

PACK RATS'



PACK RATS

CLUB CALL: W3CCX

MT. AIRY VHF RADIO CLUB, INC.

CHEESE BITS



MT. AIRY V.H.F. RADIO CLUB, INC., PHILA., PA.
(50.2, 145.2, 221.4, 432.3 & 1296.3 MC)

AFFILIATED CLUB: AMERICAN RADIO RELAY LEAGUE

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

VOLUME IV

DECEMBER 1970

NUMBER 12

OUR PREZ SEZ

Well we are almost one-half way through the K3JJZ administration. I have decided that so far the toughest thing that the president has to do is to write this blasted column every month. Believe it or not, it's even tougher than getting the paper out.

Also, having to follow such a literary genius as W3KKN, Ernie Kenas, doesn't help matters at all. I am continually being chewed out by the typist for not filling the space allotted to me. And so it goes.

You might have noticed in the last issue that "The Fat Rat" struck back. For those of you who don't know who the "Fat Rat" is, here are some clues:

1. He weighs more than 200 lbs.
2. He is so big that the FCC had to give him two calls, one to cover the part of him that resides in Pennsylvania, and the other for the part that hangs over into New Jersey.
3. He is the only guy who can get to the stencils after I finish with them, and before they are printed.

The only reason I tolerate him at all is that he is probably one of the best printers in the business, as you can tell from the quality of the paper.

So much for singing the praises for CHEESE BITS. We also make mistakes. For those of you who had your call letters mutilated, rearranged or completely left out of the contest group listing, our sincerest apologies.

Since I have mentioned the contest, there isn't much time left. The January contest is a severe test of man and machine. Can you and your gear take it?

K3JJZ, E1

DEADLINE FOR ARTICLES IS THE GENERAL MEMBERSHIP MEETING

EDITOR:

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7815 NEW SECOND STREET
ELKINS PARK, PA. 19117
215 - ME 5-1078

PRINTER:

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207 WOODLAWN AVENUE
COLLINGS LAKE, N. J. 08094

AWARDS CHAIRMAN:

W2EIF, JOSEPH KILGORE
#5 SUNNYBROOK COURT
STRATFORD, N. J. 08084

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

MONDAY NIGHT NETS:

145.2 - 7:30 P.M.
50.2 - 8:30 P.M.
221.4 - 9:30 P.M.
432.3 - 10:00 P.M.

OFFICERS - 1970-1971:

PRESIDENT: K3JJZ, ELLIOTT WEISMAN
VICE-PRES.: W3CJU, DONALD HAMPTON
TREASURER: K3GAS, DOC CUTLER
CORRES. SEC.: W3SAO, FRANCIS BRICK
REC. SEC.: WA3BIV, CARL BARISH

DIRECTORS:

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K3MXM, LEE COHEN
WA3LNH, CHARLES BENAVIDES
K3UJD, MARIO FONTANA
K3BPP, WALTER BOHLMAN
K3CIV, RALPH HERSH
(Ex-Officio)

PACK RATS' CHEESE BITS is a publication of the Mt. Airy V.H.F. Radio Club, Inc., Philadelphia, Pa., and is published monthly.

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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.

* * * * *

DID YOU KNOW

On Saturday, December 5, 1970, the Philmont R.C. will have a dinner dance at the Treadway Inn, St. Davids, Pa. For tickets contact K3KNH, Irwin Miller, 1446 Devereaux Avenue, Philadelphia, Pa. 19149 (CU 9-1086).

K3GAS, Doc Cutler (ME 5-1078) is looking for the person who bought the code tape machine at one of our silent auctions. Please contact Doc, he has the tapes.

K1SFF/3, Tony Souza, our new member, was involved in a close call when one engine of the twin engine plane he was riding in dies out at 5,000 feet. The plane was landed safely at Central Bucks Airport by the pilot Jerry Robinson.

W3CJU, Don Hampton, our veep, is now a grandfather, and we don't mean collies either.

W3KXH, Jim Spry, is home from the hospital and coming along fine.

W3IA, Tom Coyne, is back on the air on 2 and 6 meters.

Mae, XYL of W3OR, Alan Vincent, and Mildred, XYL of W3WIJ, Tom Matthews, are both in the hospital. Speedy recovery to you both.

* * * * *

NEW MEMBER

K1SFF/3, Anthony Sousa
Ottsville, Pennsylvania

WAVEGUIDE BELOW CUTOFF SIGNAL SOURCE

(The strong and the weak signal you have been looking for to peak your converter.)

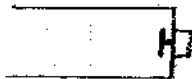
K3BPP, Walt Bohlman



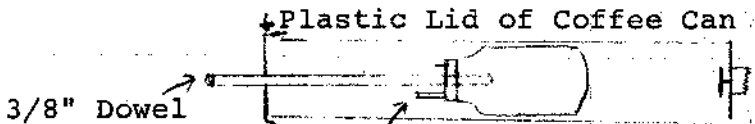
4 one pound coffee cans soldered together

STEPS

1. Obtain and cut bottoms out of three of the cans.
2. On the fourth mount the connector of your choice in the center of the can.
3. Mount a 2" disk of brass or copper on the center pin of the connector.

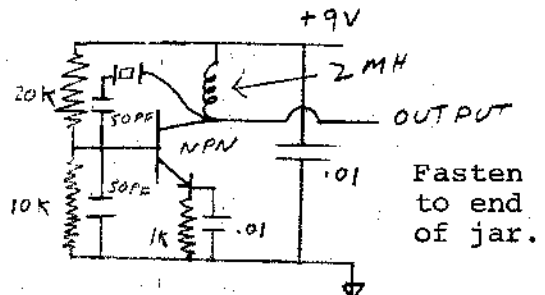
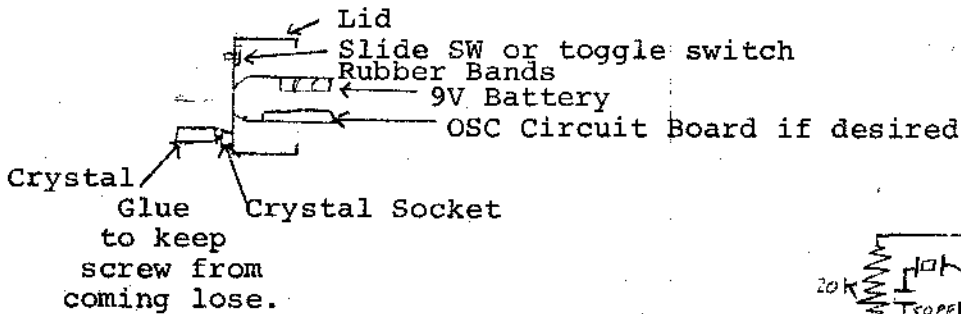


4. Obtain one quart mayonnaise jar with lid (object to have jar fit very close to wall of cans).



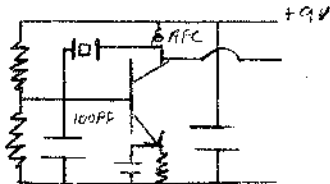
Crystal for band of interest
 8000 MHz for 144, 432, 1296
 8200 MHz for 221.4
 8333 MHz for 50
 or whatever you have that multiplies
 to the desired band

5. Build Oscillator



Works with miniature crystals.

WAVEGUIDE BELOW CUTOFF SIGNAL SOURCE (Continued)

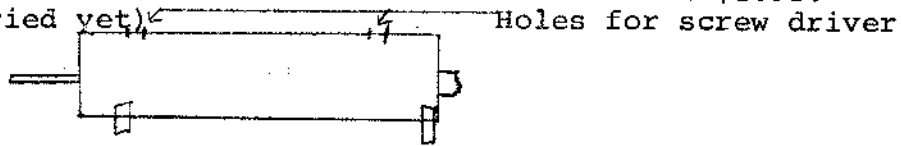


Works with FT 243 crystals. Also, an OK Oscillator should work fine \$2.95.

Other Suggestions (not tried yet)



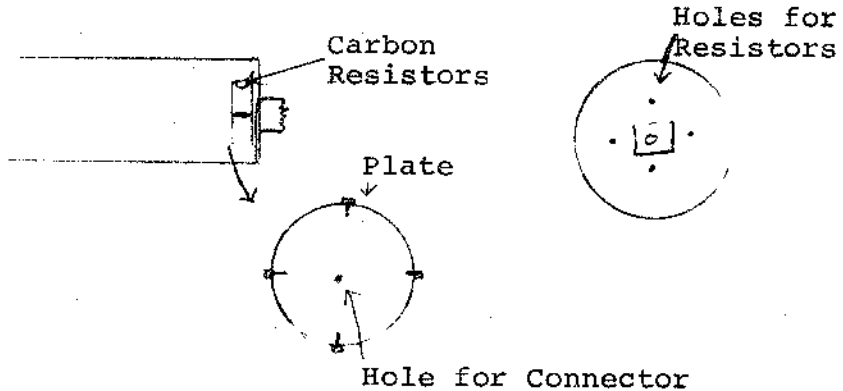
Mount



Use screws with smallest head available to keep bumps small. Put blocks at end to keep bumps out of usable path of jar.

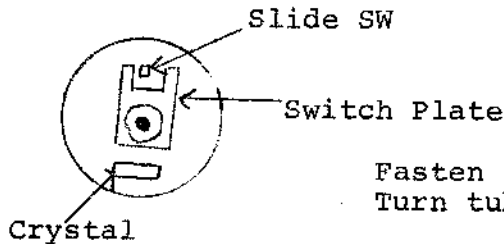
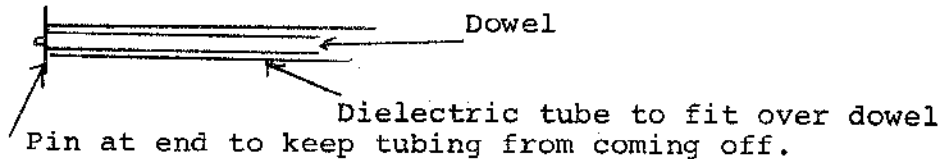
Attenuation

4-200 Carbon Resistors in parallel



Without attenuation a pad should be used.

Remote Switch



Fasten to tubing.
Turn tubing to turn on or off.

Tone Modulation

NOTES ON OPERATION

- The idea was taken from an old 73 mag K1CLL article. He used rectangular rain spouting which also will work very well.
- A 3 db pad or a lot of cable should be used between the signal source and the converter to be checked to present the converter with a 50 Ω load.

Continued on Page 5

WAVEGUIDE BELOW CUTOFF SIGNAL SOURCE (Continued)

- 3. At times it is a good idea to use a band passfilter.
- 4. The theory of operation is that waveguide has a very high attenuation per unit length below cut off. Cutoff of the coffee cans is about 1700 MHz. The result is a device that will give a lot of attenuation and scheduling which does not exist in any signal generator I know of that costs less than \$2000. With the plunger all the way in using an 8 MHz crystal I can produce a signal that is well over S9 432 MHz usually 40 db over S9. Pulling the plunger out the signal gradually drops down into the noise no matter how hot the converter.

Attenuation per inch of plunger could be calibrated for each band as it is a function of frequency.

The obvious use is converter peaking but is also useful for measuring system loss through relays, coax, etc. If the freq. of the crystal can be measured (crystal and multiplier to get to band of use) accurately, the device can be used as a one spot freq. meter or band edge marker.

Well it took longer to write the article than to build the gadget. If you build one and lend it to a friend, plan to build another one. You probably won't see the original again. That is the best testimonial for the usefulness of the gadget that I can think of.

K3BPP, Walt

ROTOR HEATER

WA3BIV, Carl Barish

If you have had problems getting your rotor to work because it freezes in cold weather here is one solution. A company called Electrofilm markets a line of strip, patch and spot heaters. The strip heater is about .05 inches thick, comes in 1 and 2 inch widths and lengths of 24 to 72 inches. For instance, a strip can be wrapped around the rotor and energized when needed. The power required is 115 VAC and they emit about 5 watts per square inch.

The patch and spot heaters are square and round versions of the strip heater. They can be bonded to the surface of the rotor. A few 1" x 1" patches would solve most any problem in this area. They are all supplied with lead terminals.

Coincidentally, Herbach and Rademan is having a closeout of these, and the 1" x 1" patch is selling for \$4.75. For other sizes see Herbach and Rademan's "This Month" Volume 36 Number 5.

WA3BIV, Carl

FROM THE BOOK RACK
de Paul R. Behrmann, K3WEU/AREA*

SOLID-STATE CIRCUIT DESIGN AND OPERATION by Stanton Rust Prentiss (TAB Books No. 508) - 288 Pages, 7 Chapters, over 140 Illustrations - Hardbound \$9.95

This newly-published volume is a unique and informative guide to semiconductor circuit analysis and design, of value to electronic technicians and engineers.

From diodes to integrated circuits - from FETs and MOSFETs to opamps - here is a truly practical guide to the design and operation of solid-state circuits. Written with the needs of technicians and engineers in mind, the author begins with a fresh look at semiconductors - diodes, transistors, FETs, MOSFETs, thyristors, SCRs, triacs, diacs, etc. - how they are constructed and how they work. Chapter 3 provides an in-depth analysis of amplifier circuit design, with guidelines for analyzing AC circuit characteristics. Pulse and switching circuits are discussed in Chapter 4, along with an array of useful multi-vibrator data.

Chapter 5 contains a detailed discussion of computer logic using digital ICs, with many circuit examples and a discussion of basic AND-OR/NAND-NOR functions. A similar treatment is given to operational amplifiers. Following a discussion of what opamps are and how they work, the author describes several currently-available opamps and the uses for which they are designed. Chapter 7 explains the use of modern math for analyzing circuit operation. As a result of the author's logical development and the unique and informative text and illustrative material plus the numerous example problems and solutions worked out in minute detail, the reader will quickly acquire the know-how of modern solid-state circuit design.

CONTENTS: Semiconductor Devices and How They Work - Semiconductor Biasing Techniques - AC Circuits and Amplifiers - Pulse and Switching Circuits - Logic and Digital ICs - Operational Amplifiers - Arithmetic of Electronics.

* Amateur Radio Editors Association

NEW PRODUCTS OF INTEREST TO HAMS
W3NSI, Lyn Rowland, Jr.

.. FM Trans./Rec. - E. T. Clegg Associates

This unit is very much like the 22er Mark II, and in fact uses the same cabinet, dual power supply (AC DC), receiver front end, and the transmitter line up is about the same. The power in the FM unit has been increased from 40 to 60 watts input. The transmitter has provisions for plugging in 9 crystals. The receiver is continuously tuneable over the entire 2M band. Receive sensitivity is less than .2 microvolt for 20 db quieting, and the selectivity is ± 17 KHz at 6 db. The squelch threshold is adjustable from .25 to 500 microvolt. Transmitter deviation is adjustable from 3 KHz to 15 KHz. Both the crystal oscillator and phase modulator stages are solid state. The unit will be supplied with a crystal for 146.94 MHz and will include a PTT mic. Price - \$369.95.

Continued on Page 7

NEW PRODUCTS OF INTEREST TO HAMS (Continued)

2. Free Standing Aluminum Towers - Universal Manufacturing Company, 6017 East McNichols, Detroit, Michigan 48234

A line of aluminum towers in heights of 30 - 90 feet are now available direct from the company listed above. Prices seem very attractive. These are regular style towers, no crank down or fold over units are made by Universal. A 30 foot tower to use with a 2M beam would be made up of a 14" base and 14" center section topped off with a top section measuring 11", and would total 38 pounds, without base plate. Price would be less than \$70.

3. Pocket Size Solid State VOM - Triplett Electrical Company

The model 310-FET VOM has input resistance of 10 M on all DC ranges. Resistance measurements up to 5000 Megohm are possible with this little gem. The 300 millivolt DC range allows transistor bias measurements, on this, the lowest of the six ranges available on DC. Accuracy on most ranges is ± 3%. Price (suggested) \$74.

CORRECTIONS AND ADDITIONS TO
COORDINATORS AND TEAMS FOR JANUARY 9-10, 1971

Change: K2LZA to W2LZA
W3NLT to WA3NLT
WA3LMT to WA3IMT
W3BAA/W3BQU to W3BAH/W3BQU
K3SMA to K3DMA
K2HJA to K3HJA
W2HYO to W3HYO

Delete: Under K3EPB Column
K3EOU

Add: Under K3EPB Column - K1SFF/3
Under W3CL Column - K3ZPQ
Under K3ZSG Column - WA3DNC
Under W3FGQ Column - W3HFY

Make W3AJF Second Coordinator under K3DLS column instead of K3DMA.



The following has been abstracted from an Electronic News article titled "Ham Radio: Foreign Market is U.S. Choice"

"The currently slow amateur radio market is expected to pick up over the coming months as U.S. manufacturers attempt to cut their way into foreign marketplaces.

"The number of ham radio operators licensed in foreign countries is growing about three times as fast as the U.S. ham population.

"We're watching with interest the possible entry of Japanese firms into the higher price (\$2,000 and up) market. The question Signal One is seeking to answer is whether the Japanese can compete in cost and performance in the top-dollar equipment market."

Submitted by
K3IUUV, Bert Soltoff

<p>SEASONS GREETINGS FROM MOTHER RAT FRANKIE W3SAO LCPL HARRY BRICK USAF Frankie</p>	<p>WARMEST XMAS GREETINGS ERNIE & BERT W3KKN & W3TNP</p>	<p>HOLIDAY WISHES TO THE PACK-RATS AND THEIR FRIENDS- fm W3CL and SYLVIA FLO and Marsha too!</p>
<p>SEASONS GREETINGS WA3BIV</p>	<p>Seasons Greetings Sid W3GEW and Family</p>	<p>TO ALL - BEST OF SEASONS GREETINGS K3GAS DOC + LORETTA.</p>
<p>SEASONS GREETINGS DON & GINNA HAMPTON W3CJI</p>		<p>SEASONS GREETINGS. WB4ORG BILL - K3ZSG</p>
<p>SEASONS GREETINGS FROM BOB & DIANE & ROBERT JR. WB2NOK</p>	<p>SEASONS GREETINGS W3HK As</p>	<p>SEASONS GREETINGS FROM THE BENAVIDES' CHUCK W3LNH PAT MIKE JACK & SCOTT</p>
<p>SEASONS GREETINGS WALT + LINA KEN WORTHY W3IDQ</p>	<p>SEASON'S GREETING'S FROM MAG-RIO - thots IVY land you - know</p>	<p>SEASON'S BEST TO THE PACK RATS FROM W3NFV AND THE MITTEN FAMILY</p> 

SEQUEL TO THE 1296 STORY OF LAST MONTH

The following letter relating to the 1296 Expedition is self-explanatory:

Hatteras Island Motel
Rodanthe, North Carolina
Mrs. Rudolph H. Gray, Manager

Dear Mrs. Gray:

Your letter of September 21 to Mr. Zimmerman concerning the missing ice buckets was turned over to me for action since the group that stayed at your motel was an official outing of our club.

An investigation was conducted among the persons who went to North Carolina, without turning up the ice buckets you mentioned, and this is very unfortunate. We regret that an incident such as this has occurred, and we extend to you the apology of the entire club for any inconvenience which may have been caused to your operation.

We accept full responsibility for the missing motel property and enclose payment in full for the amount you have requested.

Our club is indebted to you for allowing us to conduct the ultra-high frequency radio propagation test on your property, and we consider the location to be ideal for this purpose. There is a slight possibility that this test may be repeated at some future time, and many of our members are looking forward to the next occasion to visit North Carolina.

Please accept our apologies and we wish your motel were closer so that more of us could visit the very charming area.

Sincerely,

Francis Brick
Corresponding Secretary

Submitted by K3JJZ

ATV VIA AIRCRAFT
K3MXM, Lee Cohen

Sunday, October 25, was my first witnessing of the abilities of hams on amateur TV or as is called ATV.

A special test had been arranged for an airplane to fly from Northern New Jersey, New Brunswick Airport, come to Philadelphia area out of Coatesville, where a radio marker beacon is located and circle around the Downingtown-Exton area and back to their base via the Pennsylvania-New Jersey Turnpike route.

Along this route various operators had their TV equipment readied and waiting. In the plane operating the two way TV was K2KVT, Frank, and his pilot, Smitty. Communications were maintained via VHF FM on 439.25 and 439.94 both with the plane and other amateurs.

SEASONS
GREETINGS

FROM
FRANK + ANNA
BENNER
W3BRV

SEASONS GREETINGS

to the

Pack Rats



FROM THE STAFF OF CHEESE BITS
K3GAS - K3JJZ - WAZK01 - K3MKN
and all the guys who put the paper
together every month at Doc's place

Best Wishes for
a good New Year
to all
from K3IUV Bert,
and all the other
Soltoffs

SEASONS
GREETINGS
TO ALL
FROM
JACK TOWER
W2AXU

SEASONS
GREETINGS

WAZFOF
RALPH ALEXANDER

SEASONS
GREETINGS

K3DLS
NØ1ML

CARL
CH7

ATV VIA AIRCRAFT (Continued)

The first pictures were received when the plane flying at 2000 feet was over the Trenton area. These continued on and off down the corridor into Philadelphia along Route 295 - over the Philadelphia International Airport and then west. I say on and off as the plane's TV equipment was operating from a 12 volt storage battery and conservation was the order of the day.

I was at the home station of K3ZKO, Ron, in the Oak Lane section of Philadelphia along with W3DYR, Virgil, who is also a professional pilot, so the plane was supplied both with TV and navigational information. Many camera pictures were taken from the TV monitors and these may appear later on. These pictures included the cockpit interior and occupants, the landscape both on wide angle and zoom lens and even noted a ball game in progress.

Bob Stone, W3EFG, whose QTH is in the Downingtown-Exton area, both received pictures from the plane and transmitted back and these were received in excellent order.

Because of the antenna direction, the pictures from the ground to the plane were not received here in Philadelphia, but those from the plane to ground were excellent. The landmarks were readily recognizable and compass directions were given.

Helping from Long Island end was K2KQZ and others here in the Philadelphia area were W3AEH, Al, and K3WJB, Drew.

More than once the remark was made about the feeling that these pictures seemed like those coming from the astronauts, only this was done by a collection of surplus materials and abundant junk boxes. A fine experiment well done and I am indeed sorry that many more could not have seen this fine display of ATV in action.

K3MXM, Lee

* * * * *

VISITORS AT MEETINGS

CORRECTION TO PACK RAT DIRECTORY

October

- WA3DNL, Joe, Souderton
- K2KVT, Frank Madaffore, New Brunswick
- WA3AQA, Walt Zumbach, Glenside
- WA3DJF, Carl Mattiace, Philadelphia
- Mike Sonstein, Ambler
- Steve Schechner, Plymouth Meeting
- Jeff Berg, Philadelphia
- Morgan Jones, Philadelphia
- D. Schechner, Glenside

WA3IMT, Richard Marshall
 3254 Susquehanna Road
 Dresher, Pa. 19025
 215 - 887-2644

* * * * *

WANTED TO BUY

2 Meter V.F.O.

CONTACT: K3GFF, George R. Korn
 3807 Amherst Place
 Philadelphia, Pa. 19138

November

- WA3AXH, Thomas Scheid, Norristown
- WA2UUV, Bill Fulling, Springfield

JANUARY CONTEST
JANUARY 9-10

There are 51 days left until the contest (November 18). There is still time to order that crystal to get your converter, or the correct I.F. frequency, build that 220 preamp, correct the loose mike cable, put in the foot switch, check all your tubes, get the noise out of your relays, mute your receiver, clean-up and make the shack comfortable, condition the household, clean-up T.V.I., inspect the 110 plugs and outlets, get rid of multiswitch operation, organize your schematics, get spare parts, clean-up power line noise, test out your gear and see how many D.X. stations you can work when the band is closed. If you are not overwhelmed by now, you can think of a few things that you could improve.

Needless to say, everyone's score is important to the club. If you really don't like to work, contests make it a challenge - see how many fellow Pack Rats you can work, see how many new sections you can work.

Also, have a very happy holiday and hope Santa brings that 2KW Linear.

Co-Chairmen
K3BPP and W3CJU

TWO METER REPORT: OCTOBER/NOVEMBER

Two meters has shown a decline with respect to longhaul coastal contacts. Very little activity noted south and west. Northeast contacts can still be had on SSB, 144-145.2 with WLYTW, Maine, WLYK, Wooster, Massachusetts and WALJTK, Nashua, New Hampshire. No aurora openings have been observed except for a few of short duration. The Pack Rat net activity has picked up on Monday nights with better than 20 check-ins each time.

W2EIF

MEETING NOTICES

The next Directors' Meeting will be held on Wednesday night, December 9, at the QTH of W3CL, Harry Stein, 2087 Parkdale Avenue, in Glenside, Pennsylvania.

The next Regular Meeting will be held on Wednesday night, December 16, at the West Oak Lane Jewish Community Center, Sedgewick and Thouron Streets, in Mt. Airy. The topic will be "Contest Round Up". NOTE: This is a closed meeting - no visitors please.

WANTED: Bachelor ham in search of pad, preferably in Montgomery County.

CONTACT: Carl Barish
7948 Thouron
Philadelphia, Pa. 19150
LI 9-6486

MT. AIRY

V.H.F. RADIO CLUB



215 885-2140

JEROME R. GOMBERG
MANAGER

LAFAYETTE RADIO ELECTRONICS
of Cheltenham, Inc.
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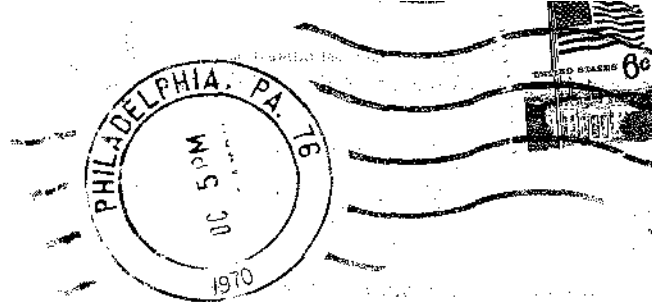
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