

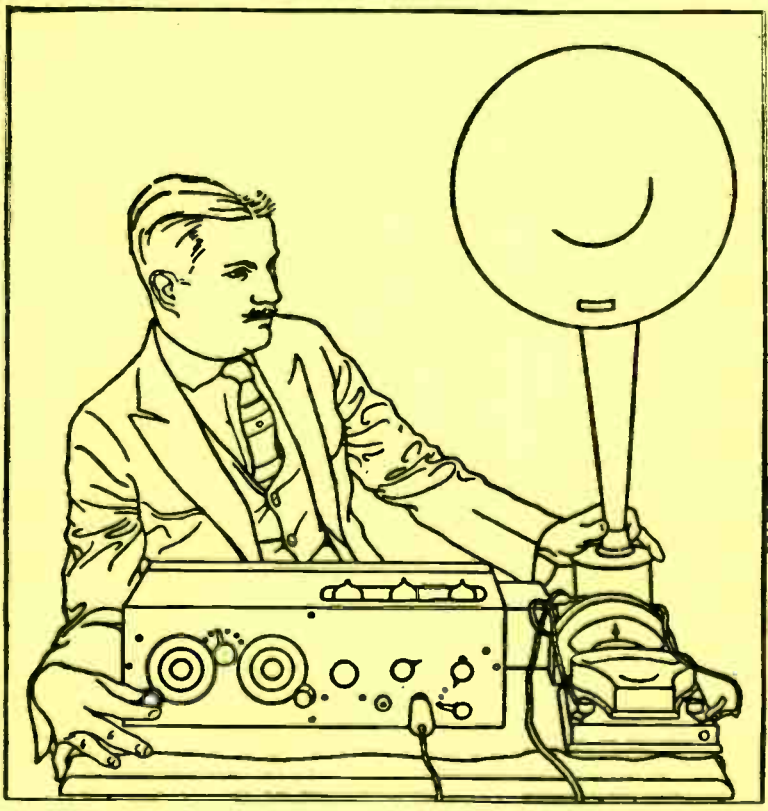
Clemans, G.B.
B. G., Ohio

Indiana Historical Radio Society BULLETIN

Vol. 11

April 1982

No. 1



WHO IS THE FAMOUS RADIO INVENTOR ?



OFFICERS

President * * * * * Frank Heathcote
1235 North 3rd St., Logansport, IN 46947

Vice President * * * * * Robert Shuck
10512 Winston Ave., Indianapolis, IN 46256

Secretary * * * * * Jim Fred
R1, Box 41, Culter, IN 46920

Treasurer * * * * * Marshall Howenstein
2741 North Salisbury, West Lafayette, IN 47906

Editor * * * * * Fred Prohl
7257 Murphy Dr., Indianapolis, IN 46256

Historian Ed Taylor
245 N Oakland Ave., Indianapolis, IN 46201

FOR SOCIETY INFORMATION WRITE TO:

Vice President - For legal matters of the I H R S.

Secretary - For general correspondence and membership applications.

Treasurer - For membership payments and address changes. (1982 I H R S membership dues remain \$6.00.)

Historian - For history of the I H R S and for donations of material for the Society Scrapbook.

Please use a Self Addressed Stamped Envelope when requesting information.

Reproduction of this Bulletin or its contents is prohibited unless authorized by the Indiana Historical Radio Society.

I H R S MEETING SCHEDULE - 1982

APRIL 17, 1982 - AUBURN, INDIANA
(See the center pages of this Bulletin.)

* * * * *

JUNE 19, 1982 - LOGANSPORT, INDIANA - Riverside
Park Pavillion. 10:00 AM to 4:00 PM.
Plenty of SWAP N' SELL space from tables in the
pavillion. This is a great place for the fam-
ily so bring them along and a dish to pass.
Our hosts will be Mr. and Mrs. Frank Heathcote.

* * * * *

AUGUST 7, 1982 - A joint meeting with the Antique
Radio Club Of Illinois, The Indiana Historical
Radio Society and The Mid-America Antique Radio
Club at ELGIN, ILLINOIS. The program will
include an all day Swap-Sell, several tech
sessions, a Radio Contest with seven classes,
a tour of Ralph Muchow's fantastic Museum and
an evening banquet.

The meeting will be held at the Holiday Inn,
345 River Bluff Road, Elgin Illinois. (Route
31 South from the I-90 Northwest Tollway).
Call (312)695-5000 if room reservations are re-
quired. To be eligible for a 10% room discount,
be sure and state your plans for attending the
The Antique Radio Club Of Illinois meeting.
Banquet tickets - \$9.75. Pre-registration -
\$2.00, registration on the day of the meet -
\$3.00. Make banquet and pre-registration checks
payable to ARCI and send to: Joe Willis, 525
Oakdale #524, Chicago, Ill 60657. If possible,
reply by April 30th.

* * * * *

FALL 1982 - Valpo Tech, home of the Wilbur H.
Cummings Museum. - VALPARAISO, INDIANA
Our host will be Art Hershman, Vice President
of Valpo Tech and the Valpo Tech Alumni
Association.

* * *

Cover -

*The set as it appears in actual use—small enough to keep in a bureau drawer.
The demonstrator is the inventor, Laurence M. Cockaday (2XK).*

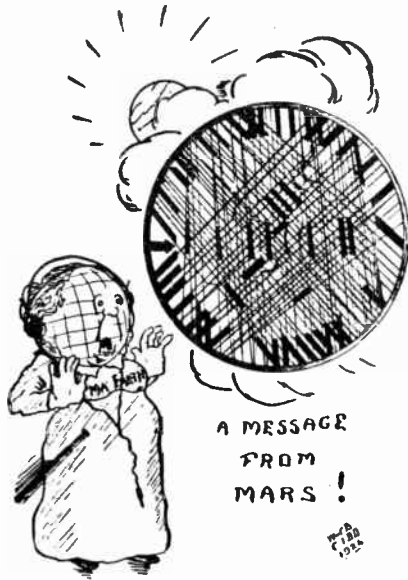
EARLY WIRELESS IN INDIANA

Indiana's early radio amateurs were among those in the nation taking the lead in wireless telegraphy. Goshen High School was one of the first to have a wireless station owned and operated by its students. This was during the years from 1916 to 1918. The station's call letters were 9ACM.

Jerry Raffensperger, pictured in this issue, owned and operated his wireless station in 1921. His call letters were 9FG. He built a lot of his equipment and obtained the 1 KW transmitting transformer from the high school after WW1.

At times he was able to talk to H. P. Maxim in Hartford, Conn. Mr. Maxim became the founder of the American Amateur Relay League (AARL). After graduation from H.S. in 1921 Jerry attended Purdue University's engineering school. It was there that he continued his interest in radio. He and a friend were the first to broadcast a football game over Purdue's radio station WBAA. This was done by means of a telephone connection from the field to the radio station. At the half time the boys exchanged places so that each could see the game.

Mr. Raffensperger now is retired and lives in Henry, ILL. He has given the transmitting transformer to Marshall Howenstein, who in turn has given it to the Tippecanoe County Historical Museum in Lafayette.



A MESSAGE
FROM
MARS !

MAR
1924

CAN YOU READ THE MESSAGE?

"Artistic Panels"

For a short period in 1926-27, several companies manufactured battery radios with front panels that were embossed in gold with an artistic design. Apparently they were not a big seller since few are available today and they seem to have only been produced for the 1927 model year.

The set pictured is the Metrodyne Single Dial Model, also referred to in advertising as the Metrodyne Super-Seven. Produced by the Metro Electric Co. of Chicago in late 1926 it retailed for \$75.00 and had seven tubes (4 RF, Det, 2AF). The center knob controls all four tuning condensers, but the "Equalizer" levers on either side of the dial allow fine adjustment of the first and second condensers as a pair and the third and fourth as a pair. The electrically lighted dial permits station logging in the dark.

The artistically gilded genuine Bakelite panel shows two slave girls in an ancient temple. Unfortunately, the controls (especially the tuning knob) are not very well matched to the decor of the "artistic panel." All exposed metal parts are finished in 24-k gold, and the cabinet is a beautiful two-tone walnut.

The same year Metro Electric produced a six tube "three dialer" (the Metrodyne Super-Six) with a standard panel for \$48.50 retail. Both sets were available on a 30 days' free trial offer.

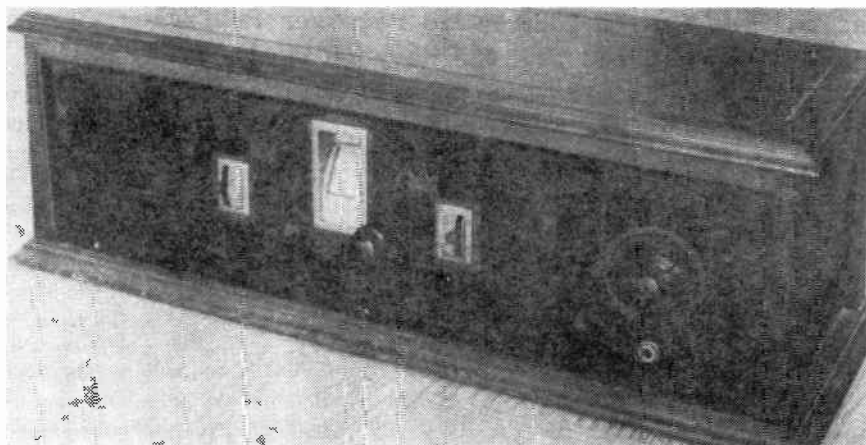
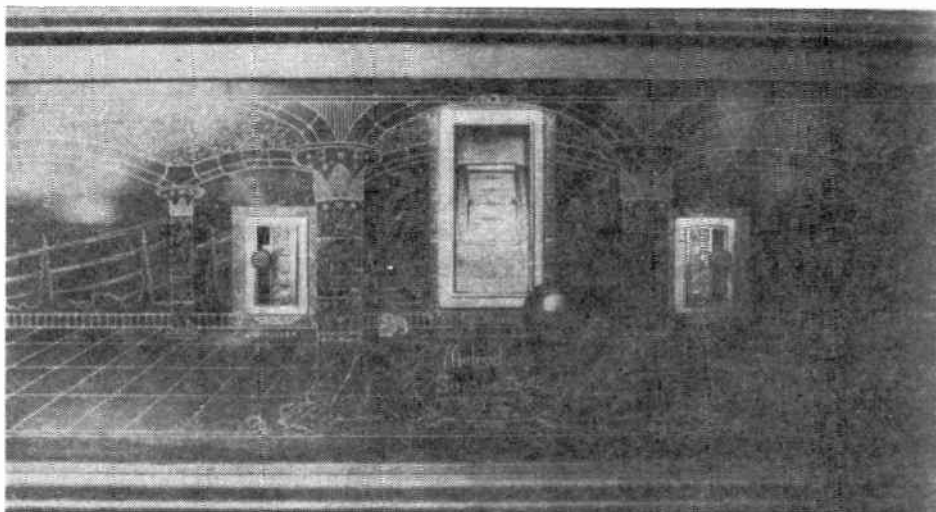
The same year the Westingale Electric Co. of Chicago offered two 5-tube models with artistic panels. Both models had the same Spanish Galleon design, but one was a one-dial set for \$57.00 and the other was a two-dial set for \$47.00. The controls did not match the design too well on these sets either, but neither were they so glaringly in contrast with the artistic appearance. Westingale not only offered a 30 days' free trial, but by showing your set during the 30 days you could get your set without cost!

I have seen another make of set with artistic panel but do not remember the manufacturer, and have no way to follow up on it. Also, several collectors have told me that Crosley made a model

with artistic panel but I have not seen one nor have I seen an ad for one.

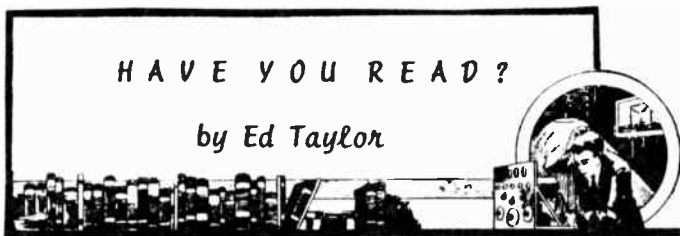
If you know of other "artistic panel" radios I would appreciate hearing from you, and would especially appreciate a photo.

Walt Sanders
Terre Haute, IN



HAVE YOU READ?

by Ed Taylor



Hazeltine the Professor

by Harold A. Wheeler

1978

Dr Wheeler has brought to this biography his great respect and affection of Professor Hazeltine, and in addition his deep knowledge of the early radio technology and his direct recollection of events of that time. This book is a reliable picture of the men and activities which brought the Hazeltine Corporation into existence.

Professor Hazeltine's invention and design of the "NEUTRODYNE" receiver in 1922 had revolutionary effects: radios were finally free of the howls and squeals with which they had been plagued, and dial settings could at last be logged for each station.

Patent drawings and photographs show the "NEUTRODYNE" as well as the SE-1420 radio receiver Professor Hazeltine designed for the Navy in WW-1.

Also included in this book is a brief autobiographical sketch of Dr. Wheeler and notes on his association with Professor Hazeltine.



Radio Builder - Experimenter

COPYRIGHT JAMES A. FRED 1979

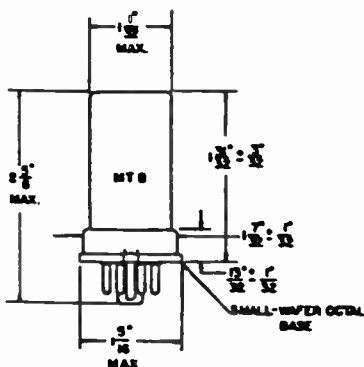
THE "BH" RECTIFIER TUBE

One of the first rectifier tubes to be introduced in the early 1920's was the "BH", cold cathode rectifier tube. The tube had no filament and was filled with Helium gas. The high voltage impressed on the anodes ionized the gas and made it a conductor. The cathode provides the plus voltage. Rectification occurs due to the fact that on the reverse alternation clouds of electrons attempt to bombard the anodes and build up a space charge which effectively blocks the flow of current in that direction.

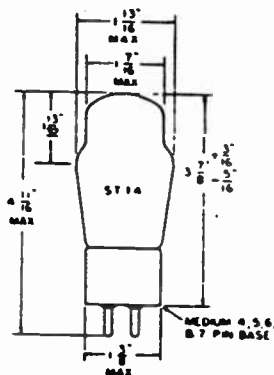
For some reason the BH rectifier soon lost favor with radio set designers and the type 80 rectifier became the most used rectifier in radio history. When automobile radio receivers came into use electrodynamic speakers and filament type rectifiers were used, but since a 6 volt auto radio drew 8 to 10 amperes there were many dead car batteries. First they replaced the electrodynamic speaker with a permanent magnet speaker and saved 1 ampere. Next they re-erected the cold cathode rectifier, gave it an octal base, and called it an OZ4. This saved another .6 ampere. The Delco Radio Division used millions of OZ4 tubes in the auto radios they built.

Many radio collectors are restoring old "E" battery eliminators that originally used BH rectifier tubes. Many rectifiers have worn out, and some have been broken or lost during the last 50 years. An OZ4 rectifier can be substituted for the BH by using a suitable adapter. You could hide an OZ4G tube in the base of an old BH tube. Of course if you don't really care you can substitute two diodes in place of the original cold cathode rectifier tube.

The OZ4 tube is constructed by placing the anodes and cathode inside a small glass bulb with a small quantity of Helium. The ionization of the Helium generates a static like noise in the radio. This is the reason you usually find OZ4 metal tubes, the metal can shields out the electrical interference.



OZ4



BH

VALPO TECH'S MUSEUM OF ELECTRONICS

The new wing of the Wilbur H. Cummings Museum of Electronics on the campus of the Valparaiso Technical Institute was dedicated during an afternoon ceremony on March 16th.

The event coincided with Valpo Tech's Founders' Day, marking the 108th year for the local institute. It was on Tuesday, March 17th, 1874 that VTI's forerunner, The Dodge Institute Of Telegraphy, first opened its doors to teach young men the telegraphic codes of the day.

Two new collections of early electronic publications will be exhibited in the new wing. The Alfred H. Hayes collection of radios and components (circa 1920) has also been recently added.

A large glass showcase suspended from the ceiling dominates the new wing. Artifacts from the early days of Dodge are on exhibit inside, specially protected from the elements.

The Indiana Historical Radio Society will be meeting at Valpo Tech this fall so you can look forward to seeing the new wing at that time, or if you are in the area stop in for a visit.

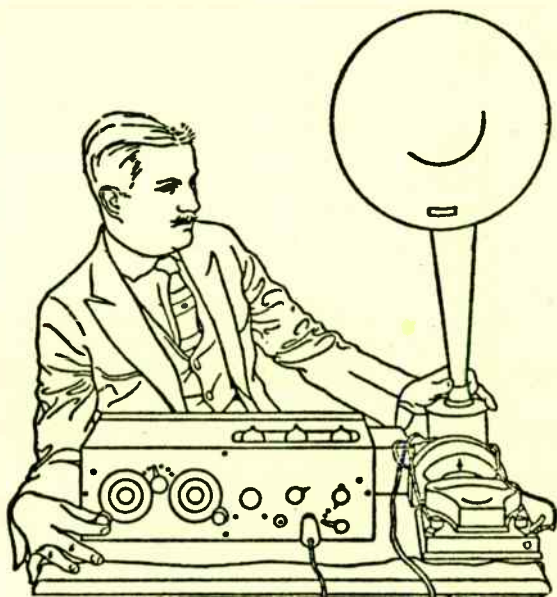
Valpo Tech is located on One Center Street, Valparaiso, Indiana 46383.



Owners of
“Michigan”
Sets
are bragging
shamelessly

They have no consideration for the feelings of their friends and neighbors but crow heartlessly every morning about the distant or elusive stations they brought in the night before—that the other fellows couldn't get at all.

THE INDIANA HISTORICAL RADIO SOCIETY
AND
THE ANTIQUE WIRELESS ASSOCIATION
REGIONAL CONFERENCE AND SPRING MEETING
AT
AUBURN, INDIANA - APRIL 17, 1982



THE INDIANA HISTORICAL RADIO SOCIETY
and
THE ANTIQUE WIRELESS ASSOCIATION

REGIONAL SPRING MEET

Saturday, April 17, 1982 at the Auburn-
Cord-Duesenberg Museum, Auburn, Indiana

SCHEDULE OF ACTIVITIES:

Friday, April 16

- 5:00 PM - Early registration at the Museum.
- 7:00 PM - "Old Time Movie" 2nd floor, next to the Radio Room.
- 7:30 PM - A W A show "Radio Museums", a new slide show covering outstanding and unique museums.

Saturday, April 17

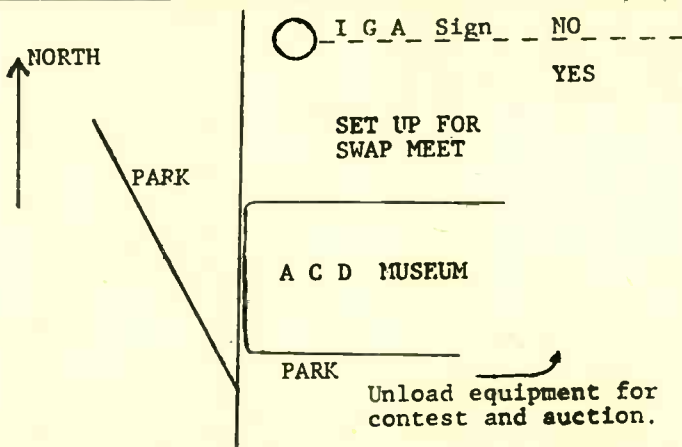
- 9:00 AM - Registration at the Museum.
SWAP MEET Please note change of set up site. See drawing on next page.
- 9:30 AM - Register items for the OLD EQUIPMENT CONTEST.
- 10:00 AM- SALE of DONATED items for the I H R S Museum Fund. You are invited to bring surplus parts and sets for a good cause!
- 10:00 AM- Register items for the afternoon auction. All items must be registered by 12:00 noon.
- 10:30 AM- CONTEST JUDGING. Jerald Hueber, Chairman.
- 12:00 Noon - Lunch at the Museum "Filling Station".
- 1:00 PM - AUCTION OF PERSONAL ITEMS. A large collection of receivers, speakers, tubes, test equipment and other items are expected. A 10% donation is asked for the Museum Fund.
- 6:00 PM - SOCIAL HOUR in the Museum Mezzanine Banquet Room.
- 7:00 PM - BANQUET and Old Equipment Contest Awards.
Program: "Old Time Radio Programs and Personalities of the 1930-1940 Era", by Dr. Gordon Kelley of Evansville, Indiana.

OLD EQUIPMENT CONTEST CLASSIFICATIONS:

1. Crystal Sets. (A) Factory made (B) Homebrew
2. Regenerative Receivers. (A) One-tube (B) Two-tube
3. Horn Speakers. (Will be judged on display appearance only).
4. Microphones from WWII or before.
5. Cathedral Receivers.
6. Atwater Kent Equipment, Receivers and Components prior to 1930.
7. Grebe Equipment, Receivers, Tuners, Amplifiers, etc.
8. Radio Receivers not otherwise classified, prior to WWII.

"BEST OF SHOW" WILL RECEIVE THE GREBE TROPHY.

SWAP MEET - New space - Northside of ACD Museum.



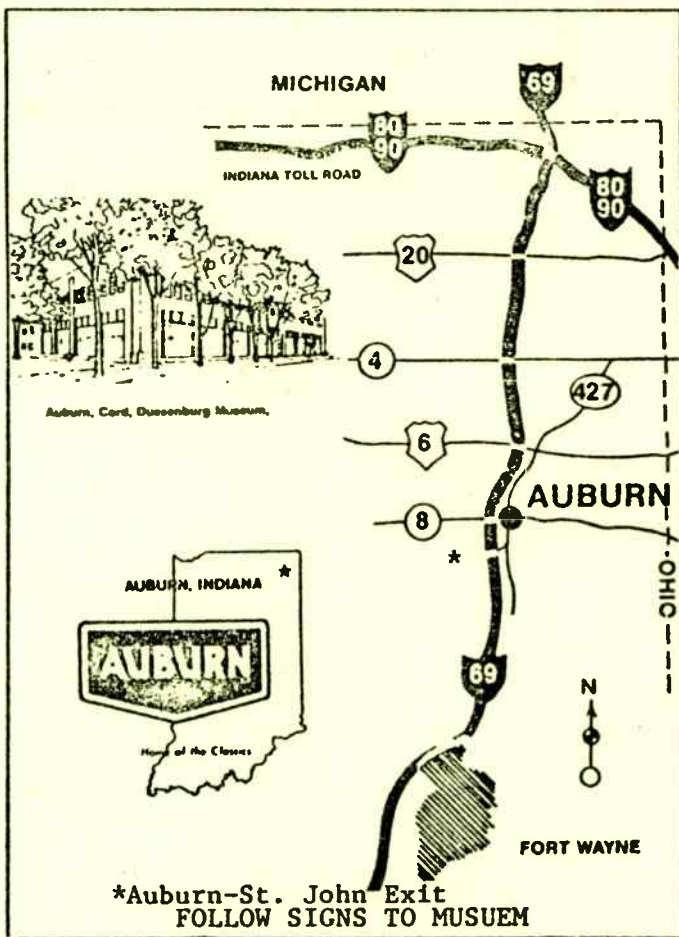
Pre-REGISTRATION for the Banquet must be received before April 13, 1982. Banquet and registration is \$13.50 each. Registration only at the Museum door is \$2.50 per person. Make Banquet checks payable to I H R S and mail to Ross Smith, 1133 Strong Ave., Elkhart, IN 46514. Please make your own motel reservations at the L&K motel 800-848-5767 or the Starlite Motel 219-925-0500, both on SR 8W, Auburn, IN 46706.

ALL MEMBERS AND VISITORS ARE WELCOME!

Del Barrett and Ross Smith, Co-Chairmen

Indiana's *Auburn-Cord-Duesenberg* Museum

AUBURN, INDIANA 46706



THE OLD EQUIPMENT CONTEST

The Official Judging Ballot for the Old Equipment Contest requests the judge to evaluate contest items with in the following criteria:

1. Historical Significance

Contribution to the art
Contribution to social history
Possession by a radio "great"
Special circumstances in contestants family history

Does the entry contribute to the study of communication?

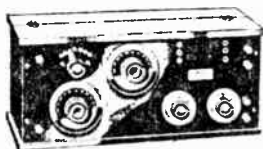
Does the entry enhance the image of our Conference and membership?

2. Uniqueness and Rarity

Few of a kind vs. production run (uniqueness)
Number originally produced (commonness)
Number surviving (rarity)
Original use and value

Does this entry amplify/illustrate/elucidate a phase of radio not commonly known today?

Does it stand out from the other entries because of function or survival?



3. Quality of restoration

Cleaning: external, internal
Craftsmanship of repair, mechanical/electrical
Conformance to original design (factory models)

Restoration and original construction (homebrews)

Parts substitution or rebuilding
Finish: cabinet, parts, wiring, insulation, connections

Has the entrant done a craftsmanlike job in preparing for the show? (Superfinish does not earn extra points; no points are lost for the deprivation of age alone.)

4. Supporting and illustrative documentation

Instruction books, service notes, production documents

Construction data, plans for kits
Original constructor's plans or sketches (for homebrews)

Use of material found in publications of the time

Has the entrant gone to the extra effort of collecting and displaying the documentation that enhances the entry?

Does the illustrative material add significance to the entry?

Would the supporting documentation be competitive by itself?

Each judging area is rated 0 to 5 with the sum of scores for a total score.



1957 TV BROADCASTING MAPS
THE LOWEST THE PRICE OF ONE

RADIO MAP LOG

"THE NEW METHOD OF LOGGING"
MANUFACTURED BY

LOUIS J. GALLO

8 0 0 M . . . 1
7th GLENVIEW ST

TELEPHONE MAPS 491
NEW ORLEANS LA

★ ★ RADIOADS ★ ★

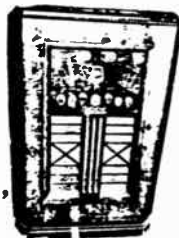
FOR SALE: Many obsolete tubes. Most new, some used but checked. Send a SASE with your wants. Bob Maxwell, 814 Lincoln Highway East, New Haven, IN 46774.

FOR SALE: BC9A, Good cond. \$195; AK-33 with tubes, \$75 ; CW1031, Appears to be Navy version of SCR68 WW-1 Xmtr. & Rec., with tubes & headphone/microphone assy. \$395; Riders 1-16 less Vol.9, fair, \$145; Westinghouse RC, fair, \$110; F.E. NR-5, needs good cleaning, \$75. Shipping Xtra or could bring to Auburn. Al Jochem, 2047 College Ave., Quincy, IL 62301.

WANTED: Kellogg 401 tube for display, cabinet for Federal 59 & Radiola X, audios for Tuska 225, SW-3 power supply. Pat Stewart, 1404 Ruth St., Walla Walla, WA 99362.

WANTED: Cabinet for AK-19; Crosley 2-step amplifier (not IV or 50A). Al Jochem, 2047 College Ave., Quincy, IL 62301.

FROM THE MAIL BAG: Will sell rare Scott all wave Imperial receiver in Waverly Grande cabinet. One woofer and two tweeters. \$1000. plus shipping. Send SASE for photo. J. Olszowka, 7816 Latrobe, Burbank, IL 60459.



WANTED: Early UV-217 rectifier tube for display. Filament good or bad. B.Wooters, 8303 E. Mansfield Ave. Denver, CO 80237.

WANTED: Radiola 17 in good working condition and all original with speaker. Ron Burtzos, 915 Crane Dr. #703, DeKalb, IL, 60115.

★ ★ RADIOADS ★ ★

WANTED: Scott amplifier chassis for Imperial Allwave, Phantom Delux and Philharmonic. Robert Teska, 334 Willard St., Toledo, Ohio 43605

WANTED: Any information concerning the Moon Radio Corporation of Long Island City, N. Y.--advertising, technical data, etc.--and the Satterlee circuit used in their radios. Would also like to buy or trade for one of their sets. George B. Clemans, 1104 E. Wooster St., Bowling Green, Ohio 43402

FOR SALE: 200+ old radios and phonographs with speakers and many extra tubes. Will sell the lot for \$6000.00. No list, come and see them. Odell Sparks, P.O. Box 55, Woodburn, KY 42170 (502)529-5892

WANTED: Any battery, wireless, crystal, pre-1935 AC sets - Radios, equipment and literature, regardless of make or condition. Either cash/sale or have various pre 1945 sets to trade. C. A. Michalowski, 1037 West 187th Street, Homewood, Ill 60430 (312)799-7046

TRADE OR SALE: School Wheatstone Bridges, seven in all, Foote, Pierson, Schaar, Leades & Northrope. WANTED Crosley 50, Paragon RD5, Radiola III balanced amp. H. W. McCauley, 8471 Patterson WB9NVE, Saint John, IN 46373 (219)365-5979

WANTED: Wire cartridges for RCA MI 12875 Circa 1948. R. Hanselman, 805 S. Indiana Ave. Auburn, Indiana 46706

★ ★ RADIOADS ★ ★

WANTED: Rider #1 manual also Gernsback #1 radio manual. Merle Duston Radio library, Vol 5 Radio Receiving Circuits, vol 6 Special Circuits & Radio Interference. Each book has 92 pages. Hugo Castelli, 1406 East 5th Ave., Joliet, Ill 60433

WANTED: Emerson Mickey Mouse Radio. Buy or trade. A. R. Nolf, 620 Auburn Cr., Burlington, Ont., Canada L7L5B2 (416)634-3267

FOR SALE: New large list of radio magazines, catalogs and literature to be ready April or May. Send \$1.00 to cover printing cost to: G. B. Schneider, 6848 Commonwealth Blvd., Parma Hgts., Ohio 44130

WANTED: RCA model 103 magnetic speaker, also Atwater Kent model 340 AC receiver. Must be good condition. Will pay top price and shipping costs. All letters answered. Ronald G. Burtzos, 915 Crane Dr. Apt 703, DeKalb, Ill 60115

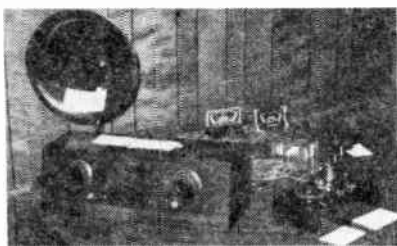
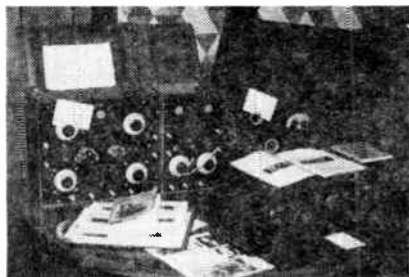
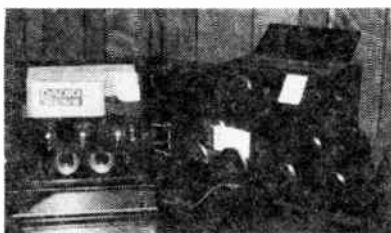
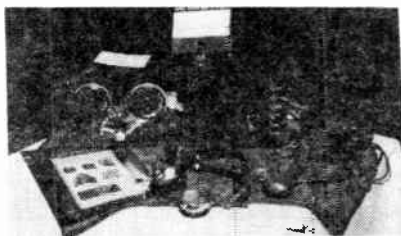
WANTED: Pre 1940 microphones for my microphone museum. Also mike related items. Have early radios to trade. Bob Paquette, 107 E. National Ave., Milwaukee, Wis 53204

* * * * *

RADIO ADS are FREE to I H R S members. Send them in regularly - there is always room for more. Send them to F. C. Prohl, 7257 Murphy Drive, Indianapolis, IN 46256.

* * * * *

TRANSFORMER REWIND SERVICE. Contact RaeCo., Inc., 3725 East 13th Street, Indianapolis, IN 46201. RaeCo. cautions that rewinds are more expensive than a new transformer and generally take approximately four (4) weeks.



I H R S AT INDIANAPOLIS - FEBRUARY 1982
Ninety two I H R S members and friends registered for this meeting. Swap N' Sell was very active and 59 people enjoyed lunch and a nostalgic talk by Harry Martin. Popular vote contest winners were: Ed Taylor, Marshall Howenstein, Del Barrett and George Hauske.

ELECTROLESS NICKEL PLATING

George B. Clemans
Bowling Green, Ohio

During the restoration of a Tuska Model 222, I encountered a problem that is often found in early radios of this type. Through a combination of wear and corrosion the switch points, wiper arms, and other small metal parts on the front panel had lost much of their original nickel plating. Like most collectors I do not have the equipment needed for electroplating and didn't want to go to the trouble and expense of setting it up for the few times that I would be likely to need it. I was therefore at something of a loss as to how to restore these parts to their original appearance. In casting about for an alternative, however, I found what is a nearly ideal solution to this problem--electroless nickel plating. This method (1) requires no special apparatus; and small parts can be plated by simply placing them in an appropriate solution for 15 to 30 minutes.

The Plating Bath

The plating solution is made up according to the following recipe.

Nickel Chloride	30 gms/L
Sodium Hypophosphite	10 gms/L
Complexing Agent*	10-50 gms/L

*Either sodium citrate (10 gms/L) or sodium hydroxyacetate (10-50 gms/L)

Pure chemicals and distilled water should be used and mixed in all glass containers. The resulting solution should be filtered before use and will have a pH of 4 to 6.

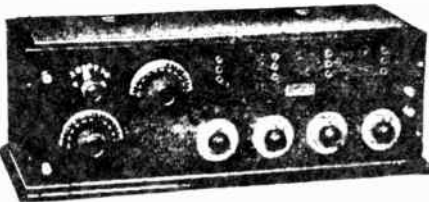
Nickel Plating

The parts to be plated are thoroughly cleaned and dipped in dilute sulfuric acid (pickling) before treatment. They are then suspended in the bath (which has been pre-heated to about 195 degrees F.) until the desired finish is obtained (about 15 to 30 minutes). Plating is the result of chemical reduction which is actually catalyzed by the plated metal. Thus, what remains of the original nickel plate on the part actually initiates the formation of the new surface. Once a satisfactory deposit has formed, the parts are rinsed with water and lightly buffed. The semi-bright finish produced is quite hard and wear-resistant.

Because it does not require special equipment, this method is very convenient for the collector who has only occasional need for small-batch plating. With a little practice, it is easy to make old radio parts look like new.

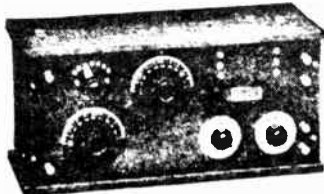
- (1) J. B. Mohler, Electroplating and Related Processes, Chemical Publishing Company, Inc., New York, 1969, pp. 163-169.

MIRACO GETS 'EM 1500 MILES AWAY!



Users of MIRACO Radio Frequency Broadcast Receivers in either model shown report wonderful results. St. Louis hears Schenectady—Davenport hears Newark—Cincinnati hears San Francisco.

Reception is clear and distinct, tuning is very sharp and there is practically no interference.



MIRACO sets may be used with either 1½ Volt Dry Cell or 6 Volt Storage Battery.

Model M-W, 4 tube set—price \$54.50

Model K, 2 tube set—price \$29.50.

Order your MIRACO set today.

DEALERS — AGENTS — DISTRIBUTORS

Write for our proposition TODAY.

The Midwest Radio Company,

804 Main Street

:

:

:

Cincinnati, Ohio

"WIRELESS" SAVED LIVES

A new device known as "wireless" was used in a rescue at sea for the first time in 1909, after the steamship Florida rammed the liner Republic during a thick fog. The accident occurred at Nantucket, R.I. Six persons aboard the Republic were killed, but the distress calls sent by the ship's operator brought help and prevented further loss of life.

A MOIST HOOK-UP

Editor, RADIO NEWS:

Although not a subscriber, I can hardly wait for RADIO NEWS, and it seems to me that it is always a week late, but when I do get it I more than make up for lost time.

To the "Radio Bugs" who are always looking for something new I ask them to try the following hook-up.

From your grid condenser connect a small piece of copper tubing next to your plate and let it extend about one inch through your panel, bending the end downward. Next get a small copper cup and place same under this "spout"; then tune in Havana, Cuba. If your grid leaks, watch out for the prohibition agent, for you may get a drink from Cuba.

Hoping this little suggestion meets with the approval of the "Radio Bugs," I present it as an original hook-up.

BEN WIRTHLIN, Cleveland, O.

Indiana Historical Radio Society member
J. G. Wood, Indianapolis, passed away
February, 1982.



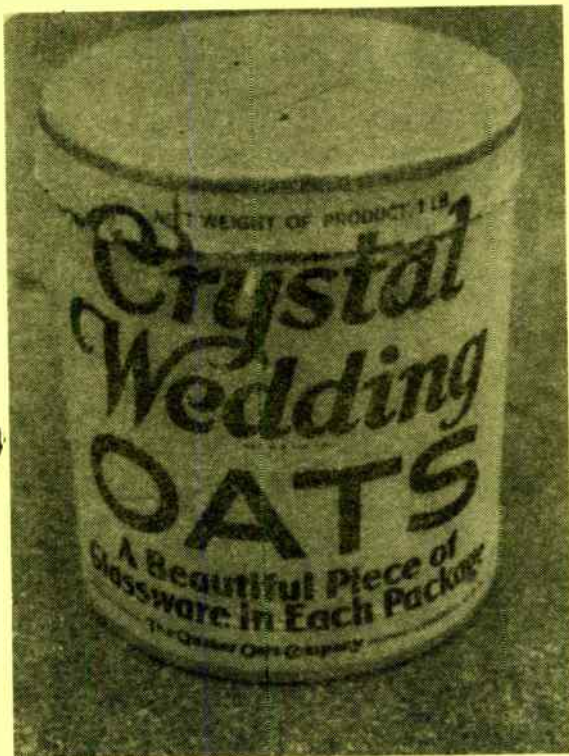
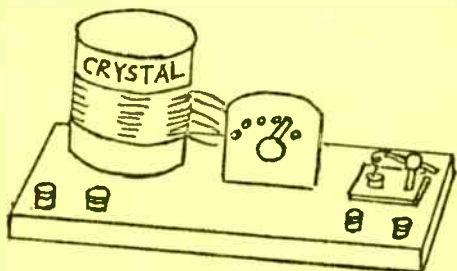
Andrews Radio Company
327 S. La Salle St., Chicago, Ill.

AN IDEAL OATMEAL BOX FOR CRYSTAL SETS

Any of the old timers will tell you that in the early days of radio, if you were going to make your own crystal set, the first thing to do was get an oatmeal box and wind your tuning coil. What could be more appropriate for this than the Quaker Oats box pictured?

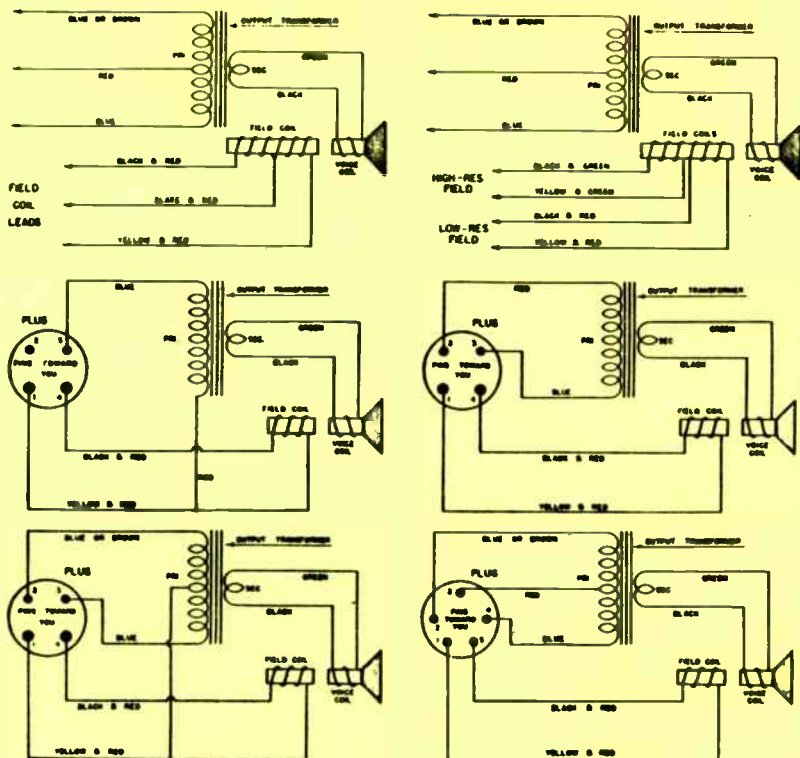
I got this box with about one and one half home made crystal sets and a few miscellaneous parts at a flea market last summer. With the coil wound around the middle portion of the box, 'Wedding Oats' will be covered up and the word 'CRYSTAL' will show.

Walt Sanders
15 Todd Place
Terre Haute, IN
47803



Editors note: Refer to the recent A W A Old Timers Bulletin, March 1982, page 19, Oatmeal Box Crystal Set, by Floyd Engels.

SPEAKER LEAD CODES



Ω Ω Ω TECH TIP Ω Ω Ω

Need an old dynamic speaker repaired to fix up that cathedral or console ???
 MIDWEST SPEAKER SERVICE at 4448 Greenmeadow Circle, Indianapolis, IN 46236
 can replace voice coils, spiders, and cones. Field coils can also be repaired but it takes a bit longer. Send SASE with inquiry or phone (317) 898-6590.

E.T.