

# PACK RATS'



## PACK RATS

CLUB CALL: W3CCX

# CHEESE BITS



MT. AIRY VHF RADIO CLUB, INC.

MT. AIRY VHF RADIO CLUB, INC., PHILADELPHIA, PENNSYLVANIA  
50.125, 144.150, 220.125, 432.110, 1296.110 Mhz, W3CCX - Repeater 222.98/224.58 Mhz  
Affiliated Club: AMERICAN RADIO RELAY LEAGUE  
Meetings: Third Thursday of each month at 8:00 P.M.  
Southampton Free Library, 947 E. Street Road  
Southampton, Pennsylvania 19866

ARNS

VOLUME XXVI

MAY, 1986

NUMBER 5

### THE PREZ SEZ

May brings a treat for VHF'ers as the SPRING SPRINTS continues (and the SNOW falls)! This the chance to fill in those missing grids and sharpen up your contest skills in anticipation of the JUNE QSO PARTY.

We would like to thank Bob, W3GXB for his presentation of how to etch printed circuit boards. Now there is no excuse to delay construction of the new projects in Cheese-Bits. Guess we will all have to keep an eye out this hamfest season for old washing machine motors.

Our program chairman, Gary, WA2OMY has really put together outstanding programs recently. Let all of us continue to support our club activities by keeping attendance at our regular monthly meetings above the current level.

Remember the next meeting on May 15, 1986 is our annual ARRL NITE, and will feature the Atlantic Division Director, Hugh Turnbull, W3ABC and Robert Bennett, W3WCQ, VHF/UHF contest committee member. Nomination of officers will be held at this meeting also - be ready to nominate candidates of your choice, Lets have a large turnout; visitors always welcome.

See you all at the meeting and also LADIES NITE on May 31st.

73, Mike, WB2RVX

\* \* \*

### IN MEMORIUM

SYLVAN EINHORN, W3ISV, BECAME A SILENT KEY APRIL 17, 1986.  
CONDOLENCES TO HIS FAMILY. HE WAS A MEMBER OF THE CLUB FOR  
MANY YEARS, MAY HIS SOUL REST IN PEACE.

Pack Rate CHEESE BITS is a publication of THE MT. AIRY VHF RAD'G CLUB, INC. Philadelphia, Pa. and is published monthly.

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We operate on an exchange basis with other publications. Anything that is printed in CHEESE BITS may be reprinted, unless otherwise stated, provided that proper credit is given.

SWAP SHOP ITEMS - NO CHARGE

DEADLINE FOR ARTICLES IS THE GENERAL MEMBERSHIP MEETING: THE THIRD THURSDAY OF THE MONTH.

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CLUB HISTORIAN:

W3CL, HARRY B. STEIN

MONDAY NIGHT NETS

7:30 PM - 50.125 MHZ  
8:00 PM - 144.150 MHZ  
8:30 PM - 222.98/224.58 MHZ  
8:45 PM - 220.125 MHZ  
9:00 PM - 432.110 MHZ  
9:30 PM - 1296.1 MHZ

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WA3JUF, DAVE MASCARO (2 Yrs)  
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CALENDAR OF COMING EVENTS  
Syllabus by Lee, K3MXX

MAY

- 3 STARC Hamfest - Owego Treadway Inn, Endicott, N.Y.
- 3 June VHF QSO Party planning meeting at the QTH of WA3NUF, Phil Miguez, 445 Ivy Street, Warminster, Pa. 7:30PM.
- 4 TCRA Hamfest, Passiac Valley, Community Center off Valley Road, Stirling, N.J. 9 AM to 3 PM. W2EUF, Dick Franklin, 201-232-5955.
- 4 Suffolk County Radio Club Indoor/Outdoor Flea Market, 8 AM to 3 PM, Republic Lodge No. 1987, 585 N. Broadhollow Rd., Melville, N.Y. Talk-in on 144.61/145.21 and 146.52. For more information: Bill Sullivan, N2ETG, 516-689-9817 evenings.
- 8 Board of Directors Meeting, QTH of Doc, K3GAS. Call 635-1078 for directions.
- 8 1296 Mhz Sprint, 7 PM - 11 PM local time. See March 1986 QST Pg. 95 for details.
- 10 Hosstraders Spring Tailgate Swapfest, Deerfield, N.H. Fairgrounds talk-in on 146.40/147.00.
- 11 Mothers Day
- 14 QCWA Delaware Valley Chapter Spring Luncheon meeting. Nero's Woodbine Inn, Route 73 - Palmyra, N.J.
- 15 General Club Meeting - ARRL Night. Bob Bennett, W3WCQ, will talk on new techniques and activities on the bands. Hugh Turnbull, W3ABC, Atlantic Division Director will also be here to answer any questions on ARRL activities. Nomination of Officers for the 1986 - 1987 term. Nominating Committee - W3CL, W3IIT, W3ZD. Marios Raffle, Frankies Silent Auction, Refreshments. Visitors welcome to our famous ARRL nite.
- 16-18 12th Annual Eastern VHF/UHF/SHF Conference, River College, N.H. To preregister, send \$13.50 to David Knight, KA1DT, 15 Oakdale Ave., Nashua, N.H. 03062 before May 5. See April Cheese-Bits for more details.
- 16-18 Rochester Hamfest, Monroe County Fairgrounds.
- 17 50 Mhz Sprint, 7 PM - 11 PM local time.
- 18 LIMARC Hamfest at the N.Y. Institute of Technology, Northern Blvd., Rte. 25A, 1 Mile East of Glen Cove Road in Westbury (Exit 39N Rte. 495), 9 AM - 3 PM, Call Hank, WB2ALW nights or LIMARC INFOLINE 536-986-2366.
- 18 Tamaqua Hamfest, New England Valley Fire Co., 1 mile West of Tamaqua, Pa. Amateur Exams at 9 AM. Talk-in on 146.67/147.105.
- 18 Willingboro Repeater Group Hamfest, Holiday Lakes, Willingboro, N.J. 6AM - 4PM Talk-in on 146.925/146.325 and 146.52. See N2SB for tickets.
- 19 Mobile Sixers Club Annual Club Auction.
- 25 Ephrata Pa. Hamfest, Ephrata Senior High School, Amateur exams at 9 AM, General admission at 8 AM. Talk-in on 145.45/146.52/144.85.
- 31 PACKRAT LADIES NIGHT BANQUET, Warrington Motor Lodge, Introduce your lady to the rest of the gang and celebrate the clubs accomplishments of the past year. Open bar before dinner.
- 31- June 1 National 6 Mtr. Invitational Net Activity Day Contest (SIN).

NEW PRODUCTS OF INTEREST TO HAMS

By Lyn, W3NSI

1. KENWOOD 2 M TR 751D: This new multi-mode 2 M rig is now being sold in Japan and is expected to go on sale here in the U.S. It may be a replacement for the 9130.
2. TOKYO HY-POWER LABS 220 AMPLIFIERS: Two new units are now available from this company. The HL22V boosts a 3 watt signal from an HT to 20 watts, FM only. A built in pre-amp using a GasFET can be switched in when needed on receive. Price \$100. The HL 102V has an output of 90 watts when driven by either 10 or 25 watts input. This is an all mode amp and also has a built in receive preamp. Price \$260.
3. VEHICLE EQUIPMENT MOUNT: The IIX Equipment LTD Co. of Oak Lawn Ill. (60454) has two mount systems of interest to hams having Vans, RVs, and Vehicles with flat floors in front. Up to four rigs can be mounted on either of two stands. The #10013 will allow radios up to 13" width to be mounted. The #1009 is used for widths up to 9". Both units mount to a flat floor using the plate and column supplied. The mount swivels and can be adjusted for height. The narrow unit #1009 might be used to support four rigs for 50, 144, 220, and 432 Mhz. The entire stack containing all rigs can be removed as a unit by loosening the telescoping adjustment bolt. Price \$240.
4. TOWER/ANTENNA ACCESSORIES: The Company in #3 also has a line of accessories for antenna towers including mast adapters, mast step kits, ginpoles, yagi beam mounts, and heavy duty brackets. IIX Equipment LTD, P.O. Box 9, Oak Lawn, Ill. 60454.

\* \* \*

VHF ARTICLES OF INTEREST

By Harry Brown, W3IIT

There are a number of articles published by the specialized amateur magazines that may be of interest to the VHF amateur. The following short descriptions may show you what you're missing and you may want to consider a subscription to some of these publications.

VHF/UHF and ABOVE, Dec. 1985. K1FO's column "ON 432" describes the K2RIW 19 element 432 beam including all dimensions, construction details and antenna patterns. WBQDGF has construction details on a 35 element yagi for 903 Mhz. W9ZIH has information on a 2304 Mhz converter. K1FO also offers construction info on his 14 element "extended NMT" 144 Mhz yagi.

VHF/UHF and ABOVE, Feb. 1986. KD5RO reviews the ICOM IC-1291A 1.2 Ghz transceiver. WA8NLC/4 describes a W6FO style 2304 Mhz GaAs FET preamp. With a NE673 it has 15 dB gain and a NF of 0.74 dB. W1JR describes a 28 and 31 element high gain long yagis for 432 Mhz.

VHF COMMUNICATIONS Vol. 17, Autumn 1985. DL6XE describes helical antennas for 432 Mhz. DF7KB writes on noise matching antenna preamplifiers. Part 4 of a series on phase lock amplifiers by DK1OF describes carrier noise sidebands. DB1NV gives complete construction details on a 10,368 Mhz crystal controlled source.

432 AND ABOVE EME NEWS, March 1986. W2IMU gives a preliminary design for a 432 and 1296 Mhz small aperture feed for dishes with a f/D of 0.35. K9ZZH has a disk/dipole feed for 432 Mhz.

\* \* \*

VISITORS - APRIL 17, 1986 MEETING

W3BNQ - Sam Santoro - Blue Bell, Pa.

WB3LGO - Bill Brandenburger - Ardsley, Pa.

SWAP SHOP

FOR SALE: 4 Jr. Boomers - 144Mhz w/frame and phasing. 1 Jr. Boomer - 144 Mhz (FM) 1 KLM 220 Mhz 14 el. 1 Boomer - 220 Mhz, 1 Hygain - 4 el - 50 Mhz.

CONTACT: K2LNS, Herb Krumich  
Phone: 201-526-0781 (day)

FOR SALE: (Help a poor student)

Swan 250 - 6 mtr. xceiver, w/pwr sply & manual \$225. Hammarland HQ110 Hf rcvr, w/manual \$50; Heathkit HD 1410 keyer, w/manual \$35; All prices negotiable.

CONTACT: WB3JYO, Paul Drexler  
Phone: 215-598-3934

FOR SALE: NYE MBII matching network- \$125

CONTACT: KS2T, Jay Miller  
Phone: 201-244-7623

FOR SALE: Butternut vertical - roof mount radials - almost new \$75.

CONTACT: Ceasar, W2SVV  
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717-325-3580 - 4:30 PM to 9:00 PM

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\* \* \*

COMMERCIAL AD

Loop Yagis: 902 Mhz and 1296 Mhz 45 element \$70; 2304 Mhz \$62.50. Also available assembled and tested. Power dividers, stacking frames available. Linear amplifiers; 1296 Mhz. 1 watt in 18 watts out \$230; 2304: 1 watt in, 10 watts out \$300. Write for more information to: Down East Microwave, Bill Olson, W3HQT, Box 1655A, RFD 1, Burnham, ME 04922. (207) 948-3741.

\* \* \*

TID BITS

Sunspot No. for March 1986 = 15.7 - Smoothed No. for September 1985 = 17.1.

Correction for smoothed No. for August 1985 = 16.6.

Bill Olson, W3HQT now writes an FB column for QEX "Focus on Technology Above 50 Mhz". Subs to the ARRL experimenter's exchange is highly recommended.

Carl, WB2RXM busy with his "new, new career - from bio-medical field service; short time teaching at Lincoln Tech, and now doing computer-aided design and drafting. Good luck OM.

John Allen, W3CXU is the club representative to the Delaware Valley Council of Amateur Radio Clubs. Listen to 147,195 repeater on Friday evenings at 8 P.M. for updates and Council information. WA3IAO, Steve White is the Net Control.

We hear from our Florida Pack-Rat, K3KTY as he flits about that State.

Dick Bokern, WB9PUJ on the way back from Jordon with a stop-over in Zurich, Switzerland. Has worked several state side stations via satellite contacts as JY9RB while in Jordon. He will be back in time to contact our gang in FMO8 during the VHF QSO Party in June.

Lee, K3MXM back home from the hospital. Dave, W3ZD underwent surgery and is back home recuperating.

Thanks to Ev Tupis, WB2EIB, Editor of the Rochester VHF Group Journal, for his congrats on the Pack-Rats score in the January SS.

K3BRS - Al Whiting phoned - will be looking for Pack-Rats on the 50 Mhz sprint on May 17th.

K2LNS, Herb Krumich reports he will be moving to Bear Creek, Pa. (near Wilkes Barre) elevation 2100 Ft., Look for WA2FGK/K2LNS in 1987 - 50 Mhz to 3400 Mhz.

W3BRU, Frank Benner, after thirty years, upgraded to General (4 star - he sez) Congrats.

Jay, KS2T, reports that CT1WW of Portugal has 24 hour use of 6 Meters - Grid IN6lge

## Modifications to the Pack Rat 2 Meter Transverter

by Dave Mascaro, WA3JUF

Many of us built the Pack Rat 2 meter transverter in 1979-80. It had a good design and was easy to build. Although I used mine for a while, I could never get the transmit section tamed down. It sat unused until the Jan. 1986 contest when I decided to use it for the IF for my other transverters.

Symptoms: The driver amp (Q3) was unstable and ran hot. The final amp was unstable due to the preceding stage and was linear only up to 3-4 watts output. The final would run away thermally, also. Replacing the devices yielded the same results. A modern device that will run very linear at the 10 watt level is needed.

If you have similar problems, try these modifications. I now use mine on 2 meters, in addition to driving the 220, 1296, and 2304 transverters. The 903 MHz. transverter will be added to the system soon.

1. Lift the emitter of Q3 and add a 15 ohm resistor and a 1000 pf chip cap similar to R13, C8.

2. Check the idling current of Q3 and adjust the value of R16 for  $I_{cq}$  of 20 ma.

3. Replace C8, C12, and C21 with 1000 pf chip caps.

4. Replace the VK-200 choke on the collector of Q3 with 7 turns of #18 enamel wound on a 270 ohm 1/2 watt resistor.

5. Replace the 2N6081 final transistor with a Thomson SD1274 and set bias for  $I_{cq}$  of 30-40 ma.

6. Rebuild the final amplifier as follows:

- a. Move C14 to the base of Q4.

- b. Add a 47 pf UNELCO in parallel with C14.

- c. Change L14 to 4 turns #16 enamel, 1/4" I.D.

- d. Change C18 to Arco 421

- e. Else the same

Tune up requires a Spectrum Analyzer, although adjusting mine for maximum output got me fairly close. Power output at the 1 dB compression point is 10-12 watts. Unwanted signals were down 30 dB in my unit.

Adding a high dynamic range RX converter is the next mod I plan to make.

VHF/UHF REPORT  
by Jay, KS2T

All Class A license holders in the U.K. have 24 hour use of 50 - 50.5 MHz limited to what boils down to an ERP of 100 watts P.E.P. There is also 32 permits issued to Norway stations to be on when TV stations are off. They are allowed 25 watts but not sure if that means output or ERP. Also, from Ireland there are 20 permits issued for 6 meter operation during 'non-peak' TV time. Another addition to 6 meters on a 24 hour basis is CTIWW, grid IN61GE. According to SIX NEWS from the U.K. 6 METRE GROUP newsletter, CTIWW has no power restrictions, but RADCOM reports that he is running 3 watts. There should also be a beacon on from Malta soon (9H0MRL in grid JM65FV) frequency and antenna is not known; possibly 25 watts output but no talk of 6 meter activity, just a beacon. There may also be a 4th U.K. beacon on from SW England (Cornwall), GB3CTC, nothing solid yet.

Talked with Bernie/VE1UT - FN63XV - in Nova Scotia on 432 for over an hour on 31 March; caught him again on 2 April as did many others. Heard that N2CJP, FM16, in NC filled 5 log pages during the April 2nd opening on 432!

Can hardly wait for E skip to get going again, especially on 6 meters.

\* \* \*

THE 1986 WEST COAST VHF/UHF Conference will be held May 2-4 at Griswold's Hotel in Fullerton, California. Friday's program includes noise figure measurements and similiar experiments, all day lectures and discussions Saturday, a 6:30PM dinner, and antenna gain measurement contest and flea market on Sunday. Pre-registration is \$10 until April 25 (too late! -hi) -- \$13 at the gate. The dinner costs an additional \$14. For more information and/or registration, write VHF/UHF Conference, Keith Thompson, K6PVS, 15130 Fir, Hesperia, CA 92345. (Tnx WESTLINK report)

\* \* \*

RACKET? PACKET

Have you been trying to chat or make a few points in the test on simplex around 145.0MHz and heard the world's weirdest noises? Fingernails on the blackboard? A dyseptic moose? A Bronx cheer contest? If you supposed it was a leaky cable TV system or some other occult intrusion into Amateur spectrum, well, it isn't. What it is, is packet radio. Each blatz is a packet of information, surrounded by all sorts of organizational voodoo that permits error-free communication. Although it sounds awful to human ears, your computer would find it absolutely musical. But one thing packet can't tolerate is splat-ter from nearby voice operators. RTTY will survive hits. Packet won't. It's perfection or zilch. Customerly in the northeast, packet runs on 145.01, 145.03, 145.05, 145.07, and 145.09 MHz, FM simplex. The VHF contest rules don't advise staying clear of that area, unfortunately, so some interference situations have arisen without any malice on anyone's part. The ARRL Board of Directors has sent the question of recommended operating frequencies for VHF and HF packet to committees (see Minute 45 in March QST, page 63). Until a revision of the band plan is published, however, we'll have to depend on courtesy. Development in Amateur Radio, sometimes means that we are obliged to change our operating habits. In any case, we're trying to keep the process friendly.

(from April issue EPA FEEDLINE)

\* \* \*

STRANGE BUT TRUE (from RADCOM) The following true story was told to a member of headquarters staff visiting a well-known retailer in the south of England. A not-so-newly licensed amateur purchased a 144 MHz Yagi antenna to replace a chimney-mounted colinear used for local fm operation: a few days later he returned to the dealer demanding his money back, saying that the Yagi was a far worse performer than the colinear. The dealer was rather surprised and asked the amateur how he had installed it. It then emerged that the customer thought that "vertical polarization" meant mounting the antenna with its boom vertical and the array pointing directly upwards.

DELAWARE VALLEY COUNCIL

The Delaware Valley Council of Radio Clubs met on April 6, 1986 at the Naval Supply Depot in Philadelphia. A number of club representatives were present including W3CL for the Pack-Rats.

One of the primary subjects discussed was a plan to demonstrate Amateur Radio to young people in schools. A short lecture would be given and followed by a demonstration of on-the-air contacts.

An updated listing of examination sessions and license courses is to be compiled for distribution to club newsletter editors. Important club meetings and Hamfests will be listed also.

An on-the-air council session is being held on Friday evenings at 8PM on the 147.195 Repeater with WA3IAO, Steve White of the Suburban ARC, acting as net control.

\* \* \*

NOTICE OF A VE EXAM SESSION

The Penn Wireless Association will hold an examination session on May 8, 1986 at 7PM at the Church of Christ, Levittown Parkway, Levittown, Pa. Pre-registration - call K3TX, Dave Heller at 946-1040 or 736-3333, however, walk-ins will be accomadated. Please bring your license and a photocopy of it plus ID, and the \$4.25 testing fee.

\* \* \*

ATLANTIC DIVISION CABINET MEETING

A meeting of ARRL section and division leaders, appointees, and elected officers met at the George Washington Motor Lodge in Plymouth Meeting, Pa. on April 19- 20, 1986. The meeting was hosted by Hugh Turnbull, W3ABC with co-host Kay Craige, KC3LM, assistant section manager, E.Pa.

Section managers from MD-DC, Delaware, W. New York, and W. Pa. presented comprehensive reports, Mt. Airy VHF Radio Club (Pack-Rats) representatives were W2HX, BB Wentzel, W3CL, Harry Stein (assistant directors) and W2AXU, John Power. W2AXU was there by invitation to discuss the Winslow, Ewing and Tabernacle, New Jersey local ordanances affecting amateur radio operation.

Other important subjects discussed were the status of repeater coordination and operation with reports from TPARC representatives; the League and FCC on the issuance of special call signs; the work of the VE program and the status of the amateur auxilliary/00 system.

Hugh Turnbull discussed the Electronic Privacy Act under way in congress. Public service events were reported and a fifteen minute slide presentation by Bob Josuweit, WA3PZO, the E.Pa. EO, on last Novembers National Disaster Medical System Drill in the Philadelphia area. This was the same presentation he gave to the Pentagon this past February.

State government liason was discussed as well as packet radio and its effect on NTS. Problems relating to League operations were touched on. It was a most interesting and instructive meeting.

\* \* \*

PENNA. LEGISLATION TO WATCH

Robert Myers, K3HWL, State Government Liason for WPA Section, announces that H.B. 2256 will permit amateurs and others to use a mike/headset while operating a motor vehicle. At present this is prohibited by Section 3314(a) of the Pa. Consolidated Statutes, Title 75 "Vehicles". If you have an opinion on this bill, you may write a handwritten letter to your Pa. House member. Avoid form letters and petitions....politicians respond best to individually-written courteous notes, however simple the language. (tnx KC3LM EPA FEEDLINE)



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