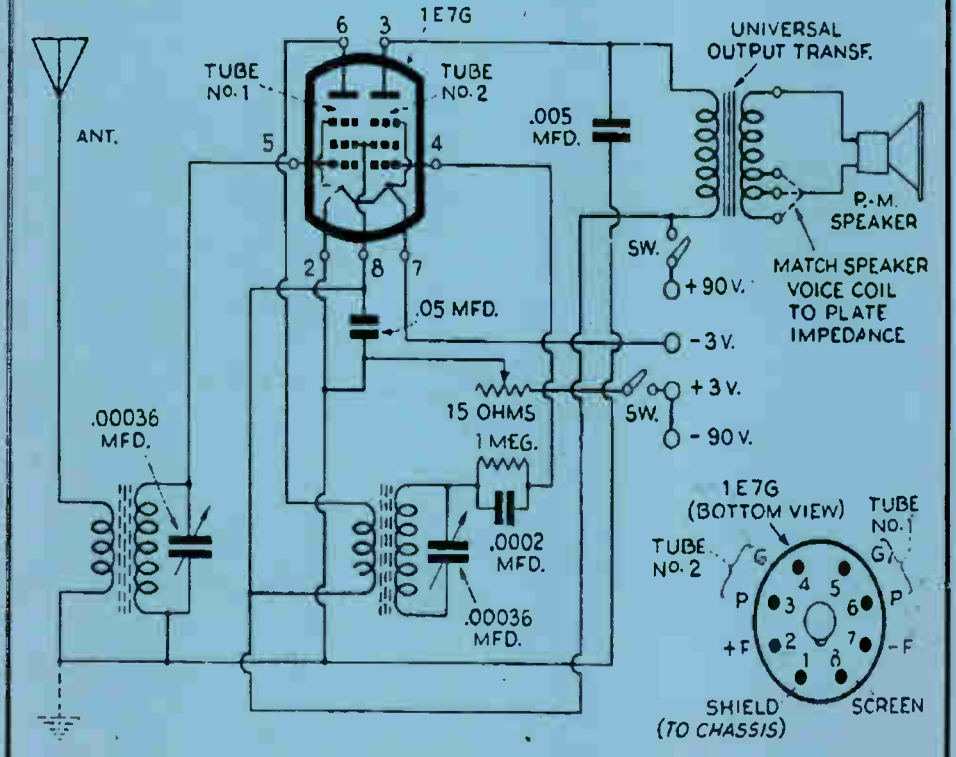
BULLETIN

Indiana Historical Radio Society

PRESERVATION FOR POSTERITY

VOL 25 MARCH 1996 No. 1

One Tube Radio with Loud Speaker Volume



See HOME BREWING, Page 22

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BULLETIN DEADLINES, News, Articles & RadioAds -- 2/15, 5/15, 8/15, 11/15

The INDIANA HISTORICAL RADIO SOCIETY is a non-profit organization founded in 1971. Annual membership dues are $10.00, which includes the quarterly IHRS BULLETIN. RadioAds are free to all members. Please include a S.A.S.E. when requesting information.

THE PRESIDENTS MESSAGE,

"The only thing that can make us give up our radio is poverty. The old radio is the last thing moved out of the house when the sheriff comes in..... It is the best invention, I think, that's ever been-" That's a quote from Will Rogers that appeared in a recent edition of Antique Week. Radio resulted in the most dramatic change to affect the development of our society and certainly explains and justifies our interest in this fascinating technology. Our schedule for the year is now in place. The annual "BIG SHOW" will take place on Friday and Saturday, May 3rd and 4th at the Ramada Inn at 1709 East Lincoln Rd. just off of Route 31 in Kokomo.

I'm extremely pleased that **Ray Andrejasich** will be our guest speaker at the Friday night banquet. Ray is one of the engineers that was responsible for the development of the Zenith "Royal 500" and, in turn, the Royal 1000 and 3000 transistorized Transoceanics. He has a model shop prototype "Royal 500" as part of his presentation in addition to fascinating tales of the challenges in getting these units to production. He is definitely a part of the history of radio.

Ross Smith has reserved the "High Dive Pavilion" in Elkhart on Saturday, August 17th. Then, on Saturday, October 12th, Glenn Fitch has scheduled our annual meet at Riley Park in Greenfield. Those who were on hand for an excellent lunch and meeting held at our Holiday Inn session on Saturday February 17th heard Mike Feldt's proposal that IHRS set up a special contest/meet at the Noblesville, Indiana 4H

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(Continued from the previous page)
Clubhouse grounds on Saturday, August 3rd. This would be a receiver performance contest with various categories starting with I tube and "Home Brew" type sets. Among other challenges to be investigated would be the Receiving Antenna and Signal Distribution problems.... More details to follow, This sounds like a program that would be of definite interest for the more technically oriented and represents a fresh outlook on our hobby. The "IHRS Story" will be presented on one of the upcoming "Indiana Today" programs hosted by Paul Irwin on WICR-FM. This station at 88.7 mhz., recently tripled their power to 3OKW (ERP) and now covers a much wider area. The IHRS chapter will probably be aired in the 2nd or 3rd week of April.

Fred Schultz deserves special acclaim for the major efforts he has placed in the IHRS museum project at Ligonier. Not only was he directly involved in the many long and hard hours of the restoration and preparation of the Museum site itself but he was also very effective in securing support and funding for the operation. It was the feeling of the membership that the club appoint Fred to the position of "Museum Curator" as an official club title. Our hat's are off to Fred.

Longtime IHRS member, Ralph Barnett passed away recently. His obituary notice stated that donations in his name could be made to the IHRS. To date, some $50 has been received. Our condolences and best wishes go to Dorothy and his family.

In the meantime, I'll see you wherever radio Lives.

Bob O'Freil

TUBE USERS GUIDE

Ludwell A. Sibley

Radio restorer-collectors need to know all they can about tubes. The following may be helpful along this line.

DON'T REPLACE IT IF IT AIN'T BAD

It's surprising how rarely trouble in an old radio derives from a bad tube. Even though tube makers in the old days promoted routine replacements of tubes, and even though radio repairmen got a major part of their profits from sales of tubes, the tubes in an old set are likely to be perfectly usable. (The main exception is 35Z5s, which often have open filaments.) Before replacing a tube, consider the following factors.

Loose Base. A tube may be loose from its base. This has no effect on performance, except for some risk that the bulb may twist around enough that the wires short-circuit in the base. To re-cement the tube, use clear nail polish - paint a ring around the base, let the polish soak into the old cement, recoat, and let dry overnight. Polystyrene "coil dope" works as well, and can be used to refill the nail-polish bottle. Don't bother with solvents (acetone, etc.) to soften the old base cement. The cement was baked hard in manufacture, and "nothing" dissolves it.

Rattles. Loose cement in the base has no effect on the operation of the tube. Likewise with loose glass particles inside the tube as long as the vacuum is OK, bits of glass from the "press" are harmless. Loose metal parts, like getters, are more serious: there is a risk of their falling into other elements and causing a short circuit. Occasionally a large filament-type tube like a 5U4 or 2A3 will show rectan-

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gular white flakes of filament coating, loose inside the bulb. This is suspicious; test emission to see if the loss of coating is serious.

Blue Glow. Tubes filled with gas (OC3, OD3, OZ4G, etc.) or mercury vapor (82, 83, etc.) glow a vivid blue in normal use; lack of glow indicates failure. Some healthy power output tubes (6CA7/EL34, etc.) show a small area of blue inside the glass at the top, the result of electrons striking the glass. However, blue glow inside the elements of a vacuum type tube indicates a gassy tube which had better be replaced.

Testers and Testing. A tube tester is simply a guide to the quality of a tube. The "emission" type of tester checks for gross defects like failed emission and for interelectrode leakage. The "transconductance" type of tester is a more refined device, and usually tests for gas as well. However, a tester may "fail" a usable tube or pass a defective one. (A tester in use today is at least 20 years old, and its components have aged appreciably. This is a drift -prone analog test instrument that doesn't even have a calibration controll) As an example, a 6JS6C TV sweep tube may test 'OK for emission, yet fail miserably in a linear amplifier that works the tube harder than the tester. A 201A with a one megohm leak from grid to filament may light the "short" light on the tester, but will work fine in a '20s battery radio. A given tube usually yields different readings from one tester to another. The ultimate test is to use it in the radio.

SOME TUBE LORE

Dual Numbering. The tube industry put out numerous tubes that were dual-numbered. Earliest examples were the 35/51, 39/44, 47/PZ, and 6A4/IA In later years multiple numberings were quite common. As an extreme example,

a 6U8A is a 6AX8 is a 6KD8 is a 5KD8. A tube substitution book will show alternative numbers that will replace a needed tube. Speaking of substitutions: the little known industrial 5R4GY is a dandy plug-and-play replacement for the 5Y3G; it draws the same filament current, but has bigger plates and runs cooler.

Improved Versions of Tubes. An "A' or"B"version of a tube is generally improved over the basic model, and will replace it. However, many "A" or 'B" versions are improved only in that they warm up in a controlled length of time. This is an important feature in series-string TV sets but meaningless in a parallel-string radio. Some of these are 6AM8A, 6AN8A, 6AQ5A, 6AT8A, 6AU6A, 6AU8A, 6AW8A, 6BA8A, 6BK7B, 6BR8A, 6CB6A, 6CG8A, 6CL8A, 6S4A, 6SN7GTB, 6TSA, 6U8A, 12AZ7A, 12B4A, 12BH7A, and 12BY7A. Improvements in other types may or may not matter: 6AF4A , shortened physically; 12AU7A - low-microphonics type; 12AX7A - low-noise-low-hum variant. In the 6L6 family, the improved versions were:

6L6, metal, dissipation rated at 19 watts.
6L6G, glass, large "ST'-bulb.
6L6GA, glass, smaller "ST-bulb.
6L6GB, glass, tubular.
5881, mini-6L6GB, dissipation uprated to 23 watts.
6L6GC, glass, tubular, dissipation uprated to 30 watts.

Interchangeability Between Makers. In the U. S., the land of interchangeable parts, the tube industry was blessed with uniform standards. Major makers produced tube parts and complete tubes for branding and sale by their competitors. A Type 80 made by RCA can be replaced confidently by one made by GE, Sylvania, Raytheon, Arcturus, etc. This

(continued on page 8)

leads to the private brands. A set-maker (Philco, Emerson, Zenith, Dumont, etc.) usually equipped its radios with tubes made by the bigger tube companies but marked with its own brand, then warned the public to use only its brand for replacements. Just for fun: the following manufacturer codes may be found on tubes in addition to the private brand. They show the real origin of the product, like "Emerson" tubes made by GE, or "Philco" items from National Union.

111	Amperex	323	United Electronics
158	Dumont	336	Western Electric
162	Eimac	337	Westinghouse
170	Electronic Tube Corp.	354	Lewis Electronics
188	GE (Ken-Rad)	423	North American Philips
210	Hytron/CBS-Hytron	636	Sheldon Electric Co.
212	Industrial & Comm'l Elect.	713	Taylor Tubes, Inc.
226	Kuthe Labs	738	Lewis & Kaufman, Ltd.
231	Machlett Labs	771	Penta Labs
247	National Union	781	Vacuum Tube Products
260	Philco	787	Sonotone Corp.
274	RCA/RCA Victor	809	Varianrates
280	Raytheon	818	Tel-0-Tube Corp.
312	Sylvania	884	C. R. T. Electronics Corp.
322	Tung-Sol	935	Electrons, Inc.

Early Metal Tubes. Plain black metal tubes that carry steel-stamped type numbers and brands date from the earliest production in 1935-36. The stamping looks like engraving, and appears mainly on RCA-Cunningham and Raytheon products. The affected types are the "original nine" (5W4, 6A8, 6C5, 6F5, 6F6, 6H6, 6J7, 6K7, 6L7) and the 6X5. Tubes in this style are the "correct" replacements for 1935-season radios like the GE A-81 or AK 317; by contrast, they are somewhat out of place in a later set. Metal tubes with a

protruding "getter bump" on the shell just above the header are early, dating pre-1936-38. Those of grid-cap types (6K7, etc.) having brown insulating material on the grid cap are of pre-war vintage. Those with the type steel-stamped into the bottom of the shell are newer than about 1945.

'**MR**' Tubes. Many old tubes are stamped with the letters "MR". These came from a 1943-45 program of manufacturing a few popular types for "maintenance and repair' of civilian radios, thus reducing a crippling shortage of such tubes caused by WW II military needs.

'**Eye**' Tubes. These are usually dim as-found. Despite hopeful articles in the collector press, they rarely can be reactivated. Fixes: (1) make sure the 1-meg resistor in the socket is OK - an open resistor will dim the display; (2) rewire the plate lead directly to the rectifier output, thus giving it extra voltage. A small increase in voltage gives a disproportionate increase in brightness.

Making Your Own. Many otherwise uninteresting tubes can be made into useful types by making an adaptor, rewiring the base, or changing the base. For example, the 6A4/LA becomes a good replacement for the 01A by changing from a five-pin to a four-pin base, with the tube triode-connected. Rectifiers, which usually involve only four leads, are particularly easy to re-base.

Some handy conversions:

5U4G to a 5Z3 (*) or a 5X4G, 5Y3GT to an 80 (*)
5V4G to an 83-V (*) or a 5Y3GT to 5Y4GT(*)
5R4GY to an 80 (#)
(*) Electrically identical.
(#) The 5R4 is higher rated / longer-lived than the 80.

EDITORS NOTE:
Lud Sibley is the editor of the "OSCILLATOR", the newsletter for the DELAWARE VALLEY HISTORIC RADIO CLUB.

CHECKING and REPAIRING VARIABLE TUNING CAPACITORS,

by Ross Smith

A six-tube AC-DC broadcast band set came in last week for restoration that was severely corroded and had aluminum spray paint over the rust and corrosion for a cover-up. The first thing to do was to clean off aluminum paint overspray with acetone and remove corrosion with WD-40 until normal circuit functions could be re-established.

After re-capping (replacing fixed capacitors), checking tubes and checking all components for continuity, including all grid-return circuits, the set worked well and had high gain with a 456 Khz IF input from my R.F. generator. However, after attaching an antenna, first to the antenna terminal and then to the grid of the converter tube, not even local stations would come in! (You could do better than this with a crystal set). All tube socket voltages were re-checked and found to be normal. WHAT COULD BE THE TROUBLE? It was obvious that the Hartley oscillator circuit was dead. All coils and resistors in the circuit checked OK, so there was just one component left, the 3-gang variable tuning capacitor. This capacitor was 200 uuf, 390 uuf and 500 uuf maximum. Where could one find an odd-ball capacitor like this?

I have been repairing radios as a hobby for over 50 years and have observed that of all radio components, the variable tuning capacitor is least likely to fail, unless it is made of pot metal. Removing all connections and checking each stator for continuity revealed short circuits in two of the three sections while rotating the shaft from minimum to maximum.

(There were no plates scraping together). The indication on the VTVM was similar to an electrolytic capacitor check, showing a variable charge instead of a clean infinity reading.

The next step was to remove the variable capacitor from the chassis. Observation in the open revealed considerable corrosion on aluminum plates in the form of spots of hard white powder, probably aluminum oxide. A good wash job with a spray cleaner did not help. This time I used a capacity checker and applied 500 volts between frame and stators. Breakdown was indicated by the electric eye on all three sections and it would not clear by reducing the voltage. In other words, the "shorts" would not burn out with application of high voltage.

Next was to spot the areas of conductivity on the plates and "clean up the act". This could be done by pushing thin folded sandpaper in and out between the plates. However, I found an old Ford Spark Coil point file that was just the right width to fit between the plates. Next came about 20 minutes of scraping and filing with alternate cleaning. One section continued to show a short, so the next step was to open and clean all three trimmers mounted to the frame. When screws were removed, one ceramic washer and the small mica washer had paint over-spray and another was completely corroded inside, under the washer. Another 10 minutes of cleaning, polishing and re-assembly corrected the problem. The tuning capacitor was re-assembled into the chassis and the set worked like new! Except for bent plates, this was my first experience with a faulty tuning capacitor.

R. S. 2-3-96

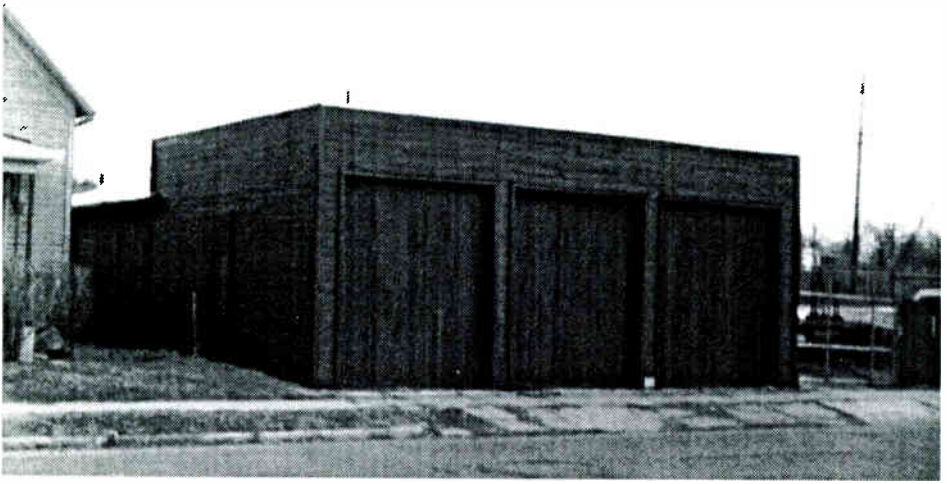
Letters from the Members:

Several years ago while attending a meet in Elgin, Illinois I purchased an Aeriola Senior receiver from the late Del Barrett. I really enjoyed our conversation about radios made in Indiana and the listing in the December 1995 Bulletin brought back memories. Among the items DEL included in this sale that day was a photo of the building at 1418 Wall street, Fort Wayne, Indiana, where the "ANYLITE Electric Co". was located from 1922-1928. Since the list in the Bulletin shows the "ANYLITE ElectricCo.", and the ,"EVERYHOME" plus the "KING COLE" were all made at the Wall street building, perhaps you could use the photo in the Bulletin.

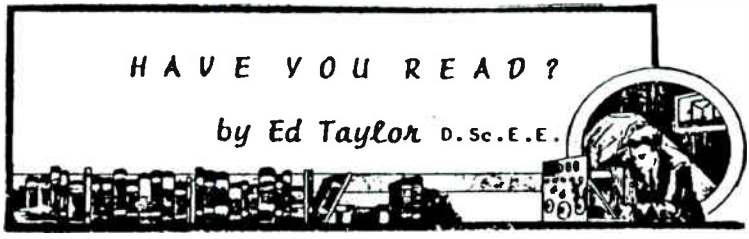
Whether or not you use it, I am sure Dr. Ed Taylor would enjoy adding the photo to the IHRS scrapbook.

CHARLIE MOONEY, BOWIE, MD 2-13-96

Thanks Charlie.... (the editor)



Factory building, 1418 WALL St., Fort Wayne , Indiana



CRYSTAL CLEAR VOLUME 2

by Maurice L. Sievers-1995

For collectors interested in the history of American crystal sets, this second volume is a must have for your bookshelf. CC-2 supplements CC-1(1991) with 244 supplementary pages devoted to futher research and the identification of an additional 172 crystal radios. Well illustrated with 479 new photographs and vintage adverts, Dr. Sievers also discusses two prolific crystal set manufacturers: Philmore and Western Manufacturing Company of Kearney, Nebraska. Western used at least a dozen different trade names *i.e.* TINYTONE, MIDGET, TI-NEE, PEEWEE, TINYMITE,PA-KETTE, etc. The classic advertisements openly glorify wild claims and testimonials as to the superiority of individual crystal radios distance receiving ability and the sensitivity of various minerals.

Trade names of crystal sets, detectors, or minerals may be referenced in the comprehensive combined index for CC-1 and CC-2.

Available from Antique Radio Classified, Antique Electronic Supply and other booksellers.

Museum update

Over 5000 visitors have now toured the Museum. Schools from Indiana, Michigan and Ohio have taken advantage of the historical importance radio played in our past and incorporated this into their curriculum. Over 26 states have been represented and 7 foreign countries including Russia, England, Mexico, Japan, Canada

Donations have been received in memory of Glen Rogers, these funds were used to purchase a new sound system for the Museum. Glen was one of the early supporters of the Museum and will be greatly missed.

Except for scheduled tours the Museum was closed part of the winter due to having only a tempory heating system. The Kenny Foundation of Noble County came to us to see if we needed anything and gave us a complete system.

Due to deterioration of the concrete in the parking lot a new surface was needed. Also, all the remaining concrete needed to be removed, this was going to cost around 24,000 dollars besides the brick we plan to use. The city of Ligonier had just torn up an old brick street and gave us the brick. They also offered to remove the old concrete saving us $8000. The Jenny Thompson Foundation gave us the remainder of the money needed and the project is scheduled to start April 1.

A booth was set up at the Ham and Electronics show at the Fort Wayne Coliseum in November. Information was handed out about the Museum and the Indiana Historical Radio Society. I.H.R.S. member Joe Miller of Kimmell, Indiana assisted us. We had a steady stream of interested people both days with many taking I.H.R.S. membership applications.

Several radios have been loaned or donated to the Museum in the last few weeks. Some of them include a baseball radio display loaned by Charlie Miller of Elkhart. A working and near mint AK 40 with matching speaker was donated by Dour McIntire of Elkhart. This is a very fine working radio and is being used during school tours to demonstrate how great a 1928 radio could sound. A very rare Lyradion with matching antenna, manufactured in Mishawaka Ind. was loaned by Marshall Howenstein of Lafayette Ind. John Foel, "A Museum board member repaired and delivered a beautiful 23 tube Scott Imperial to the Museum along with several other items including an Emerson Mae West, 1937 Zenith deluxe wind charger, and several consoles.

Starting May 1st, we plan to be open 6 days a week with plans under way to install signs on the 3 major highways passing through Ligonier. We are still in need of some Indiana Radios of the 1920s for our made in Indiana display. Anyone wishing to loan or donate these items please contact me.

Fred Schultz Ph. 219-894-3779

Tales of the Yesteryears

NANCY WHO? by Russ Rennaker

It was June of 1940. I was livinq at a little hotel just off Michiqan Avenue until I could qet located. I had just been transferred back from the CBS radio station in Washinqton, DC to the CBS station in Chicago, where I had previously worked before goinq to Washington.

I was sitting at the bar, killing time until time to go to work. I had the night shift. There was a pretty young lady sitting next to me, and in the course of due time I struck up a conversation.

I gave her my name and said I was with CBS around the corner in the Wrigley Building. She perked up her ears at that. She said her name was Nancy and she was attending acting school up the street on Chicago Avenue. Her goal was to become a radio actress, or better still a motion picture actress.

As our conversation progressed she asked where I was from. I said I was from Indiana, a little town in the central part of the state by the name of Marion. "Well, of all things," she said. "I have an uncle there. He is a very well known surgeons His name is Dr. Davis."

Now my interest was aroused. It so happened Dr. Davis was my mother's doctor, and I vouched for what a fine one he was. She told me her father was also a doctor there in Chicago. She said she had been doing some bit parts at WGN radio station and that her mother also was a part-time radio actress.

In my career in the radio broadcasting business I had seen many ambitious young women, hopinq and praying for that one big break that would catapult them into stardom. To me this Nancy was just another. But there was something in her attitude that made me wonder if she might not just succeed.

(continued on page 21)

WE SAW:

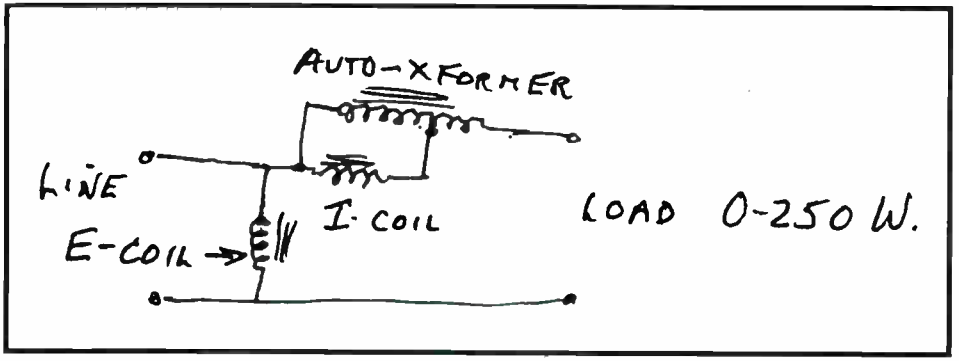
This beauiful 1937 Zenith Tombstone, 1ST place contest winner entered by Bob Sands.

Don & Marilyn Johnston, both past Presidents of the IHRS

AT INDIANAPOLIS ON FEBRUARY 17th.

Here's John & Michael Bart, sons of Julia and David Bart. David received the 2nd place contest award for his 1910 DeForest Audion Detector.

Dr. Ed Taylor was there too, selling a few things and no doubt, buying a few things. Ed is without a doubt, one of our most popular members. He's also the IHRS Historian and a regular contributor to the Bulletin.



Here's a corrected schematic on the wattmeter conversion article, in the December 1995 Bulletin. Chet Gehman points out that the transformer should be in a step-down mode instead of up. He went to say that he also included a DPDT switch, able to switch out the transformer, enabling the original 750 watt range.

Chet also showed me why my comment to the article had no bearing in this case, therefore my concerns do not apply. My apologies if I caused any confusion about this article.

Peter Yanczer

See "HOW IT ALL BEGAN", ON PAGE 19

HOW IT ALL BEGAN , (My career in radio)

BY George Kasdorf, Sr.

The year was 1935. We were in the midst of the great depression. We had no radio. I was 12 years old. I saw the following ad (see page 18 for the ad) for a crystal set in Popular Mechanics.

At this time I was already becoming interested in things electrical and reasoned this might be a way of getting a radio. My father consented to let me have the 25 cents plus the stamp for the letter. This doesn't sound like a great expenditure but at this time many men with families were lucky to earn a dollar a day.

The awaited item arrived in the mail, but I had to have an earphone. At the time I was born there were two telephone companies in town. To be able to talk to everyone in town there had to be two telephones. They finally merged and the unused telephone ended up in the attic. Again my father concented to let me remove the receiver from the attic telephone to use as an earphone. After putting up an antenna and driving a ground rod and connecting it all together, I heard nothing. Then I started inquiring around the area for those of similar interests. After conversation with others I found I needed a long wire up. Also the so called radio I bought was only a detector and probably would have worked where there any strong stations nearby. So with the addition of a tuning coil, a long wire between the house and barn and the ground I already had, I was finally rewarded with sound. As an added bonus when the state Police came on the air I heard them also. They were only three miles

(CONTINUED ON PAGE 20)

away and on 1634 Khz which is now in the AM broadcast band. As a matter of interest the ground rod was the shaft out of the steering column of a model "T" Ford.

Stations heard were WIND, Gary, WMAQ, WBBM, and at times other stations from Chicago. Also Dr. Brinkleys station XERA on the Mexican border could be heard. After the crystal sets came one and two tube radios. Thus my career was launched.

After high school I attended Dodge Radio Institute in Valparaiso, Ind. in 1942-43. I was offered a job at WTRC, Elkhart, Ind., where I worked from 1943-49. (During this time I also aquired a wife) At WTRC, I was the transmitter engineer, platter spinner, and everyting but announcer.

I Left there for a job at Michigan City,Ind. to work on a development project for the government. After six months I left there to take a job in communications with Northern Indiana Public Service Company (NIPSCO) in communications. The boss told me,"Even if it's a blanket and book of matches, you are in charge of it".
(Smoke signals?)

After four and a half years in the communications department I left for a Motorola service job in two-way communications. It was interesting as we had varied customers such as police, fire, funeral directors, veterinarians, a truck trailer plant in Ft. Wayne, and (ugh) a couple of rendering plants. Four and a half years of that and I went back to NIPSCO. where I stayed until I retired in 1983. In between I had other jobs in radio. I worked part time for a couple of radio sta-

tions and even a short time at a TV station. I also had my own two-way radio service till it got too big for me and I had to give it up. I had for clients a sheriff's dept., a couple of fire depts., a police dept, and a veterinarian. Plus some others I picked up from time to time.

I am still in love with that crystal set. Last summer while visiting with my son-in-law in Vancouver I found a commercially manufactured crystal set of the late 20's or early 30's. And of all places in a used book store.

THUS ENDS THE STORY!

George Kasdorf, Sr.

Tales of the Yesteryears continued from page 15

It was one of those "ships that pass in the night" incidents and I thought no more about it, until some forty years later when it all came back to me in a flood of memories.

I was talkinq to a friend of mine who had been with WGN for many years. I was doinq research on my new book, "THOSE GOLDEN YEARS OF RADIO", and I recalled the incident. I asked him if he remembered a girl by the name of Nancy who pretended to be a radio actress at WGN in those early days. Yes, he said, he certainly did. "Don't you know who that turned out to be?" he asked. And suddenly the whole picture became clear to me. It was Nancy Davis Reagan.

Russ Rennaker

Don't miss Ray Andrejasich at the Kokomo Friday night banquet. He was involved in the development of a number of ZENITH radios including the Royal series, 500, 1000 & 3000. This will also be an opportunity for you to see one of the Prototype sets. See you there. PY

HOME BREWING

Since the first days of Radio broadcasting, there was always a percentage of the public that elected to build their own receivers rather than to buy one. Like the alcohol beverages made at home, it was referred to as "home brewing." Many did this to save money, but in most cases, it was a lot of fun too. Not only that, but if you did it right, your "home brew" set might out-perform your neighbor's expensive commercial set.

Radio was changing rapidly in those days. New tubes an circuits were coming out every week or so. It was just like electronics today. Whatever electronics you have now, it's probably obsolete. Same with radios. With a home-brew set, as soon as you had it going, there was pressure to improve it. Add a tube.... change the circuit..... put pentodes in place of triodes.... More antenna....low loss coils.... and so it went, on and on. The result is that there isn't much early home brew gear around and when you do find one, it's pretty trashy.

With all the parts around now-a-days, its easy to build up a nice home brew of your own. There are all sorts of construction articles to be found in the radio magazines from the 20's, 30's and 40's. Books like "Radio for the Millions" are readily available and are filled with simple radio projects that will perform surprisingly well. Some of the more interesting radios are those claimed to provide loudspeaker volume with a single tube. A schematic for such a radio is shown on the front cover. You'll find the article for this one in "Radio for the Millions". Do a nice job and it will make great addition to you collection..... if you'll stop playing with it and finally put it on the shelf.

Peter Yanczer

** CONTEST STRATEGY **

Have you ever wondered how the IHRS equipment contests are graded? Do you know what to do with your entry to increase the chance that you will receive recognition for it?

Here are the official guidelines used by the contest judges. Each entry is judged on a scale from zero to five on 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 standout 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 depravation 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 ?

Using this information to enhance the appearance and completeness of your contest entry will greatly increase your chance of receiving an award that recognizes your efforts, as well as increasing the value of the entry as a part of your collection. PY

Longtime IHRS and AWA member, RALPH CHARLES BARNETT, passed away February 20, 1996 in Decatur, Illinois. Ralph and his wife, Dorothy had just returned home from Florida. He was 81 years old, born in Evansville, Indiana on February 14, 1914. Ralph had a great talent for music and was a natural born entertainer. He had retired from the Decatur Public School System where he was an Audio-Visual equipment repairman.

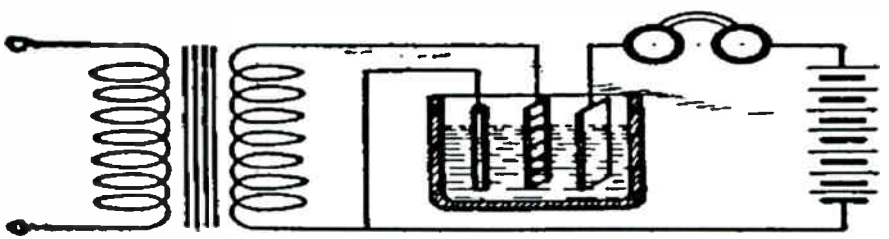
Ralph and Dorothy have been members of the IHRS since the mid 1970's. He attended all the early meets in Auburn. Neither did they miss an AWA meet in New York state.

Ralph had been ill for a number of years, but medical specialists were unable to diagnose the cause. His death was due to cancer.

Visitation was at the Dawson & Wikoff funeral home on February 22nd. The graveside service and internment were at Oak Hill Cemetery in Evansville , Indiana.

Ralph is survived by his wife Dorothy and one daughter. He will be missed by his many radio collecting friends. He asked that memorials and gifts be directed to the Indiana Historical Radio Society.

Our deepest sympathy goes to his family from the IHRS membership



The arrangement of the electrodes in the Colloidal solution is similar to a triode tube *Fig. 1*

See story on page 25

AMPLIFIERS WITHOUT TUBES

(See figure 1, page 24)

The problem of amplification and relaying has been solved, thanks to the vacuum tube, which is undoubtedly a wonderful device. However,,scieiitists are still working toward simplification and especially in Europe a great deal of research work has been done to advance Radio a step further. Mr. Y. Neinhold, a German engineer, recently patented a new system of amplification which will probably prove to be a great improvement in audio-frequency amplification. The device used, instead of the vacuum tubes, is a somewhat similar apparatus having three electrodes and filled with a colloidal solution.

A colloidal liquid is a liquid mineral, which especially prepared. contains molecules of matter, these molecules being electrified. These liquids which are at present investigated by many laboratories present much interest, especially in biology.

Mr. Neinhold used in his "liquid tubes" some solutions of pyrogalic. acid and hydrosol, and obtained encouraging results. The electrodes of the tubes consist of two plates and a grid connected as shown in the sketch. The amplifying cffect of this arrangement seems due to a negative resistance effect, but the solution must be in a colloidal state and no electrolysis should take place. The electric phenomenon is still due to electrons, but these travel in liquid instead of vacuum.

There is open an interesting field for research and we hope to be able soon to publish more data on this interesting process which, if developed, might mean much to the radio industry.

RADIO NEWS, NOVEMBER, 1923

BOOK REVIEW: *FEDERAL Telephone & Telegraph Co.*

Radio Receiving Apparatus

by Larry Babcock

(Available from the author, $6.25 post paid)

This 64 page booklet describes FEDERAL Tel. & Tel. parts and radios from their beginning in 1921 to 1929. There are over 60 illustrations including photos of early Federal R.F. and audio amplifiers as well as all of the early radio receivers. Many of the individual Federal parts are pictured and described. The Federal radios are listed by the year and month introduced with the cost and a general description of each. There are even general instructions that Federal supplied to their customers about antennas, set operation etc. There are also discussions about the company itself and the Federal broadcast station WGR and its people, the first radio station in Boston.

This book contains more information about Federal than exists in any other single place and the print quality is very good. You can get a copy by sending Larry Babcock $6.25 at 8095 Centre Lane, East Amherst, NY 14051 P.Y.

RADIOADS

These ads are free to IHRS members. Please limit them to 50 words or less.

FOR SALE ADS

I have a complete Zenith 861 chassis with speaker and the knobs, for trade or give away. Gene Williams, 2184 E. Linker road, Columbia City, IN, 46725 219-691-2323 Call in the evening.

RCA Victor V, with a Spear Point horn. Also a Radiola Super VIII. Both playing and excellent. Goeff Shearer 14101 Mesita Cliff Road, NE Albuquerque, NM 87112 505-293-8544

Marty & Sue Bunis have a new book, "The Collector's Guide to Transistor Radios", second edition. It lists over 2500 models, has 372 color photos and gives their current values on 320 pages. Get yourself a copy by sending them $16.95 at 32 West Main St. Bradford, NH 03221 Ph. 603-938-5051..... Looks like a good deal.

*** WANTED ***

A Zenith console. Any one of the following models would be OK. #430, 440, 441, 442, 444 or 619. Also looking for a 103. Steve Geary, 1310 Campbell Rd. Sidney, Ohio 45365 Ph. 513-492-0972

Radios and related items sold by Belknap Mfg. such as "My old Kentucky Home", "Blue Ribbon", "Blue Grass" and "Belknap". Also battery sets by Harbison & Gathright such as the "H&G", "Kentucky Cardinal", "Sun Mfg. Co", "Bixby" and "Robert Good". Wayne King, 408 Forbes Dr. Shelbyville, Ky 40065 Ph. 502-633-6564

Sylvania type #220 tube tester service info. Philco "Beam of Light" changer and parts. Dennis Graham, 1515 Wright Dr. Sandwich, IL 60548 Ph. 815-768-8083

RADIOADS

These ads are free to IHRS members. Please limit the to 50 words or less.

*** WANTED ***

Stock tickers, Edison, Western Union, Postal Telegraph and others. Telegraphy instruments, keys, sounders, etc. Charles Goodman, 636 West Grant Ave. Charleston, IL 61920 Ph. 217-345-6771

Victor & early RCA Electrolas or parts including horseshoe magnet pickups, motors and cabinets. Also any Nipper figural advertising. Carlton Smith Ph. 317-356-1240

U.T.C. CG309 Plate Xformer, National #T78 tube shields and a 1980 ARRL handbook. Martin Piepenburg, RR 1, Box 56B, Monterey, IN 46960 Ph. 219-542-2591

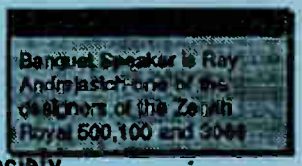
Late 50's Pilot Stereo Radio phono consoles and/or companion speakers for "Curtain of Sound" set-ups. Fred G. Stavitzke 6658 Connecticut St. Merrillville, IN 46410 Ph. 219-769-3423

"COLORTEL" adapter, wit or without the color wheel Any condition OK. I als need a #5527 Amatuer Ra dio Iconoscope tube. Pete Yanczer Ph. 314-822-174

I need the audio xformer and filament rheostats for a early AIRWAY battery set. Also I have a Zenith, mode K731 (1959?) For Sale George B. Clemens, 85 West Wooster St., Bowlin Green, OH 43402 Ph. 419-352-719

Philco cathedral radio cabi nets in any condition. Also selling various Philc reproduction cathedral cabi net parts such as bottoms front panels, molding, etc. Call evenings for complet information. Dick Oliver, 28604 Schwalm Dr. Elkhart, Ind. 46517 Ph. 219-522-4516

Coming Events



The Indiana Historical Radio Society and The Antique Wireless Association PRESENT

The 25th Annual Regional Spring Fling Radio Festival

Held at The Ramada Inn Kokomo, Indiana May 3 and 4 ,1996

'Iday May 3,1996		**Saturday May 4,1996**	
vent	**Time**	**Event**	**Time**
ea Market	All Day	Flea Market	All Day
egistration	8:00A.M.-Noon	Registration	8:00 A.M.-Noon
eminars	8:00 A.M.-Noon	Auction Items Check In	8-9:30 A.M.
adies' Luncheon	Noon-?	Donation Auction	9:30-11:00 A.M.
ontest	1-4:00 P.M.	Consignment Auction	11:00 A.M.-?
nter Items	1-2:00 P.M.		
dging	2-4:00 P.M.		
anquet	7:00 P.M.		

ll Participants must register. All sellers must pay for space. Membership in ie IHRS is not required except to enter the contest. Outdoor Flea Market et-up O.K. on Thursday. No reserved spaces. Indoor seller's spaces only vailable on Friday.

ccommodations:Ramada Inn (317) 459-8001[They are holding 50 ooms until April 19.] Motel-6 (317) 457-8211[They are holding 40 rooms ntil 4/15 .] Fairfield Inn is currently full on meeting dates.

lail Registration Deadline is April 30

ontest Categories: 1. 1920's Table Sets; 2. Communications Receivers rough 1948: 3. Most Unusual Radio ;4. Test Equipment through 1950; 5. ndiana made Radios

ee Schedule: Registration / Family $8:00 (mail); $10.00 on site; Indoor lea Market Tables $10.00 ; Outdoor Spaces $5.00/1: $15.00/2; 35.00/3;Banquet $15.00/person. **Please mail check for the ppropriate amount to Dr. Mike Clark,6484 East 350 North, rankiln, IN 46131**(317) 738-4649 For further info call Bob O'Friel (317) 49-4028