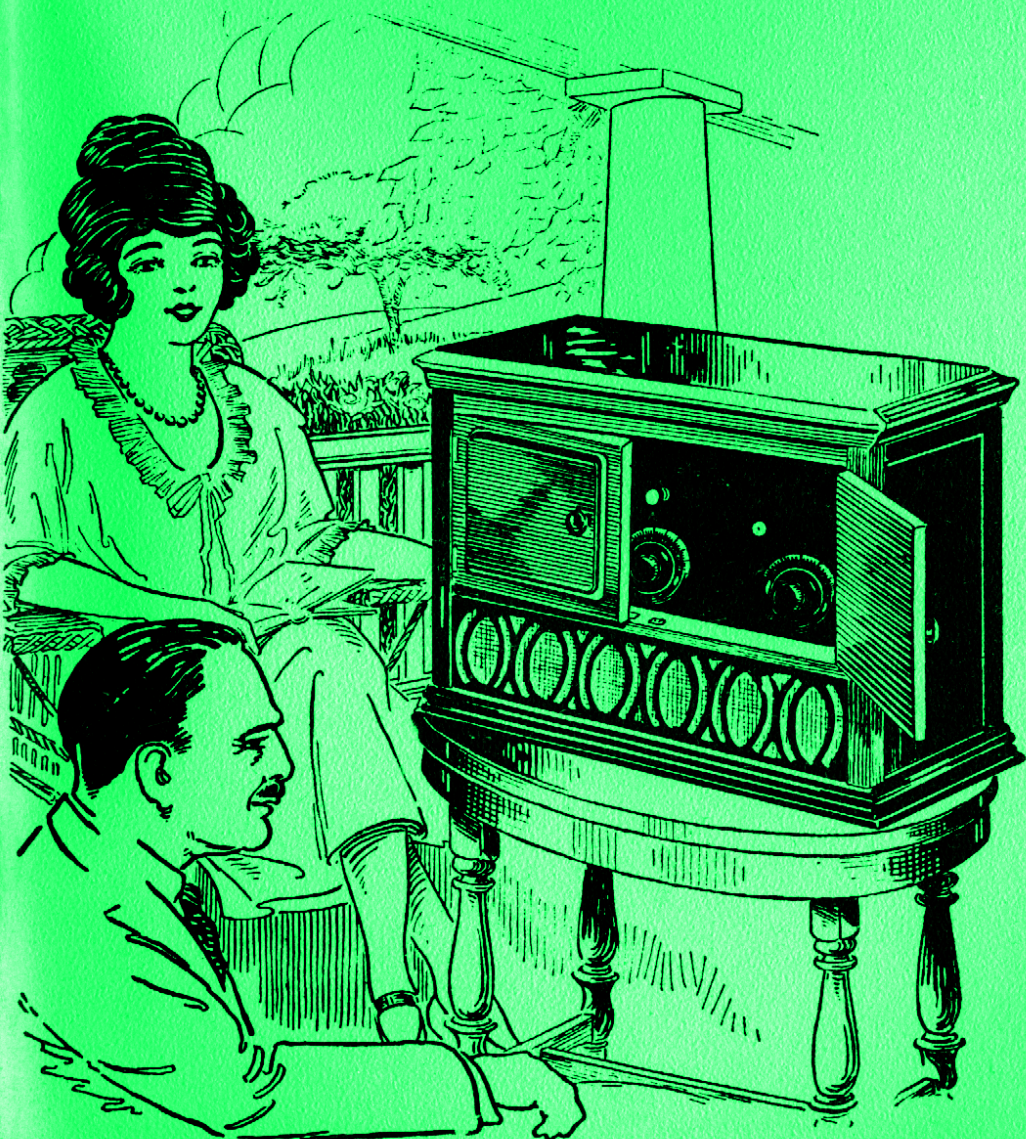


# Indiana Historical Radio Society BULLETIN

Vol. 4

December 1974

No. 4





## OFFICERS

President	FRED C. PROHL, 7257 Murphy Dr., Indianapolis, IN 46256
Vice President	SERGE KRAUSS, 141 Homan Ave., Elkhart, IN 46514
Secretary	ROSS SMITH, 1133 Strong Ave., Elkhart, IN 46514
Treasurer	ED E. TAYLOR, 245 N. Oakland Ave., Indianapolis, IN 46201
Historian	DELBERT BARRETT, 1517 Pacific Dr., Fort Wayne, IN 46819
Editor	GARY A. VIERK, 2505 Kickapoo Dr., Lafayette, IN 47905
Membership Committee	DON JOHNSTON, Box 218-A, RR 1, Windfall, IN 46076 KEITH HANSELMAN, RR 3, Box 71, Angola, IN 46073

THIS BULLETIN needs your help. Please contribute news items, ads, articles, and old advertisements that need not be returned. Send material to the editor.

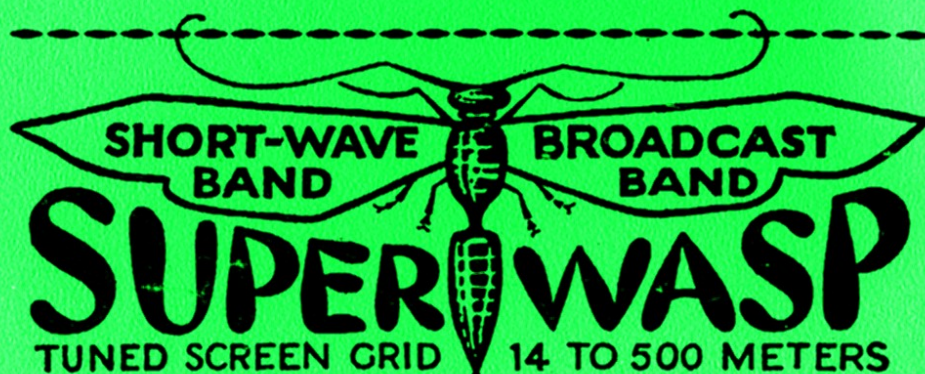
The permanent headquarters and mailing address for the Indiana Historical Radio Society has been established to help coordinate our expanding organization. The address is 245 N. Oakland Ave., Indianapolis, IN 46201. This is the home of the new museum opened by our Treasurer, Ed Taylor.

WALNART ELECTRIC MFG. CO.

## RENEW YOUR MEMBERSHIP!

\*\*\*\*Membership dues are now payable\*\*\*\*

Please make check payable to "TREASURER INDIANA HISTORICAL RADIO SOCIETY" and send to E. E. Taylor, 245 N. Oakland Ave., Indianapolis, IN 46201. Dues are only \$5.00 for the year.



## IHRS MUSEUM PROPOSED AT KOKOMO MEET ALREADY \$1000 PLEDGED

The First National Bank in Kokomo was the scene of the IHRS Fall Meet. As usual a large number of radios were on display for visitors and new members. Coffee and rolls were provided by Jim Thomas and Don Johnston, host for the meet.

Officers were elected for 1975: President - Fred Prohl; Vice President - Serge Krauss; Secretary - Ross Smith; Treasurer - Ed Taylor; Editor - Gary Vierk, Historian - Del Barrett; Membership Committee - Don Johnston and Keith Hanselman.

A far reaching project was proposed by Gary Vierk as a result of the tremendous interest in IHRS, The Indiana State Museum, the preservation of early radio equipment, and in the part that Indiana has played in the development of communications. Here is the proposal as it was presented. **PURPOSE:** To House Early Radio Communications Equipment with emphasis on Indiana Related Material. Why now? The thirteen founding members are still active and should have a part in the project. The IHRS has progressed rapidly.

**LOCATION:** A. North Central Indiana based on concentration of IHRS members. B. Locate in a building that can be leased with option to purchase. Convenient location for the majority of the members.

**OWNERSHIP:** Museum to be owned by IHRS.

**OPERATION:** Open at least two days per week and operated by members of the IHRS. This can be expanded as we progress.

**OPERATING COSTS:** Rent, Utilities, Maintenance, Insurance, attorney fees, accounting fees, advertising. \$3000 to \$4000 per year. (No salaries). Minimum operating costs - IHRS members to run the Museum.

**FUNDING:** A. Secure an endowment fund to perpetuate the museum. The interest would be used. B. Funds could be solicited from various sources including Electronic oriented companies, Individuals, Members and Interested persons.

The amount needed would be approximately \$57,000.

A committee is being established to coordinate the investigation of the various phases of the project.

**MEMBERS ARE URGED TO CONTACT THEIR LOCAL MUSEUMS FOR LITERATURE, OPERATING PROCEDURES, IDEAS, AND OPERATING COSTS AND FORWARD THIS TO GARY A. VIERK, EDITOR.**

In conjunction with this project the IHRS is prepared to begin the assembly of a booklet devoted to the history of communications in Indiana. Please research and forward all materials pertaining to radio and radio manufacturers in Indiana to Ross Smith, Secretary. This will be a very interesting project and one that each of us can participate in.

Most organizations would not attempt to accomplish what the IHRS has done after only three years. We can only do this with individual enthusiasm and we have it.

*A genuine Armstrong  
Regenerative  
double circuit set*



Radio, with all its romance, knows no more magic name than Crosley.

From the time that Powel Crosley, Jr., first enabled millions to build their own sets by offering parts at a fraction of existing prices—down to the present day, radio progress and Crosley achievements have gone hand in hand. Now Crosley announces not only vital improvements in radio performance—but in the Crosley "PUP" offers this finer performance at the lowest price in radio history.

This compact, efficient receiver is a development of the famous Crosley one tube set, with which Leonard Weeks, of Minot, N. D., heard the MacMillan Polar expedition while the rest of America listened in vain.

The employment of the double circuit not only reduces radiation to a minimum, but radically improves selectivity. It can be tuned through local stations more readily. Under average conditions, its radius, with head phones, is 1500 miles or more.

KY  
W  
NA  
K  
W  
M  
W  
G  
K  
J  
W  
B  
W  
Y  
G  
A

You can use the "PUP" to check the performance of your larger set; to entertain the youngster whose curious fingers cannot resist the lure of dials and switches; to install in the maid's room, or even in your office—for the air is full each day. You can take it on canoe trips, picnics, outings and on your business journeys—for it's only half the size of a shoe box.

Engineered and built to the strictest standards of Crosley quality, this genuine long distance set can be offered at the phenomenal price of \$9.75 only because of its simplicity and Crosley's tremendous manufacturing facilities.

**\$9.75**  
WITHOUT  
ACCESSORIES



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## news roundup

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GEORGE HAUSSKE (Wheaton, IL) finally found a Tuska 225 that he has been looking for. He does need a replacement transformer for it.

RICK & CHRIS AMMON (Mt. Carmel, IL) hit a gold mine this summer while on vacation. A Crosley Pup, homebrew with WD-11, two factory crystal sets were just a few of the items. The real Jackpot came when they found the remains of a 1922-25 radio shop near home. Many unsold radios were the prizes of this find.

MIKE WHITE (Naperville, IL) found a nice Zenith 4R with bad shafts and missing knobs.

ED TAYLOR (Indianapolis, IN) found a homebrew set at a farm sale last week.

FRANKLIN JONES (Springfield, IL) finds time to restore his 41 radios during the long winter months in addition to radio and TV work. He is 67 years young.

JACK BACON (Minneapolis, MN) recently located a Freed-Eisman "Marvel" crystal set, AK-20, AK H horn and a box of parts from rural antique shop.

ED TAYLOR & FRED PROHL (Indianapolis, IN) set up a nice display at the at the Glendale Shopping Center Collectors Show-off.

RICK & CHRIS AMMON (Mt. Carmel, IL) won first place at a hobby show in Evansville, IN, in the "General Collectables" with a radio display.

GARY A. VIERK (Lafayette, IN) picked up a Clapp Eastham HR & HZ at the AWA Convention.

FRANKLIN JONES (Springfield, IL) finds time to restore his 41 radios during the long winter months in addition to radio and TV work. He is 67 years young.

A recent newspaper article from the Chicago area advertised as follows:

"ATWATER KENT RADIO - For sale. \$1000-ofr. Call 000 0000."

With this kind of profit who needs to work - Just sell radios.



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PROHIBITED UNLESS AUTHORIZED BY THE EDITOR

## INDIANAPOLIS HOSTS NEXT MEET

On Sunday, February 9th, the first meeting of the year will be held at the Indiana State Museum in Indianapolis, Indiana. The meet will begin at 2:30 PM and last until 5 PM. Members will have the opportunity to view the IHRS Radio Exhibit in the Museum. The Museum is located at 202 North Alabama Street in downtown Indianapolis. Members are advised not to bring equipment into the museum because of museum policy. Contact Ed Taylor or Fred Prohl for further information.

There will be an open house at the Taylor Radio Museum from 9 to 12 on Sunday. Ed Taylor will be on hand to describe the many hundreds of radio artifacts he has collected over the years. His museum is located at 245 N. Oakland Avenue, Indianapolis, Indiana. His phone number is 1-317-638-1641. North Oakland Avenue is located in the near SE part of Indianapolis off East Washington Street near the Mallory Plant.

## **MICHIGAN RADIO CORPORATION**

**GRAND RAPIDS MICHIGAN**

## SPRING MEET TO BE HELD IN FORT WAYNE

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## PRESIDENT OF AWA TO ATTEND MEET

PURDUE UNIVERSITY IN LAFAYETTE, INDIANA, WILL BE THE SCENE OF THE COMBINED IHRS - AWA REGIONAL CONFERENCE ON JUNE 21.

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## INDIANA STATE MUSEUM

If you are in the Indianapolis area be sure to see the IHRS Museum Exhibit. The display is located in the INDIANA STATE MUSEUM, 202 North Alabama St. Indianapolis, IN. The Museum is open on weekdays from 9 AM to 5 PM and on Sunday from 2 PM to 5 PM. Admission is free.

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## -A- BATTERY ELIMINATOR

By Ed Taylor

The one bugaboo for operating antique radios has always been the A battery. To use a 6 volt storage battery is messy with acid, water, chargers, etc. and most people do not want the fumes and danger in their homes.

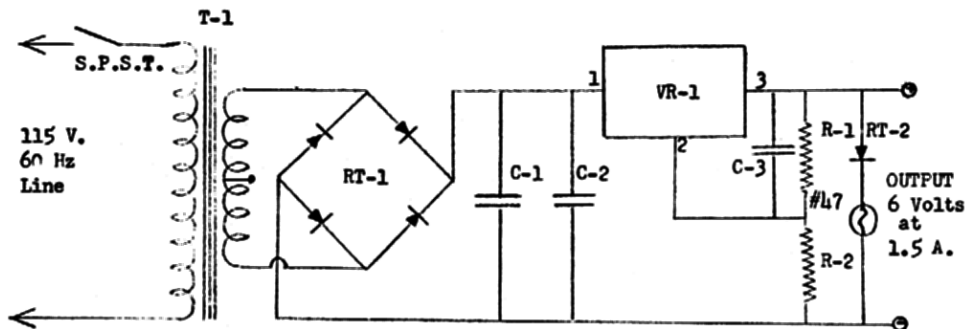
Old style A eliminators were very cumbersome with adjustments and liquid or dry rectifiers, heavy transformers, chokes, and capacitors which, even then, did not completely filter the A.C. hum.

The circuit illustrates a compact solid state 6 volt A battery eliminator which features electronic regulation and filtering. There is nothing to adjust as the correct voltage is present on 1 to 6 tube sets using the 01A type tubes. Other 5 volt tubes may be used as long as the total current does not exceed 1.5 amperes.

The heart of the package is a monolithic silicon integrated circuit voltage regulator which contains the equivalent of about 23 transistors and diodes. This \$3.75 unit must be mounted in a aluminum fin-type heat sink for maximum efficiency.

A #47 pilot lamp serves 3 functions. It signals that your eliminator is turned on and if there is a short in your receiver it will dim or go out. The bulb also discharges the filter capacitor when the unit is turned off. A diode is connected in series to lower the voltage for longer life.

This little project is well worth a few hours labor and the parts should cost about \$20.00. Normal substitutions could always be made to lower the cost even more and it will give you many happy listening hours on your antique battery radio.



### PARTS LIST

- T-1 12.6 V. C.T. Transformer (Stancor P-8130) 2 Amps.  
RT-1 Diode Bridge (Mallory FW50)  
RT-2 Diode (Mallory SI-05A)  
C-1 1500 uF 30 V. Capacitor (Mallory TC 2515B)  
C-2 .02 uF Capacitor (Mallory MAG 2512)  
C-3 .1 uF Capacitor (Mallory MAG 1601)  
R-1 3900 ohms 1W. 5% Resistor  
R-2 180 Ohms 1W. 5% Resistor "NOTE" May need to be altered for exactly 6 v.output.  
VR-1 VOLTAGE REGULATOR (National LM309K or Motorola MLM309K)

# PILOT DOUBLE-DUTY

## EDWIN HOWARD ARMSTRONG

Edwin Howard Armstrong - the father of FM radio - ill and broken in spirit from battling corporations for infringements on his patent rights, stepped out the window of his fashionable New York apartment and plunged ten stories to his death. He was only 63.

Armstrong was ranked as the United States' greatest inventor since Thomas A. Edison. He was one of the last of the freelance attic tinkerers, and his inventions provided much of the basis for modern broadcasting and receiving.

An undergraduate of Columbia University in 1912, he discovered the regenerative circuit, and as a World War I Army Signal Corps captain he developed the superheterodyne circuit. These two break-throughs provided the sensitivity and amplification necessary to make long distance radio practical.

Although he reaped \$15 Million in royalties from his inventions. Armstrong spent much of his lifetime battling and waging lawsuits. For sixteen years he carried on an ugly patent fight with radio pioneer Lee De Forest, who claimed to have invented the regenerative circuit. While the U. S. Supreme Court twice supported De Forest, engineering societies have since given Armstrong credit. But his fight for his FM patents was the bitterest of all and it was the one that pushed him to suicide.

In 1933 he discovered static-free (FM); however, the radio industry was apathetic, partly because it was more interested in the glowing promise of television. Armstrong endeavored to promote FM alone, but at high cost and without much success.

After World War II the potential of frequency modulation began to dawn on the very manufacturers who had previously spurned it. Some took out licenses under Armstrong's patents, but many others, including Radio Corp. of America, ignored his patents and turned out FM sets on their own. They claimed that his patents had roots in previous developments and that their systems were different.

At his death there were 21 unsettled lawsuits.

His widow, Mrs. Marian Armstrong, pursued the court battle and through the years the manufacturing firms began to capitulate.

RCA was the first, and in 1954 it settled out-of-court for \$1,040,000. Gradually the others followed for a total out-of-court settlements of about \$5 million.

Mrs. Armstrong was honored at an AWA convention dinner, held at the Ford Museum in Dearborn, Mich., in 1967. At that time she presented to Bruce Kelly, for the AWA museum in Holcomb, N.Y., her husband's first portable radio. It was assembled in a small suitcase with the loud speaker horn protruding through the top.

She told how she and her husband had traveled all over the country carrying this queer looking contraption, which they would demonstrate at conventions, and how at times a leary taxicab driver would refuse to take them where they wanted to go, because he was fearful that what they were carrying might be a time bomb.

Marshall Howenstein





## TIGERMAN 2-IN-1 DETECTO-AMPLIFIER TUBE

by  
Robert G. Middleton

The Tigerman detecto-amplifier tube illustrated in Fig. 1 was introduced in 1916 by the National Electric Manufacturing Co. According to the advertising, it was the most sensational announcement in the field of wireless, being the most efficient, dependable, and super-sensitive wireless detector that science had produced. Either end of the tube could be used as a super-sensitive detector. Or, by using both ends of the tube, with one end working as a detector and the other end as an amplifier, the receiving range was claimed to be increased to an almost wonderful degree, enabling the operator to hear weak signals which were impossible of reception otherwise.



Fig. 1 The Tigerman detecto-amplifier tube.

The operator could also wire up one end of the tube as a detector and the other end as an oscillator, rendering the set serviceable for reception of either undamped waves or damped waves by a mere turn of a switch. However, one of the most valuable features of this new invention was claimed to be its ability to reduce static interference to the minimum. It therefore enabled the reception of signals with the utmost clearness even on nights of heavy static, according to the manufacturer. Can you imagine all the despicable nuisance that it eliminates? Moreover, it would be folly for anyone to buy an inferior obsolete detector, as the detecto-amplifier tube will soon completely revolutionize the wireless field.

So what else is new?

*Neutro-Grand*

**FROST-RADIO**

**WORKRITE**



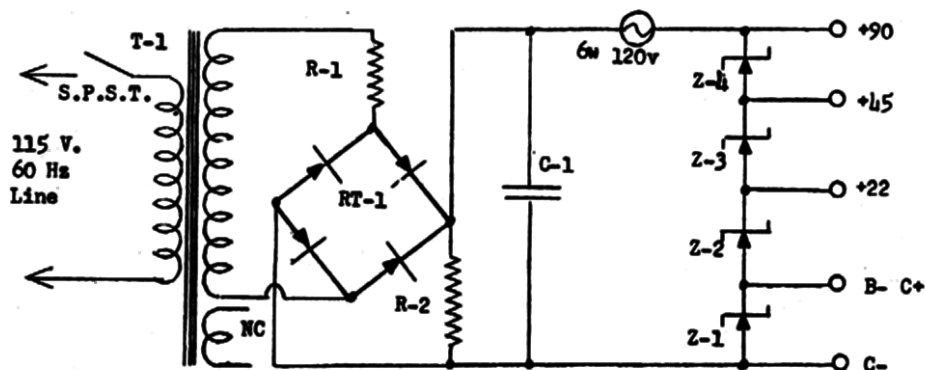
## B - C BATTERY ELIMINATOR

By Ed Taylor

A companion "B-C" battery eliminator (to go with the "A" eliminator featured in the last I.H.R.S. Bulletin) has been field-tested by several of our members. It was found to work satisfactorily; it is easy to construct. Zener diodes are connected directly across binding posts. A 6 w. 120 v. lamp is mounted in a pilot "bulls-eye" on the front panel to indicate when the unit is turned on. If there happens to be a short in the receiver circuit, the light will get brighter.

From past experience it is recommended that no more than 90 volts be applied to the antique sets. The old audio transformers and speaker windings tend to wink out at any higher voltage. For satisfactory operation it is best to use the lowest "B" voltage practicable even though some of the radios have terminals marked 135 v. or 180 v.

Both the "A" and "B-C" solid state battery eliminators may be combined in a larger cabinet if desired. They were designed to operate most 5 tube "three dialers". These battery eliminators give regulated, humless power to the old timers.



### PARTS LIST

T-1	Transformer 135v sec. (Stancor PA-8421)
RT-1	Bridge Rectifier (Mallory FW50)
C-1	Capacitor 1100uF 150v. (Mallory CG112U150K1)
R-1	Resistor 10 ohms 5 w. (Mallory 5AE10)
R-2	" 10,000 " 10 w. (Mallory 10AE10,000)
Z-1	Zener Diode 7.5v. (Mallory ZB7.5)
Z-2	" " 22 v. (Mallory ZB22)
Z-3	" " " " " "
Z-4	" " 47 v. (Mallory ZB47)
Cabinet 6 X 5 X 4" (Bud CU2017-A)	

Material for the next Bulletin must be received by the Editor no later than March 10th. The next Bulletin will be published in March.

The Indiana Historical Radio Society membership now numbers over 100 and is increasing almost daily.

## FRIENDLY EXCHANGE

**WANTED** - Unusual antique radio tubes, sockets, and adapters. Please describe fully and state price in first letter. Robert G. Middleton, P.O. Box 1061, Santa Cruz, CA 95061.

**WANTED** - Base and Driver for AK Model H Horn. Jack M. Bacon, Jr., 7700 36th Ave. N. Apt. 307, Minneapolis, Minn. 55427.

**FOR TRADE** - Duplicate 525 Stewart Warner in fair condition for other old battery radio of similar condition. Franklin Jones, 1928 S. College St., Springfield, IL 62704.

**WANTED** - Knobs for Zenith 4R. I need the two on the left and the one lower right. Also need schematic. Mike White, 118 Countryview Drive, Naperville, IL 60540.

**WANTED** - Factory made crystal set. Have battery radios and early tubes to trade or will buy. Bob Lessard, 4807 N.E. 5th St., Mpls., Minn. 55421.

**TRADE OR SELL** - Hallicrafters, Sky Buddy, Sky Ranger, Sky Chief, ANDA SZ7 & Speaker. Looking for small receivers and crystal sets and early wireless. Also want early catalogs. David McKenzie, 1200 West Euclid, Indianola, Iowa 50125.

**FOR SALE OR TRADE** - Crosley 52, Kolster D-6 (2), Radiola III & IIIA, RCA 100B Speakers (2), TRFs, books, QSTs. Wanted - Various parts for my sets and your orphans and dupes 1923 or older. Write for list. Rick & Chris Ammon, P.O. Box 104, Mt. Carmel, IL 62863.

**WANTED** - I desperately need a No. 15 Radio Tube for an EL TATRO radio. David Reid, 727 N. Hickory, Centralia, IL 62801.

**TUBES FOR SALE** - 6 ea. @ 75¢, type 27, 42, 56, 76, 80, 83, 523, 6A6, 6A8, 6C6, 6D6, & 6NT. 3 ea. @\$1.50, type 30, 45, 47, 59, 71A, 10, 50. All are good used tubes plus postage. Geo. Hauskee, 1922 E. Indiana Street, Wheaton, IL 60187.

**FOR SALE** - Silver Marshall transformers, 255, 226, 225, 220, 231, for \$8.00 and 10 battery radio parts including rheostats, sockets, dials, variable condensers for \$7.50. Will pay shipping. Arthur J. Bardish, 4042 Herman, S.W., Grand Rapids, MI. 49509.

**WANTED** - One good WD-11. Gary A. Vierk, 2505 Kickapoo Drive, Lafayette, IN 47905.



# Restoring Antique Radio Receivers

A plastic cleaners bag kept over your loop antenna when not on display will keep them nice and dust free.

On old sets with dirty and corroded brass hardware, try soaking before polishing in a solution of a half cup of vinegar with two tablespoons of salt dissolved in it. This recipe of my wife's has done some good work for me.

George Hausske

**THE BROOKLYN RADIO SERVICE**

Send 5c. in stamps for catalogue.

**BROOKLYN**  
**577 Myrtle Ave.**  
 Send Money Order ONLY!

**MAIL ORDER DEPT.**

PHONES	
Western Elect. ....	\$9.45
Federal .....	4.50
Dictograph .....	4.60
Brandeis .....	3.95
Baldwin Type C .....	7.25
Ambassador .....	3.95
N. & K. ....	6.50
Frost .....	3.25

LOUD SPEAKERS	
Magnavox, M-1 .....	\$21.95
Dictograph .....	17.50
Patho .....	11.95
Manhattan .....	15.00
Music Master .....	21.95
Magnavox, R-3 .....	24.50
Plugs included	

CHARGERS	
Reetigen, 2 Amp .....	\$14.40
Reetigen, 3 Amp .....	22.40
Yungar, 2 Amp .....	14.40
Yungar, 3 Amp .....	22.40
Acme A, 2 Amp .....	9.75
Acme A & B, 2 Amp .....	11.20
Ward Leonard, D. C. ..	8.75

RHEOSTATS	
Filkestat .....	\$1.50
Fada .....	.60
Ameco (all styles) ..	.95
C. Hammer, 6 Ohm ..	.75
Bradleystat .....	1.40
Pasent .....	.75
Klossner .....	.50
Federal No. 18 .....	.75

SOCKETS	
Fada .....	\$0.79
Tilman .....	.30
De Forest .....	.50
Bell .....	.60
Hoesick Falls .....	.60
Pasent, 199 .....	.40
Federal .....	.75
General Radio .....	.85
Worthington, 199 .....	.60

TRANSFORMERS PUSH PULL	
Came Duplex .....	\$9.90
All American .....	9.50
Modern .....	10.00

TRANSFORMERS AUDIO	
Star, 8 to 1 .....	\$2.60
Star, 6 to 1 .....	2.95
U. V. 712 .....	5.20
Modern, 4 to 1 .....	3.95
Modern, 10 to 1 .....	4.40
Acme .....	3.25
All American .....	3.35
Federal No. 65 .....	4.90
Thordarson, 3 1/2 to 1 ..	2.80
Thordarson, 6 to 1 .....	3.20
Jefferson No. 41 .....	3.20
Amertran .....	4.55
Erie, 3 to 1 .....	3.75
Erie, 6 to 1 .....	3.95
Federal No. 226 .....	3.25

TRANSFORMERS RADIO	
Coto Cells .....	\$0.69
Acme R-2, 3, 4 .....	3.25
Acme 30K Super-Het- erodyne .....	4.20
Atwater Kent .....	3.80
Tri Cell A .....	1.90
Erie Reflex .....	3.25
Rosa RT6 .....	3.00
Ovi CR .....	3.20
UV 1714 .....	.65
RR 1716 .....	3.60
RR 1716 .....	6.75

DIALS	
Ameco, 2" .....	\$0.30
Ameco, 3" .....	.50
Ameco, 4" .....	.75
De Forest, 3" .....	.35
De Forest, 4" .....	.40
Patho, 2" .....	.30
Patho, 3" .....	.40
Patho, 4" .....	.55
Federal, 3" .....	.50
Federal, 4" .....	1.15

VOLT METERS	
Jewel, 0-50 Volts .....	\$2.25
Jewel, 0-12-120 Volts ..	9.85
Sterling, 0-50 Volts ..	1.75
Sterling, 0-35 Amp .....	.89
Sterling, 0-35 Amp .....	.89
0-50 Volts, combin- ation .....	3.00

## BROOK-RAD "B" BATTERIES

A "B" Battery with an unconditional guarantee. Tested and approved by the Tribune Institute. NOTE OUR PRICES, 4 SIZES:

2 1/4 Small .....	\$1.00	45 Volt Medium .....	\$2.60
2 1/4 Large .....	2.00	45 Volt Large .....	3.75

Allow us to quote on any parts or standard sets.



## The Popular Neutrodyne!

This receiver is rapidly becoming the "Old Reliable." A five-tube tuned radio-frequency set that any inexperienced fan can operate.

SEE RADIO WORLD for March 8, 15, and 22 and get all the details which will enable you to build this reliable and powerful five-tube neutrodyne outfit. The three copies for 45c, or sent free if you send \$6.00 for yearly subscription. NOW!

RADIO WORLD, 1493 Broadway, N. Y. C.

## M-EMERSON-MULTIVALVE

Seven-element tube with 201A filament, three plates and three grids. Uses any battery. Operates on 5 volts. Draws only 1/4 ampere. Fits any standard socket. Can be used with many circuits. Write for information.

List Price \$6.50

Exclusive Licensees and Manufacturers

**Emerson Radval Corp.**

25 West 43<sup>rd</sup> St. N.Y.C.

## GREWOL The Fixed-Reflex DETECTOR

At your dealer's or direct ..... \$2

**Randel Wireless Co.**  
11 Central Ave., Newark, N. J.



## FOR A SUCCESSFUL RADIO SUMMER

"Carry-All"  
RADIO  
VALISE



Pack up and let your radio entertain you en route, in camp or at your staying place. The "Carry-ALL" Radio valise has separate compartments for your set, batteries and other parts. An enclosed loud speaker is a part of this equipment and it's a wonder for volume and clearness. Made by the makers of "Kleertone," the horn de luxe.

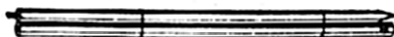
Besides using the "Carry-ALL" for transportation purposes it makes a very attractive furnishing and background for your set. Write for special circular and prices.



## LARGE COIL ANTENNA

Hang it anywhere indoors. Owing to the large coil this type aerial gives better results than the outdoor wired aerial, especially for neutrodyne and other similar sets. Any number of low wave stations obtained that are not obtained by outside aerials.

Price 85c., postage paid east of Mississippi River.



## GROUND ROD

"A Good Ground Assures Good Sound!"—56" rod, in two sections, all ready for use.

Price 85c., postage paid east of Mississippi River.

**Liberty Metal Products Co.**  
Berea, Ohio

## ELGIN SUPER-REINARTZ

The Set Which Copied

2LO LONDON, ENGLAND

on  
ONE TUBE

Send Stamp for Descriptive Circular.

**ELGIN RADIO SUPPLY CO.**

207 E. Chicago Street,

Elgin, Ill.

## VALUE OF YOUR RADIOS SHOULD BE ESTABLISHED NOW

It is important to know the worth, or lack of worth of specific items.

Before insurance companies will write specific insurance they usually require some evidence of value. The key word for appraisal or documentation of value for any purpose is before. The value of the items insured must be known before fire, loss or theft.

If you are to arrive at a fair property settlement you must have an accurate estimate of value of the items. You will need this for tax and estate planning, for tax deductions for donated items and for divorce settlements.

For insurance purposes, you should make a complete inventory with their estimated values. Make, model and serial numbers should be included.

Qualified appraisers acceptable to the insurance company should be determined. As a collector and historian you will probably qualify for the job, or you can look for a member of the American Society of Appraisers.

Remember the key word is 'before.'

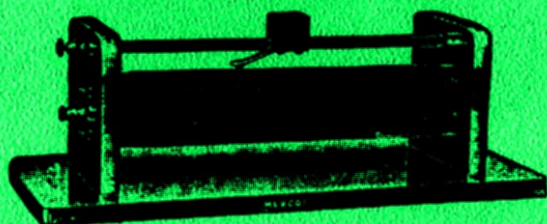
GARY A. VIERK

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## MANUAL OF WIRELESS TELEGRAPHY.

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### RECEIVING TUNING COIL



A tuning coil is essential to long distance receiving. This coil is simple, yet well made and effective. Wound with black enameled wire, and properly designed for the use of this wire. The sliding contact is certain in operation, and always touches the wire. Wire does not loosen from core.

All metal parts are of polished brass. The slider handle is of hard rubber. Wave lengths from zero to 1500 meters.

List No.	Price.
455 Single Contact Tuning Coil.....	\$3.00



# ATWATER KENT

## RADIO RECEIVING SET



THE two instruments shown above comprise an excellent and complete receiving set. The Coupled Circuit Tuner and Detector Amplifier on the mahogany board present a beautiful appearance. Complete outfit as above, unwired, \$32.00

ATWATER KENT MANUFACTURING COMPANY  
4047 STENTON AVE. Radio Dept. PHILADELPHIA, PA.

## MU-RAD RECEIVERS

THE ULTIMATE IN RADIO RECEPTION

**Dan-Ashe Radio Co.**  
210 North 10th ST. ST. LOUIS, MO.

**Federal**

Standard  
RADIO  
Products

Over 130 standard radio parts, each bearing the Federal iron-clad performance guarantee.

Write for Catalog.

FEDERAL TELEPHONE & TELEGRAPH CO.  
Buffalo, N. Y.

## I TOP THEM ALL

You may talk of distance getters,  
And of logs both great or small,  
But in speaking to your betters  
It is meet that you should fall  
On your knees to worship rightly  
One about whose head so brightly  
Shine the tubes of vacuum nightly  
Bringing distance to us all—  
For I top them all—I'm the Super!  
I fear not Clicks or Blooper!  
Yes, I'm Superheterodyne;  
Ever brightly will I shine;  
Henceforth the world is mine—  
For I am Super!

**ERLA**