

# PACK RATS'



**PACK RATS**

CLUB CALL: W3CCX

MT. AIRY VHF RADIO CLUB, INC.

# CHEESE BITS



MT. AIRY V.H.F. RADIO CLUB, INC., PHILADELPHIA, PENNSYLVANIA (ARNS)  
(50.2, 145.2, 221.4, 432.03 & 1296.3 Mhz) Repeater 222.98/224.58  
AFFILIATED CLUB: AMERICAN RADIO RELAY LEAGUE  
MEETINGS: THIRD THURSDAY OF EACH MONTH 8:00 P.M.  
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SOUTHAMPTON, PENNSYLVANIA

VOLUME XVII

SEPTEMBER, 1975

NUMBER 9

## THE PREZ SEZ

Good weather and a nice crowd of people combined to make Sunday, August 10 another successful Pack Rat Family Day and Picnic. Membership participation was not anything to get excited about, but fortunately attendance was bolstered by members of the QCWA and many friends of the club who have been coming for many years.

Total attendance was over 150 people. The club subsidizes this event rather heavily as the nominal registration fee no longer covers expenses. So to all the members who did not attend we thank you for throwing a great picnic.

Thanks also to Dick, K3IGX who was chairman of this years picnic and who somehow managed to come up with all kinds of nice prizes; no easy job in light of the economy. Thanks to all the others who helped with the work, particularly El, K3JJZ, who ran a great set of games for the kids and the kids at heart.

Before the last directors meeting attendees were treated to a tour and demonstration of the clubs moon bounce station. The station is located in Revere Pa. at the domicile of Bill, W3HQT. We not only saw first hand all the fancy hardware but also witnessed successful operation. Loud echos (several db above the noise) were heard when the station's transmitter was keyed. Murphy's Law was defeated. Good show.

The August general membership meeting, our second outdoor gathering of the year, was held at Doc's, K3GAS. There was a fine turnout with many wives and guests attending. Good laughs, and some tears were generated over the slides from the 1965-1967 era. Also, there was a large number of new slides, shown for the first time, taken at recent club activities. A cold night wrought with warm nostalgia. Thanks to Doc and Loretta for being our gracious hosts.

The program chairman for this year will be Walt, K3BPP. Walt held this job several years ago. We are relying on all that good experience to line up some real interesting meetings. Keep your ear to the ground for rumor has it that there will be an extra special speaker for the October meeting.

OOPS, I almost forgot. September VHF Contest on Sept. 6 & 7.

Tony, W3HMU, will head the January Contest committee this year. There's still some time left but it is not too early to start preparation.

73, Ron, WA3AXV

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SWAP SHOP ITEMS - NO CHARGE

DEADLINE FOR ARTICLES IS THE GENERAL MEMBERSHIP MEETING.

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<u>MONDAY NIGHT NETS:</u>	<u>NET CONTROL</u>
145.2 - 7:30 P.M.	W2EIF
50.2 - 8:30 P.M.	W3CL
221.4/224.58 9:00 P.M.	K3GAS
432.03 - 9:30 P.M.	K3IUU
1296.3 - 10:00 P.M.	W3HMU

<u>FRIDAY NIGHT ATV NET:</u>	<u>NET CONTROL</u>
439.250 - 7:00 P.M.	WA3AXV

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DIRECTORS' MEETINGS ARE HELD ON THE SECOND WEDNESDAY OF EACH MONTH AT DESIGNATED LOCATIONS.

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CALENDAR OF COMING EVENTS

Syllabus by Lee, K3MXM

SEPTEMBER

- 6-7 VHF QSO Party. Good propagation conditions are anticipated. 1900 UTC Sat. September 6 to 0600 UTC Monday September 7. Same rules as June Contest. Full rules page 73 ~~May~~ QST. Good luck to one and all.
- 7 South Jersey Radio Club 27th Annual Hamfest and Picnic. Rain or shine, valuable prizes, swap shop, tailgating, picnicing, swimming, adequate parking. Talk-in 146.52 FM, Molia Farms, Route 47, Malaga, New Jersey. Save \$1.00 by advance registration SASE to Jack Koch, K2MZP, 1980 Greentree Road, Cherry Hill, N.J. 08034. \$2.50 now or \$3.50 at gate.
- 7 Findlay Ohio Annual Hamfest and Flea Market at Riverside Park.
- 10 Board of Directors Meeting, QTH, K3KKN, Ernie Kenas, 2823 Old Welsh Road, Willow Grove, Pa. If lost, phone 659-3485. Directors and interested parties invited.
- 12-13-14 ARRL National Convention - Reston, Virginia. Write NOVARC Box 82, McLean, Virginia for full details and reservations.
- 13 Delaware Valley Chapter QCWA Dinner Meeting Buck Hotel, Feasterville, Pa.
- 18 Third Outdoor Meeting of the Season. WHITE ELEPHANT SALE. 8:00 P.M. QTH, K3MXM, Lee Cohen, 8242 Brookside Rd. Elkins Park, Pa. 19117  
Phone: ME 5-4942.  
Here is an ideal opportunity to clean out the cellar and help the club treasury. Refreshments, amusements, laughs and an entertaining evening guaranteed. Bring something to sell and bring a chair.
- 21 Annual Cincinnati Hamfest, New Strickers Grove, Ross, Ohio.
- 23 BARCC Meeting, Casa Conti Restaurant, Glenside, Pa.
- 23 Autumn Begins - Better get that antenna work under way now!!
- 24 Final Preparation meeting for HAMARAMA 8:00 P.M. QTH, WA3AXV, Ron Whitsel, 209 Frog Hollow Road, Churchville, Pa. Phone 355-5730. This is an open meeting to all club members and we do want all your participation as we all will benefit. This is our one big joint effort and everyone is encouraged to join in to make it continually grow as it has done in the past years.

OCTOBER

- 5 HAMARAMA: Bucks County Drive-In Theater, Route 611, Warrington, Pa.
- 16 Indoor Club Meeting, Southampton Free Library. Special Surprise Speaker from Connecticut. More details later.
- 19 Gaithersburg Hamfest.
- 27 Veteran's Day. (Not every where!)

SPECIAL NOTES:

Walt Bohlman, K3BPP, is the new program chairman.  
Tony Souza, W3HMU, is the January 1976 Contest Chairman.

NEW PRODUCTS OF INTEREST TO HAMS

By Lyn, W3NSI

1. Solid State 220 McPower Amplifiers: Specialty Communications Systems now has a line of amplifiers that includes two for 220 Mc. The 1.3M10-60L will put out 60 watts with 10 watts in, and, can be switched for use on FM or SSB. The 1.3M10-120L has an output of 120 watts with 10 watts input. Company also makes 6 amplifiers for 440 Mc use. Price 60 Watt \$160. 120 Watt \$220. 4519 Narrangansett Avenue, San Diego, California 92107

2. Digital Readout Adaptor: TWS Labs has just introduced a digital readout unit that will display the output frequency in three digits from any transmitter or trans/rec. in the 160-20 meter bands. Kit includes power supply, timing card, display card, etc. and can be built into some present rigs. Switch is provided to select Kc or Mc display for course or fine readouts. Time base is crystal controlled. Unit can be converted to 15 and 10 meters. Price \$43. P.O. Box 357 Provo Utah 84601

Note: Prices on the very fine Hamtronics converters and receiver boards have been received (previewed in June Cheesebits). Converters 50, 144, 220 Mc \$25.00. IF audio board (adds to converter to form complete rec. \$40. A fine 20 page catalog is available from Hamtronics, Inc. 182 Belmont Road, Rochester, N.Y. 14612 P.S. Co. will be coming out with some transmitter kits to go with these fine receiver.

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VHF/UHF REPORT

By Jo, W2EIF

The VHF/UHF bands have shown fair activity during the past month. The KLM echo II unit and the multi-2000 SSB-CW rigs have been acquired by a number of amateurs and put into service on the low end of 2 meters. Most are used barefoot, but a few have added amplifiers and really put out a nice signal.

In late July there was a nice E skip opening on 6 meters with very short skip-a signal that 2 meters could be open - sure enough it was. Many in the area worked Arkansas, Iowa, Nebraska, Missouri, Minnesota, Texas and others. The FM boys got in on the action first and then the SSB/AM crew made their share of contacts.

The September QSO Party which this year occurs Sept. 6 and 7, should be good for contacts all the way up through 1296. Don't forget the contest starts at 3 P.M. Saturday and goes to 2 AM Monday, some 35 hours. Remember that you can only work 28 hours of the Contest. This is a blessing because you can work the first part of the Contest for 12-14 hours, knock off and get some sleep and even go to the SJRA Picnic, come home and finish the contest. If you have 432 gear, look for W4BFB in North Carolina (on the Tenn. border). Good luck.

432 MHZ AVAILABLE CONTACTS DURING SEPTEMBER VHF CONTEST:

The Mecklenburg Amateur Radio Society (W4BFB) from Charlotte, N.C. will be operating from Roan Mountain, N.C. during the September VHF contest.

Roan Mountain is on the border of N.C. and Tenn. and is in excess of 6300 ft. in elevation.

We will essentially be the highest station east of the Rocky Mountains - Hi!

We would like to schedule you for a 432 MHZ, C.W. contact on Sat. evening Sept. 6 or Sun. morning Sept. 7.

Our primary frequency will be 432.015, but we will have the capability of perating on any frequency.

Would you please drop us a line and set up your own schedule for a contact during the contest.

Set an alternate time just in case something happens and we don't succeed during the first sked.

We will also be on 2 meter F.M., C.W. and 6 meter F.M. We will be looking for a QSO with you on these bands also.

73's and Best DX- Gary Dixon, K4MQG for W4BFB

CENTRAL STATES V.H.F. SOCIETY V.H.F. CONFERENCE 1975

By Jack W2AXU

The Central States VHF Society held its 1975 VHF conference on August 14, 15 and 16 at the Western Hills Lodge near Wagoner, Oklahoma. This was the 9th annual conference.

There were 110 registered hams representing all call districts plus Costa Rica and Mexico. Eric, TI2NA, represented Costa Rica. Many fellows brought their wives and children, swelling the number to around 175. There was interesting entertainment and trips for the families plus swimming for whomever. The lodge is located in the Sequoyah State Park.

The conference started Friday AM with a talk by W2BOC on "Aurora and Sunspots". Mel conjectured on where the bottoms of Cycle 20 might be and what cycle 21 might be like. W5SXD spoke next on "Microprocessors and their application to amateur radio". He explained the use of a microprocessor in EME, MS and Oscar areas. The uses could be in antenna guidance, preprogramed messages, calling sequences, etc. Jan King, W3GEY, reported on "Oscar-7 and Plans for Oscar-8". Oscar 7 is doing well and has a long life expectancy. He pleaded for the use of low power - 100 watts ERP and to curtail the use of higher power. The receiver has a well operating AGC system and high input signals will desensitize the receiver.

WA5UNL, the "clown", spoke on "Wet Cookers" and "Big Antennas". Marshall got fed up with blower noise on his EME amplifier so he constructed a new one, soldering the tube into the coaxial line. Then for cooking, he filled the line with water and proceeded to operate. When the water boiled down he just refilled. He has used some large antennas with simple elevations control for his EME contacts.

Firday night consisted of noise figure measurements, tape, slides and good conversation.

WØLER and WØMJS started Saturday AM off with a review of their "Diagnostic Study of Oscar-7 Telemetry." Using slides, they explained the many internal and external functions of Oscar-7 as transmitted to earth through Oscar-7's telemetry.

Our neighbor, K2UYH, talked on "432 MHz EME." He used many slides, showing his antennas - the old and new-giving the Pack Rats credit for assistance. He spoke of the successes of W3CCX and showed slides of the antenna and feed system.

W2BOC made a reappearance and spoke on his favorite subject, "Sporadic E." He reviewed the happenings of July 20, 1975. Those of you who read this and did any operating on 6 or 2 meters during the July 20th opening, Mel would appreciate hearing from you. Send logs to W2BOC, Melvin S. Wilson, 17 Van Courtland Drive, Pitsford, N.Y. 14534 He needs info from all areas, particularly from the Eastern part of the country.

W8KPY reviewed a phenominon known as "Rabbit Fading on EME." Kelly presented slides demonstrating this phenomenon along with sliques of his many misfortunes with his large EME antennas. You all know what Sam Harris said about antennas - well Kelly's were big enough.

WØRLI talked on an "Alerting System for Aurora and Sporadic E". Hank uses TV and FM monitoring to alert him to these happenings.

The banquet was Sat. evening with all in their finery. John Fox, WØLER, was presented this year's John Chambers Award for his accomplishments in the many facets of the hobby. Bill Tynan, W3KMW was the banquet speaker.

K6MYC started the Sun. A.M. session with a discussion on "Multi-driven Element Antennas, Antenna Matching and Phasing." This was followed by a talk by W1SL on "After EME What?" You let your imagination run here.

The conference finished with a forum on EME. The panel consisted of W1SL, W6KJD, K6MYC, K2UYH, WB6NMT and KØMQS. An excellent discussion with some EME standardization for 144 & 432 MHz being arrived at. Watch QST and EME Bulletins for details.

A great conference. Too bad only K3ZSG and W2AXU could attend from the Pack Rats. At least we represented the club.

220 MHZ REPEATER UPDATE

The Pack-Rat Repeater back on the air with a new receiver front-end (K3MWV design), and a 40 watt solid state amplifier.

The Tri-State Repeater located in Malvern, Pa. operational on 223.02/224.62. 9 DB gain antenna to be installed in near future.

"Ham Buerger" repeater will be located in Warminster, Pa. 222.74/224.34 (Autopatch). Churchville, Pa. will sport another repeater on 222.86/224.46 (Autopatch).

### W3CCX Moonbounce Update

By Tony, W3HMU (Written somewhere over Texas)

Since coming on the air in Feb. 1975, the Pack Rat 432 MHz Moonbounce station has had considerable success. The success of this effort was in large part due to those who had gone before pioneering the way for us other amateurs to follow. Notable among those pioneers are K2UYH and W1JAA. All we had to do was follow their good advice. So well was the foundation laid that we were able to build on it almost immediately with the construction of a high powered triode amplifier and the original design of a dual polarity linear dish feed.

To date, W3CCX/3 has worked seven countries and seven U.S. states via 432 MHz EME. The stations worked in the first six months of operation were: G3LQR, F9FT, VE7BBG, PA0SSB, JA1VDV and VK2AMW and in the U.S.: WA6LET, K0TLM, W0YZS, W1SL, W00QI, K2UYH and K8UQA. K2UYH although only 30 miles away was worked the hard way via the 500,000 mile circuit to the moon and back to South Jersey. We worked Allan during a total eclipse of the moon just to prove that the legendary dragon had not consumed the moon and that it was really still there. We provided G3LQR's first moonbounce contact, a thrill for both stations. We have worked Aki, JA1VDV now four times being his most regular customer. (Incidentally, Aki is a motorcycle mechanic in Cumna, Japan, sound familiar?)

Due to the versatility of K3BPP's dual polarity feed design, we always hear our echoes. Only two or three moonbounce stations can make that claim and the others are using more complicated circular polarization feeds. Utilizing the dual polarity feed has enabled us to make some interesting observations of Faraday rotation. Faraday rotation is a rotation in polarity that occurs to a linearly polarized signal as it travels through the ionosphere. Since an EME signal passes through the ionosphere twice, once on the way up and once on the way down, the total rotation can be quite a large angle.

We have observed that a horizontally polarized transmission returns as a vertically polarized echo during the daylight hours, that is we hear no echoes when listening on horizontal polarizations and good echoes when listening on vertical polarizations. (Using opposite polarities produces the reverse effect, vertical transmissions are returned as horizontal echoes during the day). At dusk, we find that we start to hear the echoes equally well on horizontal or vertical polarization. This indicates that the polarization is slant 45°. Sometime after the sun goes down the horizontally polarized transmissions return horizontally and stay that way through the night. The conclusion is 90°, 45° on the way out and an additional 45° on the way back to earth! At night, there is no rotation and the echoes come back with the same polarity. No wonder stations with only one polarity available can hear their echoes only at night.

The above observations are for 432 MHz only. At lower frequencies like two meters, the Faraday rotation is greater than that at 432 MHz. The total amount of Faraday rotation since it is determined by the state of the ionosphere, will vary with solar activity. Please remember that above observations were made during a minimum in the sunspot cycle.

Each month the moonbounce newsletter lists more and more stations working on moonbounce. Moonbounce WAC will be possible as soon as a South American Station comes on the air! However, DXCC Moonbounce still looks pretty far away.

### STOLEN - - -

On Aug. 18, 1975 the following Amateur Radio equipment was stolen from the Widener College A.R.C. WA3EUE



Kenwood T599 Xmtr. #630109; Kenwood R599 Rcvr. #540009 with built-in 6 & 2 meter converters. Kenwood Speaker #620138; Turner +3 microphone; Icom Ic-22 2 FM Xcvr #6199 +mike + 8 channels installed.

Please pass on amateur to amateur NOT over the air for the present time. Anyone with information can contact Pat Lonski, WA2PYG, at the Widener Engineering office, Widener Security, both at 215-TR 6- 5551, and the Chester Police at 215-TR 6-8111, or write W.C.A.R.C. WA3EUE, Box 1201, Widener College, Chester, Pa. 19013.

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## ADS

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1 Emerson B&W TV 17" VHF, motorized tuner (portable) \$20.00.  
1 RCA B&W TV 16" VHF (portable) \$15.00.  
CONTACT: Doc Cutler, K3GAS  
Phone: 215-ME 5-1078.

FOR SALE: Model 15 Teletype with table and keyboard (property WA3DJF) (\$40.00)  
CONTACT: W3CL, Phone 215-TU 7-5052  
FOR SALE: Collins KWM 2-A, 312B-5, 516F-2, TA33 SR, 6 and 2 meter beams, eico 460 scope, heath ho-10 scope, eico 710 grid dipper, D104 Mike, etc.  
CONTACT: Mort, WA3EPS, call evenings 215-657-2221.

Change of Address: WA3DJF, Carl Mattiace, 426 S. Springfield Road, Apt. E10, Clifton Heights, Pa. 19018  
WA3JUF, David Mascaro, 1278 Laurel Avenue, Warminster, Pa. 18974.  
K4AWS, Tony Slapkowski, P.O. Box 15, Sumterville, Fla. 33585 - Phone- 904- 793-5202

FOR SALE: HQ110 Receiver w/clock - \$100, NC125 Receiver w/Q Multiplier - \$50  
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CONTACT: K3ACR, Rich Pattison  
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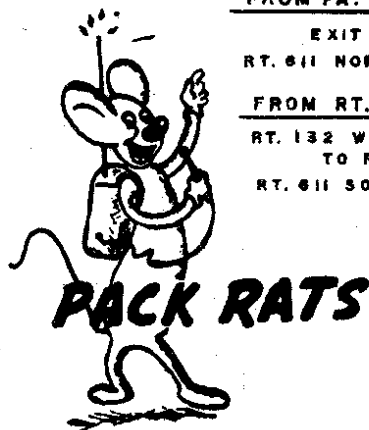
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WARRINGTON, PA.

SUNDAY OCTOBER 5, 1975

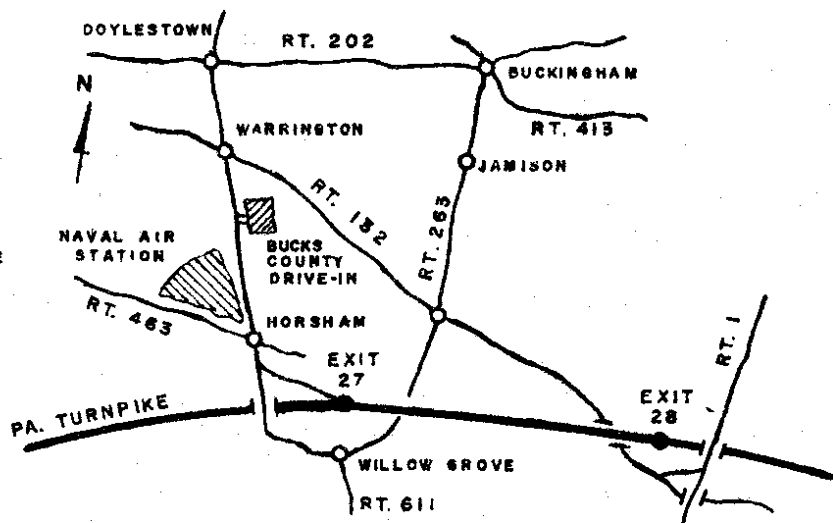
8AM to 4PM

RAIN OR SHINE



MT. AIRY VHF RADIO CLUB, INC.

FROM PA. TURNPIKE  
EXIT 27  
RT. 611 NORTH 4.3 MILES  
FROM RT. 1  
RT. 132 WEST 12 MILES  
TO RT. 611  
RT. 611 SOUTH 0.3 MILE



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REGISTRATION 1.00

SALES REGISTRATION \$2.00  
tail-gating ONLY bring your  
own table

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ATV DEMONSTRATION

VHF SPECIALISTS

RAG CHEWS

## TALK-IN

W3CCX/3  
52.525 FM  
146.52 FM  
222.98-224.58 REPEATER

## INFORMATION:

LEE COHEN K3MXM CHAIRMAN  
8242 Brookside Road  
Elkins Park, Pa. 19117

Phone: 215 Me5-4942

THE FOLLOWING RECEIVED FROM ED TILTON, W1HDQ

I always enjoy reading the Pack Rats paper, and certainly appreciate receiving it regularly.

Noting the information on 10-meter beacons, p. 4, August issue, I thought I'd offer some sidelights on their use. The impression created by the item referred to is that if you can hear the 10-meter beacons 6 and 2 meters are open. This is a possibility only, and a very remote one as far as the 2-meter band is concerned.

The IARU beacons were set up for the primary purpose of monitoring the 10-meter band for F-layer openings. As such they are of no use whatever for 2-meter predictions, and are of limited use even for 6. They have, more by accident than design, turned out to have value for sporadic-E observations.

Beginning last summer it was noted that the 10-meter band was open across the Atlantic fairly often during the peak of the Es season -- late June and early July. In 1975 the number and extent of transatlantic E openings have exceeded 1974, and have been beyond anything documented in previous years. This is not to say that we have not had the potential for transatlantic work via this mode previous to 1974 -- it's just that appreciable notice of it was first taken in that year. (See QST vhf column notes in the September, 1974, issue, p. 87).

The July 4-5-6 weekend this summer was phenomenal for transatlantic Es on 10 meters, the band having been open as long as 7 hours on the 6th, a record, in my experience. This was also a very good period for 6-meter E skip, and there certainly is a possibility that the band may have been open across the Atlantic. There was 2-meter E skip in both Europe and USA on July 20 -- but if there has ever been an authentic Es observation at a distance beyond 1400 miles, we have no record of it here. Conceivably it could happen, and I would encourage well-equipped 2-meter operators to watch for it -- but nobody should get the idea that it is likely.

We should also keep clear in our minds the differences between E and F-layer propagation. The E type is mainly short skip, with a normal maximum of about 1300 miles. It is mainly a summertime thing. The F-layer has a minimum skip distance of about 2000 miles on 50 MHz, and it occurs (on 50 MHz) only at very high levels of solar activity, if then. If you hear the European beacons this fall, it will be F-layer propagation, and it will have little meaning for 6-or 2-meter DXers, at this point (the bottom) of the solar cycle.

As you probably know, I have been working quite a bit on the collection of solar data, and have found the current low point in the solar cycle to be very interesting to a propagation-minded nut like myself. Though much of what I've been doing is reflected in the 3-part series, "The DXer's Crystal Ball," in June, August, and September QST, I'll be glad to interpret this information in vhf terms for Cheese Bits, if you wish.

OFFICIAL BULLETIN NR 547 FROM ARRL HEADQUARTERS NEWINGTON, CT AUGUST 7 1975 TO ALL RADIO AMATEURS BT: The FCC has acted on some parts of Docket 20120, to relax some operating requirements in the Citizens Radio Service, effective Sept. 15, 1975. Contrary to some reports, stations will still be required to properly identify at the beginning and end of each transmission. The explicit prohibition on hobby communication is being deleted, but a new section defining permitted communications makes no provision for such communications. Changes involving antenna height, silent periods, calling channels, and interstation communication also have been adopted. Other proposed changes have been temporarily deferred. The primary intent of the rules just adopted is to clarify, not to change, the purpose of CB in the face of widespread misconceptions. AR

OFFICIAL BULLETIN NR. 548 FROM ARRL HEADQUARTERS NEWINGTON CT AUG.14, 1975 TO ALL RADIO AMATEURS BT: From Aug. 1, 1975 to July 31, 1976, Canadian amateurs can use specially authorized prefixes in order to celebrate the Canadian Olympics. VE amateur stations can sign the prefix XJ and VO stations, XN. This updates previously transmitted information. An award will be given for confirming one contact made with each of the 10 call areas, XJ1-XJ8 and XN1 and XN2. The special Olympics station will be signing CZ20 and can be substituted for any of the 10 call areas missed for the award. Information via VE3LSS. AR

FROM THE NORTHEAST VHF NEWS

e 20th Annual West Coast VHF/UHF Conference: Jim Fisk, W1DTY, has provided

excellent capsule summary of the program which was held at the Airport Sheraton Inn in San Diego on May 3, 1975. Gary Frey, W6KJD (K6QEH), talked on transistor amplifiers for VHF, using S-parameter design techniques. Dr. Juergen Richter of the Navy Electronic Lab Center talked on Tropospheric Ducts, Propagation, and Sounding. He discussed a modulated CW radar which operates near 3GHz with a 200 MHz sweep bandwidth with 17 Hz sweep linearity. The range resolution is 90 cm and it can see a common housefly at 10,000 ft. range. This system is used to measure tropo ducts over the ocean. Jim Heritage of NELC spoke on Field-Aligned Meteor Scatter and the higher incidence of MS paths when the meteors are aligned with the earth's magnetic field. By using proper transmit/receive geometry (i.e., pointing the antennas at the correct point in the sky), it is possible to enhance occurrence of MS communications. Field-aligned MS results in longer paths at lower magnetic latitudes, shorter paths at higher magnetic latitudes. Also he mentioned apparent field-alignment of sporadic E "hot spots." By using field alignment with sporadic E, it would extend range of VHF communications. Paul Shuch, WA6UAM, talked on Microstrip Techniques for the Amateur. This talk was similar to the article in April, D 75 issue of Ham Radio Magazine. Kelly Scheimburg, W8KPY, gave a humorous presentation on Earth-Moon-Earth Fading which was quite similar to previous presentations he has made on that subject. Chuck Swedblom, WA6EXV, conducted the Noise Figure measuring clinic, with results as follows:

<u>CALL</u>	<u>DEVICE</u>	<u>UNIT</u>	<u>NOISE FIGURE</u>
WA6UAM	40673	28 MHz preamp	0.6 dB
W6OYJ	6CW4	AMECO converter 144 MHz	3.3
WB6YVP	40673	Home Brew conv. 144 MHz	4.4
WA6UAM	FMT4575	144 MHz preamp	2.0
WB6YVP	40673	144 MHz preamp	4.4
WA6UAM	40673/MD108	220 MHz converter	3.25
WA6EXV	KD6007/M6E	432 MHz converter	2.4
WB6IMV	HP21/HCD	432 MHz converter	2.4
W7DNU		Janel 432CA converter	6.0
WB6CXF	FMT4578	432 MHz preamp	0.9
W7DNU	2N5652	432 MHz preamp	1.6
WA6UAM	FMT4575	432 MHz preamp	1.5
WB6JNN	HP22/HP21/SBM	1296 Converter	4.5
WA6UAM	HP22/MRF901/M1G	1296 converter	5.5
WA6UAM	HP22	1296 preamp	2.4
K6JKQ		Microcom 1296 converter	3.2

More noise figure measurements from WC VHF/UHF Conf.:

WB6RIV	MRF901	Microcom 1296 preamp	3.25dB
WB6JNN	HP22	1296 preamp	3.4

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TID BITS

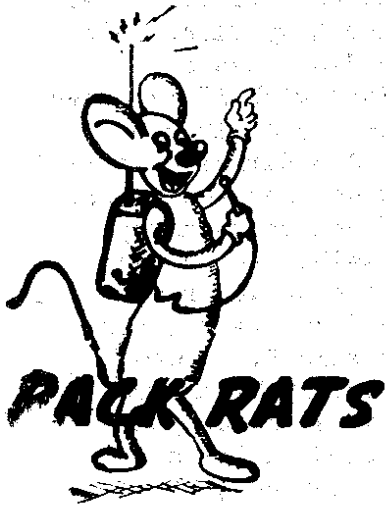
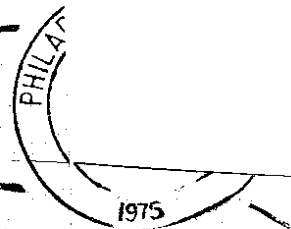
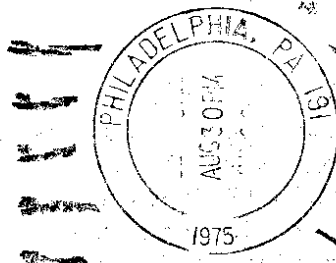
Does anyone know about the "Ghost of Ottsville, Pa."? If so, please knock three times and get in touch with Carl, K3DLS.

Randy and Della showed up at the last meeting looking very prosperous. They also sport a new car.

Wedding bells at the W3SMK's and the W3GEW's-- a son at the Perkins; a daughter at the Weiners. Congratulations folks.

How did you like the aerial shots of the June VHF QSO party set-up at Hilltown. Mort WA3EPS swooped down and took the shots. Results in QST show that we came in 3rd in the multi-op standings.

2087 Parkdale Ave.  
Glenside, Pa. 19038



W3FQD Dick Huntzinger  
130 Fairhill Drive  
Churchville, Pa. 18966

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## MEETING NOTICE

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