

# PACK RATS'



**PACK RATS**

CLUB CALL: W3CCX

# CHEESE BITS



ARNS

MT. AIRY VHF RADIO CLUB, INC.  
MT. AIRY VHF RADIO CLUB, INC., PHILADELPHIA, PENNSYLVANIA  
50.125, 144.150, 220.125, 432.110, 1296.110MHz, 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

VOLUME XXVI

JULY 1986

NUMBER 7

## THE PREZ SEZ

First, I would like to thank Mike, WB2RVX, for his support to me as Vice President last year and for his service to the Pack Rats. It was a good year for the club and many things are in the making as I take the helm of President.

For one thing, we must support and offer our help to our new HAMARAMA Chairman, Pat, WB3DNI. In the Fall we will get a chance to help 902 MHz going here in the Delaware Valley. Through the efforts of Dave Mascaro, WA3JUF and Dave Hackford, N3CX, a reproducible 902 MHz transverter will be available. We have some catching up to do since the New England Hams have already turned in contest scores showing over ten worked on that band.

The club had a huge success on Spruce Knob, WVA this year. At our last meeting, Rick, WB2NPE along with Dave, N3CX, Phil, WA3NUF, and Bob N2SB gave an excellent accounting of the trip and the contest. Congratulations to all participants for a job well done. Rick has written a short report in this issue and a detailed write-up will appear in the August issue.

That's all for now; hope to see a good turnout at Zimmermans' Glen on the evening of July 17, 1986. Please bring along a WHITE ELEPHANT wrapped or not and more importantly, YOURSELF!

73 for now,

Gary Hitchner, WA2OMY

\* \* \*

## ELECTION RESULTS

The following have been elected to serve the 1986 - 1987 term:

President: WA2OMY, Gary Hitchner	Directors for a two year term:
V. President: N2SB, Bob Cook	WB3DNI, Pat Cawthorne
Cor. Secy: W3CXU, John Allen	WB2VLA, Dave Power
Rec. Secy: WA3AQA, Walt Zumbach	WB2RVX, Mike Gullo serves ex-officio
Treasurer: K3GAS, Doc Cutler	

\* \* \*

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SWAP SHOP ITEMS - NO CHARGE

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

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609-783-9478

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

NET CONTROL

W3CL  
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K3GAS  
KS2T  
K3IUV/K1PXE  
- - -

PACK RAT REPEATER 222.98/224.58 MHZ/ W3CCX  
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REC. SECY : WA3AQA, WALT ZUMBACH  
TREASURER: K3GAS, DOC CUTLER  
DIRECTORS: WB2RVX, MIKE GULLO (EX-OFF)  
WB3DNI, PAT CAWTHORNE (2 Yrs)  
WB2VLA, DAVE POWER (2 Yrs)  
N3CX, DAVE HACKFORD (1 Yr)  
WA3JUF, DAVE MASCARO (1 Yr)

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OST

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CALENDAR OF COMING EVENTS

By Harry Brown, W3IIT

JULY

- 2 +/- 2 weeks look for European openings on 6 meters
- 4 Harrisburg Firecracker Hamfest, Bressler Fire Company picnic grounds. Talk-in on .52 or local repeaters. Info: Dave, KC3MG - 717-939-4957
- 6 Murgas Amateur Radio Club Hamfest, Coal St. Sports Complex, Wilkes-Barre, Pa. 717-388-6863, 146.61 repeater.
- 10 Packrat Board of Directors meeting at the QTH of WB3DNI. Interested parties are always welcome. (268 Bloomfield Rd., Warminster, Pa. 215 - 672 - 5289)
- 12 Mt. Nittany Hamfest at the Fireman's Carnival Grounds in Pleasant Gap, 10 miles N. of St. College off Rte. 26. Talk-in on 146.16/76 and 146.25/85. For information contact Chuck McMullen, K3CM, 7 Holly Cir., State College, Pa. 16801
- 13 Bucks County Hamfest at the Bucks County Community College on Swamp Road. Talk-in on 146.115/715 and 52.
- 17 Packrat Annual July meeting and White Elephant Auction at Zimmerman's Glen, W3ZD. Centennial Road in Warminster, Pa. 8:00 P.M.
- 18 Hamfest USA will be held at the Moorestown High School at the corner of Bridgeboro and Stanwick on Friday night at 6:00 to 11:00 PM. Talk-in on 144.69/145.29, .52, and 223.5. For more information call 609-234-3926.
- 19-20 CQ Magazine VHF WPX Contest, see July QST Page 87 for contest rules. For logs write to S.C.O.R.E. P.O. Box 1161 Denville, N.J. 07834
- 19 SCARC '86 Hamfest sponsored by Sussex County ARC. At the Sussex Co. Fairgrounds, Plains Rd. off Rte. 206. For info call K2OX at 201-663-0677
- 19-20 Atlanta Ham Festival, World Congress Center, Atlanta, Ga. P.O. Box 77171, Atlanta, Georgia.
- 20 +/- 2 weeks - look for 2 meter sporadic openings
- 20 8th Annual TSRAC Wheeling Hamfest/Computerfest, Wheeling Park, Wheeling, W. Va. 9 AM to 4 PM. Tickets: 614-546-3930.
- 25-27 Central States VHF Conference in St. Louis, Mo. Contact NØIS for details.
- 27 BRATS Maryland Computer & Hamfest, Howard Co. Md.
- 29 Predicted peak of the Delta Aquarids shower at 0845 UTC

\*A NOTE FROM DOC, K3GAS\* Rubber address stamps are being given to all Pack-Rats on record as members in 1985. The club thanks all members for their cooperation during the year and the stamps are just in time for the Pack-Rats 30th Anniversary. 73!

NEW PRODUCTS OF INTEREST TO HAMS

By Lyn, W3NSI

1. HF KW AMPLIFIER: Tokyo Hy-power Labs have introduced the HL-1K/A amplifier covering all ham bands from 160 to 15 meters. A pair of 7094 ceramic tubes produce an output of 600 watts. Vernier tuning knobs are used on the plate and load controls. Other features include built in P.S. and a very compact double shielded cabinet.

2. MICROLOOP ANTENNAS: The Advanced Design Networks Co. is advertising a line of small loop antennas for all HF bands from 10 to 40 meters. The ten meter unit measures 27 inches across, while the largest, 40 meters is 108 inches. Antennas may be mounted vertically or horizontally. Bandwidth as expected is the penalty for the reduction in size. On ten meters for a limit of 1.5 SWR the bandwidth is 46 Khz while the worst figure is for 30 meters at 11 Khz. Antennas are supplied with hardware and should be mounted on non-metallic poles. Price 10-20 meter versions \$83.50. 30 and 40 meter units \$93.50.

3. SINADAPTOR: The Sinadaptor is designed to work with a VOM or AC voltmeter to measure SINAD. Such measurement capability allows the experimenter to tune receivers, preamps, cavities, etc. for optimum sensitivity. A range of 0-18 DB is available with meters reading 2.5 VAC. Sinadaptor price \$80. J.S. Technology, Inc. 39 Main Street, Scottsville, N.Y. 14546.

\* \* \*

PRESENTATION OF AWARDS

January VHF SS Club Awards were presented to the following:

WA3AXV - 1st Place - Single Op  
WB3JYO - 2nd Place - Single Op \*  
WA3NUF - 3rd Place - Single Op.  
WB3IGR - Most improved - Single Op. \*  
1st Place - Multi-Op - N2SB, WB2NPE, WB2RVX, WB8ZAR. \*  
2nd Place - Multi-Op - WA2OMY, AA2Z  
3rd Place - Multi-Op - W3KKN, W3CXU \*

Homebrew Awards to the following:

WA3AQA\*, WA3AXV, K3GAS\*, WA3IWT\*, WA3JUF, WA2OMY.

\* Presented on Ladies Nite

- A special service award to honor the memory of Silent Key K3MXM, Lee Cohen, was presented to his XYL Peggy. \*
- A souvenir gavel was presented to President Mike Gullo, WB2RVX.\*

\* \* \*

From ARRL LETTER - ARRL POTPOURRI: The new "Gil" Cartoon book, officially titled "Gil: A Collection of Classic Cartoons," should be available from the printer. The training branch of the Club Services Department is looking into generating Novice Morse code test packages. The ARRL/VEC's test materials have received high marks for quality and consistency. Something similar for Novice candidates, even if it is a for-sale, seems to be highly desired in the field. RSGB General Manager David Evans, G3OUF, visited ARRL HQ the week of June 2. We had extensive discussions with Executive Vice President Dave Sumner and other HQ staff members on a number of topics.

SWAP SHOP

FOR SALE: K3MXX Estate: 5V. pwr/splys \$3@, Transistor tester \$3; MTR (Microns) \$2; Stereo headphones \$4; A.C. Distribution box \$4; Adding machine w/tape \$4; 8MM movie projector & camera \$10; Mag mnt ant \$5; Lafayette 12V pwr sply \$5; Battery tester \$2; Micronta digital probe \$8; Digital clock \$4; Millivac DC voltmeter \$3; Elco VTVM \$8; Dumont voltage calib \$2; Federal sig. gen. \$5; Philco 5" scope (as is) \$3; Desk clamp-on lamps \$3; Mercury #1101 tube checker \$5; Box of coax cable \$3; Accurate tester for transistor radios \$4; 12V pwr sply \$4; Table model teletype & rolls of paper \$5; underwood typewriter \$5; Kantronics Universal Terminal unit -UTV XT - \$200; 39" workbench w/perf backboard \$5; telephone plugs & sockets, resistors, capacitors, hardware, parts cabinets, meters; many computer magazines & electronic books.

CONTACT: K3GAS, Doc Cutler  
Phone: 215-635-1078

FOR SALE: 2 - Midland model 13-309 - 220 Mhz FM rigs xtaled for the Pack-Rat, Trevoise and Lancaster repeaters plus 223.5 Mhz simplex. Asking \$125 each.

CONTACT: Jack Power, W2AXU  
102 Upper Ferry Road  
Trenton, N.J. 08628  
Phone: 609-882-8811

FOR SALE: Military rcvr R392 - 0.5 to 32 Mhz Digital readout - w/pwr sply \$100.

CONTACT: Ron, K3ZKO  
Phone: 215-379-5338

FOR SALE: Lo band HF amp. homebrew pair 3-500 w/pwr sply and rack panel on wheels \$250. Bud series inclined panel cabinet rack on wheels. Model 60-2730 - \$75. Clegg - 220 Mhz FM rig w/many xtal pairs excellent condition \$125.

CONTACT: Dave Hackford, N3CX  
Phone: 215-483-2030 or 215-679-7293

FOR SALE: TS520S Kenwood Xcvr, MFJ940 ant. tuner, MFJ250 dummy-load w/manuals \$400.

CONTACT: Rex Ahlstrom  
Phone: 215-657-2496 - evenings

\* \* \*

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 May 1986 = 13.1 - Smoothed No. for November 1985 = 17.0.

This is the Pack-Rats 30th Year. The following original members are still with us: W3CL, W3KKN, W3KM, and W3RZU.

WA3HVL, and K3QQ have been dropped from membership

We were glad to see K3IGX, Dick Boyle (Came in from Arizona) and KF6AJ, Steve Simons (Came in from CT way) at our June meeting.

Helen Brick, our First Editor, is still very busy with the Phila. Red Cross after 23 years as a volunteer.

Jim Ward, WA3AAJ volunteers as the Western Region Manager of Retired?Pack Rats. Hi. He will be visiting East the latter part of July.

John, K3KTY is covering the State of Florida as a Pack-Rat goodwill ambassador.

W3ABC, Hugh Turnbull received "Grand Old Man" Award at the recent Rochester Hamfest. Congrats Hugh - you well deserve the honor!!

It was nice working Pack Rat N3AHI from Georgia during the QSO party. First time I was called Old Timer on the air. Guess your'e right Jim ....

We heard from Pack Rat Doug, WB3KES who has been living in Florida. Our good wishes to your new family.

VHF REPORT

by Jay Miller, KS2T

Dave, N3CX has a beacon on 903.075 MHz. This will be a good signal source for anyone in the Philly area to tweak-up their home-brew converters as well as to follow propagation on that new band. The antenna is horizontal omni-directional.

50 MHz on up was quiet in early June but kicked into gear on the 10th & 11th with a strong opening from the caribbean to the west coast. N4HSM & W6JKV were supplying St. Vincent Is., also they were worked during the QSO Party as well as a few other Caribbean Islands. Also on the 10th, Ron, KB3QM worked on 2 meters KP4EOR & EKG then into the southern states over to Mississippi. Not wanting to be outdone; 432 MHz showed signs of life on the evening of the 10th; VE1UT in Nova Scotia was making noise and made a 1296 MHz QSO into the Asbury Park NJ area. There may have been more DX than that but I don't have any reports.

The June VHF QSO Party had excellent propagation too. Once again the Caribbean to the west. Many missed two rare grids; one was WA2GEZ/MM in FM39 and KALICR/VE1 in FN85. On Sunday evening, the 15th, OX3LX worked several stations in the northeast; K1TOL & KA1PE, both in Maine, were two of the several.

From the Philly area 220 & 432 were good from Maine to West Virginia (W3CCX) with a few VE3s in there but activity was low because of good stuff flying around on 6 & 2 meters.

W6JKV/CT2 (Azores) will be on 6 meters for three weeks starting from June 19th or 20th, so if you have'nt caught him yet there should be about another 10 days left after you get CHEESE-BITS. The beacon in Malta should be on by late July on 50.085 MHz.

Don't forget to listen for the U.K., Ireland, Norway and CT1WW. So far every opening to the U.K. has taken place in July. For indications of an Es opening to Europe listen for the BBC harmonic on 28.230 MHz, GB3SIX (I073TJ) on 50.019 and GB3NHQ (I091VQ) on 50.050 MHz. For the Grid hunters; N4VA will be in FM25 on 6 & 2 meters from July 6 - 12th. Have fun .... everyone!

\* \* \*

1986 PACK RAT VHF-SHF EXPEDITION  
SPRUCE KNOB, WVa.

(Preliminary Report by WB2NPE)

The 1986 assault on Spruce Knob, West Virginia by members of the Mt. Airy VHF Club has been completed and the troops have returned with fine results. The Pack Rat crew was a "Dirty Dozen" of specialists and operators whom the club membership should be proud of. They are:

N3AOG	WA3JUF	AK30
WA3AXV	WB3JYO	WB2RVX
N3CX	WB2NPE	N2SB
K2EVW	WA3NUF	WA3YUE

Every detail from the journey to the site, to the trip home, was flawless. A detailed report of the entire operation will be featured in the August issue of Cheese Bits. At this point we'll say that the expedition unfolded without a hitch; the weather was ideal, and the guys worked together and produced like bread and butter. Club participation from back home was superb ... sincere thanks to everyone who got on the bands and found W3CCX/8. Pack Rats worked were W3KKN, W3CXU, WA2OMY, KS2T, K3LOM, K3ACR, K3LYB, W3IIT, W2AXU, WB2VLA, KF6AJ, N3BBI, K3BPP, W3CL, W2EIF, WB3IGR, WA3IWT, W3HQT/1, KA2JKI, K3JJZ, W3NSI, K3NHX, KB3QM, WB2ONA, AC3T, K1PXE, and possibly others we'll find upon further checking the logs. Thank you guys !!

\* \* \*

A 903 MHz BEACON ON THE AIR

N3CX has activated a 903.070 MHz beacon from Pennsburg, Pa. 5 watts into a big wheel antenna horizontally polarized. The ID is N3CX - FN20 plus Pennsburg, Pa. Reception reports will be appreciated. Drop a QSL to N3CX, Dave Hackford, Box 138 RD2, Pennsburg, Pa. 18073

MAY VHF/UHF ACTIVITY REPORT  
by Rick Connor, WB2NPE

Excellent spring conditions continued during the month of May throughout the VHF/UHF bands indicating that we may be in for a season of fun on the radio. May 2 and 3 brought us some intense Aurora conditions providing communications from our area to VE1, VE2, VE3, W8, W9 for several hours. Buzzing signals were reported as high as 220 MHz and several new states and grids were worked by guys in our districts. The Aurora returned May 5, 6 with shorter duration (about 2 hours) and gave us a second opportunity for about the communications path. It would be interesting to check the records of our "Sun Watcher", W2AXU and find what A and K indices were recorded. These are probably the best indicator of Aurora conditions approaching or past.

The 1296 MHz Sprint was run on May 8 with 40-plus stations to work from EPA, SNJ stations -- much better activity than last year. Conditions weren't super but good enough for a contact between N3CX and W3QIZ in FN00 (near Pittsburgh). Other club members heard on the 23cm band Sprint were WA3NUF, WA3JUF, AK30, N3AOG, and WB3JY0.

On Saturday morning, May 10, 2-Meters opened with a wild Sporadic-E path out to the West and South. Stations from our area worked into western Texas, Louisiana, Alabama, Mississippi, Oklahoma, Florida, Kansas, Arkansas, and Missouri. These areas were all involved in heavy thunderstorm activity at the time which supports the connection between Es and electrical storms. The six meter band had been strong with Es several hours before the opening on 2. Just before 2 meters began to open, 6-meter propagation began to shorten (much like the 10 meter band does preceding 6-meter openings). Watch for the short skip on 6 during intense sporadic E. We've already had a second E-skip opening this month on 2-meters.

The 6-meter sprint came on May 17th following a day of great 50 Mhz skip conditions. See KS2T report for details.

Nightly tropo on 2-1296 for the month as been generally good with 9's and 8's in at 0100-0300Z nightly and 8's in on 220 and 432 around 0200-0300Z. I've had good success working/hearing WA3TTS, EN90 on 1296 near our sunset and near midnight local time. Mike is running about 80 watts and pair of F9FT yagis.

Keep an ear in the headphones -- see you next month.

\* \* \*

FROM ARRL LETTER

HAVING TROUBLE WITH LOCAL ZONING/TOWER HEIGHT ORDINANCES? -- ARRL HQ has put together a "PRB-1" package which consists of a copy of PRB-1, model antenna ordinances, general information about Amateur Radio, names and addresses of local ARRL volunteer Counsels and other information useful in the battle against unduly restrictive antenna ordinances. For a copy, send \$3.00 (for postage) to HQ requesting the PRB-1 package.

AMATEUR LICENSE RENEWAL AND GRACE PERIOD -- HQ has received a number of inquiries about renewing an amateur license and its grace period. If you have a license good for a five year term, its grace period, should you fail to renew, is five years. After two years of the grace period has elapsed, you will lose your call-sign and will be assigned a new one. (Note that the new 10-year term licenses, which have been issued since January 1984, have a 2-year grace period.) To renew an amateur license, use FCC Form 610, which is available from FCC or ARRL HQ. There is NO fee for renewing an amateur license.

THE FIRST MULTIBAND MICROWAVE BEACON COMES ONLINE FROM NORTH  
CAROLINA MOUNTAINS AT 4777' AMSL IN EM85md

One reason I've almost dropped out of sight in the past six months has been a very important project for microwave activity in the southeast. On June 1st 1986 I placed into operation the first known multiband phase locked beacon in the US. The beacon is capable of operation on the following frequencies:

432.0715 MHz	1 Watt EIRP OMNI
1296.2145 MHz	2 Watts EIRP OMNI
2304.3575 MHz	100 mw EIRP beamed SW
3456.572 MHz	not operational, plan 10mw to 4' dish
5760.9295 MHz	8 Watts EIRP beamed SW
10,369.716 MHz	not operational, plan .4W EIRP beam SW

All beacons are CW (A1) identified " de K4MSK/BCN EM85md EM85md "

The beacons are phase-locked to a 108.01788 MHz ovenized crystal oscillator. Drift will be +/- 3ppm 0-60 degrees C and per year. We will touch up the tuning as necessary to maintain a frequency near 432.0715 MHz as the prime frequency. Since I do an unequal power division and then triple to get the 1296 beacon, all one has to do is transmit on the 432 beacon's frequency zero beat and look for your third harmonic on 1296. The beacon will be exactly on frequency. This allows you to precisely locate where it should be even if its below your noise floor at that particular time. This should cut down on the tuning and allow CW filters to be more effectively used to "dig" for the signals in a narrowed "search zone".

I have the 10 GHz phased locked loop working but occasionally it would lose lock so I didn't take it up on the mountain with the initial system installation. 3456 MHz did not get hooked up because the antenna wasn't ready. Other planned improvements are more power for 2304 and 3456, at which time I may go omnidirectional if I can get a strong enough signal into Atlanta on a frequent basis.

902 MHz is also a possibility as I could readily add a 760 MHz synthesized LO that I have. By mixing this with the 144 MHz keyed signal (used on 5760 and 2304 parts of the beacon) I would come out exactly at 904.000. I have plenty of ways to get power on that frequency so expect it to be added to the contingent of beacons at some point later this year.

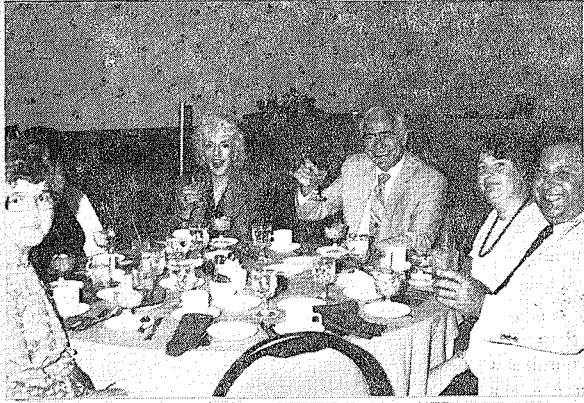
We didn't forget 220 either. The Fourland VHF Contest group placed a wide coverage repeater on 224.72 MHz. The closest one on that frequency is Falls Church Virginia near Washington DC so we run 65 watts to a 9 dB gain antenna, GaAsFET preamp, etc. This gives mobile coverage from Atlanta to Charlotte and West to Oak Ridge TN. The repeater is of course atop 4777' Mt. Toxaway also. In fact the beacon is sitting right atop the repeater's rack.

No beacon is necessary on 144 as K4MSK himself performs that function nicely with four KLM 144-16LBXs and the Henry 8877 Amp. On the worst day John can hit Washington DC to Orlando to Indiana to New Orleans. When conditions are good, lookout.

Charles Osborne, WD4MBK

\* \* \*





BERT (W3TNP), (Where is Ernie)?, ANN HOUSER (Our Apology) JANE (WB3DSK) & W3ZD, KATHY (WB3LTH) & WB3TGR



YL & WB3JYO, DONA (Where is Gregg, KD6KD)? ROSE & W3IIT, SHARON & WA3IWT



AK30 (his arm) & MADELINE, YL & WB3DNI, N2SB, WB2NPE & JANICE, RUTH & W3GXB



K3JJZ & LORRAINE, WA3HIT & BETTY, K3CAS & LORETTA, PEGGY



WA3AQA & JEAN, WB2VLA & NANCY (N2AII), WB2ONA & SUSAN



HERE IS NANCY (N2AII)



HERE IS ERNIE (W3KKK) WITH WB2NPE & W3CXU

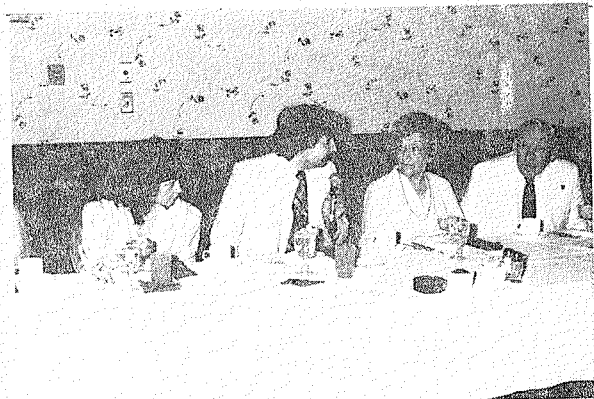


LORRI & W3HKZ

# LADIES NITE '86



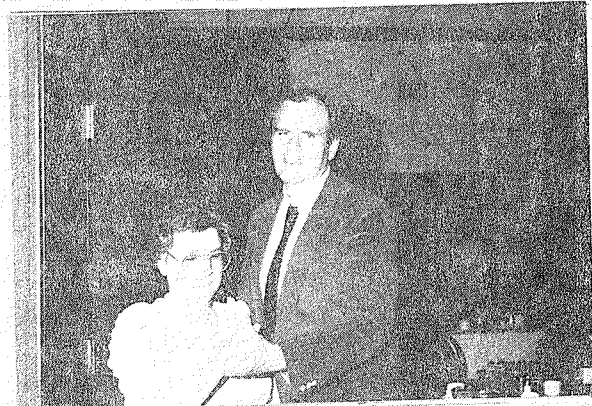
W3CXU, HELEN (Mother Rat), W3NST & SALLY



JANET (KA2NYF), MIKE (WB2RVX - THE PREZ), SYLVIA & HARRY (W3CL)



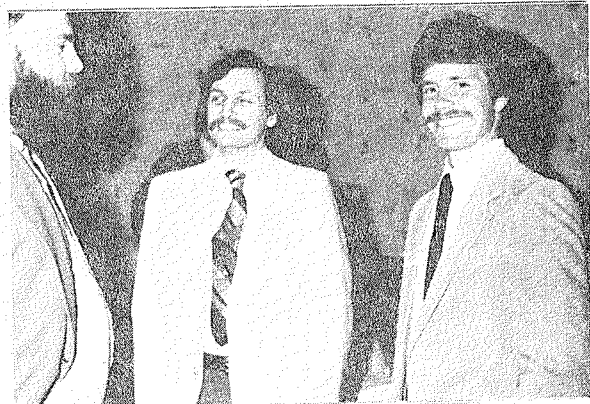
EARLY ARRIVALS - W3CXU & RUTH, HELEN, LORETTA, SYLVIA, PEGGY, BETTY & W3HIT



BETTY & PAUL (W3HIT) DOING THEIR WALTZ



W3CL PRESENTS THE P.3MGM SPECIAL SERVICE AWARD TO PEGGY



GLAMOUR BOYS N2SB, WB2RVX, WB3JYO



AWARD WINNERS - EJLOR, N1NB, W3HIT, W3ANR, W3MVA, W3AQA, K3GAS, WB2RVX, Where is ERNIE!



W3CL PRESENTS WB2RVX WITH THE PREZ AWARD GAVEL

# LADIES NITE '86

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