



VOLUME 15

JANUARY 1998

NUMBER 1



*Celebrating*  
*the*  
**NEW YEAR!**

---

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. Periodicals 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 \$40.95 by Periodicals mail and \$57.95 by First Class mail.

Annual foreign rates. By air: Canada - \$61.00; Mexico - \$67.00; Other foreign countries - \$105.00. Surface mail: Canada - \$51.00; Other foreign countries - \$58.00. (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.

© Copyright 1997 by John V. Terrey.

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

Printed in U.S.A.

## STAFF:

**Publisher and Editor:** John V. Terrey  
**Production Manager:** Scott J. Young  
**Advertising Manager:** Cindie P. Bryan  
**Managing Editor:** Dorothy Schechter  
**Publishing & Editorial Staff:** Ray Bintliff, Dave Crocker, Dick Desjarlais, Bobby Lyman, Jean Meldonian  
**Founding Publisher/Editor:** Gary B. Schneider  
**Contributing Writers:** Mike Adams, Richard L. Arnold, Ray Bintliff, Ron Boucher, Paul J. Bourbin, Norman S. Braithwaite, Dave Crocker, Alan S. Douglas, Richard C. Foster, Fred Geer, Jim Kreuzer, Ron Ramirez, Henry Rogers, Ian L. Sanders, Gary B. Schneider, Daniel Schoo, Dwane Stevens, Frank R. White, Ralph Williams

**PURPOSE.** *Antique Radio Classified* is published for people involved in the radio collecting hobby. Its purpose is to stimulate growth of the hobby through the buying, selling and trading of radios and related items, and to provide a monthly forum for the interchange of ideas and information.

**CONTACTING ANTIQUE RADIO CLASSIFIED.** All correspondence should be sent to:

A.R.C., P.O. Box 2, Carlisle, MA 01741.

Only UPS, Federal, etc. items to street address: One River Road.

Telephone: (508) 371-0512; Fax: (508) 371-7129

E-mail: ARC@antiqueradio.com - Web: www.antiqueradio.com

Please, no classified ads by telephone; thanks.

Your ads, renewals, letters, etc. can be handled faster and more efficiently if your name, address and SUB# are written on each.

Unfortunately, A.R.C. is not staffed to answer letters with questions about antique radios or requests for advice. However, A.R.C. does solicit letters of interest to its readers and publishes them as space permits. A.R.C. assumes that permission is given to edit and to publish all correspondence and articles received unless otherwise indicated.

## DISPLAY AND BUSINESS CARD ADS - DETAILS AND RATES

The deadline is the first of the month for display and business card ad artwork, payment and repeat requests.

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.

Advertising must be prepaid, except as noted below; see "Payment" paragraph above for details. Late ads will be run only if space and time permit. Since artwork is reduced to 63% in the printing process, originals must be the artwork size listed below. Do not send in artwork on art board or send negatives. Ads should be typeset or typed neatly with a carbon ribbon, black ink (not pencil) on white. If used, reverse type must be limited to 25% of the ad. If you want us to prepare your ad, include the one-time cost below for A.R.C. to make up the ad.

Photos should be at an 85-line screen; otherwise, add \$16.00 per photo for screening. Do not cut or trim photos or glue photos to artwork; submit separately.

If you are confused by these requirements and terms, please

### ARTWORK SIZE (SEND IN THIS SIZE)

Page	As Printed		As Printed		Cost for 1-month	Cost for 3-months	Cost for 6-months	Cost for 12-months	Cost to make up Ad
	H x W (inches)	H x W (inches)	H x W (inches)	H x W (inches)					
Full	12 7/16 x 7 1/2	7 3/4 x 4 3/4	7 3/4 x 4 3/4	7 3/4 x 4 3/4	\$289.00	\$769.00	\$1329.00*	\$2325.00**	\$69.00†
1/2 H	5 1/4 x 7 1/2	3 5/16 x 4 3/4	3 5/16 x 4 3/4	3 5/16 x 4 3/4	146.00	389.00	675.00*	1175.00**	37.00†
1/2 V	12 7/16 x 3 9/16	7 3/4 x 2 1/4	7 3/4 x 2 1/4	7 3/4 x 2 1/4	146.00	389.00	675.00*	1175.00**	37.00†
1/4	5 1/4 x 3 9/16	3 5/16 x 2 1/4	3 5/16 x 2 1/4	3 5/16 x 2 1/4	74.00	197.00	342.00	595.00	19.00†
1/8	2 5/8 x 3 9/16	1 5/8 x 2 1/4	1 5/8 x 2 1/4	1 5/8 x 2 1/4	38.00	101.00	177.00	305.00	9.00†
Business Card (1st)	2 x 3 3/4	1 1/4 x 2 3/8	1 1/4 x 2 3/8	1 1/4 x 2 3/8	not avail.	53.00	90.00	159.00	7.00†
Business Card (2nd...)	2 x 3 3/4	1 1/4 x 2 3/8	1 1/4 x 2 3/8	1 1/4 x 2 3/8	not avail.	68.00	118.00	205.00	7.00†

\* Full & 1/2 page, 6-mos.: 1/2 due with order; 1/2 due in 3 mos. \*\* Full & 1/2 page, 12-mos.: 1/2 due with order; 1/2 due at 3, 6 & 9 mos.

† For 6 and 12 month ads, no ad make-up charge if no change is made to ad for entire run.

GUARANTEED. You may cancel your subscription at any time and receive a pro rata refund for issues not yet mailed. If errors to ads are made by A.R.C., upon request a free correction will be run in the next available issue.

**PAYMENT.** Please send in full payment with your order or ad. A.R.C. does not carry accounts; all subscriptions, ads, etc. must be prepaid (except for the 6 and 12 month display ads indicated below). Pay in U.S. funds. Checks drawn on a U.S. bank, money orders, VISA or MasterCard (\$10.00 min.) are preferred. Make check out to "A.R.C." U.S. stamps or cash are OK for small amounts. Canadian payers may send a Canadian check but specify U.S. funds. Subscriptions will be prorated to amount sent if amount is incorrect.

**FAK & E-MAIL PROCEDURES/PAYMENT.** Subscriptions, book orders, classified ads, display ads, etc. are welcome by fax or e-mail. Deadlines are the same as for ads received by mail. Please calculate the amount due. Payment by VISA or MasterCard is preferred if your order is over \$10. If under \$10, or if you prefer to send a check or money order, state the amount being sent and that the payment is in the mail. Do not send another copy of your ad with your payment; simply indicate that it is a fax or e-mail payment. If you want confirmation of our receipt of your fax, call immediately after sending your fax.

**CHANGE OF ADDRESS.** Please notify us 4 weeks in advance of a change of address. Send both your new and old addresses, and include your SUB# and effective date of your new address. Temporary address changes can be made also.

**SUBMISSION OF MATERIAL.** *Antique Radio Classified* welcomes and solicits information that pertains or relates to radio history or collecting. This may include articles, book reviews, photos, information on upcoming radio events, meetings, antique radio organizations, radio auctions, sources of old radio and restoration supplies, and other related and interesting material. All material submitted should be carefully researched, typed and accompanied by good photos, if appropriate. Computer disks are appreciated. Writing guidelines are available upon request. Unless prior arrangements are made, all submitted materials may be edited, become the property of *Antique Radio Classified* and will not be returned. Publication is subject to approval by A.R.C. and to time and space constraints.

**MAILING OF ISSUES.** U.S. subscribers can receive A.R.C. by First Class or Periodicals mail (Periodicals is the way most magazines are mailed). The mailing of First Class copies is staggered with faraway copies mailed before local copies. Non-U.S. copies are mailed on the first day. Periodicals copies are mailed on the last day. Mailing dates change each month, but mailing is usually completed by the 27th of the month. First Class copies usually are received by the 5th of the month; copies by Periodicals mail, by the 10th.

**ETHICS.** No person involved in the production of A.R.C. is to act on any information in the magazine until the first delivery day after local copies are mailed.

**DISCLAIMER.** The publisher is not responsible for any buying and selling transactions incurred, or for any other use of the contents of this publication.

**Antique Radio Classified** subscription rates, frequency of publication, content, policies, size and ad details, and rates are subject to change at any time by A.R.C.

contact A.R.C. before beginning to prepare your ad. We will be happy to advise you on your ad ideas, estimate how much the ad will cost, recommend an ad size, etc.

We assume that advertisers want all ads which are submitted to run without delay; therefore, we will run the ad and bill for any additional work required for the ad to meet these specifications. A late ad will run beginning with the next month. "Tear sheets" will be sent only for 1/8-page or larger ads and only if requested when the ad is submitted.

**First business card per advertiser is at lower rate.**

The 3-month rates represent about an 11% discount, the 6-month rates 23%, the 12-month rates 30%. Placement requests: add 15% but call first. Clubs: write for discount policy.

One Time



# ANTIQUE RADIO CLASSIFIED



## EDITOR'S COMMENTS

Welcome to 1998! As our staff prepared this January issue, we were, like everyone else, in the throes of the holiday spirit — a mixture of nostalgia and anticipation. Both apply also to our view of the New Year.

A magazine dedicated to the preservation of old radios is, of course, steeped in nostalgia. A.R.C. articles frequently refer to the technological advances of past decades — the discovery of radio waves by Hertz over 110 years ago, the application of these waves to communication by Marconi over 100 years ago, the invention of the transistor 50 years ago, and even the appearance of the home computer just over 20 years ago.

Today, electronic technology is again reinventing communication with the exponential growth of the internet. A scan through A.R.C.'s classifieds shows that over 20 percent of our advertisers now choose the electronic mail avenue as an option. And so, we must anticipate the future technologies and move with them.

A.R.C. in 1998 has a dual challenge. The first we have been meeting for over 13 years — to continue producing a quality monthly publication. The second, however, is to decide how to embrace the new communications technologies and apply them to the nostalgic and historical technologies we all love. Readers — what are your thoughts?

Our lead article this month, contributed by Paul Seidel, covers the Sears Silvertone Commentator. Paul details his search for the radio he listened to as a kid, as well as his success in finding and restoring it.

Joseph Woychowski shares a simple technique on how to operate early tuners without their matching detector/amplifier unit. All that he uses to get his Adams Morgan RA-10 receiver operating is a crystal detector (or modern diode) and headphones.

For many years, the 300B, a very desirable triode, has been remanufactured by several firms. Howard Stone has obtained samples from Richardson Electronics, Svetlana and Westrex. This month he describes in detail the 300B tube and the interest in it as an audio amplifier. He concludes with the results of listening tests comparing the reissued tubes to the vintage originals.

As a follow-up on the Ken-Rad tube article of a few years ago, George Munsch decodes the tube data codes and logos on recent GE and Ken-Rad tubes.

For the restoration enthusiast, Bob Murray describes how to make replica brass nameplates. Bob utilizes new technologies — the photocopier, the computer and printed circuit techniques — to restore his old sets.

George Potter and Ron Ramirez report on the Vin-

tage Radio & Phonograph Society's (VRPS) 1997 Convention and on Eric's Eighth Annual Antique Radio Auction. More than \$50,000 was bid at these two auctions on over 1,000 items.

The VRPS meet is one where everyone has an equal chance at the major items, plus you don't have to be at the flea market at dawn to come away happy. You can sleep late in Texas because the "good stuff" is sold during two days of auctions. Only the "leftovers" show up at the modest Sunday morning flea market.

Perhaps television collecting is heating up since two of the higher priced sales were a Predicta TV for \$700 and a General Electric TV for \$425. Over 400 attended this meet which also included seminars, a banquet, and an old equipment contest.

Although attendance at Eric's auction was only about one-tenth of the VRPS event, many nice items were sold. Highlights were an Emerson Catalin selling for \$575 and Coca-Cola Cooler radios for \$430 and \$510.

*Photo Review* shows an unusual ArKay horn speaker, a keg radio, and other interesting items. In *Radio Miscellanea*, we chose to print several of the kudos letters, all of which we appreciate. It's a pleasure to know that so many of you enjoy A.R.C. each month.

Eric Wrobbel's two new offerings — *Toy Crystal Radios* and *American Shirt-Pocket Transistor Radios* — are reviewed by Dave Pope and John DeLoria, respectively. Ludwell Sibley's *Tube Lore* gets double action in reviews by Alan Douglas and Ray Bintliff, who continues on with comments on Åke Holm's *TubeData* computer disk.

**Coming Radio Events.** The new year is off to a brisk start with over 40 events offered in January, and most clubs have finalized dates for their major 1998 events. I hope that you will transfer the dates from our "Mark Your Calendar" to your own 1998 calendar and block out some events for your 1998 vacation plans.

Two events coming soon that involve A.R.C. are Radio XXIX on February 22 in Westford, Mass. (attendance last year was over 800!), and the small, casual and fun 3rd annual ski/radio meet at Crested Butte, Colorado, on February 8. (If you are interested in this one, notify us ASAP to help in our planning.)

Again, I hope that one of your New Year's resolutions is to add at least one meet to your plans for 1998. Attending a meet is one of the best ways to learn more about old radios and their values, and to meet those collectors whom you know only by telephone and mail.

Happy collecting in the New Year!

John V. Terrey, Editor

## OOPS!

The A.R.C. "Radio Boys" are hanging their heads in shame. They failed to catch an obvious error in two places in our December 1997 issue. But Claude Pennington helped them out. He said he admits that, "There are numerous *amateurs* (page 5) and quite a few *antiques* (page 12) in the ARRL, but the organization is the American Radio Relay League."

## ON THE COVER

Our New Year's cover shows an illustration from an advertisement for Hobrecht's Distributors, Sacramento, California, which appeared in the September 1922 issue of *Radio*. The dancing party-goers are tripping the light fantastic to music piped through a Magnavox R-Type horn speaker — what better way to spend New Year's Eve!

# WITH THE COLLECTORS

## Restoring a Sears Silvertone Commentator

BY PAUL E. SEIDEL

*One article often leads to another, we're happy to say. Paul Seidel adds to our information on the Sears Silvertone Commentator covered by Harold Isenring in the April 1996 issue. (Editor)*

I thoroughly enjoyed the authoritative article by Harold Isenring on the Commentator in the April 1996 issue of A.R.C. It took me back to when I was a kid and helped my father pick out a Model 3351 (walnut) Commentator at our Sears & Roebuck store in Corpus Christi, Texas. To me, it was an impressive radio; we never had a table radio so compact, and with push-buttons! It replaced an old GE cathedral.

That was in the fall of 1941, only months before radio brought us the news of Pearl Harbor, the fall of the Philippines and Singapore, and one battle after another. Our Commentator was in steady use throughout the war, until we bought a post-war replacement.

For readers who missed the April 1996 issue, the Sears Silvertone Commentator is a neat, compact, 5-tube AC/DC radio with four mechanical push buttons and a unique cabinet design. The cabinet is a wraparound on all sides so that there is no open back; the cabinet lifts off the chassis and its bottom plate. The dial also is distinctive, looking like a candy cane on its side; thus, the models are often called "Candy Canes." Production started in 1939.

The model we owned had gold-colored knobs and push-button caps whose color was molded into the plastic, unlike earlier versions with gold paint sprayed over yellow plastic. Maintenance of the set presented a challenge during the war when the Type 35Z4T and 12A8GT tubes failed at one time or another. But by that time we lived in New York City and some Cortlandt Street merchants were talked into coughing up some

MR (Made with Restrictions) replacement tubes for the right price.

### MY "NEW" COMMENTATOR

In recent years, I often thought of picking up a Commentator at a flea market, just for the sake of nostalgia. However, the only one I ever saw in the New York area was the ivory-painted model, and the price was high since it had been completely restored. Well, two weeks after receiving the April A.R.C., destiny struck.

On a whim, I went to an antique radio auction in Pennsylvania. I got lost and arrived late. But, as I walked in, the auctioneer was holding up a walnut Commentator! I had no idea of its condition. It didn't matter. Since I was at the back of the auction hall, all I could tell was that it had both knobs, and the cabinet appeared to be in one piece. I entered the bidding and picked it up for \$25 (included was another nondescript AC/DC that was part of the 2-set lot). The treasure had been found! I thought ARC readers would be interested in how the set was restored, as it is shown in Figure 1.

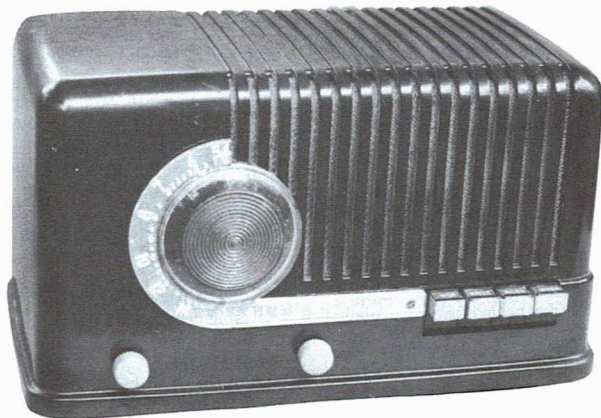


Figure 1. The restored Commentator.

### INITIAL CONDITION

My initial inspection of my treasure in the parking lot revealed that the cabinet was dirty but in good condition — no cracks, no chips. The push-button mechanism appeared to work, but the dial cord was broken. The gold paint was completely off the knobs and mostly rubbed off the three broken push-button covers, so they were now almost all yellow. Based on Isenring's article, I judged that this was a 1939-40 model. It was a couple of months before I could further assess the internal condition and tackle restoration in my shop. When I took the radio apart I found the following cosmetic and mechanical conditions:

1. The dial cord was wrapped around the tuning capacitor.
2. The plastic dial pointer was shaped like a "J." It apparently had popped off its shaft and curled up and twisted as it rested against the hot dial lamp.
3. The speaker cone rim had separated from the frame, and there was a rip in the cone.
4. The varnish holding the loop antenna windings together had deteriorated so that half the turns were loose.
5. The speaker grille cloth and its cardboard backing had shriveled up
6. The interior was generally crummy, with evidence of habitation by all manner of insect life.
7. The felt furniture protector pads on the chassis bottom plate had disintegrated.

None of the above was too surprising. The good news was that there was practically no rust. A little vacuuming, some compressed air blasts and selective mild scrubbing cleaned up the chassis pretty quickly.

### ELECTRICAL CHECKS AND REPAIRS

The next step was to check for electrical problems. The results were the following:

1. The 35Z4 filament was open.
2. The 115-volt Type C7 dial lamp was open.
3. The filter choke, riveted to the chassis, was open.

Not so bad, overall. The main thing was that the cabinet was good, and the push-button assembly, after a lube job, worked fine. First, I decided to get the set working functionally. Step one was to change all the paper caps, glue up the speaker cone, add a new line cord and bridge the open choke with a 680-ohm, 2-watt resistor. A check of the wiring of the 35Z4 socket showed that a 35Z5, with its unnecessary filament tap, would be interchangeable. So I popped in a 35Z5, screwed in a 6S6 indicator bulb (which fits more easily than a C7), checked out the rest of the tubes, and applied power.

I like to perform a smoke test gradually with a variac. I applied about 30 volts for an hour or so, just to warm things up. No smoke. As I increased the variac to about 60 volts, the dial lamp was dim and the tubes showed a hint of a glow. An hour or

so at that level and then the real test — a gradual voltage increase to exhort smoke or sound from the beast. At about 75 volts, I got some sound from a station, no hum, no smoke! At 115 volts, everything held. The electrolytic filters in their can apparently re-formed nicely. Step one was successful.

### MECHANICAL REPAIR

A dial cord stringing route was deduced and the dial restrung with new cord and springs. Temporary removal of the speaker made restringing easier. A heat gun, pliers, a vise and patience coaxed the dial pointer to resume its original straight shape. A combination of drafting tape and beads of hot melt glue from a glue gun kept all the loop antenna wire turns flat and together, and strengthened the assembly.

### ELECTRICAL MODIFICATIONS

Luckily, a full schematic of the set was glued to the chassis bottom plate and was generally readable. The next phase was to make some minor electrical modifications to prolong the life of the components. In general, I don't believe in restoring a set exactly as manufactured if minor changes will extend its life.

The original design used a 52-ohm, 2-watt resistor in series with both the filament string and the dial lamp. The resistor dropped the voltage on the 115-volt Type C7 bulb by about 12 volts, which extended its life, dimmed it slightly, and permitted cooler operation in a tight mounting space.

But, as Harold Isenring pointed out in his article, playing the set loud made the delicate filament of the dial lamp vibrate and shortened its life. I decided to reduce the line voltage on the filaments and the dial lamp by making three modifications, as shown in Figure 2.

First, I substituted a Type 50L6 for the 35L6 (the original Silvertone 35L6 was weak anyway). Then I changed the 52-ohm resistor to a 20-ohm, 2-watt resistor and added a 1N4006 diode in series with the dial lamp.

The bottom-line result from the changes is a roughly 10 percent reduction in the filament voltage on all the tubes with no significant change in the set's performance. The diode dims the light output significantly to a conservative rosy-orange glow. It also reduces the heat in the cabinet and extends bulb life. Remember that a 115-volt C7 or 6S6 bulb normally dissipates 7 or 6 watts and throws off more than 40 lumens. Compare that to the more common #47 dial lamp which dissipates about one watt.

Following the electrical modifications, I cleaned the volume control and gave the set a complete electrical alignment. I also set up the push-button cams mechanically.

### FINAL CLEANUP AND ASSEMBLY

The last stage was a complete cosmetic cleanup and fi-  
(Continued on following page)

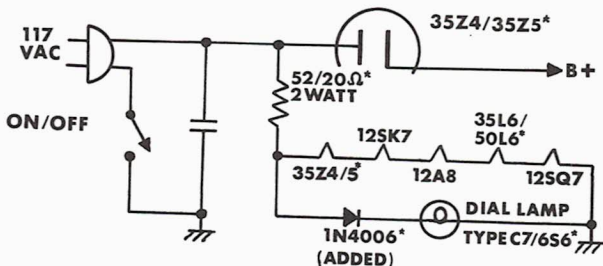


Figure 2. This partial schematic shows the modifications made to reduce filament and dial lamp voltages. Modifications are identified by an asterisk.

(Sears Silvertone Commentator, continued)

nal assembly. The cleanup went through several steps:

First, I stripped the cabinet of all its components: heat shield, "candy cane" dial escutcheon, round, bronze snap-in bezel, and speaker grille cloth with cardboard backing. Then I washed and buffed the cabinet with a soft wheel and red rouge. It came out almost like new.

Next, I washed and buffed the dial escutcheon, having separated it from its gold paper backing, which had disintegrated. I touched up the indented dial markings with white enamel and cut a new gold paper backing from some gift wrap. Buffing the bronze snap-in bezel was next.

To restore the speaker grille cloth required very gentle hand-washing, drying, and ironing. I cut out and formed a new cardboard backing and then assembled it with the grille cloth.

I then drilled out the holders for the felt pads on the bottom of the chassis and replaced them with soft vinyl pads.

All of the cabinet components were finally assembled and glued where necessary. I then assembled the chassis and loop antenna into the cabinet and ran the set for a few hours for a final burn-in. As Isenring pointed out in his April '96 article, there is noticeable oscillator drift during the first hour. I may tackle that syndrome later.

The final cosmetic touch led me to my computer. What was needed was four radio station call letter tabs to slide into the push-button slots. After a little

experimenting, I found that a 12-point Arial Bold font in an ivory color against a walnut brown background did the trick. Printing out "WCBS" and three other call letters on some heavy stock, as well as some trimming with a razor blade, gave me the tabs I needed. Unfortunately, the three push-button covers that came with the set were damaged and unusable. Some yellowish-gold vinyl tape applied in a single wraparound of each push-button made an appropriate cosmetic substitute.

The Sears Commentator sits in my kitchen and probably works as well now as it did when new. I've pointed out to my son and daughter that this is a *real* radio because it glows warmly in a dark corner. And looking at it, I almost find myself fantasizing that I should be able to tune in to one of those exciting adventure stories originating from Detroit on WXYZ and return to those "thrilling days of yesteryear." Oh well, how much can you expect for \$25 at an auction?

(Paul E. Seidel, 30 Vista Way, Port Washington, NY 10050-3807)

*Paul Seidel had built a crystal set and disassembled a defunct radio even before his family bought the original Sears Commentator. Recently retired as Director of Electronic Systems at Unisys Corp., he is a collector whose involvement with radio spans many years — from college as a radio announcer and disc jockey to his recent restoration of some 1940s Hallicrafters receivers.*

---

## More on Ken-Rad

BY GEORGE F. MUNSCH

*The February 1995 issue of A.R.C. contained an article dealing with vacuum tube production at the Ken-Rad plant in Owensboro, Kentucky — "Ken-Rad, and The Last Receiving Tube in the Western Hemisphere" by Steve Baron. We're always pleased when a little more information shows up, even a few years later, as it has in the following e-mail message from George Munsch — a copy of a letter shedding some light on the identification of tubes. (Editor)*

As Steve Baron points out in his article, Ken-Rad sold its entire receiving tube business to the General Electric Company on January 2, 1945. This transfer of ownership produced some interesting transitional effects. For example, some tube manuals printed after the transfer were identical in every respect, except for the covers, which noted "Ken-Rad" on some and "GE" on others. Also, tube boxes and tubes were marked either "Ken-Rad" or "GE", probably depending on where they were in production at the time of transfer of ownership.

Tubes built by GE at Owensboro by their "Receiving Tube Department" all had the EIA (Electronics Industries Association) designator 188-5. The 188 is GE's EIA designator, and the 5 is the Owensboro's plant number. Apparently it was not

permissible to transfer this EIA code to MPD, Inc. (Microwave Products Department) which bought GE's Owensboro product operation in 1987.

As far as the use of the GE logo on the box is concerned, consider this: GE bought RCA a number of years ago, and almost immediately sold the entertainment product line of both companies to Thompson CSF of France. They and their successors have produced millions of products with the GE and RCA logos on them, and yet neither product line has anything to do with GE or RCA.

Weekly date codes, such as "93-03," sometimes given as 9303, designated the third week in '93, i.e., January 17 to 23, 1993. In the later years, GE did not print the date code as pure numerics, but used a dot matrix below the type number. This was in response to a large fraud operation which appeared in the industry in the '60s, where the date codes of older tubes were washed off and "in-warranty" codes reprinted on them. Then the defective tubes were turned in for warranty replacement. Apparently this no longer is a problem, so MPD went back to the old style date code.

George F. Munsch, 160 CR 375, San Antonio TX 78253

# WITH THE COLLECTORS

## The Paragon Regenerative Receiver

BY JOSEPH C. WOYCHOWSKI

I read the article on the Paragon Regenerative Receiver, shown in Figure 1, in the August 1996 issue of A.R.C. with great interest. Thank you for publishing it.

However, it occurred to me that not all collectors are fortunate enough to find the RA-10 and the DA-2 as a pair. Quite often, just the RA-10 can be found. The RA-10 is a very well thought out design, offering excellent antenna tuning and selectivity. It should not be ruled out if it is found alone. It is a great choice as a crystal set! (At least until its companion is found.)

To operate the RA-10 with a crystal detector, I use the hookup shown in Figure 2. The detector can be an old time galena crystal. However, a 1N34 or 1N60 diode is quick and easy to use. The detector is connected between binding posts "G" and "W." A 2,000 ohm headset connects to the "TEL" binding posts. For good reception the "E" (Earth) binding post should be connected to a good ground (such as a cold water pipe) and the "A" (Antenna) binding post to a 50' outdoor antenna with lightning protection. After completing the hookup, place the "coupling" at "50" and set the top antenna tap switch on the 3rd or 4th tap from CCW. Place the bottom antenna tap switch at full CCW. By adjusting the center "tuning" variable condenser, you should hear a station.

By adjusting the remaining controls and taps, you will maximize the signal. This will take a bit of

practice, but adjacent stations can be tuned selectively by using antenna tap switch combinations. Figure 3 shows the various antenna and tuning tap positions available to the user. Keeping a log charting

tap positions and knowing settings will aid in finding stations for future use. I was able to tune WOR at 710 kHz, loudly, while rejecting WFAN at 660 kHz fully! Few other sets I have tested will allow me to make this claim! Other tuners, such as the Grebe CR-3 Special, can be successfully hooked up by this same procedure. Good luck!

(Joseph C. Woychowski, 81 Penn Ave., Niantic, CT 06357)

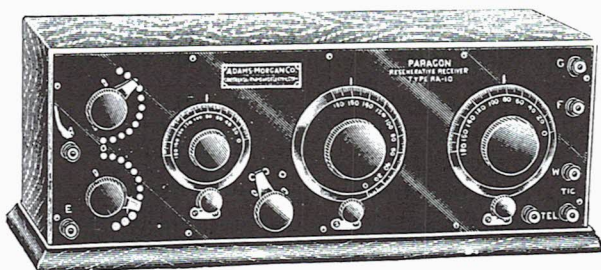


Figure 1. The Paragon Type RA-10 Regenerative Receiver

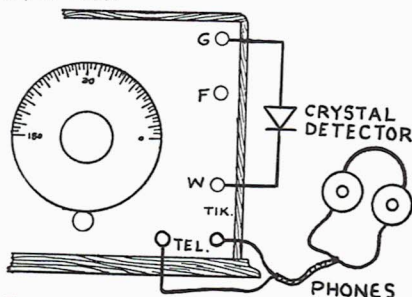


Figure 2. Connections for operating the Paragon RA-10 Tuner with a crystal detector.

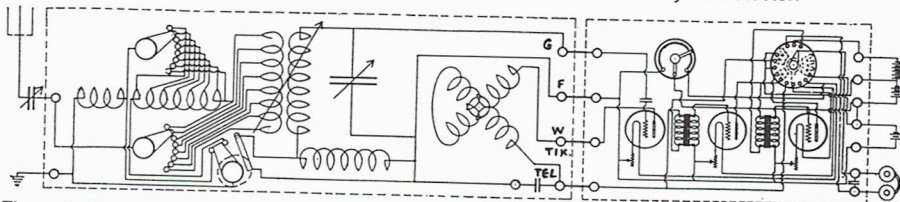


Figure 3. This schematic diagram of the RA-10 tuner (left) and the DA-2 detector/amplifier (right) shows the many antenna and tuning tap positions available to the operator.



# VINTAGE VACUUM TUBES

## The 300B Tube Lives Again!

BY HOWARD W. STONE

*In this article, Howard Stone first leads us through a nostalgic history of the Western Electric Type 300B audio amplifier triode tube. What follows is a report on the resurgence of the 300B through "reissues" being produced by several manufacturers. Tube audiophiles will be interested in the results of various listening tests, comparing modern reissues against each other, and against vintage 300Bs. (Editor)*

The lights are dim. Several tube audiophiles stand around someone's amplifier, conversing in reverential tones. They must be talking about the Western Electric 300B. No tube — and possibly no component — in the world of tube audio has attracted so much attention over the years than the 300B triode from Western Electric. Some of the finest audio amplifiers in the world use it even today.

The last Western Electric 300B tube rolled off the assembly line in 1988. Was it the end of an era? Some people feared it was. After all, almost everyone had switched to solid-state amps. Only a small group of tube audio aficionados recognized that some of the finest reproduced sounds still emanate from well designed tube amplifiers. Many of their amplifiers used the Western Electric 300B. After 1988, WE 300Bs became very scarce. Tube collectors and audiophiles throughout the world hoarded every original 300B that they could get their hands on.

Other manufacturers began producing their own versions of the 300B in an attempt to fill the void. Early in 1995, Westrex Corporation, who now owns the original Western Electric 300B production equipment, announced the reintroduction of the Western Electric 300B, but a series of delays slowed the actual reissue until the spring of 1997. The Westrex people claim to make the new 300B with the same quality materials and some of the same manufacturing molds and tooling as the old Western Electric 300B. They manufacture the tubes in the same Kansas City plant where they were previously made. Even twelve of the same employees who worked on the old 300Bs — most having worked on that particular tube for over 30 years — are now helping to manufacture the reissue.

### THE WESTERN ELECTRIC COMPANY

I became interested in the history of the Western Electric 300B when I first learned that it was to be manufactured again. I wondered whether the new Western Electric 300B really could be as good as the old classic power tube.

The maker of the original 300B is Gray & Barton, an old company founded (before radio came

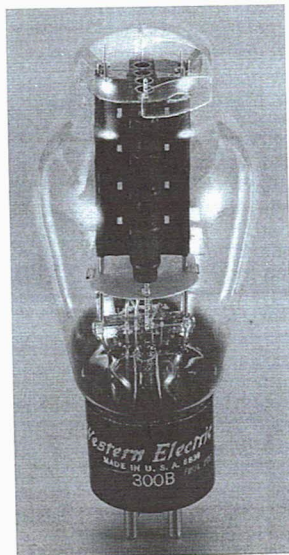


Figure 1. The reissue Type 300B tube.

on the scene) to make telephone equipment. Gray & Barton became Western Electric Manufacturing Company in 1872. It was reorganized in 1881 as the Western Electric Company. One year later the Western Electric Company became the manufacturing division of Bell Telephone.

Western Electric Export Corporation was formed in 1928 to be Western Electric's foreign distributor and its marketing arm for audio equipment and parts. The company became Westrex Corporation in 1942. Litton Industries acquired part of Westrex in 1958.

Convinced of the viability of tubes for amplification of telephone messages, Western Electric began producing them back in 1912. Those early tubes operated telephone repeaters and were first installed in 1913. The original Type A of 1912 to 1913 resembled the DeForest spherical Audion but without the screw-in base; instead, wires extended directly from the base. Since then, Western Electric has manufactured many tubes, most of them for industrial, military, and telephone use.

### THE 300A AND 300B

The 300A tube, precursor to the 300B, was first manufactured in 1933 by Western Electric. The 300B appeared on the scene in 1938, identi-



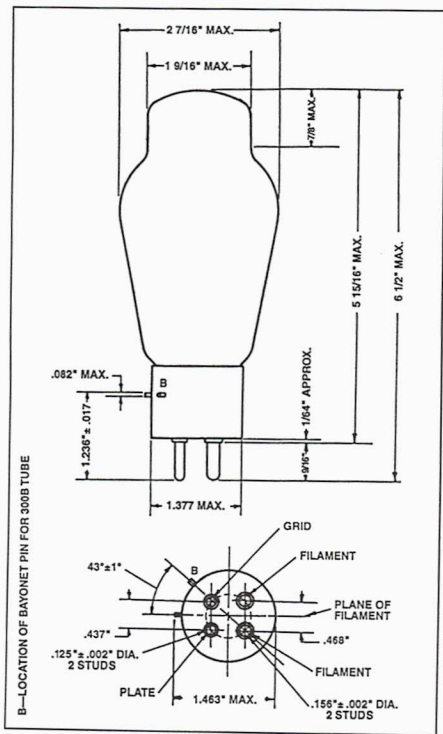


Figure 2. An outline drawing (top) and base detail (bottom) for the 300B. Note the relocation of the bayonet pin in the 300B.

cal to the 300A, except that the bayonet pin in the base was rotated 45 degrees so that the 300B could serve as a replacement for the 205A. The 300A/B had a 5-volt, 1.2-amp filament and a maximum plate voltage of 480 volts. The listed typical characteristics for class A operation are 300 volts at 60 mA with an amplification factor of 3.8 and a power output of 6 watts. Most amplifier builders today run the 300B at higher plate voltages. I scanned a number of recent single-ended triode amplifier designs and noted plate voltages from 337-475 volts, all above the rather conservative ratings of the *Western Electric Electron Tubes-General Bulletin* recommendation.

Western Electric used the 300A/B in the 27A transmitter and the 86A, 86B, 86D, 87A, 91A, and 92A amplifiers, for other military equipment, and for amateur radio. Many movie theaters had 300A/B tubes in their sound systems.

Beyond their obvious use in audio amplifiers, 300Bs found their way into power supplies as voltage regulators. Every once in a while one still turns up in an old junker power supply; unfortunately, I have not been lucky enough to find one that way.

The tube number and name is etched on the base of every 300A I have seen. Western Electric printed the number and name in yellow lightning bolt on early 300Bs. In the 1970s, plain printing

replaced the lightning bolt logo. The last batch of tubes returned to the old logo.

Several characteristics have endeared the WE 300B to those of us who are interested in high quality audio sound. In the thirties, no other tube had as much output as the 300B, except for a transmitting tube. The Western Electric 205D could produce about one watt. The same was true of the 45. The 50 tube doubled the output of the 45, but the 300B produced six to eight watts in single-ended operation.

The longevity of the WE 300B is one of its finest characteristics. It is estimated on average to last nearly 40,000 hours. Another important characteristic of the WE 300B is its very low distortion. For example, Eric Barbour tested the WE 300B and found the internal distortion to be one-third that of a RCA 250 tube.

The reissue 300Bs look very much like the old ones, both externally and internally. An outline drawing and base detail of the 300B are shown in Figure 2. The new tube has a round wire getter, while each of the two older 300Bs in my possession has a different type of rectangular getter. My 300A has a still different getter. It is my understanding that some of the later original 300Bs had a round getter as well.

On one of my review tubes I noticed a partial crack in the glass where the outer posts of the tube are pinched into the glass — most likely it occurred in shipping rather than in the tube manufacturing process. I noted no such cracks in my older 300Bs. The reissue has the lightning-bolt print "Western Electric, Made in USA 9552, 300B" on the base. Each tube has its own serial number etched into the base — a new feature.

Each reissue tube comes with a card listing its serial number and the test results for that specific tube: interelectrode capacitances; filament, plate and grid current; plate resistance; grid-plate transconductance; amplification factor ( $\mu$ ); delta transconductance at 4.5 volts; and plate curves for the plate current versus plate voltage. Each matched pair is shipped in a mahogany-stained wood box, sealed with a tag bearing the serial numbers of the tubes inside. They look elegant, but they ought to: their price is \$800 for a matched pair.

## SINGLE-ENDED TRIODE AMPLIFIERS

American audiophiles are renewing their interest in the use of triode audio amplifiers. The Japanese and some Europeans were there before we were. Most of the old 300B tubes are now in Japan, since most U.S. audiophiles had little interest in them and happily sold them for favorable prices to foreign collectors.

The attention now given to tube amplifiers (especially using the 300B) is shifting from push-pull amplifier circuits of the Macintosh, Dynaco, Heathkit, and others popular in the late fifties and sixties, to single-ended triode circuit designs without the use of any feedback. Most amplifier sections in the very early radios and many early amplifiers used this single-ended triode design.

In the middle of the century, push-pull circuit amplifiers took over from single-ended circuitry because they could produce more power (and frequently less distortion) from the tubes. There

(Continued on following page)

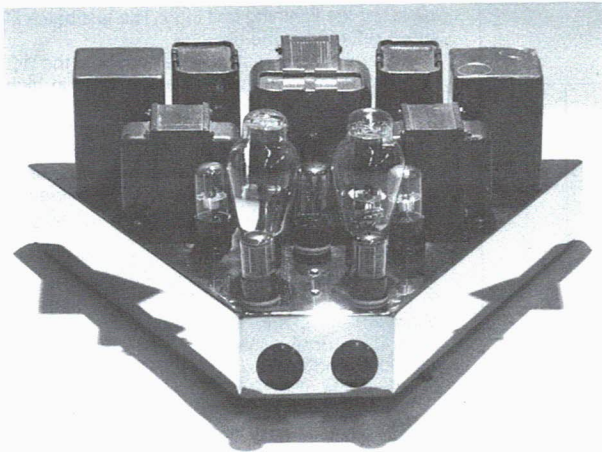


Figure 3. The custom single-ended Class A amplifier constructed by Howard Stone for the listening tests reported in this article.

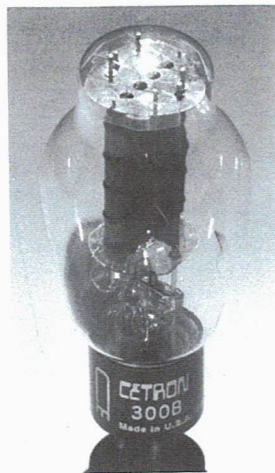


Figure 4. The Cetron 300B manufactured by Richardson Electronics.

(The 300B Tube, continued)

was more bang for the buck. Push-pulls were cheaper per watt to produce than single-ended designs. A 300B tube would have double the watt output in push-pull circuitry than it would in a single-ended circuit. However, many tube audio builders believe that a pure and more listenable sound is generated by single-ended triode without feedback circuitry.

The amplifier in Figure 3 uses a circuit that relies heavily upon original circuits designed in the forties and fifties. The difference is that contemporary manufacturers of audio output transformers make, to my ear, far superior transformers. The quality of some of the other components in contemporary single-ended triode amps are also superior to older ones. (Still, some would argue that the "old iron", the old resistors and paper capacitors, are superior to the modern ones.)

I built this amplifier myself, using MagneQuest output transformers. It supplies 7 watts per channel. The power supply relies heavily upon oil-filled capacitors for filtering. The rectifier tube is a 5AR4; two time-delay tubes provide a soft start to the plate and filament voltage of the power tubes. The filament voltages are DC as well. The input tubes are industrial 5691s.

### LISTENING TESTS

How does a tube developed 60 years ago match up to modern day audio listening standards?

Rather than simply comparing the vintage WE 300B to the new one by Westrex, I thought it would be interesting to see how both of them compared to a few other tubes. I contacted several makers offering to review their 300B tubes. I also searched for vintage 300Bs to compare with the modern reissues. Most manufacturers were very helpful, though several did not respond.

The most interesting response came from Riccardo Kron, the president of KR Enterprise, formerly Vaic Valve, a manufacturer of several re-

cently designed output tubes. In a letter to me dated September 3, 1995, he wrote, "We, needless to say, feel it would be unfair to compare a new patented tube having a revolutionary technology against an old product that today has been made a legend and consequently some piece for a collector's shelf which best reflects the mind-set of the average reader of *Antique Radio Classified*." Well, readers of A.R.C., since there seemed to be plenty of people out there still interested in dusting off their 300Bs and using them in contemporary and vintage tube amps, I pressed on with my research.

When Western Electric ceased production of the 300B, Richardson Electronics began manufacturing its own 300B as the Cetron brand, shown in Figure 4. The Cetron 300B was included in this listening test. The fourth tube in the listening tests was the Svetlana SV811-3, shown in Figure 5. Although not a drop-in replacement 300B, the SV811-3 is a thoriated-tungsten filament, low-mu, power triode recently designed to fill a need created by the discontinuance of the original Western Electric tube.

We devoted several listening sessions to comparing the various tubes, applying two types of listening tests. To get the most immediate comparison of the tubes, we put one tube after another into the amplifier without an extended warm-up, and played reference compact discs. This allowed the listener in a matter of a few minutes to listen to all of the tubes back to back.

The second test gave each tube at least a half hour of warm-up. The value of this test was that the listening conditions were more like those in the real world. Most tube amplifiers sound better after they have had a chance to warm up for a while; therefore, the second test was necessary. The disadvantage of the second test was that it required better audio memory on the part of the listener than did the first (no warm-up) test.

The listeners were John Bate, a longtime pro-

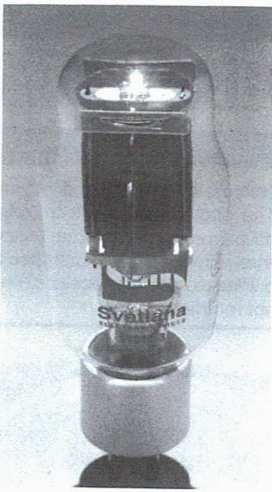


Figure 5. The Svetlana SV811-3, a thoriated tungsten filament low- $\mu$  power triode, designed to fill a need created by the discontinuance of the original 300B.

professional in the field of audio who works for the renowned Bay Bloor Radio in Toronto; Karen Stone, a music lover with a trained ear; and me. The brands of tubes were not revealed to the listeners. The same CD tracks were played for each test, as follows: Track 1 of Holly Cole's *Temptations* CD, Track 3 of Faure's *Requiem* by The Cambridge Singers, and Track 2 of Wynton Marsalis' *Standard Time Vol. 3*. The results follow.

### TEST RESULTS

First of all, the Svetlana SV811-3, as previously mentioned, is not a 300B tube but was recently developed to fill a place very much like the one the 300B has found in the audio market. Therefore, it is not entirely fair to compare it directly to the 300B, but its similarity, new design, and inexpensive price (relative to the 300B) made it a valuable inclusion in this study.

The responses to the SV811-3 were very positive. The SV811-3 in a single-ended triode amplifier provides more power than the 300B. Its bass went slightly deeper than with the 300B tubes we were playing. The sound was natural and pleasing to all three listeners. Even though the SV811-3 was not the first choice of any of the listeners, it is an excellent value. I, for one, am planning to build an amplifier specifically designed to use this tube.

When the Cetron 300B was first turned on in the cold listening test, two of us preferred it to the old Western Electric 300B. After it had been on for a while, all three of the listeners were impressed with the sound. Again it was not the listeners' first choice, but was rated as "very close" to the old and reissue Western Electric 300Bs. Its sound was a little more compressed than both the Western Electric 300B and the reissue 300B and did not seem to envelop the room as fully as the other 300Bs. Nevertheless,

its sound was lush, robust, and distinct.

The original Western Electric 300B did not sound as good to the listeners when it was cold. But, after warming up, it had a definite sense of more air and more depth of field than with the Cetron. The sound was also less grainy and more lush. It sounded superb to all three of us. Music that was delicate sounded delicate. The mid-range was awesome. Also, you could listen to it for long periods of time without listener fatigue.

The reissue 300B by Westrex sounded very close to the vintage WE 300B. Again it was lush sounding. We heard slightly more volume from the reissue 300Bs, but that may be because my old 300Bs are a little tuckered out from many years of use. The mid-range in the reissue tube, which has always been what single-ended triode amps using 300Bs were noted for, was "to die for."

Whether the reissue 300Bs will be as durable and long lasting as the old ones remains to be seen. I have listened to the reissues for about 150 hours, only a small fraction of the thousands of hours the old 300Bs were built for. Westrex has succeeded marvelously in reproducing the legendary 300B, and future tube audio amplifier lovers will have them to thank.

The quality of the other tubes we tested was very heartening. There seems to be enough interest in the 300B and like tubes to keep companies like Richardson Electronics (Cetron) and Svetlana in the business of developing power tubes for those of us who like the "tube sound."

Well, I have to get back to the new amplifier I am building. If any of you comes up with 300Bs that you don't need, please give me a call. I could use them for a future amp that I am only dreaming about now.

Keep your soldering irons warm. The 300B lives again!

**Photo credits:** Andy Anderson and Westrex Corporation.

*Special thanks to Richardson Electronics, Svetlana Electron Devices, Westrex Corporation, Karen Stone, and John Bate.*

### References:

- Barbour, Eric. "History of the WE300B and Its Relatives," *Vacuum Tube Valley, Vol. 1, No. 3*. Sunnyvale CA: Charles Kittleson, Winter 1995-96, p. 10.
- Magers, Benard. *75 Years of Western Electric Tube Manufacturing*. Tempe, Arizona: Antique Electronics, 1992, pp. iv-xi.
- Western Electric Electron Tubes-General Bulletin*. New York: Western Electric Co., n.d., p. 1.

(Howard W. Stone, TCU Box 298130, Fort Worth, TX 76229)

*Howard W. Stone has been a valued contributor to A.R.C. for over ten years, and has been collecting radios and tubes since the late 1970s. His interests are primarily in prebroadcast wireless, crystal sets and early twenties broadcast sets. An ardent love of jazz and choral classical music led him to his interest in tube amplifiers. He is a professor at Texas Christian University, Fort Worth, TX 76129.*



# PHOTO REVIEW



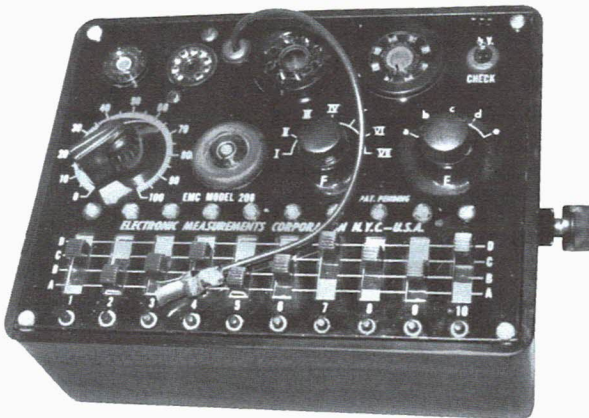
This column presents in pictorial form many of the more unusual radios, speakers, tubes, advertising, and other old radio-related items from our readers' collections. The photos are meant to help increase awareness of what's available in the radio collecting hobby. Send in any size photos from your collection. 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.



**ARKAY HORN SPEAKER** – This black lacquer over brass horn speaker was manufactured by the Riley-Klotz Co. of Newark, New Jersey. Under the base is a clamp which holds a Baldwin driver unit in place. (Dave Crocker – Mashpee, MA)

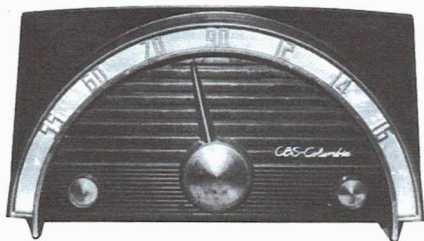


**ZENITH MODEL 935** – This ca. 1935 Art Deco tombstone is very similar to the Model 835 shown in Alan Jesperson's book on Zenith radios. I understand it was pictured in the *Time-Life* series on collectables. The set has five bands, shadow meter and 10 tubes. (John C. Baldwin – Makawao, Maui, HI)



**EMC MODEL 208** – Manufactured by Electronic Measurements Corporation, New York City, N. Y., this tube tester checks the following types of tubes: 7-pin miniature, 9-pin miniature, octal, and loktal. A large neon lamp (no meter) is used as the indicator. Any information on this unit would be appreciated. (Douglas D. Fox – St. Charles, IL)

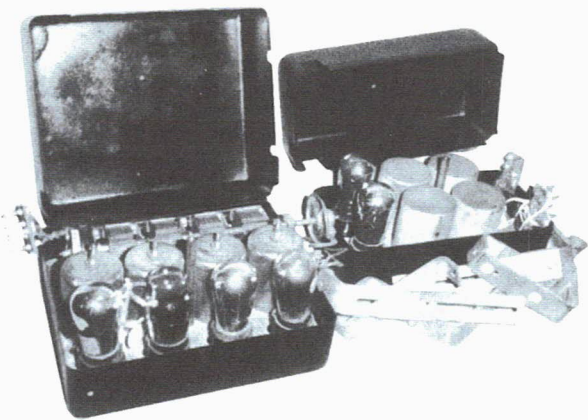
## PHOTO REVIEW



**CBS COLUMBIA MODEL 5165** – This ebony plastic radio is unique-looking outside, but common as dirt inside with its “all-American” tube lineup — 12BE6, 12BA6, 12AV6, 50C5, 35W4. It is complete, original, and easily the best “\$3 yard-sale radio” I own. (*James Robinson – Scituate, MA*)



**GIBLIN MODEL UNKNOWN** – This unusual 1-tube set, made by Giblin Mfg., Pawtucket, R. I., has flat metal dials. The overall dimensions are 5½" x 11" x 1¼". Better known for its “Radio Ear” crystal set, this company also went by the name of “Standard Radio & Electric Co.” (*Ed Bell – Raleigh, NC*)



**CAR RADIO MAKE AND MODEL UNKNOWN** – This battery car radio, ca. early 1930s, works, but I have no clue as to the manufacturer. It uses Type 201A tubes. Note the mounting brackets to the right. (*Carl Knipfel – Morton, IL*)

**R.K. RADIO LAB, RADIO KEG** – Roll out the barrel, and we'll have a barrel of fun with this radio. Manufactured in 1933, this novelty set uses a basic AC/DC chassis with a line cord resistor. Considering its inexpensive design, this radio is a good performer. With its speaker mounted in an oak barrel, the sound quality is quite mellow and pleasing. (*Robert Bailey – Jacksonville, FL*)



# RESTORATION TOPICS

## Making a Replica Etched Brass Nameplate

BY BOB MURRAY

A few years ago, I set about discovering a method for etching a replica nameplate on brass. The item I wanted to copy was the nameplate from a Canadian Independent Telephone Company Everyman crystal set — as good a place to start as any.

I first looked in commercial sources and made the rounds of some companies that make metal signs and produce sign stencils. I was hoping for someone who could photographically reproduce my specimen nameplate on a piece of brass. I learned two things. The nameplate the companies would produce for me would use new lettering in their fonts, not mine, and to make it look like brass, they would use anodized aluminum with a brass color.

### HOMEMADE NAMEPLATES

I then decided that some adaptation of circuit board technology was probably the answer. I tried photocopying the nameplate, thinking that I could take the copy to a circuit-board maker. The copies were terrible. I tried the various settings on the machine, but to no avail.

Next, I tried scanning an image of the plate into my computer with my hand scanner. I used the line art setting on the scanner because I wanted to reproduce the high contrast of the original plate. I fiddled with the contrast control. One nice thing about a computer scanner is that you can try different settings over and over again without using up any resources except your own time and a bit of electricity.

The scanning worked a bit better after I had polished the brass highlights on the plate gently with Brasso until they were bright. Another advantage of a computer scanner, which will become apparent later, is that it comes with software that enables you to flip the image and make a negative image.

### COMPUTER PROCESSING

Still the image was fairly ragged, and it seemed impossible to get the border lines parallel to each other. My scanner software is called PSPLUS and comes with the Logitech scanner, but no doubt there are others with similar features. A feature of PSPLUS is the ability to magnify the image and then edit it one dot (pixel) at a time. It is at this point in the proceedings that you have to consider whether you really want to spend the rest of your life editing this image. I told myself,



Figure 1. The computer-processed image of the nameplate.

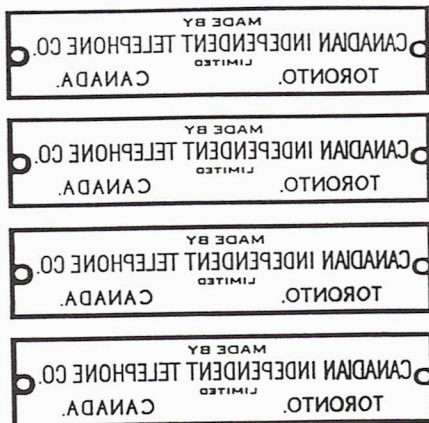


Figure 2. The photocopied mirror image of the nameplate.

"No." A few weeks later I was back at it, having decided that I knew of no better way.

Much later, my laser printer provided a letter-size sheet of paper, covered in actual sized images of my nameplate. Another advantage of image processing software is that it lets you re-size images and make multiple copies on a page. I used Pagemaker for this purpose. I had a whole page of them. One of the images is shown in Figure 1.

### NAMEPLATE PRODUCTION

What to do next? The Winnipeg Amateur Radio Club had held a demonstration of home circuit board fabrication using a product called TEC-

200<sup>TM</sup>. It's available from Cardinal Distributors in Canada or the Meadowlake Corporation, P.O. Box 497, Northport, NY 11768. You put a sheet of this material in the blank paper bin of a photocopier, and copy your artwork onto it. Either side up. Sounded like just the thing!

But first you need a mirror image. This is done by photocopying your artwork onto a clear acetate sheet (the ones designed for photocopiers, not the ones that melt from the internal heat of the photocopier). Then you photocopy what is on the acetate sheet by turning it upside down on the photocopier and making a copy using the TEC-200 sheet. The resulting mirror image is shown in Figure 2.

Use the darkest setting on the photocopier that won't give a grey background. I forgot about this on my first attempt, and it really makes a difference. Another thing to realize is that you need to handle the TEC-200 sheet very carefully. The instructions point out that you must not get fingerprints on it. Further, I found that you should not



Figure 3. The original nameplate in the center surrounded by the copies above and below.

bend it once it has the trace lines on it, or the lines will fall off.

The next question was whether this process would work as well on brass plate as it does on copper clad board. Well, it seems to. You need to iron the lines of photocopier toner onto the metal. I had a few scrap plates of brass and polished one side of each to a mirror shine, being careful to avoid fingerprints. Then you cut out a piece of the TEC-200 sheet with as many images as will fit nicely on a plate.

The instructions give a handy trick for this process. Tape one edge of the plastic sheet to one edge of the metal plate, so the tape will work like a hinge. Then heat the plate with an iron, rather than the plastic. When the plate is hot, quickly drop the plastic with the pattern onto it, and press it down with a rubber roller.

When the plate has cooled somewhat, gently pry the plastic up from the edge. Where the black toner has not adhered to the metal, you can try to touch it up by heating the plastic with the iron

(they say). I had very little success with this touch up process.

I was saved, however, by the hint that when the plastic sheet is carefully removed, you can touch up the resistant image with a fine point permanent marker pen. Since in the example of the CITCo nameplate, it was usually the rectangular border that would not adhere, a pen and ruler came nicely to the rescue.

The next step is the etching. Since the back of the plate is not phenolic plastic but brass, to minimize the dilution of the etchant, I covered the back with plastic packing tape. Put it on after the plate has cooled. (Believe me, I discovered this the hard way.)

There are a couple of common etchants for copper, and neither of them mentions brass in its instructions. I arbitrarily tried ammonium persulfate. It worked! The solution needs to be kept warm in order to work. I used a Pyrex dish to hold the etchant, and found I had to set that in a larger dish or sink containing warm water, or else the small amount I was using cooled rapidly.

Unlike etching a circuit board, you don't have the appearance of the phenolic backing to tell you that you are finished. By trial and error, I found that etching for about 15 minutes in fresh etchant gave a result that was sufficiently deep for the purpose. If you etch for too long, the letters will begin to erode at the edges. The black resist can be scrubbed away with alcohol and a soft cloth. With practice, you will discover how deeply you can etch without erosion.

When the plate is clean, the next step is to spray it with black enamel. I used black varathane with good success. It seems to adhere well without a primer. Then, when the enamel has dried well, the high spots (letters and lines) can be scraped free of enamel. A pointed X-ACTO knife works well.

This is a rather painstaking job, and if you find you are good at it, you may wish you had taken up dentistry. If you make a mess, you can always spray again with enamel and scrape again. No doubt there is a better way to do this step. I suspect if I had etched deeply enough, I could have sanded off the high spots with wet sandpaper laid on a flat surface.

Finally, after a superficial polish with Brasso, the end result is shown in Figure 3. The original plate is in the middle and the copies above and below it. I found it satisfying to discover a way to do this. I will be interested to hear from anyone who can do it more efficiently.

*This article first appeared in "Radio Waves," the publication of the Canadian Vintage Radio Society.*

*(Bob Murray, 3216 Assiniboine Ave., Winnipeg, Manitoba, Canada R3K 0B1)*

*Bob Murray has been collecting antique radios for about 15 years, and gradually has come to concentrate on radios made in Canada in the 1920s. He is interested in their restoration and history and now has a collection of about 200 sets.*

# MEET AND AUCTION REPORT

## VRPS-AWA 1997 Convention and Auction Irving, Texas — October 17-19, 1997

CONTRIBUTED BY GEORGE AND MICHAEL POTTER

The 22nd annual convention of the Vintage Radio and Phonograph Society (VRPS) and the Antique Wireless Association (AWA) was held on October 17-19, 1997, at the Dallas-Fort Worth Airport Holiday Inn South in Irving, Texas. Approximately 425 radiophiles attended this great annual 3-day event.

Friday's events featured the old equipment contest; two separate technical sessions, including a presentation by Bill Harris on output transformers in radios, and one by George Potter and John Terrey on radio valves, both of which were well attended; and three auctions — a silent auction, a tube and literature auction, and a main auction.

Saturday's events also featured a silent and a main auction, as well as the annual awards banquet. At the banquet the guest speaker was Tyler Cox, operations manager for Dallas radio station WBAP, which began broadcasting in 1922 and is celebrating its 75th anniversary. Michael Sherman, fresh from Paris, France, was again the auctioneer.

The auction hit an all-time high of \$56,466 with 983 items sold. Zenith was again the most sought-after brand, with 80-plus items of Zenith gear sold. Highlights included the following: a Philco Predicta G48654 selling at \$700; a Zenith Walton set at \$660; a Radiola II at \$375; a Fada 260G at \$425; a mint 1953 Zenith R-520/URR Trans-Oceanic at \$500; a Zenith Zephyr 6S157 console at



*Cameraman David Nigas and Marv Herring broadcasting live to the auction audience viewing 4 large monitors. One camera gave live imaging of every item held up, while another camera (shown here) displayed the consoles from an adjacent room.*

\$425; a Crosley IV amp at \$220; and a Kennedy V at \$440.

This year, VRPS tried a new concept in viewing auction items. The video crew used a remote camera to show numerous consoles, thereby speeding up the auction and reducing potential damage from handling large groups of consoles. The use of the remote camera also allowed welcome break times for the set handlers. Two large monitors were used in the bidding area. Another one in the auction equipment area enabled the handlers to see what was on the block and to go out to bid if they were interested.

The following list of auction items is a combination of all auctions. Accuracy of equipment identification and condition is not guaranteed. The \* (asterisk) at the end of an item's description indicates that a set is guaranteed by its owner to work perfectly; it has been restored and can be returned if the buyer is not satisfied.

e=excellent, vg=very good, g=good, f=fair, p=poor, unk=unknown, BB=brass-based, NT=no tubes, WT=with tubes, N.I.B.=new in box, wk=works, nwk=not working, \*=guaranteed

Abbotwares horse radio, wk, g .....	\$175
Admiral 5E22, unk .....	48
Admiral 5E23, f .....	22
Admiral 4218 portable, f .....	25
Admiral 20Y1, wk .....	100
Airchief 4A10, f-g .....	10
Airline 04BR-729A, f .....	35
Airline 04WG-611B, g .....	42

**A warning:** Auction prices are not current values. Our selection of auction items is not necessarily complete. 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.



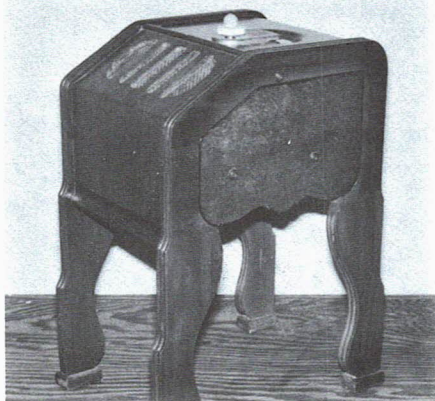


*Michael Sherman, long-time VRPS auctioneer starts the bidding. Sherman flew in from Paris for the occasion.*

Airline 5D8, black, e .....	34	Collins R388, vg .....	250
Airline 05KR, chrome, g .....	70	Columbia Eagle phono, parts missing .....	110
Airline 62-238, g .....	38	Coronado 550, p .....	22
Airline 62-198, restored .....	65	Coronado console, g .....	32
Airline 62-264, tune-eye, unk .....	36	Coronado tombstone, unk .....	45
Airline 62-425, g .....	45	Craftsman JT602 .....	10
Airline 74BR-1502B, g .....	55	Crosley 5-38, w/Dynacone F speaker, f-g ....	110
Airline 74BR-1504B, f .....	14	Crosley 5M3, (2), wk, g .....	55, 60
Airline 93BR-564, wk .....	35	Crosley 8B1, f .....	40
Airline 513B, g .....	65	Crosley 10-135, (2), g, vg .....	42, 100
Airline DE-12, mantel, NT .....	20	Crosley 10-138, dashboard style, g .....	80
Airline G609, g .....	35	Crosley 10-139, f .....	28
Airline M-306, wk .....	50	Crosley 11-1094, vg .....	45
Airline M7T5-4, 32y .....	20	Crosley 11-114V, vg .....	150
Airline P0147 .....	55	Crosley 11-126, g .....	95
Airline, Bakelite miniature, vg .....	120	Crosley 48, Repwood, g .....	140
American Bosch 66, vg .....	40	Crosley 50, Sears model, no cabinet .....	95
American Bosch chairside, wk .....	70	Crosley 51, good audios .....	100
American Bosch Super 5, M-305 .....	95	Crosley 51, wood panel, g .....	75
Arvin 32R89 .....	20	Crosley 56TN, wk, f .....	45
Arvin 451TL .....	20	Crosley 56TX, g .....	32
Arvin 2581, f .....	22	Crosley 66TW, e .....	80
Arvin Bakelite, f .....	15	Crosley 108, g .....	50
Atwater Kent 30, NT, unk .....	30	Crosley 124 cathedral, vg .....	150
Atwater Kent 33, WT, unk .....	65	Crosley 148 tombstone, f .....	60
Atwater Kent 44, p .....	10	Crosley 516, f .....	65
Atwater Kent 55 console, f .....	55	Crosley 629 tombstone, unk .....	75
Atwater Kent 60, cabinet g, (2) .....	130, 150	Crosley 715, g .....	50
Atwater Kent 185A, wk, g .....	120	Crosley 817, (2), p, g .....	55, 140
Atwater Kent 318, wk .....	65	Crosley 1084, vg .....	60
Atwater Kent cardboard "Jolly Dancer", vg ....	75	Crosley B-459A, original box, vg .....	70
Atwater Kent E speaker, (2), wk, f, g .....	25, 35	Crosley D-25-BE, g .....	75
Atwater Kent E-3 speaker, g .....	55	Crosley D-25-CE, g .....	95
Atwater Kent H horn, f-g .....	50	Crosley D-25-TN, dashboard style, g .....	90
Atwater Kent Kiel table, w/55 chassis .....	140	Crosley Fiver, f-g .....	50
Atwater Kent L horn, vg .....	130	Crosley Dynacone F speaker, (2), f, g ....	35, 55
Belmont 778B, wk, e .....	120	Crosley IV 2-tube amplifier, g .....	220
Bendix 111, f .....	16	Crosley lowboy console, f .....	80
Capehart TV610P, 12", g .....	50	Crosley 517 Fiver, restored .....	55
Carborundum detector, early .....	42	Crosley 6B1, f .....	45
Carterfone Decision, in case .....	75	Crosley Musical Chef, unk .....	10
Channel Master, silk banner, e .....	26	Crosley Musicone speaker, g .....	55
Charlie McCarthy radio game .....	22	Crosley Repwood, g .....	180
Cheertone M-579, g .....	20	Crosley RFL-60, decorative gold panel, f-g ..	120
Coca-Cola radio, repro .....	55	Crosley RFL-75, NT, g .....	80
Coca-Cola transistor radio .....	14	Crosley Showbox, w/Dynacone F speaker, g .	150
		Crosley Showbox, WT .....	40
		Crosley Vanity .....	45
		Crosley, dashboard style, g .....	80
		Dahlberg Pillow radio, (2), wk, g, vg, .....	60, 75
		David Grimes 5B, (2), NT, g, WT, vg .....	65, 80
		Delco 1107, f-g .....	40
		Delco R1154, vg .....	40
		Deluxe A-2, early CB .....	22
		Detrola FM converter, g .....	45
		DeWald A514, f .....	25
		Dulcetto phonograph, oak case .....	40
		DuMont RA346, vg .....	100
		Echophone cathedral, p-f .....	65
		Edison 50 Amberola, nwk .....	200
		Edison cylinders, 2 and 4 min., (11) .....	36
		Edison cylinders, 2 and 4 min., (24) .....	50
		Edison cylinders, 2 and 4 min., (38) .....	85
		Edison Diamond Disc records, (12) .....	32
		Emerson 93, f .....	20
		Emerson 149, g .....	32
		Emerson 425, wk .....	30

*(Continued on following page)*

Emerson 507, f	34
Emerson 520, g	70
Emerson 522 portable, f	24
Emerson 540, vg	80
Emerson 543, g	32
Emerson 578-A, g	35
Emerson 581, f	26
Emerson 587, g	30
Emerson 587-B, g	45
Emerson 640A, e	100
Emerson AW7, 71-770, vg	110
Emerson AX-217, vg	70
Emerson 544, vg	85
Emerson UV5, g	60
Emerson Viking portable	85
Emerson, Repwood, 1933, g	90
Fada 34 portable, unk	20
Fada 170A, NT, f	30
Fada 192A, NT, g	50
Fada 260G, Plascon case, e	425
Fada 1300L, metal radio	60
Federal D-1040, ca. 1947, vg*	40
Firestone S-7398-2, g	50
Firestone S-7427-7, f	40
Fleetwood Globe radio, (2), f, e	24, 46
Freed-Eisemann FE-10, WT, g	70
Freed-Eisemann FE-15, NT, (2), g	45, 95
Garod RAF, 3-dialer, dud tubes, f-g	55
GE 50, g	14
GE 67, g	22
GE 114, f	10
GE 200, f	16
GE 515, f	14
GE 802 TV/phono/radio, unk	425
GE 806 12" TV, wk	140
GE A-70, g	45
GE E-86 console, g	45
GE F-63, unk	60
GE G-500, Pee Wee, g	48
GE L641, f	28
GE P925G, f	20
GE TV, 9", Bakelite, f	75
Gilfillan, battery set, unk	30
Gilfillan, WT, wk	90
Gloritone 99 cathedral, f-g	90
Gloritone cathedral, early, g	150
Gloritone/US 27	75
Grebe MU-1 console, f	70
Grunow 5N, chrome dial, f-g	130
Guild 484 Spice Chest, g	55
Guild 818 Bonnet Box	44
Guild New Englander, vg	100
Guild TK1577 Teakettle, g	100
Guild 380 Town Crier, f	45
Hallicrafters 5R32, g	35
Hallicrafters 512, e	38
Hallicrafters R40 speaker, g	20
Hallicrafters S-108, g	95
Hallicrafters S-38B, g	55
Hallicrafters S-38E, (2), g, f	32, 34
Hallicrafters S-55	45
Hallicrafters SX-52, vg	155
Hallicrafters TW-1000, wk, vg	160
Hallicrafters TW-500, recapped, g	100
Hammarlund HQ-129X, f	55
Hammarlund HQ-145, wk	110
Hammarlund HQ-160, g	100
Hammarlund RBG-2	70



*This Zenith Model 6D336 children's chairside radio brought a winning bid of \$260.*

Headphones, (2), Davis, Brandes	12
Headphones, (2), Davis, Globe	22
Heathkit DX-100, g	70
Heathkit SB301, unk	36
Hickok 539A tube checker, vg	190
Home brew 3 dial, NT, g	32
Home brew crystal set, from old parts	36
Home brew crystal set, Japanese doll	65
Home brew, Bremer-Tully parts, e	50
Howard 435A	22
Howard 1929 console, g	150
Howard A, NT, vg	55
Imperial tombstone, g	80
Jackson Bell cathedral, restored, vg	425
Johnson Ranger transmitter, vg	120
Kennedy V, WT, e	440
Kenwood QR-666, g	110
Kiel, table only, (2), g, missing leg	70, 100
Knight AC H-9848	40
Lie detector, antique, g	26
L-Tatro 32V, A/R, g	65
Lyric, Bakelite, white, unk	28
Magic-Tone radio bottle, vg	100
Magnavox horn speaker, g	70
Magnavox J, g	65
Majestic 65 tombstone, vg	90
Majestic SA K711	40
Manhattan Jr. loud speaker, open driver	42
McMillan AC, with Kellogg type tubes	110
Meck Trailblazer	28
Microphone radio, KAMQ, plastic, g	90
Microphone, (2), Astatic/Shure, w/stand	120
Microphone, candlestick, 1940s	35
Microphone, Shure (3)	60
Microphone, Shure	18
Microphone, Shure, modern	32
Midland Sphere	15
Midwest Miraco, battery, NT, g	32
Moore M-4, battery, g	75
Motorola 5A9 portable	26
Motorola 5P23PN	25
Motorola 7VT2 TV, Bakelite	70
Motorola 55M2	14
Motorola 59X	14
Motorola 61A, g	60

Motorola 65T21, f .....	20
Motorola 67F11, radio/phono .....	75
Motorola 67X, g .....	16
Motorola 68F11, vg .....	45
Motorola 89K1 .....	65
National "doghouse" power supply .....	100
National 2-4D, w/speaker, g .....	140
National NC-2-40-D, g .....	50
National NC-60 special, f .....	20
National NC-183, g .....	90
National NC188, e .....	95
Olympic 6-50X, p .....	30
Packard-Bell 5R, g .....	26
Packard-Bell mirror top, g .....	110
Packard-Bell toaster radio .....	16
Peerless speaker, g .....	30
Philco 66B, vg .....	55
Philco 7" TV, 1948, wk, g .....	200
Philco 16B, p .....	85
Philco 37-116 console, wk, f .....	65
Philco 37-116X, w/remote, unk .....	60



*This beautiful military version Trans-Oceanic Zenith 520/URR with manual, from the John Bryant collection sold for \$500.*

Philco 37-60 cathedral, (2), g, vg .....	50, 140
Philco 37-62D, wk .....	95
Philco 37-675, 12-tube, p .....	70
Philco 38-17, unk .....	90
Philco 38-38, unk .....	55
Philco 38-62, vg .....	100
Philco 38-9, f .....	45
Philco 39-17, f .....	30
Philco 39-7, g .....	35
Philco 41-255 .....	55
Philco 42-321, g .....	55
Philco 42-322, wk, g .....	40
Philco 42-327, vg .....	34
Philco 42-390, 1942 .....	80
Philco 46-1226, AM/FM console, g .....	85
Philco 46-200, Transitone, g .....	45
Philco 46-420 .....	26
Philco 47-127-7, AM/FM phonograph .....	35
Philco 47-2047, g .....	38
Philco 48-460, (2) g .....	ea. 16
Philco 49-500 custom cabinet .....	32
Philco 49-904, p .....	10

Philco 49-909, wk .....	24
Philco 52-548 .....	20
Philco 53-566, g .....	38
Philco 54, wk, f .....	50
Philco 57, wk, p .....	55
Philco 60 cathedral, wk, g .....	150
Philco 60 tombstone, unk .....	70
Philco 66 tombstone, (2), p, g .....	35, 85
Philco 84 cathedral, (2) g .....	50, 60
Philco 84, 1936, restored .....	75
Philco 84, wk, g .....	90
Philco 100 .....	45
Philco 511, metal, w/speaker, f .....	60
Philco 531, wk, p .....	60
Philco 610 tombstone, (2), p, g .....	35, 45
Philco 630 tombstone .....	100
Philco 650 tombstone .....	38
Philco 1201 Bing Crosby radio/phono, g .....	20
Philco A-361, vg .....	65
Philco aerial kit, 1937, new .....	55
Philco farm radio display, g .....	26
Philco Jr. 80 .....	45
Philco Predicta TV G48654, vg .....	700
Philco Predicta TV, (2), wk, f-g, g .....	ea. 210
Philco Predicta TV, wk, f-g .....	210
Philco PT-2, (2), unk, e .....	14, 42
Philco PT-25, (2), unk, vg .....	42, 60
Philco TV, Miss America, 1961, unk .....	90
Philco, Art Deco, Bakelite, unk .....	44
Phillips 3-1A, g .....	32
Pilot Products Radio Wave .....	65
Pilot Products T511, p .....	10
RCA 1R81, unk .....	45
RCA 1X54, g .....	22
RCA 3BX671 .....	45
RCA 5T1, g .....	50
RCA 8K console, p .....	20
RCA 8R71, g .....	25
RCA 9, g .....	26
RCA 9TX31 .....	24
RCA 14BT2, w/eliminator .....	22
RCA 16T2, f .....	25
RCA 29K, 1942, g .....	60
RCA 45rpm phono .....	32
RCA 45X4, unk .....	50
RCA 61-5, p-f .....	20
RCA 66X2 portable, SW .....	50
RCA 75X15 .....	30
RCA 76ZX11, g .....	26
RCA 98K console, f .....	75
RCA 118 tombstone, f .....	50
RCA lighted sign, vg .....	140
RCA 96T2, wk .....	40
RCA R7 tombstone, g .....	55
RCA Radiola 18, no hood, unk .....	65
RCA Radiola 18, WT, g .....	55
RCA Radiola 20 console, p .....	60
RCA Radiola 25, w/antenna, g .....	65
RCA Radiola 26, photo w/Laurel and Hardy ..	18
RCA Radiola 60, WT, g .....	75
RCA Radiola 100A speaker, (3), f, vg 20, 25, 34	
RCA Radiola AR812 portable, g .....	45
RCA Radiola II, WT, g .....	375
RCA Radiola III, NT, unk .....	85
RCA Radiola III-A, (2), p, NT, f .....	75, 80
RCA Radiola table, ornamental .....	150
RCA Radiola UZ-1325 horn only .....	30
RCA T7-5 tombstone, wk .....	55

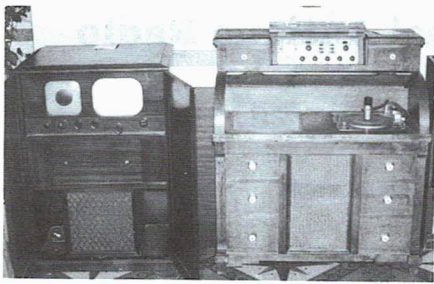
*(Continued on following page)*

RCA T7-5, unk	45
RCA Victor advertisement, framed	20
RCA Victor Nipper mirror, 8 x 10	34
RCA X-552	20
RCA X-711	20
Records, 78 rpm, (200), in cases	80
Rola horn speaker, coil open, g	170
RPC-Chicago Deco set, g	75
Sandar cone speaker, unk	45
Scott 800B chassis only	50
Sentinel 226, vg	30
Silver-Marshall, 12-tube chassis	200
Silver-Marshall, Silver Six, f	45
Silvertone 6-volt farm power supply	50
Silvertone 10D195, g	40
Silvertone 44-29	35
Silvertone 510, p	20
Silvertone 6071	35
Silvertone 7037, AM/SW, g	30
Silvertone 7054, wk, g	35
Silvertone 4585 console, e	100
Silvertone 1954, unk	30
Silvertone 2511, wk, g	20
Silvertone 4403	35
Silvertone 4423, g	30
Silvertone World's Fair	35
Sonora 118BT2165	32
Sonora C, NT, g	70
Sonora RCH208, f	20
Sonora, Bakelite, g	26
Sony fibre-optic sign, vg	75
Sony TV, B/W, 8-301W, battery pack	60
Space shuttle, novelty transistor radio, (2),	22, 25
Sparton 517, refinished, vg	45
Standardyne 5-tube TRF, NT, g	85
Stewart-Warner 01-6K, FM/SW, f	20
Stewart-Warner 345 battery, NT, g	40
Stewart-Warner 705 battery, NT	45
Stewart-Warner 9152C, vg	24
Stromberg-Carlson 1204HA, g	14
Stromberg-Carlson 1600H, g	44
Stromberg-Carlson 1110, g	65
Telegraph key/sounder	45
Telegraph sounders, (2), g	50
Telegraph unit, fire alarm/RGV	34
Temple drum speaker, (2), f	18, 24
Temple G725, wk	20
Thermostat, novelty transistor radio	18
Thompson prototype 3-dialer, NT, g	60
Trav-Ler 5022, g	50
Trav-Ler 5028A, snake skin	110
Trav-Ler Kadette, f	25
Trav-Ler portable, with 5 Type 199 tubes, vg	290
Tresco, Tri-City, W-1, unk	60
Truetone Boomerang, vg	85
Truetone D-725, vg	110
Truetone D1016, Deco, vg	100
Truetone D1835A, chest, g	45
Truetone D2261	22
Truetone D2563	15
Truetone D2615, g	45
Truetone D2716	42
U.S. Apex 24 cathedral, (2), unk, vg	110, 200
Utah D-100 speaker, g	25
Variac, (2)	30, 55
Volotone battery set, NT, g	35
Watterson 78, tuning eye	130
Webster wire recorder w/extra wire	55

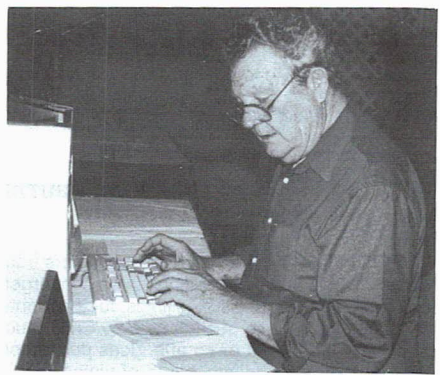


Among the several advertising items in the auction was a Westinghouse neon clock (left) selling for \$180. The RCA lighted dealer radio tube sign (right) sold for \$140

Western Air Patrol, S/W	40
Western Electric 10-D horn speaker, p	60
Westinghouse Aeriola Senior, WT, g	220
Westinghouse clock, neon, vg	180
Westinghouse clock radio, vg	130
Westinghouse H130	28
Westinghouse H188	25
WWII aviator's cap, w/phones and goggles	80
Zenith 3R05	16
Zenith 4K422, vg	75
Zenith 5A10, (2) g	45, 55
Zenith 5D62K, unk	65
Zenith 5F134, f	60
Zenith 5K03	26
Zenith 5J217, (2), wk, g	ea. 65
Zenith 5R312, g	75
Zenith 5S127, unk	80
Zenith 5S319, (2), g, refinished	100, 210
Zenith 6 console, g	170
Zenith 6D015Z, wk	50
Zenith 6D317, Glass Rod set, wk	240
Zenith 6D413	80
Zenith 6D525, (2), wk, g	60, 75
Zenith 6D538, wk	60
Zenith 6D644, unk	35
Zenith 6D815, g	40
Zenith 6S128, vg	200
Zenith 6S140, e	250
Zenith 6S223, g	200
Zenith 6S229, wk	160
Zenith 6S321, g	110
Zenith 6S321, vg*	280
Zenith 7D04	42
Zenith 7G605, vg	210
Zenith 7H722	22
Zenith 7S169 console	230
Zenith 7S529, g	80
Zenith 7S629, p	75
Zenith 7S657 console, f	90
Zenith 8D625, wk	65
Zenith 8S169, vg	230
Zenith 8S661, g	160
Zenith 10S549, no speaker, p	65
Zenith 10-tube, wk	140
Zenith 10S130 Walton set, restored	660
Zenith 10S464 console	200
Zenith 10S689, g	130
Zenith 12, NT	40
Zenith 52 console, p	50
Zenith 705, (2), f, g	65, 75



The GE Model 802 TV/radio/phono, at the left, with channel 1 and the new (then) FM band brought an amazing \$425 in the auction. At the right is the Guild New Englander wooden desk with AM/FM/stereo/phono that sold for \$100.



Bob Nelson, who shared the task with Jim Collings, entering the auction results into the computer.

Zenith 807, wk, g .....	150
Zenith 3000, wk .....	425
Zenith 3000-1, f-g .....	65
Zenith 3001, nwk .....	80
Zenith 6205, unk .....	24
Zenith 7000D, export model .....	80
Zenith A-600, e .....	270
Zenith B600, battery pack, g .....	75
Zenith C-730, AM/FM, f .....	20
Zenith Deluxe Royal transistor radio, g .....	60
Zenith G500, p .....	50
Zenith G503Y .....	40
Zenith G511, vg .....	32
Zenith G724, AM/FM, g .....	50
Zenith H500, f .....	75
Zenith H511 .....	40
Zenith H6151 .....	10
Zenith H723, f .....	20
Zenith H845 .....	40
Zenith J402C, e .....	100
Zenith K412W, vg .....	110
Zenith L500, g .....	130
Zenith L600, f .....	70
Zenith R-520/URR Trans-Oceanic, e .....	500
Zenith R4000, e .....	80
Zenith R615 .....	34
zenith T402 portable, f .....	65
Zenith Wilshire console .....	70
Zenith Y-600, g .....	110
Zenith, child's chairside, vg .....	260
Zenith Guardian, (for Radio Nurse transmitter) ..	100
Zephyr 6S157 console .....	425

#### Literature:

Atwater Kent Breadboard Models .....	22
Atwater Kent Literature 1926 .....	20
Atwater Kent Manual 31, 38, 39 .....	27
Atwater Kent Manual 1931 .....	20
Atwater Kent Manual, Models 145, 206 .....	15
Atwater Kent Manual/Parts List .....	10
Boys Life of Edison, vg .....	20
Bunis, 2nd ed., vg .....	20
Collins radio catalogs, (3) .....	10
Essentials of Radio .....	12
Gernsback Vol. 2, g .....	16
NRI , Vol. 1, Repairs .....	35
Philco Yearbooks 39, 41, 42 .....	26

QST 1941, (12) bound .....	16
Radio News, 1926-1930 .....	30
Radiocraft magazines, 1930-1935 .....	34
RCA Red book Vol. 1 .....	38
RCA Red Book, 1923-1928 .....	65
RCA Victor Phonograph Repair Catalog .....	10
Rider Vol. 1, reprint .....	25
Rider Vols. 1-17 .....	140
Rider Vols. 1-18 .....	150
Rider Vols. 1-5 abridged .....	30
Saga of the Vacuum Tube, vg .....	16
Sams pamphlets, box .....	20
Sams, (12) vols., early .....	12
Trans-Oceanic Operating Guide .....	26
Wireless Yearbook, 1916, .....	40
Zenith Vol. 1 Service Manual .....	18
Zenith Vols. 1 and 2 combined .....	45
Dictionary of Music, ST100 .....	45

#### Tubes:

Tube(s): 01-A, (5), g .....	40
Tube(s): 01-A, globe type, (2), g .....	20
Tube(s): 27, globe type, (3), g .....	10
Tube(s): 57, 237, blue, g .....	10
Tube(s): 80, (5), N.I.B. .....	38
Tube(s): 26, 71, (4), 80, (2), g .....	16
Tube(s): Arcturus 27, (6), g .....	60
Tube(s): Audiotron, dud, tubular .....	30
Tube(s): DeForest DV5 w/can .....	45
Tube(s): European, (5), g .....	16
Tube(s): RCA Radiotron 852 display .....	26
Tube(s): WD-11, no tip, Bakelite, g .....	50
Tube(s): WE 102A, (3) .....	22
Tube(s): WE 212D, g .....	75

(George Potter, 2069 Sienna Trl., Lewisville, TX 75067-7407)

Photos by George Potter and John V. Terrey.

For information on the Vintage Radio & Phonograph Society (VRPS), contact Bill Harris, P.O. Box 165345, Irving, TX 75016. VRPS publishes "The Reproducer" quarterly and "Soundwaves" monthly. Dues are \$13.50. The club holds monthly meetings, a spring auction, an annual convention, and summer swap meets.

# Eric's Eighth Annual Antique Radio Auction

Olney, ILLinois — October 26, 1997

CONTRIBUTED BY RON RAMIREZ

On Sunday, October 26, 1997, collectors from across Illinois and surrounding states converged on the small town of Olney, Illinois, for the eighth annual antique radio auction held by Eric's Auction Service. The 40 or so attendees purchased several thousand dollars' worth of vintage radio equipment.

In general, sets in poorer condition brought more money than usual if they were hot names like Zenith or Philco. Other less desirable sets went begging; for example, one postwar Magnavox console brought only \$1.

Highlights of the sale included two Coca-Cola cooler radios at \$430 and \$510 respectively; an Emerson 56Y Catalin at \$575; an RCA Radiola 106 console speaker at \$160; a Westinghouse RC at \$190; and a Zenith Royal 555 transistor radio in a box with a solar-powered "Suncharger" at \$180.

A partial listing of the items is given below. As usual, model numbers were not called out during the sale, so we tried to write down the more interesting sets and get the model numbers before the auction started.

e=excellent, vg=very good, f=fair, p=poor, NT=no tubes, WT=with tubes

Atwater Kent 33, g	\$50
Atwater Kent 46, f	38
Atwater Kent 84 cathedral, p	85
Atwater Kent 145 tombstone, p	30
Atwater Kent horn speaker, broken base, p	45
Bendix 526, g	9
Cannon novelty transistor radio, g	10
Casper novelty transistor radio, g	20
Coca-Cola bottle novelty transistor radio, g	16
Coca-Cola cooler radio, (2), g, vg-e	430, 510
Constellation globe novelty transistor radio, g	30
Crosley 10-135, (2), g	25, 50
Crosley 25AW tombstone, w/1960s Truetone clock radio, g	60
Crosley 86CR console, g	13
Crosley Ace Type 3B, g	95
Crosley Super-Trirdyn Special, g	100
DeForest Audion D-01A, can only, g	18
DeForest Audion DL-5, in original can, g	18
Detroit 310, g	15
Emerson 56Y Catalin, maroon, g	575
General Electric S-22 (?) tombstone, g	65
Hallcrafters S-52, g	33
Hallcrafters Sky Buddy, g	25
Hallcrafters SX-110, g	35
Home-brew 2-dial TRF, g	28
Huntington (Buckingham), one-dial TRF console, g	10
JVC Videosphere TV, w/clock, manual, g	140

Kolster 6D, NT, f	23
Magnavox CR-226 console, g	1
Magnavox horn, works, g	75
Majestic 93 console, g	20
Mickey Mouse novelty transistor radio, g	11
Mohawk "One-Dial" AC table, w/separate power supply, g	70
Music Master horn speaker, g	85
Na-Ald midget cone speaker, w/box, g	75
Operadio speaker, g	33
Peerless cathedral speaker, g	223
Philco 29X console, g	35
Philco 37-602C, photofinish stripped, f	25
Philco 37-84B, (2), f, g	33, 60
Philco 41-220, g	23
Philco 46-1201, "Bing Crosby Special," g	15
Philco 46-1226 console radio/phono, g	10
Philco 48-460, ivory, g	8
Philco 77 console, g	35
Philco 84B, WT, f	23
Philco 89B cathedral, f-g	60
R-K Radio Labs keg radio, g	230
RCA 8T tombstone, restored/working, vg-e	85
RCA 100A speaker, gray, g	28
RCA 100A speaker, painted gold, g	10
RCA coin-operated radio, g	28
RCA Nipper dog, 14" tall, g	20
RCA Radiola 17, f	14
RCA Radiola 60, no lid, f	15
RCA Radiola 106 console speaker, g-vg	160
Saal horn speaker, g	60
Sky Rover, early AC, on speaker table, g	88
Spiderman novelty transistor radio, g	20
Stagecoach novelty transistor radio, g	18
Star Leader 1082 cathedral, vg-e	75
Stewart-Warner 07-5R5, g	65
Stewart-Warner 91-62, g	25
Stromberg-Carlson 145L console, vg	210
Thorola horn, driver OK, g	55
Truetone D-2017 (like Philco Boomerang), g	55
United Unidyne 4-tube TRF console, w/crank phono, g	100
Westinghouse H-125 Little Jewel, g	80
Westinghouse RC, g	190
Zenith 6A40 Trans-Oceanic, g	40
Zenith 6J230 tombstone, AC, 6V, g	60
Zenith 6V62 battery console, g	75
Zenith 8G05YT Trans-Oceanic, (2), g, f-g	35, 43
Zenith 10S669 console, vg	125
Zenith Royal 555 transistor radio, in box w/Suncharger, g	180

(Ron Ramirez, 811 Maple St., Providence, KY 42450-1857)

(Eric's Auction Service, Eric L. Bruner, Auctioneer, 1000 S. West St., Olney, IL 62450)



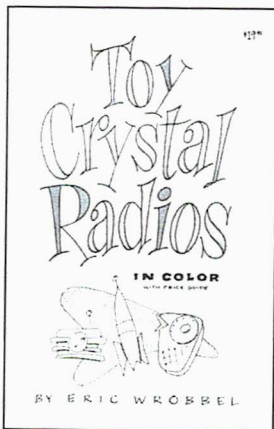
## Toy Crystal Radios by Eric Wrobbel

REVIEWED BY DAVID A. POPE

Eric Wrobbel has written another pamphlet in his series of radio photo books, and this one is a gem.

The 25-page booklet of mostly germanium diode radios offers 58 quality color photographs, a price guide, some old advertising, and a running commentary that, alone, is worth the price of the guide. Each photograph, mostly of sets in the "toy radio" category, from 1929 to the mid-1960s, is accompanied by approximate dating, country of origin, and the author's own insights regarding the radio, such as "a nice phony grille on this one" or "neat fake plastic antennae."

The limited text is laced with the tongue-in-cheek humor of the author, who takes the reader on a fast spin through the world of toy crystal radios. Quick to note the idiosyncracies of the radios displayed, he addresses similarities of models and uses



(David A. Pope, 22 Robinson St., Plymouth, MA 02360)

of 'special' features like movable antennae on crystal radios.

Of note is Mr. Wrobbel's delight in the use of advertising for many of these toys. An example is how the Disaster Radio (complete with a picture of an atomic bomb on the box) could save your life in times of emergency.

Radio collectors, especially those of the baby boomer generation, will appreciate this guide as a unique and interesting documentation of a remote corner of radio history.

Published by the author in a 5 1/2 x 8 1/2 booklet form, *Toy Crystal Radios* is priced at \$19.95, postpaid. It may be ordered from: Eric Wrobbel, 20802 Exhibit Court, Woodland Hills, CA 91367. (818) 884-2282.

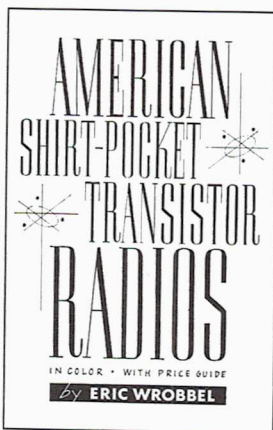
## American Shirt-Pocket Transistor Radios by Eric Wrobbel

REVIEWED BY JOHN DELORIA

*American Shirt-Pocket Transistor Radios* by Eric Wrobbel features 67 of the all-time greatest shirt-pocket radios *not* made in Japan. Many are shown full size or larger, and all are photographed in full color. The book lists model numbers, dates of manufacture, notes, height measurements, and current values.

While most of the attention to transistor radios has lately been paid to the high-end Japanese sets, I believe that some of the lower end American radios have been greatly overlooked. As a collector, I have most of the radios featured in this book because I love their attractiveness, colors, and engineering, not because of their market value. The book shows that many attractive radios were made in the U. S. A.

Wrobbel discusses the question of how Japan came to dominate the transistor radio market. This is an important topic, since subsequent domination of most of the consumer electronics followed. The reasons that are usually given for Japanese dominance are the following: American companies did not make transistor radios, American



companies made poor transistor radios, and American radios were overpriced.

As a transistor radio collector who has done considerable research, I have concluded that all of the above reasons are false. Wrobbel discusses these issues and provides what I think is the first meaningful explanation of what went wrong with the American transistor radio and how Japan came to dominate the field.

This discussion should be of interest to everyone, not just collectors of transistor radios. As we all know, history was made with the transistor radio, and the longterm ramifications are still being felt today. Eric Wrobbel's little books, now numbering eight, contribute much to that sense of history.

Published by the author in a 5 1/2" x 8 1/2" booklet form, *American Shirt-Pocket Transistor Radios* is priced at \$19.95 postpaid. It may be ordered from Eric Wrobbel, 20802 Exhibit Ct., Woodland Hills, CA 91367. (818) 884-2282.

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



## Tube Lore By Ludwell Sibley

REVIEWED BY ALAN DOUGLAS

What do you do with your leg immobilized in a cast for the better part of a year? If you're Lud Sibley you produce the "ultimate" tube resource book — *Tube Lore*.

There are already histories, tube manuals, substitution guides, and collectors' reference books, new and old. This book complements all of them. You won't find in it a history of the Audion, but there is an amazing amount of material on later tubes. You won't find the level of detail found in a tube manual, but there are major specs for almost every tube ever made in the U. S. (some post-1950 TV types excepted). You won't find an oversimplified list of substitutions, but there are cross-references

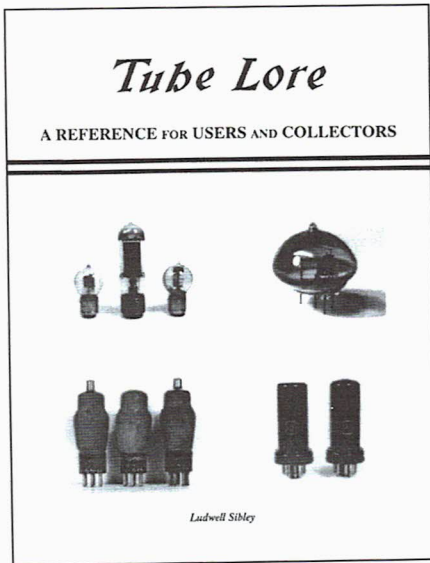
to all variants, including 4-digit types with upgraded characteristics. You won't find the concentration on one subject as in Tyne's *Saga of the Vacuum Tube* or Stokes' *70 Years of Radio Tubes and Valves*, but a collector will have this book dogeared in a week.

What more will you find? The list goes on and on: Manufacturers' date codes; EIA registration (introduction) dates; model numbers of military gear and broadcast transmitters that use certain tubes; comparative specs for sweep tubes, and lists of ham gear and audio amplifiers that use each type; compiled auction prices for collectible tubes; rejuvenation data; tube testing; manufacturer code numbers (who *really* made those tubes?); explanations of the numbering systems; trivia — and not-so-trivia — galore. It's all here, over and above the play-by-play on the tubes themselves.

I was slightly disappointed to find nothing on several vertical-output tubes that have audio applications: 6BL7, 6BX7, 6EA7, 6CK4; the 6CK4 was even promoted by Sylvania for audio use. Granted this data is all in standard tube manuals, but the EIA registration dates might have been instructive, since other "worthless" TV types made the roster.

There are a few mistakes and typos, but considering the sheer quantity of information, the error rate must be down around 0.0001 percent.

Lud and I have an ongoing discussion about in-



dexing and organization. Editors like to categorize (all the RCA 2000-series in one section; all the EIA 5500-series listed in order, etc.), while users would be better served by a single alphanumerical listing, so they wouldn't have to decipher the author's classification scheme before looking up a tube each time.

The historian or browser who wants an overview of, say, the RCA 800-series transmitting tubes will appreciate the chosen format. The guy who finds an S856 in a box of tubes and wonders what it is (an 0-A2) will have to search for it in the "general" section, while an SB846 appears in the "Sylvania developmental" section.

Yes, there is an index, but it says all "800" tubes are in the RCA listing, and does not show any "S" prefixes. Looking up an S856 would require knowing beforehand that it is "nonregistered" (the chapter heading "general" does not appear in the index). This indexing dilemma may be insoluble, but the reviewer's job is to point these things out.

Do you really *need* the specs on an 8568 (20-megawatt klystron used in the Stanford Linear Accelerator)? Maybe not, but if you were given a pair of 8122s, it might be useful to know that they fit a National NCL-2000 linear. Do you need to know the manufacturing date of a tube? Yes, if you wonder if a radio still has any of its original tubes. Can't recall where you saw that article on rejuvenation voltages or times? No matter, it's all here in one place. Wish Tyne and Stokes in their books on tubes hadn't stopped in 1930 and 1940 respectively? Right up to Nuvistors and Compactrons, there's a lot of later tube lore in *Tube Lore*.

*Tube Lore*, ISBN 0-9654683-0-5, contains 186 pages in 8½" by 11" softbound format. It may be ordered from Ludwell Sibley, 44 E. Main St., Flemington, NJ 08822, and from A.R.C. and other vendors. The price is \$19.95 postpaid in North America, or \$24.95 elsewhere.

(Alan Douglas, P.O. Box 225, Pocasset, MA 02559)



# BOOK/CD-ROM REVIEW

## TUBE LORE/TUBEDATA Two Handy References

BY RAY BINTLIFF

Two new offerings have crossed the editorial desk at A.R.C. *Tube Lore* by Ludwell Sibley and *Tubedata* from Sonoran Publishing. Although Sibley's book is the subject of Alan's excellent review on the opposite page, some additional thoughts about the book occurred to me that may be of interest.

### TUBE LORE

In his first chapter, *Trends in Tube Design*, Sibley describes some innovative tube designs that were introduced starting in the mid-1930s.

He packs a lot of information into that short chapter, and it is interesting and easy reading indeed. The short lived Nuovistor is one of the unique tube designs described in this chapter.

In Alan's review, he noted the absence of information regarding the use of TV vertical deflection tubes in audio application. Sibley has provided such information on six triodes in an errata sheet insertion. In addition to noting some corrections, the errata sheet also includes additional information on tubes for Rogers of Canada, as well as tube substitutions and auction prices.

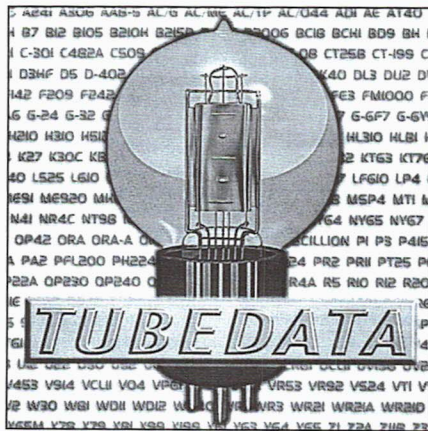
The book reflects the author's excellent knowledge of vacuum tubes and his diligent research.

### TUBEDATA

Like *Tube Lore*, *Tubedata* is a handy reference that can expedite your journey through the jungle of existing tube data. But, there are some differences. *Tubedata* is furnished on a 3.5 inch floppy diskette for IBM compatible computers. It contains 27,000 entries and includes European, American and Russian tube types. Also included are military tube types from the U. S., Great Britain and Sweden.

Although a DOS program, *Tubedata* will run under Windows. The program is easy to install and use. Its computer requirements are modest — an IBM compatible PC with at least 4 MB of free space on its hard drive, and VGA graphics.

The data and format has a European ap-



proach that may require American readers to re-adjust their thinking, but it is not a difficult transition to make. For example, some abbreviations used with tube characteristics are different from those used in the States. "Va" is used to denote anode voltage instead of the "Ep" (for plate voltage) used in the U. S. Tube pinouts may cause some initial confusion, but just remember that an anode and a plate are the same thing.

Since Russian tubes are included, some combination keystrokes are used to generate the Cyrillic characters that differ from the Latin alphabet. A useful set of instructions that explain this and other features is included with the disk.

The search feature is easy to use and the screen displays two windows so that data for two tube types may be called up at the same time. This dual display capability is useful for making side-by-side comparisons of tube data. Typically, the displayed data include basic characteristics, such as filament voltage and current, maximum plate voltage and current, transconductance, etc., as well as the manufacturer, the year, and the source(s) of additional information. The referenced sources cover a wide range of U. S. and European publications. Coincidentally, one of the publications often cited is *Tube Lore*.

For most tubes, base diagrams (pinouts) are also included.

*Tubedata* is a comprehensive listing of tube types from worldwide manufacturers, including the U. S., Canada, Great Britain, Holland, Germany, and Russia. It is an ideal aid for radio and tube collectors, circuit designers and others. Created by Åke Holm in Sweden, the disk is distributed in the U. S. by Sonoran Publishing, 116 N. Roosevelt, Suite 121, Chandler, Arizona, 85226. It retails for \$39.95 and is sold by A.R.C. and other vendors.

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



# RADIO MISCELLANEA

"Radio Miscellanea" includes items of general interest selected from A.R.C.'s incoming correspondence. "In The Marketplace" items are based on information submitted by the businesses themselves. "From The Internet" items are obtained from internet newsgroups and other internet resources. Submitted items should be verified for accuracy; items may be edited by A.R.C. for publication, and publication is not guaranteed. See the masthead for more details.

## On Bruce Kelley Tribute

Dear Editor:

All of us who are involved with the activities of the AWA wish to thank you for the fine article on Bruce Kelley. This is much appreciated as A.R.C. saw fit to let its subscribers know that Bruce was so very important to the radio collecting fraternity.

Lauren Peckham, Breesport, NY

## Superb December '97 Issue!

Dear Editor:

Although always anticipated, devoured, and enjoyed, the December issue of A.R.C. was one of the best yet. Applause for the article on and review of the latest Cones and Bryant Zenith book. Dick Desjarlais convinced me that I must have both the Bunis fourth edition and the Bintliff *Foto Finder*. I found particularly poignant the story of Joseph Jackson's efforts to save his grandfather's Columbia 31. With sadness I read of the passing of Bruce Kelly — a gracious and charming gentleman. Even the short article by William Miedema touched a nostalgic nerve because my parents' first post-World War II radio was from Electronic Laboratories Co. I await the next installment of Ray Bintliff's article on capacitors, although I thought his Figure 4 could use another layer of dielectric material. [Yes, Dale, there should be a dielectric for each foil — we "simplifieth" too much!]

Concerning newsletters vs. club journals, I respectfully take a tangential stand to that of my friend Gerald Schneider. I personally would like to see as many publications as possible, ideally with some sort of central collection point for reference and research. All too often historical information is preserved only through small publications with limited distribution.

From the ads, I sold one and bought one, so here too I prospered!

To everyone behind A.R.C.'s preparation and distribution: Take a handful of "Attaboys" out of the till — you've earned and deserve them!

Dale Davenport, Fort Smith, AR

## On Post Office Mailing Mysteries

Dear Editor:

I am enclosing a check for \$111.90 for another two years of *Antique Radio Classified* by First Class mail. First Class mail is much better than Periodical Mail by which the other ten magazines I receive are sent. For example, I received the October 1997 issue of the magazine *Nuts and Volts* on October 29, 1997, mailed from California during the first few days of the month. I don't know how the post office managed to take almost an entire month to get the magazine to me — unless someone kept it to read. One month, I received my copy of *Consumer Reports* with two pages stuck together with grape jelly!

Aurie S. Myers, Jr., Lexington, NC

We're also working at keeping the peanut butter out of A.R.C. (Editor)

## More on Capacitors

Dear Editor:

As a note to Ray Bintliff's excellent article on capacitors, I'd like to share some observations about mica capacitors. Molded mica capacitors with values between 10 pf and 100 pf were used by the manufacturers of many auto radios for the purpose of coupling the plate of the RF amplifier to the input of the mixer stage. Also, in addition to the diode filters in the second IF, we frequently find a 200 pf capacitor on the plate of the 2nd detector. In spite of their high coefficient, these fail surprisingly often. Why?

Someone knowledgeable once suggested to me that this failure is because the Bakelite casing shrinks over time, causing pressure on the elements within. Another possible cause is that some sort of chemical change that seems to affect some RF coils over time increases their Q (Quality Factor). In any case, mica capacitors used in high stress locations like the ones mentioned above are worth testing, as they may actually function as resistors today, not capacitors. These conditions also affect the molded, tubular, Bakelite capacitors we find in late '40s and '50s radios, the ones with the colorful stripes

Incidentally, I was surprised once when rebuilding a Scott chassis to find flat molded 0.05 paper capacitors that looked like micas. They too showed abnormal leakage.

A voltage check can reveal a host of interesting things about a capacitor. Lifting the cold end of a coupling or bypass capacitor that has B+ voltage on the other end, and taking a reading to ground on the cold end may surprise you, just when you thought that mica was reliable.

Richard Foster, Cochituate, MA

Dear Editor:

While mica capacitors are relatively reliable, I replaced several which had caused problems in a Du Mont RA-102 television — low and missing plate voltages and sweep frequency drift. I can only speculate about bad batches of capacitors and how contaminants get in.

Ted Hutson, Beverly, MA

## A.R.C. — Fantastic and a Joy

Dear Editor:

I just wanted to tell you that you have a fantastic publication — well worth what I pay for it, even though my slumping Canadian dollars are making it more expensive! Rob Prince, Toronto, Ontario, Canada

Dear Editor:

First, let me tell you how wonderful it has been to receive A.R.C. I have fooled around with radio since about 1968, and this magazine has been a joy and help. Charles Callahan, Baltimore, MD

Since our mail bag usually includes one or more kudos, we decided to print several in this, the first issue of the new year. (Editor)

# CLASSIFIED ADVERTISING POLICY

**ONE FREE 20-WORD AD** for subscribers in each issue; additional words are 29¢ 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 ad. 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 3; 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 not-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\***

29¢ per word for extra words over 20 **plus**

10¢ 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:

47¢ per word **plus**

10¢ per word for shaded ad.

Please do not forget to send in the extra 29¢ 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:

40¢ per word for all words,\* none free, **plus**

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

10¢ per word for each all-caps word.

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

50¢ per word for all words\* **plus**

10¢ per word for each all-caps word.

Non-Subscribers:

Add 20¢ 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

\$23.00 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.



A.R.C., P.O. Box 2, CARLISLE, MA 01741  
ADDRESS SERVICE REQUESTED

PERIODICALS

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