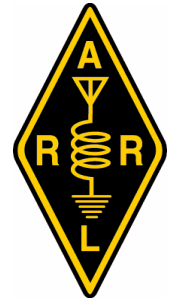




CHEESE BITS

W3CCX
CLUB MEMORIAL CALL

ARRL
Affiliated
Club



Volume LII

June 2011

Number 6

PREZ
SEZ:

“AND AWAY WE GO” –
Thank you Jackie Gleason
for my opening.

Yes **AND AWAY WE GO!**
Off to **Camel Back** and Big

Pocono State Park for the June VHF
Sweepstakes. **AI N3ITT** and **Michael**
KB3GJT have been doing a superb job of
rallying the troops and getting things
organized, along with a “little” (e.g. a lot of)
help lugging equipment hither and yon under
the skillful guidance and driving of **Elliott**
K3JJZ.

We will have some new operating positions
and some new band captains. It looks like
we may have some tropo opportunities on 6
meters as the **Hepburn Forecast** looks good
for the weekend. Also checking the
Tannersville weather forecast, at this writing,
it looks like only a slight (less than 20%)
chance of rain. Now all we need are
operators to keep the stations on the air for
the full 36 hours of the contest. If the
Hepburn is correct we may get some
transequatorial DX and decent DX to the
West on 6 meters. (There’s nothing like
wishful thinking!)

Before you know it the contest will be behind
us and we will be headlong into the election
of officers and the wrap up session for the

long weekend. That is on Thursday, 16 June
2011 (the Thursday following the contest).

As a reminder there will be no call in for the
June Board Meeting as we hold that meeting
on Friday evening at Big Pocono State Park.
As usual everyone is invited to attend – you
just have a bit longer of a commute this
month.

The July Board of Directors is the
reorganization meeting at my QTH on 14
July. One week later is the **ANNUAL WHITE**
ELEPHANT SALE at the QTH of **WA2OMY**
in Norristown. This is usually very well
attended. Bring a chair and your wallet. The
doors Open at 7 for shopping. We start the
proceedings about 7:30 with a brief business
meeting followed by a lively auction led by
K3JJZ and K3IUUV with lots of help from
WA3YUE, who keeps the goodies coming to
the auction block.

In place of the August General meeting,
August 13th has been planned as the
PACKRATS FAMILY PICNIC. So bring the
family, the swim suits, towels and tanning
lotion. N3ITT has a beautiful pool and there
will be plenty of great food. The meat and
beverages are on the PACKRATS. The
sides are “pot luck” or “covered dish” style so
bring a favorite salad, veggie platter or
dessert to share. We won’t mention rain but

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

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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 FN20ki
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

just in case Al has planned the 14th as a dry day



Watch Cheese Bits for information on meeting subjects. We have several very interesting programs lined up for the fall meeting thanks to the efforts of Phil, K3TUF. Phil is always open for suggestions for programs. You can also check the activities on the PACKRATS website.

The ARRL is seeking comments and suggestions for the VHF Contesting Committee. They're soliciting suggestions on what can be done to encourage hams who have expanded coverage, (i.e. 6, 2 and/or 432) HF rigs to **try VHF contesting**

AND AWAY WE GO – off to plan meals, pack, finish gathering the goodies and tools needed to keep the food on the table for all those hard working contesters next weekend.

AND AWAY WE GO – Off to check for more activity on 6 meters before the alarm and another day of work.

LISTEN FOR THE WEAK ONES !
73, de W3GAD

Editors Column

Greetings Packrats!

Not much room this month for many comments from your editor, except to encourage you to participate in this coming weekend's June VHF Sweepstakes, either from your home QTH or by visiting the club operation at Camelback. Let's hope the weather and the propagation are favorable!

73, Lenny W2BVH

WA3QPX ANTENNA FARM

By Paul , WA3QPX

Awhile back, Paul, WA3QPX submitted a very nice variety of pictures of his antenna farm. Here's what Paul is using. --W2BVH



<--- This pic is an earlier antenna arrangement . I had a big problem getting the stacked 6m M2 6m7jvh to achieve a decent match. Then I read K1WHS's talk on stacking antennas. The rest of the pics are the result. All the aerials are happy and performance is vastly improved. Dave, K1WHZ gave this talk at a Packrat conference some years ago and is available at the web site for Directive Systems . See <http://www.directivesystems.comstacking.htm>



^ On the terrestrial tower: For 6m, two M2 6m7jvh with 15dbd. For 220, one M2 222 7wl with 16.2dbd. For 432, two M2 432-9wl with 20dbd. For 903, one Directive Systems looper 3347lyk with 23.4dbi. For 1296, two Directive Systems loopers 2355lyk with 24dbi. For 2304, one Directive systems 1376ly looper with 23.4 dbi. For 3456, one Directive Systems looper 9112lyk with 25.2d. Micro tower is also a 72ft crankup layover



^ 2M: four M2 2m xp28 crosspolarized antennas with 21.3dbd gain. Used for eme and terrestrial on a 72ft crank up layover tower. These antennas are on a computer controlled Az-EI mount. Its just too distracting to work an EME station and hand control the antennas at the same time. Not impossible but a lot of work.



Look closely it's not a 4 el 2MFM yagi. It's really eight M2 432-9wl with 26 dbd used for eme on a layover pipe tower at 20ft.



The other two towers (above right and to the right) are 55 foot crankup layovers for HF with monobanders , 10 through 20. The feedlines are LMR600 except for 2m which is 1 5/8 hardline and HF which is some kind of RG8. All the vhf micros are using SSB mast mounted preamps except for 3456 which uses W5LUA preamp by DEMI. Not shown are a 6m, M2 5element yagi , a 6m Ringo and 6m M2 loop on the garage for spotting. The antennas are always a work in progress.



Additional notes: All the towers are motor driven to raise except for the pipe tower. The vhf and the micros towers are motor driven to lay over. These are the ones I play with the most. Sometimes when I am trying something new I have to lay them over a couple of times in one day. On 3456 and 2304 I also have to raise them to their full height to hear the beacon and if I can't hear the beacon I have to go through the whole process again! Oh well! Getting too old to do the cranking by hand. I hope to have a rundown of the shack equipment in a future issue of Cheese Bits. I hope you enjoyed this quick tour of the aluminum at WA3QPX.

73, Paul WA3QPX

RF and Microwave Power Meter Basics

There are a number of ways in which RF power (including microwave power) can be measured. There are two main types of RF power meters that are used:

Through-line RF power meters:

These RF power meters take a sample of the power flowing along a feed-line and use this to indicate the power level. These through-line RF power meters are used on live systems, such as radio transmitters as a check of the outgoing power. They are normally directional and can be used to check the power travelling in either direction. Measurements made by these RF power meters are frequency insensitive - they measure the total power entering them regardless of frequency (within the overall frequency limitations of the instrument).

Absorptive RF power meters: As their name implies, these RF power meters absorb the power they measure. Typically they utilize a power sensor that may be one of a variety of types. This generates a signal proportional to the power level entering the sensor. The sensor signal is coupled to the main instrument within the overall RF power meter to process the results and display the reading. Measurements made by these RF power meters are frequency insensitive - they measure the total power entering them regardless of frequency (within the overall frequency limitations of the instrument). The absorptive RF power meters generally have digital readouts these days. An analogue voltage is generated within the power sensor or power head and this is fed into the main RF power meter unit. With high levels of digital signal processing available these days, many RF power meters contain significant levels of processing and this can enable a variety of signal types to be measured. When selecting an RF power meter or a microwave power meter, it is important to select the correct type of power sensor. There are a number of different types of power sensors, and these are suited to different types of RF power measurement. Some types of RF power sensors are suited to make measurements of average power, whereas others can make measurements of pulse power or peak envelope power.

Spectrum analysers and other instruments:

Instruments such as spectrum analyzers have power measurement capabilities within them. These instruments are able to measure the RF power level on a particular frequency, but cannot measure the total power entering on all frequencies. Spectrum analyser RF power measurements used to not be accurate, but with the improvements in their technology, the RF power measurements have far greater levels of accuracy. Each type of RF power meter is used under different circumstances. However the absorptive RF power meter is the most widely used for accurate laboratory measurements. The throughline power meters tend to be used more for field applications. *From Radio-Electronics.com (Digi-Key)*

Units for RF and microwave power measurements

Power is a measure of energy per unit time and it is typically measured in watts - this is a energy transfer at the rate of one Joule per second. Although the watt is the base measure, often this is preceded by a multiplier as power levels can extend over a vast range. Levels of kilowatts (10^3 watts), or even megawatts (10^6 watts) are used in some large power installations, whereas other applications have much lower levels - milliwatts (10^{-3} watts), or microwatts (10^{-6} watts) may be found. In some instances power may be specified in terms of dBW or dBm. These use the logarithmic decibel scale but related to a given power level. In itself a decibel is not an absolute level. It is purely a comparison between two levels, and on its own it cannot be used to measure an absolute level. The quantities of dBm and dBW are the most commonly used. dBm - This is a power expressed in decibels relative to one milliwatt. dBW - This is a power expressed in decibels relative to one watt. From this it can be seen that a level of 10 dBm is ten dB above one milliwatt, i.e. 10 mW. Similarly a power level of 20 dBW is 100 times that of one watt, i.e. 100 watts. A more extensive table of dBm, dBW and power is given below:

dBm	dBW	Watts	Terminology
+60	+30	1000	1 kilowatt
+50	+20	100	100 watts
+40	+10	10	10 watts
+30	0	1	1 watt
+20	-10	0.1	100 milliwatts
+10	-20	0.01	10 milliwatts
0	-30	0.001	1 milliwatt
-10	-40	0.0001	100 microwatts
-20	-50	0.00001	10 microwatts
-30	-60	0.000001	1 microwatt

This article was originally published in Vol 25 Nr 2 (Feb 2011) of the Midwest VHF-UHF Society newsletter. Thanks!

MICROWAVE UPDATE 2011

October 13 - 15, 2011 **Joint Conference Announcement and Call for Papers - Microwave Update 2011 & The 37th Eastern VHF/UHF Conference.** Both sponsored by the North East Weak Signal Group at Holiday Inn, 1 Bright Meadow Blvd, Enfield, CT, 06082 USA - This year the premier amateur radio microwave conference and the Eastern VHF/UHF conference will include **tours, hospitality, swap session, equipment for measuring and tweaking, banquet and of course technical presentations.** Please visit <http://www.microwaveupdate.org/> for the latest updates, registration and hotel information. Please contact Paul Wade W1GHZ w1ghz@arrl.org by July 15, 2011 for paper and talk arrangements. Papers must be submitted by August 30.

STRAYS

John K3MD informs us that he just got a feature article on 6 Meters and a Homebrew 6 Meter Beam Antenna accepted for publication in CQ magazine.

Congratulations John !!

The Wayback Machine

Gleaned from the pages of
Cheese Bits, June, 1961
(Vol. IV Nr. 3)

de K3IUUV

(author's comments in italics)

- Helen notes that “as of May 21st, you must dial a 3-digit area code to reach another telephone, even within your own area code. This change was required to implement Direct (*Long*) Distance Dialing (DDD). Two related pages of information were included in this issue. 1) Summary instructions and a map of nearby area codes (*South Jersey was 609*), and 2) a partial list of area codes for major cities in the US. (*Note the absence of a leading “1”, which was not added until a much later date*).
- June QSO information from the Chairman, Bert, K3IUUV. The contest site will be on a hill in Doylestown, in back of the QTH of club member Warren Parker, W3CKP. (*This was the club's first venture into field operation in June*). The site is a few miles from the Cross Keys Diner in Doylestown. (*Another “thing that isn't there any more”*).
- WCAU-TV (via W3HKZ) reports that KFEQ-TV (Channel 2 in St Joseph, MO) has been interfering with CBS's

- Channel 2 in NY since May 23rd. WCAU uses two 10-element yagis pointed toward New York, and the KFEQ signal is sometimes stronger than the N.Y. signal. (*Must have been some good 6-meter dx if anyone was listening*).
- Eight other interesting Interference complaints investigated by the FCC were described. These included a 14-year old boy found to be using a low power device to communicate with his neighborhood friends (*early citizen bander?*). He used Neon signs with bare wires, an airport receiver with a missing protective shield, which was interfering with aircraft receivers, and other diverse services.
- Frankie's 220-MC (now MHz) column reports the following for the June QSO party. Hardware is all identified and the crew is well established. They will operate on 50, 144, 220, 432 and 1296. (*Yes Virginia, we did operate 1296 “back then”*). The club call W3CCX will be used. All members are enjoined to work the club station, as well as any individual members or groups. (*Same plea as now*). Frankie also lists tidbits about 12 other members now on 220.

- Frankie identifies two sections of the Club Constitution for members to review this month (Duties of Officers and Meetings).
- SMEL A. RHAT notes that the DX season has arrived for VHF, with many 1, 2, 4, 5, 8, and 9th district stations being worked and logged on 6-meters. A few 6's and 7's also heard but not worked. Two-meter band reports openings to Ohio, West Virginia and Massachusetts. He also reminds us that club elections are coming up, and members should carefully review the slate presented, before making their vote.
- “Swap Shoppe” in the column edited by W3ZRR (Ray Whitehead) included a 2-meter Gonset (from Stan, K3IPM), a Measurements Corp VTVM (from Bert, K3IUV), and a 400-volt power supply (from K3BPK, Dave Gindin) “to the first person with \$30”. (*Pre-Internet and eBay sales method*).
- The Slate of Officer candidates for the upcoming election was presented. Noted that at least two names were included for each row office. (*Maybe time to revive that practice?*).

- QST published the Official scores for the January contest, verifying that our club was number one in the country. Top two club scores were; Packrats, 617,139 points, and SJRA, 493,420 points.
- Metering For Grid Dip Meters, an early technical article (complete with schematics) described methods to greatly improve the sensitivity of grid dip meters (*how many still have one, or even know what it is / does ?*). *<I do but was never able to get it to do anything useful --Ed.>*
- Meeting agenda for June: Election of Officers, followed by a presentation by W2LOY, Ed Clegg (Clegg Laboratories). Ed will bring samples of his new equipment, including the ZEUS.

73 'till next month, Bert

W3CCX Microwave Beacon Frequencies

Roger, W3SZ reports the following GPS locked measurements of the W3CCX microwave beacons as of May 23:

10368.044.75
5760.195.337
3456.203.95
2304.043.677

Events

For inclusion, please direct event notices to the editor.

June VHF QSO Party - Contest Jun 11-13, 2011 - **Second major club contest activity of 2011.** Please participate. Volunteers still needed for Camelback operations on all 4 days (Fri loadup and setup, Sat-Sun operation, Mon teardown). If you can't make it to Camelback, please plan to operate with your own equipment and get/give out points to everyone and especially your fellow 'Rats. See <http://www.arrl.org/june-vhf-qso-party> for additional details

Valley Forge Hamfest and Computer Fair Hamfest - July 17, 2011. See <http://www.marc-radio.org> for details

CQ WW VHF Contest - Jul 16-17, 2011. See www.cqww-vhf.com/CQVHFContestRules2011.pdf for details

August UHF Contest - Aug 6-7, 2011. See <http://www.arrl.org/august-uhf> for details

10 GHz and Up Contest (Round 1) - Contest Aug 20-21, 2011. See <http://www.arrl.org/10-ghz-up> for details

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. Sponsored by N.E.W.S. Group. This is the location where the Eastern VHF/UHF Conference has been held for the past 10 years. Additional info to follow or email n2liv@arrl.net and w1ghz@arrl.net for details.

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.

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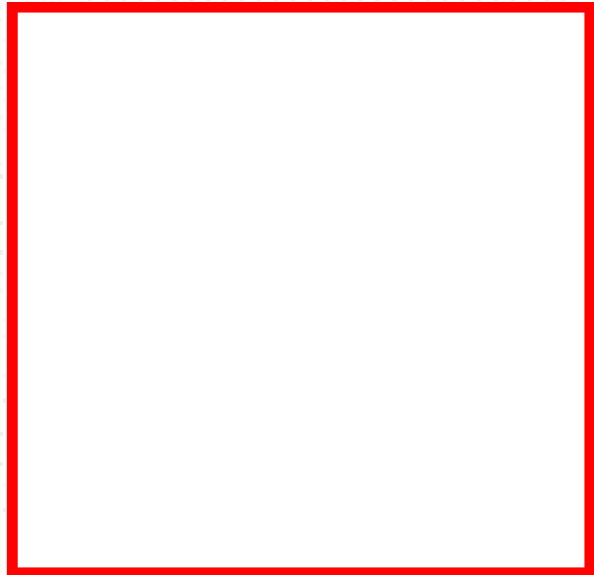
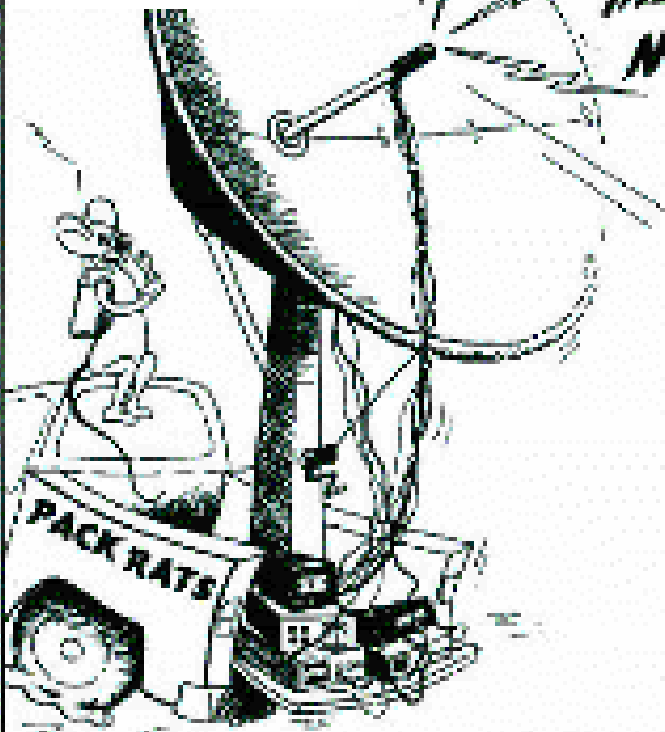
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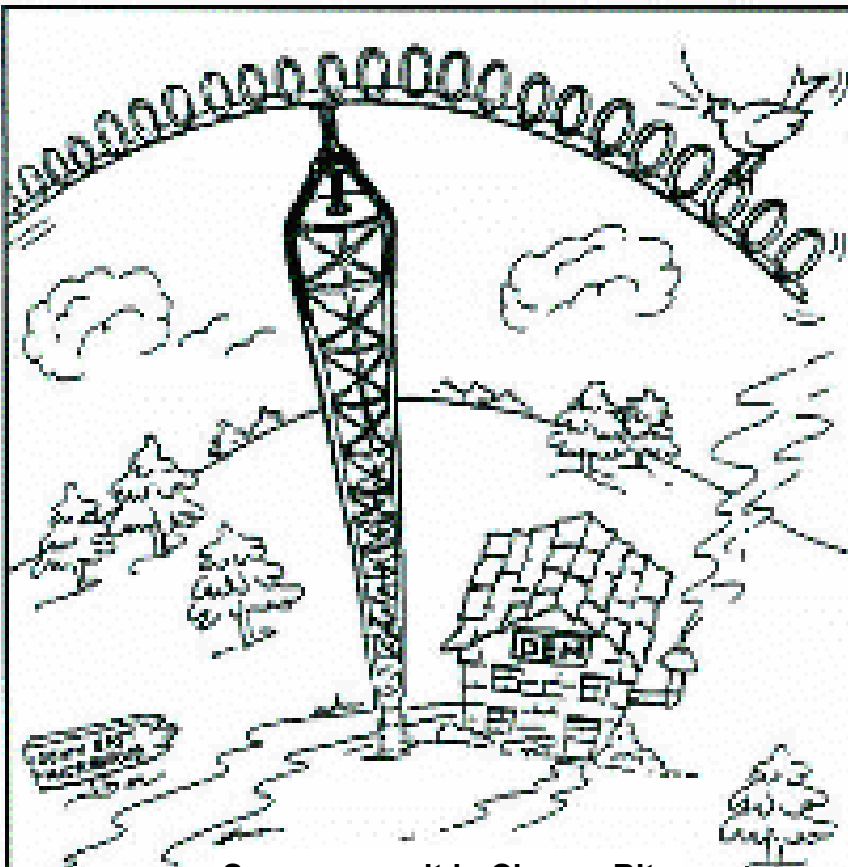
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