BULLETIN

Indiana Historical Radio Society

PRESERVATION FOR POSTERITY

Vol. 33 Summer, 2004 No 2

Regency....

The First Shirt Pocket Transistor Radio

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Indiana Historical Radio Society
PRESERVATION FOR POSTERITY

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Fred Schultz 1246 Lincolnway South Ligonier, Indiana 46767 (260) 894-3092 e-mail: olradio@ligtel.com	IHRS Museum Curator

Bulletin Deadlines: News, Articles & Radio Ads, 2/15, 5/15, 8/15, 11/15
IHRS e-mail Web site address: www.indianahistoricalradio.org

The INDIANA HISTORICAL RADIO SOCIETY is a non-profit organization founded in 1971. Annual membership dues are $15.00/year or 2 years/$25.00, which includes the quarterly IHRS "BULLETIN." Radio-Ads are free to all members. Please include a S.A.S.E. when requesting information. Send applicatins for membership and renewals to Fred Prohl, our treasurer as noted above.

IHRS Summer Meet in Elkhart

Northern Indiana Summer Meet at Elkhart Saturday 8:30 AM **Sept. 11, 2004** Meet at the High Dive Pavilion, 500 East Beardsley Avenue, Elkhart, Indiana. Registration is $5.00 per member/family. Swap and Sell in the East lot. **Old Equipment Contest** with categories such *as:* 1920's Radios, Tube Radios, Transistor Radios, and My Favorite Radio. Included is a silent auction, pitch in lunch, and an IHRS business meeting. **Motels:** About a doz. motels North and South of 1-80/90 at SR-9 (Cassopolis) Exit 92. Super-8, 345 Webster Ave., 574-264-4457. **Red Roof Inn,** 2902 Cassopolis St., 574-262-3691. Info: Ty Gregory, 574-264-0257 or Terry Garl, 574-679-4280, ihrselk98 aol.com.

IHRS Fall Meet in Greenfield – October 9, 2004

Other Club Activities

MSARC For information contact George Freeman ralogeum@aol.com

NARC ACTIVITIES - 2004
For NARC meet info contact: Jim Thompson, 612-822-4000 or Kip Wallace, 612-544-2547, KipWallace@dl-inc.com

ARCI ACTIVITIES - 2004
All meets at Elgin, IL, RAMADA INN, 345 River Rd. 847-695-5000.
Info: Tom Klienschmidt 847-255-8128 or Art Bilski 630-739-1060, OLDRADIO@NTSOURCE.COM

MICHIGAN ANTIQUE RADIO CLUB
July 9-10, 2004 Extravaganza Lansing, Michigan
Info: Oran Sauder murrellr@ameritech.net (248) 437-4413 John Reinicke – john.reinicke@fanucrobotics.com (248) 626-4895

Join the AWA-ANTIQUE WIRELESS ASSOCIATION
THE ORIGINAL AND LARGEST HISTORICAL RADIO-COLLECTOR GROUP The AWA publishes a quarterly Old Timer's Bulletin.
Membership is only $20 per year. Write to: Antique Wireless Association, Inc. Box E, Breesport, NY 14816 http://www.antiquewireless.org

2004 *IIRS* DUES
Please send a check payable to the ***Indiana Historical Radio Society*** in the amount of $15.00 for a one-year membership or $25.00 for a two-year membership.
Send your payment to:Fred Prohl, IHRS 3129 Lanam Ridge Road Nashville, IN 47448 Please include your current mailing address, if not on your check, and your email address, if you have one. Questions concerning your membership should be directed to Fred at fprohl@att.net or call him at 812-988-1761.

IHRS Spring Meet $ Business News
Kokomo 2004

This issue of the Bulletin will have several reports on the IHRS Kokomo Spring Meet. As the program chairman for this meet, my preference is to report on exciting events such as the Old Equipment Contest, the Auction, or the people attending the meet. But as IHRS Treasurer doing the numbers is first on my list.

For this meet we had 122 family registrations totaling $610.00.
The Swap N Sell table rentals totaled 51.5 for $515.00.
Sixty-one lunch tickets were sold for a total of $427.00.
The auction credited IHRS $710.45
The donation jar collected $28.56 (Thank-you Janet for the cookies!)
Total receipts of $2291.01 excludes membership renewals.

The Spring Meet expenses include:
The Johanning Civic Center space rental $860.00
Rozzis Food Service $755.30
Auction (materials, auctioneer and staff) $279.00
Advertising $131.40. Miscellaneous costs – such as nametags, table covers, program and sign printing $117.00.
Plus insurance at $123.25 for a total expense of $2265.95.

Thank-you Bill Morris and Ed Dupart for your presentation on the Regency TR-1 Pocket Transistor Radio.

Jim Fred, it was great to see you at the meet! Also a "Good to see you!" IHRS/AWA members and visitors traveling from distant states such as South Carolina, Georgia, Florida, Missouri, Texas, Minnesota, and California. (Not to exclude Indiana neighbors from Ohio, Kentucky, Michigan, Wisconsin and Illinois – without you folks we would have a very disappointing meet.)

Congratulations to Karl Johnson on winning the luncheon drawing. Karl's ticket won a Radiola III!

Many thanks to the volunteers who contributed to a successful meet, with special appreciation to Herman and Shirley Gross for their several months of work to provide the end of show auction. It was the most efficiently run auction I recall attending.

Fred Prohl, IHRS Treasurer and Spring Meet Program Chairman

Auction Results, 2004 Spring Meet

The auction, held in the Pioneer Room of the Johanning Civic Center at Kokomo, IN, was a resounding success. There were over 136 items on the block, the majority from the collection of member Jim McDonald. Included in the count were consignment items from members as well as items donated to the IHRS by members and non-members alike.

This auction would not have occurred but for the generous help received from the following people. I'd especially like to thank my wife, Shirley and grandson Joshua for helping move and prepare 94 items from the McDonald collection in late March. They also helped move them to the auction site a couple days before the meet.

Friday morning of the meet Sandy and Les Freed, Mike Magiera and Garry Tidler met me at the Civic Center with their trucks and van and we proceeded to the McDonald residence to haul about 20 consoles and larger "table" models back to the auction site. I could not have managed without them. Thanks to Sandy and Les for shining them up after we returned to the Civic Center. I wish to mention that Mike Magiera took a day vacation from Delphi to help us and he isn't even a member! Garry Tidler, in addition to helping move consoles, put notice of our auction on a couple websites. Many thanks again.

Our auctioneer, Max Scott and his "crew", did a wonderful job of keeping the auction moving and the participants interested. All items were sold in about 1 ½ hours, not bad! Many thanks to Les Freed and Dave Gilbert for helping during the auction. It was no easy task holding up those radios so the attendees could see them better.

The gross receipts from the auction were about $4700.00. Other details are listed in Fred Prohl's treasurer's report as well as the listing of items auctioned with selling prices located elsewhere in this issue. Do you think we can duplicate this auction next year? Start thinking about it now.

Herman Gross, IHRS Secretary and Auction Coordinator.

IHRS Spring Meet Auction Results will be in the Fall Bulletin

The Spring 2004 Old Equipment Contest

The Old Equipment Contest results are as follows;

Class 1 Indiana Made Radios
- 1st place **Lyradion Portable Loop Receiver**, Fred Prohl
- 2nd place **Delco Radio**, Tom Williams

Class 2 1920's Battery Radio
- 1st place **Splitdorf**, Alex Whitaker

Class 3 1930's AC Radio
- 1st place three **Cathedral's**, Ed Dupart
- 2nd place **Emerson Treasure Chest**, Peter Yanczer

Class 4a Regency Transistor Radio
- 1st place and ***Best Of Show***, **Regency TR-1** and display, Dr. Ed Taylor
- 2nd place **Regency TR-1** and display, Fred Prohl

Class 4b Pocket Transistor Radios – Context Category
- 1st place **Hoffman**, Bret Phillips
- 2nd place **Mitchell**, Fred Prohl

Class 5 Open, Radio Related
- 1st **Bosch Cone Speaker**, Karl Koogle
- 2nd **Zenith TV Sign**, Michael Feldt

Class 6 Operating 1920's Battery Radio
- 1st **Silver Marshal**, Michael Feldt

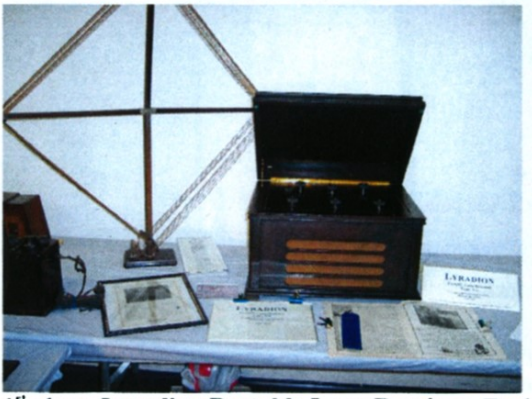
Class 7 Operating AC Radio
- 1st **Zenith** , Karl Koogle
- 2nd **RCAVictor**, Tom Williams

Congratulations to Dr. Ed Taylor for his win of the Founders Award, the Best of Show trophy! His display of the Regency TR-1 and related equipment was outstanding. In case you did not have an opportunity to study the display, Ed presented a 1954 Cloud Gray TR-1 in the shirt pocket of a mannequin; an Ebony TR-1 on a turntable; TR-1 accessories, case, earphone, and 221/2 volt battery; a Cloud Gray TR-1G; a TR-6, cowhide case; a TR-7, cowhide case; TR-8, Blue Aluminum case; an XR-2, two transistor (boy's radio?); related brochure's and ads; and 1954 background music!

Appropriately several nice Delco radio items were in the contest and on display. Of special note is the Delco-Remy automobile radio presented by Joe Scott from Houston, Texas. Produced in Dayton, Ohio, the radio was introduced exclusively for the 1930 Cadillac. It is a TRF, three RF stage, ganged tuned variometer set with 5 tubes. A rare Delco radio!

Also presented in the Regency category was a TR-1 50 year commemorative display constructed by Bill Morris. Bill did an excellent job in reproducing a

Regency store display. An unexpected addition to the display was a rare clear cased TR-1 provided by Bret Phillips. Thank-you Bill and Bret for your presentation!



1st place **Lyradion Portable Loop Receiver**, Fred Prohl, top left. Class 1
2nd place **Delco Radio**, Tom Williams, top right. Class 1 Indiana Made Radios

To the Left:
Class 2 1920's Battery Radio
1st place **Splitdorf**, Alex Whitaker

Class 3 1930's AC Radio
1st place three **Cathedrals's**, Detrola, Climax & Belmont, using same cabinet manufacturer, Ed Dupart

Class 3 1930's AC Radio
2nd place **Emerson Treasure Chest**, in a beautiful setting, Peter Yanczer

Class 4a Regency Transistor Radio 1st place and ***Best Of Show***, **Regency TR-1** and display, Dr. Ed Taylor

Class 4a Regency Transistor Radio
2nd place **Regency TR-1** and display, Fred Prohl

Class 4b Pocket Transistor Radios – Context Catregory
1st place **Hoffman**, Bret Phillips

Class 4b Pocket Transistor Radios – Context Catregory
2nd place **Mitchell**, Fred Prohl

Class 5 Open, Radio Related 1st **Bosch Cone Speaker**, Karl Koogle

Class 5 Open, Radio Related 2nd **Zenith TV Sign**, Michael Feldt
Class 6 Operating 1920's Battery Radio 1st **Silver Marshal**, Michael Feldt

Class 7 Operating AC Radio 1st **Zenith** with original box! Karl Koogle

Class 7 Operating AC Radio
2nd **RCAVictor**, Tom Williams

Early AC Delco 2nd place

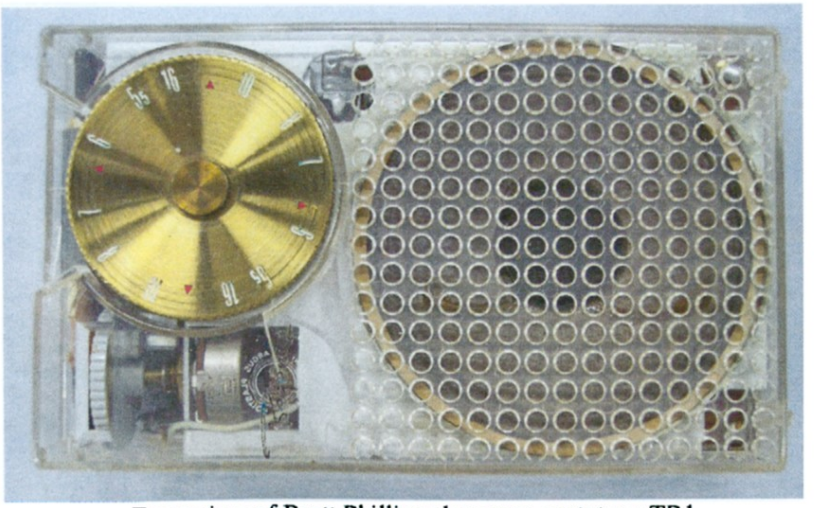
More Kokomo Contest Entries

A Nice Arvin Display

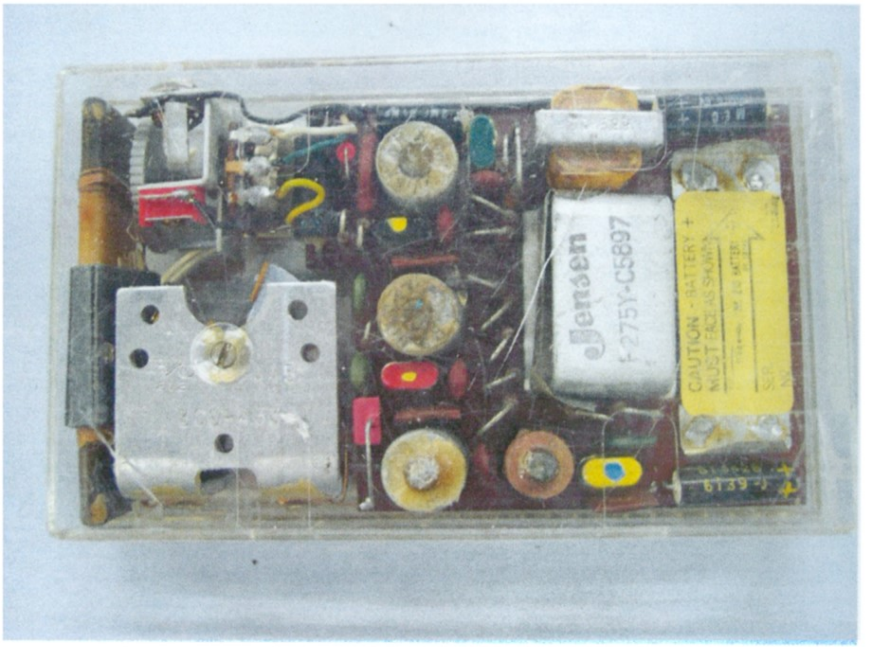
More Regency Pictures

Bill Morris's reproduction display. Many thought it was a Regency original! Note Brett Phillip's clear prototype TR1 to the left.

Brett Phillips and his clear case prototype TR1



Front view of Brett Phillips clear case prototype TR1



Back view of Brett Phillips clear case prototype TR1
Note the color coded transistors

Dr. Taylor's TR-8

TR1's from Dr. Ed Taylor's, Bill Morris and Fred Prohl's Collection

3 TR1-G's and a TR4

The top black TR1-G is Bill Morris's and the gray TR1-G is Dr. Ed Taylor's, and the bottom two are Ed Dupart's

A Coral TR1-G to the left and a Coral TR1 to the right

Bill Morris's display

The Regency TR-1 All-Transistor Radio

Written by Ross Smith

The following article is taken from an interview with Richard Koch of Regency Electronics on March 10, 1983.

Through cooperative efforts of Texas Instruments and Industrial Development Engineering Associates, the first all-transistor radio arrived on the market in time for the 1954 Christmas Season. It was a true "pocket size" radio, measuring three inches wide, five inches long and only on and one-quarter inch thick, weighed 12 ounces and sold for $49.95 on the retail market, less the $22^{1/2}$ volt hearing aid battery.

Advertised as the World's Smallest and Lightest Weight radio, it did actually fit in the pocket of an Arrow shirt of the day, but not in the pocket of a discount store shirt. The plastic case was offered in six colors and a leather carrying case was optional for $3.95. Another option was the Regency earphone priced at $7.50.

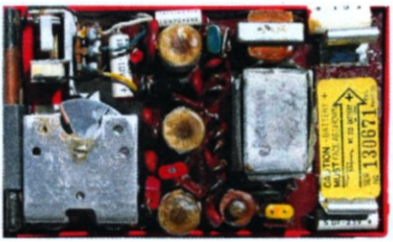
The station selector dial was designed to be flush with the case and a small edge-wheel knob was provided for the volume control and battery switch.

Texas Instruments was ready for large-scale production of transistors in 1954 and considered building a radio for the market themselves. However, cost estimates of over $100.00 retail price discouraged management and it was decided not to produce the set. Industrial Development Engineering Associates (I.D.E.A.) Regency Division entered the picture at this point in time. An aggressive company since its founding in September of 1945, I.D.E.A. had the design and production capacity to handle the job of producing a transistor radio within a very short time period, with the resulting increase in sales for the Texas Instruments transistor market.

Richard Koch of I.D.E.A. and Roger Webster of Texas Instruments worked together, with their respective staffs, in matching the early transistors available to a practical circuit design, which later became the Regency TR-1. Texas Instruments built a six transistor prototype board in the spring of 1954. Design directions were formalized in late June and bench work began at Regency Division I the first week in July. By this time, the transistor second detector had been replaced by a diode. This reduced the number of transistors to five, which was an important step for control of costs. Next, parts were saved and current drain from the battery was reduced by utilizing bias voltage for the I.F. stages that was already available in the circuit of the audio output stage.

By August, a new single transistor oscillator-mixer circuit was developed, reducing the number of transistors to four. Both the biasing circuit and the oscillator-mixer circuit were registered as I.D.E.A. patents by the U.S. Patent Office.

Introduction of the TR-1 was one of the best kept secrets in the Industry. Competitors were caught short and required several months of development and tooling in order to catch up with the introduction of the transistor radio.



The plastic case was the last item to be tooled and was not ready until October, just in time for the Christmas Season introduction. The case was tooled in Chicago and molded in Indiana.

Because of the new circuitry and compact size, almost every component in the set had to be designed and produced by the various component suppliers.

Jensen designed the compact $2^{3/4}$ inch dynamic speaker.

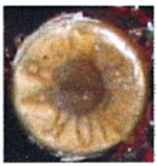
The new Centralab Flatcaps were used.

CTS supplied the miniature volume control, but was unable to tool a battery switch for the small space available. To clear this hurdle, I.D.E.A. designed a spring actuator switch in front of the volume control, which was operated by a lobe or cam molded on the shank of the volume control edge-wheel knob.

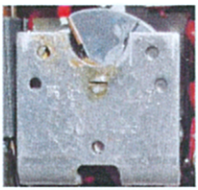
Raytheon supplied the original CK706 diode detector.

Cornell Dubilier supplied sample low voltage electrolytics in a miniature design for the original T.I. prototype. However, when production quantities were needed, C.D. had not set up a production line for this item. I.D.E.A. then contacted a company in Nashville, Tennessee who supplied a miniature electrolytic capacitor in phenolic impregnated paper tube. At a later date, the first paper tube capacitors were found to have a very short life, sometimes drying up as early as six months. This problem was resolved with the introduction of ceramic package electrolytics by I.E.A. Company.

Low impedance antenna coils were not available on the market at the time, so Regency Division wound their own.



I.D.E.A. designed and Vokar produced the special miniature 262Kc I.F. transformers. This low I.F. frequency was required because of a 3 to 6db loss per stage at the standard 455Kc with the available Germanium grown junction transistors. As soon as transistors with higher gain and better frequency response were available, the I.F. frequency was changed to the standard 455Kc. The first Regency set to make this change was the model TR-4, designed by Roger Liggett.



The Radio Condenser Company tooled and produced the special compact two-sectioned variable tuning capacitor with 135mmf in the antenna section and 110mmf in the oscillator section, both with standard open plates. Since they had no previous production experience with forming a narrow 15/16 inch condenser frame, an end thrust bearing adjustment was provided for first production parts as a precautionary measure. Two trimmers were also included on the small frame. Spacing of the plastic case was so close that a round depression has to be molded into the inside of the lid in order to provided clearance for the top adjusting screw. Early production sets can be identified by this adjusting screw and case depression.

As with any new and radical design, there were many problems with first production. Board fail-out was as high as 50% at the beginning. Because of the new board design, all new test fixtures were required. Spring loaded phono needles were used for test stations. A three position ferris wheel solder station was designed and built for board soldering.

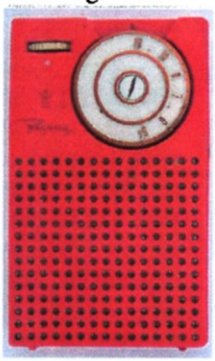
Two market areas were selected for the TR-1 introduction, New York City and Los Angeles. The new sets were so popular that they began to show up on the black market in Boston and other cities.

Producing enough quality  transistors in order to reduce costs was a major problem for Texas Instrument at that time. The original purchase order form Regency Division to T.I. was for one hundred thousand kits of four per kit at the price of ten dollars for each kit.   Kits were matched and color coded by Texas Instrument before shipping to Regency Division. In order to unilateralize the I.F. stages the RC networks were varied according to the transistor color codes.

With the advent of increased demand and increased production, transistor prices soon came tumbling down.

The Proceedings of the "Institute of Radio Engineers" for December 1954 carried an article on the first transistor radio and pictured the TR-1 beside a teacup on the front cover.

Approximately one year later the model was changed to TR-1G with a change in the tuning knob design and a change in the audio output to a PNP transistor. Prior to this time all four were grown junction NPN types. The battery power remained 22 ½ volts.



The standard 2" by 1" by 5/8" nine volt battery was not used until the introduction of the Model TR-4. The first design required a 22½ volt battery for adequate audio output with the grown junction transistors available at that time.

The Model TR-6 transistor set was the next model introduced in late 1955, also designed by Richard Koch. It was a larger set, measuring 7" by 5" by 3" deep. Included was a large good quality five inch speaker and a push-pull audio output stage for good power. It came in a genuine leather case with a leather handle. A most interesting story is connected with the design of the TR-6. It is probably the most rapid design of a successful production radio set on record.

Richard Koch, Chief Engineer, and Robert Cox, Director of Purchases, sat down together one afternoon after working hours and designed the complete TR-6, including the list of materials and components for purchasing, in less than two hours time. It is the first set to use a 9 volt power source in the form of a large rectangular battery, burgess number C6X. The front end of the set is similar to the

TR-1, using NPN transistors for the mixer-oscillator and the two 262Kc I.F. stages. For the audio output stages, a PNP driver is transformer fed into a pair of PNP outputs in a class B audio circuit, resulting in a very good performing radio set.

Raytheon was next on the marked with a larger transistor set than the TR-1 in 1955, followed by Bulova, General Electric, RCA, Mitchell and others with various sizes of miniature sets.

Three American physicists, John Bardeen, Walter H. Brattain, and William Shockley of the Bell Telephone Laboratories, invented the point contact transistor in 1947. Patents for the three electrode circuit element utilizing semi-conductive materials were filed on June 17, 1948. Patent number 2,524,035 was issued on October 3, 1950 to J. Bardeen et al. The time span from patent issue to radio production from patent issue to radio production was only four years, a remarkable achievement by I.D.E.A. Regency division and their component suppliers.

Ross Smith, CTS Corporation
Elkhart, Indiana September 3, 1983

The Regency TR-1 All-Transistor Radio article was originally published in the Indiana Historical Radio Society Bulletin, June 1984

Picture credits:
Emerald TR-1, Bob Schuck; *Coral TR-1G*, Ed DuPart; *All other pictures*, Fred Prohl

More Pictures from the Kokomo Meet

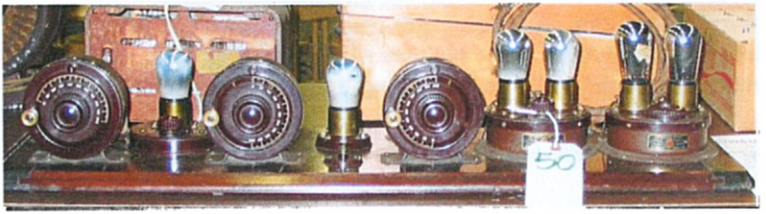
A small part of the swap area.

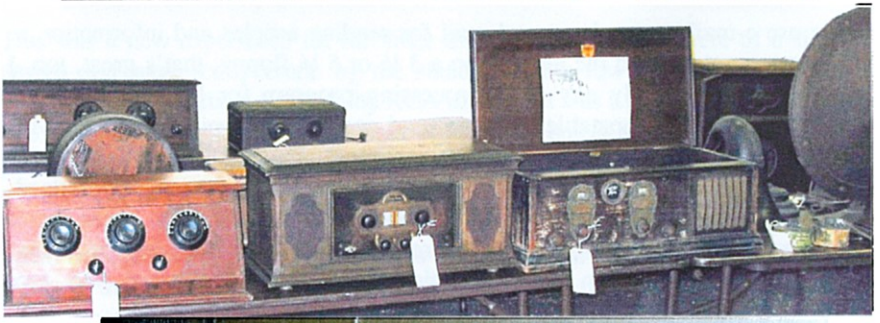
Alan Jesperson of Minneapolis and some of his great looking radios

Another view into the swap area from Alan's table

More
Regency's

Auction Items





Herman Gross who put a lot of work into the auction to make it a success

Comments from the Editor

Ed Dupart

I saw a lot of very rare Regency radios and contest radios at the Kokomo meet. I've decided to include a lot of pictures of them in this Bulletin, so it is larger than usual. I hope they will be useful to a number of our members. Because of the Bulletins size, I didn't include any of my articles. My thanks to Brett Phillips for bringing his clear case TR1 and everyone else that brought their Regency products.

Please use e-mail or regular postal mail for sending articles and information to me. If you want to send me articles on a 3 ½ or 5 ¼ floppy, that's great, too. I can work with virtually any word-processing program for DOS or windows designed for IBM compatables. Please send computerized pictures in a BMP, JPEG or TIFF format. Pictures can be incorporated with the article done in Microsoft Word or WordPerfect. If you don't have your pictures computerized, send the photo to me, preferably 35mm. Polaroids lose detail when I scan them. If you want your pictures and articles returned to you, please let me know. Sorry, I'm not set up for Mac or Apple. Typewritten articles are fine, too, because I can scan those into my computer.

Send me a photo of your favorite/ unusual radio and I will put it in the Bulletin.

Upcoming articles: Joe Scott's 1930 Delco Cadillac car radio, more pictures from the Kokomo meet, February meet contest info., repairing transistor radios, replacing 3-6Kv capacitors in 3" to 9" early TV's and the LaVelle's museum.

IHRS Museum Notes

The Museum was closed for 6 weeks while the show cases were being completely rewired and other repairs being made.

The rest of the wiring has been completed thanks to a grant from the Noble County Community Foundation.

The Museum has been donated a large RCA turntable. The turntable was used by radio station WOWO in Fort Wayne Indiana. The turntable is on a metal stand and stands about 3 1/2 feet tall; many of the early WOWO personalities have autographed it. It is quite impressive and will make a great addition to the IHRS radio museum.

The Audio Video class of the local high school will be making videotape of a tour of the Museum. The tape when completed will be available to the public. There will be additional information on the video as it progresses.

May 1st we will begin our regular summer hours. Fred Schultz Museum Curator

MY HOME MADE TWO TUBE AMP

By Bill Arnold
Washington, Indiana

I became interested in working on the older battery sets just simply because I felt like I needed the experience. I have always thought battery sets were just too much trouble. Still, I wanted to know about them, which meant I needed to get an example of my own.

This was a new experience for me since the older battery sets were of a simpler design and were really crude by the standards of a few years later. I became interested in the Radiola III made by RCA in 1924. It was a simple design that used two WD-11 tubes, which are no longer in existence unless you are willing to pay a premium. These old style tubes were not made as well as the later ones and do not work as well as the modern replacements that are sold from various sources.

I also believe that most of the collectors of the old sets such as the Radiola III do not have them working but just display them. I was to find out that most have bad transformers and the capacitors do not check within the acceptable range. This means that the components need to be replaced or rebuilt if you are to get the radio working. Bear in mind that when you get something like this working, it is still a terrible radio. After all, they didn't know how to design things back in the 20s since radio was in its infancy.

With schematic in hand and an article I got from my friend, Jim Fred, I began working on my first Radiola III. It had wires disconnected and a bad transformer, which I repaired with a new coil. I bought replacement tubes and decided the capacitors would have to be rebuilt. I took the metal ends off and put modern capacitors inside phenolic tubes. After they were put back together, they looked original. As I remember, it took a long time but I had never worked on one of these old sets and it was a learning experience.

After the repair job, I tried to power up the Radiola III with a power supply but I got so much noise that I decided to run it on batteries. That is when I decided to build a battery box to set up the voltages to operate the radio. With a combination of batteries, I made a power supply that operated the Radiola III without noise.

The Radiola III is a two tube radio that uses various capacitors in the tuning depending upon what frequency you want to tune into. The coils vary the inductance and actually select the stations by the use of two dials. I have found on a good day, you still get a lot of whistling but the stations can be tuned in by this method.

One of the problems with this arrangement is that it uses earphones because there is not enough power to drive a speaker. RCA realized this and designed what is called a Balanced Amp. This allowed the Radiola III owner to make a few simple connections to hook an amplifier to the radio and use a speaker.

Of course, there were several speakers around at the time but the most common was the horn speaker. It was basically a unit built much like one side of an earphone. It was then hooked to a horn, which amplified the sound. The sound was not all that great since you could hear the high frequencies but no bass or low notes.

Another speaker was developed to have better sound qualities. It was the cone speaker. It used a driver as in the horn speaker but used a pin, which was attached to a paper cone to amplify the sound. Some of the cheaper cones were simply out in the open while others were installed in wooden cabinets and sounded quite well.

Keep in mind, at that time radios were sort of expensive and were sold without tubes, batteries and earphones. One could purchase all of this at the time but most of the working class people could not afford everything at once and as money was available, they would add these extras.

I had a Radiola III as an early example but needed the Balanced Amp to go with it. I was to find out that these were bringing more than the Radiola itself. I decided since I had the schematic, I would build one myself and this is how my project began.

I bought a front panel for a Radiola IIIA, which I was going to use for parts. It had the needed panel and with a little work, I could cut it and modify it for the top. It also had the needed brackets and rheostat for the filament. The only problem was that it looked too nice. Even the lettering and plating was good. About that time I ran across a case and transformers. It had been missing two transformers but now that it was complete, I couldn't bring myself to use it for parts. This is how it ended up in my collection.

My quest for parts continued and I bought an original Balanced Amp case. I thought I might run across a Balanced Amp with a bad case but never did. I had a tube socket from a Radiola III that fit but was wrong. It had the same pattern of the 864 tubes that are re-based and used as WD-11s. I also got a junk panel that was given to me because it had extra holes to mount various components. I patched them and modified it to fit the original box. Now if I could find the other parts I needed, I could start this project.

I bought the brackets for the tube socket, rheostat, knob and coils to rebuild two transformers. I didn't have the wiper for the rheostat but I borrowed one and

fashioned one from a piece of metal that works well. I also cut a piece of plexiglas to use behind the rheostat since the original panel is built up in that area. It took some engineering but I put it all together and it seemed to be just fine.

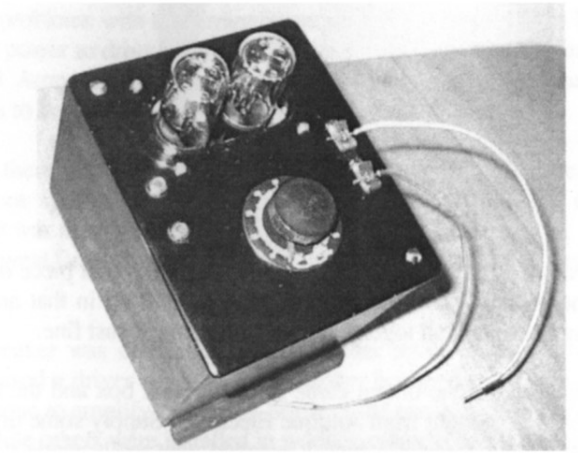
The pin tip receptacles for the output came from my junk box and the fahnestock clips for the input were bought from Antique Electronic Supply some time back. I also found a dial for the rheostat, which I installed, that really made it look nice. Before it was plain and now it looks like it has always been there.

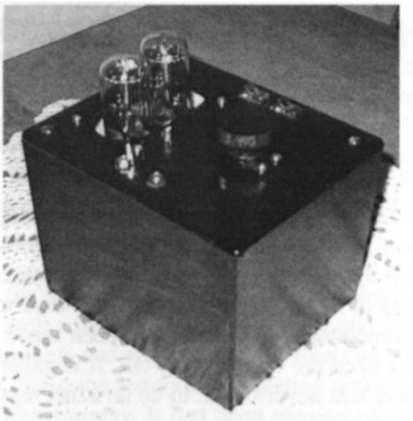
The box itself was large enough that the batteries were installed inside which made it self contained. This eliminated the need for a power cord, wire labels and an external power supply. It uses 1 $^{1/2}$ volts, 4 $^{1/2}$ volts and 90 volts to make up the various voltages used in the amp. They were hooked up in series and parallel depending upon the function and current needed.

I also decided I didn't really need the original case and thought a home made one would serve my purpose just as well. I took my measurements and duplicated the case. Now it fits the top that was made to fit the original case. I even used a cutoff saw to miter the corners as in the original. I stained it dark to match radios of the era and it looks like something that would have been made in the 20s. I think it looks pretty good and I liked the way it came out. It is patterned after the original RCA Balanced Amp and was never meant to be an exact reproduction or a forgery but merely something for me to use.

It does look vintage which is exactly what I wanted. I hate to use something that looks too new. After all, you wouldn't want a solid state amplifier hooked up to your 1924 radio. It will work on those old sets that were set up for earphones. Since the input is coupled by a transformer, it will not conflict with the power supply of the radio it is hooked up to. It is a push-pull operation as in the original.

So far, I have used in on a Radiola III, Radiola IIIA and an Aeriola Senior with excellent results. I have also used it with horn speakers as well as my RCA tapestry speaker, a Peerless cone speaker and a Crosley Muiscone speaker. I would say it operates as designed and should be comparable to original in operation. Of course, I would guess it is not a project that everyone would want to do since it was so time consuming but I have enjoyed building and using my own Balanced Amp.





Carl and Jerry

Dave Mantor merrijoy@comteck.com

"It was one of those unseasonably warm days that March often borrows from May and then pays back with a chilly day of its own during the latter month. Jerry Bishop was a victim of this nice weather. Instead of lolling comfortably on the leather-covered couch in his basement laboratory while his nimble mind toyed with some fascinating electronic problem, he found himself ....."
Remember the **Carl and Jerry** stories from Popular Electronics in the '50's and '60's?

How about this one? "Outside it was a stormy March morning. The howling wind, laced with driving snowflakes, shook and rattled the heavy *Radio and TV Service* sign over the door of Mac's Service Shop. Inside, things were a little stormy, too, at least with Barney, the red headed Number Two man of the service establishment. He stood a couple feet away from the bench and ....." I knew you'd remember **Mac's Service Shop**, a continual series that ran first in "Radio & Television News" followed by its replacement "Electronics World" and then finishing in the early 1970's in issues of Popular Electronics.

My brother and his family had come to my parents' home and after Sunday dinner, he introduced me to the writings of John T. Frye by giving me the March 1955 issue of Popular Electronics. Although I don't have that very same magazine that I read that day in 1957, I do have the replacement issue in my collection that reminds me of that time 47 years ago. The first quote above came from that issue of Popular Electronics.


. . . Jerry reset the dial of the oscillator each time one of the brief notes was heard . . .

I have re-read every issue I have numerous times. In the same way that we appreciate things of yesterday more now than when they occurred, I have read the different episodes of Carl and Jerry just like it was when I was 11 years old. I never cease to enjoy the different plots as they unfold even though I can almost recite some of them word-for-word.


. . . They wound a full three pounds of wire on the coil. This took up one milk carton by itself . . .

My collection of all of Mr. Frye's writings is far from complete, and it may be some time before I have them all. I find it to be a work in progress, and I'm enjoying every moment that I spend with **Carl and Jerry** and **Mac and Barney**. One of the problems I have at this point, is knowing for sure when he started writing in **Radio and TV Magazine** and when the very last issue of Popular Electronics came out that featured **Mac's Service Shop**.

As previously mentioned, the Carl and Jerry series was not the only series he wrote. In **Radio and TV Magazine** and later **Electronics World**, Frye wrote from a service viewpoint in **Mac's Service Shop**. The characters involved were Mac, along with his helper,

Barney and Matilda (sometimes identified as Miss Perkins), the office girl. The topic chosen for each month gave the reader the feeling that you were right there in the back shop of the radio and television store working on an intricate problem. Not only did you feel you were there, but you received a step-by-step tutoring of the actual problem along with the remedy.

Take the May 1956 issue of **Radio and TV News** for an example. Mac and Barney are discussing the questionable work being done on a radio that is in for an insurance claim due to being hit by lightning. The pros and cons as to replacing a whole unit or repairing the unit with the needed parts is part of the story. Then Mac continues to explain his premise on doing the best possible work with the dollars and cents consideration to both the customer and the insurance company. With the integrated boards we have today, the decision of unit or parts repairing or replacement of unit Frye had his characters making would certainly be different in 2004. However, the integrity of truthful work never becomes obsolete and Frye's' writing is as relevant today as it was in 1956. To me, that relevance makes or breaks a story. If it was only true then, well, nice story. If it's true today just like the period from which it was written, then I can learn a valuable lesson. Mark down one very good reason why John T. Frye's work is so worthy.

He did not limit himself to magazine serial stories, however. He was the author of several books as well. One, which I have, is **Basic Radio Course** published by Hugo Gernsback in 1951. The first printing of this book was July 1951 followed by a second printing in September 1952. Later, it was revised and enlarged into the **New Basic Radio Course** in 1977.

He also wrote **Radio Receiver Servicing**. I don't have this book, but I hope to at some future date. I've seen them on eBay and "Bookfinder.com" from dealers worldwide, including England and Switzerland. The readership base for his writings was and is widespread.

I hope to do a follow-up on Frye and his writings later on here in **Dave's Service Bench**. Several considerations will be a new **Carl and Jerry** story that was released just several years ago by a gentleman who graciously shared his story with me. Also, I hope to complete an interview with one of Mr. Frye's relatives in the Logansport, Indiana area, a cousin by relation. Then, too, if there are any of you who knew Mr. Frye and you would consider sharing your recollections with me, I'd appreciate it and will gladly share them in the next installment of the **John T. Frye Saga**.

I would also like to tell you of my latest project with a new website committed to articles and stories about radio. You can find it at:

http://radio_papers.tripod.com/cj, using all lower-case letters. I love radio, and I love building websites. So, it seemed to be the logical thing to do.

The next time you're bored with the Internet, and there doesn't seem to be anything of value on TV, just pick up an old radio magazine and browse the contents. Stop by and read articles about radios when they had tubes, and the newest electronic break-through was in the back-pack radios the military had just introduced. Turn over to page 66 in that issue of **Radio and TV News** and find out what Mac and Barney are working on. While this is all going on, a music selection by Bing Crosby on the old Zenith would complete the mood and scene. Makes you wonder why we ever got modern, doesn't it?

Keep a good thought, give a smile and help someone have a great day. Dave Mantor merrijoy@comteck.com

RADIOADS

These ads are free to IHRS members. Please limit them to 100 words. Unless we are advised otherwise, we will run ads for two issues. The exception would be where services, etc. are being listed. Please send your ads to the editor at the address shown on page 2.

I'm also offering a postage size picture ad service.

Wanted: 1949 Pilot 3" TV - Parts Set. Charles Mooney, 13018 Midsummer LN. Bowie, MD 20715-3030. (301)464-1624. e-mail: charliemooney@webtv.net [6-04]
For Sale: 1947 Admiral 7T10-C, White, Orig., $35.00; 1932 Aetna mantle, $65.00; Belmont wooden 636, Orig, $40.00; 1932 Courier mantle, Walnut, $65.00; 1924 Crosley Model 51, $115.00; 1931 Crosley 148, $225.00; 1950 Crosley 10-135, $100.00; Emerson 587, Black, $45.00; 1948 Firestone 4-A-61,White, $55.00; 1932 Knight Mantel, $125.00; 1932 International Majestic Mantle, $65.00; 1927 Peerless Speaker, $45.00; 1942 Philco 42-PT95, Walnut, $50.00; 1942 Philco 42-PT95, Walnut, $50.00; 1930 Philco 20, Walnut, $250.00; 1931 Philco 70, Walnut, $345.00; 1947 Pilotuner T601, Walnut, $$35.00; 1924 RCA Radiola III, Mahogany, $150.00; Radiola Power supply, $40.00; 1939 RCA 9TX31, Bakelite, $65.00; RCA 100 speaker, $85.00; Sears mulitmeter, $10.00; 1950 Silvertone 2, White, $65.00; Sentinel Model 309-1, $45.00; Simpson 270 tester, $30.00; 1939 Truetone D-2015, White, $100.00; 1938 Zenith 5R312, Brown, $125.00. 1949 Zenith 7H920, $45.00; 1950 Zenith G725, $35.00 Two sets of working earphones at $20.00 for choice. Everything is in nice condition and works. Most have been re-capped and restored. If interested, call for details. I will deliver to Louisville in August or Lawrenceburg in the fall. All are subject to prior sale. Bill Arnold, Washington, Indiana. Phone 812-254-1702 or email bbarnold@excite.com [6-9-04]

For Sale: New & used tubes. Send a long SASE for list. Contact Ralph Keen, Jr. 1003 Sutton Rd. Greensboro, NC 27406-8812 Phone 336-674-7379 [6-9-04]

For Sale: Photocopies: Manuals for B&K E-200D Sig. Gen, Radiola III, IIIA, 17, 18,25, 60, 100, 100A & 103 and other paper, some original. LSASE or email for list. **Wanted:** Spkr/ OP x'fmr assembly for RCA 5T1. Herman Gross, 1705 Gordon Drive, Kokomo, IN 46902 765-459-8308 Email: w9itt@mindspring.com

For Sale: 2 brand new solid state Bogen 35w PA amplifiers in the box, $250 ea. 1 used 100w solid state Bogen PA amp, $200. 1 brand new solid state Radio Shack 20 w portable 12v/120v PA amp, $75. 1 used solid state Radio Shack 20 w portable 12v/120v PA amp, $50. Other misc. solid state amps, call. Brand new Electro Voice microphones, call. Outdoor PA speakers, some new, call. Used resistors, pots and capacitors, some dating back to the 30's, call.
Loren Willis, Box 282 301 S. Plum, Farmland, IN 47340 765-468-8501

Wanted: 21EP4 picture tube - prefer Zenith or Rauland but will take what you have with non scratched face and good emission. State condition and price. Ship or I can pick up. John Foell, 6130 Deer Track Cove, Auburn, IN 46706-9323. (260)-627-0127 evenings, (260)-429-8202-days. Email to John_D_Foell@raytheon.com [12-03]

Wanted: R.F. choke, Zenith part 20-135, for Zenith chassis 1204, as shown in Rider 8—41. Richard Ender, 806 Lee St., Milan, MI 48160. (734) 439-2545

For Sale: Now Available: A replacement for the UV99, our V999R replaces your UV99, our V999 operates the filament on 1.5 VDC. Both use a 5676 proximity fuse, subminiature tube. Our price: $15.00 plus first class shipping. James Fred, 5355 S. 275W, Cutler. IN, 46920, phone (765) 268-2214.

For Sale/Trade: See our new website for beautifully restored radios. Choose from deco tabletop models to gorgeous consoles. Always open to reasonable offers. Check us out at: www.tubularradio.com Actively collecting Zenith and other high-end 30's wooden sets. Bob Snively, Richmond, Indiana
Phone; (765) 935-3746 E-mail; totallytubular@aol.com

Wanted: MYSTERY SCOPE Any information will be appreciated on a 5-inch 'scope made by Television Equipment Corp, of NYC, model TEC601. This unit is heavy and very well constructed. It appears to be of early 50's vintage (octals and miniatures) and was intended for TV servicing. This is a candidate for a possible fun restoration project.
Harold E. (Hal) Hunt 1209 Canterbury Dr Decatur In 46733 260-724-9700 (leave message) hehunt@adamswells.com

Wanted: Any information about Marconi No. 3574 receiver (made by "MWTC, Ltd. London") using carborundum, valve, and perikon detectors. Needed for restoration project. George B. Clemans, 851 West Wooster St., Bowling Green, OH 43402. (419) 352-7198, clemans@bgnet.bgsu.edu.
For Sale: Philips Radio tube books. I am currently reducing my stocks of my book "Illustrated History of Philips Radio Valves to 1935" and am offering signed copies to fellow IHRS members for $10 cash including air mail postage. Please reply to Fin Stewart, "Cockerdale", 380 Bulga Rd, Wingham, N.S,W. 2429, Australia.. email address cockerdale@bigpond.com

FOR SALE: Reproduction Philco cathedral cabinet parts and reproduction cabinets for model 20, 21,70, 90. Grandfather clock finials: Philco 570, GE H-91, Crosley 124. Philco Colonial Clock top trim and finials. Rider's Radio Index, 1 through 23 -$20.00 ppd. Books, SASE for list. All plus shipping. Philco cabinets, front panels, see page 22 in Volume 29, #4 the Winter edition. Other parts, inquire. Call or e-mail for details. Note new phone # and address. Dick Oliver c/o Antique Radio Service, 1725 Juniper Place, #3 10, Goshen IN 46526. New phone # (574) 537-3747, e-mail dolivears@aol.com

Wanted: Philco 512 Mandarin Red radio w/212 Red speaker or 514 Nile Green radio with 214 Green speaker or 513 Labrador Grey metal radio with 213 matching grey speaker. I prefer the Red model.
Bob O'Friel, 7631 Cape Cod Circle, Indianapolis, IN 46250-1844 Phone, (317) 849.4028

Interested in TV history? Want to see how it started? Try this Web site. You'll be amazed how far we've come.
http://pyanczer.home.mindspring.com/Tour Note: all lower case except the upper case "T" in tour.
Pete Yanczer, 635 Bricken Place, Warson Woods, MO 63122-1613

FOR SALE: Federal Book: Limited supply again available. 64 page booklet describes Federal Tel. & Tel. Radio-from the beginning in 1921 to the end in 1929. Over 60 illustrations including pictures of early Federal RF and audio amplifiers as well as all early radios. Many federal parts are pictured and described. The article and speech by Dick Scramberger, the Federal expert, are included. All Federal models are listed with the year and month introduced, cost new, and description. The Federal Broadcast station, WGR first in Buffalo is included. There are two pages of references for more Federal information. This booklet contains more Federal information than exists in any other single spot. Good Quality printing. Please send $7.95 (Including S&H) to Larry Babcock, 8095 Centre Lane, East Amherst, N.Y. 14051

Wanted: Wood cabinet for Atwater Kent Model 33 receiver. Ray Andrejasich (317) 846-6977.

Wanted: I am wondering if any one has a power transformer that can be used in a Grebe—Garod 511. The original unit is mounted above and through the chassis with horizontal laminations (4—1/2" by 3—7/8"). The following specifications are required: ***Primary*** 120VAC, 60CY ***Secondaries*** 860VC1 (approx.) to deliver 43OVDC to the filter at 150 MA, 5VAC at 3A ---(5Z3), 2.5VAC at 3A --(two 45's), 6.3VAC at 3A -- (nine 0.3A heaters) Also **Wanted**: I wonder, does anyone have any information on a Thordarson power transformer with the nameplate model No of 5604?. It is a vertical mount, and has HV, 5V and 2.5V secondaries. By "heft", I would guess it is good for about 100VA. This is an older unit, and I believe its revised Model No would be 56R04. Thanks, Harold H. Hunt hehunt@adamswells.com [12-03]

FOR SALE: Photocopies: Hallicrafters 8-22, Zenith 1000-1, Radiola III, 18, 60, 100A, 103, Majestic 52, and other radio, tube, and Test Equipment manuals. Also some Novelty radios. LSASE for list. N.I.B. Western Electric 421A-$55 postpaid. **WANTED:** Speaker/output xfmr. assembly for RCA 5T1. Herman Gross, 1705 Gordon Dr. Kokomo, IN 46902. (765) 459-8308, e-mail = w9itt@mindspring.com

Happy 90th Birthday Weldon Hook!

George Freeman informed me that Weldon's 90th birthday is this July 6 and that his wife Margaret would like his radio collector friends to "shower" him, presumably, with birthday cards/notes. Weldon is a Crosley expert and has helped me over the years with my Crosley's and I always enjoyed Margaret's banana nut bread that she brought to the meets. George sent this to me about Weldon: " Here's a little bit from me about Weldon:

When I went to my first vintage radio meet, maybe 15 years ago, it was an IHRS Indy location. There, Ed Taylor introduced me to Weldon Hook.

Weldon took me under his wing and was the most patient man I had met in a long time. He answered my clearly very uninformed questions patiently and positively and never had any words but encouragement. One time he visited my collection. I had just acquired a '20s Crosley I was especially proud of. He looked it over for a few seconds, complimented me on the acquisition, and pointed out one knob was incorrect. Weldon really knows Crosleys. Guess that's why so many call him "Mr. Crosley"."

Weldon's address: Weldon Hook
5 Henry Street
North Vernon, IN 47265-1027