



ANTIQUE RADIO CLASSIFIED



VOLUME 12

AUGUST 1995

NUMBER 8



Minerva Model W-117 Tropic Master

A.R.C. — THE NATIONAL PUBLICATION FOR BUYERS AND SELLERS
OF OLD RADIOS AND RELATED ITEMS — PUBLISHED MONTHLY

ANTIQUE RADIO CLASSIFIED

Antique Radio Classified (ISSN:8750-7471) is published monthly, 12 times per year, by John V. Terrey, One River Road, P.O. Box 2, Carlisle, MA 01741. Second-class postage paid at Carlisle, MA, and additional mailing offices. Telephone: (508) 371-0512, 8:30 AM to 6:00 PM ET weekdays; machine answers phone at other times.

Annual subscription rates within the U.S. are \$34.95 by Second Class mail and \$51.95 by First Class mail.

Annual foreign rates. By air: Canada - \$56.00; Mexico - \$56.00; Other foreign countries - \$98.00. Surface mail: Canada - \$45.00; Other foreign countries - \$50.00. (Surface delivery to countries other than Canada may take two or more months and cannot be guaranteed.)

Two-year subscriptions are twice these rates and receive an extra month. Sample issues are available free on request.

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POSTMASTER: Send address changes to Antique Radio Classified, P.O. Box 2, Carlisle, MA 01741.

Printed in U.S.A.

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Only UPS, Federal, etc. items to street address: One River Road. Telephone: (508) 371-0512; Fax: (508) 371-7129

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1/2 V	12 7/16 x 3 9/16		7 3/4 x 2 1/4		113.00	299.00	520.00	899.00**	33.00†
1/4	5 1/4 x 3 9/16		3 5/16 x 2 1/4		57.25	151.50	263.00	459.00	17.00†
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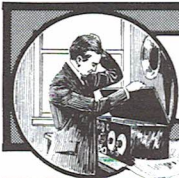
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ANTIQUE RADIO CLASSIFIED



EDITOR'S COMMENTS

Recently, the torrid temperatures of my native Texas followed me here to Massachusetts, now in the grips of a heat wave. Rarely does the weather influence the choice of A.R.C.'s cover, but somehow the climate and the name "Tropic Master" came together as an August inspiration. In submitting this fine photo to our *Photo Review* section, Alan Douglas asked, "Who was Minerva anyway?" We invite answers from you radio history buffs out there.

Our lead article by Wally Worth covers the L.E. Knott Apparatus Company, one of several laboratory equipment companies that expanded into radio during the early 1920s. Knott manufactured components and horn speakers, but seems to have dropped that business by late 1924. Wally's effort to preserve this bit of radio history is a good example to us all.

A hospital for sick radios seems a clever idea, and Larry Hillis introduces us to just that in his *Radio Ramblings...* story, "A Radio Hospital Fable." Larry and the A.R.C. staff supplement his story with information about the real radio hospital in Connecticut.

"See you at the Ford," is the catchword of the radio community these days. The reference is to the October auction of radios at the Henry Ford Museum in Dearborn, Michigan. Auctioneer Richard Estes has contributed an article on his first impressive cataloging trip to the museum. Although 1,800 or so items are scheduled to be auctioned, a radio exhibit will remain a part of the museum. Keep up to date on this major event through A.R.C.

In his article on the Heathkit IT-12 signal tracer, Dwane Stevens encourages us to fix up those old radios by using vintage test equipment. This article also triggers a nostalgic feeling for Heathkit, which is no longer in the kit business. In fact, Heath equipment is now becoming collectible.

Four club radio auctions are reported this month — from Kansas City to Houston, and from Kokomo to Timonium. Prices were moderate at these auctions where the top-priced item was a National SW-3 ham receiver, selling for \$300. Also reported are several mechanical music items from the Sanford Alderfer Auction Company's June auction.

Dale Davenport describes a straightforward solution for that all-pervasive problem — the bad audio transformer. Although his approach does not repair the transformer itself, it does get the set working by

PRINTED WITHOUT COMMENT

Several months ago, A.R.C. received reports from individuals who had wired funds to Kent A. Ise and did not receive the items promised. Although these instances have not been resolved, we have received no further reports.

A.R.C. serves as a clearing house for complaints between our readers, so please let us know about any problems that you have not been able to resolve yourself.

the use of three small, easily disguised components.

Readers will remember Artist Geoffrey Brittingham's work from the April 1994 radio mystery cover and article. His cartoon strip captures a moment in a collector's experience familiar to many of us.

Eric Wrobbel's two booklets on transistor radios are reviewed separately this month by David Pope and John DeLoria. These reviews assure transistor radio collectors that they will find a lot of useful information on Sony, Toshiba and Trancel transistor radios in these very reasonably priced booklets.

Our *Photo Review* includes crystal sets, novelty radios and cathedrals. Ray Bintliff has two short contributions — one on radio gimmicks and the other on hum problems. Geoff Shearer's note of caution in *Radio Miscellanea* is must reading for any collector who ships or receives radios, no matter what shipper is used.

New Books. In addition to Wrobbel's booklets, two other books merit mention. Robert Grinder has revised and updated his *Radio Collector's Directory* which lists information and a value range for over 20,000 models. And, Maurice Sievers has completed a second volume of his popular book on crystal sets, *Crystal Clear*. The proof copy of Volume 2 is impressive, and we hope to review it soon.

On and Off the Internet. Our announcement last month of accepting correspondence by e-mail and our request for comments on possible A.R.C. computer-accessible services, has intensified mail on the subject from our readers. Please continue to let us know what direction, if any, A.R.C. should take in the future in Cyberspace.

Coming Radio Events. Of the three dozen events that dot the radio calendar for August, the largest is the Antique Radio Club of Illinois Radiofest '95 in Elgin, Illinois. This 4-day event is one of the two largest old radio activities in the country, the other being the September, AWA Conference in Rochester, New York. Both meets have giant flea markets, auctions, seminars, banquets, and a lot of chances to meet those collectors you have met only via mail or phone. A.R.C. plans to be at both of these meets. Look for us and say "hi."

Happy Collecting.

John V. Terrey, Editor

ON THE COVER

Our cover photo, contributed by Alan Douglas, is a Minerva W-117 Tropic Master, a ca. 1945 radio housed in a metal cabinet. It resembles the set pictured in the April 1995 *Photo Review* section of A.R.C., page 13, contributed by Tom Clinton. Minerva claimed to have made wartime sets for the military and for servicemen's organizations, as well as to have been making radios since 1919. However, the company apparently made a few models and disappeared. If you can add to this history, please write to A.R.C.

WITH THE COLLECTORS

The L.E. Knott Apparatus Company Cambridge, Massachusetts - 1916-1924

BY WALLY WORTH

This is the story of a large scientific equipment company prominent in the early manufacture of wireless equipment; however, the company faded out of the radio scene after a short appearance.

Louis E. Knott Apparatus Co. was owned by Louis himself. His brother E. Richard Knott, who had no connection with the firm, was the father of my friend, Richard Knott. I called on Dick Knott from 1975 to 1986 to sell him a line of power transmission equipment for his machine shop that made vegetable slicing and peeling machinery.

Recently, I returned to his shop, met with Dick, and had an informative chat about his Uncle Louis and the early days of L.E. Knott Apparatus Co. The following information came out of our chat.

Before World War I, L.E. Knott was in business selling laboratory apparatus, such as glassware, laboratory furniture and fittings, physical instruments, optical equipment and wireless sending and receiving equipment, including crystal detectors, etc. The company was located at Ames and Amherst Streets in Cambridge, Massachusetts, close to the Massachusetts Institute of Technology buildings in Kendall Square.

Interestingly enough, two other laboratory equipment wholesalers and manufacturers were also located in Cambridge. They were McAllister-Bicknell Co. and the W.W. Welch Scientific Co. In addition, there also were four companies making radios or parts nearby — American Radio and Research (Amrad) of Medford, Clapp-Eastham Co. of Cambridge, W. J. Murdock Co. of Chelsea, and General Radio Co. of Cambridge.

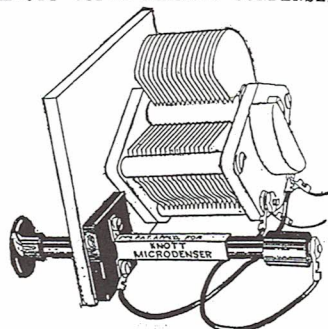
The first president of L.E. Knott was Eleazar Cate, while the treasurer was Arthur Hall. Later records show the business listed as the E.R. Knott Co. and relocated to 1 Ellery Street in South Boston around 1922. My large L.E. Knott Apparatus Co. catalog, dated 1916 and marked "Catalog 21," depicts thousands of laboratory items that the company sold at that time. The company continued to make some wireless equipment well into the 1920s, as did many others in the area, to satisfy the rage for radio parts and sets at that time.

KNOTT PRODUCTS

Knott's patented Super-Vernier condenser, shown in Figure 1, was made to be installed in parallel with the regular tuning condenser. It was a push-pull affair, mounted on the radio panel, similar to the later neutralizing condensers of the Neutrodyne sets. The price of \$2.75, quite high for the time, included a wrench/screwdriver to mount the article.

Also made were the "Knott Radio Name Plates," a near necessity for the early do-it-yourself radios, which were assembled by the thousands. An ad-

KNOTT SUPER-VERNIER CONDENSER



(Trade Mark Registered)

Showing how you connect to Condenser
Tune in that message or music you have been
losing. Tune out that interference. Bring it
in and clear it up.
Tune your condenser to the whistle and then
bring in the messages with this Micro.
Buy it of your dealer, or send us \$2.75 and
we will mail you one complete with connecting
wires and wrench-screw driver.
Knott Sure Ground. Radio Name Plates.
Patent Dial. Rheostat. Quodocoil. Cincooil.
Microstat.
Send Postal Card for Circulars.
Jobbers write for our proposition. It will
please you.
E. R. KNOTT MACHINE CO., Boston 27, Mass.

Figure 1. Knott's Super-Vernier condenser.

vertisement for these nameplates is shown in Figure 2. Apparently the company also branched out into the manufacture of the Dynamic Horn Speaker, Model B, Serial #1824, ca. 1924, which is shown in Figures 3 and 4.

MAGNAVOX A COMPETITOR

At this time Knott's main, and possibly only, competition was the Magnavox Co., which made a speaker very similar in design. When compared, the Knott horn and the Magnavox horn seem identical at first glance. On close inspection, however, the Knott horn is quite different in the method of assembly and the placement of parts.

Note that the Knott horn has a spun bell (aluminum) and a rolled-up bottom neck, but the transition piece is a right-angle-bent stamping which is then closed and locked with a bead underneath.

The Magnavox horn has no transition piece, and there is a more gradual turn from the neck portion to the flared bell. Also, the Knott horn is 1 1/2 inches shorter in height. The base of both horns contains the electromagnet that provides the pull on the moving voice coil, as well as the binding posts, etc.

The Knott base also has a rotatable ring around the lower end of the neck to adjust the rheostat

KNOTT RADIO NAME PLATES



STYLE A	Antenna Ground	A Battery— B Battery+	Phone Input Output	9 for 50c
STYLE B	A Battery+	B Battery—		
Phones	2nd Step	Coupler	Parallel	
Off	3rd Step	Loading Coil	Variable	Condenser
On	Potentiometer	Detector Tube	+	
Increase Current →	Vacuum Tube	Grid Variometer	—	
Increase Current ←	Primary	Tickler	Microdenser	
1st Step	Secondary	Series	Microstat	
		Plate Variometer	Rheostat	

12 for 50c

Buy of your dealer, or we send direct upon receipt of price.
Made of sheet brass, etched, silver plated and lacquered.

They are of exceptional value and read above the binding post, the right place for them. They greatly improve the appearance of a set and simplify the operations.

Send 2 cent stamp for circulars about Knott Sure Ground, Patent Stop Dia., Rheostat, Quodcoil, Cln-coil, Microdenser, Microstat. Jobbers, write for our proposition, it will interest you.



E. R. KNOTT MACHINE CO., 1 Ellery Street, Boston 27, Mass.

Figure 2. An advertisement for the Knott radio nameplates.

that controls the voltage to the field coil of the magnet, and thus the volume produced. The early Magnavox speaker also has an adjustable feature comprised of a lever that moves horizontally to accomplish the same purpose.

The Knott speaker has a 14-inch bell and is 26 1/2 inches tall; the horn only is 20 1/2 inches tall. The Knott "K" logo appears on the lower lip of the bell. The Magnavox speaker has a 14-inch bell and is 26 3/4 inches tall; the horn only is 22 inches tall.

I have not been able to track the Knott Compa-

ny past the 1924 date. However, the company might have continued producing radio products for a while longer, and certainly the laboratory line lasted much longer.

While this story is a short one and discusses only a small portion of the products of the Knott Company, I thought it worthwhile to deliver to the radio fraternity whatever information I could while it was available.

References:

L.E. Knott Apparatus Company Catalog. Boston: Cambridge Station A, 1916.

Radio News, 1922.

(Walter V. Worth, 2 W. Elm Ave., Wollaston, MA 02170)

At age fifteen, Wally Worth began saving his paper route money to buy parts for 1-tube sets. Then in 1986, fifty years later, he started to collect anything that needed cabinet work. His diverse collecting tastes include crystal sets, 1920 battery AC sets, transistor sets, multiband sets, and even novelty radios. He also collects early tubes and both horn and cone speakers.



Figure 3. The Knott Dynamic Model B horn speaker.



Figure 4. The driver unit of the Knott Dynamic Model B horn speaker.

RADIO RAMBLINGS...

A Radio Hospital Fable

BY LARRY HILLIS

Hartford, Connecticut — August 1, 1939

"Hello, this is the Radio Hospital where we bring sick or dead radios back to life. This is Nurse Nulty speaking. How may I help you?"

"Yes, Ma'am, this is John Radiosky of 123 2nd Street speaking. My Philco 20 is acting very strangely. I'm very attached to this radio, and I'd like to get the problem fixed."

Nulty: "Hold on, I'll get you our chief radio doctor, Ernest T. Augsten."

Augsten: "So, you have a problem with our Philco, do you?"

Radiosky: "Yes, the set is acting rather strangely. I turn the set on and start listening to my favorite radio show, and within a few minutes, the set goes off. I'm sentimentally and emotionally attached to this radio. My late wife, Margaret, gave me the radio on our 65th wedding anniversary. Then, my dear wife passed away one month later. So you can see why I'm so fond of this Philco. I can almost see my late wife in this set every time I look at it or turn it on."

Augsten: "That's a very strange problem indeed, but we've never encountered any radio abnormality that couldn't be cured at the Radio Hospital. I'll send our ambulance driver out to pick the set up. We'll have it working right in no time."

Since the radio repair business was so good, Augsten had just moved into a new building in downtown Hartford. Everyone on his staff, including himself, always wore an intern or nurse uniform. The Radio Hospital was a Philco warranty station, servicing home radios and auto radios as well. The ambulance driver, William Smith, previously had driven an ambulance for the local hospital.

Augsten: "Smith, we have an emergency. There's an ailing Philco 20 over at 123 2nd St. It means a lot to its owner, so handle the radio as if it belongs to your mother. Get out there right away."

Smith: "Yes, Sir! Nurse Almond, get in the ambulance. We've got to pick up a sick radio."

With red lights flashing and the siren screaming the ambulance sped off to its destination. It arrived in record time.

"Mr. Radiosky, we're here to pick up your Philco," Smith said after greeting the customer.

"Oh, I don't know if I can part with this radio for a minute," Radiosky said. "Please, please be careful with it, and don't put a scratch on it. My late wife will come back to haunt you if you do. And please, please hurry and get it fixed. I love this radio almost as much as I loved my late wife."

Smith readied the stretcher, and the radio was wrapped in a blanket to keep it from getting scratched. Nurse Almond strapped it to the stretch-

er for a safe and smooth ride to the Philco warranty station.

Enroute to the hospital, Nurse Almond heard a loud thumping noise from the back of the ambulance. She turned around and looked. Behold, both the radio and the stretcher were bouncing around. It was as though there was someone or something inside this particular Philco. "You reckon this radio is haunted?" Almond asked Smith. "This is the strangest phenomenon I've ever witnessed."

Upon the radio's arrival at the hospital, Augsten and his highly trained staff performed an emergency examination. They checked the set's major components, its capacitors and resistors, and measured its voltages. Why, there was absolutely nothing wrong with this Philco 20! The set was put through a multitude of tests that lasted nearly all day, and no trouble of any kind could be found.

It was closing time, so Augsten and his staff decided to call it a day. They had repaired twenty radios that day, not a bad day's business for a Monday.

Augsten arrived at the Radio Hospital early the next morning. The first thing he did was turn on the Philco 20. The radio seemed to be playing fine. However, within a few minutes the radio turned itself off, just as Radiosky had said. Augsten turned it back on and a few minutes later, it went off again. On and off, on and off — the radio did this all morning.

"I believe this radio is haunted," Augsten told Nurse Almond. "I'm calling in the renowned authority on ghosts — Dr. Leonard Lichtenstein, and perhaps he can cast out whatever spirit has taken up residency inside this Philco."

Lichtenstein, known worldwide for his ghost-busting talents, arrived about an hour later.

"What's the problem?" Lichtenstein asked the radio doctor.

"This radio must have Margaret Radiosky's ghost in its chassis or cabinet somewhere," Augsten said, "because when you turn it on, a few minutes later the set turns itself off. And the volume control moves as though someone or something were turning it. The radio works perfectly except for that. I'm hoping you can eradicate the ghost from this set."

Lichtenstein tried every technique he knew, but nothing worked. The Philco 20 radio continued its haunted ways.

Unbeknownst to both men, John Radiosky himself died suddenly of a heart attack while Lichtenstein was attempting to rid his radio of its ghost.

Would you believe, the ghost of John Radiosky also entered the inner sanctum of this radio! The

set then went on and off all by itself, and continued to do so even with the power cord unplugged. Ghost-like voices seemed to be coming from this radio's speaker. Augsten and Lichtenstein both were trembling.

"There's only one thing to do with this radio," Lichtenstein said. "We must bury it in the Radio Cemetery along with the other totally dead radios of our time. No future generation will ever be able to appreciate this particular set."

Augsten agreed, so an undertaker was called in to prepare for the radio's last rites. The radio was placed in a nice cherrywood coffin just slightly larger than its beautiful wood cabinet. Internment was in the Radio Cemetery west of Hartford.

"We've not only gotten rid of a haunted radio — we've also buried the ghosts of John and Margaret Radiosky once and for all," Lichtenstein told Augsten as the set was lowered to its final resting place.

"You're right," Augsten replied. "It was the sensible and honorable thing to do. It's a shame, though, that these ghosts couldn't have been emancipated from this radio because someday there may be people out there who will want to collect it for history's sake."

The epitaph on the tombstone reads: "Here lies a Philco 20 radio, haunted by the ghosts of John and Margaret Radiosky. May all of them forever rest in peace."

Today, in 1994, some 55 years later, visitors to the Radio Cemetery in Hartford, Connecticut, have reported hearing what sounds like an early vintage AM radio when they pass by this grave. And, the music continues to go on and off!

(Larry Hillis, 509 Second Ave., Conway, AR 72032)



The Radio Hospital, Hartford, Connecticut. (Photo is from the "Philco Serviceman," April 1939.)

Larry adds the following information to his story: "There actually was a Radio Hospital in Hartford, Connecticut, in 1939. According to the April issue of *Philco Serviceman*, a magazine for service personnel and dealers, the hospital was an authorized Philco Transitone warranty station. 'Ernest T. Augsten chief of staff, believes in dramatizing and merchandising radio service,' the publication states. 'Everyone in the organization wears interns' or nurses' uniforms. Radios are picked up in an ambulance and carried about on a stretcher. A measure of the success of the plan may be made by observing that the organization supports six persons, a new building and complete equipment.'"

Larry continues, "Although based on a real-life organization, my story is pure fiction. Still, a radio collector might wonder whether someone's ghost might be lurking inside an antique radio he owns."

Larry Hillis is a member of the Arkansas Antique Radio Club, host of the ARCA convention in June 1994. His interest in radio began in the 1950s when he used to listen to his grandmother's Truetone console radio. His collection consists largely of Philco wooden Deco radios.

Showmanship in the Radio Business

(AN EXCERPT FROM RADIO & TELEVISION RETAILING, AUGUST 1944)

While browsing in the A.R.C. library, a member of our staff happened upon a copy of "Radio & Television Retailing" for August 1944. The full cover photo of the real Radio Hospital, as well as the staff and the ambulance, was too coincidental to ignore, since we were just preparing Larry Hillis' story for publication. The title — "Showmanship in the Radio Business" — is followed by the subtitle, "Hartford, Conn., Dealer Diagnoses and Cures Sick Sets. Backs Business-Getting Publicity Ideas with Practical Application. Adds Electronic Maintenance." Below are some amusing excerpts from this article, as well as a floor plan of the "hospital" and a picture of the enterprising "doctor" himself. (Editor)

"The only kind of hospital that a patient enters dead and comes out alive!' is Ernest C. Augsten's claim, and he is proud of the outstanding setup at his Radio Hospital, 714 Maple Ave., Hartford, Conn. (A ground plan for the hospital is shown in Figure 1.)

"Dealer-technician Augsten, shown in his laboratory in Figure 2, has built a unique service in curing sets suffering from laryngitis and other ailments ranging from ruptured appendix (condenser) to high blood pressure (high current drain).

"His staff consists of one nurse and two interns and the doctor himself. Mrs. Augsten, the 'nurse,' receives the 'patients' and keeps their 'records.'

(Continued on following page)

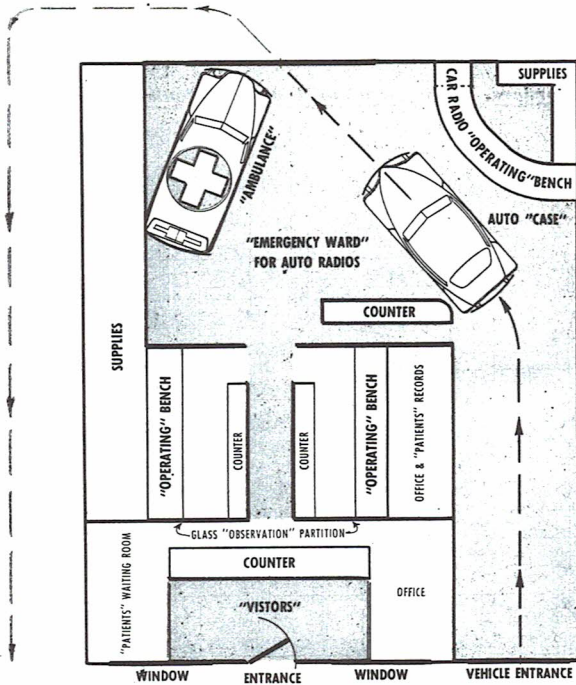


Figure 1. Floor plan of the Radio Hospital's operation. Glass panels permit service display without outside interruption.

(Showmanship, continued)

Two radio technicians are the 'interns' who assist the 'doctor' in all major operations.

"The stethoscope is actually used in connection with channel checkups, the scapel in fine cutting — such as on a speaker cone, the hypodermic syringe, filled with carbon tetrachloride, in cleaning small sections of receivers.

"In the good days — when gas wasn't rationed — the delivery truck, which is still painted white and blue and resembles an ambulance, called for sets, and the two interns carried the receiver out on a bona fide stretcher. Needless to say, crowds gathered at such events, and it was not at all unusual for four or five persons to ask then and there for ambulance services for their sick radios.

"When Dr. Augsten entered the radio repair business, he felt there were so many others in the field that he had to make himself outstanding. He gave a new angle to the repair busi-

ness, and his showmanship brought him many customers. During the first year, he repaired 4,653 sets and installed 2,881 new car radios. This averages 90 (repairs) and 55 (installations) receivers weekly.

"Today [the war years], without radios to sell, the service end of the business has increased approximately 200 percent. The defense plant area surrounding Hartford provides money and priority for the use of cars, and about one-half of this business is in car radio repair.

ELECTRONIC SPECIALIST

"Augsten has also done much work on electronic equipment. This includes work on amplifiers, public address systems, surface gauges, automatic armatures, and electronic checkers of texture and density of nylon parachutes. In addition, factory men bring in electronic meters and parts for repair.

"Augsten sees a future for the radio technician in America's electronically controlled plants. He believes that many of the devices operated in today's war plants will be turned to the production of peacetime needs."

We have to conclude that "Doctor" Augsten was a man of vision, to say the least. (Editor)

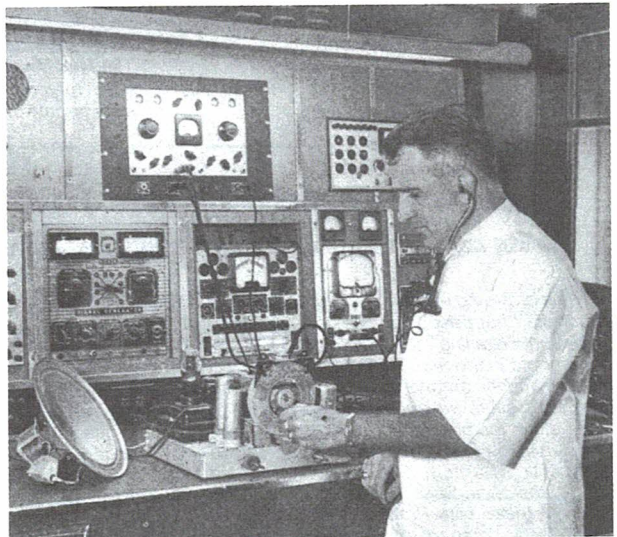


Figure 2. "Doctor" Augsten is shown using the stethoscope channel check in his laboratory.

Henry Ford Museum To Hold Radio Auction Dearborn, Michigan — October 7-8, 1995

CONTRIBUTED BY RICHARD ESTES

The Henry Ford Museum Radio Auction will be the most exciting sale my company, Estes Auctions, has had the opportunity to conduct. It will be held on October 7 and 8, 1995, with a preview on October 6, at the Henry Ford Museum and Greenfield Village, 20900 Oakwood Blvd., Dearborn, Michigan, a suburb of Detroit. The reason for the auction is that the museum constantly updates its collections due to changing interest and also to improve existing displays.

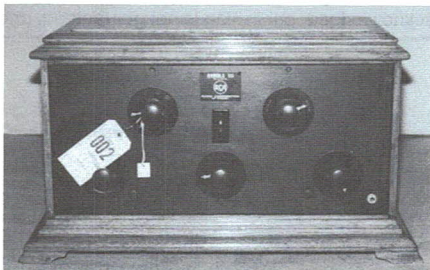
As an auctioneer, I have been specializing in radio auctions for the past four years. However, my interest in radio goes back to childhood when my father ran a radio repair shop in Kentucky, and I would spend the day with him at the shop. The big beautiful Zenith consoles held special interest for me.

My father has been a licensed amateur operator for almost 60 years, and this facet of the radio hobby has also rubbed off on me. I obtained my license in 1958 — General Class K8LRY— and prefer low band 160 meter CW. Thus, when I arrived at the museum to look over the collection, with the help of Jim Clark — president of the Michigan Antique Radio Club, Bob Dobush of Arcturus Productions, and my wife Kathy, I felt like a child in a candy store — all those great radio prizes!

Just the rarity of the items themselves would be enough to pique anyone's interest. But, knowing that many of the items came from collections donated by some of the pioneers of radio makes for more excitement. Some of the Marconi items were donated by Hugo Gernsback, while many spark items came from McMurdo Silver. Many of the items in the sale are from the 1920s collaboration of RCA and the Smithsonian Institution known as the "Clark Collection."

On our 2-day visit to the museum warehouse to preview the items, we went through each aisle slowly, imagining the days when this equipment was the order of the day. Many things had been placed in large crates for safe storage, so we happily opened these up and inspected the contents. We all uttered many "oohs" and "ahs." On our second day, while Bob wandered off to check tubes, Jim, Kathy, and I tagged items for the upcoming auction.

After seeing some of the telegraph keys and spark equipment, I began to wish I could have lived in that



An RCA Radiola VII in the Ford Museum auction.

era. It was sort of like being in a time warp inside the warehouse. It was 1920, but on the other side of the warehouse door was reality and a sadness for all the things that have passed into memory and museums.

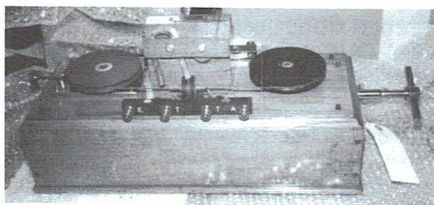
We will be doing much more work at the museum before the actual auction takes place, but the events of these first two days will be something to tell our grandchildren. Thanks to Jim Clark and Bob Dobush for their physical labor as well as technical advice. A special thanks to Sarah Lawrence at the museum for her inspiration to have "radio people" do the auction. Hope to see you all there.

The many items scheduled to be auctioned include the following receivers: SE-143, SE-1420, BC-14, CN-113; Radiolas II, VII, VII-B, IX, X, 20; Kennedy 110; Grebe CR-9, MU-1; Federal DX-58; Freed-Eisemann NR-5; DeForest Interpanel; a Marconi magnetic detector and a Type 106; and RCA, Magnavox and Western Electric horns. Also included are two mule pack sets, keys, crystal detectors, crystal sets, spark coils, tubes (including spherical audions), and many foreign items.

The first auction on Saturday, October 7, will be held from 10 A.M. to 5 P.M. The second auction on Sunday, October 8, will continue from 10 A.M. until all items are gone. Previews will be held on Friday, October 6, from 3 P.M. until 6 P.M., and on each day of the auction from 8 A.M. to 10 A.M. A mixture of all types of equipment will be sold each day.

The auction will be held on the grounds of the museum where a large tent will be erected. Food and restrooms will be available near the tent. Since the museum will be open to other visitors during the auction, to reduce the number of "curious lookers" there will be a \$3.00 entrance fee good for all auctions and previews. No absentee or phone bids will be accepted.

A catalog with 23 photographs and a partial listing of the over 1,800 items to be auctioned includes maps of the area and motel information. It is available for a \$3.00 shipping and handling charge from: Estes Auctions, 7404 Ryan Rd., Medina, OH 44256. Phone: (216) 769-4992/(216) 769-3987; Fax: (216) 769-4116.



A rare Marconi magnetic detector in the auction.



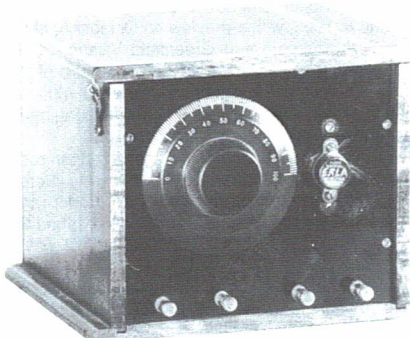
PHOTO REVIEW



This column presents in pictorial form many of the more unusual radios, speakers, tubes, advertising, and other old radio-related items from our readers' collections. The photos are meant to help increase awareness of what's available in the radio collecting hobby. Send in any size photos from your collection. Photos must be sharp in detail, contain a single item, and preferably have a light-colored background. A short, descriptive paragraph **MUST** be included with each photo. Please note that receipt of photos is not acknowledged, publishing is not guaranteed, and photos are not returned.



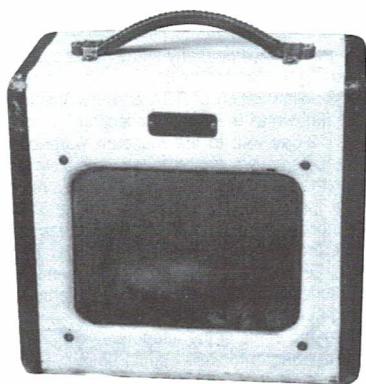
SILVERTONE MODEL 6408 – Introduced in 1940, this sleekly styled radio features thumbwheel volume and tuning, as well as 4-station, push-button tuning. (*Bart Rydzinski – Winchester, IN*)



HOME BREW CRYSTAL SET – Made in the early 1920s, this home brew crystal set uses a wooden variometer for its tuning. The original catwhisker and crystal stand was replaced by a more convenient Erla fixed crystal. (*Robert Bailey – Jacksonville, FL*)



ATWATER-KENT MODEL 135-Z – Found on the "junk wagon" at a local farm auction, this all-original Superheterodyne needed only a filter capacitor to get it in working order. (*Bart Rydzinski – Winchester, IN*)



FENDER MODEL 600 AMPLIFIER – This rare, 1947 TV-front Fender 600 amplifier has a 2-tone brown and tan covering. The tube types are (1) 5Y3GT, (1) 6V6GT, and (1) 6SJ7. The speaker is a 6" Jensen, and the volume goes to "12" on this little screamer. (*Bill Hall – Grand Haven, MI*)

PHOTO REVIEW



TUNG-SOL TRANSISTOR SALESMAN'S DEMONSTRATION RADIO – This AC-powered radio has switches that change polarity for PNP-NPN transistors. The left-hand dial has CD markings. (*V. Vogt – Renton, WA*)



AC/DC NOVELTY RADIO MODEL UNKNOWN – This standard 5-tube AC/DC novelty radio with no markings was made in Japan. Construction is heavy foil over wood. Its 13" x 9" size dwarfs its famous cigarette pack counterpart. (*Rod Galloway – Melbourne, FL*)



HOME-BREW CRYSTAL RECEIVER – I built this crystal set and mounted it in a 100-year old cabinet made by my grandfather. The homemade crystal detector and all other parts are ca. 1920. The dial is from a 1920 TRF receiver and marked "B.M.S. Made in USA." The variable condenser is a Silver-Marshall also marked "Made in USA." The two solid brass balls on each end of the panel are for lifting out the chassis. (*Neil Spencer – Pinellas Park, FL*)



BELMONT MODEL UNKNOWN – This 5-tube set is designed to operate from the 110-volt DC mains that could be found in some of the larger cities in the 1930s. The tube complement is Type 38 (2) and Type 36 (3). The finish on the front and the grille cloth are original. The chassis has been restored and the set plays quite well. (*Bill Harris – Roanoke, TX*)

VINTAGE TEST EQUIPMENT

The Heathkit IT-12 Visual-Aural Signal Tracer

BY DWANE STEVENS

Have you gotten past the collecting stage and ventured into repairing those old radios? If so, you will eventually want a few pieces of test equipment to make those "fixes" a lot easier and much more fun.

One piece of test equipment I have found very useful and even fun to use is the Model IT-12 visual-aural signal tracer that was made by Heathkit. The Heath Company no longer makes kits but tons of its products are still around. Pay attention at antique radio auctions and swap meets and especially at ham radio meets (hamfests as we operators call them), and you're likely to find several kinds of Heathkit test equipment.

The Heathkit IT-12 is a versatile tool when it comes to general troubleshooting of those old radios. Figure 1 shows the signal tracer with its unique RF-AF probe. This probe allows RF signal tracing from the antenna circuits through the 1st detector stage and IF amplifier. When checking the 2nd detector through all audio amplifier stages to the output transformer and speaker circuits, simply switch the probe from "RF" to "Audio." Therefore, the path of the signal can be traced through each succeeding stage within the receiver.

The probe contains a crystal diode (1N191) used when switched to the RF position to detect the radio-frequency signals. When you are checking audio frequencies, the diode is simply bypassed and the signal is routed to the level (gain) control. This control is adjustable from the front panel and is marked from 0 to 100.

The signal then passes to the input grid of a Type 12AX7 tube, a high-gain dual triode. It is then condenser-coupled to a 12CA5 beam power output tube whose output feeds an output transformer and a built-in speaker. This allows you to hear the signal and monitor its quality and ampli-

tude as you test each receiver stage. The volume can be adjusted with the previously mentioned level control.

An R-C circuit also feeds a small amount of the output signal to the grid of a 1629 eye tube, an electron ray tube which permits visual observation of the output level. This unique feature is especially useful when performing alignment adjustments. The amount of signal gain or loss



Figure 1. The Heathkit IT-12 visual-aural signal tracer with RF-AF probe.

during alignment can be observed on the indicator tube. Figure 2 shows the chassis layout with the eye tube in the lower right corner.

The audio pick-up function allows quick checks of phono cartridges on record turntables as well as microphones and musical instrument pickups.

Other functions of the signal tracer include a noise locator which is used to locate noisy and intermittent components. A test speaker function is provided which allows you to use the built-in speaker as a substitute speaker for the radio you're servicing via the panel-mounted "SPKR" binding posts. These binding posts connect to the voice coil of the built-in speaker.

All three primary leads of the output transformer are brought out to terminals on the front panel. With the power switch off, the transformer may then be used as a substitute single or push-pull audio output transformers. (Note: only for radios that use permanent magnet-type speakers, not electro-dynamic type speakers).

As can be seen, the Heathkit IT-12 signal tracer is a very useful tester, and it is fun to experiment with. Keep in mind, however, that during some signal tracing tests, as in the case of a receiver with low output, only an approximate estimation of gain per stage can be made. The actual amount of gain to be expected can best be determined by having some experience in making similar tests. In other words, I suggest experimenting with the tester on a good receiver to have an idea of what signal levels to expect at each stage.

Of course, in the case of a receiver with no output, it should be a simple matter of checking each stage to determine where the signal stops and, therefore, which stage is at fault. These checks would be made after it has been determined that the power supply is OK.

As mentioned previously, lots of Heathkit test equipment can still be seen at swap meets and hamfests. Ask ham operators, especially those who have been around for a while. They might have an old tracer stashed away in the attic somewhere! Many times the original manual can still be acquired, and the manual to the IT-12 signal tracer has very good instructions on its use.

If you have an IT-12 but can't locate a manual for it, contact me for a photocopy of all or part of the original Heathkit manual. A copy of the section "Using The Signal Tracer" is probably all you will need. This gives operating instructions with a typical radio schematic as an example, plus information on how to check each stage. This pack-

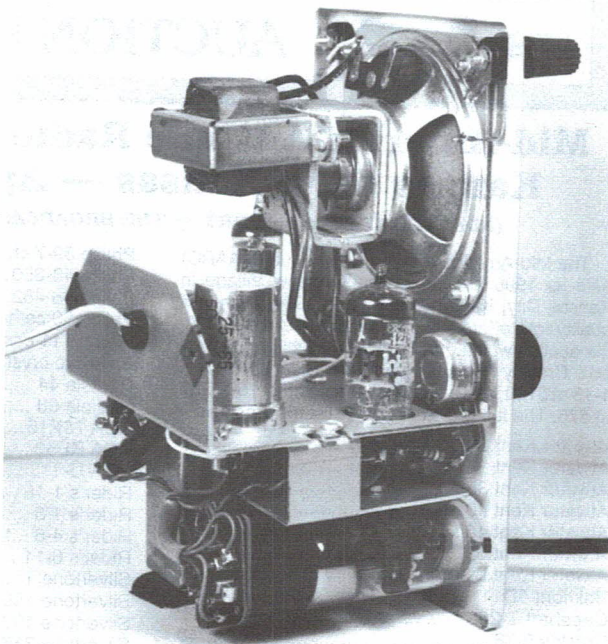


Figure 2. The Heathkit IT-12 visual-aural signal tracer chassis with the eye tube in the lower right corner.

age contains six pages of instructions for \$1.50, including a schematic of the tracer itself and return postage U.S.A.

If you need a copy of the entire manual, which includes kit assembly, alignment procedure, and troubleshooting problems in the tracer itself, this package is \$5.00. It contains 30 pages and includes return postage U.S.A. Send your check or money order to: Dwane Stevens, Rt. 3, Box 25A, Ardmore, OK 73401.

So, head for the radio auctions and swap meets, and keep your eyes open for test equipment. Remember — old testers never die, they just look that way!

Reference:

Heathkit Assembly Manual for Model IT-12 Visual-Aural Signal Tracer. Benton Harbor, Michigan: Heath Company, 1962.

(Dwane Stevens, Rt. 3 Box 25A, Ardmore, OK 73401)

Dwane Stevens installs and calibrates computer controlled equipment for a major tire manufacturing company. He has been an amateur radio operator for 17 years and holds an Advanced Class license, while his wife, son and daughter all hold Technician Class licenses. He enjoys repairing and restoring 1920s battery sets and early AC sets, as well as collecting tubes, repair manuals and old radio magazines.



AUCTION REPORT

Mid-America Antique Radio Club Auction Kansas City, Kansas — April 2, 1995

(ADAPTED FROM A REPORT IN *THE BROADCASTER*, JUNE 1995)

The Mid-America Antique Radio Club (MAARC) held its 1995 auction at the Rainbow Village in Kansas City, Kansas, on April 2, 1995. With 275 quality lots offered and proceeds totaling \$5,200, the auction was a great success. Highlights included a Crosley Pup selling at \$260, Rider's Volumes 1-16 at \$120, and a Zenith chairside Model 5-S-237 at \$75. The following is a partial list of items sold.

Atwater Kent 33 console	\$55
Atwater Kent 33, (2)	30, 75
Atwater Kent 35	35
Atwater Kent 40	20
Atwater Kent 46	22
Atwater Kent 67	20
Atwater Kent L horn	30
Belmont 6D111, (2)	70, 75
Capehart T-22	22
Crosley 5-38	40
Crosley 5FTWE	7
Crosley 51	55
Crosley 52	80
Crosley 56TXL	12
Crosley AC-7	45
Crosley Pup	260
Dahlberg coin-op	22
Echophone EC-1	8
Eveready battery sign	80
Fada Special	19
Freed-Eisemann NR-5	80
Guild Town Crier	60
Hallicrafters S-38A	18
Hallicrafters S-71	20
Home brew, w/(3) tubes	47
Majestic 5A410	28
Majestic 20	70
Philco 37-84 cathedral	45
Philco 38 console	45
Philco 39-39	32
Philco 39-7 chairside	75
Philco 48-350	10
Philco 48-482, (2)	75
Philco 89 cathedral	65
Philco 111 console	55
Philmore crystal set	32
Radiola 44	22
Radiola 60	52
RCA 75X15	11
RCA RE52	40
RCA U-115	25
Rider's 1-16	120
Rider's 1-5	80
Rider's 4-6	50
Rider's 6-11	35
Silvertone 1	25
Silvertone 1561	25
Silvertone 1926	57
Silvertone 3561, cracked	65
Toshiba HT294B	65
Tube(s): 01-A, (6)	32
Zenith 5-R-216	50
Zenith 5-S-237 chairside	75
Zenith 6-A-40	27
Zenith 6-D-315	50
Zenith 8-G-005	35
Zenith 10-S-153 console	160
Zenith 10-S-556 console	100
Zenith 3000-1	47
Zenith H-725	16
Zenith plastic sign	25
Zenith Royal 90	20

For information on the Mid-America Antique Radio Club, write Monty Greenstreet, 220 Bayview, Lee's Summit, MO 64064. Dues are \$10 per calendar year. MAARC publishes "The Broadcaster" quarterly and holds semi-annual auctions and swap meets.

HVRA/AWA 16th Annual Show and Auction Houston, Texas — May 5-7, 1995

BY RICHARD COLLINS AND LANCE BORDEN

The Houston Vintage Radio Association (HVRA) and the Antique Wireless Association (AWA) held their 16th annual show and auction at the Howard Johnson Lodge at Houston's Hobby Airport on May 5-7, 1995.

The auction was a highly successful event with 111 bidders from a variety of states, including Louisiana, Oklahoma, Maryland, and Washington State. There were 524 lots presented, of which 471 were sold, for a cash total of \$11,679.

Noteworthy were the vigorous bidding and the high prices brought by Rider's volumes, as well as the large and interesting variety of items sold in the Friday auction devoted to plastic radios, tubes, and test equipment.

Highlights of items sold in Saturday's auction included a Westinghouse WR-15 grandfather clock radio selling at \$275, a Victor 1-1 spring-driven phonograph at \$260, a Zenith 1940 chairside at \$250, and a Zenith 6-tube, black-dial

console at \$250.

The Old Equipment Contest brought forth a rich variety of items of uncommon interest. There were 21 categories covering everything from wireless equipment to transistor radios. A total of 76 displays were shown this year.

Of interest was the "World War II Commemorative Category," created to mark the 50th anniversary of the end of World War II in 1945. The entries included a complete radio setup from a B-17, with a BC-375 transmitter and a BC-348 receiver, shown by Roger Schermerhorn. Other interesting entries were a paratrooper radio and a foxhole radio replica with World War II German Siemens and Halske headphones.

A 1920s phonograph built into a doll, a fantastic high-voltage quack machine, a McMurdo Silver 5B communications receiver, a rare Majestic mirror-cabinet radio, an Emerson Patriot Catalin radio, and a 1930s Majestic neon advertising sign were among the many rare and interesting displays.

Ray Richardson won the "People's Choice" award with his gorgeous blue-mirrored Richardson Phantom radio, which he created using vintage parts and construction techniques. Dave Herlinger won the coveted, "Best of Show" trophy with his rare Crosley Pup one-tube set, which included the original box and instructions.

e=excellent, g=good, f=fair, WT=with tubes, NT=no tubes, N.O.S.=new old stock

Airline 62-297 telephone dial radio	\$70
ARRL Handbook, 1951	13
Arvin metal	48
Arvin metal, white	45
Arvin multiband console	110
Atwater Kent 24, good, NT	175
Atwater Kent 30, WT	90
Atwater Kent 60 console radio	43
Atwater Kent speaker E	60
Atwater Kent speaker, Model E2	70
BBC crystal set	65
BC 454 receiver	8
Bed-type radio, white	140
Bendix 0526A	25
Bookcase radio	25
Brandes B-16 console	170
Brandes Metrodyne	90
Channel Master transistor radio	10
Collins transmitter, vg	185
Coronado coin-op	220
Crosley 9-102	25
Crosley 51	80

A warning: Auction prices are not current values. A listing such as this cannot adequately include the condition of cabinets, chassis, transformers, tubes, the operating status of the set, and the inclusion of incorrect, restored or replica components, etc. Auction prices are the result of the excitement of the auction process, the skill of the auctioneer and the specific interests of the participants. Nevertheless, auction prices serve as useful references and as another element in the value determining process. The possibility of error always exists, and if we are notified, corrections will be reported.



A rare Majestic mirror-cabinet radio in the Old Equipment Contest.

Crosley 52 portable w/batteries	170
Crosley 515 wood table	50
Crosley 545 wood table	85
Crosley 1941 wood table, works	65
Crosley Buddy Boy	210
Crosley 61 tombstone	70
Crystal set and (2) tubes	25
Crystal set and Philco buttons	28
Detrola Pee Wee 195	100
Dynaco preamp	30
Edison lithograph portrait	38
GE 861 plastic, works	50
Globe transistor radio	18
Hallicrafters S-120	18
Hallicrafters S-36A	20
Hallicrafters S-53	73
Hallicrafters TV	25
Heathkit 1953 catalog	15
Hickock tube tester	30
Jackson tube tester	25
Midland wood table	38
Minerva Bakelite	43
Minerva wood	10
Monitor amplifier	18
Parmak 76 tombstone	45
Philco 16 console	50
Philco 19 console	33
Philco 37-93 cathedral	70
Philco 39-35 console	25
Philco 39-80 farm set, tombstone	45
Philco 40-130 wood table	45
Philco 41-240 console	30
Philco 46-350, portable	20
Philco 60 cathedral	110
Philco 655 console	25
Philco 1201 Bing Crosby radio, f	8
Philco 1934 Deco console	65
Radio News magazine, 1926	10
Radio News magazine, May 1923	15
Radio News magazines	15
Radiocraft magazines	35
RCA 6X7	10
RCA 610K console	25
RCA 1933 Service Notes	15
RCA 1934 Service Manual	18
RCA portable, metal, 1940	48
RCA Radiola III, NT, g transformer	90
RCA Radiola 30A console	140

(Continued on following page)



A display entered in the "World War II Commemorative Category."

(Auction Report, continued)

RCA Service Notes, 1935	20
RCA T64, wood	25
Records, 78 rpm, (100)	7
Rider Record Changers & Recorders, manual	5
Rider's Vol. 10	45
Rider's Vol. 13	25
Rider's 1943 Manual	20
Rider's TV Vol. 2	18
Rider's Vol. 4	40
Rider's Vol. 8	38
Rider's Vol. 9	38
Rider's Vol. 11	43
Rider's Vol. 12	48
Rider's Vol. 14	38
Rider's Vol. 7	50
Scott 24 tube 800B speakers, (2)	150
Service mirror	5
Silver-Marshall console	75
Silvertone Bakelite radio, 9000, restored	25
Stewart-Warner tombstone 9-18	130
Transistor radios, (9)	20
Tube(s): 01-A, (3)	13
Tube(s): 01-A, (3)	15
Tube(s): 01-A, brass dud, p	10
Tube(s): 24A, (16)	33
Tube(s): 27, (14)	50
Tube(s): 27, (23)	45
Tube(s): 45 bulb type, (2)	20
Tube(s): 45, (4)	53
Tube(s): 45, N.O.S., (2)	30
Tube(s): 45, N.O.S., (2)	38
Tube(s): 199s, rainbows, some duds, box	48
Tube(s): 205	33
Tube(s): 7591, (4)	50

Tube(s): Arcturus blue 01-A, (2)	28
Tube(s): Arcturus blue, 24, 26, (2)	28
Victor 1-1 tabletop phono, windup	260
Victor Book of Opera, 1936	10
Victor record catalog, 1920	18
Watterson 524 wood table	45
Watterson 4581 wood table, works	35
Western Electric horn speaker	50
Westinghouse grandfather clock WR-15	275
Westinghouse WR-7	120
WWII telegraph key	35
Zenith 7-S-363 AM/SW	160
Zenith 27 Super, farm radio, WT	240
Zenith 950 console	60
Zenith 1940 chairside radio	250
Zenith brochure	20
Zenith console	130
Zenith console, 6-tube black dial	250
Zenith H500 Trans-Oceanic	70



A console lineup for the Saturday auction.

Zenith H725 w/original box	120
Zenith K526 Bakelite	45
Zenith plastic radio	28
Zenith Royal transistor radio	35
Zenith teddy bear radio	28
Zenith Trans-Oceanic	53
Zenith Trans-Oceanic T600	200
Zenith Trans-Oceanic, parts set	13

(Richard Collins, 8722 Reamer St., Houston, TX 77074)

(Lance Borden, 13911 Kensington Pl., Houston, TX 77034)

The Houston Vintage Radio Association (HVRA) holds monthly meetings and special regional events. The "Grid Leak" is published monthly. Dues are \$15. For more information write to: HVRA, P.O. Box 31276, Houston, TX 77231-1276.

IHRS 24th Regional Radio Festival Kokomo, Indiana — May 12-13, 1995

CONTRIBUTED BY LARRY BABCOCK AND MICHAEL A. CLARK

The following article is a combination of two reports. Larry Babcock's account of his trip to the IHRS meet conveys his obvious enjoyment of the flea market in particular, as well as some valuable advice about making plans for next year. Michael Clark has added some important auction results. (Editor)

The Indiana Historical Radio Society (IHRS) held its 24th Regional Radio Festival at the Ramada Inn in Kokomo, Indiana, on May 12 and 13, 1995. I have attended this event for the past several years, and every year it has grown a little bigger. A total of 53 families were registered, while 93 flea market spaces and 18 indoor spaces

were sold. Like most meets, this one also displayed items that seem to grow a year newer.

The IHRS meet was different for me this year because I decided to set up and sell for the first time. I sold more in the flea market than I had ever done at any other meet.

A goodly number of sellers were set up Thursday evening preceding the official start of things. Although the rules specifically stated that no sales were permitted until sunup Friday, earlier transactions were brisk, and nobody seemed to mind.

A LIVELY FLEA MARKET

Friday morning started off strong, both with the opening of the flea market and with seminars. This was when the action peaked. I checked out the flea market just after daybreak and saw several nice looking Grebe Synchronphase radios priced at \$250. Remember a few years back when you could buy one for \$100?

Two Crosley Pups in good condition were priced at \$400 and \$500, while a transistor version of the Trans-Oceanic portable was priced at \$125. You could even purchase a Radiotron doll for \$800. I know because I sold one for that.

I can remember when I traded my R4 Dictograph horn speaker for something of modest value. One was priced at \$375 here, and I have seen similar prices at other recent meets.

An Atwater Kent 12 breadboard was priced at only \$750. However, most of the metal parts were covered with heavy green corrosion, while other parts were almost rusted through the metal.

Three pairs of working Federal headsets sold at \$5 a pair. A Kennedy Type 281 chassis brought \$100, although the wire was loose on several of the coils. Still, the panel was good, and all the parts were there. A flat, round, white porcelain part, similar to that used as a rheostat on the DeForest RF4 detector, sold for \$5 — a real bargain.

By early Friday afternoon, the pace had slowed, and few new dealers were in the parking lot. Since



at 9 A.M. on Saturday morning nothing had been entered in the main auction, which didn't start until 2 P.M., I decided to begin my 500-mile trek back to Buffalo. It would be helpful if the auction could be moved up to mid-morning, as it is at some other meets. Still, it was a great meet at a great location, and I hope to return again next year.

The registration for this event totalled a little over 200 families, and it increases every year. The banquet was enjoyed by 69 people. Do not try to go without reservations, as the time trials for the Indy 500 are held every weekend in May, and even distant motel rooms fill up early.

Although this event is held at the Ramada Inn, (317) 459-8001, both Motel 6, (317) 457-8211, and the Fairfield Inn, 1-800-228-2800, are just about as convenient to the flea market. These three motels fill up fast. Make your reservations early, or try the Econo-Lodge a mile distant, 1-800-424-4777, or the Comfort Inn two miles away, (317) 452-5050.

On Saturday, May 13, the second day of the meet, a very successful auction was held. The following is a partial listing of items sold.

e=excellent, vg=very good, g=good

A.C. Dayton XL-10, working	\$85
Akkord M56, g	18
American Bosch 585, g	70
Arvin metal, 5-tube, brown, g	30
Atwater Kent 37, g	25

(Continued on following page)



Collector Craig Smith of Florida looks on as Ed Bell of North Carolina displays some very nice items, including the SE-1420C receiver to the left. It is good to see Ed back in the swing of things after his illness.

(Auction Report, continued)

Atwater Kent 40, g	35
Crosley Dynacone speaker, working	18
GE H73, g	25
Grunow 1181, working	80
Heathkit XR-1, g	10
Home brew superhet, g	65
Home brew, 3 tubes, g	15
Jewel plastic, e	35
Kolster 43, g	25
Magnavox table speaker, g	115
Mecograph telegraph key, g	80
Mengel crystal set, new	230
Morris coil winder, working	40
National SW-3, g	300
Philco Boomerang, g	60
Philco 37-650, vg	90
Philco 40-185, working	50
Philco 116, g	80
Radiola 24, case rough	180

Silvertone crank phono, working	80
Tube(s): CX-12, (5), g	23
Tube(s): UV-200 (1), 201-A (4), g	55
Tube(s): UV-202 brass based, g	15
Tube(s): VX-199, (4), g	43
Weston 565 tube tester, g	35
Zenith 500, g	25
Zenith H-500, vg	30
Zenith H5034, working	23

(Larry Babcock, 8095 Centre Ln., East Amherst, NY 14051)

(Michael A. Clark, Box 90, Franklin, IN 46131)

The Indiana Historical Radio Society publishes the "IHRS Bulletin" quarterly and holds quarterly swap meets in various areas of the state. Dues are \$10. For more information, write to: IHRS, 245 N. Oakland Ave., Indianapolis, IN 46201.

Mid-Atlantic Antique Radio Club Meet and Auction — Radioactivity '95 Timonium, Maryland — June 10-11, 1995

CONTRIBUTED BY SAMMY AND MITCHELL COHEN

The Mid-Atlantic Antique Radio Club (MAARC) held its second annual meet and auction — Radioactivity '95 — at the Holiday Inn Convention Center, Timonium, Maryland, on June 10-11, 1995. However, the flea market was open for brisk business on Friday evening from 6:00 to 9 P.M. and continued throughout the weekend. There were over 400 attendees from 18 states and Canada.

Of great interest was the Old Equipment Contest offering eleven categories, including four related to the theme "A Golden Anniversary of Victory in Europe." The following seminars were presented: "The Zenith Trans-Oceanic in World



Cathedral tailgating was among the flea market sights.

War II" by Dr. H. Cones, "Axis vs. Allied Electronics" by Ludwell Sibley, and "Radio Repair and Restoration" by Ed Lyon. Videos on historic topics played continuously in a dedicated viewing room. Saturday evening's banquet speaker, Frank Young, related the life and times of his father, who had been employed by Atwater Kent and Philco.

In Sunday's 3-hour auction, Colonels Sam Cannan and Brian Belanger briskly handled 232 lots. Highlights were a Philco 90 cathedral selling at \$250, a Silvertone 3551 ivory beetle at \$210, and a Hallicrafters S-107 with paper and sales slip at \$180. The raffle for the fairly rare Philco Model 52 was won by Roy Ditzell. The following is a list of auctioned items.

e=excellent, vg=very good, g=good, f=fair, p=poor, N.I.B=new in box, NT=no tubes

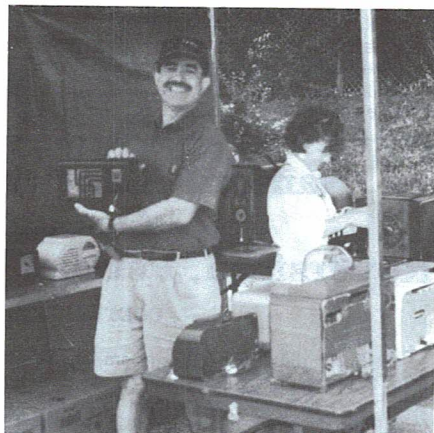
Admiral 5R38N	\$4
Admiral plastic	4



This Old Equipment contest entry by John DeLoria is a Pathe wooden cone speaker labeled "Safar." It is 20"h x 20"w x 7"d and has a solid bronze driver and grille.

Air Castle battery set, wood, no speaker, case, or knobs, vg	12
Air Champ kit, 1 tube, assembled	10
Air King 511/512	9
Airline 62-502, Deco case, rocker push buttons, ivory, vg	40
Aria 523 Junior table set, wood, ca. 1930s	33
Army BC-645 IFF, w/W.E. 316A tube, mint	10
Army set analyzer, WWII	15
Atwater Kent L horn, less base, vg	7
Bogen Challenger PA amp, w/new 7868 tubes (4), f	13
Browning Labs signal generator, 22-36 MHz, w/book, e	10
Channel Master 6472 cigarette case radio in box, e	10
Clarion 11801, ivory, vg	15
Clarovox horn, no driver or base, vg	7
Classic roadster car transistor radio, e	5
Crosley 11-102U Bullet, small hole in center of grille	4
Crosley AC-DC, wood, f	8
Dukane 1A385 amp, works, e	11
Dynaco stereo FM tuner, less 1 knob, g	7
Emerson 6S279	25
Emerson 336, vg	14
Emerson 509, Bakelite, vg	13
Emerson 547A, ivory Bakelite, e	23
Emerson 572A, vg	35
Emerson 779, vg	13
Emerson 825 clock radio, g	3
Emerson tombstone	75
Fada 119, cracked dial window	25
Fisher 440 FM receiver	15
Garrod 5764 RAF 3-dialer, w/tubes, vg	43
GE 100	13
GE 200, AC/DC, Bakelite, e	13
GE 425	5
GE 450	2
GE 515F	9
GE 650, e	5
GE Bakelite AC/DC, vg	5
GE C-505	1
GE P-2900A AM-SW-LW transistor radio, vg	45
GE T-1230A	1
Grundig 80U	5
Grunow 1291 Teledyne console, e	75
Hallicrafters S-107, w/paper and sales slip, N.I.B	180
Heathkit IG-28 color bar generator, w/book, vg	5
Hickok 195 5" oscilloscope, g	4
Hickok 209A multimeter, huge, 18", g	7
Hickok 539A, w/copy of book, g	50
Home brew	2
Horn speaker, model unknown, celluloid tiger-stripe style	38
Insulators	6
Keystone K98	15
Lafayette FM tuner	6
Lambda C281M regulator, lab power supply, 300V@200mA, vg	20
Magnavox FMO42	1
Micamold 23	10
Midwest 617 AM/SW table, less knob, Deco, g	160
Mitchell bed lamp radio	13
Monitor MR33, low band VHF, e	3
Motorola BCG3	2
Olympic 441, vg	6

Olympic FM15	4
Panasonic, w/2 speakers	1
Peerless R-156 cathedral speaker, g	13
Philco 20 cathedral, early version, g	100
Philco 38-60 tombstone, f	38
Philco 38-70 battery set, g	85
Philco 41-226, g	50
Philco 49-150 AM/FM, vg	5
Philco 50-522, Bakelite, g	2
Philco 53-559, (2)	1, 3
Philco 84	70
Philco 90 cathedral	250
Philco AM/FM, prewar, wood, pushbutton tuning, e	45
Philco battery set	15
Philco Briefcase TV, B&W, g	1
Philco cardboard shipping crate for 38-62, g	25
Philco PR65Y81	1
Pilotron CG-1162A	15
Precision 612 tube tester, w/book, vg	10
Precision 912 tube tester, w/book	23
Prento crystal set, g	50
RCA 2X-61, AM, ca. 1948, e	5



A happy shopper at the flea market.

RCA 5C591 clock radio, vg	20
RCA 6XF9	5
RCA 8X8N, table, ivory, vg	2
RCA 28X, wood, vg	18
RCA 33, g	20
RCA 35X, wood, prewar, g	10
RCA 106 floor speaker, works, vg	35
RCA 221 console, AM/FM, ca. 1935 airplane dial, vg	95
RCA broadcast remote amplifier, one channel, vg	45
RCA Radiola 33, no lid or legs, f	13
RCA Radiola IIIA, 1929, NT, g	40
RCA RHA-17A table, vg	1
RCA WO-888H oscilloscope, vg	2
Record sleeves, 78 rpm, 1920s vintage, 2" stack	1
Regal radio	10
Regency MR33, Monitorradio, low band	2
Sams Photofacts 900-1300, 15" stack	4
Sentinel 243T battery farm set, wood, table, AM-SW, vg	30

(Continued on following page)

(Auction Report, continued)

Sentinel OS-46A/U oscilloscope, military	2
Sentinel U352-2	6
Signal Electric telegraph sounder, g	12
Silvertone 3004 Bakelite	5
Silvertone 3551, Ivory beetle, e	210
Silvertone 7006	4
Silvertone 9005	9
Silvertone AM/FM custom tuner	5
Silvertone metal	15
Sonar FR-105 high band VHF monitor, g	1
Stewart-Warner Air Pal, ivory, vg	35
Stromberg-Carlson 520L console, f	5
Superior TV10 tube tester	3
Supreme 500 tube tester w/dual meters, vg	23
Supreme 582 signal generator, wood, vg	13
Supreme 912 tube tester	5
Sylvania 1107, AC/DC, Bakelite, vg	1
Telechron 8H59 clock radio, Bakelite, vg	10
Teletone 135 Miniradio, Bakelite, vg	7
Tradio coin-op radio and steele table, g	27
Transistor radio 425, 4" face, watch-style, e	7
Tube(s):	
Big S-bulb, duds, (15)	8
GE CG-886, WWI vintage, in box	5
Mixed GT and larger, tested, boxed, (54) ..	13
Mixed S-bulb, duds, including blue, (20) ..	7
VT-24, N.I.B., (11)	50
Tube tester TC1	1

WE hearing aid, 1946, N.I.B., e	30
WE Magneto telephone 1317-Type CTPFF style, vg	180
Westinghouse H122B radio/phono, Bakelite ..	20
Weston tube tester 798, w/book	10
Zenith 5-D-810Y	11
Zenith 5-R-05	2
Zenith 6-H-023 AM/FM Bakelite, prewar/ postwar bands, vg	10
Zenith 11 battery set, ca. 1920s, NT, vg	45
Zenith 6105	7
Zenith A-400 portable, vg	8
Zenith H-551Y	17
Zenith H-725, vg	2
Zenith L-5206 plastic clock radio, vg	10
Zenith N-725	2
Zenith Trans-Oceanic R-600, g	43
Zenith Zenette tube portable, Bakelite, g	10

Photos by Steve Snyderman

(Sammy and Mitchell Cohen, 5113 Linden Ave., Philadelphia, PA 19114)

The Mid-Atlantic Antique Radio Club (MAARC) publishes "Radio Age" monthly. Dues are \$20, and the club holds monthly meetings. For more information, write to: Jay Kiessling, PO Box 67, Upperco, MD 21155.

Sanford Alderfer Auction Company Absolute Auction Royersford, Pennsylvania — June 13, 1995

CONTRIBUTED BY BRENT SOUDER

The Sanford Alderfer Auction Company of Hatfield, Pennsylvania, held a real estate and personal property auction on Walnut St. in Royersford, Pennsylvania, on May 13, 1995. Included in the auction were a few items of interest to antique radio and phonograph collectors. They are listed below.

Edison phonograph w/horn \$200

Edison Morning Glory horn	625
Orchestinpe 28F 19061228F player	1,025
Telephone, box	110
Wurlitzer Simplex P-12-10081 jukebox	1,050

For more information about the Sanford Alderfer Company's radio auctions, contact Brent Souder, Sanford Alderfer Companies, 501 Fairgrounds Rd., Hatfield, PA 19440. (215) 393-3000

Gimmicks in Radioland

BY RAY BINTLIFF

The word "gimmick" has a negative connotation, as in "sales gimmick." But, in the world of radio, the word is used appropriately to describe a legitimate, simple, but ingenious device. A gimmick is simply two insulated wires twisted together to produce a very low capacity. For example, sometimes gimmicks are used to couple the output of a local oscillator to a mixer stage. Occasionally, I am asked if the problem with a radio could be that "those two wires are not connected." Of course, the answer is that the two wires are not to be connected directly.

Another variation of the gimmick is when wire in an RF coil has only one end connected. Usually,

one end of the gimmick wire is connected to the plate side of the RF coil's primary, and the other end is looped around, but not connected to, the grid of the RF coil's secondary winding. In this instance, the gimmick provides a small capacitive coupling between the coil's primary and secondary.

The applications described above are not meant to be a complete list of the uses for gimmicks, but rather they are given as examples for the benefit of those readers who may not be familiar with gimmicks.

(Ray Bintliff, 2 Powder Horn Ln., Acton, MA 01720)



BOOK REVIEW

Sony Transistor Radios: The Complete Photo Guide to Collectible Models, By Eric Wrobbel

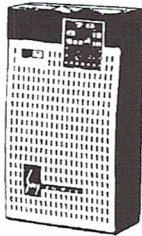
REVIEWED BY DAVID POPE

Sony Transistor Radios: The Complete Photo Guide to Collectible Models is a 14-page booklet of 92 models of Sony transistor radios accompanied by a brief handwritten history and philosophy of the corporation. It also contains interesting handwritten notations relevant to each set.

The black and white layout is presented in chronological order which easily conveys style changes from 1955 to 1979. Importantly, each model is pictured (line art conversions reproduced by photocopying), which can be infinitely more valuable to a collector than simply a model number and written description.

Conversely, the fine detailing, coloration and often unique decorative applications of grilles, nameplates and dials is lost in this economical manner of presentation. [According to Eric Wrobbel, "To be fair, none of the other transistor books, except *Made in Japan* by Handy, Erbe, Blackham Antonier, show much detail either."]

As the title implies, not all transistor models produced by Sony are included in the work but rather only those deemed "collectible" by the author and probably the majority of the transistor radio collecting community.



Interestingly, a brief comparison of production year dates between *The Collector's Guide to Transistor Radios* by Marty and Sue Bunis and this guide revealed at least six discrepancies of from one to three years. Almost certainly, the purists in the hobby will find a way to verify and correct these differences.

Serious transistor radio collectors should find this booklet a necessity for their reference libraries and will be delighted by the low cost.

Published by the author in a 5½ x 8½ booklet form, *Sony Transistor Radios: The Complete Guide to Collectible Models* is priced at \$7 postpaid. It may be ordered from Eric Wrobbel, 20802 Exhibit Ct., Woodland Hills, CA 91367. (818) 884-2282

Eric Wrobbel supplied the following additional information: "The production year dates of the radios in my booklet are based on recent research by Noriyoshi Tezuka. This research was unavailable to Marty and Sue Bunis when their book was published."

(David Pope, P.O. Box 89, Plympton, MA 02367)

Collectible Transistor Radios from Toshiba and Trancel, By Eric Wrobbel

REVIEWED BY JOHN R. DELORIA

At last! At last someone has taken the initiative to produce a book about Toshiba and Trancel transistor radios! Since I am primarily a Toshiba transistor collector, I have been looking forward to such a publication for a long time. Thanks to Eric Wrobbel and his *Collectible Transistor Radios from Toshiba and Trancel*, my wait is over.

How many times has someone asked you, "Have you seen that 6TR12 or that TR193?" Or, "Does a TR193 have a round grille or a square grille? Now you have an immediate reference to aid your memory.



Wrobbel's book is a self-published effort, and, as a result, the pictures are not crystal clear or in color as I would like to see them. The pictures are line-art conversions reproduced by photocopying. While not the best method of photo reproduction, the results are adequate and offer insight into what you may be looking for on your next buying trip.

In general, this book offers the best pictorial view to date of so many models in one publication. Numbers are given for each model, some of which

are extremely rare. Most are photographed from the author's own collection.

More commentary about each set would have been helpful; for example, how many colors were offered for a particular model? Did the "Rice Bowl" come plain or only with hand-painted flowers? I have been told that there was a blue "Rice Bowl." Does anyone know this to be a fact? Is there any documentation from the manufacturer one way or the

other?

Overall, this is a job well done and long overdue. The book is worth buying and is a good value to recommend to fellow transistor radio collectors.

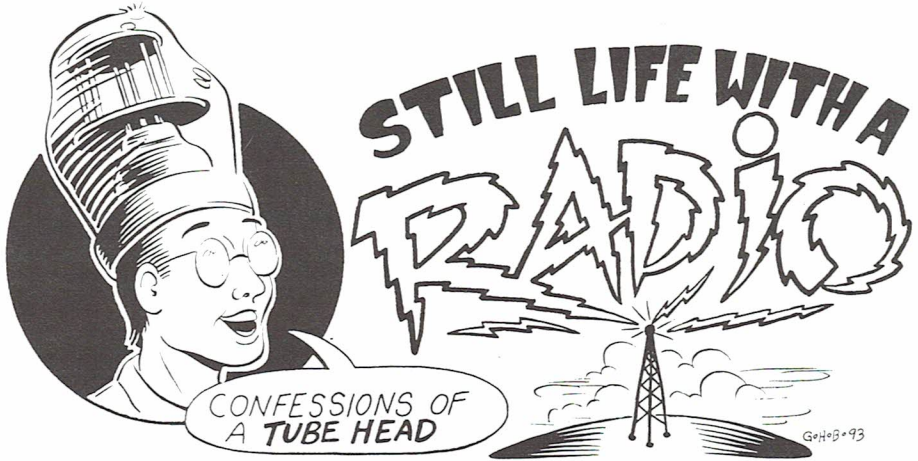
Published by the author in a 5½ x 8½ booklet form, *Collectible Transistor Radios from Toshiba and Trancel* is priced at \$7 postpaid. It may be ordered from: Eric Wrobbel, 20802 Exhibit Ct., Woodland Hills, CA 91367. (818) 884-2282.

(John R. DeLoria, 101 Doverbrook Rd., Chicopee, MA 01022)



RADIO ADVENTURES

BY GEOFFREY BRITTINGHAM



MY LIFE WITH RADIOS BEGAN IN 1979. I WAS STARTING MY FIRST YEAR OF COLLEGE. ONE AFTERNOON I WAS WANDERING THROUGH THE LOCAL JUNK SHOPS, HUNTING FOR OBJECTS TO USE IN MY STILL-LIFE DRAWING CLASS...



AS I LEFT THE SHOP I COULDN'T TAKE MY EYES FROM THIS OLD PIECE OF PLASTIC. SO DIFFERENT IT WAS FROM WHAT I WAS ACCUSTOMED TO. IN MY HANDS IT FELT SO SMOOTH, WITH ITS ROUND EDGES FLOWING INTO LOUVERED GRILLE, BEAUTIFULLY EMBOSSED KNOBS (ONLY TWO), METALLIC GOLD AND COPPER DIAL. **IT—IT HAD NO RIGHT ANGLES!** IT WAS SO ALIEN ——— IT WAS A **PHILCO!**



SOMETHING STRANGE HAPPENED THAT DAY. SOMEWHERE IN THE VACUUM TUBES OF THAT 1946 PHILCO WERE THE REMAINS OF THE SIGNALS THAT HAD PASSED THROUGH IT FOR 30 ODD YEARS.



(Geoffrey Brittingham, 1603 N. Observatory, Nashville, TN 37215)

Geoffrey Brittingham's illustrations appeared with Fred Geer's article "The Golden Age of Radio Entertainment" and on the cover of the April 1994 issue of A.R.C. Although not a collector, Geoffrey likes to portray old radios in his work — a definite plus for A.R.C.

RESTORATION TOPICS

Fix that Audio Transformer

BY DALE DAVENPORT

Without question, the single most often needed repair to early radios, particularly battery sets from the 1920s, is that of open audio transformers. Frequently, when we carry our newly acquired possession to the shop for refurbishment, we discover that time and conditions have left the primary, the secondary, or, in many cases, both windings open, and our set is as dead as the proverbial dodo.

The reasons for this condition are varied, including excessive current due to some other defective component and the natural deterioration of original materials. The environmental conditions the set endured during its lifetime also play a significant role in the failure of an audio transformer. Remember that the wire used to wind these devices is about the size of a human hair. It was common practice to use paper, layered between successive layers of windings, to separate them electrically and provide a stable mechanical platform for the next layer of winding.

This paper was high in sulphur content as was the tar or wax-like material used to make these devices moistureproof. Over years of use and storage, moisture was drawn into the transformer by thermal expansion and contraction. This action resulted in tiny droplets of acid that attacked the copper wire and eventually resulted in an opening of the winding.

I am aware of six possible and quite different methods of effecting repairs to open audio transformers. I will discuss each of them, dwelling at length on the one most of us could achieve.

VARIOUS REPAIR METHODS

The first and perhaps most controversial repair is "zapping" the open winding for a few seconds with high voltage such as that from a neon sign transformer. I have had rather poor results with this process. The purported weld that is supposed to take place may instead be a carbon trace caused by the high voltage arcing across the opening in the winding. In any case, often the repair does not hold up for any appreciable length of time when the set is placed in operation. It seems too that fidelity on this type of repair is not all that it should be.

The second repair technique is replacement of the inoperable unit with one from another set. The problems here include, first of all, finding a junker set with good transformers. Second, the repair is made at the expense of a set that otherwise might be saved. A similar repair might be made with an incorrect transformer taken from a set deemed too far gone for restoration. This, however, will produce an

incorrectly restored set.

The third possible method of transformer repair involves some aspects of the foregoing replacement technique — that is, to disassemble the open transformer and replace the windings with those taken from a transformer by some other manufacturer or by using one of the replacement windings available. These windings are sold by vendors such as Antique Electronic Supply of Tempe, Arizona. The drawback to this method is availability of the new replacement winding or the necessity of disassembling a good transformer to obtain the needed winding.

A fourth possibility that presents itself for consideration is rewinding the original transformer. To have rewinding done by a commercial firm is, in most cases, prohibitively expensive, but rewinding the transformer ourselves is beyond the ability of most of us.

The fifth repair technique is only applicable to transformers with open secondary windings. Often the open is at the point where the very fine wire used for winding the transformer is joined to a heavier wire used for the unit's "leads." Careful, slow surgery with an X-ACTO™ knife, removing one layer of paper at a time, will uncover the junction of the two wires. If inspection reveals the break, the two wires can be rejoined, while the paper outer covering can be

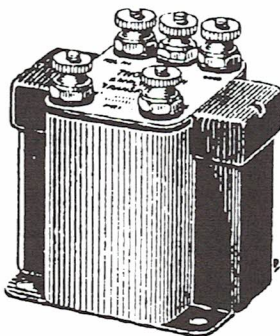
replaced and held down with a little white glue, thinned and painted on.

THE BEST REPAIR METHOD

The sixth and, I think, best repair method involves replacing the open windings of a transformer with a capacitor and either one or two resistors, as shown in Figure 1. The result will be the satisfactory operation of the set and maintenance of the cosmetics.

The use of a resistance/capacitance (RC) network will reduce the gain of the stage somewhat, but not enough to be of any consequence. A positive side benefit may be increased fidelity due to a flatter audio bandpass than that afforded by transformers.

A good value for the plate coupling capacitor (C1) is 0.1mFd. at 150 or more working volts. The plate voltage is applied through a 68 K resistor (R1), and the grid of the following stage is handled by a 470 K resistor (R2). These values are not engraved in stone, but rather chosen as values that will work in most circuits of the 1920s period. The use of a variable resistor alligator-clipped into the circuit will allow some experimentation and perhaps optimize results. Higher plate voltages in the later output stages will usually require higher resistance in the plate circuit.



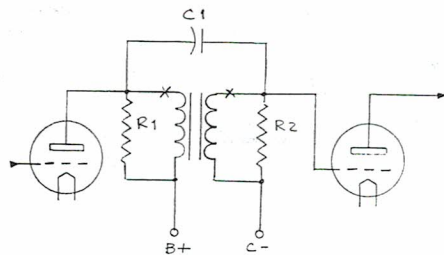


Figure 1. Partial schematic diagram showing the location of added components.

In the event of either the primary or secondary being open, the appropriate leg of the RC is, of course, omitted. The actual components can be hidden underneath the chassis in some instances, or inside the transformer housing in cases such as the early Atwater Kent units.

In the case of an open-frame unit, it is possible sometimes to hide the network under the paper wrapping of the now useless windings. In addition, small 1/4-watt resistors can be hidden inside the spaghetti used to insulate the leads from the windings to external binding posts. I have also used small ceramic disc capacitors wrapped inside the paper winding coverings.

Audio transformers housed in metal cans or cases can be removed from their containers and the RC network hidden in the housing. I use a mixture of hot, dry sand and household sealing wax, intended for sealing jelly jars, to fill up the rest of the empty space in the nearly empty housing and replace some of the lost original weight. A thin layer of black windshield RTV, a silicone material, smoothed over the wax mixture in the open canister end will replicate the missing tar for cosmetic purposes. The object here is to return the set to operation and still maintain the original appearance.

There are perhaps other methods of repairing these pesky little transformer problems, and some thought and/or experimentation might be in order. I feel that old equipment should be brought to a point where it can be used and enjoyed, if possible. A temporary fix is O.K., but try to find a solution and the time to go back to do the repair so that the cosmetics of the set will not be compromised.

(Dale Davenport, 622 S. 18th St., Fort Smith, AR 72901)

Dale Davenport has worked in commercial broadcasting as an announcer, news director, owner, and engineer. He has been a collector since age 14, and his wide-ranging interests include Metrodyne, Steinite, and early AC sets. His prize is a Crosley Ace 3-B portable.

Hum Problems

BY RAY BINTLIFF

Hum is a frequent problem in AC-operated radios and is usually caused by bad filter capacitors in the B-supply. However, hum can also result from a number of problems, including filament to cathode leakage in an audio tube and poor shielding in a radio's audio stages. This common form of hum is present whether a station is tuned or not.

TUNABLE HUM

However, tunable hum, also called "modulation hum," is heard only when a station is tuned in. This characteristic distinguishes tunable hum from the more common hum problems.

A tunable hum problem can usually be traced to a radio's AC line bypass capacitors. Most old AC-operated radios employ one or two AC line bypass capacitors. When only one line bypass capacitor is used, it is connected from one side of the AC line to the chassis ground. If this capacitor is open, tunable hum may be heard.

The remedy is simple — replace the defective capacitor. Since only one side of the AC line is bypassed, reversing the AC plug in the wall socket may also cure the problem. A better way is to add a capacitor from the other side of the AC line to the chassis. If tunable hum is heard in a radio that uses two line bypass capacitors, chances are that one or both of the capacitors are bad.

GROUND-LOOP HUM

Although not a common problem, ground-loop hum can be an annoying source of hum in high gain audio amplifiers. This type of hum is often the result of poor design, insulation failure or improper repair.

When more than one chassis ground point is used in a single stage or multistage audio amplifier, a small difference in ground potential will exist between those points. This differential can induce AC hum into the audio circuit — a condition called ground-loop.

For example, broken insulation on the outside of a shielded lead to the grid cap of an audio tube can produce ground-loop hum. Usually, shielded grid leads are insulated to prevent contact with the chassis except for the intended chassis ground. If the insulation is broken at the point at which it passes through a chassis hole, the shield is then grounded at two points and ground-loop hum may result. An improper repair that uses an uninsulated shielded grid lead may also produce unwanted hum.

Occasionally, ground-loop hum results from a faulty design. Other than rewiring the audio circuitry, little can be done in such cases. Fortunately, some manufacturers have acknowledged shortcomings in their designs, and rewiring instructions are included in their service literature. One example is the Silver-tone Model 6155 (Chassis 101.549). A schematic diagram for this radio, along with rewiring instructions, is covered in Rider's Volume XI, page 23.

If a hum problem persists in a radio after all conventional solutions have been tried, the problem may be ground-loop hum. So, look for multiple chassis grounds and try wiring these connections to a single chassis ground point. Don't forget to check the condition of the outer insulation on all shielded wires and to check service literature for possible rewiring instructions.

(Ray Bintliff, 2 Powder Horn Ln., Acton, MA 01720)



RADIO MISCELLANEA

"Antique Radio Classified" invites its readers to contribute letters and information for inclusion in "Radio Miscellanea" and elsewhere in the magazine. The topic should be of general interest and sent to A.R.C., P.O. Box 2, Carlisle, MA 01741. All material submitted should be verified for accuracy and may be edited for publication, which is not guaranteed. See the masthead for more details.

UPS — Just The Facts

Dear Editor:

I just got back from UPS and I'm steamed! Not because they wouldn't ship my radio, which wasn't double-boxed, but because lately I had received two damaged radios, and after getting a tour of their facility by the manager, I understand why.

After they take your package to the conveyor belt, it disappears behind the wall, not unlike your baggage on an airplane. This is where it gets interesting — the package travels up the conveyor belt to the loading dock. There is a 6-foot drop from the top of the conveyor belt to the loading dock. This allows packages to drop off without backing up the assembly line. Your package needs to be able to sustain the fall unless other packages are already there. Want to take the chance?

Next comes the scary part. After the package gets to the loading dock, only heavy (the manager pointed to the 77- and 100-pound boxes sitting there) packages get deliberately placed on the bottom. Your package goes into a semi-trailer. The manager told me that five or six 50-pound packages could end on top of your item. That means 300 pounds could be sitting on top of your box!

I now have a clear idea of what happened to the Stromberg-Carlson I received with crushed knobs and to the Crosley Buddy Boy that arrived totally destroyed, looking as if the package had been dropped six feet. The Stromberg-Carlson had been double-boxed with the knobs facing up against the box. The Buddy Boy had been placed in a large box with shredded newspaper all around it. Some time ago, I sent a Crosley 148, and it arrived looking as if someone had thrown a javelin through it.

Folks, the items we send across the country cannot be replaced. They represent a part of our nation's history and brought the news of war, baseball games, famous boxing matches, and entertaining music and variety shows to the population. UPS, FEDEX, the U.S. Postal Service, etc. don't have the same love for these objects as we do, so let's make sure we ensure the preservation of these treasures. Isn't that in the bylaws of a lot of our clubs?

Geoff Shearer, Albuquerque, NM

"Packaging Radios for Safe Delivery" by Walter Worth and the accompanying sidebar in the November 1990 issue of A.R.C. discussed some of these issues. (Editor)

Minerva Tropic Master Remembered

Dear Editor:

I was both surprised and happy to see the Minerva Tropic Master in the April 1995 A.R.C. When I was a kid, my closest friend had two radios that I have been trying to locate ever since, one of them appearing to be the Minerva. I have not seen one since; where can I find one?

Harry Church, Lebanon, IL

Obviously, we would suggest placing a "Wanted" ad in A.R.C. The Minerva W117 is listed at \$35 in the Bunises' Third Edition "Collector's Guide to Antique Radios." (Editor)

On High Temperature Tubes

Dear Editor:

While looking through Gernsback's Volume 2 (1932) in the section on tube specifications, I came across something interesting. The section "Special Purpose Tubes" mentions the Types 76 and 86. It states that these are iron filament tubes in a hydrogen atmosphere! It goes on to say that these are high temperature tubes and are used with a special chimney-type shield to help conduct the heat away. They are used as voltage regulators in power transformer primary circuits.

The schematic from page 77 of the Gernsback publication shows that the original Type 76 tubes were 4-pin ballast types. The later tubes identified as Type 76s are 5-pin triodes. Based on the A.R.C. article on tube tester settings by Ray Bintliff in the July 1994 issue, the Type 76 seems to be a Type 56 with a 6.3v filament.

I have a Truetone Model D712M (Rider's Volume X). It is unusual to see a set of this late vintage with Type 45s in push-pull final.

I do wonder if there are any of the *original* 76s and 86s still out there, and if there is anyone who has had experience with them.

John G. Bayusik, Wallingford, CT

Please Call Local PBS Stations

Dear Editor:

I hope the antique radio community will lobby their local PBS stations to take advantage of the opportunity to show *Broadcasting's Forgotten Father: the Charles Herrold Story*. This video will be offered free to all PBS stations on Sunday, August 13. Just give your local station the following information: The feed will be on the Pacific Mountain Network (PMN) satellite, the time will be 1600-1700 EDT, Schedule 6. The stations will know what all this means.

The stations get advance notice, but it would help if they knew that there is an active community out there interested in radio topics. If you have friends involved with the stations, please contact them personally. Many thanks.

Mike Adams, San Jose, CA

Readers Request Articles

A.R.C. frequently receives requests for article topics, and we encourage writers to take up the challenge. James Riff writes, "Your magazine is the very best. I especially like the technical and restoration articles." Laten Fetters has asked for more on the history of radio, while, along the same lines, Joseph Caron writes, "I especially enjoy the articles on the early days of radio." Any budding authors out there should request a copy of our guidelines, and we will be happy to work with you on developing your topic. (Editor)

CLASSIFIED ADVERTISING POLICY

ONE FREE 20-WORD AD for subscribers in each issue; additional words are 22c each. See details below. Classified ads sent by mail, fax or by any other method must be received (not just postmarked!) by **Noon Eastern Time** on the classified ad deadline date to guarantee inclusion in the current issue. Late ads are held for the following issue. Please enclose correct payment with all ads. Stamps or cash are OK for small amounts. (Canadian and other foreign advertisers, please see "Payment" on page 2 for methods.) "Free words" cannot be accumulated from month to month; free words must be requested when ad is submitted.

Faxed & e-mailed ads: Please see additional information on the inside front cover.

When including ads with other A.R.C. correspondence, write the ads on a separate piece of paper. Include SUB# with ads. Ads may be sent in advance; but, write each ad on a separate piece of paper and indicate the month (or successive two months) you want the ad to run.

To minimize our typing errors: Please write legibly. Use both capital and small letters. Do not use a dash between words. Carefully write the following numbers and letters (especially in model numbers) since some can look alike; for example 1, I and l (the number one, the capital i and the small L.) Also: 0, O, o, Q and D; r and n; 6, b and G; V, U, u, v and Y; A and R; 5, S and s; 2, Z and z. We try to correct spelling errors, so when using an uncommon word or manufacturer which we might mistake as a more common word or manufacturer, note it so that we do not "correct" it. Editor's annotations are in [brackets].

Advertising is accepted only for early items related to radio, communication, etc. All items must be described fairly; reproductions, reprints and non-original items must be so identified. Advertisers must agree to respond promptly to inquiries and orders, to resolve problems promptly if the buyer is not satisfied, and to comply with a buyer's refund request on unaltered returned items.

The publisher reserves the right to edit ads without notification to the advertiser and to reject ads for any reason. Names other than the advertiser will be edited out of ads. Ads with non-radio-related items will be returned or edited unless the non-radio-related items are for trade of radio-related items, or they are incidental to and appear at the end of an otherwise acceptable ad. The publisher is not responsible for errors due to illegibly written ads or for any other reason.

Clubs: Since club activities receive free coverage on the *Coming Radio Events* pages, the free 20 words may not be used for club activity ads. See inside front cover for additional information.

CLASSIFIED AD DETAILS

Deadline: NOON ET— 10th of the month!

Classified ads must have a standard heading such as **WANTED, FOR SALE, FOR TRADE, FOR SALE/TRADE, SERVICES, MESSAGE, HELP, AUCTION, MEET**, etc. This heading is the only bold or all-capitalized words allowed in the ad. Capitalize only manufacturer names, model names, etc. This standard ad format makes scanning the ads easier.

Before writing your ad, please look over the ads in a recent issue of A.R.C., and try to write your ad in the same style. Full name (or company name) and address is required in all classified ads; we will add it if you forget.

To encourage varied content of the ads, the same classified ad may be run only once per issue and for only two consecutive months. (To run an ad longer, use a boxed classified or display ad.)

Classified Ad Rates per Month

Subscribers:

First 20 words: **FREE***

22c per word for extra words over 20 **plus**

10c per word for a shaded ad (count all words including free words).

* Subscribers may take 20 free words on only **one** ad each month.

Non-Subscribers:

38c per word **plus**

10c per word for shaded ad.

Please do not forget to send in the extra 22c per word when your classified ad runs over the free 20 words; your payment will be appreciated, and it will help to keep A.R.C. healthy.

BOXED CLASSIFIED AD DETAILS

Deadline: 1st of the month!

Boxed classified ads can run unchanged for three months or more. No words are free. Ads may be shaded and may include bold and all-capitalized words freely. The ad need not begin with "For Sale," etc. Minimum run is 3 months, prepaid. Discount: 10% for 6 months; 20% for 12 months.

Boxed Classified Ad Rates per Month

Nonshaded ads:

33c per word for all words,* none free, **plus**

10c per word for each bold word **plus**

10c per word for each all-caps word.

Shaded Ads (All words are bold at no charge):

44c per word for all words* **plus**

10c per word for each all-caps word.

Non-Subscribers:

Add 20c per word to above costs.

*Three words can be bold-all-caps at no extra charge.

PHOTO & DRAWING DETAILS

Deadline: 1st of the month

for all ads with drawings or photos!

Drawings and photos are encouraged as the response to your ad is much larger and the reader knows better what you want or are selling. Send in your drawing or photograph, and A.R.C. will reduce it or enlarge it as needed.

Photo and Drawing Rates per Month

\$14.00 per month for each photo or drawing (If ad is canceled, this amount cannot always be refunded.)

CHANGES & CANCELLATIONS

Please check your ads carefully before sending them in. Once ads are received, it is not always possible to refund the amount sent, pull the ad or make changes.

IMPORTANT — COUNTING WORDS — IMPORTANT

The **standard headings:** WANTED, FOR SALE, etc., count as **one** word each time used in an ad. **Name, address** and (one) **telephone number**, count as **6 words**, regardless of length. Ham call letters and business name can be included in the 6 words and do not count extra. Full name (or company name) and address is required in all classified ads. Each additional word, abbreviation, model number or number group, extra telephone numbers, fax, e-mail, etc. count as one word each. Hyphenated words count as two words.



SECOND CLASS

A.R.C., P.O. Box 2, CARLISLE, MA 01741
RETURN POSTAGE GUARANTEED

**CLASSIFIED AD
DEADLINE AUG. 10th
Noon Eastern Time**