

**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

JULY 1970

NUMBER 7

## OUR PREZ SEZ

Well it seems that I couldn't talk Ernie into writing just one more "Prez Sez" column. He really wrote some great ones and I'm sure you fellows didn't believe all the talk about ghost writers.

As your new president I want to take this opportunity to sincerely thank Ernie Kenas, W3KKN, for a really great year. We had our trials and conflicts and came through all of them in fine style. Ernie, if you think that now you can go into retirement you've got another thing coming. I have a few choice jobs for you. Maybe the first task I ought to assign you is to ghost write the "Prez Sez" column. That would seem to be proper for a guy who kept advertising for a ghost writer.

There are many committee assignments to be made in order to get the next year's programs moving. If you have a preference, let me know. If I don't hear from you it means you're willing to serve in any capacity.

K3JJZ, E1

SWAP SHOP

Conducted By: W3ZRR, Ray Whitehead  
7329 Shelborne St.  
Phila., Pa. 19111  
215 - RA 2-4786

FOR SALE

- Heath SB401 Trans. and new mike  
Heath SB301 Receiver  
Will Divide \$500
- National NC 300 with 2 meter con-  
vertor and speaker \$100
- BC 906-D Freq. Meter 2 to 30 MC \$15
- I-222A Signal Generator LF and HF \$20
- Bendix crystal freq. indicator  
SCR 292 \$15
- T+21 ARC 5-Rcvrs.  
190 - 550 KC; 6.0 - 9.1 MC @ \$8
- Hallicrafter Sky Raider Model 23  
Rcvr. Best Offer
- Hallicrafter Rcvr. Model 32 -  
incomplete Best Offer
- Heath Transmitter DC 100 -  
incomplete Best Offer

CONTACT: David Greenberg  
24 Park Lane  
Levittown, Pa.  
946-1889 or  
Ext. 5739 at RCA

FOR SALE

- 1 - 50 ft. Rohn YT-6 tower, hinged  
base, telescopes from 22 1/2" at  
base
- 1 - HB 60W transm. and rcvr.,  
pair 5881 modulators complete with  
power supply and cables, less  
antennas
- 400 ft. RG17 - 1/2 price

CONTACT: K3ESL, Ben Ginden  
6504 Roosevelt Boulevard  
Philadelphia, Pa.  
GE 3-1849

WANTED

- 220 and/or 432 MHz gear  
CONTACT: K3WRY, Joseph G. Palsa  
60 Tapered Oak Lane  
Levittown, Pa. 19054  
215 - 949-1379

FOR SALE

- 1 National YCX 200 Transceiver  
80-10 M \$150
  - 1 Heathkit 20 M Transceiver \$70
- CONTACT: K3FYS, Mollie Silverstein  
132 E. Colonial Street  
Philadelphia, Pa. 19120  
LI 8-4885

FOR SALE

- Collins 75A-2 receiver plus central  
electronics side-band slicer and  
"Q" multiplier. One owner, excel-  
lent condition, carefully main-  
tained. \$225

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

FOR SALE

- Hallicrafters SR-150, 80 to 10 meter  
S.S.B. Transceiver w/AC supply,  
speaker combo \$300

WANTED

- 25 watt Modulator w/P.S.  
CONTACT: WA3BIV, Carl Barish  
8760 Stenton Avenue  
Philadelphia, Pa. 19118  
CH 7-1071

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2 METER REPORT

The two meter band has had some excel-  
lent openings up and down the coast.  
There is a new SSB station on in  
North Carolina at about 145.05. He is  
located just below Cape Hatteras and  
should be an easy contact for the  
SSB boys. Only one slight bit of  
aurora noticed with no unusual  
signals noted. During June look  
for sporadic E openings on two.  
I still am scheduled with W8DGF in  
Cleveland every night at 9 p.m. You  
are welcome to join in.

W2EIF, Jo

# PACK RAT PICNIC

SUNDAY

AUGUST 9, 1970

(RAIN DATE: AUGUST 16, 1970)

FORT WASHINGTON STATE PARK

FLOURTOWN, PA.

MOBILE TALK IN 50.25 & 145.2

FOLLOW SIGNS FROM FT. WASHINGTON

EXIT OF PENNSYLVANIA TURNPIKE

## DOOR PRIZES

FOR

HAMS

XYL'S

CHILDREN

FREE SODA & GAMES FOR ALL

REGISTRATION AT PARK \$2.00 PER FAMILY

ALL INVITED MEMBERS &

FRIENDS

of

MT. AIRY VHF RADIO CLUB, INC.

PHILA., PA.

CALENDAR OF COMING EVENTS  
Syllabus by Lee, K3MXM

JULY

- 8 Board of Directors Meeting - QTH of K3UJD, "The Ivyland Kid", Mario at 8 p.m.
- 15 First outdoor meeting of the year - WHITE ELEPHANT SALE - QTH of WA3EPS, Mort Mazer, 3200 West Bruce Drive, Dresher, Pa.

Please bring all those special brand of goodies and impossible items. What isn't sold will be encased in cement and put into the next building project. Who knows but your next home may be radio supported!!!!

DIRECTIONS: Come to the junction of Susquehanna and Fitzwatertown Roads. Go north on Fitzwatertown Road to the first street on the left hand side which is ALPHIN ROAD. Turn in and go to the DEAD END. Turn left, count 6 houses on left side, look for all the lights, look up for the tower, watch for the parked cars and listen for the noise. This is the place. (Dundee Road becomes Bruce Road)

BRING CHAIRS - BRING CHAIRS - BRING CHAIRS

Bring a goodie - Bring an impossible item - Bring something for a laugh - Here is your chance to clean up your shack and help the club!

- 19 ~~Real~~ Rats Transmitter Hunt 50.25 and 145.2 - 1 p.m. to 3 p.m.

AUGUST

- 9 PACK RAT ANNUAL PICNIC - All Day Sunday - Fort Washington State Park, Flourtown, Pa.

One of the high spots of the year's program. Check your picnic equipment, Put a ring around this date on your calendar, Meet your SCM and Atlantic Division Director - they have been invited, Talk in on 6 and 2 meters, Games for the kiddies, Prizes, Drawings, Watch for a new type Transmitter Hunt - Micro Miniature Size.

W3ZD, Dave, is chairman - Volunteer to help - plenty of jobs need to be filled.

Visitors and Friends are more than welcome!

- 19 Second outdoor meeting - SOCIAL NIGHT - QTH of K3IUUV, Bert Soltoff, 961 Warfield Lane, Huntington Valley, Pa.

XYLs, GFs and YLs definitely invited!

A social night in the country - Watch Frankie, W3SAQ, take his annual dunking in a brand new 16' pool, See where the 1296 dish is stashed all year, Movies and slides, Special running commentary by W3CL.

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W2EIF, Jo

CALENDAR OF COMING EVENTS (Continued)

SEPTEMBER

- 13 SOUTH JERSEY RADIO CLUB HAMFEST - Moilia, New Jersey
- 16 CLUB AUCTION - QTH of W3ZD, Dave Zimmerman, Johnsville, Pa.  
More details in next issue.

YORK COUNTY HAMFEST - no date given

GAITERSBURG, VA. HAMFEST - no date given

Listen and check into the club nets each and every Monday night for announcements and changes.

Coming events yet unannounced: Regular Hidden Transmitter Hunt and Antenna Measuring Party

10 months to go - 15th Anniversary Dinner - Buck Hotel - 1971

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NEW PRODUCTS OF INTEREST TO HAMS

- 1. Audio Amp. Modules - Solitron Devices 256 Oak Tree Road, Tappan, New York 10983

These units were designed by Bendix just before the Semi-cond. Div. was sold to Solitron. Three models are available as follows:

- BHA 0002 - 15 Watt output, Class B, 40 volt max, 1.2 amp max. - \$12.25
- BHA 0001 - 2 Watt output, max. volt 16, max. cur. 1a - \$8.25
- BHA 0004 - 5 Watt output, Class B, 20 volt max., .75A max. - \$14.00

All three units have output to match speakers.

- 2. All Band Communications Receiver - TRIO (Japan)

A very interesting item which has not yet been advertised in the United States. It will be handled by Henry Radio, 11240 West Olympic Boulevard, Los Angeles, California 90064. The JR 599 is all transistor and covers the 160 m through the 2 m bands on the best model. Other units can be had to cover up to 10 m with internal provision for the VHF converters. Size of the unit runs 10 x 5 1/2 x 12 1/4 deep. Weight is 12 1/2 lbs. A matching Transmitter, the TX 599, will also be available, probably during the summer. Both are now being sold in England, I understand. The TX 599 will run about 160 Watts and will be all transistor except for the final and driver. Like several of the Japanese transceivers, the power supply is built in. The size is the same as the receiver, but weight is 26 lbs.

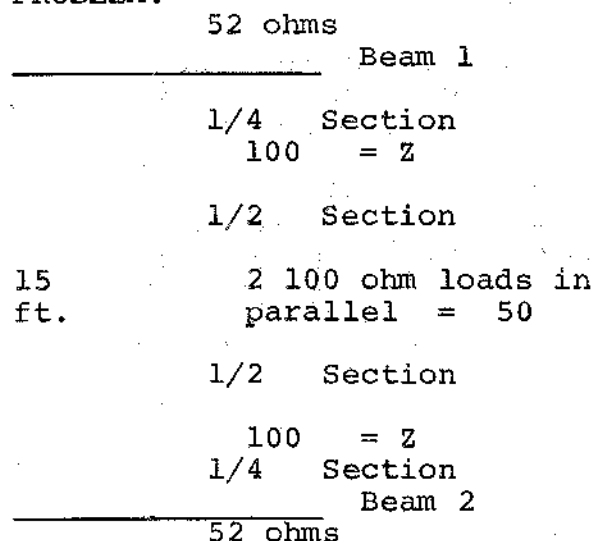
These units would make a nice mobile set up, and for just listening, the receiver would be hard to best for this coverage.

W3NSI, Lyn

MATCHING DEVICES  
(Continued From June)

You will note that in the example last month that the coaxial 1/4 wave section is only 39.25 inches long, and if I want to parallel the two 6 meter beams (which now look like 100 ohms each instead of 50), it will be pretty tough to do with the beams maybe 15 feet apart.

## PROBLEM:



This problem is solved by using another unique line characteristic, namely:

"A given impedance at one end of a 1/2 wavelength of transmission line will look like the same impedance at the other end."

To continue the 6 meter example above. The 1/2 wavelength sections of line will be calculated from:

$$\frac{5900}{F \text{ MHz}} \text{ V inches}$$

or in this case,  $2 \times 39.25 = 78.5$  inches of polyethylene coax. If I connect a 1/2 section of line to each of the 1/4 terminations, all I have done is move the 100 ohm impedance feed of each antenna by 78.5 inches. Since the loads are now adjacent, I can now connect the ends of the 1/2 sections together with a T connector and the 100 ohm loads are in parallel or 50 ohms total. This is practically a perfect match for the RG 8/ cable coming from the transmitter. The total length of the sections of transmission line will be 3/2 or  $3 \times 78.5$ ". In this case = 23.55 inches of RG 11/ polyethylene coaxial cable.

Of course the system can be simplified because the 1/4 section and 1/2 sections can be combined.

The final matching harness will be two pieces of polyethylene coax line RG 11/ each will be  $39.25 - 70.5 = 117.75$  inches long including connections, plus a "T" connector. If you use foam type line, the lengths would be 136 inches. At any rate, in either case there is enough to permit the beams to be stacked at least 15 feet apart.

There are many ways of using these tools with very practical results. These will be discussed in future articles.

AS IF YOU DIDN'T ALREADY KNOW  
K3MXM, Lee Cohen

The Mt. Airy V.H.F. Radio Club has won its tenth gavel in the V.H.F. Sweepstakes held last January and we are already working on number eleven in the contest that will be held January 9 and 10, 1971.

Of the top 5 individual scores the Pack Rats boast of 4 with top place going to Stan, K3IPM, whose individual score was higher than 19 scores submitted by various clubs throughout the country. We had 14 members with scores over the 10 K mark and this is down from last year. You guys must be laying down on the job.

The South Jersey and Rochester Clubs are starting to get organized and we can expect much more competition from them in this coming contest so get to work on those antennas and equipment now while the weather is fine.

Antenna parties can be organized through the nets and there will always be more than enough fellows willing to come out and lend a hand. However, don't ask for an antenna crew in December or January. That's carrying friendship a little too far. K3IUUV take note.

\*\*\*\*\*

MEMBERSHIP

New Members

WA3IDQ, Walt S. Kenworthy  
119 Davis Street  
Philadelphia, Pa.  
IV 3-4966

K3OPC, John A. Carson  
8715 Old Line Road  
Philadelphia, Pa.  
IV 2-7170

Applied for Membership

WA3AXV, Ron Whitsol  
209 Frog Hollor Road  
Churchville, Pa.

WA3YXF, Joe Rushton  
Star Route 2  
Doylestown, Pa.

\*\*\*\*\*

DID YOU KNOW

K3ZPQ, Bob Elmer, is in Abington Hospital, Room 4EO2 and at this writing scheduled to undergo surgery.

W3CL, Harry Stein, is urgently in need of circuit diagrams and/or informational on electronic book page turners. Harry's address and phone are: 2087 Parkdale Avenue, Glenside, Pa., 215 - 887-5052.

In addition to his other talents, W2EIF, Jo Kilgore, is able to scare kids by transmitting on 220. Ask WA3ERQ, John Gallagher.

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The 36 page "Practical Grounding" Brochure is available from Copperweld Steel Company, Frick Building, Pittsburgh, Pa. 15219. This is an excellent introduction to grounding which is particularly useful to newer hams. Most of us are quite familiar with the excellent Copperweld antenna wire produced by this outfit and their ground rods are equally good.

de Lerc



FROM THE BOOK RACK

Paul R. Behrmann, K3WEU/AREA\*

TV TROUBLESHOOTER'S HANDBOOK - New Second Edition, written by the editors of Electronic Technician/Dealer, published by TAB Books #521  
288 pages, over 125 illustrations - \$7.95 hardbound; \$2.95 paperbound

A completely updated, quick-reference source for scores of tried-and-tested solutions to "tough-dog" TV troubles.

This detailed compilation of practical help is the answer to the need for a well-organized file of proven troubles and cures, field factory changes, new and unusual circuits and descriptions of how they work, etc. This brand-new edition represents the only known up-to-date digest of specific TV troubles and cures, for both color and monochrome sets, up to and including 1969 models.

Every major brand is included, from Admiral to Zenith, as are such "off" brands as Gamble-Skogmo, Packard Bell, and Montgomery Ward. The practical, down-to-earth material provides the reader with quick and easy solutions to hundreds of service problems. For easy reference, all troubles are categorized by make and model. Included in the color TV section are hints for troubleshooting chroma circuits, making adjustments, etc.

Partial Contents: Black and White Sets: Admiral - DuMont - Emerson - Gamble-Skogmo - G.E. - Magnavox - Montgomery Ward - Motorola - Philco - RCA - Sylvania - Westinghouse - Zenith; Color Receivers: Admiral - G.E. - Magnavox - Motorola - Olympic - Packard Bell - Philco - RCA - Sylvania - Westinghouse - Zenith. Index

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ELECTRONIC TEST AND MEASUREMENT HANDBOOK by John J. Schultz, TAB Books #506  
224 pages, over 100 illustrations, 8 chapters, plus appendix  
\$7.95 hardbound; \$4.95 paperbound

Here's a "one-stop" source of practical electronic troubleshooting procedures, based on tried-and-tested measurement techniques.

For anyone involved with verifying or establishing proper operation, with checking claimed performance, or with repairing a defective piece of equipment, this brand new "super market" of ideas is just what has been long needed.

Covering a variety of tests on receivers, transmitters, transceivers, antennas (up to and including VHF), and a wide range of accessory equipment, this is one book that clearly shows how to apply factual and crystal-clear information to daily problems. Based on years of practical experience, the author tells how to measure even critical performance, using moderately-priced test equipment. Encompasses many tests that heretofore required the use of lab-type gear to equal the accuracy attainable with the methods outlined in this work. In each case there's a complete, detailed procedure and setup diagram to show how to conduct each test or measurement with ease. With the help of a thorough index the reader can find a specific test in seconds and be on his way to accurate, dependable measurements.

Continued on Page 9

FROM THE BOOK RACK (Continued)

Contents: General Testing Procedures - Basic Test Instruments - Receiver Tests and Alignment - Transmitter Tests and Alignment - Antenna and Transmission Line Measurements - Accessory Equipment and Component Testing - System and Interference Tests.

\*Amateur Radio Editors Association

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WHEN I BECAME A PACK RAT

W3BRU	-	March 18, 1959	K3IPM	-	April 19, 1961
K3EPB	-	October 21, 1959	W3ISV	-	December 18, 1957
WA3EPS	-	February 16, 1966	K3IUU	-	October 21, 1959
WA3ERQ	-	December 15, 1965	W3IXL	-	April 16, 1958
K3ESL	-	December 16, 1959	WA3NLT	-	November 19, 1969
WA3FOF	-	December 17, 1969	K3ZCY	-	November 19, 1969
K3HSS	-	November 18, 1959	K3ZVD	-	July 21, 1965
W3HYO	-	May 15, 1956	W3ZTL	-	August 16, 1958
WB2IOE	-	July 7, 1967			

Where Are You?

K3ESL - Ben Gindin  
 W3HYO - Lenny Ciucci  
 W3ZTL - Myles Groce

W3SAO, Frankie  
 Club Historian

\*\*\*\*\*

SOMEBODY ELSE.....

There's a clever young fellow named somebody else  
 There's nothing that fellow can't do.  
 He's busy from morning till late at night  
 Just substituting for you.  
 You're asked to do this, or asked to do that,  
 And what is your reply?  
 "Oh, why pick on me, Get Somebody else;  
 He'll do it much better than I."  
 You've a worn out excuse on the tip of your tongue  
 Too busy, too something-or-other  
 When really the truth of the matter is  
 You simply don't want to bother.  
 So much to do in this weery old world,  
 So much, and the workers so few;  
 And somebody else is all tired and worn,  
 Just substituting for you.  
 'Tis time that this faithful old Somebody Else  
 Gets a much needed vacation;  
 Suppose you start substituting for him and  
 Build up your own reputation.

Anonymous

50 MHZ TO 144 MHZ MIXER - AMPLIFIER  
JACK POWER, W2AXU

I have described a 50MHZ amplifier and a dual band - 50 and 144MHZ amplifier in recent issues. This is a heterodyne unit to get you from 50 MHZ to 144 - 145 MHZ.

The unit consists of an oscillator, a doubler, and amplifier, a mixer and a linear amplifier. The oscillator operates a 47MHZ and is a 12AT7. The second half of the 12AT7 doubles to 94 MHZ and drives a 6AH6 class "A" amplifier. A 12BY7 is used as the mixer with 94MHZ on the grid and 50MHZ on the screen. The resultant sum is 144MHZ on the plate circuit. This tank circuit couples 144MHZ energy into the grid tank of a 6360 linear amplifier operating class AB1. The power output is about 6 watts. The circuit for the unit is conventional. A few comments concerning the mixer and amplifier may be in order, however. The 50MHZ drive is impressed on the screen of the 12BY7 through a tuned circuit. There is no B+ voltage applied to the screen. The operating voltage is derived from the RF voltage and must be from 100 to 150 peak volts. Any 50MHZ amplifier can provide this and usually must be attenuated. About 2 to 3 watts is sufficient.

The grid of the 6360 is not tuned with a capacitor. It is tuned by the input and circuit capacitance. L5 must be resonated by adjusting the coil.

The unit is built on a brass plate 7" long and 5" wide and is mounted in an upside down 5" x 7" x 2" aluminum chassis. Power supply voltages are conventional and should pose no problem. The 105 volts regulated on the oscillator is a must. This can be derived from the 300 volts through a regulator tube.

The power output from the unit is sufficient for a good on-the-air signal. WB2OAD has been using a similar unit for sometime and it is now driving the two band amplifier.

John B. Power  
W2AXU

# 144 MHz MIXER - AMPLIFIER

## OSCILLATOR

## DOUBLER

## AMPLIFIER

## MIXER

144.0 MHz  
145.0 MHz

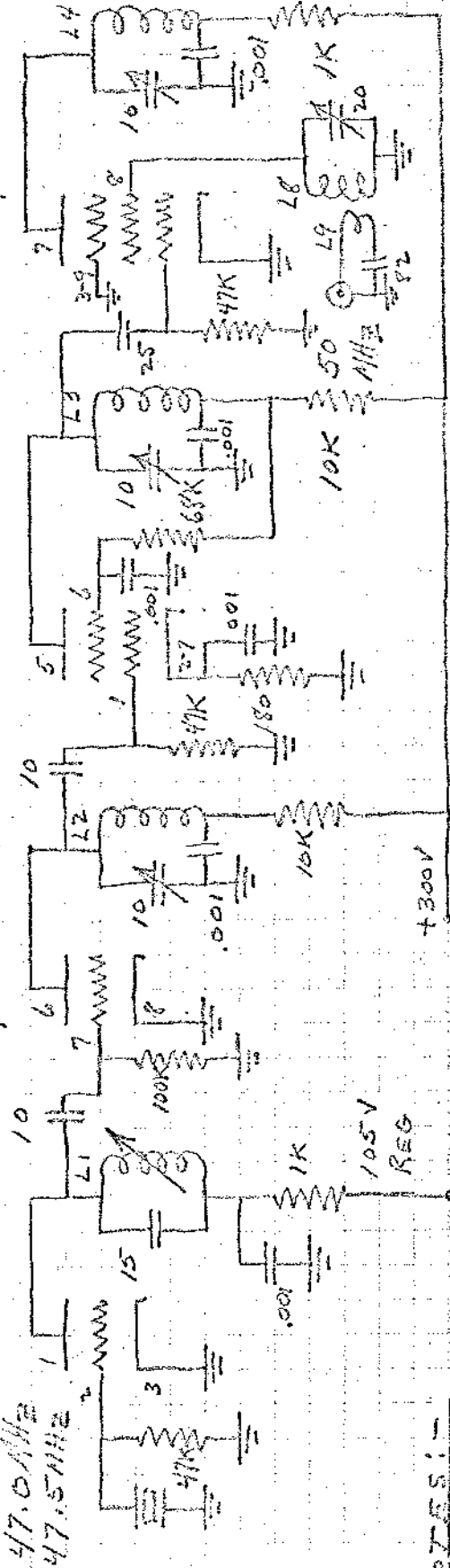
94.0 MHz  
95.0 MHz

94.0 MHz  
95.0 MHz

6A H 6

12A T 7

47.0 MHz  
47.5 MHz



## NOTES:-

L1 - .68 MH MILLER

L2 - 4T #18 1/2" DIA. CLOSE SPACE

L3 - SAME AS L2

L4 - 2T #16 1/2" DIA. CLOSE SPACE

L5 - 2T #16 1/2" DIA EA. SIDE  
CENTER SPACED 3/8"

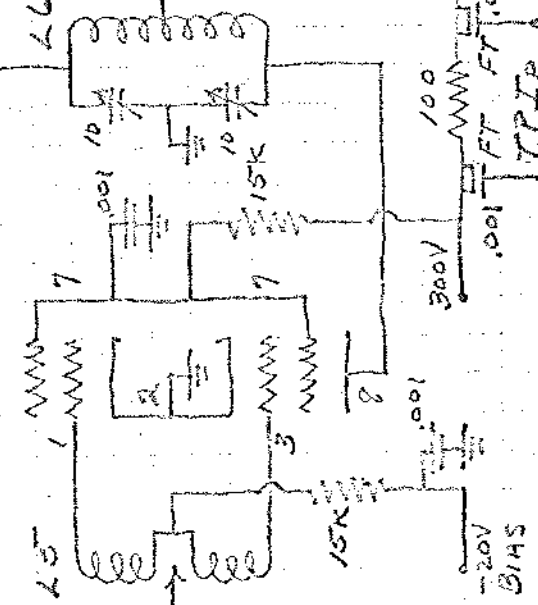
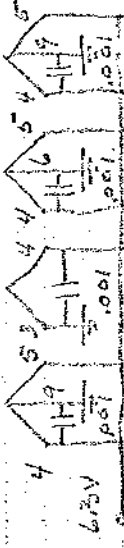
L6 - 4T #16 1/2" DIA. CENTER SPACED 3/16"

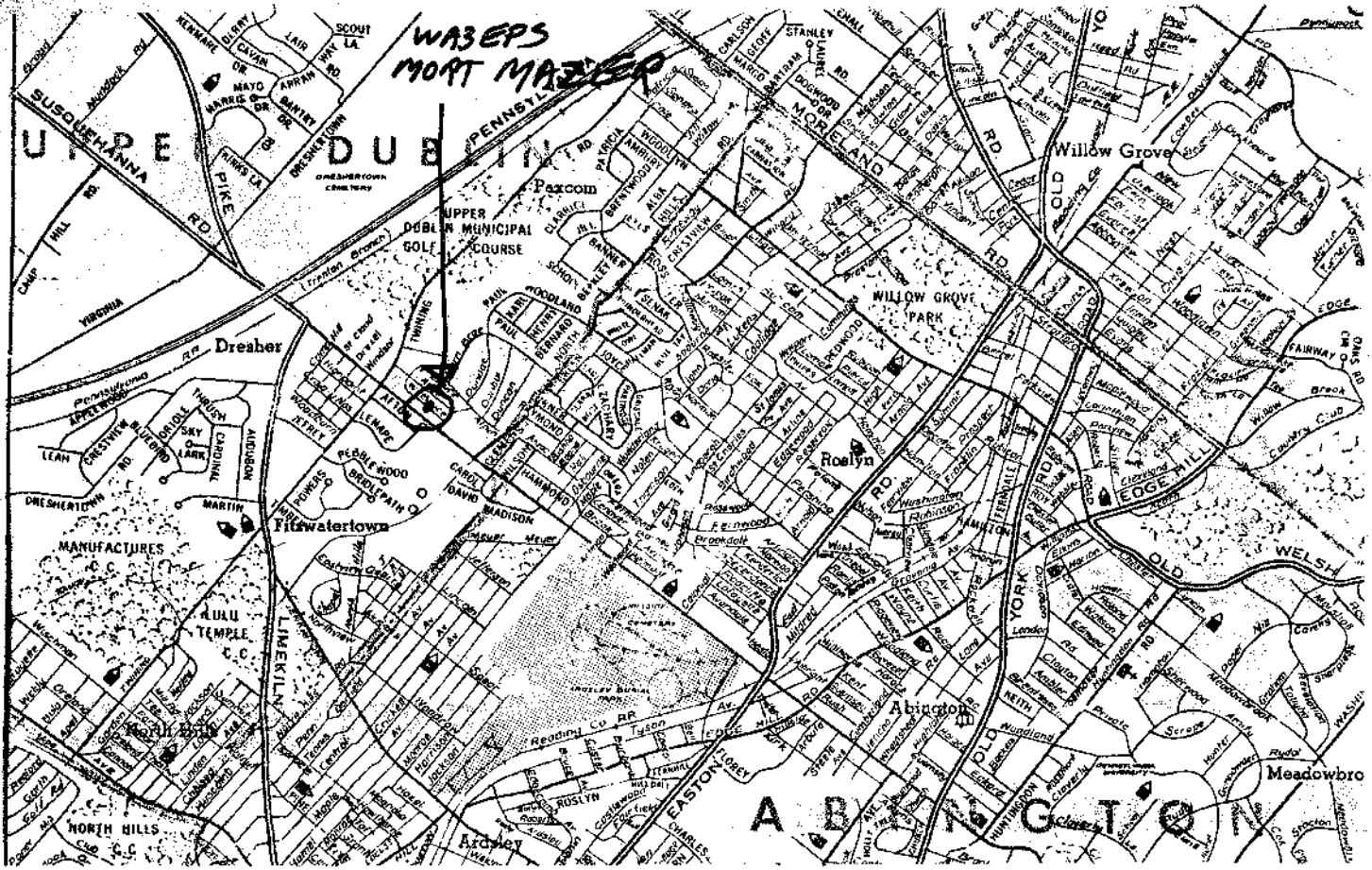
L7 - 1T #16 1/2" DIA. INSULATED

L8 - 5T #16 W #3004

L9 - 2T SAME OFFSAME COIL L8  
SPACED 4T FROM GND END L8  
GND ENDS ADJACENT

## LINEAR AMPLIFIER





**morton d. mazer** W3EPS  
REAL ESTATE  
1609 E. WADSWORTH AVENUE  
PHILADELPHIA, PENNA. 19150  
(215) CH 8-1662

MECHANICAL ELECTRONIC DEVICES BA6-4646  
REPERFORATOR MOD14 w/AUTOMATIC WINDER \$55  
RECEIVER MOD. ARR-27 465-510KHZ.....\$35  
TRANSMITTER TDG-1 w/MODULATOR.....\$30  
COMPUTER TAPE TRANSPORT w/8 CHAN.HEAD \$20  
4000V SILICON RECTIFIER 1 AMP.....\$3.95  
SILICON BRIDGE UP TO 500V 1 AMP. 3/4.50  
CARBON MIKE w/PUSH TO TALK SWITCH ....\$1  
PANEL METERS 3/\$9 MULTIMETERS \$9.50 & \$15  
TRANSFORMERS FILAMENT 12V-5A ..... 2/3.5  
TEST EQUIP. POWER SUPPLIES, WIRE 1/20FT  
FERTIK'S ELECTRONICS 9TH&TIOGA SAT 9-5PM

**K3MXM** JE 3-4660  
4661  
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COTTON & WOOLEN WASTE  
**CLAYTON L. HADY & SON**  
INCORPORATED  
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**JOHN A. TATE** 2215-2217 RACE STREET  
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**B. GINSBERG** 1709-15 GILLINGHAM STREET  
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(WEST OF LANSDOWNE AVE.)  
DREXEL HILL, PA. 19026

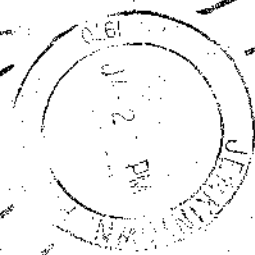
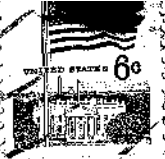
**K3WGK**  
**DON COOPER**  
Cooper-Clemen Associates  
839 Glenside Ave.  
Wynndale, Pennsylvania  
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