

# 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

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### THE PREZ SEZ

As the weather turns colder and with the holidays upon us, contest time is growing closer. Get the stations in top working condition and ask for help now. Get the dust off the amplifiers and give them a workout over the next few weeks rather than blowing a diode in the second hour of the contest. An excellent opportunity will be during the Genemids Meteor shower from December 10th to the 14th. This is one of the major showers of the year and provides some exciting contacts for both the beginning and experienced scatter operator.

We would like to thank K3ZKO, Ron Cohen, for giving us an electrifying talk on lightning protection. I am sure we will all find some useful hints from his 4 page handout. The December meeting is our famous Pack-Rat Contest strategy meeting. Plan to attend this meeting as it will be stock full of juicy tid bits on the art of VHF Contesting. Finally, I would like to wish all a Happy and Safe Holiday Season.

73, Mike

\* \* \*

The Joint Navy/Civilian Disaster exercise held on Saturday November 16, 1985 sending simulated casualties to hospitals in the five county, Eastern Pennsylvania area was declared a success as far as the Amateur Radio Community was concerned. (Tnx., WA3DSP)

\* \* \*

Congratulations to Hugh Turnbull, W3ABC, and James Mozley, W2BCH, elected to Director and Vice-Director, respectively, of the Atlantic Division.

\* \* \*

N2SB, Bob Cook, was appointed by President Mike Gullo, WB2RVX, to the office of director to fill out the term of Jim Ward, WA3AAJ who moved to San Diego, Cal.

CALENDAR OF COMING EVENTS  
Syllabus by Lee, K3MXM

DECEMBER

- 2 Useless Trivia - First Model A Ford sold in 1927 for \$385. Wonder what car is worth today??
- 6-8 ARRL - 160 Meter Contest - Info: QST November Page 103
- 8 Hanukkah or Chanukah - What is your pleasure??
- 9 Start looking for Halley's Comet - if should be able to be seen with the unaided eye - the first time in nearly three quarters of a century.
- 12 Board of Directors Meeting - QTH: WA3YUE, Bruce Loss, 3747 Warfield Drive, Huntingdon Valley, Pa. Phone: 215-947-4166.
- 13-15 Geminid meteors will pour from high in the sky from the late evening until early morning twilight in numbers as great as 50 or 60 an hour.
- 14-15 ARRL 10 Meter Contest - Info: November QST, Page 103.
- 19 General Club Meeting - Preparations for the Contest. Come to the meeting early, get your packages, get all the last minute info on conditions, etc. The Mario Raffle, Frankie's Silent Auction, Refreshments.
- 21 Winter solstice 5:08 P.M. EST
- 25 Christmas Day - Best Seasons Greetings to Everyone!!!
- 31 New Year's Eve - Happy New Year to one and all...

"No one ever regarded the first of January with indifference" Charles Lamb...

\*\*\*\*\*

AMATEUR RADIO SOCIAL: PHILADELPHIA, PENNSYLVANIA

The CHAVERIM OF DELAWARE VALLEY, INC., an organization formed to promote a closer association between Jewish Amateur Radio operators and their friends throughout the world will be holding their 6th mid winter annual social in downtown Philadelphia on Sunday, January 12, 1986, at 10:00 A.M. In store for participants is a fabulous traditional buffet brunch, brief installation of new officers, entertainment, and lots of eye-balling. Everyone invited to participate. Contact Bill Soble, W3QXT, Ph: 215-676-6769 or write to 9357 Hoff Street, Philadelphia, Pa. 19115, for information, cost, and full details. Reservations absolutely necessary.

\* \* \*

TID BITS

Sunspot No. for October 1985 = **18.5** Smoothed No. for April **17.8**

W3KM, Bill Benner was severely injured a month ago when installing a small tower on the roof of his house. He is recuperating at this time.

Our "Down East" member, W3HQT reports a couple of inches of snow on the ground so Bill is starting to think about pre-January antenna work - Hi!! Suggests we should revive the Sunday AM 3828 Khz get together at this time.

Heard from our San Diego, Cal. man WA3AAJ, Jim. His new house about ready for occupancy but must camouflage his antennas (shades of WB2RVX!) Would like an audio cassette of the business portion of our meetings. Sez he will really miss the January Contest.

SWAP SHOP

FOR SALE: 8 element 2 meter beam;  
5 element 6 meter beam; 1 hy band verticle  
antenna; 1 CB antenna. Free to any ham under  
21 years of age. \$30. to anyone older. On  
the ground-requires disassembly.  
1 HA-460 6 meter AM-xcvr \$50.

CONTACT: Mort, WA3EPS  
Phone: 657-2221 (evenings)

FOR SALE: 450 Mhz tube type repeater  
transmitter 10 watts out. High stability  
tcxo and double shield screen. 70 watt  
amplifier available, if you can supply  
another amplifier to me. \$15.

CONTACT: WA3IWT, Richard Prim  
Phone: 215-355-1192

FOR SALE: Butternut HF6V-radials,  
tripod roofmount & post - almost new \$85;  
Variac - Superior electric, 15 amps, 2KVA  
115V 50/60 cycle \$25; Cushcraft 220 Mhz  
vertical, never used \$30; 10 mtr Telrex  
monoband beam.

CONTACT: Geasar Arena, W2SVV  
1090 River Road  
Trenton, N.J. 08628  
Phone: 609-883-6336

\* \* \*

ADDENDUM

1296 MHz, 1 watt in 18 watts out - \$230  
2304 MHz, 1 watt in 10 watts out - \$300

\* \* \*

COMMERCIAL AD

FOR SALE: 1296 and 2304 Mhz Loop Yagis----- 45 element \$70; 2304 45 element, \$62.50  
power dividers and stacking frames available. Above antennas available assembled  
and tested. Linear Amplifiers: See Addendum above. Write for info: Bill Olson, W3HQT,  
Down East Microwave, Box 1655A, RFD 1, Burnham, ME 04922 Phone: 207-948-3741.

\* \* \*

TID BITS CONTINUED

N3CX reports a good return of the contest questionnaires. Keep them coming.  
New membership directories are in the works. Will be available in the contest  
package at the December 19th meeting.

A 432 Mhz EME Directory compiled by W5HUQ in August 1985 is available to those  
interested. ( Tnx K2UYH)

FOR SALE OR TRADE: (2) 18 element RIW  
antennas, 432 Mhz (co-phased) with Harness Kit.  
Lets talk!! must go!!

FOR SALE: Hygain TH3MK3 10,15,20 meter 3  
ele. beam, exc. condx. \$95; Ham 4 rotor w/brake  
2 yrs. old. best offer; Hammurlund HQ-180 rcvr  
(general coverage) \$220; Yaesu FT-107 10-160  
solid state xcvr, matching P/S & mike \$650;  
Drake HS-75 padded headphones (new) \$15;  
Kenwood BS-5 pan adaptor (new) \$40 (mounts  
in SM220 scope); Wilson Mark II, H.T., chg.  
xtal control \$75; Collins 75S3B Ham band  
rcvr \$350.

CONTACT: Tony Musero, K3UKW  
Phone: 215-271-8898

FOR SALE: Cassette tapes "Fire & Ice" \$1.00;  
Tubes including 4-125a's; Astatic JT30 mike &  
stand \$10; Gonset 450 6 meter transceiver w/  
manual \$50; Realistic dual response microphone  
PTT \$10; Realistic Dynamic microphone base  
station \$10; Realistic amplified base station  
\$10; Heath sixer and book \$20; Heath twoer  
and book, converted \$10; 4 ft. rack on wheels  
w/2 meter transmitter, P.S. and modulator -  
5894 final \$25; 6 meter transmitter, 829F  
w/power supply, modulator, relay control \$15;  
CMU15-432 transmitter, 2 5894, power  
supply and modulator \$20; 432 converter (Parks  
copy) \$25; Some HB power supplies; auto  
antennas \$1.50; 8 track tapes 50¢; cassette  
tapes 50¢.

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

## 2 X SD1599 AND 4 X SD1599 1296 MHZ. AMPLIFIERS

by Dave Mascaro, WA3JUF

Combining transistor Class 'C' amplifiers is easy, even @ 1296. Wilkinson power divider/combiners were used with good results. Combining 2 devices in Class AB was also tried with good results, although the biasing gets tricky with more than one device when using common base transistors. Combining two stages using Sage Wire Line 3 db hybrid divider/combiners was also tried. This is recommended for high power combining because power dissipating loads can be used on the dump ports instead of resistors.

I used G-10 pc board and 2 watt resistors to prove that good microwave components are not necessary for good performance at 1296 MHz. These amplifiers could have been built with Teflon pc board and microwave terminations for the balancing resistors with possibly better results, but I doubt it.

The two stage amplifier was built first, using devices that gave at least 10 watts Pout in a single stage. With 2 watts of drive, Pout was 22 watts. Power output did not change when the balancing resistors were removed. Only slight re-tuning was necessary. The standard carbon resistors are therefore good even @ 1296 MHz. The resistors did not heat up under normal operating conditions.

Four devices were then combined using 6 Wilkinson divider/combiners total, and 6 balancing resistors. With 4-5 watts of drive, power output was 38-40 watts. Again removing the resistors did not effect the output very much. Blowing up one device did however make several resistors very hot. At the same time the other 3 devices still performed without damage. The balancing resistors DO work, even if they don't handle the unbalanced power very well.

The resistors are mounted in holes cut in the pc board to eliminate the lead length. Copper tape is soldered over holes cut in the pc board for the flanges (bases) of the transistors. Heatsink compound is used between the copper tape and the heatsink. It is not used between the tape and the flange of the transistors because good RF and DC connections are needed.

A suitable heatsink is of course required. The flanges of the transistors are screwed down to the heatsink with 4-40 screws.

Initially, the piston trimmers are adjusted to near minimum capacitance. Input drive is applied at a low level, and increased to the point where maximum power output occurs. The trimmers are alternately adjusted for maximum output. Slight tuning of the input and output can be done now using copper foil tape and an Exacto knife to add or trim the Z2 and Z6 microstrip 'C' elements.

Thomson CSF Semiconductor devices are available from RF Gain, Ltd. The SD1599 sells for \$15.00 ea.

THE MT. AIRY VHF RADIO CLUB, INC.  
PRESENTS  
**HAMARAMA '85**  
AND  
MID-ATLANTIC STATES VHF CONFERENCE  
OCTOBER 5-6, 1985

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**THE CONFERENCE**

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BUFFET DINNER AT 7:30 P.M. - \$13.50

REGISTRATION--ADVANCE \$4.00, AT DOOR \$5.00 (INCLUDES FLEA MARKET)

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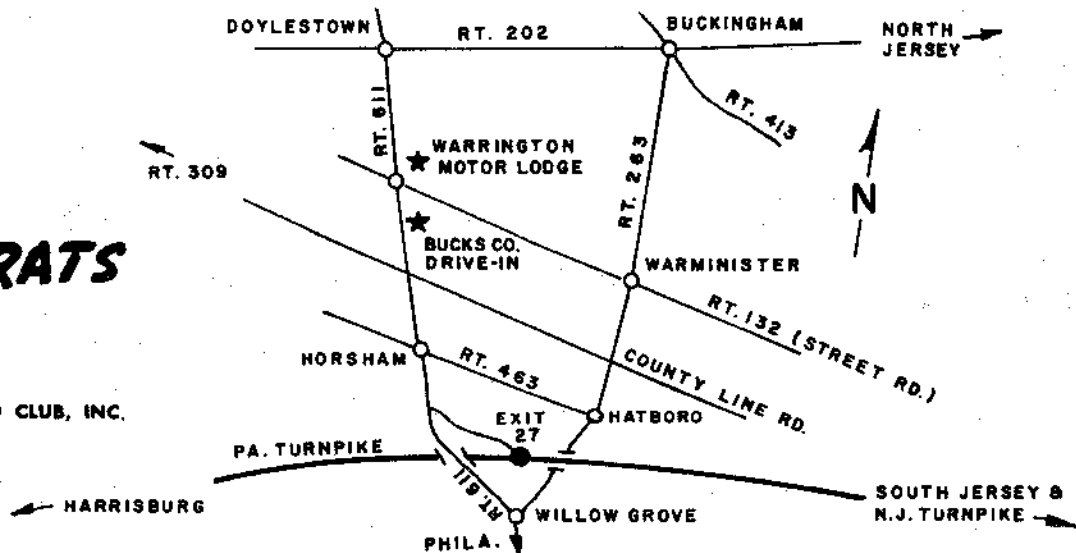
SEE YOU IN WARRINGTON IN OCTOBER

HAMARAMA  
P.O. Box #311  
Southampton, Pa. 18966

# HAMARAMA '85

AND  
MID-ATLANTIC STATES VHF CONFERENCE  
OCTOBER 5-6, 1985

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