



CHEESE BITS

W3CCX
CLUB MEMORIAL CALL

ARRL
Affiliated
Club



Volume LI

November 2010

Number 11

PREZ
SEZ:

It's beginning to feel a lot like summer is over. I even had to scrape the windows before driving off to work the other day. I am thankful that I experience these changes

in the weather.

With the changing of the weather we are rapidly approaching Thanksgiving Day. You know, too many parades and football games to watch and way too much food to eat. But we give thanks to those who prepare the food, the privilege to sit, eat and to enjoy family.

It is a time to reflect on all those PACKRATS who help keep THE MOUNT AIRY VHF RADIO CLUB running smoothly through out the year. I know I will miss many; but, a few who come to mind immediately are your elected officers. Me – I'm thankful just to be alive after the terrible spring encounter with some less than honorable citizens in Philadelphia. I can't forget my wife Arlene, she has been most patient with my recovery, my late night musings on the computer and years editing Cheese Bits.

I am thankful to Phil, K3TUF for his efforts to arrange the continuous series of interesting programs that make the monthly meetings a good reason to get out for the evening.

Thank you to Drex, W3ICC for gathering the coffee soda and snacks every month. To Dave W3KM thank you for a terrific job keeping track of expenses and paying the bills. And to Jim WA3EHD who, with the help of his wife Pat, does an excellent job handling the correspondence.

The recording secretary, Rich KB3NRL literally records the meetings then translates all that noise into an accurate record for the business side of the club. I am also thankful for Walter WA3AQA whose very detailed minutes of the meeting set a benchmark for accurate reporting of the proceedings and whose sense of humor always managed to keep us smiling.

We have a superb Board of Directors to be thankful for; Ed WA3BZT, despite the medical challenges his wife faces almost daily and his horrific accident this summer, keeps track of the health and well being of the membership; George, KA3WXV is always willing to lend a hand on a project; Gary WA2OMY; not only does he host the White Elephant Sale in July, but is also there with the technical support and has been a guiding light on several of the last major equipment acquisitions and their conversion to amateur use; and lastly to Michael KB1JEY, always looking for the best deal, nudging things along and his lovely wife Carol for her persevering during the various outings and hosting the family picnic.

I must not forget our Past President, my mentor in the leadership game, Rick K1DS, never angry and always willing to provide guidance and a lending a hand.

Al, N3ITT has been a constant driving force in keeping the June Contest effort moving along with K3TUF and Steve K1SMS. Bill K3EGE keeps the rovers organized, issues QSL cards and keeps us all in line for the January and June contests. This kind of dedication to projects is hard to find and too often goes

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PACKRAT BEACONS - W3CCX/B

FM29jw Philadelphia, PA
50.080 144.284 222.064 432.286 903.072 1296.245 MHz
2304.043 3456.207 5763.196 10,368.062 MHz (as of 1/08)

MONDAY NIGHT NETS

<u>TIME</u>	<u>FREQUENCY</u>	<u>NET CONTROL</u>
7:30 PM	50.145 MHz	K3EOD FM29II
8:00 PM	144.150 MHz	N3ITT FN20kl
8:30 PM	222.125 MHz	K3TUF FN10we
8:30 PM	224.58R MHz	W3GXB FN20jm
9:00 PM	432.110 MHz	WA3EHD FN20kd
9:30 PM	1296.100 MHz	K3TUF FN10we
10:00 PM	903.125 MHz	W2SJ FM29LW

Visit the Mt Airy VHF Radio Club at: www.packratvhf.com or www.w3ccx.com

unrecognized, and worst, unappreciated by many. Thank you Gentlemen.



Phil, WA3NUF, Ron W3RJW and Jack K3CX have been nursing the beacons along. Yes it is difficult to not have a beacon operating but it takes a lot of effort to repair them and move the equipment in an out of the center city roof top site. It is difficult and it takes time. I'm thankful these volunteers are willing to give their time and talent to tend to keeping all 10 beacons running. Phil and Ron were also responsible or organizing the estate of Ernie W3KKN. John K3DMA, despite commuting to Pax River every week did a terrific job disposing of another estate.

Remember too, to thank Bob W2SJ and K3JJZ for their helping hand with K3EOD's and W3OR's station repairs plus helping keep track of newly acquired equipment, and fulfilling the promises of "who gets what" with each new batch of goodies.

So; how could I forget – Lenny W2BVH – our editor; whom, with WA3BZT, keeps this newsletter coming every month. **They too are thankful every time you send them something to help fill the pages** with hints, kinks and stories to share with your fellow PACKRATS.

There are so many more PACKRATS to thank. This is truly a wonderful gathering of individuals with so much talent to share in the club contest efforts and promoting the growth and use of the bands above 50 MHz.

To change themes a bit - We have another terrific meeting coming in November with a presentation on HDRADIO. I hope to see you all there, if you can not make the meeting please have a safe and thankful Thanksgiving.

Meanwhile...**LISTEN FOR THE WEAK ONES!**

73, de W3GAD

Pix from the October Packrat Meeting: An EME Extravaganza

The October Packrat meeting featured an elaborate set of tutorials on EME operation to tempt the many members who do not use this communication path to give it a try. As the illustrious set of presenters showed, EME can be simple (not a heck of a lot more complex than many of our current stations) or it can be very elaborate and many more EME QSO's can be achieved with the more complex setups.

The presenters and the topics covered were:

Joe K1JT - "MC and EME Fundamentals"

Ed WA3BZT - "Antenna, Preamp, Feedline"

Russ K2TXB - "Back End, Setup, Making QSO's"

Mike, WB2RVX - "EME and Contesting"

Chris W3CMP - "Portable EME"

John W3HMS - "1296 EME with a 3M Dish"

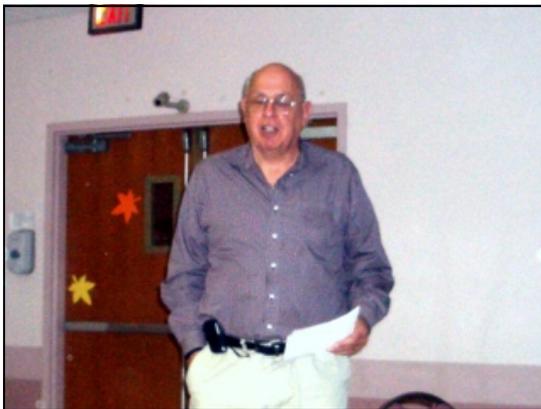
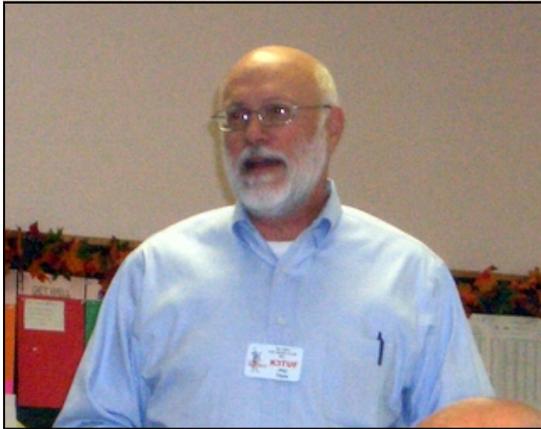
The consensus was that this was a super presentation. If you missed it you can get a flavor of what was presented by looking at K1JT's Powerpoint slides at http://www.physics.princeton.edu/pulsar/K1JT/PackRats_Oct_2010_EME.pptx

Here are some pictures from October.



Pictures courtesy K3JJZ

....more October pix



Some Test Results on a Surplus Compaq 50 Volt Power Supply

A few months ago used, surplus HP/ Compaq high power regulated supplies found their way onto the market in large numbers. These supplies were originally used to “hot swap” power in large racks of server computers.

Some Packrats (myself included) picked them up for very reasonable prices. (In my case it cost \$14.99 plus \$13 shipping). On paper, at least the supply seemed ideal as a power source for a high power SSPA. So spending \$28 on a 3Kw regulated supply seemed like a no-brainer.

Lately more and more solid state power amplifiers seem to require 48 or 50 volts to power them. As manufacturers master the art of producing high voltage rf transistors they bring them quickly to market. The high voltage parts make it easier to fabricate a power amplifier with higher efficiency and lower IMD than at 28, 26 or 13.5 Volts

Packrats who got one of the WCBS-TV 6 Meter driver amps have direct use for these supplies. But its also quite likely that there will be other uses for them as time goes on and more 50 volt equipment finds its way onto the surplus market at reasonable prices.

Other than basic specifications of 51 volts at 57 amps out and 220 VAC single phase in, the power supply is pretty much a pig in a poke.

To see how well it works, I made some measurements on the supply and here is what I found.

The power supply is a
 Compaq Series ESP120
 Part Nr 226519-001 (same P/N for HP)
 Spares #253232-110
 Output rated at 51.4V, 57A
 Input is rated at 220VAC 1 phase

I load tested it using a set of edge wound, open coil, stainless steel ribbon resistors. They are wound on porcelain frames and the coils are easily tapped with a simple alligator clip, to change the load. Though only rated at around 800-1000 watts the resistors are very rugged and easily stand an overload with no harm.

The load was wired to the power supply with around 3-4 ft (total) 10 Ga. teflon insulated wire.

Here are the results of the load test:

Load (A)	P/S Voltage	Load Voltage
0	51.5	XX
19.4	51.2	50.8
25.2	51.2	50.6
37.5	51.2	50.2
46.5	51.1	50.0
48.0	51.1	49.9
49.0	51.1	49.8
50.5	51.1	49.8

Tests past 50.5 amps couldn't be made because of limits of the meter.

I also checked the output ripple at no load and at a load of 37.5 amps with an oscilloscope. At first glance, the output has 1.3 volt spikes repeating every 10 uS. This is probably the switching rate of the regulator (e.g. 100 KHz). And it doesn't change in amplitude or frequency between no load and 37A load.

A close-in look at a single spike of "ripple" showed it to actually be an (approximately) exponentially damped sine wave where the observed "spike" was the first cycle of the waveform. The ringing of each sinusoid is down to a very low voltage after about 250 nS. (In true ham fashion, I didn't do actual 90% - 10% amplitude measurements). The frequency of the ringing waveform was around 50-60 MHz (hard to measure more accurately than that with a

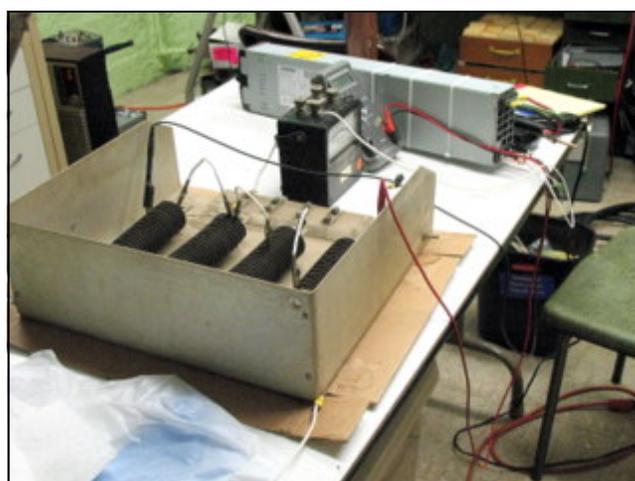
scope).

The only difference in the "ripple" waveform between no load and 37A load is that at 37A, after the initial 1.3V spike, there are 4 cycles of the sinusoid at a constant 700 mV. After that the waveform drops exponentially as at no load.

Conclusion: This is an excellent power supply for a high power SSPA. The regulation is very good. There is no provision for remote sensing, but short wire runs from the power supply to the load would make that unnecessary. An adventurous ham might be able to "reach inside" the supply and bring out sensing wires if long runs are needed between the supply and the amplifier. The ringing "ripple" waveform explains the "hash" some users have reported on 6 Meters. Taming this "hash" can be done. See John, KB3XG's recent 6 Meter power amp conversion article in recent issues of Cheese Bits for more advice on how to filter.

If you're interested, these power supplies are still readily available (at slightly higher, but still bargain prices) on "that auction site" and from commercial vendors. Type 226519 into Google and you'll be surprised at how many relevant responses come up.

Thanks to Phil, K3TUF for the loan of the load



Load test setup (oscilloscope not shown)

resistors and a very fine antique Weston ammeter for the testing. [73, Lenny W2BVH](#)

Grid Quiz

by Mike KB3GJT

Sometimes we hear a grid and have a hard time figuring out what direction that grid is from our present location. Since most of us have a fair idea where various cities are located, I've created this little quiz to test our knowledge. Match up the cities to the grids they lie in. Note that there are more grids than cities, so some grids will not be used.

If you score high on this quiz, you'll be able to start swinging the beam around without having to look up the heading first. A great tune up for the upcoming contests in January and June. See how well you do!

<u>CITY</u>	<u>GRID</u>
Atlanta	EN51
Cape Cod	CN87
Charleston, WV	EM87
Chicago	EN80
Denver	FN20
Havana, Cuba	DN87
Montreal	DM79
Nashville	EM98
Pittsburgh	FN35
Seattle	FN51
	CM97
	EL83
	EL89
	EM66
	EM73
	EN61
	EN90
	FM29
	FM41

Answers

Denver	DM79
Atlanta	EM73
Nashville	EM66
Cape Cod	FN41
Chicago	EN61
Seattle	CN87
Havana, Cuba	EL83
Pittsburgh	EN90
Montreal	FN35
Charleston, WV	EM98

Ron Allen W3OR Back on the Air

W3OR- Ron Allen in FM-28 is back on the air. Report by W2SJ & K3JJZ.

Bob & I visited Ron on 10/18/10 and 10/19/10 in order to help get his station back on the air. There will be a detailed report at a later time but for now we can report that Ron is currently able to sign into the nets on 50, 220, & 432 Mhz!

So point your beams south and listen for FM-28 on net nights.

See photos of antennas below.

73, K3JJZ



K1DS EME Trials and Tribulations

Dateline October 23, 2010, Blue Bell PA --- I spent the entire day setting up my 432 EME with a pair of 9WL yagis vert pol, AZ-EL and 180 watts and preamp with only 10' of superflex feedline to splitter.

Saw the moon at about 7 degrees of elevation. Tried CW with Zdenek--I heard him 2x but he heard nothing from me.

The problem is I discovered that somehow my WSJT is not working correctly. Despite going over all the connections, it would not turn on the xmt. **I could use an Elmer** to help me trouble shoot. **The other major issue**, which I did not previously encounter when using my laptop (Compaq Presario) on the 20m contacts and on 2m using MAP65 with my ARR preamp and ARR receive converter and SDR-IQ, or on 1296 when I made contact with AI, is that the **RFI noise generated by the computer on 432 is LOUD!** I tried the tin-foil wrap and I have ferrites on the AC line, but to no avail. So I was stuck trying CW only.

I need to disassemble later tonite when the PHILLIES ballgame is over, and after I try again with OK1DFC at 0300. Headed to Baltimore tomorrow to be with grandkids there. This may be the last gorgeous weekend of the fall to operate portable on my cul-de-sac.



Portable rig on a trailer in the cul-de-sac

AND LATER THAT NIGHT....

We had a good CW QSO with several exchanges @03:15 tonight operating portable on my cul-de-sac!!
73, Rick K1DS

Looks like Rick's hard work is starting to bear fruit - W2BVH



Neighbor inspecting the rig



ON THE MOON!!!

The Wayback Machine

Gleaned from the pages of
Cheese Bits, September, 1960
(Vol. III Nr. 5a)

de K3IUV

(author's comments in italics)

- Heathkit's "improved" HW-29A (the Sixer) is announced. It includes changes suggested by the Packrats, and the League. Price \$49.95. It corrects fm and frequency jumps with this am rig (reported by the Packrats). The cover page featured a discussion on modifications to the Heathkit "Sixer", a popular beginner's rig for 6-meters.
- Smel-a Rhat (our own unidentified critic) bemoans the number of Hams that key down for testing, with no ID. (*The modern ker-chunkers still do the same thing on repeaters!*)
- A letter was received from Ed Tilton (K1HDQ, sk) refuting last month's claim, and stating that he is still the VHF editor of QST. The confusion resulted when Sam Harris (of Rhododendron Swamp Society fame) was announced as taking on the "World Above 50 Mc" (*now MHz*) column.
- A thank-you note received from The Braille Technical Press, thanking the Packrats for their cash contribution (*the rats have always been a thoughtful group*).
- Strong Aurora noted last month, affecting TV reception, and allowed some good Ham contacts. *Remember rabbit ears, Alliance rotors, and TV antennas?*

- A detailed technical dissertation is provided by W3HKZ (sk) on the uses and advantages of corner reflectors. Also notes on tests run to determine compatibility between SSB and AM stations. *Why would anyone want to operate that way?*
- It was noted that Don Lauer (K3GAY, [*anyone know if he is still around?*]) signed in to the 220 net from Allentown, using 4-watts and a TV antenna.
- A notice that the speaker of the evening at the November meeting would be yours truly, Bert, K3IUV. (*Yes Virginia, we did have transistors 50 years ago*).

*How about some feedback on this column. Do you want it continued?
Bert, K3IUV*

Ham Radio URL of the Month

This month we encourage you to check out <http://www.chris.org/cgi-bin/jt65emeA>, a web site dedicated to JT65, the digital communications mode that's optimized for EME communication.

You'll find a forum for setting up JT mode EME skeds and reporting echoes.

In addition there are separate pages for CW EME skeds, Terrestrial JT-mode skeds and a convenient bearing calculator (enter the grids at both ends of a path and it calculates the bearing and distance to that grid).

ENJOY!

— Lenny W2BVH

Events

For inclusion, please direct event notices to the editor.

ARRL January VHF Sweepstakes - Contest

Jan 22-24, 2011. Details to follow

June VHF QSO Party - Contest Jun 11-13, 2011 - Details to follow.

CQ WW VHF Contest - Jul 16-17, 2011. Details to follow.

August UHF Contest - Aug 6-7, 2011. Details to follow.

10 GHz and Up Contest (round 1) - Contest
Aug 20-21, 2011 Details to follow.

10 GHz and Up Contest (round 2) Contest
Sept 17-18, 2011. Details to follow.

International EME Competition (2.3 GHz +) - Contest Sept 24-25, 2011. Details to follow.

Microwave Update 2011 - Conference October 13 -16, 2011. Crowne Plaza Hotel, Enfield CT. Rooms \$99. Details to follow.

EME Contest, 50-1296 MHz (round 1) - Contest Oct 22-23, 2011. Details to follow.

EME Contest, 50-1296 MHz (round 2) - Contest Nov 19-20, 2011. Details to follow.

Strays...

The **Mt. Airy VHF Radio Club** just received a Check for **\$2100** in recognition of our volunteer work running the Flea Market at last year's Trenton Computer Fair. Plans are still in flux for the TCF in 2011, but it's likely we will be doing it again. Please consider volunteering to participate this year. Its fun and hard work that benefits our club. --W2BVH

Strays...

Congratulations to Packrat friend AI, K2UYH for achieving EME DXCC by working TI2AEM on 432!
Reported by Paul , WA3QPX

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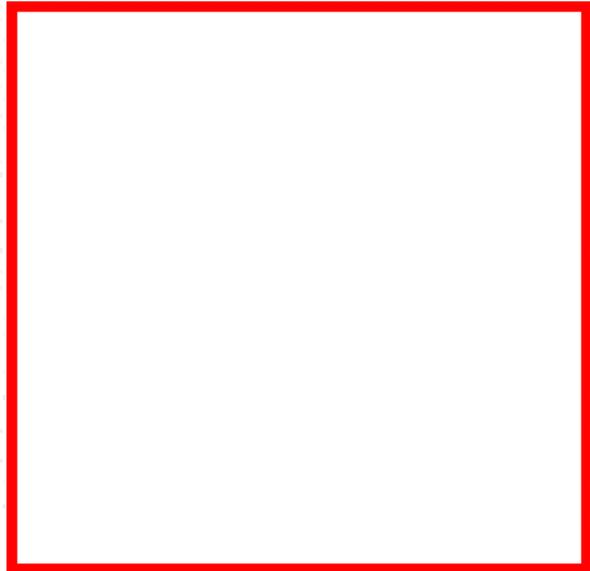
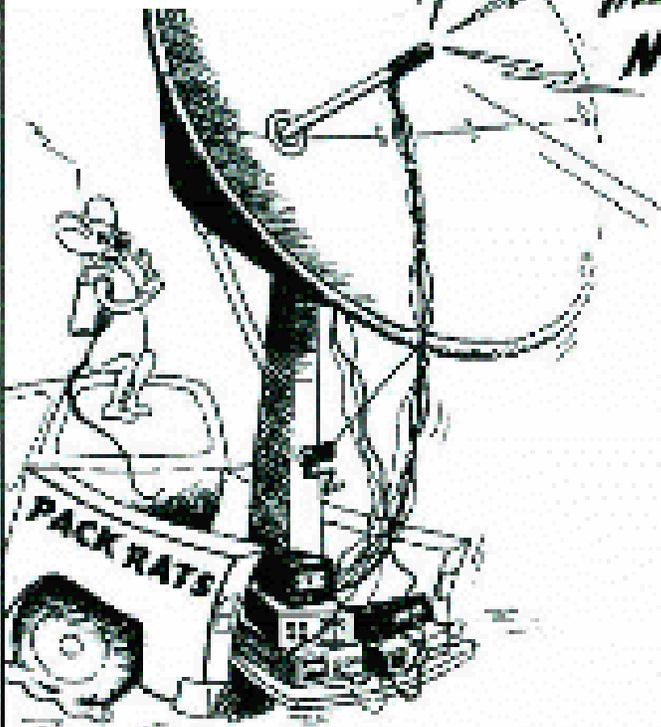
**Hours: Monday-Friday 9:30am-5:30pm Eastern
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Strays...

As of the publication date of this month's Cheese Bits, the pdf file version of the 2010 MUD Proceedings was still available for free download from http://www.lulu.com/items/volume_68/9451000/9451717/1/print/MicrowaveUpdate.pdf It's 29 MB but well worth the wait.

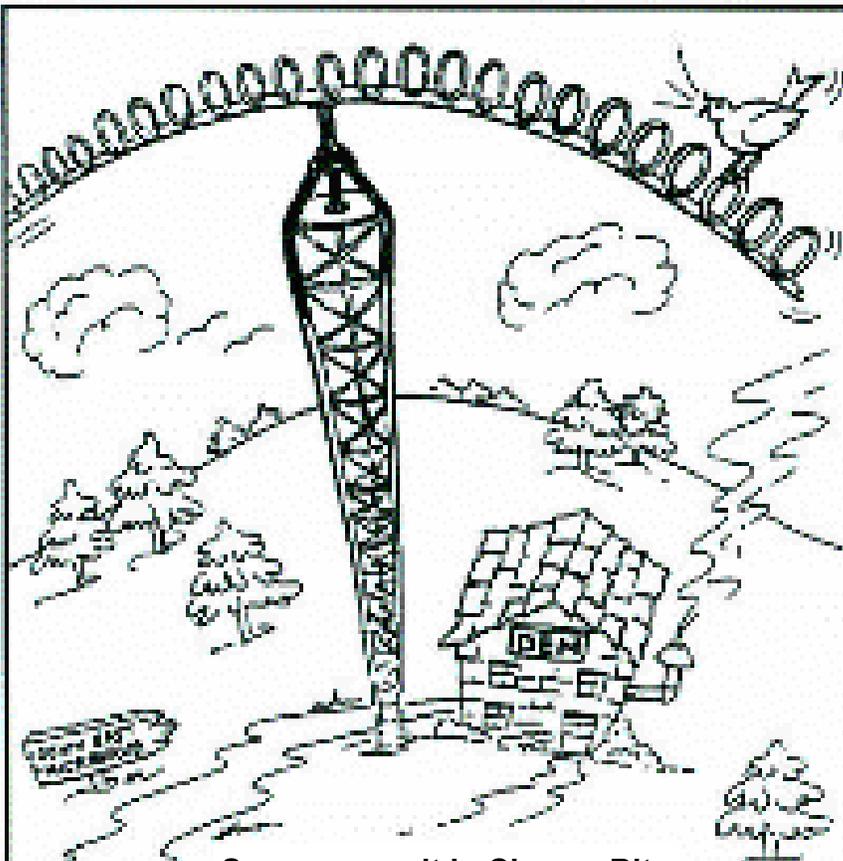
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