

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. ARNS
50.2, 145.2, 432.03, 1296 MHZ, WR3ACD - 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 Rd.
Southampton, Pa. 18966

VOLUME XX

FEBRUARY, 1978

NUMBER 2

THE PREZ SEZ

Now that the smoke has cleared and peace and tranquility have returned to the Delaware Valley, a few reflections on this years' VHF Sweepstakes Contest are in order. The Pack-Rats again displayed a fine team effort spearheaded by our contest chairman Danny, WA3NFV and his hardworking team of coordinators.

Never in my memory was the caliber of Pack-Rat operators any better. As the contest wore on, the improvement in operator skills among the area contestors could be easily observed. These improvements were without doubt influenced by the example of Dannys' well drilled team. Even on 146.52 FM the Pack-Rat operators were a standout with short no nonsense calls and contest exchanges which were models of brevity and efficiency.

The new two-letter call holder (nameless and not a Pack-Rat) who repeatedly called CQ sure looked bad by comparison (did'nt make too many contacts either).

The new contest scoring system with its emphasis on the upper bands produced increased activity on 220 MHZ and up. We have some fine new members in our club with a number of first time scores of 5K plus turned in. We old timers feed on your enthusiasm. K3QQ, recently burned out of house and home was nothing short of pervasive from his mobile location. All of this I am sure is clearly the level of effort to be expected from the championship team.

Turning to other matters; the directors decided to combine our traditional August picnic with the Hilltown June VHF contest activity. We always did have family visitors on the Sunday of the contest at that location in the past number of years.

The Ladies Nite/Banquet committee headed up by Doc, K3GAS have found a new place in the cal area for this affair. The date selected is Saturday evening, May 20, 1978. Our talented MD, John Tate, K3KTY will officiate once again. We are all looking forward to a gala evening in the merry month of May.

73, Tony, W3HMU

Pack Rats CHEESE BITS is a publication of THE MT. AIRY VHF RADIO CLUB, INC. Philadelphia, Pa. and is published monthly.

Subscription Rate - \$1.50 per year.

We operate on an exchange basis with other publications. Anything that is printed in CHEESE BITS may be reprinted, unless otherwise stated, provided that proper credit is given

SWAP SHOP ITEMS - no charge.

DEADLINE FOR ARTICLES IS THE GENERAL MEMBERSHIP MEETING.

EDITOR:
W3CL, Harry B. Stein
2087 Parkdale Avenue
Glenside, Pa. 19038
215 - TU 7-5052

PUBLISHER/SUBSCRIPTION MANAGER:
K3GAS, Doc Cutler
7815 New Second Street
Elkins Park, Pa. 19117
215 - ME 5-1078

PRINTER:
K3IGX, Richard Boyle
7915 Bayard Street
Philadelphia, Pa. 19150
215 - 927-6471

PRINTERS DEVIL:
WA3FOF, Ralph Alexander

TYPIST:
WA3TEM, Marsha Lissauer

TRUSTEE OF CLUB CALLS: W3CCX-WR3ACD
WA3AXV, Ronald Whitsel
209 Frog Hollow Road
Churchville, Pa. 18966
215 - 355-5730

AWARDS CHAIRMAN:
W2EIF, Joseph Kilgore
#5 Sunnybrook Court
Stratford, N.J. 08084
609 - 783-9478

CLUB HISTORIAN:
W3CL, Harry B. Stein

OFFICERS: 1977 - 1978

PRESIDENT: W3HMU, Tony Souza
VICE-PRES: W3HQT, Bill Olson
COR. SECY: W3IIT, Harry Brown
REC. SECY: WA3NFV, Dan Mitten
TREASURER: K3GAS, Doc Cutler

DIRECTORS:


K3MXM, Lee A. Cohen (Ex-Officio)
K3MWV, Dick Pierce (2 years)
WB2SZK, Randy Bynum (2 years)
K3IGX, Dick Boyle (1 year)
K3JJZ, El Weisman (1 year)

<u>MONDAY NIGHT NETS:</u>		<u>NET CONTROL</u>
145.2 MHZ	7:30 PM	W2EIF
50.2 MHZ	8:30 PM	W3CL
221.4/224.58 MHZ	9:00 PM	K3GAS
432.03 MHZ	9:30 PM	K3IUU
1296.3 MHZ	10:00 PM	W2EIF

<u>FRIDAY NIGHT ATV NET:</u>	<u>NET CONTROL</u>
439.25 MHZ	7:00 PM WA3AXV


PACK RAT REPEATER - WR3ACD - 222.98/224.58
Churchville, Pa.

-215-674-0300



LAFAYETTE RADIO ELECTRONICS
"Associate Store"
531 Easton Road
Horsham, Pa. 19044

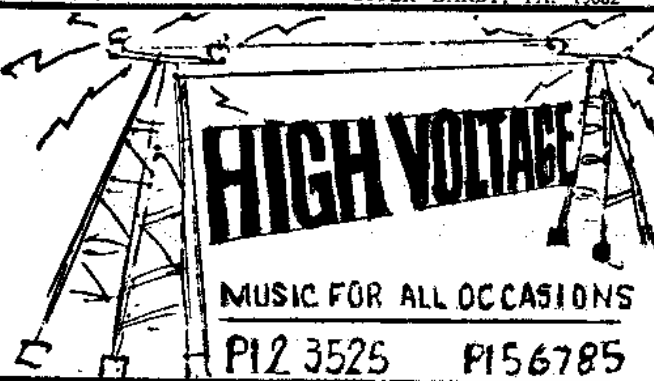
Paul Hamilton, Bruce Clark



PENNSYLVANIA
INSTITUTE OF TECHNOLOGY

PAUL D. MERCADO - W3FBF
FCC AMATEUR Instructor COMMERCIAL
LICENSE INSTRUCTION

(215) FL 2-7100
(215) JA 8-6998
414 SANSOM STREET
UPPER DARBY, PA. 19082



HIGH VOLTAGE

MUSIC FOR ALL OCCASIONS

P12 3525 P15 6785

CALENDAR OF COMING EVENTS

Syllabus by Lee, K3MXM

FEBRUARY

- 2 Ground Hog Day, Noting the weather past few weeks, need we say more!
- 4 Contest Wrap Up Session, QTH, W3ZD, 520 Centennial Road, Warminster, Pa. Starting around 9:30 a.m. bring your calculator - free lunch on the club.
- 4-5 ARRL DX Contest - Phone. See December QST for full details.
- 4-12 ARRL Novice Roundup. See January QST, Page 91 Full details.
- 8 Ash Wednesday
- 9 Board of Directors Meeting, QTH, K3GAS, "Doc", 7815 New Second Street, Elkins Park, Pa. If lost, ME 5-1078. Directors and interested parties invited.
- 11-12 Ten Ten International Net Winter QSO Party, Exchange 10/10 number and QTH
- 11-12 QCWA QSO Party. Exchange QSO number, QTH and QCWA number, see Page 91 January QST for full details
- 13 Lincoln's Birthday
- 14 Valentines Day. Get your points in with the other half. Don't forget the card and candy. Maybe a meal out or a show!!
- 16 General Club Meeting. Southampton Free Library, Street Road, Southampton, Pa. 8:00 P.M. "Crying Towel Session" Aftermath of the VHF SS Without a doubt, one of the funniest club meetings of the year. Naturally, there will be prizes and surprises. There will be many shoulders to cry on and gain sympathy of the problems of the nites of Jan. 21 and 22. An open meeting to one and all. Bring your buddies. The Mario Raffle, Frankie's Silent Auction, Refreshments. New 1978 Pack Rat Membership Directories will be available.
- 17-18-19 Orlando Florida Hamcation. Contact WB4HAK, 6 Camellia Drive, DeBarry, Florida. ZIP 32713 for reservations and information
- 19 Winterfest, Vienna Community Center, Vienna, Virginia. Talk-In 147.81/21 or simplex 146.52 and 146.58. Info and reservations. Vienna Wireless Society. P.O. Box 418, Vienna, Virginia 22180
- 18-19 ARRL DX Contest - CW
- 20 Washington's Birthday

Up-Coming Events: March Club Meeting "TV in Space". Bert K3IUV
May Meeting. ARRL Nite, Special speaker from the League
June 10-11, VHF QSO Party, Hilltown, Pa.

MAY 20, 1978 - PACK-RAT LADIES NITE/BANQUET SATURDAY NITE AT THE COUNTRY SQUIRE INN, RTE 611, HORSHAM, PA.... GOOD FOOD, MUSIC, AWARDS, PRIZES. MC - JOHN TATE, K3KTY.

* * *

THE NORTHEAST V.H.F. ASSOCIATION PROMOTES ACTIVITY ON THE BANDS ABOVE 50 MHZ. AND PUBLISHES AN FB NEWSLETTER SIX TIMES A YEAR. MEMBERSHIP \$3.00/YR. SEND NEWS ITEMS AND SUB TO:

Lewis D. Collins, 10 Marshall Ter., Wayland, Mass. 01778

NEW PRODUCTS OF INTEREST TO HAMS

By Lyn, W3NSI

1. SOLID STATE MOBILE KW AMP: Magnus Electronics Corp. is selling a 12 VDC operated amplifier covering 80-10 meters. Unit MA 1000 may be driven from any 100 watt output transmitter. Current drain is of course very high, in fact on voice peaks, it can run up to 70 amps, with the average being 40 amps. Size of unit is 10" wide by 17" deep and 4 1/2" high. Price \$795.00. 5715 N. Lincoln Ave., Chicago, Ill. 60659
2. FM T/R 144-220-440 MHZ: Drake has just introduced their UV 3-3 band transceiver, which covers the three FM ham bands 2 M. 1 1/4 M and 3/4 M. Operation is FM only and the unit is fully synthesized in 5 KHz steps, with a four digit readout. Power output is 25 watts on 144, 10 watts on the two higher bands. A low power position is also available on each band. The UV 3 can be purchased for one band, or 2 bands or all three bands. If the single or two band version is purchased first, the second or third modules can be added later just by plugging them into the main frame. In addition to the synthesizer, four fixed channels may be selected from the front panel. When these channels are in use, a scanner function may be activated, which checks the frequency dialed into the synthesizer. Price UV 3-3 Band \$995. 2 Band \$795. 1 Band \$595. Modules as added \$250. Power Supply \$89.95. (R.L. Drake Co.) 540 Richard St. Miamisburg, Ohio 45342

* * *

VHF/UHF REPORT

By Jo, W2EIF

The VHF/UHF bands continued to show little activity. Six meters seems to have the least activity. There have been some bursts of sporadic E sessions and some auroras which were useful up through 2 meters.

Two meters always seems to have some small activity almost every evening, around 144.110 Mhz.

One would think with the January Contest coming up that there would be a lot of checking on all the upper bands. However, such is not the case. 220 Mhz activity continues about the same pace. A number of us meet around 220.020 every Tues. nite at 8:30 EST. There was a new one last week when we were joined by W1GXT near Boston.

The grapevine has it that several W. N.Y. stations are trying to get on 220 but we have not heard them yet.

WA3JUF Dave, has heard and been heard by W1GAN, E. Mass. on 1296. They will probably work very soon.

Hope everyone gets a nice score for the Contest in spite of the icing conditions that damaged a lot of antennas.

THE FOLLOWING LETTER RECEIVED BY JO, W2EIF, FROM ANDY, VE1ASJ:

"I am looking for a CW/AM rig for my Beacon (VE1SIX) Don't want to spend much money! Have got \$150.00 of my own in the project already. Can you pass the word through the Pack Rats. Someone must have an old Xmtr. The one I used last year packed up - it was an old GE FM base Station. Two 807. Very heavy 200 lbs. I found it impossible to carry up the hill on my back.

VE1SIX is located 870' A.S.L. on the Bay of Fundy 1 1/2 miles inland. No land between it and U.S.A. Had reports on four different AUR's plus many openings. It was worth its weight in gold to have it going.

Hope maybe one of the Pack Rats can help!!"

* * *

OFFICIAL BULLETIN NR 688 FROM ARRL HEADQUARTERS NEWINGTON CT JAN 12 1978 TO ALL RADIO AMATEURS BT: February presents an excellent opportunity for every amateur to test frequency measuring skills by taking part in an ARRL Frequency Measuring Test. W1AW will transmit signals for measurement on February 12 at 0300 and 0600 UTC. This is the evening of Feb. 11, local time. The first test will take place on approximately 14128 7040 and 3552 kHz. Three hours later the second series of test signals will be transmitted approximately on 14082 7030 and 3561 kHz. Each participant's report will be compared with that of a professional frequency measuring laboratory. Further details appear on page 91 of January QST. AR

SWAP SHOP

FOR SALE: Clegg 27B-\$200.

CONTACT: WA3OQR, Charles Zeager

Phone: After 4 P.M. 215-533-9277

FOR SALE: Drake R-4 Receiver \$275.

TR-4 Less power supply \$300.

CONTACT: K3JJO, Wally Newell

Phone: 215-659-9504

FOR SALE: SB-200 Heathkit low band

amplifier. 10-80 mtrs., 1200 watts.

PEP, new tubes, manual \$250.00

572B tubes - Pair of new "Cetrons"

\$40. 6M - FM, converted RCA, AC supply,

rack mounted, crystals for simplex and

WR3ABE, 30W. Manual \$25.

CONTACT: WA3AXV, Ron Whitsel

Phone: After 6 P.M. 215-355-5730

* * *

FOR SALE: CLEGG FM-21 220 MHZ xceiver

belonging to WA2MWB/7. Crystals for

Pack-RAT, Trevoise, and PARA Repeaters.

Simplex Channel on 223.5 - \$130.

CONTACT: Harry Stein, W3CL

Phone: 215- 887- 5052

* * *

TID BITS

Congratulations to Stan, K3IPM on obtaining his general. His son Matthew, WA3VJU did a nice job contacting Pack-Rats during the VHF SS Week-End.

Congratulations to "El Presidente" Tony, W3HMU on his reappointment to the VHF/UHF ARRL Advisory Committee.

Congrats also to Harry Dannals elected as Pres. of the ARRL. We are happy to report resolutions adopted by the ARRL Board of Directors at their Jan. 19-20, 1978 meetings expressed gratitude to Bob White, W1CW and Ellen White, W1YL for outstanding service on the occasion of completing 25 years of service at headquarters.

Also, They warmly thanked Leitha Phillips Tilton, now retired, for her faithful service during the 30 yrs. with the League.

A speedy recovery to our friend Lew McCoy, W1ICP who suffered a mild heart attack Jan. 19, 1978. Send cards to Hartford Hospital, Hartford, Conn. 06106.

An excellent showing by the many Pack Rats participating in the Jan. VHF SS. Our pre-contest meeting on Jan. 19th was cancelled due to weather conditions where operating details would have been discussed - instead we had a spirited on-the-air meeting that evening chaired by Dan, WA3NFV the contest chairman.

Amateur Radio Courses in the Local Area: Amateur Radio II - Course for General and Technician at Upper Moreland Evening School. Started Jan. 26 Thurs. Evening - 10 weeks, 7-9 P.M. Call 659-9504 for info.

Amateur License Classes sponsored by Cheltenham Evening School starts Feb. 6, 1978 at the classroom located at 2600 Cheltenham Ave., Phila., Pa. Wed. evenings for Novice; Thurs. evenings for General and Advanced. Starting Time 7:30 P.M. For details contact Ralph Alexander, WA3FOF, 215-276-4185. * * *

MISCALCULATED EXPLOSIONS: Do you carry a miniature calculator in your pocket? If so, it could knock you off your feet. The Journal of Environmental Health has recently warned that an improperly shielded pocket calculator can explode. Researchers have found that any metal object that inadvertently comes in contact with the unprotected battery charge contact points will cause a thermal runaway. This in turn shorts out the nickel-cadmium batteries, and an explosion with enough force to knock a person down will result. Even the lead of a pencil can cause such a thermal runaway. The best way to prevent such an accident: carry a pocket calculator in its case. (FROM THE NAVAL AIR DEVELOPMENT CENTER "THE REFLECTOR")

NO MORE AMATEUR RADIO LICENSE PLATES IN PA.

By Ric Janssen, WA3UDS/K3QQ-NNN/QPO

Under the New Pa. Motor Vehicle Code which became effective 7/1/77, ham license plates (\$3 yearly additional fee) ceased to exist. Call sign plates are now classified as "Vanity Plates" and require the payment of \$20 when they are first issued and when they are replaced at approximately four year intervals. Call sign plates, under current regulations, can only be issued to FCC licensed radio and television stations.

House Bill 1171 was introduced to the legislature in 1977 to further revise the Motor Vehicle Code. It was amended to again recognize amateur call sign license plates and to require reduced fees for their issuance. The full House accepted re-instatement of ham plates but rejected reduction of the fee. House Bill 1171 was then sent to the Senate Transportation Committee. They promptly rejected the House amendment allowing ham plates. Sen. Budd Dwyer has offered two amendments to H.B. 1171 which affect amateur call plates, one which would allow special ham registration plates (-----) and a second which would reduce the special fee to \$12. There is considerable opposition to the second amendment since Senate and House members must pay the full \$20 for their own "Vanity Plates".

The Senate Transportation Committee will vote on these and other amendments later this month (Jan. 1978). If they do not accept the first, it appears that any car-owner will be able to require any un-used combination of letters and numbers. Assuming you do not now have a call sign license plate, it would become possible for a local CB'er to request and receive your call on his plates!

What can you do? You and the more than 13,000 other amateurs in Pa. can inform our Senate and House members of our feelings. Please contact Ric, K3QQ to get a list of State Senators and a special list of the members of the Senate Transportation Committee. Write to your Senator and tell him about amateur radio (Many of them do not understand the difference between an amateur and a CB'er). Mention that amateur call sign plates in Pa. were granted in recognition of the emergency communication assistance rendered by amateur operators during disasters and when regular communication facilities are disrupted and to allow state and local officials to readily identify amateur operators in time of need. A copy of the story 1978 Jan. QST, pg. 50-52 showing how amateur radio carried the bulk of the communications at the recent Johnstown flood could be included. If you are a member of MARS, AREC or RACES or have assisted hospitals, the Red Cross, Civil Defense, the fire department or local or state police, mention your activity. A letter from these organizations or magazine articles or newspaper clippings are useful. Ask your Senator to support the Dwyer Amendment to House Bill 1171 re-establishing Amateur Radio Call Sign License Plates. Request a reply from your Senator and if you can, follow up your letter with a telephone call. Ask other Pennsylvania hams to do the same. Please send a copy of your letter and any reply to either K3HWL or me.

To protect your call, apply for your call sign "Vanity Plate" this month. If someone else requests it under new regulations, you've lost it. If you have any questions, call Bob, K3HWL (814) 336-1066 or me (215) 355-1980 any evening. We've had ham license plates in Pennsylvania for over two decades, let's keep them!

* * *

JOTTINGS BY LEE -K3MXM

Wind-Chill Factor

It's that time of year again. You've seen this chart before, but maybe you want to cut it out and refer to it when winter winds start howling:

WIND SPEED	10	20	30	40
TEMPERATURE				
55	40	32	28	26
30	18	4	-2	-6
20	4	-10	-18	-21
10	-9	-25	-33	-37
0	-21	-30	-48	-53
-10	-33	-53	-63	-69
-20	-46	-67	-79	-85

OFFICIAL BULLETIN NR 689 FROM ARRL HEADQUARTERS NEWINGTON CT JANUARY 21 1978 TO ALL RADIO AMATEURS BT: Meeting in annual session January 19 and 20, the ARRL Board of Directors voted to establish the position of resident Washington, D.C., representative for ARRL, to petition FCC to extend from 30 to 45 days the period allowed for return of Novice examinations by volunteer examiners, and to urge FCC to seek legislative authority for increased volunteer assistance in administering amateur examinations. In an action related to the ARRL Code of Ethics, the General Manager is directed to publish information on manufacturers and suppliers who demonstrate a commitment to the principle of seeking means to limit the unlawful use of amateur radio equipment. In other actions, the Board directed the Communications Manager to continue to mailing of Official Bulletins to OBS, directed the implementation of a three tier club competition in League sponsored contests; transferred Ocean County, New Jersey, from the Hudson to the Atlantic Division, conferred the 1976 Technical Excellence Award upon K4FWG and W4BBP, and changed the mileage limit for WAS and Five Band WAS contacts from 25 to 50 miles. A new award to recognize sixty year members of the League is to be established, and QST authors henceforth will be awarded a certificate of appreciation. Studies were ordered of several aspects of the contest program, band plans for the 220 and 420 MHz bands, a possible new position of Division Technical Coordinator, guidelines for the use of non profit mailing permits in the name of the League, how to increase participation in the Amateur Radio Emergency Service, and the establishment of a Public Relations Advisory Committee. Complete minutes of the Board Meeting will appear in March QST. AR

* * *

JOTTINGS BY LEE-K3MXM CONTINUED
WIND SPEED GUIDE

Here is a handy guide for estimating wind speeds that was worked out by the U.S. Weather Bureau Central Region:

MPH	
25-31	Large branches moving. Whistling is heard in overhead wires.
32-38	Whole trees moving. Inconvenience to walk against the wind.
39-46	Small branches break (twigs). Impedes walking.
47-54	Slight structural damage. Larger branches and weak limbs may break.
55-63	Moderate structural and tree damage.
64 plus	Heavy to severe structural and tree damage (sometimes antenna towers)

* * *

To fight colds, Indians used to brew up a pine tea made from steeping balsam needles in boiling water.

Note: Sometimes these old fashioned remedies work as good as or even better than the newer ones.

The dizzy ride to fame and fortune on the CB craze has left two big names as casualties. HyGain Antenna Co. is bankrupt and the E.F. Johnson Co. is closing their plant in March and Radio Shack is disposing of most of their inventory. There will be a big sale of the remaining components of CB sets and prices are expected to hit a high of 10¢ on the dollar for the bits and pieces.

An egotist is a person who suffers from I strain...

The Guillotine was a French chopping Center.

A coal miner is a vein man.

She is only an amateur's daughter, but you should see her operate!!

CB'ers may do their thing all over the road, but amateurs do it with more frequencies..

ARRL Aids: Free to members who enclose a self-addressed stamped envelope with a request:

Technical Department: List of Circuit Board Suppliers; Technical Aid Sheet (Form TAS-1); List of Dealers in surplus teleprinter equipment; Authors guide to writing for QST; List of available back copies of QST; List of publications on propagation predictions; Information sheets on Micro-TO Keyer; List of parts and component suppliers; List of dealers offering surplus 5FP7 tubes; Nelson reprint "Electrical Interference"; Repeater Forms; List of Bibliographie; List of Templates (1967-1976) (with prices)

A couple Signs spotted and Noted while Christmas Shopping: Sign on a garbage truck; "It may be garbage to you, but it's our bread and butter". Sign on a plumber's truck "In our business a flush beats a full house". Sign on a clock shop: "There is no present like time." Sign at a garden center: "Plant our seeds and jump back." Sign at a restaurant: "Topless oysters on the half shell." Sign at a roadside stand: "Cider easy to get now - Will be hard later on."

HOW TO REWIRE POWER TRANSFORMERS

BY K200D

Did you ever want a special transformer and could not find "just the thing"? Consider winding your own. Discussed here will be a typical problem. You want to build an adjustable supply for a 12 volt transceiver. A 12.6 volt filament transformer, well filtered, will give under load about 12-13 volts, but when the load is removed, it will soar up to perhaps 18 volts! Not GOOD! One could put a Zener across the putput, but it would have to absorb a lot of watts under light load conditions, not good enough yet.

The design goal here is to produce about 18 volts at the required current, well filtered to the point that, under full load, the voltage never drops below 18 volts as observed on an oscilloscope. You now have to make a choice of filter input circuits: choke or capacitor. The capacitor input circuit will produce higher no load voltage, but poor regulation. The choke input circuit has the advantage of needing smaller filter caps and reduced input surge through the rectifier diodes. I recommend the choke input arrangement, but you ask, where will I get a suitable choke that has very low resistance? That will be the subject of the next article.

Now you know you have to have a transformer that will produce about 18 volts filtered D.C. Determine the current you will need, figure out the wattage, and then pick any transformer out of your (or someone else's) junk box, that has the right wattage, being sure the 110 VAC winding is next to the core.

Our procedure is to disassemble all the iron and remove the bobbin containing the windings. This makes re-winding simple but there is this drawback. When the laminations were stacked at the factory, the iron was covered with a thin varnish which insulated the plates, one from the other. Somehow, you have to replace this insulation. If you do not, eddy currents will flow in the iron and it will get hot and draw lots of 110 VAC current even without a secondary! The solution to this problem is to carefully clean all the laminations and then spray with a thin layer of clear acrylic. (One side is enough.) Another method involves pulling a bobbin with the required length of wire in and out of the transformer core openings. It requires lots of patience and time, but produces a more satisfactory result.

In either case, carefully separate the leads going to the 110 VAC winding and get them taped out of harm's way. If you break them off, all is lost. Remove the outer insulating layers and identify a low voltage winding whose voltage is determined. When you un-wind this winding count the turns, then the number of turns per volt can be determined. Assuming a conventional power transformer, the 5 volt winding is usually on top. (Count the turns) then remove the 6.3 VAC winding, again count the turns for a double check. Remove any other winding with a hack-saw, razor blade, or with your teeth, if necessary. Discard all the junk and you should have the original 110 VAC winding left. You will probably discover that most transformers have about three turns per volt.

To rewind, choose a wire size that will handle the current your design calls for, from the table in the back of the ARRL Handbook. Measure the length of one turn around the largest diameter of the original winding, multiply this by the number of turns determined by the above, and cut off the correct length. Use enamel covered wire. The inside, or bottom turns, will take less wire per turn, but that leaves a comfortable margin for error. Determine which side of the transformer you want the leads to come out on (preferably on the opposite side from the 110 VAC winding) and carefully anchor the wire to the bobbin. Wind even layers, do not scramble wind, this is apt to produce shorts. When the first layer is complete, wrap tape over it. Glass re-inforced tape is best for this, as the adhesive cures under heat. Vinyl tape melts and creeps and is not satisfactory. Black friction tape is also good. When the required number of turns has been laid on, stop and test. This test should be under maximum anticipated load. Add on a few turns, or, take off a few to get the desired voltage. This is critical. If the voltage is too high, the pass transistor(s) will have to dissipate the extra watts. Cut off the extra wire and solder on flexible leads.

Tape the whole mess together and reassemble. If you picked a transformer that was fully shielded, you can invert and fill the whole pot with epoxy. This prevents hum and makes sure the wires do not thrash about on the core. Currents in the wires tend to make them vibrate and wear off the enamel. The epoxy potting also helps carry off the heat, but makes repair impossible.

(215) TU7-5052

W3CL

HARRY B. STEIN ASSOCIATES

COMMUNICATIONS CONSULTANTS

HARRY B. STEIN

2087 PARKDALE AVE.
GLENSIDE, PA. 19038



AMERICAN RADIO RELAY LEAGUE

HARRY A. McCONAGHY, W3SW/W3EPC
DIRECTOR, ATLANTIC DIVISION

8708 FENWAY DRIVE—POTOMAC
BETHESDA, MARYLAND, 20034

NE 7-8329

GEORGE S. VAN DYKE, JR., P.E.
CONSULTING ENGINEER

W3HK

4807 CONVENT LANE
PHILA., PA. 19114



AMIL S. GUMULA
PRESIDENT

A. G. RADIO PARTS CO.
939 TOWNSHIP LINE RD.
ELKINS PARK, PENNA. 19117
TELEPHONE: 215-886-5100

RCA Authorized
Distributor

HOURS
CLOSED MONDAY
TUE. & THUR. 9:30-5:00
WED. & FRI. 11:30-9:00
SAT. 9:30-5:00

(215) 723-1200
(215) MI 6-2511

ELECTRONIC EXCHANGE

ALL TYPES OF HAM GEAR & ELECTRONIC EQUIPMENT
BOUGHT, SOLD, TRADED & REPAIRED

GORDON R. KITTEL
W3GK

136 N. MAIN STREET
SOUDERTON, PA. 19084

AMATEUR & CB RADIO
SALES & SERVICE

(215) OL 9-5900

"HAM" BUERGER INC.

Communication Specialists

BOB HERSHMAN
WA3ZID

68 N. YORK RD.
WILLOW GROVE, PA. 19090

KASS ELECTRONICS DISTRIBUTORS



DISTRIBUTORS OF
RADIO — TELEVISION PRODUCTS
INDUSTRIAL ELECTRONIC PARTS & EQUIPMENT

2502 TOWNSHIP LINE ROAD
(West of Lansdowne Avenue)
DREXEL HILL, PA. 19026

Suburbs: (215) 449-2800
Phila.: (215) 528-6120



Write for FREE
COPY of any of
our publications.

The Ham Radio Publishing Group
GREENVILLE, NEW HAMPSHIRE 03048

Exit I-95 at Scotch Rd. South
Al & Hank (WB2GWE)



the BARGAIN BROTHERS
PHOTO & ELECTRONIC SURPLUS

CONSTANTLY CHANGING INVENTORY LOWEST PRICES

Glen Roc Shopping Center
216 Scotch Road
Trenton, N.J. 08618

(609) 883-2050

K3KTY

215-567-7130

WA2MWB/7

CARL BARISH

TRANSPORT EQUIPMENT COMPANY

"EVERYTHING FOR THE TRUCK"

JOHN A. TATE
President

2215 - 2217 Race Street
Philadelphia, Pa. 19103

MELCO

P.O. BOX 1673
BELLEVUE, WA 98009

McINTOSH ELECTRIC COMPANY 206-455-5661

BROWSING-THURS. 7^{PM}-9^{PM}
SAT. 9^{AM}-6^{PM}

Day-Nite (215) 495-2121

FERTIK'S ELECTRONICS

Components & Equipment

LEON FERTIK

5400 ELLA STREET
PHILADELPHIA, PA. 19120

RICHARD E. BOKERN

PRODUCT MANAGER
COMMUNICATIONS PRODUCTS OPERATION
FORT WAYNE DIVISION

1913 PRODUCTION ROAD
FORT WAYNE, INDIANA 46808
PHONE: (219) 482-4411

WB9PUJ

**MAGNAVOX GOVERNMENT AND
INDUSTRIAL ELECTRONICS COMPANY**

Budd

W3KKN

ERNEST KENAS
TOOL DESIGN
MANUFACTURING ENGINEERING DEPARTMENT

THE BUDD COMPANY
AUTOMOTIVE DIVISION

PHILADELPHIA, PA.

FREE ESTIMATES
(215) 672-3650



MICHAEL McMACKEN
REGISTERED PLUMBING & HEATING

BATHROOM INSTALLATIONS
ELECTRIC DRAIN CLEANING

2405 PARKSIDE AVE.
HATBORO, PA. 19040

People who look for peace get it.

—Guru Maharaj Ji

For information contact:

DIVINE LIGHT MISSION (DUO)
6037 Overbrook Ave.
Phila., Pa. 19131
Office: 215- GR 7- 2800

1 Year = \$15
3 Years = \$36

73

magazine
for radio amateurs

PETERBOROUGH, NEW HAMPSHIRE 03458

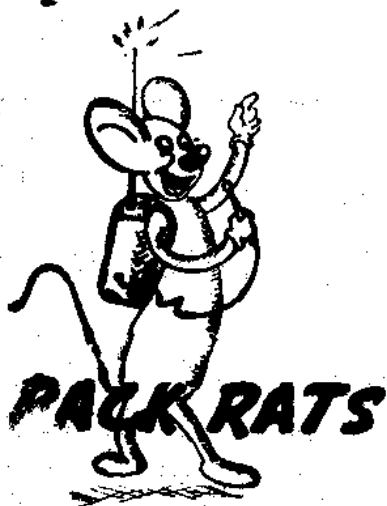
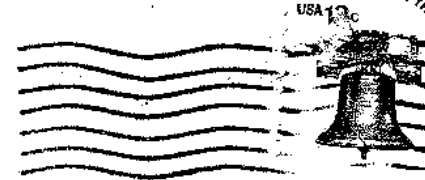
LANDSCAPING FIELD MOWING
EASTERN PENNSYLVANIA

GROUNDSKEEPING
PHILADELPHIA AND SUBURBS
INSTITUTIONAL · INDUSTRIAL · PRIVATE

PETER H. SHAVNEY, WA3OVH
111 S. EASTON ROAD
GLENSIDE, PA. 19038

886-1859
OR
933-0451

Cheese Bits
2087 Parkdale Ave.
Glenside, Pa. 19038



WA3WAS, STEVE SIMONS
8506 KENDRICK PLACE
PHILA., PA. 19111

MT. AIRY VHF RADIO CLUB, INC.

FIRST CLASS

MEETING NOTICE

"HAM" BUERGER INC.

AMATEUR RADIO EQUIPMENT PARTS & SERVICE

68 N. YORK RD.
WILLOW GROVE PA. 19090
(215) OL 9-5900

HOURS:
MWF 9:30 to 9:00
TThS 9:30 to 5:30



THESE BRANDS
AND MORE

Bob Hershman, WA3ZID

BUY TRADE SELL on CONSIGNMENT



LMB®

"W2AU" BALUN

