

# PACK RATS'



MT. AIRY VHF RADIO CLUB, INC.

# CHEESE BITS

CLUB CALL: W3CCX



MT. AIRY V.H.F. RADIO CLUB, INC., PHILADELPHIA, PENNSYLVANIA

ARNS

(50.2- 145.2, 221.4, 432.03 & 1296.3 Mhz)

AFFILIATED CLUB: AMERICAN RADIO RELAY LEAGUE

MEETINGS: THIRD THURSDAY OF EACH MONTH AT 8:00 P.M.

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SOUTHAMPTON, PENNSYLVANIA

VOLUME XVI

MARCH, 1974

NUMBER 3

## THE PREZ SEZ

Club members and guests were shown a great display of sophisticated home-brew equipment at our February meeting. It was proof positive that the art of do-it-yourself ham radio is far from dead. The home-brew items and their proud exhibitors were:

- K1SFF/3 - 6 meter amplifier - 4-400 tube, 1 kw input.
- W3KKN - Jones Micro-Match coupler
- W2EIF - Frequency counter. "I know what frequency I was on. I just wanted to prove it."
- WA3JUF - 6 meter SSB Transverter and Directional coupler.
- W3SAO - His 1951 original Novice Xmitter, 2 meters, 6J6 Final, 2.5 watts Input without provision for tuning!
- K2SMZ - Two Frequency Counters.
- WA3OVH - Kit construction - HW101 - 10-80 SSB Exciter for transverter use on VHF. (Assisted by WA3UXM and WN3VYZ of the Penn ARC)
- WA3NGK - 1296 MHz Interdigital Converter.
- W3NSI - Two 220 MHz Transistor Converters. P.C. version of FM adaptor for Gonset. FM exciters for 2 or 220 - 36 MHz out. 2 meter transceiver with scanner for 8 frequencies. High gain audio circuit boards - up to 2 watts out.
- K3IGX - Solid State VFO - 2 meter "Pip Squeak" Mark II.
- W3AJF - 6 meter Xmitting Converter.
- K3BPP - 432 MHz Class C Power Amplifier, 1 KW.
- WA3AXV - Frequency Counter.
- K3GAS - Monitor Scope, 1296 MHz interdigital Filter Converter. 80 and 40 meter Receiver.
- KLJDY/3 - 432 MHz Power Amplifier.
- K3JJZ - Automatic "CQ" caller for VHF contests.
- W3FQD - FM Adaptor for 220 MHz AM transmitters. (See descriptive Article in this issue)

Award winners in the various categories were: W3NSI - Special Commendation. K2SMZ - Most Ingenious Project. WA3AXV - Best Craftmanship. W3AJF - Best Reproduction. K3IGX - Most Miserable Failure. Our thanks to Tony, K1SFF/3 for organizing and em-ceeding the affair and particularly for the preparation of the beautiful home-brew plaques. It was gratifying to see the ammendment to the constitution pass so handily allowing 18 year olds to join as full members. We must keep up with the times.

Dick, W3FQD

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WE OPERATE ON AN EXCHANGE BASIS WITH OTHER PUBLICATIONS AND ANYTHING THAT IS PRINTED IN CHEESE BITS MAY BE REPRINTED, UNLESS SO STATED, AS LONG AS THE PROPER CREDIT IS GIVEN.

\* \* \* \* \*

DEADLINE FOR ARTICLES IS THE GENERAL MEMBERSHIP MEETING.

SWAP SHOP ITEMS - NO CHARGE

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W3TEM, MARSHA STEIN

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W3YXF, JOE RUSHTON  
WA3NGK, HARRY BROWN  
K1SFF/3, TONY SOUZA

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

MONDAY NIGHT NETS: NET CONTROL

145.2 - 7:30 P.M. W2EIF  
50.2 - 8:30 P.M. W3CL/W3GEW  
221.4 - 9:00 P.M. K3GAS  
432.03 - 9:30 P.M. K3IUU  
1296.3 - 10:00 P.M. K1SFF/3

FRIDAY NIGHT NET: NET CONTROL

439.250 ATV NET - K3ZKO/WA3AXV  
19:00 HRS.

# A 5

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CALENDAR OF COMING EVENTS

Syllabus by Lee, K3MXX

MARCH

- 6 79 Repeater Skating Party - Southampton Skating Rink, Southampton, Pa.  
 Tickets can be obtained from the many sellers on the air. If you missed the first one, here is your chance to get in on the fun of the second. 7:30 till midnight.
- 9-10 WORLD WIDE VHF ACTIVITY CONTEST. Sponsored by the ITCHYKOO PARK VHF ARC.  
 3 P.M. local Saturday till 10 P.M. local Sunday. 2-way contacts on 6, 2 and 1 1/4 meters count. EXCHANGE call, County, State, then chew the rag a bit. Club Participation. See K3ACR Rich, Chairman.
- 13 Board of Directors Meeting - QTH K3BPP, Walt Bohiman, 101 East St., Doylestown, Pa. Directors and interested parties invited. If lost or need directions, call 348-8913.
- 21 GENERAL CLUB MEETING - Southampton Free Library, Southampton, Pa. 8 P.M.  
~~Frank McEntee~~ (Ex W3BVD) will talk about "Logic Design Using Integrated Circuits". Frank is associated with Delta Data Systems, a manufacturer of computer peripheral devices. Doc's famous Silent Auction in rear of room. Mario's infamous Auction - all over the room (Get well soon, Mario) Refreshments will be served. Open meeting to all. Bring your friends, buddies, fellow hams, other club members.
- 23 Delaware Valley Chapter, QCWA Dinner Meeting at the Buck Hotel, Feasterville, Pa.

APRIL

- 6-7 Space Net Contest - Skylab I
- 7 Greater Baltimore Hamboree - Calvert Hall, Towson, Maryland. More details in next months column.
- 26,27,28 Dayton Hamfest

COMING EVENTS

MAY

- 4 Ladies Nite - Buck Hotel. A super evening is being planned. A band has already been contracted and signed. A super special BUCK HOTEL repast is being organized and there are many many surprises in the offing. Look for your tickets coming in the mail and get your checks back to John Tate early to be assured of a seating. Last few years there were very few extra places so tend to this early.

AUGUST Picnic - Fort Washington State Park.

- 11 A new special of this column is HAPPINESS IS. Here is one for a starter - Just send yours to me for publication in future issues. "Learning that your daughter's boyfriend had his electric guitar repossessed." Let's hear what your happiness is-----

\*\*\*

VISITORS AT THE FEB. 21, 1974 MEETING

- |  |  |
|--|--|
| W2HX, A.G. Wentzel, Jr., Trenton, N.J. | WASUXM, Greg Adams, Glenside, Pa.      |
| WN3VYZ, Mark Gluch, Glenside, Pa.      | WA3VJC, Marc Paker, Phila., Pa.        |
| K2SMZ, John J. Yost, Oaklyn, N.J.      | W3MAT, Howard R. Harding, Trevese, Pa. |
| Silvio Bianco                          | Horst A. Nolle, Langhorne, Pa.         |

CHANGE OF CALL LETTERS, WA3LNH/1 Now WALKIR. K1SFF/3 Now W3HMU.

NEW PRODUCTS OF INTEREST TO HAMS

By Lyn, W3NSI

1. Spectrum International 1296 Receiving Converter: The MMc 1296 covers the 4 Mc range from 1296-1300 Mc using an I F of 144-148 Mc. An I F of 28-32 or 50-54 Mc can also be supplied. Unit operates on 12 VDC at 50 Ma. Price \$85.95. P.O. Box 1084, Concord Mass. 01742
2. Ultraline Co. Operating Console: The CC 1000 is built to be best used in a corner area. The top is curved in a 90 degree arc between the two end sections, which have three drawers each. Two matching shelves are supported in such a way to avoid interference with the equipment layout. Write for details: 3822 W. 149th St., Hawthorne, California 90250
3. Spectronics Inc. Digital Display: Both Transmit and Receive frequencies can be displayed on the DD-1 6 digit readout. No internal connections or modifications are required on a Transceiver that has a VFO signal source jack installed. Accuracy of the DD-1 is rated at 100 Hz. Unit is supplied assembled and calibrated for \$169.95. 1491 E. 28th Signal Hill Calif. 90806 On Display at Trevoze Electronics.

\* \* \*

CLEANINGS FROM THE EXCHANGE PAPERS - BY LEE, K3MXX

QST NEWSSTAND PRICE GOING TO \$1.00 - Membership rates unchanged. Increased paper and distribution costs cited. de hr. report.

NON-AMATEUR INTERFERENCE IN AMATEUR BANDS... deliberate jamming of improper transmitter operation in any service, should be reported to FCC Monitoring Watch Officer in Washington. Telephone number manned round the clock is 202-632-6975. de Circuit Board.

Pennies have been called coppers by most people for many years. Pretty soon, it will be incorrect to call them coppers because they are being replaced by aluminum coins.

Hoarding of copper pennies has already begun. If copper prices exceed \$1.50 per pound, the metal value of copper pennies exceed their face value. Who remembers those silver quarters and halves? de LERC.

The next time your friendly neighborhood serviceman hangs the blame on you for getting into somebody's hi-fi, electronic organ or other audio channel have a copy of the FCC Bulletin "Interference to Audio Devices" date 14 April 1969, on hand. In it, the commission points out the fact that home equipment manufacturers believe it to be unfair costwise to the majority of purchasers to include the type of circuitry and shielding required by the relatively few electronic devices which encounter strong RF fields. The complaintant should "contact the dealer or manufacturer of (the) audio device for assistance" says the FCC.

An amateur radio operator rarely makes the same mistake twice - the average is five or six times. de PEARL NEWS.

\* \* \*

6 METER REPORT BY RICH PATTISON, K3ACR

February is normally an inactive month on 6 meters with only the usual nets and such. But with the space net and the activities involved with it, activity seems to have been greatly stimulated. Keep April 6-7 open for the "Skylab #1" contest with details to follow next month. Most of the activity is centered around 50.4. But the other popular "rock" frequencies like 50.2, 50.55 & 50.7 have been pretty active lately. With all this AM activity, SSB seems to be left to the DX hunters and the Sunday nets. It should be noted that with this dry cold weather, the author as well as many others have avoided cold shacks and noisy bands. For those with a noise problem who are serviced by Philadelphia Electric Co., a call to Erwin Trembelas, K3EEP at 841-6296 may help to solve the problem. K3EEP is employed by P.E. to find noise sources with both 6 & 2 meter rigs and good directional antenna. A report on Chuck WA3LNH/1 tells of his receiving his new call WALKER. Chuck works scatter on 50.110 quite avidly and is looking for contacts into the area on Sat. & Sun. mornings 9 to 12 and some evenings. Remember to get on March 9-10 for World Wide VHF Activity. Fun starts at 3 P.M. Sat. to 10 P.M. Sun. Be sure to get on. The Pack Rats won last year and will be trying for two in a row. Scoring is contacts times counties times States. Separate logs and scores for each band worked.

# ADD FM CAPABILITY TO YOUR 220 MHZ AM TRANSMITTER

By, W3FQD

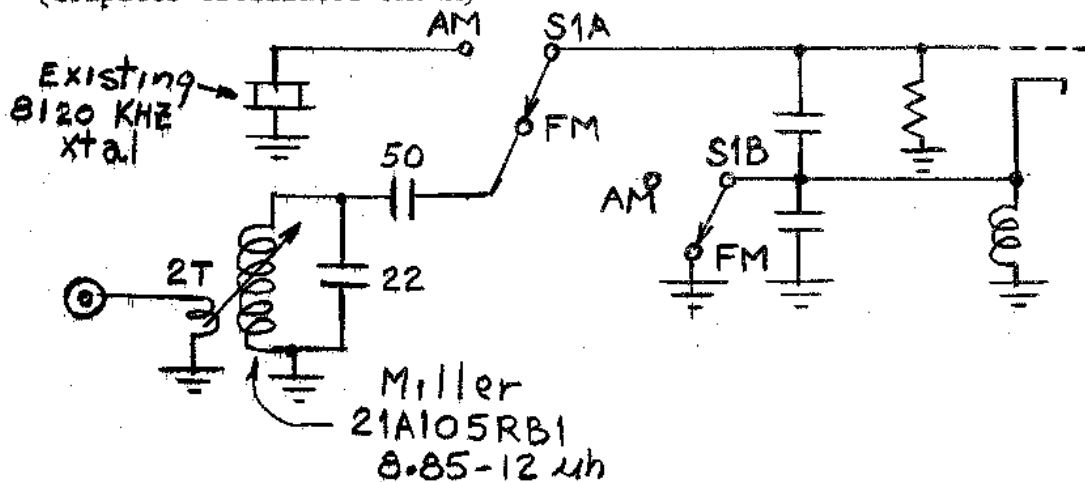
Many club members have an AM transmitter which employs an 8120 KHZ crystal for use on the 221.4 MHZ Pack Rat net frequency. Here is a simple and inexpensive add-on modulator which does not alter the original transmitter capability but adds the switch-selectable capability of producing an FM output on 222.98 MHZ -- the input to the Pack Rat repeater, WR3ACD.

The modulator consists of a 12AX7 speech amplifier, a 6AK5 crystal controlled oscillator and a 6AU6 phase modulator and frequency doubler. The design of the crystal oscillator, phase modulator and frequency doubler were originally described by W3NSI. The complete schematic of the modulator, with certain parts values modified for the frequency used and the speech amplifier added are shown on a separate page. The diodes in the speech clipper are surplus silicons.

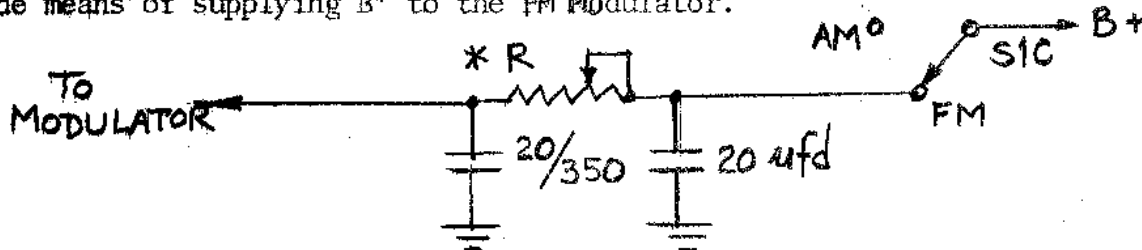
I built the unit on a 4x6x2 inch, aluminum chassis, used a 4130 KHZ FT-243 crystal, modified the original transmitter as shown below and, after padding the crystal to the proper frequency, received reports of a very adequate signal from other repeater users.

## MODIFICATIONS TO EXISTING 220 MHZ AM TRANSMITTER

1. Modify existing crystal controlled oscillator circuit.  
(Colpitts oscillator shown)

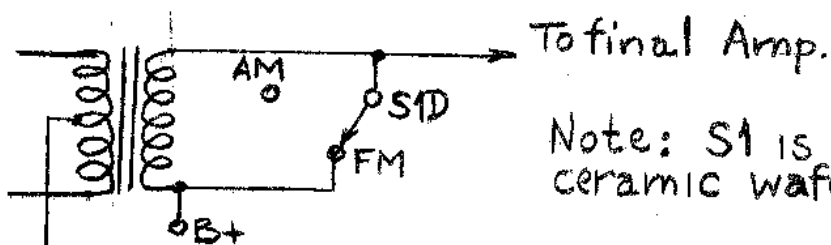


2. Provide means of supplying B+ to the FM Modulator.

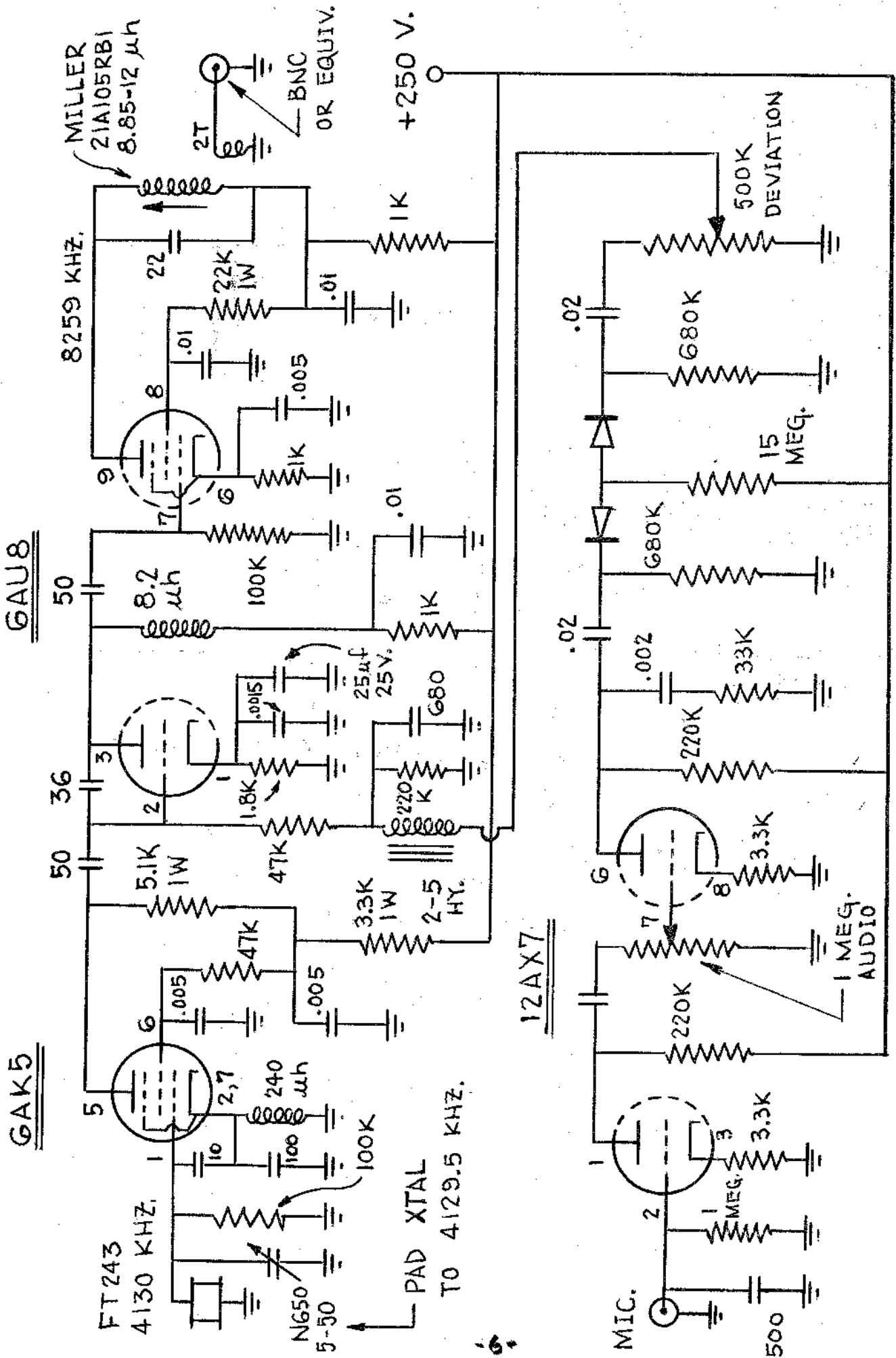


\* Adjust R for 250V (@ ~ 20 ma) to the FM modulator

3. Provide means of shorting modulation xformer in FM mode.



Note: S1 is a 4PDT ceramic wafer switch.



222.98 MHZ. FM MODULATOR



W3FQD  
TAN '74

# MT. AIRY V.H.F. RADIO CLUB, INC.



AD  
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<p><b>ham radio</b> the most interesting amateur magazine:</p> <p>1 Year \$7.00, 3 Years \$14.00</p> <p><b>HAM RADIO MAGAZINE</b> Brynolite, N. H. 03040</p>	<p><u>A request from your AD Manager</u></p> <p><b>PATRONIZE OUR ADVERTISERS</b> Tell them you saw their ad in <b>CHEESEBITS</b>. Leave your QSL card with them. <b>CHEESEBITS</b> is one of the best read local radio club papers. Circulation - 300</p>	<p><b>73</b> <b>magazine</b> for radio amateurs</p> <p>PETERBOROUGH, NEW HAMPSHIRE 03458</p>

### SWAP SHOP

**FOR SALE:** HyGain Junior Tribander. Good shape. \$50.00.  
**CONTACT:** Joe Reed, WA3QNS, Phone: 215-279-1517

**FOR SALE OR TRADE:** Heath QF1 Qmult. \$4.00;  
5CX-1500A7 (new), \$35.00; 4-400A; \$10.00; Heath Mobile Supply, Solid State, \$7.00; Two CB-2 Conv. 14 Mhz I.F. \$4.00 ea; CB-6 Conv. 27 Mhz I.F., \$4.00; CN-220 Conv. 14 Mhz I.F. (needs work) \$15.00; 220 Super Roger, \$3.00; 500 Ft. Roll #12 copper wire, \$4.00; AM pushbutton Car Radio, \$20.00; Eico 753 80-40-20 SSB-AM-CW, \$100.00; Capacitive Discharge Ignition System, \$5.00; Two 16 EL Collinears for 432 Mhz \$4.00 ea.

**WANTED:** 4CX-1000A Socket

**CONTACT:** Randy Bynum, WB2SZK, Phone: 609-783-3560.

Interested in the 1750 meter experimenter's band? The Navy Rak VLF Receiver is very good for 160-190 Khz. For Sale: RAK-6 Excellent working condition, \$35.00  
**CONTACT:** Ed Braddock, W2BAY, P.O. Box 305, Haddonfield, N.J. 08033. Phone: 609-429-0087.

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The proposed amendment to the Club Constitution dropping the membership age requirement to 18 was passed at the regular meeting on Feb. 21, 1974. Pass the word to prospective applicants

Did you ever hear of the "Luxemburg Effect". At a recent discussion on propagation effects, Walt, K3BPP spoke about this phenomena. For the scoffers among us Walt submits the following from the International Dictionary of Physics and Electronics: "LUXEMBURG EFFECT. A type of atmospheric cross-modulation apparently due to the non-linearity of the ionosphere, which causes a receiver tuned to the frequency of a powerful transmitter to also receive the transmission of some other powerful transmitter on a different frequency."

DUES are DUE and Payable. Doc, K3GAS reports over 50% of the members have already paid. Get on the right side of the decimal point and see DOC at the meeting or send them to his QTH. Nice to see "big John", K2BMZ at our last meeting. Thanks for bringing Jo, W2EIF.

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MT. AIRY VHF RADIO CLUB, INC.  
 SUMMARY OF CONTEST SCORES JANUARY 5-6, 1974  
 VHF 5S

CALL	CONTACTS	SEC.	SCORE	CALL	CONTACTS	SEC.	SCORE
K3ACR	328	15	16,275*1	W3HKZ	20	2	480
W3AJF	208	15	10,400	K3HSS	18	2	432
WA3AQA	221	6	7,072	WA2HVD	100	11	4,200
W2AXU	126	23	8,316	K3IGX	206	6	6,592
WA3AXV	250	15	12,500	WA3JMT	85	4	2,380
K3BOY	100	4	2,800	K3IPM	600	29	46,761*1
K3BPP	283	18	15,848	K3IUU	402	17	16,281*1
W3BRU	108	9	4,104	K1JDY/3	339	23	22,374
W3CCX	216	4	6,048#	K3IJZ	301	12	13,222*1
W3CJU	250	10	10,000	WA3JSR	75	3	1,950
W3CL	360	15	18,000	WA3JUF/3	164	10	6,560
W3CLT	90	6	2,880	K3KKN	406	20	24,360
W3CXU	45	7	1,530	K3KMN	275	19	15,834*4
WA3DJF	110	3	2,847*1	WA2KOI	20	5	600
K3DLS/3	41	2	984	K3KTY	171	12	7,524
K3DMA	250	5	7,500	K3MXM	196	6	6,272
WA3DNC/3	311	18	17,416	WA2MWB/2	166	14	7,960
W2RIF	402	24	27,234*3	WA3NFV	79	4	2,212
W3ELX	151	3	3,926	WA3NGK	245	13	11,270
K3EOD	262	15	13,075*1	K3NMN	123	3	3,198
K3EPB	141	5	4,230	W3NSI	109	5	3,270
WA3EPS	107	3	2,782	K3OBY	11	1	242
K3HVV	115	19	6,670	WA3OVH	185	6	5,920
WA3FOF	216	11	9,072	WA3PIR	9	2	216
W3HOD	226	12	9,944	W3PST	18	1	396
K3GAS	254	11	10,668	WA3PUL	255	13	11,730
W3GEW	212	10	8,480	K1SFF/3	388	25	27,160
W2GGB	30	2	720	W3YXF	109	3	2,834
K3GOZ	133	3	3,458	K3BKO	71	4	1,988
W3HPY	267	17	19,548	W3ZD	376	24	25,568
K3HIN	19	3	494	W3ZRR	88	2	2,112
WA3HIT	164	2	3,936	K3ZSG	353	21	21,886
W3HK	204	11	8,568				
						TOTAL	581,117

65 Logs Submitted  
 65 Members Participating  
 37 Logs over 5,000 Points

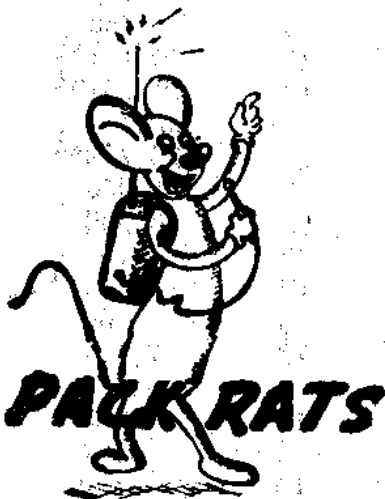
\* 1 way contacts  
 # W3CCX - Club Station (W3SAO-Operator)

FROM "DOTS & DASHES"

Strange is our situation here upon Earth. Each of us comes for a short visit, not knowing why, yet sometimes seeming to divine a purpose. From the standpoint of daily life, there is one thing we do know; that man is here for the sake of other men and, above all, for those upon whose smile and well-being our own happiness depends, and for the countless unknown souls with whom we're connected by a bond of sympathy. Many times a day I realize how my own outer and inner life is built upon the labors of my fellowmen, both living and dead, and how earnestly I must exert myself to return as much as I have received.

Albert Einstein

Cheese Bits  
2087 Parkdale Ave.  
Glenside, Pa. 19038



W3FQD Dick Huntzinger  
130 Fairhill Drive  
Churchville, Pa. 18966

MT. AIRY VHF RADIO CLUB, INC.

FIRST CLASS

## MEETING NOTICE

# AMATEUR RADIO EQUIPMENT

*"Ham" Buerger, Inc.*  
68 N YORK ROAD, WILLOW GROVE, PENN. 19090  
(215) OL 9-5900

## STORE HOURS

Mon.	9:30 to 5:30
Tue.	9:30 to 5:30
Wed.	9:30 to 9:00
Thur	9:30 to 5:30
Fri.	9:30 to 5:30
Sat.	9:30 to 5:30