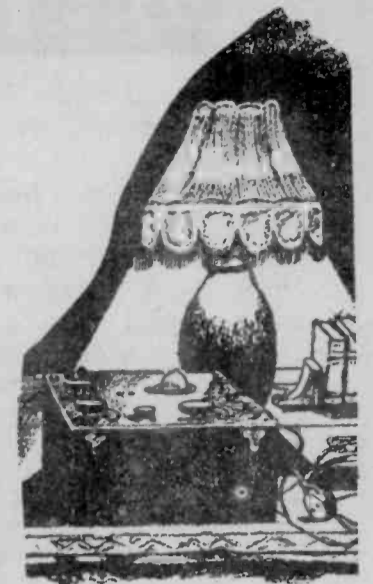


Price \$7.00 yearly Single issue \$1.00

THE NEWSPAPER FOR
THE HOBBYIST OF VINTAGE
ELECTRONICS AND SOUND

THE HORN SPEAKER



New Jersey's got it!

Golden Age of radio recalled

Remember the days when the family rushed through dinner to gather around to hear Gabriel Heater or H.V. Kaltenborn tell the news? How about Amos and Andy, Fibber McGee and Molly and such old-time soap opera favorites as Stella Dallas, Helen Trent and Ma Perkins?

Well, you can stop reminiscing. "The Golden Days of radio are back for keeps," says Steve Richer, acting director for the New Jersey Division of Travel and Tourism. "New Jersey's National Broadcasters Hall of Fame captures those thrilling days of yesteryear when a simple turn of the dial was the key to entertainment and words alone created vivid images of people and places. It honors the geniuses who transformed an idea into an industry and pays tribute to the men and women who became heroes through their voices."

The Hall of Fame is located in Freeholder, N.J., and is housed in a grand, old former bank building constructed before the turn of the century. Visitors are able to see and hear radio broadcasting history from the 20's to the present with slide presentations, old-time radio displays and more than 400 tapes of the greatest programs. An extensive collection of early radios, props, scripts and recordings have been gathered for public showing and listening. One section highlights the lives and contributions of personalities in the industry who have been inducted into the Hall of Fame.

"What we try to do is to make the visitors feel they've been transported back in a time capsule to the 1920's," said Arthur S. Schreiber, the Hall's founding president. The visitors first listen to an eight-minute introductory tape which sets the scene; bloomer swimming suits are the latest rage, fashionable men wear knickers for golf, and the first regularly scheduled broadcasting radio service has recently commenced. Here, your imagination "tunes in" to the listeners from an era where imagination was the key to the nation's entertainment. "The door you're facing," concludes the tape, "leads to the greatest collection of old-time shows and artifacts ever collected."

Immediately after the slide presentation, you walk into an area where there are 34 listening booths. Each booth contains a radio that is the correct vintage of the selected program. You simply press a button and pick up a phone. "The Hall of Fame is a new idea for an old accomplishment," Schreiber said.

The structure's high ceilings, marble interior, and art decor finishes all

contribute to the exciting atmosphere of the museum. The vast walk-in vault has been kept in place to preserve valuable historical documents and artifacts.

Schreiber, a former publisher of two successful newspapers, said he became aware of the void in the broadcasting industry when he tried to collect information for his 14-year-old son, who had developed an interest in the field. Like many parents, Schreiber provided his child more than was required. "It first started out innocently, and then somehow, one thing simply led to another," he explained.

"As I traveled around," he said, "I realized there were various collections of broadcasting equipment on display at many locations. Libraries were filled with books on broadcasting. Recording companies have compiled collections of early radio programs. There were and continue to be many honors to those in the field today, distributed by a variety of professional organizations. But nowhere had the past, the present, and the future interests of the broadcasting industry been brought together in one location until we incorporated the National Broadcasters Hall of Fame."

Schreiber said Freehold is an ideal location. The town is located only 12 miles east of the New Jersey Turnpike at the Hightstown exit (Exit 8) and is close to the Thomas Edison museums, which attract thousands of broadcasting enthusiasts each year. (Edison in 1887 invented the Tin Foil Phonograph, the first instrument to reproduce recorded sound.) Also near the Hall are the site of the first transcontinental radio signal transmission, and Bell, where the transistor was developed. Add to these advantages the fact that millions of people pass through Freehold each year to visit the area's Revolutionary War sites, the New Jersey beaches and the Great Adventure theme park in nearby Jackson.

The hall of Fame will fascinate people of all ages and interests. "Younger people can discover what the excitement of the golden days of radio was all about and the older people can remember and relive it," said Schreiber. "I think it deserves a great deal of attention and is a serious project that is here to stay, with a life of its own."

Admission to the Hall of Fame is \$2 for adults and \$1 for children over six. Children under six can tour free of charge. Tours are self-conducted at your own pace with an attendant present to answer all questions. For further information, write Arthur Schreiber, National Broadcasters Hall of Fame, West Main St., Freehold, N.J. 07728; or call 431-4656.



To Grandmother's Time No. 3 - An Extensive collection of old-time radios and props revive yesteryear for visitors of all ages at the National Broadcasters Hall of Fame in Freehold, NJ.



"Kipper," RCA's nostalgic symbol, is one of many items for visitors to see as well as touch at the National Broadcasters Hall of Fame in Freehold, NJ.

Courtesy of George Kitchen, president of Palisades Communications, Inc.

Letters

Dear Jim-

I have been reading THE HORN SPEAKER now for four years and needless to say I enjoy each copy. I have always filed each copy neatly in a large 3 ring binder and keep them in my office. I often read copies several years old and enjoy them just like I did 4 years ago.

You certainly do have a fine paper and I look forward to my copy. Keep up the good work and don't think we could get along without a copy of THE HORN SPEAKER. Thanks again.

Yours very truly,
Eugene D. Bordeaux
Olde Tyme Music Scene
by Margene
273 West Prospect Ave.
Keyport, NJ 07735

EDITOR...Thank you for the kind words. We want to think that THE HORN SPEAKER belongs to its readers.

Jim,

Here is my check of \$12 for a two year renewal. Thanks for the renewal notice. Keep up the work on restoration tips in THE HORN SPEAKER.

Thanks,
John Miller

Dear jim,

Read your article about the "low value" of antique radios and your wonderment as to why they aren't bringing a price worthy of them.

Let me say that the low price at garage sales, flea markets and antique dealers is a good thing --- for us collectors. If these people knew the value of these radios, us collectors would go broke. An example; several antique dealers and farm auctioneers are keeping an eye open for old radios for me --- and found quite a few. These I purchased for \$15.00 to \$30.00 a piece. If they had known these sets were worth over \$100.00 a piece, I couldn't have bought them.

So I tell all the aforementioned persons that old radios aren't worth too much, costs too much to restore and find tubes etc. In the meantime we are collecting our antique radios for a pitance. Once we get the available supply into our collections, then we can claim their rightful heritage.

We all know that what we are collecting is a genuine part of Americana and is a valuable part of our past.

So-o-o let's hold down the price at flea markets, etc. until the supply is near or at its end. This won't be too long for I already have bought out the supply from nearly 1/4 of Wisconsin. Now the people who have some are jacking up the price merely because they know there aren't too many around.

Let's wait a year and then let go with a national release in some magazine as to the actual value of our antique radios. Then we can sell our excess to antique dealers for what they are really worth.

Respectfully,
George Friedrich
7162 Jacqueline Lane
Custer, WI 54423

EDITOR...Can't take credit for the article about the depressed value of radios. Dr. Rosenthal wrote it.

club news

NIAGRA FRONTIER

WIRELESS ASSOCIATION

THE HORN SPEAKER has helped our club so much by publishing reports of our meets that here I go again. Our fall meet will be in the Wilson, New York Museum on October 11, 1980 (ed. could be past tense.) There will be a flea market from 12 to 2 p.m. And included there will be two talks. The first talk is by Jim Ross, Beamsville Ontario, Canada. He will tell us about the Canadian sets in-

cluding the Mercury Super 10 and the Rogers. The Mercury is an early superheterodyne using 10 of the type 215A tubes.

Our second speaker is Larry Hazel, a commercial photographer who will tell the special tricks in taking pictures of old radios and parts.

Finally, we will report winners in the equipment contest. Ribbons will be awarded in 3 categories: 1. Canadian equipment 2. superhet sets 3. head sets.

Our last Meet with the Antique Wireless Association aboard The "USS Little Rock" cruiser in the Buffalo Harbor was a lot of fun for the 75 to 80 people who showed up on August 16, 1980. An excellent talk written by David Crocker and presented by John Wolkinowicz was given with over 100 slides of Crosley equipment.

In the equipment contest the early one tube category was won by Art Albion with a nice Harko Senior, nonregenerative. Lauren Peckham was second with an also very nice Harko Senior Regenerative set.

In the later one tube category the three ribbons were taken by three Crosley Pups. Jim Kreuzer's Pup was first because his set included Bonzo, the Crosley "dog," earphones and Pup advertising signs.

I got the blue ribbon in the 2 tube category with my Crosley Model VI Special and its matching amplifier. Ken Slager won second place with another Model VI without its amplifier. A very clean 51SD owned by Chris Fandt won third place.

In the Special Class Mark Kaplan won first place with his "Buddy Boy." I thought that it was so ugly that it was beautiful. I won second place with a 1956 radio made to look like a book. It is a small Crosley portable with 3 pencil tubes and 2 transistors.

Everyone also toured the "Little Rock" and the destroyer, "Sullivan."

Next, we went half mile to the main office of the Erie Savings Bank. There we had a cocktail party, which was sponsored

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by the bank from 5 to 7 p.m. All people attending our Meet were invited to this party. Actually, it was wine and cheese -- all anyone wanted. About 50 people attended and they also saw a display of antique radios owned by our club members on display in show cases in the bank lobby for the month of August.

May, I tell all readers that our club, N.F.W.A., does not try to compete with the national clubs -- rather we try to fill in with information not found elsewhere. Some of our recent talks included a nice presentation on juke boxes by a prominent collector. Another talk was about how to insure antique radios. And another talk was about how to transistorize old dead tubes like 01As and WD11s and then run your old set with just the A battery. TV and stratovision were described and numerous other topics which may interest readers. We are getting together all our flyers for those who are interested.

Larry Babcock,
president of the
Niagara Frontier
Wireless Association
8095 Centre Lane
East Amherst, New York
14051

VINTAGE RADIO AND
PHONOGRAPH SOCIETY

During the weekend right before the presidential election, Vintage Radio and Phonograph Society will hold a national meet which is called "Convention '80." V.R.P.S. has several activities planned for collectors who attend.

An auction is scheduled to help collectors buy and sell sets in a function that has financially benefited this club. It receives ten percent of an item sold. John Rawlins is the leader of this activity and he may be reached by calling (214) 285-2313.

An outstanding feature of V.R.P.S. in spite of its relative low attendance is the appropriate trophy they award to a contest winner. The "best of show" has, at least in the past, been a real beauty. This year television sets and phonograph records will present themselves before the judges.

Of course, there will be the usual flea market activities with all the flavor of anticipation of finding the "missing part" or a radio or phonograph for a bargain price. Must be the reason for the early crowd.

To lure collectors to this meet and to urge them to register by October 20, 1980, V.R.P.S. is offering a chance to win a Radiola 20. The exact days for these activities are October 31 through November 2. The place is Irving, Texas. For additional information call Ken Deibel, the gentleman who furnished us with a news release and of the publicity committee, should be glad to give more details if you want more information. His telephone number is (214) 352-9914.

CLINIC



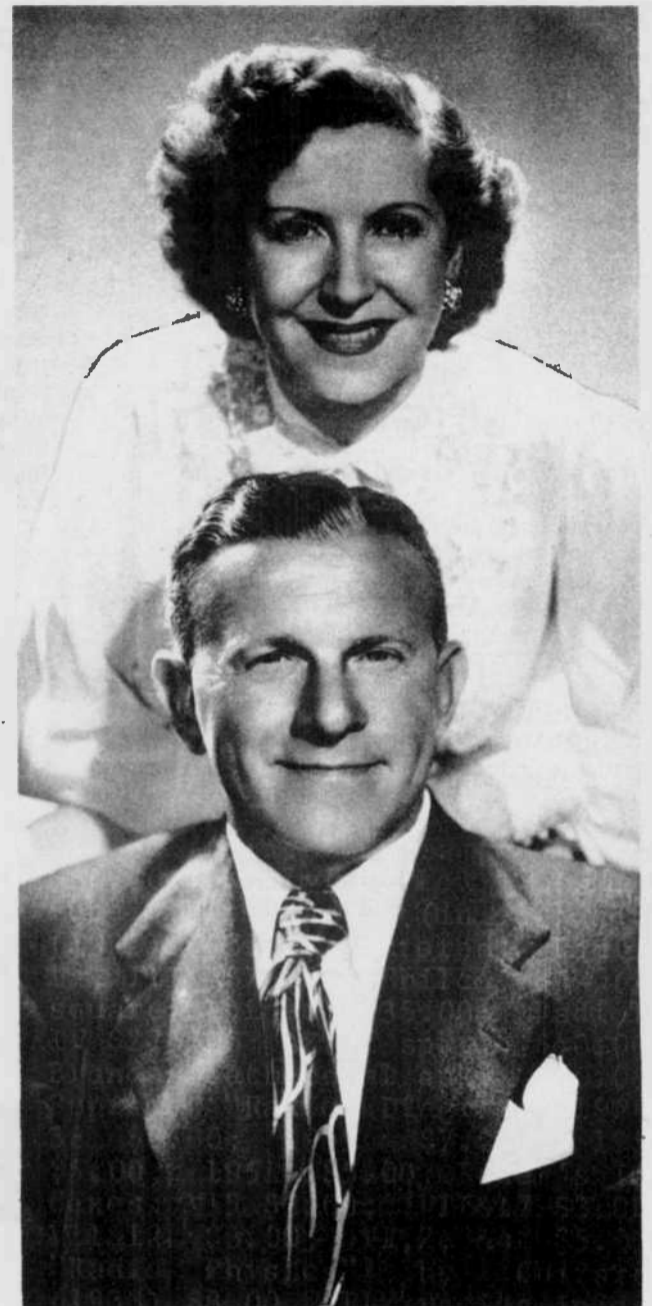
BAKELITE PANEL LETTERING

by Ron Boucher

Many battery sets have bakelite front panels with white lettering, which is engraved into the panel. Often, the white paint in the letters has flaked off, leaving the lettering with missing lines. One method of restoring this type of panel is to dab thick white paint into the recesses and then wipe off the excess from the top surface. This process works well but my experience is that it takes more than one coat. And, often, it is difficult to wipe off the excess on the surface without removing some of the paint in the letters. There is, however, another way of relettering a panel which is much quicker.

Remember the box of Crayola crayons you used as a kid to mark on paper or the walls and how all the colors got used up except for the white ones? Well, that white crayon can be used to highlight the lettering on your Radiola III or your Freed Fismann receiver. You merely have to rub the crayon into the let-

on the air



radio favorites George Burns and Gracie Allen

tering and then wipe off the excess. It's very quick and you don't have to wait for anything to dry. Use it on your large tuning knobs too. It's easy to wipe off.

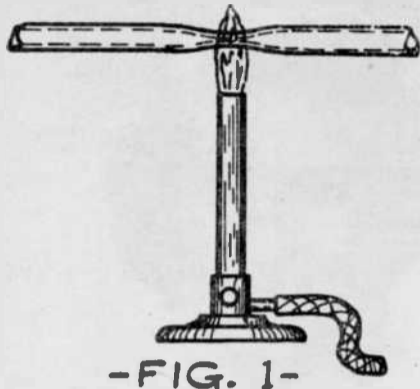
Maybe your school age children or grandchildren won't mind donating that useless white crayon. Just don't let them see what you are going to do with it because they may decide to try it themselves when you are not there...with other colors.

This method is similar to the wax sticks that carpenters use to fill in the holes made by finishing nails.

Ron Boucher
Vintage Radio
Servicing
376 Cilley Road
Manchester, NH 03103

FOR YOUR COLLECTION OR MUSEUM How to Make an Electrolytic Detector

The following directions will enable the amateur to make a very sensitive wireless detector, one which will receive messages up to five hundred miles. However, the operating radius of any detector depends largely upon the height



By C. C. WHITTAKER.

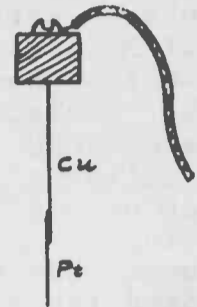


piece of copper wire. Place these joined wires in the best piece of the tube so that the tip of the platinum wire protrudes at the end of the pointed part of the tube. Place the cap on the other end of the tube, letting the copper wire stick through a small hole in the top of the cap (Fig. 2). Bend the wire over on the cap and remove both cap and wire from tube. Solder this wire and the flexible lead to the cap as in Fig. 3. Replace the wire in the tube and seal the

nest part of the tube is about 1/16 in. diameter (Fig. 1). Quickly take the tube from the flame and hold it suspended by one end and allow it to cool. When cool cut or break it in two at its thinnest part. Take the smaller piece of platinum wire and solder one end to a

cap to the tube by means of sealing wax. Seal the small end of the tube to the platinum wire by directing the flame of the blowpipe upon it. When cool rub the point on an oil stone to make sure that the platinum point is exposed.

The cup which contains the acid is made by fusing the larger piece of platinum wire into one end of the remaining glass tube. This is done by directing the flame of a blow pipe upon the edges of the end of the tube until the opening left is slightly larger than the diameter of the wire. Insert the wire with a twisting motion by means of a pair of pliers until about 1/16 of an inch



is left projecting. Now direct the flame upon this wire and the glass immediately around it so as to thoroughly fuse the two together.

As soon as this is finished, a small piece of copper wire, about four inches long, should be soldered on to the outside end of the platinum wire to serve as

of the aerial, the ground connection, and the tuning coil.

The material needed is a piece of thermometer tubing about three inches long, having a bore of not more than 1/64 in. diameter, two pieces of platinum wire, one 1/2 in. long and .001 in. diameter, the other 3/8 in. long of No. 20 or 24, a piece of glass tubing 2 in. long having an inside diameter of 1/4 in., a brass cap which will just fit over the top of the thermometer tube.

Hold the thermometer tube in the flame of an alcohol lamp or bunsen burner, preferably the latter, turning it continually. When it begins to be red-hot pull gently upon each end until the thin-

WANTED CROSLEY

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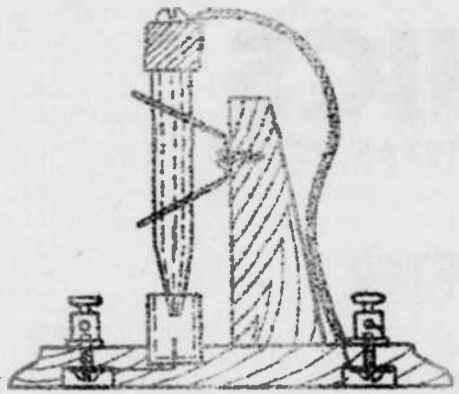
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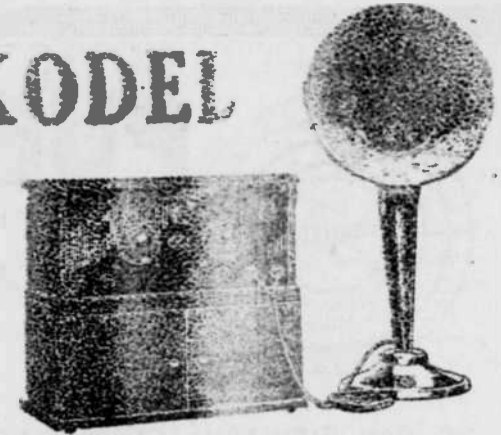
after 6PM 214-262-7855



-FIG. 4-

a connector. Now place the whole in a place where no draft will strike it and allow it to cool gradually. After it has once cooled it will require no further heat to heat it without cracking it. This is because platinum conducts heat much more readily than glass.
Cut off the end which contains the platinum wire, making it 3/4 of an inch long. Fig. 4 shows the detector complete. The solution for the cup is sulphuric or nitric acid one part, water four parts. The platinum point will need cleaning from time to time on a whet stone.

KODEL



C-14—Four tube receiver. Tuned radio frequency. KODEL detector, rectifier and two stages audio frequency amplification gives six tube volume with only four.

\$32.50

(Battery cabinet as shown, \$4.50.)

Reprinted from MODERN ELECTRICS, November, 1908

Radio News for February, 1925

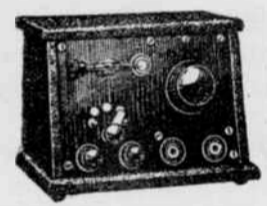
KODEL

Radio News for February, 1925



P-12—Two tube portable, weighs only 8 lbs. complete. Gives loud speaker volume on local and many distant stations.
\$22.50

P-11—A one tube portable—the Camera of Radio—fits in the corner of hand bag, weighs only 4 1/2 lbs. complete.
\$16.00



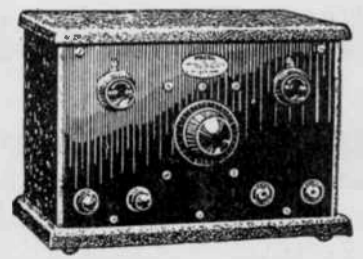
C-1—Crystal Receiver. Beautiful, selective long range and simple to operate.
\$5.00



A-11—One tube Audio Amplifier.
\$12.00
A-12—Two tube Audio Amplifier.
\$17.00



C-11—One tube receiver—Range up to 1,500 Miles.
\$10.00



C-12—Two tube receiver. A marvel for selectivity, range and volume.
\$18.00

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Rush my order prepaid. I am enclosing full price, plus \$1 for postage and handling. I have checked the manuals that I have ordered. Thank you.

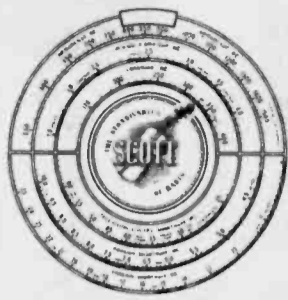
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TV-14 (1958)	R-14 (1954)
TV-13 (Late 1957)	R-13 (1953)
TV-10 (Late 1955)	R-12 (1952)
TV-8 (1954)	R-11 (1951)
TV-5 (1951)	R-10 (1950)
	R-8 (1948)
	R-5 (1942)
	R-4 (1941)
	R-1 (1926-1938, Antique Radio sets), \$7.
	AU-1 (Auto Radio, 1964-1965), \$2.50.
	Radio Mathematics, 50¢

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- (6) HAZELTINE'S NEUTRODYNE CIRCUIT RADIO RECEIVER by F.A.D. Andrea, Inc. 1923 - "Complete assembly, wiring, adjusting and tuning information for 4 and 5 tube Hazeltine circuits . . 19 photocopied pages actually 38 pages in booklet. \$3.00
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HISTORICAL RADIO SERVICES offered the first directory of which we are aware. When that organization ceased to publish for a six month period, we placed our directory on the market. Approximately eight months later, another individual offered a directory with "more listings."

In 1975, after our first two years of serving the world of antique radio, we had collected more than 2,000 names and addresses of customers and correspondents nationwide and abroad. We have lost count, but from our own invoice records, we estimate that there are currently between 15,000 and 20,000 individuals and organizations with an interest in antique radio. The growth of our hobby has been phenomenal!

We see no need for duplication of publications within our hobby. There are far too many needed-but-yet-unpublished books and other literature. For this reason, we are hesitant to increase the size of THE DIRECTORY OF ANTIQUE RADIO SERVICES unless our customers indicate a sufficient demand for a larger directory. The estimated price of such a directory would be approximately \$10.00 postpaid.

We believe that we have already published most of the available significant listings. We have offered to add the names and addresses of other organizations and individuals who wish to be listed in our addendum sheets. The addendum sheets offer the possibility of both errata and addition.

If you desire a directory with "MORE COLLECTORS, MORE SUPPLIERS, MORE PUBLISHERS, MORE LIBRARIES, MORE CLUBS, MORE MUSEUMS, and MORE FOREIGN" listings, please make your wishes known to us. If we receive a sufficient response to warrant such a publication, we will make it available.

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- (16) TYPE UX-201-A TUBES (WHILE THEY LAST) NEW-IN-ORIGINAL-CARTONS ----- \$7.00 EA.
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THE ALOE VERA PLANT IS A SPINY SUCCULENT WHICH GROWS IN TROPICAL AND SIMI-ARID REGIONS OF THE WORLD. THE TRANSPARENT GEL FROM AN ALOE VERA LEAF HAS LONG BEEN A FOLK REMEDY USED FOR ALMOST ANYTHING INCLUDING SUNBURN, MINOR BURNS AND CUTS, FOR WHICH IT IS SAID TO STOP PAIN AND PROMOTE HEALING, REDUCE INFECTION AND LESSEN SCARRING. ALOE VERA LIQUID HAS BEEN USED AS A HOME REMEDY FOR STOMACH DISORDERS, ULCERS AND ARTHRITIS-LIKE CONDITIONS.

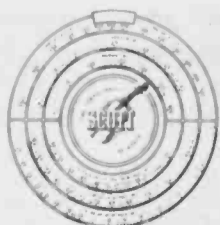
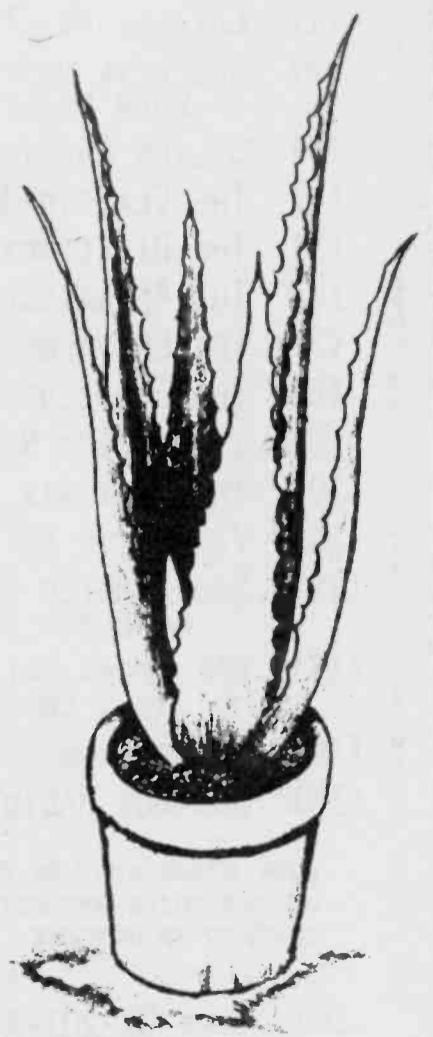
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THE CLASSIC RADIO NEWSLETTER



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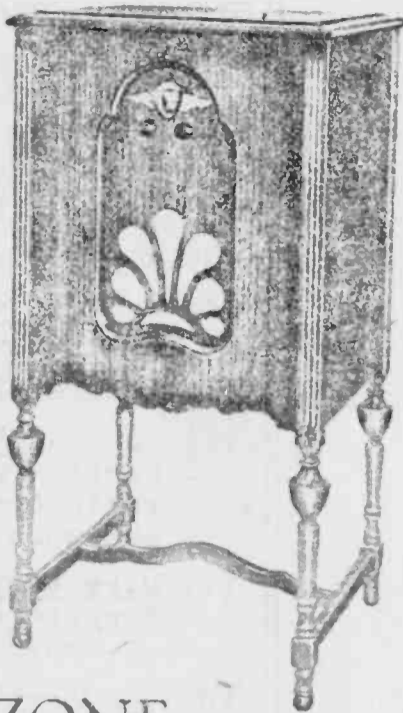
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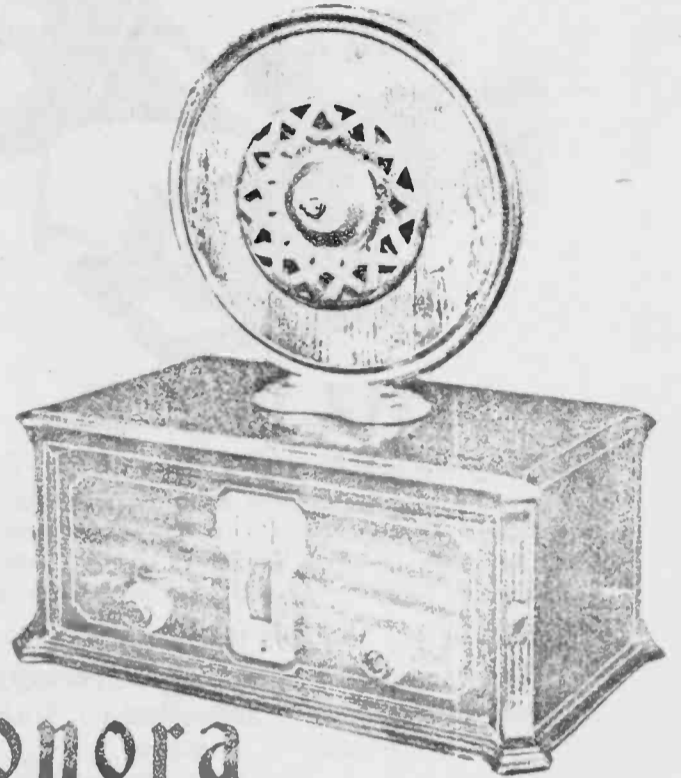
FROM MR. T. K. NILSSON

AIRZONE



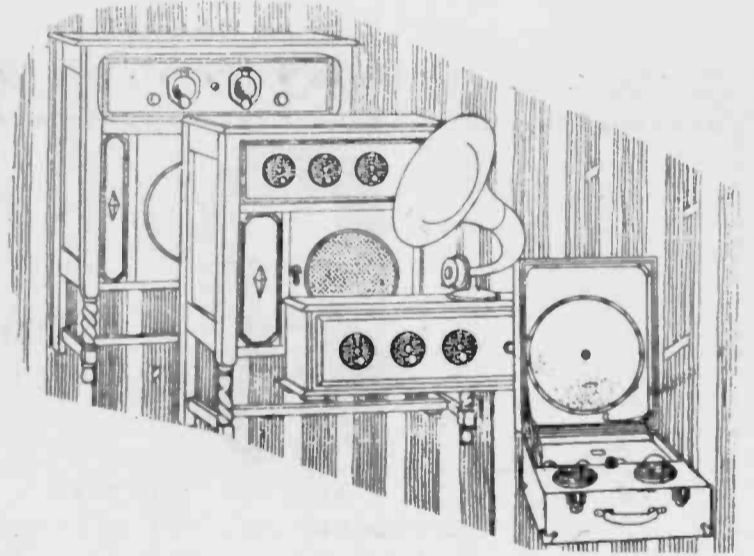
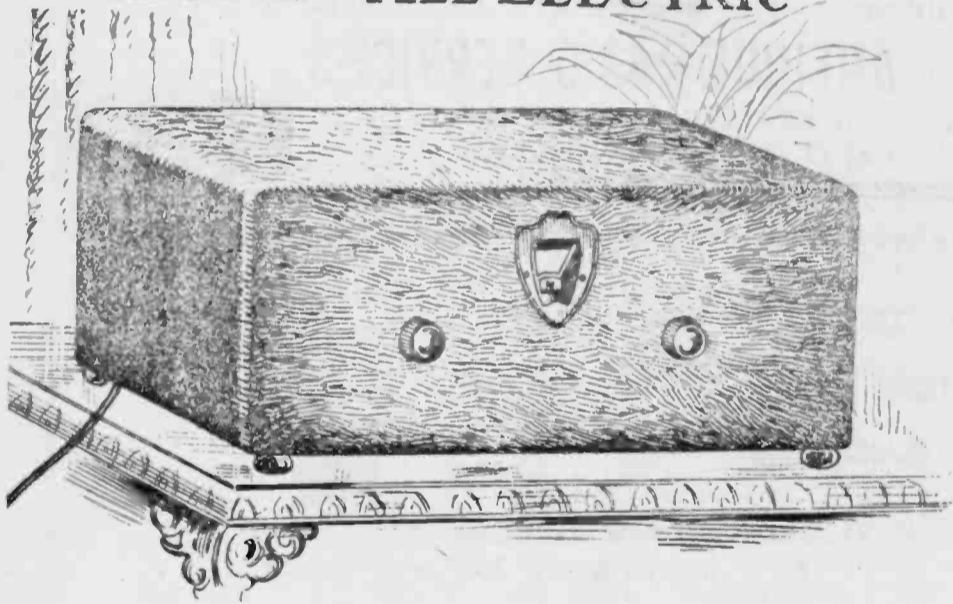
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STATION	DIAL NO		
	DIAL 1	DIAL 2	DIAL 3
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5CL	47	47	47
4QG	44 1/2	45	45
2BL	37	36 1/2	37



Astor Five-Valve Console



JOHN STONE STONE

A mathematical physicist whose work on the mathematics of tuned radio circuits made possible the practical radio results of today

By Oscar C. Roos, B.S., M.E., Fellow I.R.E.

MANY names are blazoned on the radio honor roll today and yet very few of those interested in this rapidly spreading art know of the epoch making work which this remarkable mathematical physicist did nearly a generation ago in a field too difficult for any but the most highly gifted to explore. His work on the mathematics of tuned radio circuits, especially with regard to the different kinds of couplings, condenser

coupling, resistance coupling and inductance coupling, was the means of leading engineers along a path which permitted the remarkable results we are now getting today in tuning—years after the laws governing these effects were laid down.

It is therefore somewhat of a late hour for laymen and recent radio experts to talk about radio being in its infancy. As a matter of fact, it is no more in its infancy than the

automobile industry and it is only within the last three years that a great deal of the early research work done by Stone has been put to practical use by others. If a general estimate were to be made of what this pioneer has done, it might be said that he has shown the way in which to apply the principles governing carrier wave telephony and most of our modern filter-circuits so as to permit multiplex

working for telephony and telegraphy, and after that in radio broadcasting.

Dr. Stone was born Sept. 24, 1869, of American parents within the shadow of the Khedive's palace in Egypt—his father holding an official position in connection with the educational projects of the Egyptian ruler. In later years it was rather startling to hear from the office of this profound investigator a sudden series of exclamations in guttural language, percolate through the door whenever results were not coming as they should! Dr. Stone's earlier education led him finally to Johns Hopkins University, Baltimore, where he met and knew intimately Major-General George O. Squier who since has developed line radio for "narrow casting" purposes. Both these investigators were pupils of the famous professor, Henry A. Rowland, who experimentally proved that a moving electric charge is equivalent to an electric current in all respects, thus crowning the edifice which Maxwell had built years before and which is at the basis of all radio engineering.

Dr. Stone, about 1890 was employed as research engineer by the A. T. and T. Company where his marvelous grasp of the mathematical processes of the differential calculus led him to master the almost impossible methods used by Oliver Heaviside in England. The chief difficulty of Heaviside's methods was that he took an impish delight in solving some profoundly obscure problem in electric transmission of impulses by means of a new method which he called "the operational method." He meant by this that instead of treating symbols to represent quantities that he treated them to represent mathematical operations. He discovered the laws of these operations, but gave no general justification for his system in the form of a detailed and exhaustive proof. It was very exasperating to those who tried to follow him.

Stone, however, in spite of these difficulties filled out the missing proof for his own brilliant researches and got into communication with Heaviside. This rather "porcupinish" English genius came out of his retreat and actually sent a letter of almost tearful appreciation to Stone hailing him as the first one to really appreciate his work.

In blazing this trail for all subsequent mathematical physicists, Stone found that the method was so concise that the chief difficulty after the problem was solved in the form of "operational equations" was to interpret the results and narrow them down to a particular case. All those who followed the method had a great advantage over their contemporaries using the older methods, and it is only recently that engineers like Fry in the Western Electric Company, Carson in the A. T. & T. Company, Nicholson and a few others have used the methods employed by Stone and his assistants twenty years ago.

The result of Stone's work was that he became very much interested in the question of simultaneous telegraphy and telephony by means of what we now call "carrier waves." One of the earliest patents on this problem caused an interference between the French engineers Hutin and LeBlanc, Michael Pupin and Stone. After an incomplete prosecution short of the highest court the case was dropped for financial reasons. It is interesting to note that at this early date—about 1893—there was a difference of opinion among experts as to what was meant precisely by "resonance." On the one side was Dr. Kennelly of Harvard and on the other side was Stone. The latter maintained that from a physical standpoint, the frequency of resonance was that at which the maximum current occurred in a tuned circuit. The former maintained that the resonant frequency was that at which the condenser reactance equaled the inductor reactance. These questions are not of serious engineering importance today, but a great deal hinged on them in this classical suit.

We thus see that Stone is one of the precursors of "wired-wireless" now so successfully used for telephony between two important cities in the United States where five simultaneous telephone messages are sent through wire and cable circuits by the use of five separate carrier waves of inaudible frequencies.

Again, we find that Stone as a pioneer had the talent to solve the most difficult mathematical problem then before the world of radio investigators; that is, the problem of the performance of two coupled circuits including resistance of radiation from the antenna, and even the skin-effect in the circuit. This work unfortunately was never published, but was checked up afterwards to the work of Max Wien who had also become interested in the question of coupled circuits. The result of this work was that Stone in 1906 was tuning out frequencies using spark transmission when the difference between these frequencies was as small as 3 per cent.!

Another early investigation of Stone's which showed his vision, is that which he undertook in collaboration with Dr. Ladd of Boston about 1900 in direction finding by means of experiments made with extremely short waves of about the same length as those used by Hertz in his famous experiments. The power used by Stone was far too small to give the results which have recently been obtained by Franklin and Marconi using C.W., but the methods used were the same and the results over short distances were practically what we have today over longer distances.

These experiments using damped waves led Stone to develop his transmission system whereby the energy from the "Whip-crack" circuit was stored in a second circuit having very small damping. This circuit together

with the famous "intermediate" or "weeding-out" circuit gave Stone just as small a damping in his transmitter (down to .02) as he desired and for receivers he reduced his damping to a fraction of the above amount at even these early dates in laboratory experiments.

The patents granted him could have been used to apply to the entire art of transmission and reception if he had so chosen, but he was too engrossed in the science to bother with the commercial aspect of radio. His accomplishments were made possible to some extent from the fact that he was the only worker at the head of an organized company who seemed to have a clear idea of all the factors which determined "selectivity" in the circuit. What is even more important in regard to early receiver design is the fact that he was able to show the connection between selectivity and great persistency in the wave-train of a circuit in regard to the sharpness of tuning obtainable with it. A great many modern so-called wave traps are nothing but Stone's weeding-out circuit under different forms.

Stone did some of the earliest work in the country on stationary waves on wires and, together with the writer of this article, got out the first direction finder by means of radio waves without "swinging" the ship. This was done by stationary waves on a kind of dephasing device by which electrical angles were measured instead of turning the ship.

In 1904 Stone at St. Louis delivered some papers before the International Electric Congress and the Canadian Society of Civil Engineers in 1905 at Montreal. He also read papers before the Society of Wireless Telegraph Engineers and Institute of Radio Engineers. He was awarded the Edward Longstreth Medal by the Franklin Institute in 1913 and the Medal of Honor of the Institute of Radio Engineers in 1923.

Among the useful inventions which were used by operators and developed under Stone, there are found a practical "break" system, so that operators may interrupt each other even when using as high as fifteen K.W. input. Closely related to this was a patent by which the usual lowering of voltage in a transmitting room from 110 to about 40 with the key down was done away with. By obtaining what is known as "unity power-factor," Stone found that his apparatus acted as a pure resistance load and did not either magnetize nor demagnetize the field of his A.C. generator. The net result was that in 1907 at the Brooklyn Navy Yard with George Davis as chief operator at the station called "PT" it was possible to throw on a full load of 15 K.W. and see the voltage change only from 112 to 110½.

Another interesting apparatus which was successfully tried out before (then) Commander S. S. Robison of the U. S. Navy, was a secrecy-sender

by which a message could be delivered without much possibility of an enemy "listening in." This device had a transmitter which sent out a continuous "nonsense message" on about 600 meters and alternate signals as dots and dashes at 570 and 630 meters respectively. The receiver was tuned to both these latter frequencies and excluded the "nonsense frequency." But alas, it had fourteen adjustments. These all had to be set by calculation so as to be simultaneously correct. Cut-and-try methods simply worked in a circle and produced chaos!

In quoting the above instances of very early work demanding a knowledge of how to obtain high selectivity and pure waves twenty years ago, it is merely desired to emphasize the fact that the natural genius and sincerity of this investigator led him to avoid the temptations of a very active stock market, based upon radio, which was then at high tide.

Perhaps the one outstanding short and sharp achievement which Stone has left to the radio art is the fact that he pointed out that close coupling is the inveterate enemy of sharp tuning and pure radiation and he not only showed why this was so, but he showed exhaustively how all the various factors which entered into this condition are related. He not only answered the question "in what way?" but he also answered the question "to what degree?" No engineer can do more.

It is impossible in a brief article to describe the more than one hundred patents granted to Dr. Stone. Many of them were transferred to the A. T. and T. Company some years ago, and today have run out. Stone was the first to point out to those interested what an ideal telephone repeater the vacuum tube would be; as he had been working on the original problem of the repeater with Dr. White back in the early 90's.

To the men who worked with Stone, namely Sewall Cabot, Fred Holster, Ernest R. Crani, George H. Clark, and the writer, his personality as a cosmopolite, his polish as a man of the world, his personal magnetism and his remarkable powers of analysis have been sources of inspiration in all their subsequent professional work.

Dr. Stone was one of the first to examine the question of an auxiliary language for engineers and other professional men in 1905 when the great physical chemist, Ostwald came to the United States as the champion of Esperanto. Unfortunately both Ostwald and Stone decided that it was too unscientific and uncouth in appearance and pronunciation to be of service. They both have gone over to the younger and more carefully developed system called Ilo (Ido) and Dr. Stone is now, together with Mr. E. F. W. Alexanderson, an honorary president of the Radio Auxiliary International Language Society with headquarters at Beacon Chambers, Boston, Massachusetts which is spreading a knowledge of radio in foreign countries by correspondence.

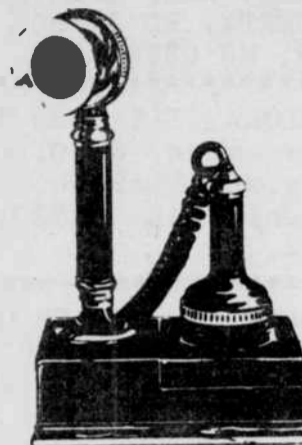
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19	5	2	35/51	5	3	46	5	3	59	6	4	83V	7	4
22	10	7	36	5	2	47	7	4	75	4	2	84	4	3
24A	6	3	37	5	2	48	6	3	76	4	2	85	15	8
26	6	3	38	4	2	49	5	2	77	4	2	89	4	3
27	6	3	39/44	4	2	50	10	7	78	4	2	1V	10	7
30	5	2	40	-	-	53	15	8	79	4	2	801	10	-
31	5	2	41	5	3	55	6	4	80	5	3	807	10	-
32	5	2	42	5	3	56	4	3	81	7	3	1625	5	-
33	5	2	43	5	3	57	4	3	82	6	3	71A	10	7

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WD12(bb)	-	20
UV199(bb)	-	8
UX199(bb/ob)	12	8
UX120	-	8
215A(ob)	12	8
874(ob)	15	-
876(ob)	15	-
UX201A	10	7

Type	new	used
CG1787(bb/ob)	10	-
BH(bb)	10	-
BR(bb/ob)	15	-
VT2(bb/ob)	15	-
VT4C	10	-

bb= bakelite base
 ob= orig box with new tubes
 (CG1787 is like UV01A with 3.65v filament)

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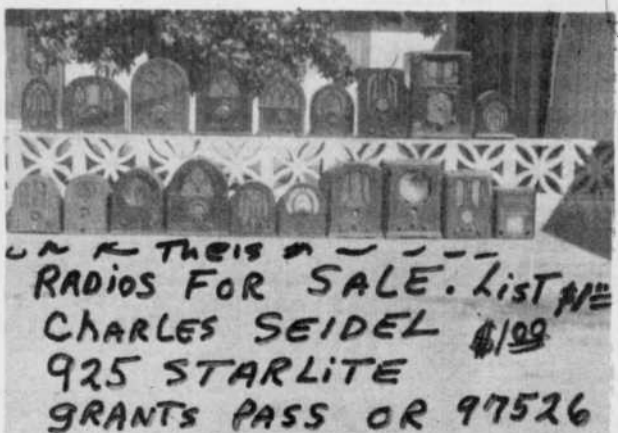
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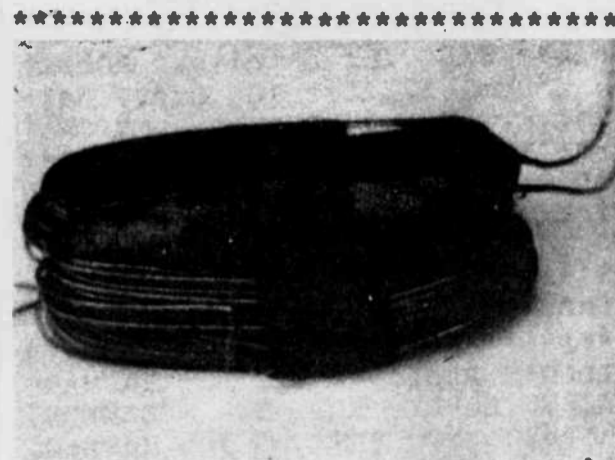
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"Radio Physics" by Ghirardi
(1933) \$8.00. All radios in ex-
cellent condition & w/o tubes
except A.K. 47 -- Ron Boucher,
376 Cilley Rd.. Manchester, NH
03103. (603) 669-1698.

TRADE: AMRAD 3500-3475, BC14A,
BC15A, BC9A, brass base VT1's,
Audions. Federal 61 panel, for
early AK 10, AK Radiodyne, or
AK 12 -- or will pay cash. Also
want to buy pre 1925 Crosley
radios and amplifiers. Would
appreciate any information re-
garding Frank Conrad, founder of
radio station KDKA, as reference
material for a juvenile book.
Frank Cooper. 4215 Ravine Drive,
Friendswood, Texas 77546 (713)
482-6781.

FOR SALE: H. G. FISCHER SPAPK
gap transmitter type G, cabinet,
nameplate and meter missing. --
Dan Voydanoff 1141 Yorkshire,
Grosse Pointe Park, Michigan
48230.

FOR SALE OR TRADE

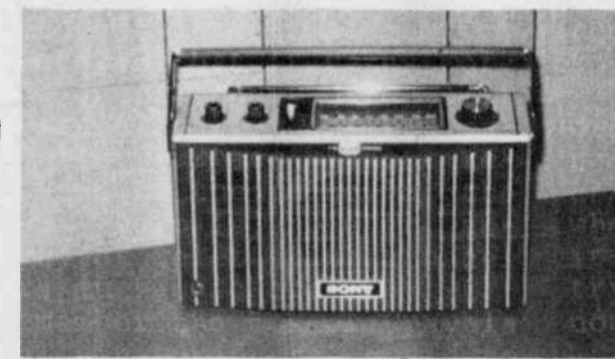


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High St.. Ashland, OR 97520.
(503) 482-4944.

FOR SALE: CATHEDRAL, battery
and AC radios from 1920's and
1930's. Please send large S.A.S.
E. for list. J. Albert Warren,
Box 279, Church St., Waverly,
PA 18471.

AK - 40 - speaker needs reconing
..\$50.00. Radiola - 28 - good
condition... \$75.00. Radiola
60 - mint condition - minus
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thederal - good condition . .
\$100.00. Crosley 122 - Super
Buddy Boy...\$100.00. Crosley
58 - Buddy Boy - minus dial ...
\$90.00. Call Bill: (501) 636-
2501.

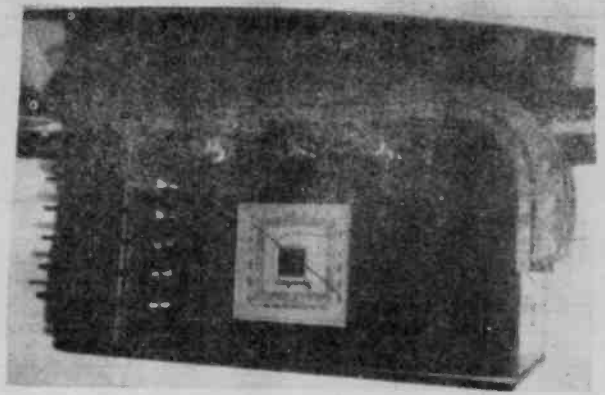


BRAND NEW 1974 SONY AM/FM matrix
stereo portable radio. Has 3
speakers. Model # MR-9400W.
Can't tell from new. \$50.00.
Was over \$90.00 in '74. I'll
pay UPS. M. Hanke, 1036 South
15th Avenue, Wausau, WI 54401.

WANTED

WANTED

WANTED



RAYTHEON TELEVISOR LAMP FOR JENKINS Scanning Disc TV. Top price paid for scanners. Bill Russell, 6463 1/2 Fulton Ave. Van Nuys, CA 91401 (213) 989-4086.

WANTED EARLY AMERICAN made transistor and hybrid transistor radios. Especially multiband. Write condition and price to me. Alvin Weeks, 3620 Algonquin Blvd Rockford, IL 61102.

PHONOGRAPH RECORDS WANTED: talks speeches, recitations, not music Arthur Harrison, 1021 Falcon DR. Columbia, MO 65201.

EARLY FANS, TABLE, ceiling, floor standing, etc., especially open motor Edison, Mesco or odd or unusual types. Richard Cane, 8391 N. W. 21st St., Sunrise, FL 33322.

WANTED: COMMERCIAL RADIO telegraph eqpt., receivers and transmitters. Also want wire telegraph apparatus keys, relays and sounders. Also want high speed Bomey telegraph equipment. Ralph G. Maddox, Vali-Hi Farm, Purgitsville, WV 26852 Telephone (304) 289-3069.

AK BB'S AND RELEVANT PARTS OLD UNUSUAL MICS. WILL TRADE ITEMS LISTED BELOW FOR BEST TRADE ON PARTS - BB'S, ETC. ABOVE FOR BEST OFFER OR POSSIBLY FOR CASH. HERE IS WHAT I HAVE FOR TRADE. 1- STERLING R-510 TEST & REACT. 2- RYDERS TROUBLE SHOOTER VOLUMES 1 - 17 AND FEW XTRAS. 3- 3" PILOT TV WITH CAR. CASE. 4- ANSLEL PROJECTION TV. 5- PHILCO PREDICTA (2). 6- STERLING -

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WANTED: CIRCUIT DIAGRAM and/ or service notes for a Silvertone Neutrodyne radio, model H. Has 4-26's, 1-27, 1-71A, 1-80. Proper payment will be made for what is available. CIARDI, 1116 Bank Towers, Scranton, PA 18503.

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WANTED: EARLY 30's Philco chassis and speakers: model 52, 5 tube; model 80, 4 tube ("Philco Jr."). Also, complete Zenith console, model 1000z, chassis 2501, 25 tubes, circa 1935 ("Stratosphere"). Also pre-war E. H. Scott in good condition. J. Smolski, 2641 E. Cannon Dr. Phoenix, Arizona 85028.

WANTED- 130 KC IF transformers dial AK627 Cathedral, Bob Nicholson, 3423 Long, Topeka, KS 66605..

WANTED FOR DISPLAY: Scanning disc television, Patsy Hicken, WCSC Broadcast Museum, 80 Alexander Street, Charleston, S.C. 29402. (803) 723-8371.....

METAL CATACOMB SHIELD OR JUNK CATACOMB FOR RADIOLA 24; METAL RETAINING NUT FOR RADIOLA UZ 1325 HORN. CASH OR TRADE, E. A. HECKLER, 1314 N. SPARKMAN, HARTSELLE, AL 35640.

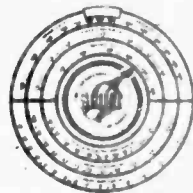
COLORED MIRRORED RADIOS (blue, peach and green) wanted by obsessed collector. I'm also interested in colored mirrored clocks. Can use any unusual items from art deco period, such as chrome radios, etc. Also wanted: Philco Predicta television sets, ccin operated radios. Barbara Gorton, Box 1252, Dayton, OH 45401. (513) 253-5073 evenings.

WANTED: WIRE RECORDERS: Armour, Brush, unusual types only. Also: VLF Signal Simulator, c.1968, pre-1940 TV literature. H. Lyster, AV-SFSU, 1600 Holloway, San Francisco, CA 94132.

WANTED: HALLICRAFTERS, manuals, books, catalogs, advertising items, accessories, parts. G. Barber, P.O. Box 31654, Aurora, CO 80041.

WANTED: CANADIAN COLLECTORS' ATTENTION! CANADIAN GENERAL ELECTRIC, MONTREAL QUEBEC; ANY AND ALL RADIO ADVERTISING AND SERVICING LITERATURE UP TO 1948. I WILL COPY YOUR ORIGINALS, IF AGREEABLE. DARCY BROWNRIGG CHELSEA, QUEBEC, JOX 1NO CANADA

"Wanted:
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OCTOBER

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1980

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6A8	\$5	6B8	\$4	6C8	\$4
6A9	\$7	6B9	\$4	6C9	\$4
6B7	\$4	6B8	\$4	6C7	\$4
6B8	\$4	6B9	\$4	6C8	\$4
6B9	\$4	6C7	\$4	6C8	\$4
6C7	\$4	6C8	\$4	6C9	\$4
6C8	\$4	6C9	\$4	6D6	\$5
6C9	\$4	6D6	\$5	6D7	\$5
6D6	\$5	6D7	\$5	6D8	\$5
6D7	\$5	6D8	\$5	6D9	\$5
6D8	\$5	6D9	\$5	6E5	\$8
6D9	\$5	6E5	\$8	6E6	\$8
6E5	\$8	6E6	\$8	6E7	\$8
6E6	\$8	6E7	\$8	6E8	\$8
6E7	\$8	6E8	\$8	6E9	\$8
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6F5	\$5	6F6	\$6	6F7	\$6
6F6	\$6	6F7	\$6	6F8	\$6
6F7	\$6	6F8	\$6	6F9	\$6
6F8	\$6	6F9	\$6	6G5	\$8
6F9	\$6	6G5	\$8	6G6	\$8
6G5	\$8	6G6	\$8	6G7	\$8
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- (4) When Was That Old Tube Made? by James R. Wilkins
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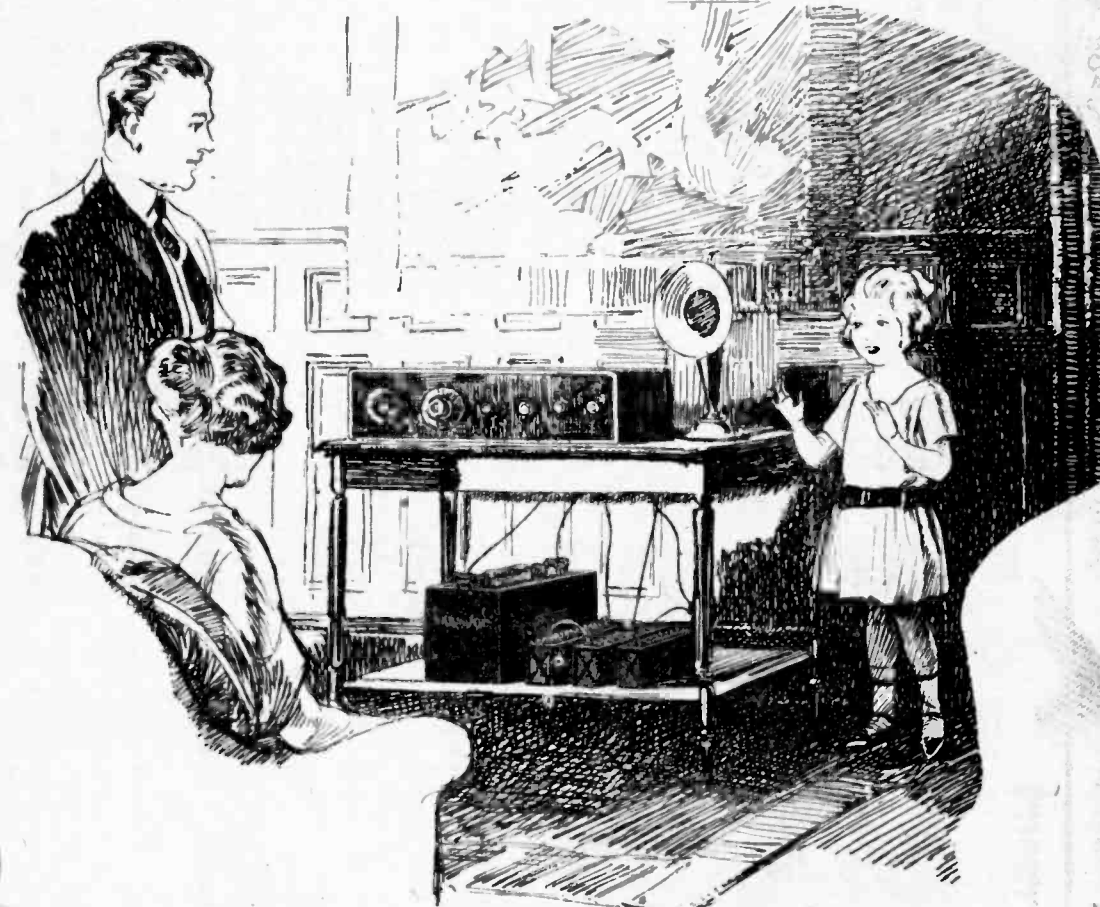
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