EACH SUCCESSIVE PERIOD.

To be Continued in the Next Issue

Protecting Your Rigs Using Dual Band Feeds

I recently purchased the dual band feed and dish from DEMI. I reviewed the literature from DEMI below on the isolation between Feeds. also at: <http://www.downtownmicrowave.com/DBFeed.htm>

I posed this question to the Packrats: Since I have 10W on 5G and 2W on 10G, is there any need to turn the power off from one rig or the other while the other is transmitting, or is there need for an isolation relay in the antenna lines to cut the potential signal from the opposite band while one of the rigs is transmitting? I am using the DEMI transverters on 5G and 10G without additional preamps. Your thoughts and experience?? Thanks in advance. Rick, K1DS >From the DEMI page: This feed design is based on the work of Al Ward, W5LUA, and represents an efficient way to use one dish on two different ham bands. Unlike earlier multi band feed designs, W5LUA's design is capable of good performance on both microwave bands in use. In addition, the high isolation simplifies installation requirements by eliminating the need, in many cases, for a protective relay on the 5.7 GHz port. DUAL BAND W5LUA FEED FOR 5.76 & 10.368 GHz Amateur bands. Each plot displays the VSWR (return loss) and isolation between ports for the respective band. The feeds are optimized for 10 to 5.7 GHz isolation when shipped from the factory. The VSWR on both bands can be improved at the expense of isolation. It's all a trade-off! 10 GHz isolation is quite critical and can be affected by what the feed "sees". It is always a good idea to check port to port isolation when ever you adjust the feed location on your parabolic reflector. Normally, the dish will have little effect on port isolation when properly installed, but unwanted reflections back into the feed can degrade the >30dB isolation value. These plots were made with the feed only in free space. 5760 MHz isolation is very high and is not influenced by much, since the 10 GHz waveguide portion of the dual band feed cannot support 5.7 GHz propagation. The 5760 MHz VSWR is about -16 to 20dB when the 10 GHz isolation is optimized. If you optimize the feed for best return loss, R.L values of close to -30dB are possible.

Here are four responses I received:

There are several things you can do to either measure the isolation or to see if you might have a problem:

1. With a spectrum analyzer or power meter, measure the amount of isolation each band has to the other. Send a 5.7 GHz signal to the feed (in place on the dish) and measure the amount of signal returned on the 10 GHz port. Then make the opposite measurement. Calculate the number of DB of difference each way and then the amount of power that will be delivered to the front end of each preamp while you are transmitting on the other band. If that calculation reveals 25 milliwatts or less then you should have no problem as modern devices can handle this amount of input power. However this method does not take into account the rejection of the input circuit of the preamp, so it may be possible to apply much more opposite band power to the preamp without a problem.

2. Measure the source voltage of the device in the preamp while transmitting on the opposite band. Bring the power up slowly. If or when the voltage increases then you are approaching the danger point and you need more isolation.

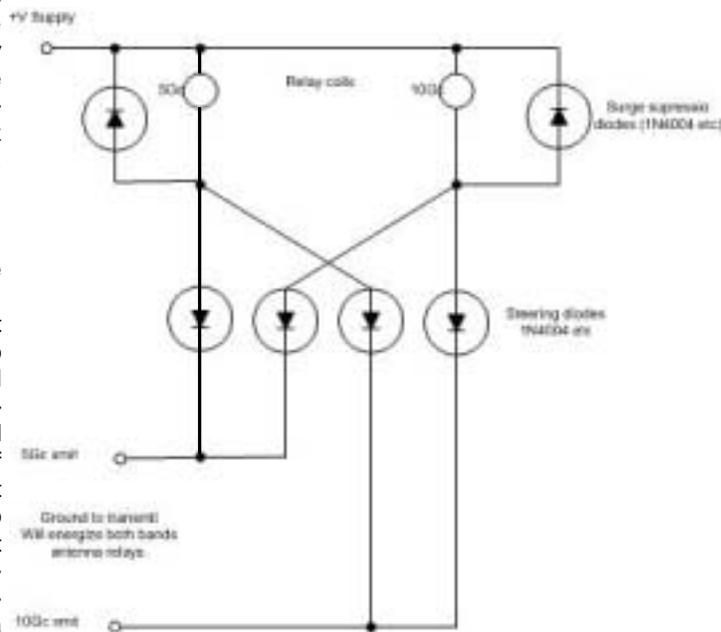
3. Measure the noise level from the preamp while transmitting on the opposite band. If it changes significantly from when not applying tx power then you are doing something to the preamp that might be destructive. You should use more isolation. But when using this method, pay attention to the points in the following paragraphs so as not to come to the wrong conclusions due to other factors. Methods 1 or 2, above, are the best. Remember that we are not talking here about catastrophic destruction of the devices, but rather a longer term degradation due to overdriving or overheating.

Continued on next column....

Preamps affected this way will not usually fail completely, but they may become noise generators or exhibit high gain but very poor noise figure. The tests described in 2 and 3 above should be short enough so that they will not cause any damage.

You should be aware that even when not applying drive to the opposite transmitter, if it is powered up and connected to the feed it could produce noise that would be strong enough to adversely affect receive sensitivity on the opposite band. The easiest way to avoid this is to always have the amplifiers powered down when not transmitting - a situation you likely already have. But in test 3, above, you should make sure that you do not hear a noise increase when the opposite band amplifier is connected to the antenna and powered up, but no drive is applied. If you do hear a noise increase that way then it will be harder to properly evaluate the effects of applying power using that test. Finally, I do not know how much effect impedance changes at one of the input ports of the feed might have on the input impedance of the opposite band. For instance loading or opening the 5.7 input port might cause the impedance of the 10 GHz input to change. If this happens then the gain of the connected 10 GHz preamp can change quite a bit, making measurements difficult. And, if you plan to optimize your feed to each preamp (by some kind of matching tuning) then it should be done with both preamps connected and powered up so that the matching is done when the system is operating as it will be under actual field conditions. Hope this helps, **73, Russ K2TXB** ~~~~~

I assume hot end of your antenna relay is tied to +V (12V or 24V). The steering diode matrix gets inserted in the cold leg of



each transverters antenna relay. If your transverters are in separate boxes, you'll need to bring the cold end of the relay and the line that used to go there out to a little box or board between. Using feedthrus on each will be the cleanest way. **73, Joe AA3GN** ~~~~~

Do as I do key both bands relays at the same time then you have no chance of ruining the other bands pre amp. I use a diode in each keying circuit so everything but the RF is switched and there is no loop in the keying circuit. I can tell you now you will destroy your 5.7 front end with as little as 200 mwatts. Been there done that. **73 Bill, AA2UK** ~~~~~

I called K1WHS (who makes those dual band feeds for DEM) about this very question. He assured me that the (cnt'd->p7)

Coax Cable for the Microwaves Ron J. Whitsel W3RJW

411 GHz QSO in NA (from the microwave reflector 11/11/03)

I recently added a short article to the Technical section on my WEB page dealing with coax loss at microwave frequencies. Jumpers and short pieces of coax are often needed when setting up a microwave station. Be very careful with the coax cable you use. **Never, never** use RG-214 at any frequency much above 3 Ghz unless you have need for a dummy load. LMR-400, both the standard and the ultra flex, are usable all the way up to 10 Ghz when some loss can be tolerated. Below are measurements taken on new pieces of RG-214 and LMR-400 Ultra flex. This data can serve as a guide in making coax use decisions. <http://www.users.voicenet.com/~w3rjw/>

Frequency	RG-214	LMR-400
1.227 Ghz	- 0.61 dB	- 0.45 dB
2.032	- 0.77	- 0.59
3.502	- 1.20	- 0.91
5.690	- 2.50	- 1.50
10.100	- 50.1*	- 1.80 * There may be a 'waveguide beyond cutoff' effect in this measurement, but loss is loss.

I'd like to report what I believe to be a first for QSOs above 400 GHz here in the US. (DB6NT was first on the "band" at 411 GHz with a 50 meter QSO) On Nov 11, 2003 at 02:15z WA1ZMS/4 worked W4WWQ/4 on a frequency of 403 GHz over a distance of 0.521km. W4WWQ/4 was located at: 37-21-14.1 79-10-13.6 WA1ZMS/4 was located at: 37-21-23.6 79-10-31.1 The weather at the time of the QSO was: Temp: 3.9C Dew Point: 1.1C Relative Humidity: 82% Station pressure: 1006mb The weather conditions result in a total atmospheric loss of 14.4dB per km! Gear used for the QSO was the same basic gear used for our 241GHz QSOs last year but this time with new 30cm parabolic dishes. The feeds used on the parabolas are W2IMU horns designed for 241GHz, so the feed is over-moding and thus not optimal on 403GHz. When colder and dryer winter WX arrives, we have hopes of trying to break the 1km distance barrier. I hope to have photos and .wav files posted at www.mgef.org sometime very soon. Although any QSO above 300 GHz is considered the same "band" by some, I would think that a QSO in the 400 GHz range would be of interest to several people active on microwaves and just wanted to report it. 73, Brian, WA1ZMS/4

More on Dual Feeds (cont'd from p6)

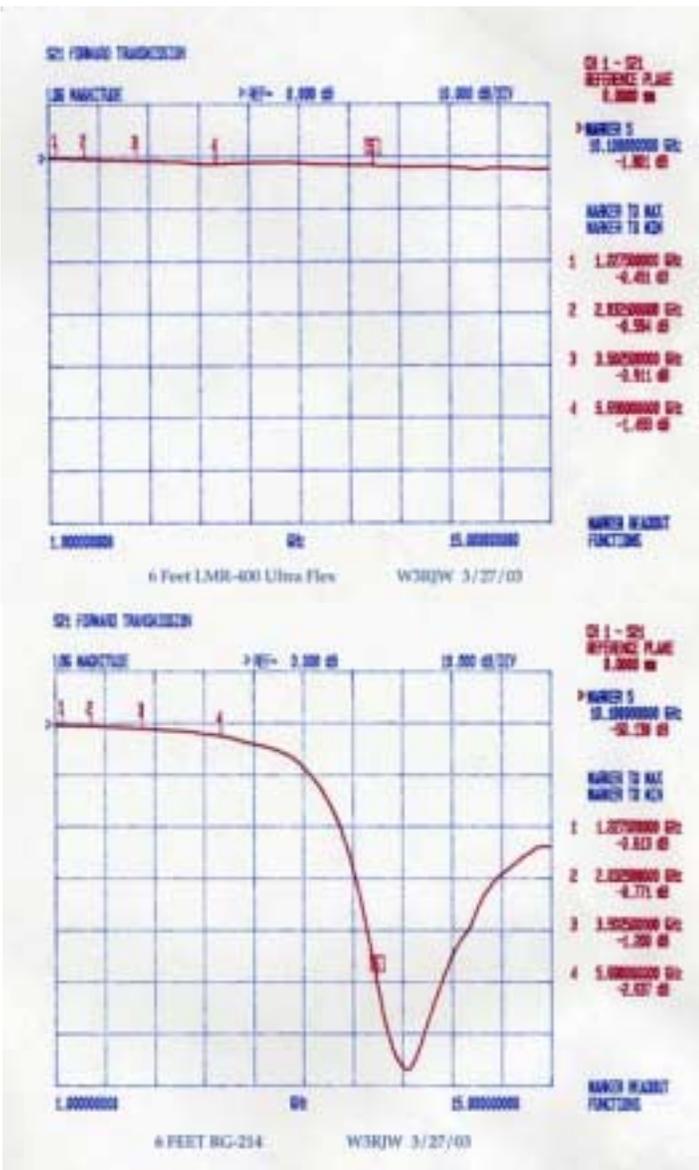
isolation is sufficient (around 40 dB worst case) that transmitting on one band will not blow out the front end on the other. However, he was talking about 1-2 watt systems (like I have on both bands). He did say he had heard about problems with higher power (I think he said 100 watts output). 73, Wayne N6NB

Happy to be a Packrat Again!

After an almost 20 year hiatus, Steve Simons, KF6AJ, has rejoined the ranks of the club. He was a member in the late 70's and early 80's, and has returned as an active participant in the club's activities. Welcome Back!!



Steve, KF6AJ



Joel Knoblock W3RFC
www.therfc.com
The R.F.Connection
213 N. Frederick Ave. #11WWW
Gaithersburg, MD 20877 USA
 World wide shipping via FED-EX or US Post OFFICE
 Tech Line 301/840-5477
 Order Line 800/783-2666 All major credit cards taken
 Fax Line 301/869-3680
 Hours: Monday-Friday 9:30am-5:30pm Eastern

Robert A. Griffiths
 Attorney at Law

KLETT ROONEY LIEBER & SCHORLING
 A PROFESSIONAL CORPORATION (215) 567-7857
 12th Floor, Two Logan Square FAX: (215) 567-2737
 Philadelphia, Pennsylvania 19103-2736 e-mail: ragriffiths@klettrooney.com

Tid-Bits

Late Report: Fall Microwave Sprint from FN43MJ (That's FN43Mumbo Jumbo) Well, it all started off fine. I fired up the big generator at a little after 5 am Saturday morning. Al, WA1T, and Ernie, W1MRQ showed up around 6 am, and we had the electric heat and the coffee pot on. It was nice and comfortable by about that time, and we started looking for customers for microwave skeds and such. We had the big amps running on 144 and 432 to attract sked makers. Things were slow until after 8 am. Conditions were poor but we were working people and having fun. Activity was good considering the bad conditions in Northern New England. We were working guys at a good rate thru 10 to 11 am. I went and checked the generator at 11:30 am and was surprised to see that the fuel tank was almost empty. It should not have been. I got suspicious and went looking and found that a pressure sensor in the internal fuel line (inside the generator housing) had ruptured and diesel fuel was spewing all over the engine. Well, I had to shut it down immediately, and missed the last hour and a half of microwave fun. I think we made 38 contacts total. No real good DX either. Most all contacts were in New England and VE2. We did work W1GHZ on 24 GHz from Mt Wachusett in MA. The generator problem was serious. It could have been bad if it had caught fire. (unlikely). The bottom line is that I have some repair time to do now on the machine. I ordered a new part, and am also looking for a possible microscopic air leak in a fuel line that is making it very hard starting. I think I need all new fuel lines as the ones there are old and have rubber in them. They get bad after years of use I guess. They were new in 1977!!! Cleaning up the diesel fuel mess is a bugger. That diesel oil is sure nice smelling too. I think I better bury those clothes I was wearing when I cleaned it all up!!! You guys who plug your rig into a wall outlet are very lucky. I wish I had the same situation here. I guess that is the price you pay for having a ham shack away from the road!! Too bad I am not that far off the road so that I can't hear power line noise! The noise on six and two has been awful of late. The microwave dishes are coming down for the winter. The storms are hard on that stuff up on that ridge. We have already seen 60+ mile wind gusts and its still October! **73 from "Pungent" Dave K1WHS** ~~~~~

My big project right now is getting K8GP capability on 120, 144 and 248 GHz. I have two systems running narrow band on 76 G now. 24 and 47 systems were done a couple of years ago. Glad to hear his 10G system worked well. Terry and I are focused more on K8GP infrastructure these days - getting the buses in better shape, tower mounts cleaned up, new rotors for the microwave bands (Orion 2800's) stuff like that, new, "dedicated" rover operating position for microwaves (33cm and up). I have new dish feeds ready for 2304 and 3456 dishes, Terry and I have to figure out how to add another dish to K8GP as we were using a dual band feed for those bands before. With our new power levels (over 120 watts out on each) the dual band feed "LUA" design has insufficient isolation and we have experienced damage to equipment on one band or the other. Relays to isolate using the dual band feed approach is too much of a cabling and control nightmare for our portable type of operation. **73, Owen K6LEW** ~~~~~

Atlantic Division Director Bernie Fuller, N3EFN, has announced the appointment of a new Assistant Director to the Division leadership team. The new Ass't Director is John V. Rodgers, N3MSE, of Butler, PA. John's primary responsibility will be the development of quality training materials for use by the members, clubs, and other organizations within the Atlantic Division. Topics may include such subjects as ham recruitment, served agency operations, licensing, field day operations, contesting and others of widespread interest. Please join us in welcoming N3MSE to his new position. **Bernie Fuller-N3EFN Atlantic Division Director**
Bill Edgar, N3LLR Atlantic Division Vice Director

Activity Reports-Solar Flare Early November

Over the 2 day period I made 48 contacts in 30 different grids almost all on CW - picked up 6 new grids in the process. Just worked 6 meters. My 6 meter station consists of an Icom 746 - 100 watts - to a 3 element beam only up about 30 feet. Worked mostly to the north and west. Farthest north was FN25 - west was EN50 - southwest was EM86 and south was FM16. Signals were very rough sounding - not true tones at all - and hollow sounding. The cw part of the band was packed - stations all the way from 50.8 up to 50.105. Grids worked were - EN50, EM69, EN60, EN70, EM86, EN80, EN82, EM95, EN90, EN91, FN00, FN02, FN03, FN04, FM16, FM18, FM19, FN11, FN12, FN13, FN20, FN21, FN25, FN30, FN31, FN32, FN33, FN35, FN42, FN53
My first aurora - long live CW. **Bill - K3EGE**

The widely reported solar flare gave us plenty of warning. I got home late on October 29, had dinner with Marietta, and turned on the radio at 2345z. Sure enough, two meters was alive with auroral signals, some of them extremely loud. I found a clear frequency and called CQ on CW, and made 31 aurora QSOs in the next hour. Then I checked 222 and made several contacts there, finishing up with a few on 6 meters. I didn't stay up late, but I hear that six meters got very interesting with some auroral-E propagation in the wee hours. When I got home the next evening, the buzz was underway again. This time I concentrated on the higher bands at first, and managed a number of QSOs on 222 and one on 432. Then back to two meters, where 19 more stations were worked in a little over an hour. All in all, they were a great couple of days on the VHF bands. **73, Joe, K1JT**
Grids worked included the following:
50 MHz: EN 18
144 MHz: EM 25 36 48 54 55 57 59 79 84 98 99
 EN 34 61 71 73 80 82 90 91 93
 FM 07 18 19
 FN 00 02 03 12 21 41 42 54 96
222 MHz: EM 58 95
 EN 50 EN81
 FM 19 FN 42
432 MHz: FM19 ~~~~~

More from the November meeting—>
The Amplitron, amplifier and magnets together



Other microwave generating and amplifying devices, including the 3mm wave magnetron (near magnifying glass on index card)



The 30th Annual Eastern VHF/UHF Conference: April 16, 17 & 18th, 2004

The conference will be held on April 16, 17 & 18th, 2004 at the Radisson Hotel in Enfield, Ct. The conference has been moved to the spring time frame to help alleviate numerous conflicts with other ham radio activities and vacation schedules in the August time period. Quest speakers, proceedings articles and overall volunteers are being solicited to help out. Prize donations are also being solicited from vendors and members alike. A WEB site link is being developed on the NEWS WEB site and will be available shortly with further information. Speakers confirmed to date:

Jeff Klein - K1TEO: 16 years of contesting from CT.
Gerald Youngblood-AC5OG: Software Defined Radios 1000 Beta.
John Sorter - KB3XG: 2304 Amplifier Conversions.
Tentative:
Fred Stefanik-N1DPM: Multiple Stacked, Short 2M Yagis.
Ken Schofield - W1RIL: Reflock Board Construction.
Del Schier - K1UHF: What's new at West Mountain Radio?

Door Prize Chairman and DXCC Card Checking (By Appointment only): Stan Laine WA1ECF Mail Address - P.O. Box 1295, Forestdale MA. 02644. UPS/FEDX (Only) 24 Madison Dr., East Sandwich, Ma. 02537.

More to follow as it develops. Bruce Wood N2LIV Conference Chairperson. bdwood@erols.com, (631) 265-1015 (H), (631) 293-9600 (W) Pre registration is encouraged and a discount/ extra prize drawing ticket will be provide to help entice this method, online registration is also being explored. Steve Simons - kf6aj@arrl.net will handle registration when it opens. Hope to see you all there, a great program has been arranged for all.

Websites and Tid-Bits

222 QRO projects using Russian tubes designs at <http://www.nd2x.net/you1aw-222.html>

All versions of CPLD configuration that I've made on request are now available at the reflock pages. Maybe they be of interest to others. <http://w3ref.cfn.ist.utl.pt/cupido> Good "lock". Luis Cupido. CT1DMK

The design files from my paper in the Microwave Update 2003 Proceedings on hairpin filter design using Serenade software are now on my web page: http://www.w1ghz.org/small_proj/small_proj.htm
The paper is there with color figures also. 73 Paul W1GHZ

From the 432 & Up EME News: N3FTI: Steven n3fti@yahoo.com reports on his progress toward 3 cm EME – I just got the AZ-EL mount back from the machine shop. It is going to the commercial sandblaster today. I tried to sand blast it with my little home system and decided it would just take too long as my compressor just can't keep up! After some additional thought, I have decided to mount the xverter, LNA and TWTA at the feed instead of using waveguide to feed the dish, and have ordered another DEMI xverter kit. I have also started construction of the feed and mounting the electronics package. The project should speed up once the dish and mount are up!

Michael OH2AUE, has converted a 900 MHz cellular amp for weak signal (100 watt!!) work on 1296. (*Nice! Everyone should see, Ed*) <http://www.kolumbus.fi/michael.fletcher/xrf187s.htm>

The San Bernardino Microwave Society reports that they will move the International Microwave Club Contest to the third weekend in May of 2004. This is a 2304 and up contest, scored only for clubs as a group, and based on total Km worked with multipliers for power classes. More details to follow.

C3i[®]

Top Quality, Performance, Durability, Cost Others make claims, C3i[®] Delivers

Call, FAX, or E-mail or Order from our Web Site

Our K1FO and K1JX VHF and UHF Antennas are proven Performers in Contest after Contest @ K8GP / FM08fq

GO WITH THE WINNERS

VISIT OUR HOME PAGE TODAY FOR MORE DETAILED INFORMATION
<http://www.c3iusa.com>

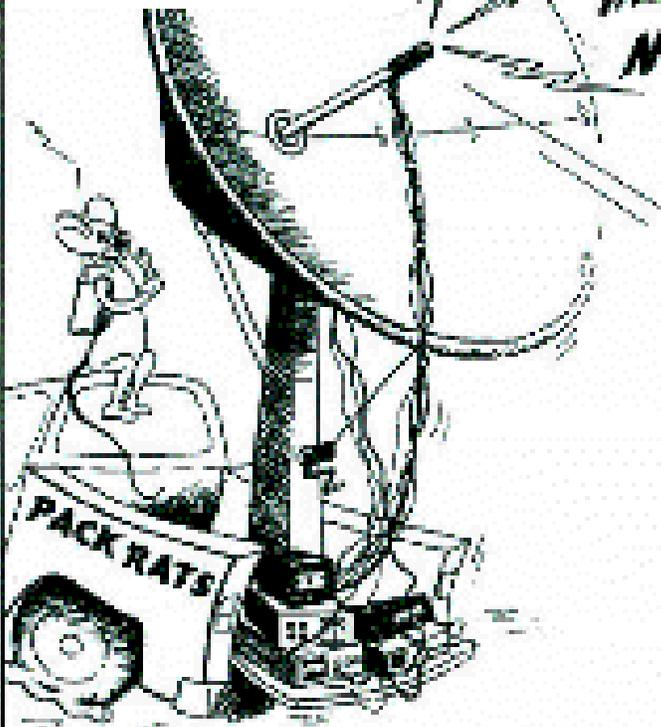
1-800-445-7747 Antennas

Owormser@c3iusa.com sruffin@c3iusa.com



CheeseBits
206 Kimberton Drive
Blue Bell, PA 19422

**MEETING
NOTICE**



P4-5: Small Station EME
P6: Dual Band Feed Info
P7: Coax at 10 GHz? No!.
P8-9: Reports, Tidbits

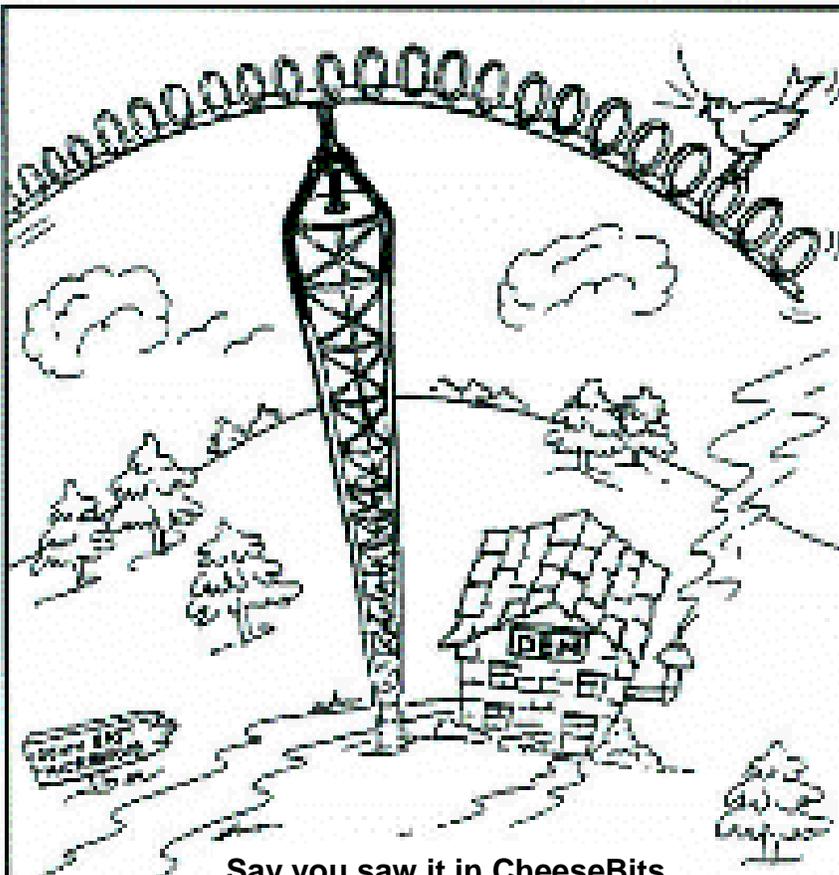
Packrats:

Please complete your page 3 contest questionnaire and send to me asap. Tnx es 73, Rick, K1DS

**HAPPY &
HEALTHY
HOLIDAYS**

FIRST CLASS

MT. AIRY VHF RADIO CLUB, INC.



Say you saw it in CheeseBits

DOWN EAST MICROWAVE

Manufacturers and Distributors
Of VHF/UHF/SHF Equipment and Parts
50 to 10,368 MHz

- Microwave Loop Yagis
- No-Tune Linear Transverters
- Linear Power Amplifiers
- Low Noise Preamps
- Coax Relays, Coax Cable, Connectors
- Crystals, Chip Capacitors, MMICs, Transistors, RF Modules

For All Equipment and Antennas:

Steve Kostro, N2CEI

954 Rt. 519

Frenchtown, NJ 08825

Tel. 908-996-3584

Fax. 908-996-3702

<http://www.downeastmicrowave.com>