

CHEESE BITS



W3CCX

CLUB MEMORIAL CALL



ARRL

Affiliated

SCANNED TO PDF BY BERT, K3IUV, 2013 Club

VOLUME XLI

April 1999

Number 4

The PREZ SEZ

Another Pack Rat Home Brew Night has come and gone. It was really nice to see the large assortment of projects displayed by the members and guests. The art of making your own equipment is alive and well. The type of projects has certainly shifted over the years. In years past it was not uncommon to see complete home built receivers and transmitters. Conversion of war surplus electronic equipment for use on the Ham bands was popular in the fifties and sixties. The seventies and eighties saw the advent of the first solid state projects that were within the technological and financial reach of home constructors. Electronic kits by Heath and Eico were big on everybody's list. While strictly not 'home brew' the kits provided an outlet for the technically challenged that could not quite muster the courage to completely 'roll their own'. The nineties are a real challenge with the advent of surface mount technology. The average person does not have the tools to handle the construction or repair of any kind of equipment using this technology. I think the desire to 'build' is still there, but the complex construction techniques have pushed the envelope far beyond what one can do in his or hers basement. Fortunately, UHF and Microwaves still use some of the "old" technology, thus providing an area where the average Ham can still participate in the art of home brew. Let's keep this time-honored tradition of Amateur Radio alive as long as we can.

The April meeting is our annual ARRL Night. We will have the Atlantic Division Director and N1ND, head of the ARRL Contest Branch, direct from ARRL headquarters. There will be a 'Meet the Speaker' dinner at 1800 prior to the meeting. Contact WA3EHD if you want to attend. The dinner is excellent chance to chat with league officials in an informal and friendly atmosphere.

Don't forget Ladies night on May 8th. In addition to a fine dinner and dancing the Pack Rat awards for the January Contest, Home Brew Night, Pack Rat of the Year and other awards that recognize significant contributions by individual members to the club will be presented. N3AOG has been working hard to make this years event a night to remember.

N3ITT is hot on the June Contest trail. Set aside some days in June (6/11 to 6/14) to help with this major club activity. Many of us take Friday and Monday off to help with the set up and tear down as well as operate for the weekend. It is a lot of work but also a chance to operate a big station with no worry whatsoever about TVI!

The Spring Sprints are still alive. April 12th starts the season off with the 2m Sprint. The Sprints run through May 15th. See the ARRL contest page for the unofficial/official rules, schedule and where to mail your logs. Remember if you don't turn in a log you might as well go on vacation and forget the whole thing.

73, Ron, W3RJW

MEETINGS

Third Thursday each month at 8:00 PM
Southampton Free Library
947 E. Street Road
Southampton, PA 18966

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	AA3GN	(1 Yr) Joe Landis, landisj@nad.unm
	W2SJ	(1 Yr) Bob Fischer, fnsf57a@prodigy.com

PACK RAT BEACONS - W3CCX/B

FM29JW Philadelphia, PA
50.080 144.284 222.065 432.295 903.072 MHz
1296.251 2304.037 3456.220 5760.190 10,368.177 MHz

MONDAY NIGHT NETS

<u>TIME</u>	<u>FREQUENCY</u>	<u>NET CONTROL</u>
7:30 PM	50.150 Mhz	WA3EHD
8:00 PM	144.150 MHz	N3IIT
8:30 PM	222.125 MHz	W2SJ
8:30 PM	224.58R MHz	W3GXB
9:00 PM	432.110 MHz	W3RJW/WA3DRC
9:30 PM	1296.100 MHz	WA3NUF/AA2UK
10:00 PM	903.100 MHz	N3AOG

COMMITTEE CHAIRMEN

LADIES' NIGHT:	N3AOG	215-443-9965
JUNE CONTEST:	N3IIT	610-847-5490
HAMARAMA:	NK8Q	610-847-2285
VHF CONFERENCE:	KB3XG	610-584-2489



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SILENT KEY, IN MEMORIAM, Horace P. Deacon, Jr., W3AJF

de Ernie Kenas, W3KKN

On March 10, we lost a friend and fellow member of the Mt. Airy VHF Radio Club. Horace or "Deac" as most hams knew him was a courteous man of many talents. I'll try to describe some.

Deac was 94 years old and born in the Germantown section of Philadelphia. He attended Germantown Academy - Class of 1922. He loved sports. He married Lucy Bertram and had two children, Ann and Pete. He lived most of his life in East Falls. He worked for a heating and air conditioning company in Sales Engineering. During the war he worked at the Franklin Institute. In his later years, he lived in the Ft. Washington Estates Retirement Apartments.

Ham radio was an early hobby. First exposed to "Spark" and the subsequent progressions as we know it, from CW to AM to SSB. He was an experimenter and built most of his rigs. He built many rigs for aspiring hams. His basement was his workshop. He built some wondrous devices. His copper tubing Yagi antennas were something to behold. It seemed he could fix anything, mechanical or electrical and helped many young hams get started and was a legend among many licensed hams. I first heard Horace on 5 Meters with a homemade receiver I built while I was still in high school. I then met Horace at the York Road Radio Club. I was so pleased to meet him, then I found out he was the President. He was a real gentleman, courteous with lots of class.

After the war, a group of us formed the Mt. Airy V.H.F. Radio Club, nicknamed "The Pack Rats". Horace, being interested in the very high frequencies, joined our new club. Needless to say, he was a welcome addition.

He was always so practical and down to earth. We rewound a H.V. plate transformer on his lathe. He loved to wind coils and make parts we would normally buy. He was a real home brewer, although in his later years he succumbed to Heath Kits. The club donated all of his ham gear to the Valley Forge Council of the Boy Scouts studying electronics and hopefully becoming hams. He was a member of the Quarter Century Wireless Association (QCWA) and was awarded a 70 year plaque for Amateur Service. This is a very prestigious award.

Horace, we miss you but we have memories of your humor, your kindness, and your personality. You exemplified the spirit of fraternalism that makes this such a great Club. Thank you. 73 and CUL, Ernie Kenas, W3KKN

ARRL NIGHT

Our customary ARRL night meeting will be held on Thursday, April 15, 1999 at 8:00 P.M. at the Southampton library. Our guest speaker will be Dan Henderson, N1ND, of league headquarters.

As usual, there will be a "Meet the Speaker" dinner at Pippo's Fantastico, 765 Second Street Pike in Southampton, at 6:00 P.M. I need to give the restaurant a count of how many will be in attendance at the dinner 24 hours in advance. Therefore, I ask that all persons planning to attend the dinner, let me know of your plans either by phone or e-mail by Tuesday evening, April 13th. For those needing a map, check out the Pack Rats web site at [HTTP://www.ij.net/packrats](http://www.ij.net/packrats) and bring up the map showing the meeting place. It has been updated to include the restaurant.

Both the dinner and the meeting have always been high points in our meeting schedule every year. I hope to see many of you there. Best 73, Jim/WA3EHD

TID BITS

Check the latest happenings of the Mt. Airy VHF Radio Club by checking our web page at <http://www.ij.net/packrats/>.

VUCC Award Checking: If you want QSL cards checked for your initial VUCC Award or an update, contact Harry, W3IIT at lbrown@voicenet.com or 610-584-4846. I'll do updates (up to 25 additions) at regular club meetings.

Congratulations to Craig, K3CWH, for increasing his 50 MHz VUCC standings to 175 grids.

The April 1999 432 and Above Newsletter by K2UYH is at: <http://www.nitehawk.com/rasmit/em70cm.html>.

March 99 QST's 1998 10 GHz and up Contest results shows W3RIW and KB3XG as entries. What happened to the other rats that were on?

March 99 QST's "World Above" column by Emil, W3EP shows Rick, KB3PD's EME standings as 66 contacts on 2M and 120 on 432. Rick completed WAS on 432 EME last fall.

Visitors at the March Club meeting: John, N2RTX, Clinton, N3DHI, Carol, N3PVO, Craig, K3CWH, Roger, W3SZ, N2RLI and Chuck, WA2ONK. Application for membership received from Roger, W3SZ.

March 99 also reported the results of the Sept. 1998 VHF QSO Party. Rat Ron, W3OR was 9th overall in the SO category with 145K points, 509 contacts and 182 grids. Rat Russ, K2TXB and friends in WNY were 4th in the MultiOp category with 428K, 1013 contacts and 310 grids. Rats Paul, WB3JYO (now W2PED) and Bob, W2SJ were first and second in SNI SO category with 68K and 50K. Joe, AA3GN was second SO in EPA with 39K, Jerome, K3GNC third in SO with 30K and Dave, W3KM was 5th in SO with 14K.

Checkout Bob, N3XEM's mobile antenna array at: <http://www.kb6kq.com/pix.html> on the KB6KQ webpage.

CALENDAR OF COMING EVENTS - APRIL 1999

- 8 Packrat Board of Directors Meeting at the QTH of Joe Landis, AA3GN, in Lansdale, PA, 203 Twining Rd., Lansdale, PA, 215-855-6056.
- 9-10 Southeastern VHF Society Technical Conference will be held at the Atlanta Marriott Northwest between Atlanta and Marietta. For details visit their web page at: <http://www.svhf.org/svhfs/>
- 12 Physicist John Thompson demonstrated his discovery of a body smaller than the atom, a negative charged he called a corpuscle now known as an electron in 1897.
- 12 144 MHz Spring Sprint (Monday evening) starting at 7-11 PM local time. See March 1999 Cheesebits for rules. Mail your log to 144 MHz Sprint -trclog@aol.com or to Rocky Mountain VHF+ Group, PO Box 473411, Aurora, CO 80047.
- 15 Packrat Meeting at the Southampton Free Library at 8:00 PM. Bring and/or invite your on the air VHF buddies. ARRL Night. All VHFers invited. The speaker will be Dan Henderson, N1ND, Contest Manager of the ARRL.
- 20 Spring 222 MHz Sprint (Tuesday evening) 7-11 local time. See March 1999 Cheesebits for rules. Mail your log to 222 MHz Sprint -frank@horizon.sri.com or to 50 MHz DX Bulletin, 12450 Skyline Blvd., Woodside, CA 94062.
- 22 Lyrids meteor shower at 1000 UTC.
- 22 LEAP INTO THE MICROWAVES with the Packrats! 903 and above. Starting on the 4th Thursday of the month and continuing every 4th Thursday of the month operate from 8 to 10 PM local time on any band 903 MHz and above. For coordination on those difficult long haul contacts 144.260 MHz is the suggested liaison frequency. So here's your chance to fix what broke in the contest and work all those stations you missed.
- 23-25 CQ-VHF Weak Signal Weekend. sponsored by CQ-VHF Magazine. From 6 PM local time on 23 April to 12 AM local time on 25 April. Rules on page 100 of the April 1999 QST and the March issue of CQ-VHF.
- 24 Cherryville Hamfest at the Warren County Farmers Fairground, Harmony, NJ.
- 25 The Pen-Del Hamfest will be held at the NUR Temple, 198 DuPont highway (Rte 13 near US 40 split), Newcastle DE. Talk-in on 224.220 and 147.225+.
- 25 Italian engineer and inventor Gugliem Marconi, inventor of the wireless telegraph and Nobel Prize winner was born in 1874.
- 28 Spring 432 MHz Sprint (Wednesday evening) 7-11 local time. See March 1999 Cheesebits for rules. Mail your log to 432 MHz Sprint -wzlv@ntplx.net or to North East Weak Signal Group, 458 Allentown Rd., Bristol, CT 06010.
- 2 May Warminster Amateur Radio Association Hamfest at the Middletown Grange Fairgrounds in Wrightstown, Pa. Talk-in on 146.69/.09 and 146.52. VE Testing.
- May 8 Annual Banquet (Ladies Night) of the Mt. Airy VHF Radio Club at the Mill Race Inn, Holland, Bucks County, PA.

SWAP SHOP:

(send all ads to the editor)

FOR SALE: CALLSIGN HISTORY. Name and address of each holder since 1912. Cost \$15 plus SASE for printed CERTIFICATE. Wanted CallBooks before 1970 and QST's before 1940 will buy or trade. Also looking for 1x2 Ham Radio License Plates for my collection. Ron Allen W3OR, PO Box 73, Bethel, De. 19931-0073 or call 302-875-1100.

WANTED: 1296 MHz Transverter to use with a Kenwood TS 830-S. Please state price and condition. Contact Lou, NB2T, FN30 at 718-445-5653 or e-mail at nb2t@wa2soc.ampr.org.

WANTED: Horizontal omni directional antenna for K3DEL 903 beacon. Contact Ron, W3OR at 302-875-1100 or w3or@delanet.com.

HEALTH AND WELFARE: Dick Comly, N3AOG, reported that Hal Grace, W3HFY, suffered a stroke in his home in Havertown, PA and is now in a nursing home there unable to speak and with no muscle control on his left side. Dick has sent flowers on behalf of the club, and Ernie Kenas, W3KKN, is in contact with Hal's daughter-in-law.

CHEESEBITS SUBSCRIPTIONS

Cheesebits subscriptions are available to everyone interested in activities and information from the VHF through the microwave frequencies. Subscriptions are for 1 year of 12 issues. For a subscription, send the following information:

Name: _____ Call: _____

Street Address: _____

Town: _____ State: _____ ZIP: _____

Subscription Rate: \$10.00 per year (USA), \$12.00 (Canada), \$15.00 (Worldwide)

April 1999 Send to: SUBSCRIPTION/ADVERTISING MANAGER:

Bob Fischer, W2SJ, 7258 Walnut Avenue, Pennsauken, NJ 08110

JUNE CONTEST - CONTENDERS OR PRETENDERS?

de AJ, N3ITT

Ah !! That is the question ! The June VHF Contest fast approaches-- the moment of truth is almost upon us! What separates the "Top Dogs" from the rest of the pack? Looking at recent scores in this event I think it would be fair to say that a score of one million points seems to be that "dividing line". Last year the club was just a few points shy of that bench mark. What does it take to do it. Here are my thoughts.

1. Location. Again this year we're in good shape on this one. The Club's site at Camelback mountain offers an excellent elevation in the densely populated Northeast Corridor. Add to that the fact that its fairly close for most members, offers commercial power, and is really not too far from civilization our location is second to none.

2. Equipment. The club has a great deal of equipment dedicated for this event with regards to towers, ropes, antennas, rotors, utilities, etc. However, the "guts" of the stations must still be contributed by club members. Looking at club members January contest scores the total collective of our best equipment would be the best multi anywhere, all we need are members willing to "liberate" this stuff from their shacks for a weekend.

3. Participation. Make no mistake, it takes every club member to compete in this contest. Not only does it take plenty of help on the mountain, but it's also important for EVERY Pack Rat who can't make it up to work the club station, on all bands possible. If you won't be on extensively for the contest make sure you call me for a sched. or better yet the individual band captains.

4. Team work. This one can make us or break us. To maximize our score we must not only think about what's going on where we are operating but what we can do to help the guys on the other bands. Don't just sit back and enjoy that warm fuzzy feeling after working that "rare one" PASS IT ON!! Most importantly we must work together. As with any group of two or more differences will arise, please, for the good of the club, set them aside for now, hash it out later.

5. The Will: YA GOTTA WANT IT!!!!

Those are the ingredients to put us over the top, in my opinion, time to start to get it together!! Following is a list of Band Captains, and other officers for June Contest 99.

50 MHz W2SJ Bob Fischer / WA1YHO Gary Dallas

144 MHz WA3NUF Phil Miguez

220 MHz. N3NGE Len Martin

432 MHz. W3RJW Ron Whitsel

Micro KB3XG John Sortor

Truck #1 N3ITT AJ Sheppard

Truck #2 ??

Truck #3 ??

Utilities (elect., phone) ??

Food / beverages W3GAD Doc Whitticar / N3OZO Don

Please note we still need 2 more members to drive the "big rigs" It is urgent we get the trucks reserved and up to the mountain. PLEASE if you can help call me NOW!! Also we need someone to work with Bruce WA3YUE, Bruce has done the elect/phone for many years but may not be able to make set up this year, if you can help on this contact me or Bruce. That's it for now, Let's get this show on the road!!! CU on the bands, AJ N3ITT

TID BITS Contd.

New E-Mail Address. Bob, W2SJ is bobw2sj@prodigy.net. Any mail to my old address will be forwarded until sometime in October, when Prodigy pulls the plug on their old "Classic" service which is not Y2K compliant.

WTMPR (Worked The Most Pack Rats) Award results announced. The results have been compiled by Price/Waterhouse for the Worked The Most Pack Rat QSO's in the 1999 January VHF Sweepstakes Contest: **Grand prize to Jeff Klein, K1TEO** with 165 QSO's. All other entrants will receive a certificate: Chuck Grabowski, WA2ONK, 137 QSO's Del Schier, K1UHF, 133 QSO's Rich Klodt, KD2KS, 111 QSO's James Kelly, KK3K, 31 QSO's Craig Huntsinger, K3CWH, 27 QSO's Frank Ayers, W2FCA, 13 QSO's Thank you gentlemen for working the Pack Rats and promoting VHF, UHF and Microwave activity. 73. Bob W2SJ
Walt Rauscher, N3EUV, reported that he received a call from Down East Microwave to inform us that the new 2304 MHz transverter is now available.

Packrat Jackets: New Packrat jackets were displayed at the March club meeting. They will come complete with your call and the Packrat logo. The smaller sizes will cost \$39.95 and the larger sizes will be \$47.95 plus about \$5 for the logo, call and name. Contact Dick, N3AOG to order your jacket.

HOME BREW NIGHT

Homebrewing continues (at least in the Pack Rat community) with the annual show and tell resulting in many interesting projects. The winners of our intense competition are:

Best Construction	Len	N3NGE	2.3 GHz Transverter
Most Ambitious	Bill/Mark	AA2UK/W2UR	Tower Mounted 10 GHz Transverter
Most Unusual	Dave	W3KM	General Purpose Logging Program
Best Project built from Mario Raffle Parts	Joc	AA3GN	222 MHz Transverter
Most Miserable Failure	Doc	W3GAD	1966 50 MHz Transmitter/Transverter

<u>Entrant</u>	<u>Project</u>	<u>Description</u>
John, N2RTX	144 MHz Transverter	Transverter from the ARRL Handbook
Walt, N3EUV	50 MHz Transverter	50 MHz Transverter
	222 MHz Mods	Mods to WA3EHD's 222 MHz Transverter by adding a spice designed image reject filter to cut out fm broadcast images falling into the receive if.
Ed, WA3DRC	2.3 GHz Transverter	Scrounged parts, some from DEM, 1.5 watts out. Completed 1 week before the Jan. contest.
Bob, W3GXB	Wattmeter	3 ranges, 0 to 100, 300, and 500 watts, including dummy load, 1N23 diode detector.
Len, N3NGE	2.3 GHz Transverter	DEM Beta boards used, initially lots of leakage fixed by added shielding, 1 watt GaAsFet amp, 5 watt W3KM PA, to N3CX final amp.
	5 Band Tower Switch	Photos only, project on the tower, 5 band remote controlled switch including interlock circuitry
Doc, W3GAD	50 MHz Transmitter/Rcv	1996 Vintage 50 MHz Transmitter and receive conv., 6146 output tube, 14 MHz built in transmitter with a VFO, converted to 50 MHz, under water for quite a some time, inoperative now, Original June 1966 issue of QEX on hand, amazing amount of construction articles (none meaningless like regen receivers in current era QST's), several Packrats including Mario (of raffle and award fame), W3UJD listed in the 50 MHz and above column.
Dave, W3KM	HF Logging Program	Dave's been doing some HF contesting so he's made his own logging program using several features from his world renown VHF Log program. Available on his web site at http://www.qsl.net/w3km
Paul, W2PED	Voice Keyer	HB voice keyer (see Jan. 1999 Cheesebits for schematic and PC Board parts layout. Uses a capacitive device to store the message, built into an existing MFJ CW keyer.
Joc, AA3GN	222 MHz Transverter	Design from Zack, W1VT's article in QEX, 1 watt output.
	Interdigital Filters	1.296 and 2.3 GHz Interdigital filters from QEX. Paul Wade, W1GHZ design.
Mark W2OR/ Bill, AA2UK	10 GHz Transverter	Parts by Bill, Assembly by Mark. 25 watts output, mounted 60 ft up the tower. Commercial parts, pipe cap filters/traditional Pack Rat assembly of parts, 0.8 dB NF preamp, WR112 6 ft flex waveguide out to the 2 ft dish, started 4 weeks before the Jan. contest (also traditional Pack Rat approach).
Chuck, WA2ONK	Waveguide Filter	5.6 GHz Waveguide filter

TID BITS Contd.

Call for EME papers. Anyone interested in having a construction, technical or other article included in the EME Symposium 99 proceedings which will be in CD format can be sent to proceedings@kb2ah.com. Can be in any standard format. Hard copy can also be sent to KB2AH with a SASE for return of original article and pictures. de "Charles R. MacCluer" macccluer@math.msu.edu.

More TID BITS

The Jan/Feb 1999 issue of QEX has article on **Waveguide Interdigital Filters** by Paul, W1GHZ for 1296, 2304, and 3456 MHz. In addition, there is article titled: "A Pair of 3CX800s for 6 Meters" by Dick, K5AND giving 1500 watts out with 45 watts of drive power. "Experiments with Phase Noise Measurement" by Jos, PA0JOZ tells how to do your own phase noise measurements. Schematics are included. "No-Tune Transverter-Spur Identification" by Mike, W4AZR is also included. Zack, W1VT shows how to building amplifiers using microwave "bricks". Wouldn't it be nice to see articles like this in QST?

The March/April 1999 issue of QEX includes: "A High Performance Homebrew Transceiver, Part 1" by Mark, K5AM. It includes 6 and 2 meters. Another article "A Dentron MLA2500 HF to Six-Meter Conversion" by Jim, W4KXY gives another way to get 800 watts of power on 50 MHz by changing from a dead 8875 to a 3CX800A. For those playing with newer higher voltage MOSFET's, William Sabin, W0IYH, has an article on a 40/50 volt, 8/7 amp Power Supply. Zack, W1VT's column shows how to switch a 10 watt 2304 MHz amplifier with a transfer switch and sequencer. He also presents test results of a the difference in insertion losses of a type N connector with and without water injected into the connector junction. Loss with different amounts of moisture for frequencies from 50 thru 2304 MHz are shown.

Magnetometer update. Hello VHFers, The ground thawed out enough so that I was able to dig out the sensor on the now defunct magnetometer and I found a broken signal wire (small PTFE coax) that cut off the output signal from the sensor. The sensor was operating fine, nice and dry inside. So it was frost action that did it in. I have cobbled it back together and stuck it back in the mud, but it is so soupy, that the sensor is moving around a bit. I need to upgrade my sensor burial methods:

- a. The sensor must be below the frost line
- b. The sensor must be in a large pvc housing with pvc pipe coming out of the ground to keep stresses off the wiring.

The good news is I am back in business with the aurora monitor. So things are getting back to normal. I need some multi conductor shielded cable, say two signal leads with shields and some (4) unshielded power leads. Does anyone have about 100 ft of something that may work as above lying around? I am all set to install the second sensor as soon as the ground thaws out and stabilizes. I hate to order new wire with all the wire that we collectively have in our attics and basements! I am sure just the wire would clog the Colorado River. 73, Dave K1WHS

ATTENTION CW CONTESTERS: BURST CW

By Dave Mascaro, W3KM

A few years ago I modified my CW software to include Burst CW. A few hams tried it and liked it. Then I sort of forgot about it. Today, multi-speed CW messages can be heard in all the CW contests. I think CT is being used by most contesters, so K1EA must have the multi-speed CW option in his software.

Burst CW (as I call it) is where certain portions of the CW message are sent at a rapid speed (typically >40 wpm). Commonly heard CW messages in recent HF contests use the burst mode when sending 5NN, TEST and BK. The important exchange parts of the QSO are still sent at the regular speed, although some operators can get going at 30-35 wpm anyway.

It sounds weird at first, but is actually quite interesting to hear and use after you get used to it. After hearing or using this technique for a while, the burst does not detract from the intelligibility of the message being sent. When using high speed CW, the repetitive parts of a CW message are actually heard as one character. So it makes sense to send them as such. I guess when you make hundreds (or thousands) of QSOs, speeding up a QSO or CQ by a few seconds can add up.

Check out this type of CW by trying my HF shareware called GEN LOG. You'll need to wire up a simple interface that connects between the COM port and your CW key jack. You can download the software at <http://www.qsl.net/w3km>

VHF/UHF SPRINTS

These are great tune-ups for the June contest, summer activity and openings. Also, Steve at Down East Microwave is offering some nice incentives: Sprint discounts on 222 and 903 gear, and a chance at winning a \$100 gift certificate if you turn in a Sprint log for those bands.

Here are the dates and times:

April 12, 7 PM - 11 PM local time - 144 MHz

April 20, 7 PM - 11 PM local time - 222 MHz

April 28, 7 PM - 11PM local time - 432 MHz

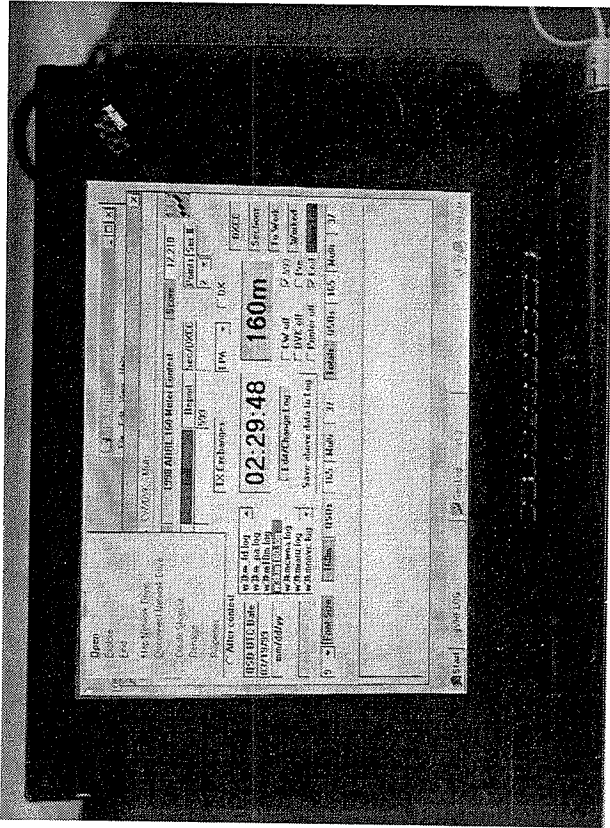
May 8, 6 AM - 1 PM local time - 903, 1296 and 2304 MHz.

May 15, 2300Z - May 16 0300Z - 50 MHz

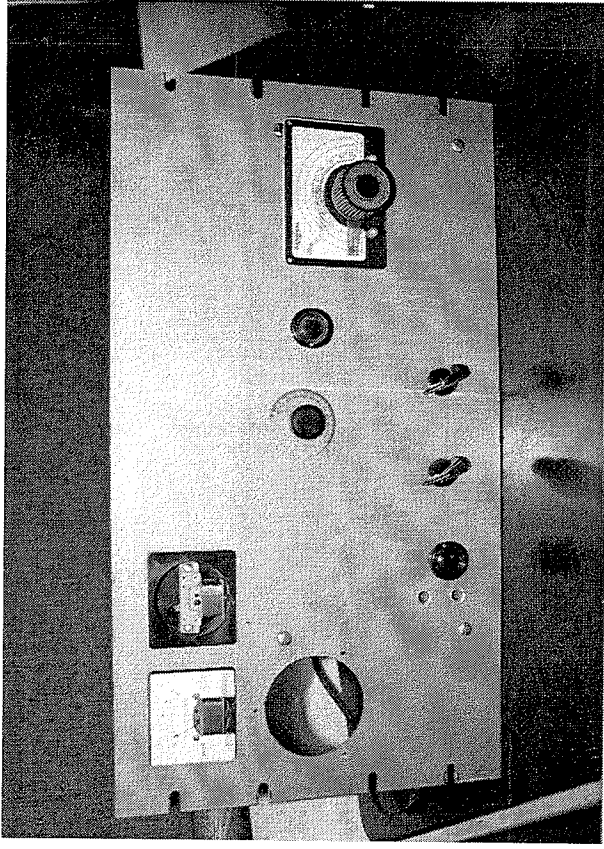
Link to the Down East Sprint Special page: <http://www.downeastmicrowave.com/Offers.htm>. More information about the VHF/UHF Sprints (including where to send your logs) can be found at:

<http://www.arrl.org/contests/announcements/99/sprint-sprints.html>. Rules can also be found in the March 1999 issue of Cheesebits.

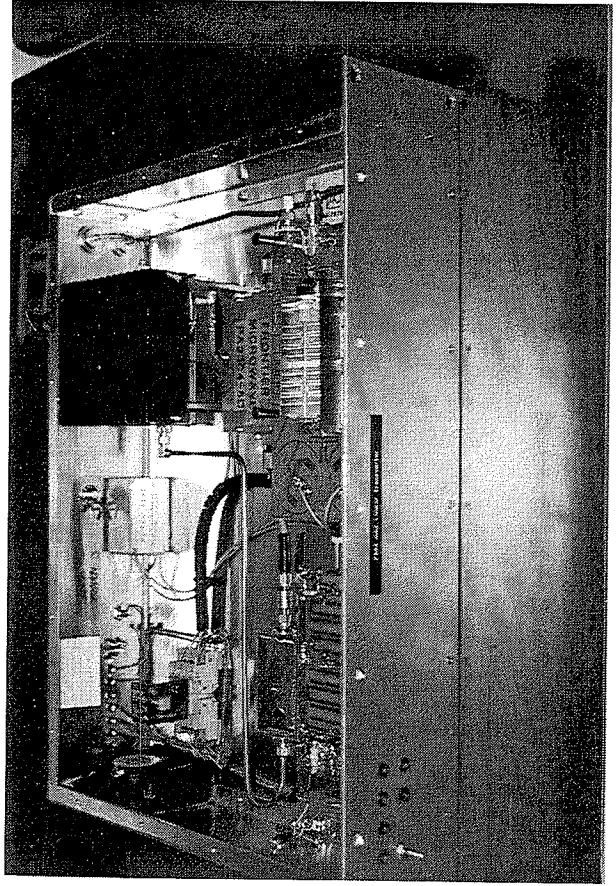
1999 HOMEBREW NIGHT



Dave, W3KM, HF Logging Program

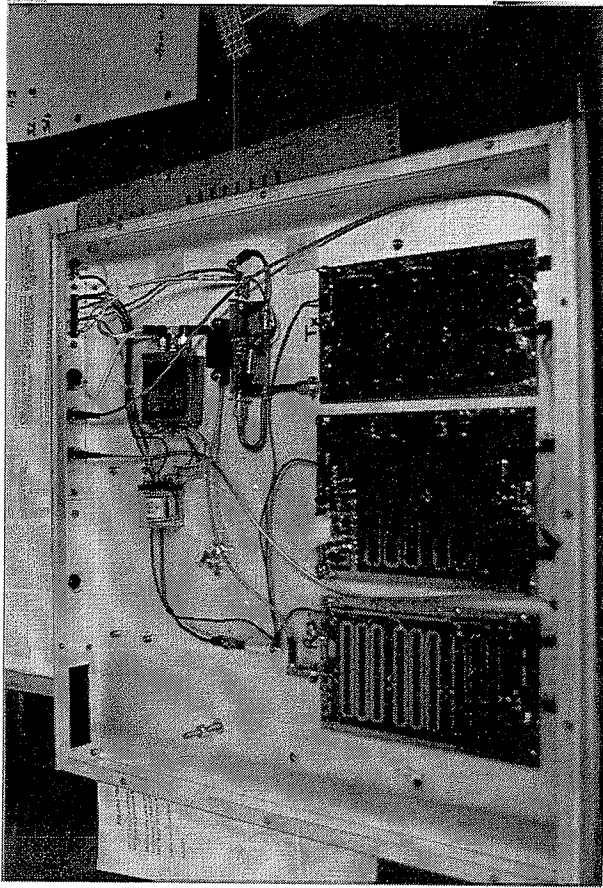


Doc, W3GAD, 1996 Vintage 6 Meter Transmitter.Rev Cony.

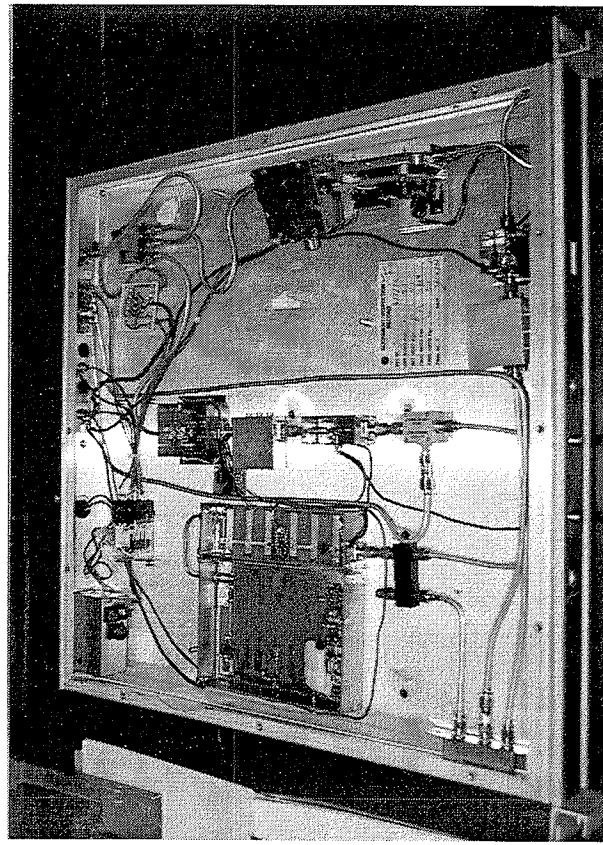


Len, N3NGE, 2304 MHz Transverter

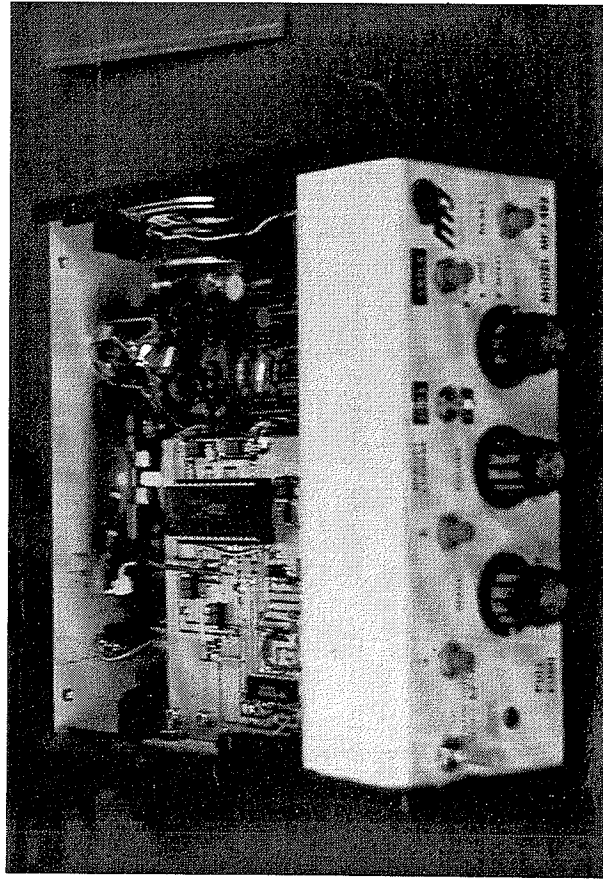
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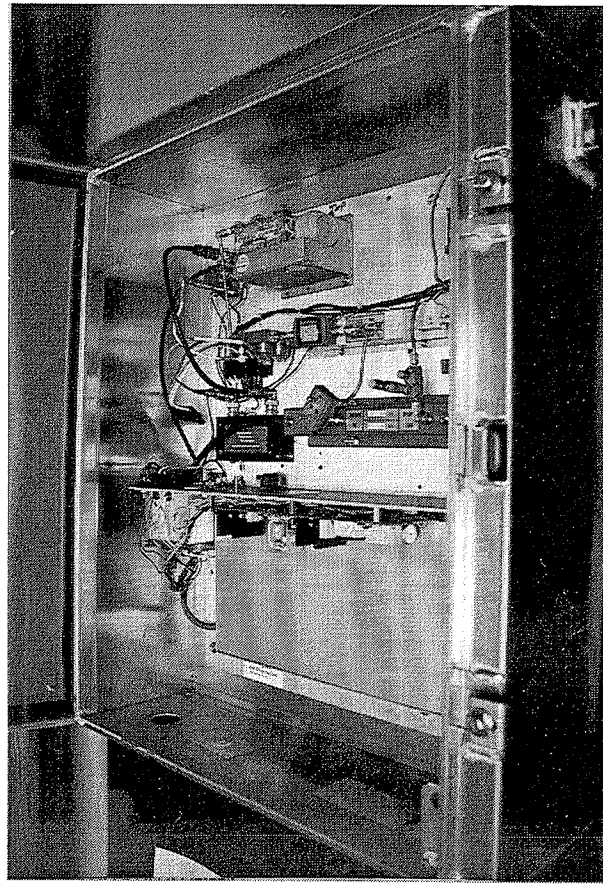
Joe, AA3GN, 222 MHz Transverter



Ed, WA3DRC, 2304 MHz Transverter,

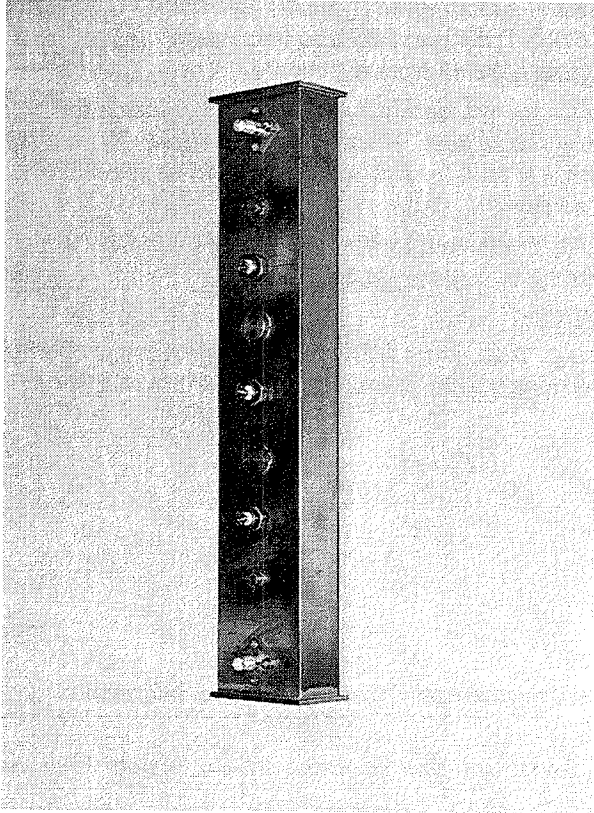


Mark, W2UR/Bill, AA2UK, Tower Mount 10 GHz Transverter

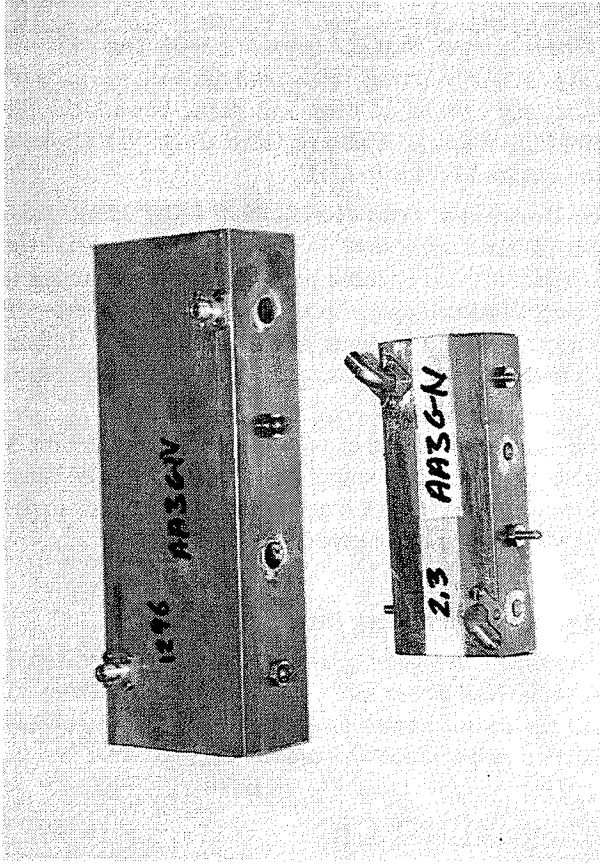


Paul, W3PED, Voice Keyer

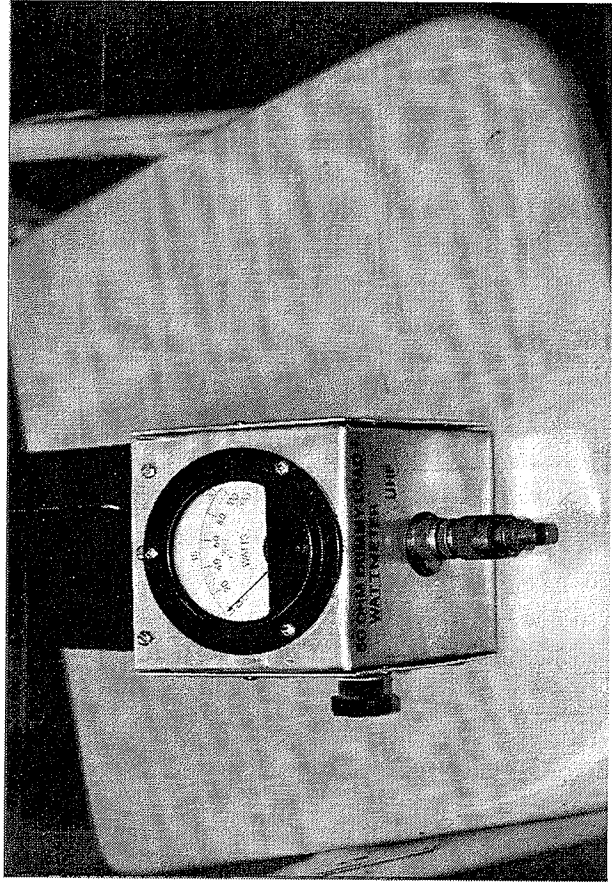
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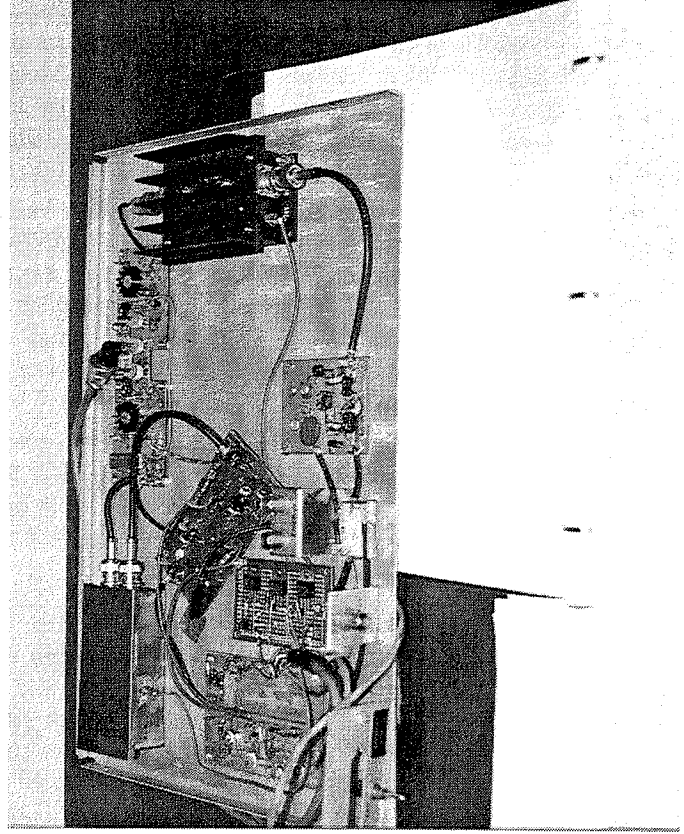
Chuck, WA2ONK, 5.6 GHz W/G Filter



Joe, AA3GN, 1296 and 2304 MHz W/G Filters



Bob, W3GXB, Dummy Load/Wattmeter



Walt, N3EUVV, 6 Meter Transverter

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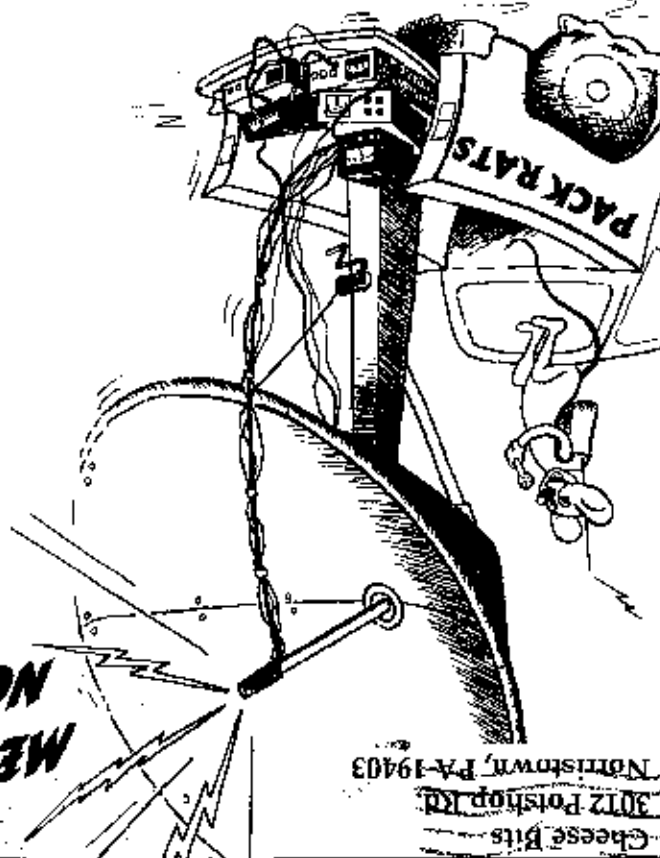
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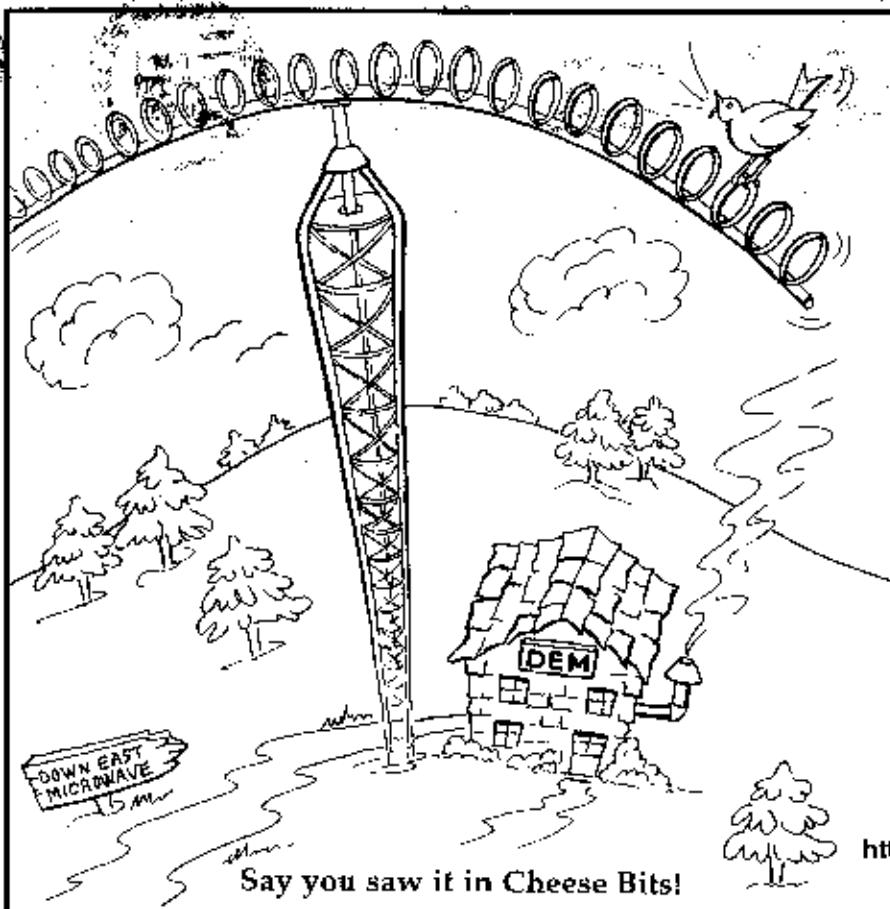
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