



WARCI News

Wisconsin Antique Radio Club, Inc.

Winter, but Happy New Year!

January 2013



Boardwalk Empire, RCA Style, Late 1920's, Atlantic City NJ

Contributed by Bill Engaas

NEXT WARCI MEET:

Sunday, January 20; 7:00 – 11:00 AM,
Doors open 7:00AM

The Richfield Chalet
1271 Highway 175, Hubertus WI.
See Directions on last page.

Features: WARCI Business Meeting, Election of
Officers for 2013, 50-50 Raffle

INSIDE THIS ISSUE...

3 WARCI Headlines – Club News and Doings

4 A Path Forward, MARC's Example,
by Greg Hunolt

6 CLEARCO Crystal Company, by Dale Boyce

11 Ghosts that Talk by Radio,
by Harry Houdini

WARCI, Inc.

THE WISCONSIN ANTIQUE RADIO CLUB, INC. EXISTS TO PRESERVE THE KNOWLEDGE OF RADIO, TELEVISION, AND OTHER RELATED DISCIPLINES. WE HAVE A SPECIAL INTEREST IN THE HISTORY OF RADIO IN WISCONSIN, WISCONSIN RADIO COMPANIES, RADIO STATIONS, ETC. OUR MEMBERS' INTERESTS INCLUDE RADIO, TELEVISION, AUDIO, AND ANTIQUE PHONOGRAPHS.

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WARCI News Editor - Greg Hunolt

WARCI Website - Nick Tillich
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WARCI Information

WARCI is incorporated in the State of Wisconsin.

Annual membership dues are \$15 for each calendar year, January - December. (Allowance is now made for new members joining in July or September.)

Seller's fee at Swap Meets is \$7.00 for members, \$10 for non-members.

The next Swap Meet will be held on January 20, 2013, in doors at the Richfield Chalet, Hubertus WI.

The January swap meet times are 7:00AM - 11:00 AM. Doors open at 7:00AM for set-up.

WARCI News

This newsletter is the official publication of the Wisconsin Antique Radio Club, Inc. It is published four times per year, in January, May, July and September. The WARCI News is free to all paid-up club members.

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Articles or material for the newsletter are most welcome and should be sent to Greg Hunolt, ghunolt@excel.net or N5412 State Hwy 57, Plymouth WI 53073. Include your name, address, phone, and email. PC format (e.g. MS Word) by email is preferred. JPEG for images is preferred. Please contact Greg Hunolt for assistance.

Classified ads up to ¼ page are free to WARCI members

The cut-off date for all newsletter material is about the fifteenth of the month preceding publication of the next newsletter (e.g. April 15, 2013, for the May, 2013 issue).

WARCI Website

www.warci.org

The WARCI website features information about WARCI activities, Wisconsin radio, articles, etc. Contributions are most welcome! Contact our webmaster Nick Tillich, at webmaster@warci.org. Thank you, Nick, for your great work.

Voluntary Member Directory

There is a new feature on the website that lets you create a listing for yourself in a club member list. You can describe your interests in radio, etc., and provide contact information. This capability put in place by NARC has provided some good contacts for WARCI members who are also NARC members and have listed themselves on the NARC site. We encourage you to list yourself on our site - it is purely voluntary.

WARCI Headlines

September Meet and Our Second Auction

We had a large turnout at the meet— the parking area by the Landmark was quite full. As in July there were just 14 sellers 11 members and 3 non-members. One new member joined the club. The 50-50 Raffle netted \$61 for the club. Once again, we enjoyed the excellent pizza cooked and served by Joe Halser and his staff.

The auction went very well, although the room in the Landmark was quite crowded, We had 28 people participate as buyers and/or sellers, up from 24 last year. 9 people consigned a total of 23 lots, and 14 of those lots sold – 61%. Last year 10 people consigned 30 lots, and 15 sold – 50%. We sold 4 donation lots this year, 6 last year. The total selling price of all lots this year was \$963, last year \$1,315. We collected \$19 in bidder card fees and \$135 in lot fees.

Our second WARCI auction was quite small compared to the mature auctions run by ARCI, NARC, MARC, etc., and no bigger than last year. I do think we attracted a bigger crowd this year than last. And once again the radios that we said in the WARCI News would be there, were there, maintaining our credibility.

Thanks to everyone who worked on the auction, including Dale Boyce, Bill Engaas, Dawn Kondrek, Jim Menning, Jim Michaels, Mike Sajdowitz, and Dennis Schrank.

Membership Update

We finished 2012 with 58 paid members, up very nicely from 44 paid members in 2011. It is now time for everyone to pay dues for 2013.

Officer Elections and Business Meeting at our January 20, 2013 Swap Meet

For our January meet we are returning to an old WARCI haunt, the Richfield Chalet in Hubertus. See the last page for directions.

We need for more folks to step forward to run for WARCI officer or board positions at our election during the January meet. Turnover of officers and

board members is very healthy for a club. Consider throwing your hat in the ring for a position that would interest you. We need folks - we did not have a vice-president in 2012. On the other hand, we added two new faces - our secretary and our public relations coordinator.

I strongly believe that either the club president or vice-president should be a Milwaukee area person, since most of our members live in the overall Milwaukee area. For example, a Milwaukee area person would be better able to deal with meeting venue problems (as Bill Engaas did last year and Dale Boyce this year), outreach to other Milwaukee radio or related groups, getting to our meets early enough to help with any questions / problems that might arise, and occasionally holding WARCI board meetings. Travel can at times be a problem with folks outside of the Milwaukee area.

Topics for the business meeting will be a treasurer's report, plans for next year, including any new broadening our base effort (see page 4), next year's auction, and any other topics you wish to discuss.

We'll have a WARCI board meeting afterwards.

Looking ahead a bit— Happy Valentine's Day!



A Path Forward — MARC's Example

By Greg Hunolt

All of the antique radio clubs, including ours, have to face the fact that our future is problematical. Other clubs are seeing a drop off in attendance at their major meets and/or a drop off in paid membership. The main factor seems to be demographic – many folks interested in antique radio are getting older to the point where travel is more of a problem, health is more of a problem, and we are seeing some sad losses.

Our club has been fortunate in the last few years to run counter to the trend – we have increased our membership from about 44 to 58, very good growth from an admittedly small base. On the other hand, our 2012 auction was not a big step forward from 2011 (see the WARCI Headlines page).

There are (at least) two things we need to do – to attract more new younger members, and to broaden our base, while making sure we do as much as we can to draw in antique radio folks in our area. We have begun to work on attracting younger members; Jim Michaels, our PR coordinator, has established a WARCI Facebook page to help us become visible to younger folks where they spend a lot of their time being in touch.

MARC, the Michigan Antique Radio Club, seeing the same problems, has taken a step in the direction of broadening their base. From now on, they will refer to their periodic meets as "Vintage Electronics Expos" to welcome collectors of other interests besides antique radio per se. In his column "Perspectives" in the Fall 2012 issue of the MARC Chronicle, MARC President John Reinicke writes: "We need to expand our horizons and become more inclusive. Radio is, of course, the huge marketplace that provided the genesis for the electronics industry but the history of electronics doesn't stop with radio or even television. Just so much more has occurred and we want to welcome expanded interest. The 'Golden Age' of High Fidelity, the advent of electronic games, the advent of home computers, really sophisticated electronic instrumentation, video and audio recording and so much more has all occurred since World War II. So our events will be billed as "Vintage Electronics Expo" to welcome collectors of other interests, particularly since we have so much in common." In the Winter 2012 issue of the Chronicle, John suggest that the club form 'special interest groups', as they now have informally for Zenith radios and battery sets, for tube audio equipment and possibly transistor radios, hand

held games, calculators, industrial instruments, tape recorders, television, computers, etc.

I suggest that WARCI consider a conscious broadening of its base. It may be a matter of emphasis. Our charter says "The exclusive purpose of this club shall be to preserve the history and enhance the knowledge of radio, television, and other related disciplines." 'Other related disciplines' opens doors. In our newsletter we add "We have a special interest in the history of radio in Wisconsin, Wisconsin radio companies, radio stations, etc. Our members' interests include radio, television, audio, and antique phonographs."

Possibilities would be antique phonographs, telephone / telegraphy, more emphasis on tube audio, more links to amateur radio groups. (It was ironic that at the MARC July 2011 meet they had invited an antique telephone collectors group to meet in conjunction with the antique radio meet. I walked through their flea market room, and got in to an interesting discussion with two members of the telephone group and another antique radio fellow—and it turned out that we were all from Wisconsin.)

We need your ideas; please comment. I will bring this up at the January business meeting; let's see if we can kick off a discussion on this and come up with some first things to do.



RADIO ROOTS
OLD TIME RADIO
TUESDAYS 9:00AM-NOON

WRLR 98.3FM
ROUND LAKE HEIGHTS ILLINOIS

Streaming world wide: wrlr.fm

RICK HAGERTY
PRODUCER-HOST
ricksradioroots@yahoo.com

Editor's Note:

The WARCI News is your newsletter.

Your comments and suggestions for the newsletter are most welcome.

Your contributions of articles or other material are urgently needed. Your help is needed to make the WARCI News a success and to ensure that it covers the full scope of the interests of WARCI members.

If you're not seeing articles on topics you are interested in, **write one.**

You may submit complete articles, but information from which an article can be developed is also welcome.

Don't agonize over format, etc., as I will have to adapt your submission to the newsletter anyhow. Simple text is best. PC format (e.g. MS Word, separate jpegs by email) is preferred, but hardcopy text and photos are accepted.

In this issue we have another in our series on Wisconsin radio companies, this one about the CLEARCO Crystal Company, contributed by Dale Boyce — thank you Dale. The second article is another historical reprint, an article on the use of radio by phony 'mediums' written by Wisconsin's Harry Houdini for Popular Radio in 1922.

We will also cover tube audio and television and other member interests — but we need your contributions of articles or information for articles.

The usual photos from the last meet are missing—a casualty of my computer problem causing this newsletter to be so late. I didn't have any photos in hand and I didn't want to further delay getting the newsletter out to you. If you have some, please send them to me, and I'll put them in the next issue.

Thank you, and see you at the January meet,

- Greg Hunolt, Editor, WARCI News

Renew Your Membership for 2013!

WARCI membership runs January to December, so it is now time for you to renew for 2013!

Please complete the Membership Renewal form that you received in the mail from our secretary Mike Sadjowitz and bring it to the next meet or mail it, with \$15, to Bill Engaas, 18265 W. Thornapple Lane,

WARCI Welcomes!

WARCI welcomes Mark Batten and David Harris as new members, *thank you!* We hope you enjoy being WARCI members.

WARCI Remembers: John Nurse died unexpectedly Saturday, December 8. John was not a member of WARCI, but over many years he often attended our swap meets and some of those in Illinois. He was very knowledgeable and interested in audio and audio tubes. Some of you, I'm sure, had the pleasure of talking with John. (Thanks to Bill Engaas for calling this to our attention.)

Bob Paquette's Microphone Museum



WARCI member Bob Paquette's Microphone Museum features his collection of well over 1,000 different makes and models of microphones as well as related pieces of equipment. The emphasis is on historically important microphones made between 1876 and 1950, and early radios, telephones, and many other communications devices, including an assortment of military gear. Check out Bob's website,

<http://www.sssmilwaukee.com/Microphone%20Museum.html>

There is a very nice 8 minute video taken at Bob's Museum on You-Tube. You can find it easily by googling on "tube tests 23" or the link:

<http://www.youtube.com/watch?v=1MzBQqiHUX0>

Bob always enjoys visitors and will be happy to give a guided tour to individuals or groups. You can call Bob at Select Sound (414) 645-1672 to arrange for your visit. Just ask for Bob Senior. The museum is located on the second floor of Select Sound, 107 E. National Avenue in Milwaukee. Enjoy your visit and allow yourself plenty of time.

CLEARCO Crystal Co. — Crystal Sets Made in Milwaukee

By Dale R. Boyce

Dale is an avid collector well-known to WARCI and no stranger to the pages of the WARCI News. He has a special interest in Wisconsin radio history, and takes great pleasure in ferreting out the story of the small companies that played their roles in Wisconsin radio history. Dale is also a member of several other antique radio organizations including: AWA, ARCI, Northland, MARC, MAARC, OKVRC, etc. and that the Boyce Collection includes electrical and communications technology items from 1855 to present.

Introduction and Sources

The CLEARCO Crystal Company of Milwaukee, Wisconsin and Idaho Springs, Colorado, sold crystals in the mid-1920's and small crystal radio sets, both assembled and kits, as late as the 1950's. This article will first take a quick look at valuable sources for information on crystal radios. Then I will present items from my own collection, and conclude with what Greg Hunolt and I have discovered about the history of the CLEARCO Crystal Company.

My 1973 2nd edition of "Vintage Radio 1897-1929" by Morgan McMahon is getting a bit worn. It is full of wonderful information and images. A close look in the Wireless Detector section on page 167 of this 263 page book shows an image of an envelope/package with the name CLEARCO CRYSTAL. One can find the same image in the 1972 1st edition on page 167 of 240.

As indicated on the book cover, "Vintage Radio" is "Greenwood's Classic Pictorial Album", revised, edited and expanded by Morgan E. McMahon. The full title of the Greenwood book is "A Pictorial Album of Wireless and Radio 1905-1928" by Harold S. Greenwood. The Greenwood book has 225 pages. One will find that page 167 in "Vintage Radio" previously was page 12 in the Greenwood book. It is my understanding that McMahon acquired all of the printing plates/documents that were used for the Greenwood book. He then revised, edited and expanded the materials. The materials were further

edited and expanded as is evident from minor variations on the book covers and quantity of pages from the 1st edition to the 2nd edition and so on... We are all beneficiaries of these works by Greenwood and McMahon.

Additional information about many crystal radios can be found in the books "Crystal Clear Volume 1" and "Crystal Clear Volume 2" both by Maurice L. Sievers. The books include extensive listings of crystals, crystal packages, crystal detectors and crystal sets.

Items in the Boyce Collection

The Boyce Collection includes several CLEARCO CRYSTAL items which have been acquired over the last 25 years from multiple swap meets, auctions and friends including Cathy Evans, the late Bob Evans, and the late Dick Bury.

Figure 1 is a paper envelope/package (2-1/4"x 3-1/2") with a straight mounted type crystal. The crystal is 3/16" diameter x 7/16" high.

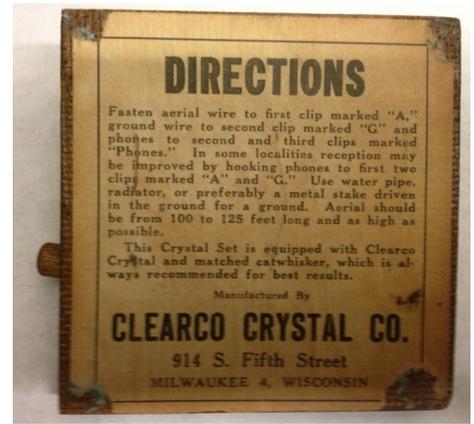
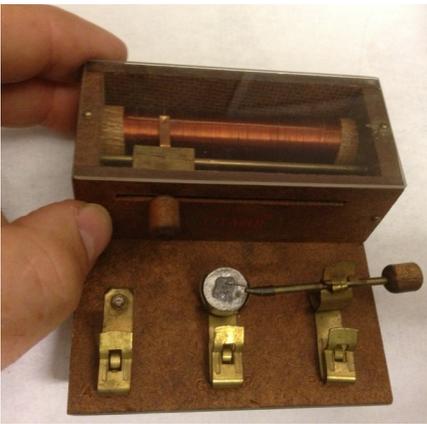
Figure 2 is a paper envelope/package (2-1/4"x 3-1/2") with another straight mounted type crystal. The crystal is 1/2" diameter x 1/4" high.

Figure 3 is a cellophane envelope/package (1-15/16"x 1-15/16") with three CLEARCO Conical Catwhiskers.



Figures 1, 2, and 3 — CLEARCO Crystal & Catwhiskers

CLEARCO- continued on Page 7



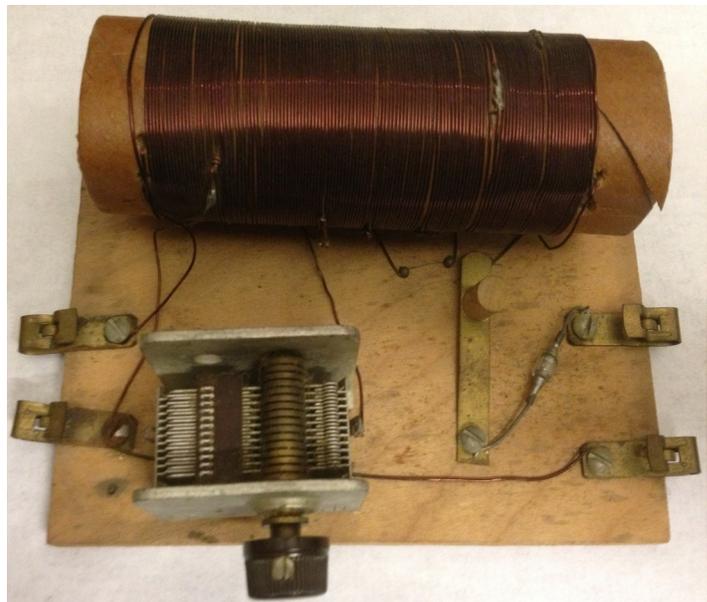
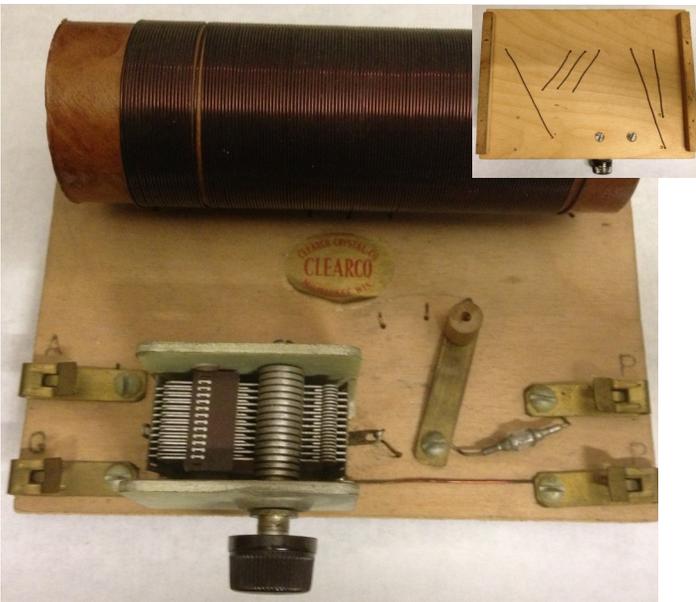
Figures 4, 5, and 6 — A small Milwaukee CLEARCO Crystal Set, its identifying decal, and directions.

Figure 4 (above left) shows a small CLEARCO crystal set which utilizes a cat's whisker and a straight mounted crystal. The oval decal (1-1/8"x3/4") in Figure 5 (above center) can be found on some but not all CLEARCO items. The 1/8" thick fiberboard base is 3-1/2"x3-1/2" square. The fiberboard and wooden raised section with the slide tuner is 1-1/2" high. The clear plastic window at the top of the tuner is 1/8" thick.

Figure 6 (above right) shows the bottom paper label from the CLEARCO Crystal Set. The paper label conceals the wiring. The slight coloration (glue residue) at each corner indicates that this set may have had some small feet at each corner. Mounting feet would have helped to protect the bottom label and wiring from wear.

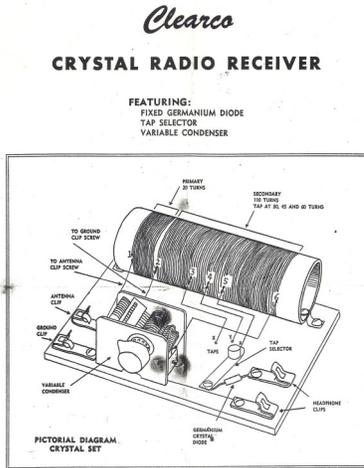
Figures 7 and 8 (inset) show a later CLEARCO crystal set with a fixed-diode type detector. Notice the oval decal. The 1/4" thick plywood base is 6"x4-3/8". This set has 1/4"x1/4" legs along both 4-3/8" edges. Most of the wiring is concealed below the main board (see figure 8). On this set, the letters A, G, P, P are printed on top of the board adjacent to the Fahenstock terminals for Antenna, Ground, Phone, Phone.

Figure 9 shows a CLEARCO crystal set similar to Figure 7 with a fixed-diode type detector but, with slightly different components, component arrangements and no oval decal. The 1/4" thick plywood base is 6"x4-3/8". This set has does not have legs. The wiring is above the board.

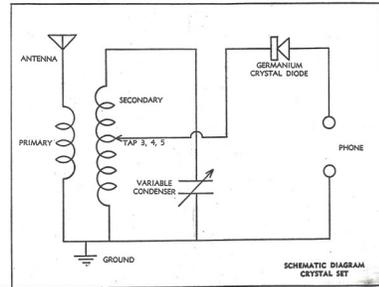


Figures 7 and 8 (inset) - CLEARCO Crystal Set

Figure 9- CLEARCO Crystal Set, above board wiring.



Manufactured by
CLEARCO CRYSTAL CO.
 MILWAUKEE 1, WISCONSIN



- PARTS LIST**
- 1 - 1 1/2" x 5" Coil form.
 - 1 - 57' coil of #22 enameled wire.
 - 1 - Envelope containing: 2 - 1/4" 6-32 machine screws; 2 - 6-32 self-tapping screws; 2 - coil supports; 1 - tap selector knob; 1 - variable condenser knob; 1 - Fahnestock clips; 4 - escutcheon pins.
 - 1 - Germanium crystal.
 - 1 - 1/4" x 6" plywood base.
 - 1 - .265 mmfd single gang variable condenser.
 - 1 - Instruction sheet.
- 55 K 288 COMPLETE KIT**

CLEARCO CRYSTAL CO.
 MILWAUKEE 1, WISCONSIN

INSTRUCTIONS FOR BUILDING THE

INTRODUCTION

This crystal radio receiver is easy to build and operate. It has a specially designed circuit that provides maximum sensitivity. The taps provide maximum selectivity where several stations transmit in a small area. It uses a fixed type germanium diode which needs no adjustment and is always at top efficiency. The use of high quality name brand parts assures long, trouble free operation.

By carefully following the diagrams and instructions, this fine operating set will give long hours of clear and loud headphone reception. At the same time, it will acquaint you with the

fundamentals of radio communication and construction.

Before assembling this kit, study the pictorial and schematic diagrams very carefully. The pictorial diagram shows the location of the parts. Using the pictorial diagram and instructions, the beginner should have no trouble in building the crystal radio receiver. The schematic diagram can then be used to check the assembly and to study receiver principles. If you are beyond the beginner stage, the schematic diagram alone can be used to wire this kit.

ASSEMBLY OF THE COIL

Be careful in winding the coil. Since the coil is the most important part of the receiver, a poorly wound coil will not permit efficient operation of the radio. The windings must be pushed together every few turns so that the coil form (the cardboard cylinder in the kit) cannot be seen through the turns. No kinks should be allowed to form in the wire because they may cause the wire to break while it is being wound on the coil form.

Into the coil form (the cardboard cylinder), stick 2 holes with a sharp ice pick or heavy needle, 1/2 inch from the end and 1/4 inch apart, crosswise, as in #1 in the pictorial diagram.

Cut 19 inches of wire from the supplied coil, and lay it aside. Using the remainder of the full coil, push 3 inches of it through the #1 hole from the outside, and then thread it back from the inside out again. Pull this reasonably tight and bend the 3 inch end out over the top and into the inside of the cylinder, to be out of the way during the winding. Clip it with a paper clip if necessary to keep it down and taut. In pulling, be careful not to break the space between the holes.

Unroll the next 6 feet of the coil of wire and clamp it into a wood or cardboard lined vise. Then, holding the cylinder with the clipped wire end in the hands in a horizontal position,

pull the wire as secured in the vise into the proper winding tension and begin rolling the cylinder toward you, thus slowly winding the wire on to the coil form, much as paper would be wound on a roll. Stop at every few turns and push the winding tightly together. If kinks appear, immediately undo them by reversing the loop which formed them. When the first 6 feet of coil wire is used up, unroll and secure 6 more, etc., repeating these stages to the end. Wind 20 turns.

Now, make a connection loop as in #2 in the pictorial diagram. Scrape or sand 1 inch of insulation from the wire, bend it like a hairpin in the center of the scraping, and twist it once around with a pliers, being very careful not to break the wire. Later, a lead wire will be soldered to this end and to other loops still to be made.

Leaving the space of one wire between the last and the new series of winds, as shown, make 30 more winds, and there, bend another loop or tap. Try to make all of the loops at an even level as shown. Remove 1 inch of insulation on all. Then continue, making 15 more turns, another loop, another 15 turns, a last loop, and then add 50 turns. There should be 6 inches of wire left: if not, wind or unwind until just 6 inches remain. At the end of the wind, stick 2 more holes through the coil form with the ice pick and lead the end wire into one and out of

CLEARCO CRYSTAL RADIO RECEIVER

the other, as shown. See that the winding is tight and then bend the end out and into the inside of the cylinder to be out of the way.

Cut the 19 inch length that was first set aside into 3 pieces 3 inches long and one of 10 inches. Remove insulation from both ends of each wire. Solder a 3 inch length to each tap, marked 3,

4, and 5 in the diagram. Solder the 10 inch piece to tap #2.

Drill or punch a hole at each end of the coil just big enough for the machine screws. Be sure not to damage the windings. Mount the coil support legs on the coil form using the 1/4" long machine screws and nuts.

LAYOUT OF THE BASE

Place all parts on the base. Refer to the pictorial diagram. Mark the holes with a pencil. Be sure the coil does not extend over the back of the base and that the parts are evenly spaced. This will assure a workman-like job. Drill 3/32 inch holes for the self-tapping screws. (Holes

should be smaller than the screws.) Drill two 3/16 inch holes through the base for the 3/8 inch machine screws that fit into the variable condenser. Countersink these holes so that the screw heads do not extend below the board.

ASSEMBLY OF THE PARTS

Screw the coil and the Fahnestock clips to the base. Remove the insulation from the end of the wire that comes from #1 on the pictorial diagram and fasten it to the antenna clip screw. Remove 4 inches of insulation from the middle of the 10 inch wire that leads from #2 on the coil and wind it once around the ground tap screw, then lead it to and around the variable condenser machine screw, and finally across to the front headphone clip screw. Good contact must thus be made with the ground of the variable condenser, since this is very important to the operation of the radio crystal receiver. Therefore, check this step.

Drive the brass escutcheon nails into the base

to form an arc at X, Y, and Z. Draw the arc with a compass, using the pivot point of the tap selector as the center, and divide the arc equally. Turn the end of #3 tap lead around the X nail, and drive the latter down tightly into the base to hold the wire. Do the same for tap wire #4 to Y, and #5 to Z. Mount the germanium crystal diode lead to the tap selector pivot screw, and its other end to the second headphone clip screw. Bend the tap selector slightly for tight contact with X, Y, and Z. Now, mount the variable condenser.

Remove the insulation from the end of the wire from tap #6 and solder it to the tab on the right side of the variable condenser, as shown.

OPERATING INSTRUCTIONS

To obtain the best results, a good antenna, a good ground and a good set of headphones must be used. The headphones should be at least 1000 ohms. The higher the resistance of the headphones, the clearer the reception will be. An antenna should be 50 to 100 feet in length and as high as possible. It should have glass or porcelain insulators at the ends. An insulated lead-in wire is best for it reduces the chances of grounding the radio signal. If a long aerial

cannot be put up, the same results can be obtained by passing the aerial wire back and forth so that the wires are parallel to each other.

One of the best grounds is a steel bar driven several feet into moist earth. However if this is impractical, the ground wire can be attached to a waterpipe, radiator, or hot air register. Remember to remove the paint and clamp the wire so that the best contact is obtained.

Figures 10 - 13 — Direction Sheets for CLEARCO Crystal Receiver w/ Germanium Diode

Figures 10 - 13 show a copy of the four page instructions for the crystal set shown in Figure 9. The

address for CLEARCO on the instruction sheet is P. O. Box 1857, Milwaukee 1, Wisconsin.

The address from an image in Crystal Clear Volume 1 page 121, Figure 220 appears to be 314 S. 5th Street, Milwaukee, WI. The address on the bottom of the CLEARCO crystal set shown in Figure 4 — 6 above is clearly 914 S. Fifth Street, Milwaukee 4, Wisconsin.

Crystal Clear Volume 1 page 121, figure 220 shows images of two board mounted crystal detectors. One has the CLEARCO oval label. The other one has a box with CLEARCO information. Volume 1, page 153, Figure 338 also shows an envelope/package for a straight mounted crystal. This appears to be the same as the image in Figure 1 above.

Crystal Clear Volume 2, page 108, Figure 155 shows an image of the instruction sheet for a CLEARCO Fixed Crystal Set that is different from the sets shown in this article.

Although both books, Crystal Clear Volumes 1 and 2 include extensive listings of crystals, crystal packages, crystal detectors and crystal sets, images and information about the crystal radio sets in Figures 4 — 9 do not appear in the Siever's books.

One of the listings in Volume 1 indicates a date of 1925 for the straight and flange mount type crystals.

History of the CLEARCO Crystal Company

The CLEARCO Crystal Company is associated with two locations, Milwaukee, Wisconsin and Idaho Springs, Colorado.

The CLEARCO listing in "Crystal Clear" Volume 1 on page 253 indicates the location of the manufacturer as Idaho Springs, Colorado and Milwaukee, Wisconsin, in 1925 – one company operating at two locations. A radio collector in Fort Collins, Colorado, in a June 2011 post on the Radio Forum reported that "More investigation led to references describing the "Clearco" brand "Steel Galena Radio Crystal" of Milwaukee, WI & Idaho Springs, CO! These appeared in ads as early as 1925 at fifteen cents each to thirty cents each in 1946, the last ad found." No source was cited for the ads with a Colorado address, or possibly showing both a Colorado and a Wisconsin address.

The CLEARCO Crystal Company was listed as located in Idaho Springs, Colorado, in the Radio Trade Directory, published by McGraw-Hill in August 1925,

(page 49, under Crystals, Mounted) and the Radio Trade Catalog, McGraw-Hill, November 1926 (page 151, under Crystals, Detector). CLEARCO was not listed as a maker of crystal sets.

The September, 1925, issue of Radio News, awarded a Radio News Laboratories Certificate of Merit for "Clearco Crystal", submitted by Clearco Crystal Co., Idaho Springs, Colorado, noting that "these crystals function very well in radio receivers, being sensitive and uniform in operation."

Howe crystal sets were manufactured by the Howe Auto Products Company, 120 N Green St., Chicago Illinois in the period 1925-1927 according to Sievers. At least some of these sets used CLEARCO crystals; see figure 14 below.



Figure 14 — Howe Receiver uses CLEARCO Crystal

Howe was listed under 'Sets Crystal' in the August 1925 Radio Trade Directory (page 116) and the November 1926 Radio Trade Catalog, (page 181). Radio News in its April, 1925 issue (page 1907) awarded Howe its Radio News Laboratories Apparatus Award Certificate for the Howe Radio Receiver crystal set.

The tag on the CLEARCO crystal set shown in figures 4 – 6 shows a Milwaukee address for the CLEARCO Crystal Company, 914 S. Fifth Street, Milwaukee 4, Wisconsin. The style of the crystal, catwhisker, and coil suggest that the set was made in the 1925-27 time-frame. The tag on the CLEARCO conical catwhiskers package shows and address of CLEARCO Crystal Co., Milwaukee 1, Wisconsin. These look like the same catswhisker used on the crystal set shown in figure 4 – 6, see especially figure 5.

The CLEARCO crystal set instructions in "Crystal Clear" volume 2, page 108, show a fixed crystal, and the

CLEARCO - continued from Page 9

address of the CLEARCO Crystal Company as Milwaukee 1, Wisconsin.

The next references (at least as found so far) to the CLEARCO Crystal Company showed it as located in Milwaukee, Wisconsin, in the 1940's and 1950's.

CLEARCO fixed crystals, crystal detectors mounted on Masonite bases, and catwhiskers were advertised in the November, 1946 issue of Boys Life, see figure 15 below. The address given for the CLEARCO Crystal Company was P.O. Box 1857, Milwaukee 1, Wisconsin.

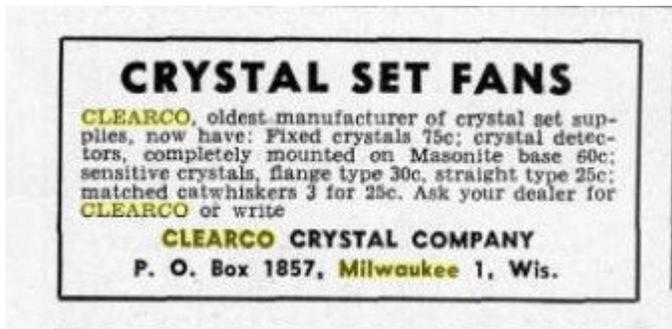


Figure 15 — CLEARCO Ad, Boys Life, November 1946

There were small one sentence CLEARCO ads in Popular Mechanics, May 1953, Popular Science, September, 1953 and October 1954, all with a Box 1857 Milwaukee 1, Wisconsin address for the CLEARCO crystal company, for a crystal set kit 1.50, assembled 1.75. The same ad appeared in Popular Science September 1953 and October 1954.

The instruction booklet shown in figures 10 – 13 shows a crystal set using a germanium diode for its fixed crystal detector. This suggests a 1950's time frame for the set the booklet describes. The CLEARCO crystal set shown in figure 9 has a germanium diode for its detector. That, and the design of the tuning condenser, suggest a 1950's time frame for this set. The instruction booklet may have been for this set, and this set may be the one advertised in Popular Mechanics and Popular Science in 1953-4.

It appears that CLEARCO began in 1925 producing crystals, crystal detectors, catwhiskers, and a crystal set, operating out of two locations, Idaho Springs, Colorado, and Milwaukee, Wisconsin. The company continued into the 1950's selling crystals and crystal sets from its Milwaukee location. It was always a small company, for example not appearing in any Milwaukee city directories.

More research about this company and its products continues.

Some CLEARCO crystal items have been offered thru Ebay, but I have not participated in those transactions.

Additional CLEARCO Crystal Company items, advertising, literature and related information would be appreciated by the author. Corrections and comments to this article would also be most welcome.

I wish to express my thanks to Greg Hunolt for his research, comments and editorial work on this article.

References

1. "Vintage Radio 1897-1929" by Morgan McMahon. 1st, 2nd and 3rd editions.
2. "A Pictorial Album of Wireless and radio 1905-1928" by Harold S. Greenwood
3. "Crystal Clear Volume 1", Maurice L. Sievers, Sonoram, 1992.
4. "Crystal Clear Volume 2", Maurice L. Sievers, Sonoram, 1995.
5. CLEARCO on the 'Radio Museum' website: http://www.radiomuseum.org/dsp_hersteller_detail.cfm?company_id=9697
6. Radio Trade Directory, McGraw-Hill, August 1925.
7. Radio Trade Catalog, McGraw-Hill, November 1926.
8. Radio News, April 1925 and September 1925.

Discovery World of Milwaukee – "Tesla Lives!" Show

Filling the stage with 20 million volts of roaring, crackling, sizzling electricity, a continuing live theater show **TESLA LIVES!** delivers an energetic and sometimes humorous glimpse into how our modern world was designed by the godfather of the 21st century, Nikola Tesla. Through Discovery World's latest theater production, audiences will meet the genius who invented the modern world and find the genius within themselves.

See www.teslalives.com for information.

Ghosts that Talk by Radio

By Harry Houdini, taken from Popular Radio, October 1922.

Harry Houdini, a Wisconsin native, in 1922 was President of the Society of American Magicians, an organization that kept secret the tricks of its profession but exposed tricks used for dishonest purposes. This article was an expose of some of the "Spiritualistic Phenomena" perpetrated by fraudulent mediums for getting money from their credulous followers.

Magicians have used the radio telephone in their performances for several years – long before radio was generally known to the public. I am not at all surprised that the radio is being used by fraudulent mediums to convince their patrons that they are in direct communication with the dead.

I regret profoundly to admit that in over thirty years of investigation, during which time I have attended hundreds of seances with a mind ready and eager to discover some sign from those who have gone to the Great Beyond, I have never witnessed anything that I could accept as evidence that there was life beyond the grave. All the "evidence" that I have seen is merely phenomena that are well known to the average magician. What are "wonders" to the average human being are merely everyday tests that are familiar in the profession. In performing some of these experiments I have myself seen men and women faint away, overcome with what they thought were supernatural occurrences. As a matter of fact, I was merely performing more or less common tricks.

Radio has given the "spirit business" an enormous boost in the last few years. While the rest of us have just been getting acquainted with it, many of the so-called psychics have been reaping a harvest.

I love an honest-to-goodness trick that mystifies and entertains me. It is my business to know them all and try to perform them better than other magicians. As President of the Society of Magicians, numbering over 1,000 members, it is my duty to hold such tricks; indeed we have all taken an oath not to reveal them. But concerning the deceptions of fraud mediums – that is another matter. I regard it as the duty of every thinking man, whether or not he believes in spirits, whether or not he believes in God, to expose imposters who profane the concepts of future life merely to extort money from believing souls who in their ignorance misplace their confidence.

A total of \$300,000 was extorted by one clever medium from Luther B. Marsh (the law partner of

Daniel Webster) in 1888 by the use of a primitive radiophone. Her name was Ann O'Delia Dis Debar, and she made a spectacular career for herself until she was exposed in court by Alexander Hermann and Carl Hertz.

There have been countless other swindles through the invention which has been practically unknown up to the present time. The device was little more than ordinary telephone by induction in most cases, but in the more intricate deceptions the principles of modern wireless telephony were employed.

Kettles, Buddhas, and Trumpets – Telephone by Induction

I have the largest library of magic in the world. It was while trying to buy books that I read of the auction of a well-known medium in New York. ... I was shown a kettle, and as I knew that the kettle was used by mystifiers, I bought it.

The device was a "talking kettle." When the proper "spiritual connections" had been established by the medium, through her facial and bodily contortions in the approved "psychic manner", the kettle became most intelligent. Anyone in the room could ask the kettle a question and receive an intelligent answer at once by placing the spout of the kettle to his ear. The answer would come in a whisper, a most ghostly whisper, such as is familiar to those who have attended spiritualistic seances.

That same kettle is now installed in my home and it talks to my friends in the same kind of whisper with absolutely no change except the replacement of the battery. Sane men of prominence in public life, men who should by all means suspect me of trickery, have actually been deluded by this simple device. There is no doubt in my mind that I could cause a great many people to believe that spirits speak through the medium of the kettle; in this way I could merchandise spirit messages for substantial sums of money. The kettle can be handled and carried about the room while it is whispering, turned upside down and otherwise explored. Sometimes my friends ask

Houdini - continued on Page 12

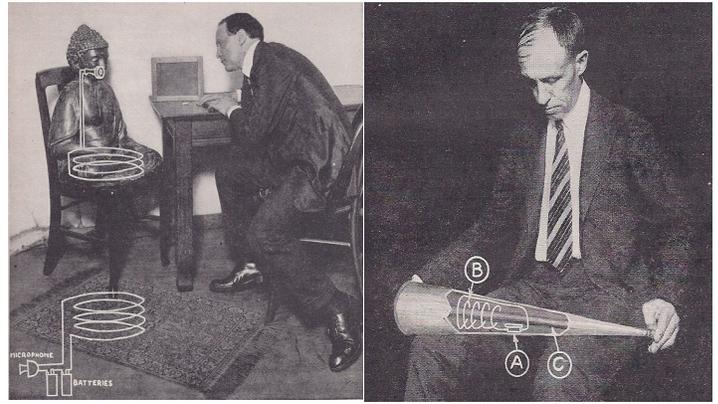
questions in such a low tone that I cannot hear them; they are, accordingly, completely converted to the belief in spirits when the kettle answers. This "spirit talking" kettle has been used by mediums for years; it is the invention of David Abbott, who devised it for purposes of entertainment only.



Figures 1 and 2 — Harry Houdini demonstrates the confederate's transmitter (left) and the psychic's kettle (right) with hidden receiving coil and telephone receiver.

[See figures 1 and 2 above. The secret of the kettle lay in the radio receiving apparatus, including a coiled aerial, concealed inside it. The medium who operates the kettle or similar radio device must have a confederate in an adjoining room. The confederate hears every question that is asked through a sensitive microphone concealed in the room where the seance is held, and makes his replies by radio. The transmitting wireless instruments are placed in the room with the confederate, but the transmitting antenna is concealed in a rug beneath the kettle. This makes it necessary for the radio waves to travel only a few feet to reach the receiver in the kettle, so that not much power is required for transmitting. With modern improvements in radio, the kettle may be carried to any part of the room, and with the sensitive microphones they are making today the slightest whisper can be heard by the confederate, who may be elsewhere in the building.]

This radio telephone trick is performed in many ways. Statues of Buddha are among the popular bits of property employed by mediums (see figure 3); they are made to answer questions as glibly as hollow balls and trumpets (see figure 4). It is interesting to note that as far back as 1784 mediums were using various means of transmitting the voice for mysterious effects. Radio has vastly increased



Figures 3 and 4 — The talking Buddha and Trumpet. The voice of the medium is transmitted to the confederate in another room by the ordinary microphone. The confederate's reply is transmitted into another microphone that is connected with a transmitting coil concealed in a rug (or other object). This energy is collected by the receiving coil in the statue and is converted into sound waves by the telephone receiver concealed in the statue's head or the trumpet.

their facilities.

Perhaps you who are reading this article may attend the seance of a medium as clever as the woman who became nationally famous as a result of her work one evening in a western city. While she was in the midst of her communion with the shades of those present, she stopped short. "I see a man murdered", she exclaimed. She described a violent death scene, giving the name of the man and the address in the city where he was actually murdered a few minutes before she received the "spirit message". The newspapers confirmed her statements and later spread her fame throughout the country. From that time on people paid ridiculous prices for her services – until she was exposed.

The secret of her spiritualistic demonstration was simple. A radio antenna in the sole of her shoe received impulses from a transmitting antenna in the rug upon which she stood, and conveyed them to a sensitive headphone hidden in a large bouquet of flowers on her shoulder. A reporter had telephoned the news of the murder to a confederate behind the scenes, who transmitted it by radio telephone. The receiver concealed in the flowers was not loud enough for the audience to hear, but when the medium leaned her head upon the flowers she could hear it distinctly.

Her feat was a blow she had been aiming at skeptics

for some time. She had placed her reporters at police stations, hospitals, and newspaper offices to wait for the news of a death by violence which would receive space in the papers.

You understand this particular type of medium now, and are sure you will not be fooled – but suppose you meet the statistician-medium? She wears a phone over one ear and a complete aerial and receiving set is concealed beneath a heavy wig, or it is concealed in her hair. She stands under a chandelier which hides the transmitting antenna, or perhaps walks near a picture from which the radio waves issue. If she is a good radio engineer, she may have a set so sensitive that she can place her transmitting antenna in another room. See Figure 5 below. Your name rolls off her tongue as soon as you enter. She tells you all about yourself, she seems to know as much about you as your intimate friends. "Your mother will be here shortly," she remarks, casually, although you had not told her your mother was dead and that she was the one you wished most to be near.

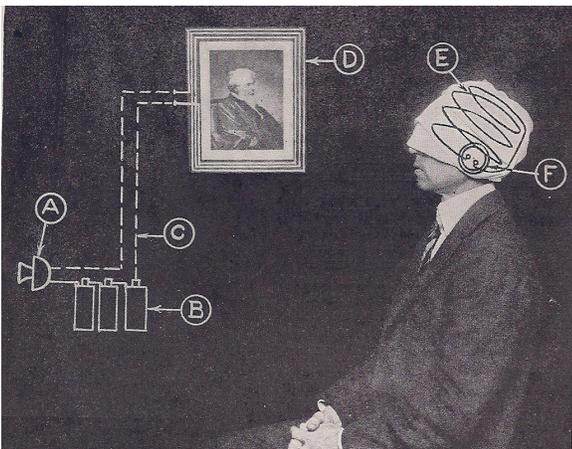


Figure 5 - Getting the Picture. In Communion with the "Spirits" – Planted in Another Room. Still another variation of the inductive radio trick. (A) is the microphone into which the distant confederate talks. (B) are the batteries that furnish current over the concealed wires (C). (D) is the transmitting coil concealed in a picture frame which transmits the energy to (E), the receiving coils that are connected to (F) the telephone receiver over the medium's ears.

Many a man has fallen victim of such mediums, for he had no way of knowing that confederates had looked up his history while he was waiting for the interview, and telephoned it via radio. The medium offers proof that he or she has not left the room to

receive information, and thereby he gains a few more gullible customers for his illicit traffic.

Aboard the *Imperator* and Conclusion

A few years ago, while going to Europe on the *Imperator*, I was asked to entertain with an informal seance. I had for my guests Theodore Roosevelt, Victor Herbert, and other prominent men. Roosevelt wanted to know if I could tell him where he spent his last Christmas day. I had a slate with a "spiritual" covering, and in a few moments, with the slate apparently before their eyes continuously, a map appeared upon it, made with a dozen colors of chalk. It indicated the exact spot where he had been on the "River of Doubt" and was a duplicate of the map he intended soon to publish in a book. The name of W. T. Stead, the English writer lost on the *Titanic*, was signed below the map; it was recognized as Stead's own signature. I had never seen the map and I was unacquainted with the signature.

"Is that really the spirit writing?" Roosevelt asked with deep concern. I'm sure I could have won his confidence by this slight test. But I replied: "No, I am simply a mysterious entertainer. Everything I do can be explained by natural means as illusions."

When it is so easy to deceive a highly developed mind, it is easier to fool ordinary people, and especially those who are anxious to believe. In many instances self-hypnotism is the secret. The medium suggests things, catches the mind off guard, and the moment after it has been surprised he follows up with something else which carries the intelligence along even against the will.

Radio at present is the greatest aid to the fraud mediums, and they are sure to take advantage of every new development. I hope that spirits will talk to us through radio instruments some day. but I will prefer to hear such messages in a scientist's laboratory rather than through the presentations of unscrupulous mediums.

If there are mediums who are not fraudulent, I have yet to see them.

[In a similar follow-up article in Popular Radio, January 1927, E. E. Free wrote that "It is probably too much to hope that the public can ever be persuaded to cease resorting to practitioners of occult foolery for answers to their questions as to the future or their own characters and capabilities. ... It is no wonder that radio is preempted by fortune

tellers and worse. But radio is accomplishing, on the other hand, a great work of popular education. It is teaching more and more people in each community the essential methods and viewpoints of science, Possibly it is radio that is destined to drive superstition from the world."]

Another note from 1922: "The first application of the principles of radio to spiritualistic manifestations was in 1852, when Jonathan Koons, a farmer of Dover Village, Ohio, installed a "spirit machine" described as a "crude structure of zinc and copper for localizing and collecting the magnetic aura".

A brief biography of Harry Houdini, from <http://www.thegreatharryhoudini.com/> :

Harry Houdini was born on March 24, 1874 in Budapest, Hungary, with the name of Ehrich Weisz. He was one of six children and the son of Rabbi Mayer Weisz and his second wife, Cecilia Steiner. In 1876, Mayer Weisz immigrated to the United States with the dream of a better life. He found work as a rabbi and changed his last name to Weiss. In 1876, the remainder of the family joined him in the United States.

The family moved to Milwaukee when Ehrich was eight years old. During his early years, Ehrich sold newspapers and shined shoes to help support the family. On October 28, 1883, nine year old Ehrich made his first appearance on stage, performing a trapeze act. He billed himself, "Ehrich, the Prince of the Air." At 12, Ehrich hopped a freight car and ran away from home. A year later he returned to New York and continued to help support his family by working as a messenger, necktie cutter, and photography assistant.

Nothing is known of his year away from his family.

About this time, Ehrich and his brother Theo began to pursue an interest in magic. As a stage name, Ehrich Weiss became Harry Houdini by adding an 'i' to the last name of his idol, French magician Robert Houdin. Harry is simply an Americanized version of his nickname, Ehrie. At 17, Ehrich, now known as Harry Houdini, left his family to pursue his magic career. By the age of twenty, Harry had been performing small acts throughout New York. He soon married and joined a circus where he began to develop and perfect his escape tricks.

Through the years, Houdini gained fame after

repeatedly escaping from police handcuffs and jails. Harry was even given certificates from various wardens for escaping from their prisons. After making his name in America, Harry toured Europe, where he expanded his repertoire by escaping from straitjackets and coffins. Eventually, Harry was able to accomplish his dream of having a full show dedicated to the performance of his magic.

In his later years, Harry took his talent to the film arena, where he both acted and started his own film laboratory called The Film Development Corporation. Years later, Harry would receive a star on the Hollywood Walk of Fame. In addition, Harry showed interest in the field of aviation and was the first person to ever fly over Australian soil.

In the 1920s, Harry became interested in the occult, specifically in debunking mediums and psychics. His training in magic helped him expose frauds that scientists and academics could not. He chronicled his time investigating the occult in his book, which was titled *A Magician Among the Spirits*.

In 1926 Houdini died as a result of a ruptured appendix, after suffering a blow to the abdomen by university student J. Gordon Whitehead. Houdini refused to seek medical help and continued to travel, eventually succumbing to peritonitis on October 24, 1926 at the age of 52.



WARCI Radio Services

We now have a list of WARCI members who would be willing to provide repair / restoration services, advice or research for folks who contact WARCI looking for help. If you would like to be added to the list, please let me (Greg) or one of the Board members know.

Name	Email	Telephone	Service Available
Dwight Church	(none)	414-545-6972	Radio repair – electronics only.
Bill Engaas	craftyradio@earthlink.net	262-786-8183	Speaker Repair.
Ralph Larsen	radoralph@hotmail.com	414-278-7981	Repair, including Television.
Mike Lewis	deepheart@att.net	608-835-7193	Repair, restoration, training.
Ben Bensaid	Ben@badgerconsignment.com	262-581-5453	Repair and restoration.
Greg Hunolt	ghunolt@excel.net	920-893-0422	Research, especially on 1920's radios.



Badger Consignment

eBay Power-Seller

Turn your collection into profit-making treasures!

Badger Consignment is an eBay consignment dealer with 12 yrs. experience specializing in high end antique tube radios and hi-fi tube audio components (i.e. tube amps, preamps, receivers, tuners, and much more).

If you have items you would like sold or repaired/restored call WARCI member Ben Bensaid at (262)-581-5453, Ben@badgerconsignment.com or visit our website at: www.badgerconsignment.com

News from the Neighboring Clubs

ARCI

Antique Radio Club of Illinois
www.antique-radios.org

Next ARCI Event - February 10, 2013

American Legion Hall
570 South Gary Avenue
Carol Stream, Illinois

7AM-11AM Indoor Swap Meet ,
People's Choice Contest, Donation Auction
50-50 Cash Drawing Raffle

Boy Scout Pancake Breakfast / Free Coffee, Juice,
and Cookies.

See the ARCI website for info and directions.

MRAC & MAARS

Milwaukee Radio Amateur's Club and
Milwaukee Area Amateur Radio
Society

www.w9rh.org

Mid-Winter Interclub Swapfest

Saturday, February 16, 2013

Large Indoor Swapfest, with Ample Onsite Parking

12560 W. Townsend Street, Brookfield WI
Grounds open 6:00AM to 1:00PM
Swap Meet Runs from 8:00AM to 12:00 Noon.

WARCI Needs You!

If you would like to become more active in WARCI, please step up! Organizations like WARCI depend upon volunteers for their success. Areas where you can help include:

Contribute newsletter articles or information from which an article can be written.

Contribute items for the WARCI website and Facebook page - such as photos of your Wisconsin-made radios to add to our gallery.

Give us your ideas on how we can make WARCI better for you!

Some Flea Markets!

Cedarburg Maxwell Street Days

May 26
July 14
September 1
October 6

Elkhorn Antique Flea Market

May 19
June 30
August 11
September 29

Odd Bits

Send in your odd story about strange doings in the world of radio collecting, or weird items from old radio magazines.

Classified Ads

WANTED: All things Hallicrafters! Receivers, transmitters, accessories, television sets, test equipment, signs, books, etc. Also Silver-Marshall (1933-34) and Echophone.
Stan Broome, 108 East Main street, Sun Prairie, WI 53590, 608-520-6290.

HELP NEEDED: Would like to contact owners of 1920's battery sets, literature, and equipment made by Globe Electric Company of Milwaukee, WI, to survey existing model types and variations for development of a company history. All responses will be kept confidential. Thanks.
Glenn Trischan, P.O. Box 240022, Milwaukee, WI 53224. E-mail: gnets142@att.net.

WANTED: Any set made in Plymouth, WI, by the Plymouth Radio and Phonograph Co., and Arlington, Alkire, or other sets made by the Wells Manufacturing Co. of Fond du Lac, WI. Also, I am looking for a Kennedy 525 Amplifier! Greg Hunolt, N5412 State Hwy 57, Plymouth, WI 53073, Email ghunolt@excel.net or 920-893-0422.

TRAINING & SERVICE: Michael Lewis -- Radio Restoration Education & Consultation

I'm available to refurbish (90 day guarantee) or fully restore (1 year guarantee) your antique radios. Estimates can usually be provided in 2-3 weeks from the time you drop off your set at my shop in rural Oregon, WI (a bit SW of Madison). The cost for an estimate is \$25, which can be applied towards a final bill if you hire me to work on your radio. Full restoration includes testing all tubes, capacitors, and resistors, with replacement as needed. Power supplies are modified to operate safely at 120 VAC. Chassis are dusted off, variable capacitors are flushed with residueless cleaner, and switches & pots are treated with contact cleaner. Moving parts are lubricated. Sets are aligned with digital RF generators, tested for proper operation, and "burned in" to reveal any intermittent problems.

I have over 30 years' experience in electronically restoring antique radios (I don't restore radio cabinets). For most of this time I've also taught others how to do radio restoration. I can be hired for 4- or 8-hr. blocks of bench time. You will have access to DMMs, digital audio and RF generators, capacitor and inductor analyzers, power supplies, and much other test equipment. I stock 1/4, 1/2, 1, 2, 5, and 10W resistors. Capacitor stock includes 75 values of mylars; micas & ceramics; electrolytics from 25 WVDC to 450 WVDC. Tubes are available to my students, as well as technical literature including Rider, Beitman, and Gernsback manuals, factory manuals, and Sams Photofacts. Whether you've never soldered before, or regularly restore radios & are stuck on a "tough dog," chances are I can help.

Michael Lewis, 6070 County Road D, Oregon, WI 53575, Phone: 608-835-7193, Email: deepheart@att.net

WANTED: DeForest Plug-In Butterfly Coils - Terry Hanney, 414-545-6425

WANTED: Sylvania lamps NE-23-N5A1-5AB with starting voltage 60-90 volts, maintaining voltage 59 volts, current 0.03 mA. Tom Palmer 262-789-7177

Remember that classified ads up to about ¼ page are free to WARCI members.

The cut-off date for all newsletter material is about the 15th of the month preceding publication of the next newsletter (e.g. April 15, 2013 for the May 2013 issue). Send ads by email or letter to Greg Hunolt, WARCI News, at ghunolt@excel.net or N5412 State Hwy 57, Plymouth WI, 53073.

the Wisconsin Antique Radio Club

Will hold a winter swap meet
on Sunday, January 20, 2013
from 7:00 AM to 11:00 AM



NOTE



NEW LOCATION

for this meet only

The Richfield Chalet

Located at 1271 Highway 175, Hubertus

Directions will be available on our website
and in the January newsletter. The 50/50 raf-
fle will be held as usual. Be sure to be there!!

www.warci.org

Directions to Richfield Chalet:

On I-43, coming from north or south of Milwaukee, get off at the Mequon Road, State Hwy 167, exit and go west.

Follow it through Germantown. After Germantown there is a fork, with Mequon road going straight ahead and Lannon road bearing left. Keep going straight on Mequon road past Hwy 41-45.

About a mile west of 41-45 the road will end at state Hwy 175 (Appleton avenue). (If you did bear left on Lannon you will still come to 175.)

Turn right to go north on 175.

The Richmond Chalet is on the left, about a mile north. Just north of the chalet is Freistadt road - if you get to that intersection, you've just missed the chalet, turn around and it will be on your right just a bit down the road.

You can find all of this on MapQuest - I could not figure out how to copy off the map from MapQuest to put it here.