

ANTIQUE RADIO CLASSIFIED



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WMAZ at Mercer U.

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

ANTIQUE RADIO CLASSIFIED

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1/2 H	5 1/4 x 7 1/2	7 1/2	3 5/16 x 4 3/4	4 3/4	146.00	389.00	675.00*	1175.00**	37.00†
1/2 V	12 7/16 x 3 9/16	3 9/16	7 3/4 x 2 1/4	2 1/4	146.00	389.00	675.00*	1175.00**	37.00†
1/4	5 1/4 x 3 9/16	3 9/16	3 5/16 x 2 1/4	2 1/4	74.00	197.00	342.00	595.00	19.00†
1/8	2 5/8 x 3 9/16	3 9/16	1 5/8 x 2 1/4	2 1/4	38.00	101.00	177.00	305.00	9.00†
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WITH THE COLLECTORS

Espey Radios

BY WARD KREMER

As the result of his search for information about Espey radios, Ward Kremer describes two Espey-produced radios. His acquaintance with some members of the Espey family gave him the incentive to search for Espey models. Perhaps some readers can add to his store of knowledge about Espey products. (Editor)

Since starting my search for Espey radios about a year ago at the request of the son of the Espey Company founder, I have located six items: two table models; one console; and three custom hi-fi component systems.

The three Espey radios in my possession show very distinct characteristics. They are conservative in cabinet design, with costly, very solid construction and no frills. If there was a cheaper way, it was never used.

The chassis construction is heavy and conservative, with only the best parts, such as molded capacitors, ceramic sockets, etc., consistently used. The design engineering was innovative, if sometimes superfluous and costly. It appears that the company was trying to provide a little extra that added up to a lot.



Figure 1. The Espey Model 6514 BC, AC/DC table radio.

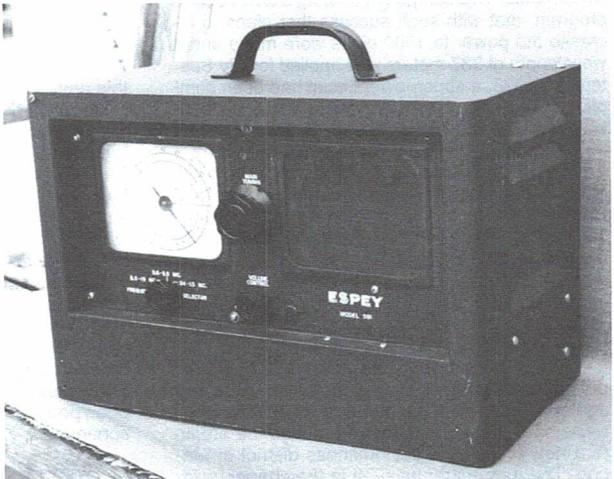


Figure 2. The Espey Model 581 BC/SW, AC/DC portable battery radio of military design.

The table radio and the portable set described below appear to have been manufactured on a very small scale, as there are several parts substitutions. Both sets were found still working, albeit with leaky capacitors and the usual hum and crackles, but working. Whoever designed these radios had determination, as the production changes are numerous and must have cost many sleepless nights and lots of money. Here are the case histories to date of the restoration of two of these sets.

ESPEY MODEL 6514

The Espey Model 6514, Serial #6016, shown in Figure 1, is a BC, AC/DC wooden Deco table set, circa 1948-1949. A set with the quaint, baroque look of the late 1930s, it is made to look like an icon of itself. It has a solid plywood veneer cabinet with six separate louvers screwed to the front to constitute the grille. The cabinet and louvers are stained to get the then popular orange shellac look. The louvers and cabinet are trimmed in black, making a very labor-intensive cabinet design.

The dial is a large, glass, slide-rule type set 45 degrees to the cabinet edge. The dial back is flocked velvet instead of paint.

The chassis is heavy gauge metal with lots of

"In October 1924, the station opened again with an enlarged program. Four regular radio talk shows each day by Mercer professors were added to the program. [Figure 1 shows a student listening to a lecture by one of the professors.] Mercer was one of only four colleges broadcasting courses at this time and boasted students from as far away as 3,000 miles! Macon civic clubs, the college glee club, and other organizations helped in these programs.

"In April, 1925, a campaign was begun to raise money to increase the power of the station to 500 watts. A gift of \$500 was received from the Macon Civitan Club. This campaign, offering a civic booster program, met with such success that plans to increase the power to 1500 watts were made and a wavelength of 337 meters was applied for. By September, 1925, a superpower circuit had been completed. This circuit was so designed that the 500-watt oscillators could be switched from the antenna to the modulating system of the 1500-watt circuit.

"Mercer presented claims for permission to operate a superpower station at the International Radio Congress in Washington on November 9, 1925. Since the necessary funds for maintaining the station on a higher power basis were unavailable and the prospect for future support was doubtful, the director of WMAZ resigned in December, 1925. From that time until the following June, the station was maintained as a 500-watt station.

"During the summer and fall of 1926, WMAZ did not go on the air. During the fall of 1927, the Junior Chamber of Commerce of Macon took ownership of the property and moved the studio to a new location in the business district of Macon. The transmitter was left in the chapel building on the Mercer campus. Since that time, the station has been leased to a local broadcasting company and has continued to operate as WMAZ."

Mr. Crudup's narrative ended at this point, indicating that it was probably written in the late 1920s. I derived the following history of the station beyond 1927 from numerous sources.

THE POST-1927 YEARS

In 1929, the station was leased to George Rankin, E. K. Cargill and Wilton Cobb who formed

the Southeastern Broadcasting Company and finally purchased the station in 1936. Tentative plans were made to move both the studio and transmitter to Macon's grand Dempsey Hotel; however, regulations came into effect that prohibited a transmitter within a central business district. Around 1935, the transmitter was moved from Mercer to the periphery of the city, and the road leading to the transmitter was appropriately named "Radio Drive."

In the latter part of the 1930s, Southeastern Broadcasting Company purchased a 5000-watt transmitter from KMOX in St. Louis. This second-hand transmitter was disassembled, transported to Macon, and reassembled. In 1941, the transmitter was moved from Radio Drive to Forsyth Road, which remains the AM transmitter site to this day.

In 1947, the station's power was boosted to 10,000 watts, and in January 1959, a 50,000-watt transmitter was purchased and translocated from San Antonio. Southeastern Broadcasting, which, by this time, included FM and television divisions, was acquired in the early 1960s by Multimedia, which held the station until it was sold to Gannett in December 1995.

Gannett subsequently sold the AM facilities to Ocmulgee Broadcasting Company on May 21, 1996. As part of the agreement for the sale, the call letters were changed, and the station began broadcasting as WMWR on September 20, 1996. The news, sports, and talk format, which has been popular in Middle Georgia for several years, continues.

Photos courtesy of Mercer University.

Special thanks to Jenny Treby and Steve Mosley of Mercer University.

(Joseph G. Jackson, 6331 Old Forsyth Rd., Macon, GA 31210)

Joseph Jackson, a physician currently in the practice of diagnostic radiology in Macon, Georgia, is a graduate of Mercer University and a radio collector. His interests include collecting radios of local historical interest, as well as the history of radios in the South.

Mercer University Profile

Mercer University, founded in 1833, is the second-largest Baptist-affiliated institution in the world. It is the only independent university of its size in the country that combines programs in liberal arts, business, engineering, education, medicine, pharmacy, law and theology.

The university offers more than 20 undergraduate, graduate and professional degrees through its eight schools and colleges. For seven consecutive years, *U.S. News & World Report* has ranked Mercer among the top 15 regional colleges and universities in the South.

Although Mercer's main campus is located in Macon, the cultural and commercial hub of Central Georgia, the university's educational

programs reach virtually every corner of the state. The Cecil B. Day Campus in Atlanta is home to the Graduate and Professional Center, as well as the new School of Theology. In addition, five off-campus centers located in the Atlanta and Central Georgia areas offer degree tracks for non-traditional students.

Mercer's official "Profile" states that "The University is guided by the historic principles of religious and intellectual freedom, while affirming religious and moral values that arise from the Judeo-Christian understanding of the world."

More information about Mercer University may be acquired by writing to the Office of University Advancement, 1400 Coleman Ave., Macon, GA 31207-0001.

VINTAGE BROADCASTING

The End of an Era — WMAZ AM (1921-1996)

BY JOSEPH G. JACKSON

In this article, Joseph Jackson combines two interests — radio history and his alma mater, Mercer University in Macon, Georgia. We are grateful to the Mercer News Services Department for its cooperation in assembling the article and providing our cover photo. (Editor)

On September 20, 1996, WMAZ AM 940 became WMWR AM 940, thus concluding 75 years of broadcasting under the call letters of WMAZ and ending an important era in the history of radio in Middle Georgia. WMAZ was the by-product of a physics class project at Mercer University in Macon, Georgia.

The early history of the station was chronicled in an undated paper by Josiah Crudup, a physics instructor at Mercer University during the early operation of the station. His paper, with some minor editing, reads as follows:

"To Mercer University belongs the distinction of being one of the first educational institutions of the nation and the very first university of the southeast to operate a radio station. Mercer's entry into the field of radio broadcasting was right along with that of the earlier commercial companies. For this unusual achievement, Mercer owes all credit to Dr. C.R. Fountain, professor of physics, on the faculty at that time.

"WMAZ (Watch Mercer Attain Zenith) first went on the air during the earlier part of June 1921 to broadcast the commencement exercises of Mercer University with a 10-watt set. The station was silent from then until the following October, when its power was increased to 50 watts, and programs were again sent out.

"The fall of 1921 marked a period of experimental broadcasting for WMAZ. A 6-wire antenna was swung from the flag pole of the chapel building. The city electric current was rectified and used for plate voltage. Extensive experimental testing of quality speech output then followed. During the spring of 1922, phonographic modulation of output was installed, and on June 7, 1922, once again the commencement exercises of the University were broadcast.

"The success with which WMAZ had met caused the college officials to see the value of the work and more money was put at the disposal of Dr. Fountain. In August, 1922, an enlarged antenna was installed on a 70-foot steel tower above the chapel tower. [The antenna, shown on this issue's cover, no longer exists.] In October of that same year, the daily afternoon broadcast of special music and phonograph records began. The general routine work of the operation of the station was



Figure 1. A student of Mercer University in the 1920s listening to a college professor's lecture by radio, thus saving him a visit to the classroom.

done by Ernest Hulsey and Josiah Crudup, under the direction of Dr. Fountain.

"In February 1923, the station secured an experimental license to operate on any wavelength with the call letters 4XL. The station was also permitted to operate on a temporary license for general broadcast purposes as WMAZ on 268 meters. On May 7, 1923, WMAZ was granted a limited commercial class A license. On June 6, 1923, again commencement exercises were broadcast, and the station was closed for the summer.

"By September, 1923, Hillyer Stratton had qualified as a commercial operator and was named operator of the station. A motor-generator was installed and the transmitter remodeled. From that time on there was a regular program of daily broadcasts, besides the college chapel program, on a wavelength of 261 meters.

"During the spring of 1924, a new and larger cage antenna with fan counterpoise was installed, the station power was increased to 50 watts, and a padded studio was equipped two floors below the transmitter. On May 22, 1924, the power of the station was increased to 100 watts, and the services of a program director were secured. The commencement exercises were broadcast as usual, and the station was closed for the summer.



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EDITOR'S COMMENTS

As this issue goes to press, here at A.R.C. we are still in midwinter, and reports of El Nino's havoc elsewhere pervade the airways. But, radio collectors are undaunted and certainly irrepressible. Proof of that lies in a perusal of *Coming Radio Events* which extends into April and May and on to the end of the year.

Listed for March alone are more than 40 events, including the 3-day Carolinas/AWA Spring Meet. Spring fever has obviously set in early, and we doubt that it will take much urging for all you collectors to get out there and join in the excitement of an event close to you.

While collectors look forward to the immediate bright future, there is always time for a nostalgic look at the past. That's exactly what Joseph Jackson does in our lead story about early broadcasting in Georgia. A radio collector and historian, Dr. Jackson (ironically, a radiologist) digs into a subject close to home — WMAZ, a 1920s radio station at Mercer University, Jackson's alma mater. WMAZ may be unique in that it retained its call letters and its identity until 1996.

Research projects seem to be the basis for more than one article this month. Knowing members of the Espey family was the impetus for Ward Kremer's search for information about Espey radios. Bunis lists only ten Espey models, a fact that seems to corroborate Ward's premise that Espey production limitations were due to the company's aversion to cost-cutting — not the best business philosophy, to say the least.

Following Richard Begbie's article on Australian radios in the February issue, we welcome another article from "Down Under" — this time, New Zealand. However, Ian Sangster's subject, "The Exterminating Co. Five," has a little different twist — a U.S. radio, picked up in the U. S. in 1996, that he is still trying to identify from afar.

Our Holland correspondent Gérard Faassen extends our international connections to Belgium where he picked up the teapot used as an advertising gimmick for Ecko Bakelite receivers of the 1930s. Of course, it was an English company that made this connection with tea drinking for its sales pitch.

Both Ted Babcock and Robert McCulloch contribute more to the ongoing discussion of the Freshman Polydyne. They remind us of the strange and different thing about this set — the transformer with 5 filament windings. As Robert points out, such a transformer would be very expensive to replace today.

Richard Arnold reports on an interesting Jackson Bell AC cathedral radio. The really attractive swan grille makes this Model 62 a highly collectible set.

Photo Review includes many interesting items. Among them are a Warwick Model 45, which has the shape of a trapezoid, and a highly collectible Tower Castle cone speaker.

Our intrepid auction reporter, Ray Chase, contributes no fewer than three auctions this month. The Childers & Smith auction included a lot of lab test equipment going for surprisingly reasonable prices.

Other nice pieces, like a DeWald Catalin and an Emerson "Strad," brought good prices.

Ray reminds us that the Hahn auction included only a small collection of radios, but such auctions are always worth checking out. Regarding the extensive collection of Gilbert L. Finne, we can't help concluding that, had it been in good condition when it went on the block, the proceeds might have told a different story. We collectors should remember that we owe it to future generations to maintain and store our collections well.

A piece by Dick Desjarlais is based on information from Herb Eltz on windchargers. These machines connected farmers and others in rural areas with the world before electric power was commonplace. As Herb says, "We had more wind than anything else in those days." No doubt environmentalists would cheer if windchargers came back into more common use today.

The subject of a substitute for the Type 1L6 tube refuses to die. Both Robert Perlstein and Jim Farago have contributed thoughts on this subject, and no doubt we'll hear more from other collectors in the future.

David Davies' story about finding his Motorola 56T1 transistor radio reminds us to leave no stone — or case or box — unturned in our quest for an exciting radio find.

Radio Miscellanea attests to the fact that we have had so much feedback to articles and *Photo Review* that we decided to go to two pages this month. How to use the new communications technology is an ongoing subject, and we hope to hear more from you readers.

Jonathan Hill's latest book *Audio! Audio!* is reviewed by Charlie Kittleson who says that this book is an excellent reference for "interested tube heads." Jonathan also is the organizer of the National Vintage Communications Fair, an event in Birmingham, England, planned this year for May 10.

Coming Radio Events. Be sure to note also the private auctions in our *Coming Radio Events* section. These include the 2,000-lot auction of the Tony Moletiere collection in Pennsylvania on May 7-9. Certainly, this is one not to miss.

A.R.C. will be at the next NEARC meet in Nashua, New Hampshire, on April 18, and we also look forward to seeing you at the Dayton Hamvention, May 15-17.

Happy collecting!

John V. Terrey, Editor

ON THE COVER

Thanks to Joseph Jackson and the archives of Mercer University of Macon, Georgia, our cover strikes a real note of nostalgia for the early days of radio broadcasting. The 1920s photo depicts the WMAZ (Watch Mercer Attain Zenith) antenna atop the chapel tower. We did not include the caption below the photo, which is a Latin verse with an English translation. The words may have related to commencement exercises, which were a topic of early broadcasts.

*Farewell, a word that hath been and must be,
A sound that makes us linger — and yet farewell.*

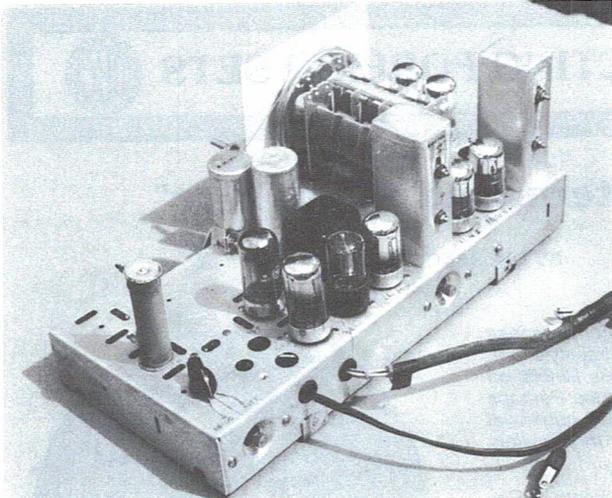


Figure 3. The chassis of the Espey Model 581.

plating and ceramic sockets for five loktal tubes — then expensive, high tech stuff. The volume control is a large, mil-spec type, with extensions soldered on, but also tapped and countersunk.

Although basically a conventional AC/DC "All-American 5" set, the Model 6514 uses two different types of IF transformers. The older, large type has trimmer screws on top, while the newer one is slug-tuned and soldered below the chassis, adjacent to the converter tube socket. The tuning condenser has no trimmer screws. There are also heavy filters, molded capacitors instead of wax, and a 5-inch, rather than a 4-inch, PM speaker. Perhaps the company's concept was "This is the last one of these you'll ever need to buy."

This set packs a wallop! It pulls in stations loud and clear, very hot and selective with very nice tone and no noticeable hum, so typical in these sets. If it had had proper distribution, this set would have been a big hit, but on a small, hopelessly expensive manufacturing scale, it could not compete. I wonder what the price was. But, regardless of price, this set was Espey's answer to the "All-American 5."

ESPEY MODEL 581

The Espey Model 581, shown in Figure 2, is a BC/SW, AC/DC battery set, serial #18380. Also stamped on the chassis is "271499-Phila. 44-03." This table set has an olive green, wrinkle-finish metal case with white silk screen lettering, [a tipoff that this is a military item], and a removable metal faceplate with plastic dial window and knob lettering.

Primed with green aircraft primer, the very sturdy cabinet has many folds and welds, a battery bracket, rounded corners, louvers, and a recessed front panel. This is an expensive metal box!

The chassis, shown in Figure 3, is extra heavy with triple cadmium plating and still looks new. The chassis is hot electrically, so it is isolated from the metal cabinet. The IF transformers, sock-

ets, and tuning gang are all mil-spec with large first class coils, antifungal treatment, silver trimmer capacitors, mil-spec coupling capacitors and electrolytics, extra heavy shielding, and 8 tubes. The tube types are the following: 1LN5 tuned RF amp, 1LC6 converter, (2) 1LN5 first and second IFs, a 1LH4 Det/AVC/1st AF, a switchable second audio, 3Q5 or 3LH4 tubes for battery operation, and a 50A5 for AC/DC operation. A Type 35Y4 is used as a rectifier. This feeds the tapped 32-ohm potted mil-spec audio transformer. The speaker shown in Sams for this set is an extra heavy Jensen 6-inch, but the one in this set is a modest 5-inch with a machined adaptor bracket.

The dial is a heavy white enamel with black lettering. It looks like porcelain and uses mil-spec fluted communications knobs.

The Model 581 sounds like a multiband communications set, right? But, it is only a 3-band, BC/SW radio that covers 3.89-8.5 and 8.5-19 Mc on the two SW bands. It looks sturdy enough to survive some terrible climates, but it must have cost a fortune to produce. Although Sams dates it as 1947, the chassis stamping seems to indicate March 1944 as the date of manufacture.

All in all, this set performs very well, if a little fussy. The silver-plated loktal sockets are intermittent, and the set will cut out when the band switch vibrates them. It is very selective, stable, and although not loud and musical sounding, it is very clear, as a communications receiver should be.

The Model 581 is a most interesting and somewhat unique set. It is sort of a landlubber's version of a "Navy Bendix" designed for 110/220V, AC/DC battery use.

Thanks to Alton Bowman, Maury Kalb, and A.R.C. for their help in procuring and restoring these sets. I found all the sets and the schematics through A.R.C. If anyone out there has any information about Espey sets, literature, etc., please contact me.

References:

KAL-TEC Electronic and Maury Kalo.
Sams, Howard W. *Photofact*. Indianapolis, Indiana, 1947.

(Ward Kremer, 5807 Papaya Dr., Ft. Pierce, FL 34982)

Ward Kremer, an audio and recording engineer/producer, specializes in recording with vintage systems, i.e., tube processors, mikes and live recordings. An antique radio collector, he also collects and restores broadcast/recording equipment. Ward is seeking information to add to his forthcoming book, "The Art and Application of Microphones." Interested collectors should contact him at the above address.

“The Exterminating Co. Five”

BY IAN SANGSTER

From New Zealand, Ian Sangster describes his efforts to identify his cathedral-style set, purchased at Radiofest '96 in Elgin, Illinois, on one of his occasional visits to the States. Perhaps some A.R.C. readers can provide additional information regarding the radio in question. (Editor)

When I approached Frank Heathcote at Radiofest '96, his eyebrows lifted quizzically. [A.R.C. readers will remember Frank's expert *Collectors Corner* articles in the early days of A.R.C.] I was explaining to him how I could not resist buying a very untidy, small, no-name cathedral, which was displayed and sold in a plastic bag. The bag, or sack as you folks would call it, kept the unruly delaminating veneers on the cabinet from becoming more damaged.

I had sought out Frank to get his expert opinion on the possible manufacturer of the radio. It is a small, 14" high, 2-knob, arc-dial cathedral, shown restored in Figure 1. It has a 6-inch, gold-painted Oxford speaker. The chassis bears no marking other than "Antenna Red, Ground Black," and handwritten in pencil, "Exterminating Co." At the time of purchase, Frank was unable to identify it. Thus, until this day, I refer to it as "The Exterminating Co. Five." Perhaps I will continue to do so, in a friendly manner, even when I am assured positively of its manufacturer.

The chassis, shown in Figure 2, has 5 tube sockets, one having a Type 57 installed in it. Two sockets without tubes are labeled "47" and "80" respectively, and the remaining two are 6-pin sockets, unlabeled and also missing tubes. The significant feature of the chassis is a massive, 2-gang "Radio Condenser Co." tuning capacitor. The chassis is a simple, folded, shallow "U" section without an enclosure at either side. Beneath the chassis are two rather splendid looking copper coil cans engraved "Concord Coil," as well as Falcon and Potter fixed condensers.

CIRCUITRY

Some time later, I took the chassis to my friend John to seek advice on its circuitry. I was unsure of the purpose of the two coil cans. Initially, we thought the set was a 5-tube superhet, but it lacked antenna and oscillator coils.

While tracing this portion of the circuit, we discovered that the antenna wire entered the rear of the chassis running forward to the top of the gain control potentiometer. However, another wire was soldered to the antenna wire running

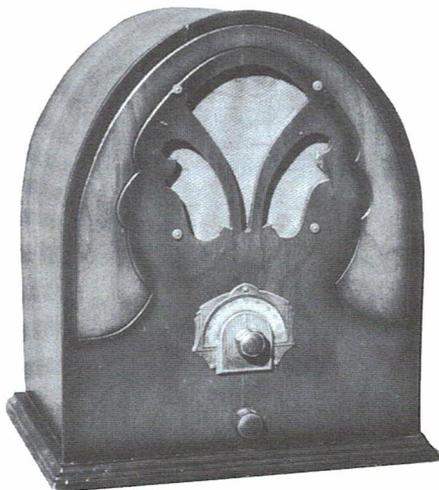


Figure 1. The restored "Exterminating Co. Five," or perhaps the Autocrat Model 80.

up to a grid cap for one of the unlabeled tube sockets.

"Ah-hah," said John. "This is a TRF with an additional untuned RF stage — somewhat unusual, as it would have been regarded as a waste of a tube at a time when they were still an expensive component."

Armed with this knowledge, I referred to my *Sylvania Tube Complement Book* and began

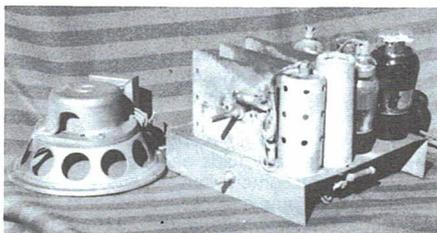


Figure 2. The chassis and speaker in "as found" condition. Note the relative size of the tuning capacitor and chassis.

listing all the 5-tube TRF radios with Types 57, 58, 47 and 80 tubes. I found several there that fitted into that category, so I took note of them. Next, I turned to the *Perpetual Trouble Shooters Manual Vol. IV*, the only Rider volume I own. Coincidentally, many of the TRF sets on my list are in this volume, probably because the year matches the use of those tube types.

I found a circuit that fitted the chassis. It is an Autocrat Model 80 on page 4-4 of Rider's. The company's address is 3855 N. Hamilton Ave., Chicago. The circuit looks as if it had been drawn on the back of a cigarette packet with a carpenter's pencil!

The same page contains a schematic diagram for a 4-tube TRF Model 57C. It appears to me that the Model 80 was created by adding an untuned RF stage to the Model 57C, since both models contain common circuitry and components.

I have sought references to or advertisements featuring the Autocrat, but have not located any. Thus, until something else turns up, I'll still consider this radio as the "Exterminating Co. Five." The challenge of tracing the parentage of such a set is one of the more interesting aspects of our

great hobby. It justifies another aspect — the collecting of radio literature.

Postscript: At a recent auction I purchased a bundle of early 1930s *Radio News* magazines. Scanning through them, I found, on page 244 of the October 1932 issue, an advertisement for Autocrat radios. The ad showed a small plain cathedral set that did not look like the one I own, but which shared the same escutcheon and knob layout. This is the 4-tube New Autocrat Junior, and it sold for \$11.95 as a kit and \$13.95 assembled. In October, there must have been a big advertising budget at Autocrat, as on page 246 an advertisement appears for a 6-tube Autocrat auto radio, selling for \$17.45.

(Ian Sangster, 75 Anawhata Rd., Piha R.D., Auckland, New Zealand)

Ian Sangster is president of the New Zealand Antique Radio Society (NZRS) and past editor of the "NZRS Bulletin." He has had a 31-year career in aviation radio and avionics. A member of the AWA and the Puget Sound Antique Radio Society, Ian makes occasional visits to the U. S. where he enjoys the friendship of many radio collectors.

The Ekco Teapot

BY GÉRARD FAASSEN

As we all know, the English love their tea. And so, it is not surprising that E.K. Cole, Ltd., of Great Britain used a teapot as an advertising gimmick for its popular Ekco Bakelite receivers in the late 1930s. I recently found the teapot, shown in Figure 1, in a flea market in Brussels, Belgium.

In Figure 2, the teapot sits grandly on the Ekco Model AD 65 with original stand in my radio museum. This set was the first round Ekco — a Bakelite, 4-tube superhet which could operate on AC or DC and covered the broadcast band and long wave.

For more information, I refer you to the March 1990 issue of *A.R.C.*, which contains a feature article by Howard Stone on these interesting round radios. As for the teapot, it is definitely an attention getter in my collection.

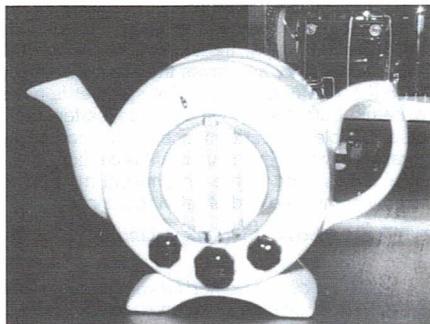


Figure 1. The ceramic teapot made by E.K. Cole, Ltd., was designed like the Ekco round radio.



Figure 2. The teapot's size is evident sitting atop the Ekco Model AD 65 radio.

(Gerard Faassen, Heideweg 1, 5953TL Reuver, Holland)

WITH THE COLLECTORS

More on the Freshman Polydyne

BY TED BABCOCK

The article by Jerry McKinney on the Freshman Polydyne in the June 1997 issue of A.R.C. was very exciting. I also have a Freshman Polydyne radio which I have carefully restored. However, mine is identified by a paper label inside the cabinet as "Model QD-16-S, manufactured by Chas. Freshman Co., Brooklyn, N. Y."

My radio has a more conventional wooden console cabinet with a drop desk-type lid which covers the front panel. In Figure 1, the front cover lid is open, revealing the Polydyne dials. Under the large tuning knob is a metal label stating, "Polydyne Screen Grid, licensed by RCA." The cabinet front is split walnut veneer with a beautiful grain. The speaker is only 8 inches in diameter, not the 10 inches of the McKinney set.

I located the Model QD-16-S schematic in Rider's Volume I, Freshman page 1-11. It is identical to the schematic of Figure 5 in the article. I was taken aback by the use of 5 separate filament windings. This arrangement is very unusual and may indicate the early development of AC power supplies where isolation of each filament circuit was thought necessary.

My chassis restoration required much more work, since the entire high voltage section was faulty and required replacement parts. I continue to use the original power transformer for the fila-

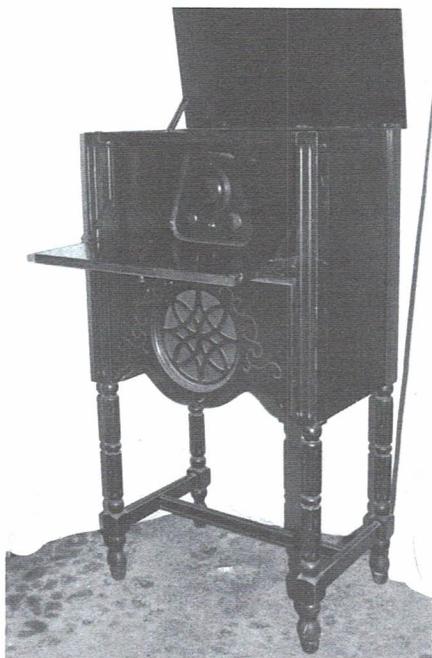


Figure 1. The Freshman Polydyne shown with the front drop lid and top lid open.

Even More on the Freshman Polydyne

BY ROBERT J. MacCULLOCH

The Polydyne described in the June 1997 issue of A.R.C. uses a Type UX222 tube because it is a tetrode and has more gain than the Type UX226 triodes. The Type UX227 is used as a detector with an indirectly heated filament to reduce hum, and the UX171A is the push-pull output tube developing approximately 0.25 watts output. Jerry McKinney was lucky to find that the power transformer was not burned up because those old electrolytic filter capacitors used to short out and the transformer was not fused. A transformer like that, having 5 filament windings and a center tapped HV winding, would be very expensive. The Type UX222 was actually a battery tube, the forerunner of the 24A.

Robert J. MacCulloch, 9963 Ramona, Bellflower, CA 90706

ments only, and have disconnected the high voltage wires. I added a separate transformer for the high voltage and the filament of the Type 80 tube.

The HV choke and the filter capacitors were also replaced, as was the speaker. My set does not have the output transformer shown on the Rider schematic, but drives the speaker directly from the 71A output tube. The speaker is not a dynamic, but is the high-impedance, battery radio type. The playing performance is quite poor in my rural area, which has limited AM reception. However, this seemed to me an unusual model and worthy of my time and effort in restoring.

(Ted Babcock, 163 Long Island Dr., Moneta, VA 24121)

Ted Babcock has worked for various aerospace companies as an electronics engineer for 37 years. He and his twin brother Larry, who has written various articles for A.R.C., are longtime collectors. Ted specializes in early battery and AC radios, especially Crosley and Stromberg-Carlson.

WITH THE COLLECTORS

Jackson Bell Model 62 with Swan Grille

BY RICHARD ARNOLD

Jackson Bell, a southern California company in business from 1926-1933, advertised its 1930 line of Midget (cathedral) radios in a 1930 edition of *Radio Doings* magazine. One of those advertised was the Model 62, a TRF using 6 tubes — 4 Type 24s, a 45 and an 80.

The Model 62 came out in at least three cabinet designs. One style had a slanted-top, with a rising sun and extended rays grille. The other two familiar to me were what we now call “swan grille” radios. The slant-top version is not all that popular today, but the “swans” are considered high-end cathedrals. I have seen them advertised* in A.R.C. for \$350 on up.

I purchased the radio shown in Figure 1 at an auction about five years ago. I paid \$260 for it back then. It has a seated swan with the tail feathers going up and cascading over the swan's back (see Figure 2). The scalloped-draped-looking affair under the grille looks like burl maple.

The second swan design is similar except the swan's body is higher up in the grille, the tail feathers flow downward, curve inward, and then up in a more intricate and, I think, delicate pattern. The Jackson Bell Model 62 measures only 12½ x 15 x 14 inches.

Jackson Bell was making between 120-175 sets per day. The radios sold for \$59.50. Back during the Depression people had very little money, but a radio was considered a necessity. People managed to find the money to purchase at least one radio per household.

References:

Jackson Bell Service Notes.
Paul, Floyd. *Los Angeles Radio Manufacturing – The First Twenty Years (1922-1942)*. Glendale, Ca.: Floyd Paul, 1988.

(Richard Arnold, PO Box 275, Lone Grove, OK 73443)

Richard Arnold has been collecting radios since 1985. His interest is primarily in cathedrals and

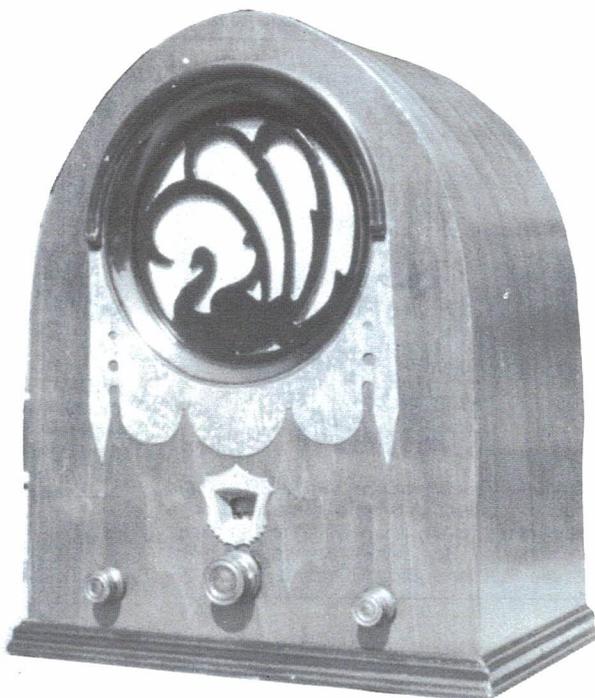


Figure 1. A Jackson Bell Model 62 with a swan-design grille.



Figure 2. Detail of the Jackson Bell swan grille.

1920s battery sets, and his collection ranges from crystal sets to a 1928 American Bosch in a Pooley cabinet. His prize is the 1932 Jackson Bell Peter Pan featured in the June 1991 A.R.C.



PHOTO REVIEW



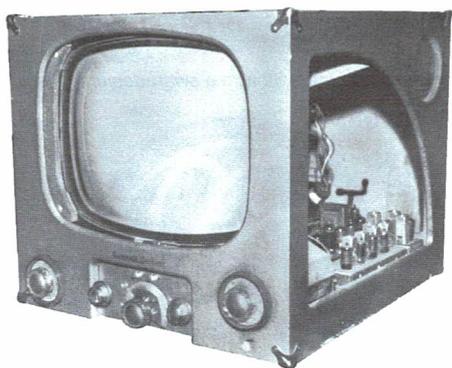
This column presents in pictorial form many of the more unusual radios, speakers, tubes, advertising, and other old radio-related items from our readers' collections. The photos are meant to help increase awareness of what's available in the radio collecting hobby. Send in any size photos from your collection.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



TOWER CASTLE CONE SPEAKER – This unusual hand-painted cone is mounted on a heavy metal frame. It is working and in excellent condition. Has anyone else seen one like it? (*Jim Haskins – Bloomington, IL*)



WECCO CRYSTAL SET – This 1925 Stowell model, made by the William E. Cheever Co., 90 Arlington St., Edgewood, Rhode Island, has a top lid that opens for access. The dimensions are 7 $\frac{1}{4}$ " x 10 $\frac{3}{4}$ " x 6 $\frac{3}{4}$ ". (*Ed Bell – Raleigh, NC*)



SETCHELL-CARLSON 155 SERIES CHASSIS – This mid-1950s shop test jig used "unitized" modules for each section of the receiver; audio, IF, vertical, etc. This was unique for its time. (*Guy Forstrom – Quinnesec, MI*)



STROMBERG-CARLSON MODEL 240R – This elegantly curved cabinet console is big brother to the mirror-topped Model 231-R chairside. Both of these deluxe radios were manufactured in 1937. (*Claude Chafin – Independence, MO*)

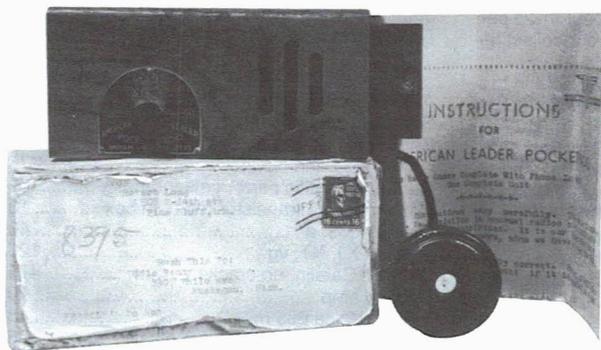
PHOTO REVIEW



NZERU 8 TRANSISTOR AM/SW RADIO – This set is very rare. It has a wooden case and was made in Africa (Malawi) in 1969 by a company started, owned, and operated by an American. (Ken Greenberg – Skokie, IL)

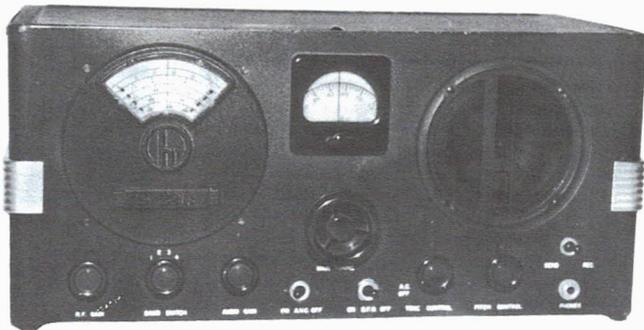


WARWICK MODEL 45, SERIAL #10046 – Warwick Mfg. Co., Chicago, Ill., produced this Art Deco model, ca. 1933. It is in original, mint condition, including a wooden back. This AC/DC TRF set uses a resistance line cord with 4 tubes — Types 12Z3, 43, 6D6, and 6C6. (Rod Kennedy – Moraga, CA)



AMERICAN LEADER POCKET RADIO – This crystal set is complete with earphones which fit into a compartment on the left side of the cabinet. Note the original instructions and the shipping carton with its 16-cent stamp. (Harry and Toni Blesy – Hinsdale, IL)

HALLICRAFTERS MODEL S-22R – This early 1940s Skyriider Marine can tune from 110 kHz to 18 MHz. The AC/DC circuit uses 8 tubes and a ballast. (Doug Buskey – Mansfield, OH)





AUCTION REPORT

Childers & Smith Radio Auction Lionville, Pennsylvania — October 22, 1997

CONTRIBUTED BY RAY CHASE

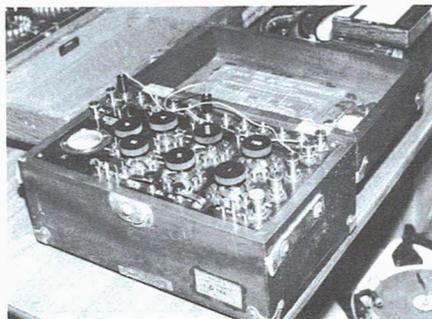
The semi-annual Childers & Smith radio auction was held on October 22, 1997, at the Lionville Fire Co. social hall in Lionville, Pennsylvania. In addition to radios, mechanical music devices and a huge quantity of old electrical measuring equipment from the University of Delaware Physics Department Electrical Measurement Laboratory were included. Among the latter items offered were galvanometers, rheostats, shunts, meters, bridges and standards, many in fine wood-encased cases. A number of Leeds & Northrup (L&N) products were included. Since many items were last minute additions, the catalog provided was incomplete.

A large quantity of 1940s and 1950s plastic radios drew little interest. Fifty-eight of these were sold in 34 lots for a total of \$75, or about \$1.25 per radio — a good bargain, if that is your collecting interest.

Approximately 225 radio lots were sold in the first two and a half hours of the sale. Among the highlights were a Crosley XJ selling at \$125, a DeWald Catalin at \$475, a large Capehart 112-2F radio/phono console with the old FM band at \$275, an Emerson CL-256 — the violin-shaped "Strad" — at \$425, and a Garrod RAF Reflex at \$130. A 10 percent buyer's premium was in effect, and that should be added to the listed prices below. Prices have been rounded up to the nearest dollar.

g=good, vg=very good, f=fair, p=poor, NT=no tubes, WT=with tubes, N.I.B.=new in box, PS=power supply, wk=working, L&N=Leeds & Northrup

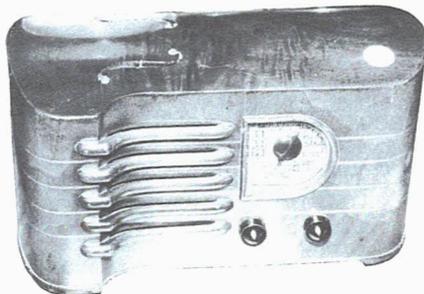
Arvin 444 midget, metal, wk, vg \$60
Atwater Kent 35, NT, f 25
Atwater Kent 36, w/PS 100



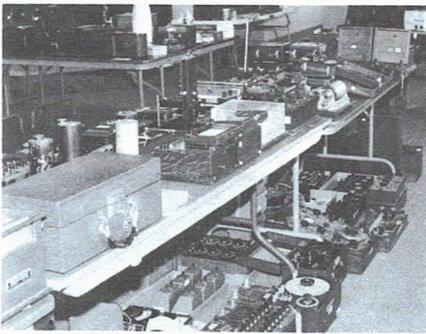
This elaborate decade testing set was one of many from the University of Delaware Physics Department.

Atwater Kent E speaker, g	35
Benrus clock radio, nice	23
Capehart 112-2F radio/phono console, old FM band	275
Central Scientific mirror galvanometer	65
Coke machine transistor radio, in box	13
Crosley 635, g	40
Crosley XJ, NT, vg	125
DeWald Catalin, no cracks	475
Dynaco amp	10
Electro-Voice 605 mike	43
Emerson 149, ivory & brown plastic, vg	75
Emerson 512	13
Emerson CL-256 "Strad" radio	425
Executone table mike, g	13
Fifty-seven Chevy transistor radio, modern	33
Force hi-fi speakers, (2)	8

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.

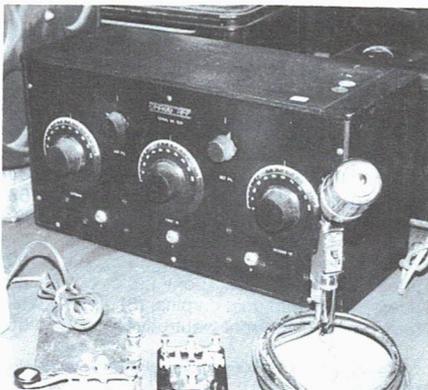


This classic Emerson Model CL-256 violin-shaped radio, called the "Strad" (for Stradivarius), sold for \$425.



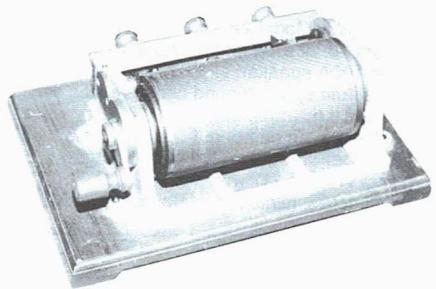
An impressive array of laboratory electrical instruments shared the spotlight at this auction.

Freed-Eisemann battery set in console	50
Garod RAF 3-dialer Reflex, NT, vg	130
General Radio decade box, (2), g	25
General Radio slant-front impedance bridge, wood case	10
General Radio variable inductor, wood case .	20
Getty radial tire transistor radio, (3), N.I.B.	33
Gorilla transistor radio	5
Invicta midget, plastic, white	8
Jackson tube tester	13
Jewel clock radio, brown	3
Jewett horn speaker, large	95
Klerman Inst. Co., Washington, DC, medical diathermy machine, wood case, g	55
Knight transistor radio	15
L&N, adjustable meter shunts, (2), Rubicon, (1) ..	15
L&N decade capacitor, (2), vg	28, 30
L&N decade resistance box	8
L&N potentiometer, large wood case	35
L&N potentiometer, wood case, vg	18
L&N small decade box, wood case	10
L&N small potentiometer	15
Magnavox transistor radio, w/leather case	10
Marconi Victor Voice records, telegraph training set	35
Mitchell Lumitone lamp radio, poor shade	90
Panda Bear transistor radio	10
Peerless cathedral radio speaker	13
Philco 89 cathedral, vg	75
Philco 89, g	60



This Garod Model RAF 3-dialer sold for \$130.

Philco Jr. cathedral, g	70
Philco semi-cathedral, 4-band, wk, g	180
Philco Type 630 mike	18
Queen decade box, wood case, vg	55
Queen potentiometer	8
Rawson flux meter, (2)	13
Rawson meters, (2) multimeters, (1) fluxmeter ..	18
RCA 100A speakers, (2), f	20
RCA 106 tapestry speaker, g	30
RCA Nipper picture on tray	5
RCA Radiola 16, NT, g	28
RCA Radiola 18, WT and hood	60
RCA Radiola 18, WT and hood, restored	40
RCA Radiola 60, WT, g	60
Rubicon bridge, wood case	25
Rubicon potentiometer	15
Rubicon potentiometer, portable, wood case, vg ...	23
Rubicon potentiometer, wood case, vg	20
Silvertone 6002 midget, metal case	25
Silvertone 6401 midget, metal case	110
Simpson small voltmeters, (5)	5
Steinite early AC set, WT and paper	20
Stromberg-Carlson hi-fi amp and tuner	75



One of the roller drum-type variable resistance units from the test equipment inventory.

Telegraph key J-38	8
Transistor radios, small, sold in 10 lots, (34) ..	63
Utah horn driver	23
Variable resistance, roller drum type, (2)	45, 65
Western Union keys, (2), f	28
Western Union telegraph	23
Westinghouse "refrigerator" radio, white, restored, vg	33
Westinghouse Aeriola Sr., WT and paper, f ...	100
Westinghouse tombstone	70
Weston AC ammeters, wood case, (2)	20
Weston AC voltmeters, wood case, (2)	8
Weston ammeter shunts, wood case, (4)	15
Weston DC ammeter, wood case	5
Weston DC voltmeters, oak cases, (2)	18
Weston multi-voltmeter, very old	40
Weston small shunts, wood case, (5)	20
Zenith Royal 500, red	30
Zenith table radio, wood, rainbow dial, g	15
Zenith Trans-Oceanic, military, brown	70

(Ray Chase, 1350 Marlborough Ave., Plainfield, NJ 07060)

(Childers & Smith Auction Co., Harold Smith, Annette Smith and Dennis Childers, Auctioneers, 1415 Horseshoe Pike, Glenmore, PA 19343) (610) 269-1036.

Hahn Auction

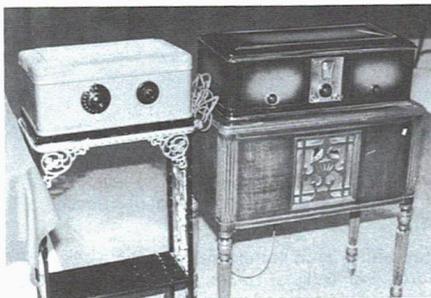
Klecknersville, Pennsylvania — September 20, 1997

REPORTED BY RAY CHASE

The Hahn Auction Company held a general auction at Klecknersville, Pennsylvania, on September 20, 1997. A small collection of radios, most of which had been functionally and cosmetically restored, were included.

e=excellent, vg=very good, g=good, f=fair, NT=no tubes, WT=with tubes, unk=unknown

Atwater Kent 20, compact, NT, g	\$60
Atwater Kent 33, WT,vg	105
Atwater Kent 40, WT, restored, vg	45
Atwater Kent E speaker, g	30
Atwater Kent E2 speaker, g	28
Drake Cyclopedea, 12th ed., 1946, vg	1
GE K-63, 3 tubes missing, g	100
Metal stand, ornate, vg	95
Philco 511, w/Model 221 speaker table, e	60
Precision 10-12 tube tester, w/paper	10
Radiola 100A speaker, f	10
RCA Institute spring-wound code practice set, w/paper, g	11
RCA Radiola 18, no hood, f	40
Tube(s): DeForest, (3); (1) DV3, (2) DV2, (1) g, (1) dud, (1) unk	10
Tube(s): octals, miniatures, (13) boxes	ea. 1-2



The Atwater Kent 40 and ornate metal stand (left) and the Philco 511 with the Model 221 Console Grand speaker table (right).

Weston 519 test set, w/paper	8
Wireless Tel. & Tel., book by Morgan, 1915, vg ..	1

(Ray Chase, 1350 Marlborough Ave., Plainfield, NJ 07060)

Hahn Auction Co., 102 West Main St., Bath, PA 18014. (610) 837-7140

Gilbert L. Finne Radio Auction

Edison, New Jersey — October 11, 1997

REPORTED BY RAY CHASE

The Gilbert L. Finne radio auction was held in Edison, New Jersey, on October 11, 1997, with Art Hanna as auctioneer. Gil Finne was a consummate collector, and radios were one of his collecting hobbies. When he died, it took five days of sales to dispose of his estate. Much of the radio equipment was dirty, and some had suffered the effects of poor storage; nonetheless, there were a few exceptional items. There was no buyer's premium at this sale.

g=good, f=fair, p=poor, vp=very poor, w/=with, w/o= without, WT=with tubes

Atwater Kent 20 big box, WT, f	\$45
Charles Leverage voltmeter and ammeter, in wood case, early, vg	30
Crosley Trirdyn, p	25
DeForest DT-600 Everyman crystal set, w/phones, w/o crystal or holder, dirty but w/good label ...	330
Double button desk mike, vg	280
Emerson 7" table TV, g	30
Freed-Eisemann NR6, WT and paper label, g ...	70
Garod RAF3-dialer, w/meter, g	30
GE console, legs cut off, f	40

Holtzer-Cabot speaker driver	15
Home brew 1-tube battery set, NT	20
Home brew battery set, WT, (3)	40
Keys, headphones, telegraph parts, (box)	35
Magnavox horn only, no base	15
Magnavox horn, large	50
Magnavox M-4 horn	50
Marconi of Canada promotion pamphlet, early, and Mesco telegraph pamphlet	33
Monarch cathedral, vp	20
Philco 630X console, slant speaker grille	35
QSL cards, (100±)	30
RCA Radiola 18, WT and table speaker, g	55
RCA Radiola 60 cabinet only, f	18
RCA Radiola 82, vg	80
RCA Radiola UZ horn, g	55
Stewart-Warner 3-dialer, WT, g	40
Stromberg-Carlson pedestal cone speaker, cone gone	100
Tube(s): Globe, 26, etc., (box)	65
Tube(s): VT-1 with gold on pins, (5)	150
Ware Type T slant-front Neutrodyne, f	90

(Ray Chase, 1350 Marlborough Ave., Plainfield, NJ 07060)

WITH THE COLLECTORS

The Wincharger on the Farm

BY DICK DESJARLAIS COMPILED FROM INFORMATION PROVIDED BY HERB ELTZ

The photo of a "Wincharger" in a July '96 A.R.C. auction report prompted Herb Eltz to share his memories of the "good old days" when windchargers made radio reception a reality down on the farm. (Editor)

Herb Eltz recalls: "Before World War II, few rural areas were electrified, and that is when most windchargers came into use. Windchargers were of little use to city folks, but they were instrumental in bringing at least some limited electrification to us farmers. We had more wind than anything else in those days. Some of us made our own windchargers from scratch, but there were also companies selling complete units, or plans and parts to build your own."

One of the most popular makes was made by the Wincharger Corporation in Sioux City, Iowa, but other companies were also in the business.

Notwithstanding the Zenith logo on the vane of the Wincharger shown in Figure 1, it was not manufactured by the Zenith Radio Corporation. Zenith made many battery sets for farm use, as noted in the ad in Figure 2; however, Winchargers provided the electrical power for many of the farm radios made



Figure 1. This Wincharger with the Zenith trademark sold in the April 1996 Vintage Radio Auction in Marshalltown, Iowa, for \$400.

"Using Frepower from the air through an automatic, controlled roof-mounted machine which keeps your battery charged, we built the Zenith Farm Radio with special design for this particular service."

(Excerpted from the Zenith ad below.)

by Zenith and other radio manufacturers.

Companies like Jacobs made big and expensive 32-volt and 110-volt farmpower plants, but the relatively inexpensive models made by Wincharger and its competitors were all you needed to bring radio into the country home.

Reference:

Country Home Magazine, January 1936.

(Dick Desjarlais, c/o A.R.C., P.O. Box 2, Carlisle, MA 01741; Herb Eltz, 4265 S. Bladen Ave., Juniata, NE 68955)

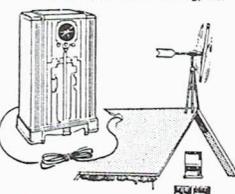
"NEWS" IN JUNE— LANDSLIDE IN DECEMBER OVER \$3,000,000 WORTH OF ZENITH FREPOWER FARM RADIOS NOW SOLD

Don't waste the wind... Ask the Zenith Owners

**50c A YEAR
POWER OPERATING COST A BIG HIT!
NO DRY BATTERIES**

Europe, South America or the Orient—every day or money back—all American Stations, too.

Zenith Farm Radio performs like our own city set. Far or near—clean and clear reception. All the famous Zenith features—Black Dial, Split Second Tuning, etc.



● Last spring, after twenty years of research, Zenith announced a new, economical type of radio for the country home without electric power. Up to the present over three million dollars worth of Zenith Farm Radios had been sold. At the lowest power operating cost on record—50 cents a year—this remarkable set brings the whole world of entertainment to your home. Using Frepower from the air through an automatic controlled roof-mounted machine which keeps your battery charged, we built the Zenith Farm Radio with special design for this particular service. Always a pioneer, Zenith has opened and is again first, with the economical Farm Radio and you may depend upon it that the name Zenith on the set you buy is your protection against a "make-shift" or substitute. Be safe—Buy Zenith.

NO POWER LINES—NO RUN DOWN BATTERIES

**SPECIAL PRICE ON
WINCHARGERS TO
ZENITH BUYERS
\$10.00**

Zenith offers 8 Frepower Farm Models, 22 different 32 volt Models and 40 AC City Models.

ZENITH RADIO CORPORATION, CHICAGO
for 20 years makers of fine radios.

Figure 2. Zenith was a pioneer in developing farm radios that could operate with cheap wind power.

RESTORATION TOPICS

More On Type 1L6 Tube Substitute

BY ROBERT PERLSTEIN

We always hope that an article will elicit a response from readers. In this instance, we're glad to report that Robert Perlstein and Jim Farago were inspired by the Melvin George and Fred Gordon articles in the January 1997 A.R.C. to expand on the subject of a tube substitute for the Type 1L6. (Editor)

After reading Melvin R. George's article, some of you may wonder why Zenith used the 1L6 pentagrid converter tube instead of the popular 1R5 in the Trans-Oceanic portable radio. Virtually every battery portable based on 7-pin, miniature, 1.4-volt, 50-milliamperere tubes uses the 1R5 as the local oscillator/mixer. Was Zenith simply attempting to be unique or was it trying to establish a different tube type as a standard converter tube for battery portables?

Zenith used the 1R5 tube in a number of its battery portable AM sets. While I have not perused the tube lineup of every one of Zenith's battery portable radios that use 7-pin miniature tubes, of the several I own, only the Trans-Oceanic uses the 1L6. There are technical reasons for this use.

REASONS FOR USING THE 1L6

The Trans-Oceanic portable covers several shortwave bands, as well as the conventional AM broadcast band. Pentagrid converter tubes, including the 1LA6 and 1R5, display some nasty traits when implemented as mixer/oscillators. Their conversion transconductance drops rapidly at frequencies higher than the broadcast band, they produce prodigious quantities of electrical noise, and they tend to have poor oscillator isolation

(probably the nastiest of the traits associated with pentagrid converters).

The electrical noise stems not only from the tube functioning as an oscillator, but also from the tube's mixer or converter action. The conversion (or mixer) noise becomes a factor limiting receiver sensitivity at the higher frequencies (15 MHz, 18 MHz and above). At the lower radio frequencies — for example, the AM broadcast and the first two Trans-Oceanic shortwave bands — atmospheric noise tends to define maximum practical receiver sensitivity instead.

Since filament and plate supply power is at a premium in a battery-powered tube radio, minimum tube count is usually a must. Therefore, every tube in a battery-powered radio must contribute to receiver performance. If the converter tube can add to "signal gain," so much the better, especially on the two highest shortwave bands in the Trans-Oceanic radio.

The Zenith Trans-Oceanic radio uses a single 455 KHz IF (intermediate frequency) amplifier stage. As the receiver is tuned to ever higher frequencies, the ratio of IF to received frequency increases. Thus, the IF becomes an ever decreasing portion of the input frequency. If the receiver's local oscillator drifts or is "pulled" off frequency, the signal the radio is tuned to may suddenly fade, disappear, or even seem to be modulated by other than typical prevalent atmospheric conditions.

Pentagrid converters tend to exhibit decreasing oscillator isolation as the conversion frequency increases. Thus, the local oscillator frequency will become increasingly sensitive to external factors, such as the level of AVC voltage (if the mixer stage

Other Substitutes

In the following excerpt, reader Jim Farago has also supplied comments regarding substitutes for the Type 1L6.

The Type 1U6 tube is my favorite for direct replacement of a 1L6. However, it is necessary to add a 60Ω, ½-watt resistor between pins 1 and 7 of the 1L6 tube socket. This change is required because the 1L6 filament is rated at 0.05 amp, and the 1U6 filament operates at 0.025 amp. The 60Ω resistor bypasses the "extra" 0.025 amp of current, allowing the 1U6 to work in place of the 1L6.

My experience with use of the 1R5 as a substitute for the 1L6 is that the 1R5 works only on the BC and lowest SW bands.

For loktal substitutes, either a 1LA6 or a 1LC6 will work. These tubes have compatible pin connections and similar characteristics.

My friends tell me that a 1A7GT will work much better than the loktals. The 1A7GT is an octal-based tube with a grid cap — a configuration that would make substitution a bit difficult.

(Jim Farago, 4017 42nd Ave., SO, Minneapolis, MN 55406-3528)

gain is adjusted by AVC voltage), mixer input tuning (or actually mixer input impedance shifts), plate supply voltage, filament voltage, and input signal level. Thus, as a pentagrid converter-based receiver functions at higher frequencies, its tuning will tend to become increasingly unstable.

All of the above traits are exacerbated by the fact that tubes powered by zinc-carbon dry cells must function adequately when their filaments are energized by less than 1.4 volts and at a low plate supply voltage. This would be when the A and B batteries begin to run down. Zinc-carbon dry cells exhibit a somewhat linear voltage drop as they discharge. As the filament power to the pentagrid converter tube drops, the converter tube's characteristics begin to change; in fact, more than if just the plate voltage falls. Therefore, the alignment of many battery sets will seem to change markedly as their batteries discharge. This change would be most noticeable on the shortwave bands.

The 1L6 tube was designed to address the above problems. Its design provides better oscillator isolation (read stability) and exhibits less performance "drift" as its filament efficiency decreases. Since Zenith designed its Trans-Oceanic radios to receive 15 and 18 MHz, any local oscillator instability at those frequencies would be very noticeable and seriously detract from the receiver's excellent reputation as a shortwave radio.

DESIGN EVOLUTION

It is interesting to note the design evolution of the Zenith Trans-Oceanic radio from the first Model 7G605 to the last 600 series sets. The 7G605 uses a separate oscillator tube and a 1LA6 mixer tube. The 1LA6 is a pentagrid converter tube like the 1R5 and 1L6, but in the 7G605 Trans-Oceanic, its oscillator function is disabled. It is quite possible that Zenith found the nasty traits of pentagrid converter tubes to be objectionable on the shortwave bands when the 1LA6 was also functioning as a local oscillator.

The separate oscillator tube at least alleviated this poor oscillator isolation trait and, therefore, improved receiver tuning stability. Curiously, the 1LA6 pentagrid converter tube functions as the oscillator tube, as well as the mixer tube, in Zenith's first postwar Trans-Oceanic.

I have not investigated the circuitry of the Trans-Oceanic "knockoffs." Perhaps they use the 1R5 tube as the converter, and it functions acceptably. Hallicrafters used the 1R5 as a converter (mixer and oscillator) in its S-39/R-80 portable shortwave radio, and also used two IF stage amplifiers for added sensitivity.

PERFORMANCE

So, if you decide to "retrofit" your Trans-Oceanic or similar battery portable with the 1R5 converter tube, be on the lookout for noticeable changes in receiver performance, such as noise increase, lower sensitivity, and tuning instability, especially on the higher frequency shortwave bands.

I issue a disclaimer though, as I have not compared the actual performance of the 1R5 to that of the 1L6 under laboratory conditions. Nor have I compared the performance of the 1LA6 to the 1R5 and 1L6. I have not set up a test circuit to compare the level of mixer noise, oscillator isolation, etc., in order to investigate the actual performance of the 1L6 versus the 1R5 and other pentagrid converter tubes. Furthermore, I have not compared Trans-Oceanic radios working with a 1R5 versus a 1L6.

So, in the end, there may be no noticeable performance degradation in a Trans-Oceanic retrofitted with a 1R5 converter tube.

(Robert Perlstein, P.O. Box 642, Old Orchard Beach, ME 04064)

Robert Perlstein, an engineering consultant, holds an Amateur Extra Class license (W1IV). His collecting interests include portable battery radio sets, as well as vintage amateur radio and sound reproduction equipment.

Finding The Motorola 56T1

BY DAVID M. DAVIES

Another morning on the road, up at dawn – what lies ahead? At 10 o'clock, we begin stopping. Will it take four days to get home? Somewhere in rural Tennessee, 50 miles from the expressway, is an antique mall we've somehow missed.

In the door, down the aisle, looking, looking, looking... There! On the bottom shelf, a camera from the 1950s (but I don't need any more cameras). It's a pretty nice case, though.

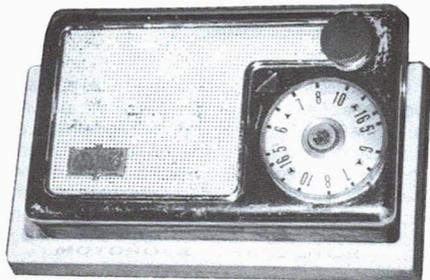
A minute later the Mrs. says: "Did you see the radio?" I reply: "Can't find any." She adds: "But the camera tag says: Radio – \$15." So I go back to check.

The camera case has, very faintly, the impression Motorola on it. Aha! I recall Mr. Breed saying in *Novelty Radios*: "...pick up any item that could be a radio and inspect it." Anxiously opening the case, I find a Model 56T1 – Motorola's very first transistor radio!

The Mrs. says: "Pay the saleslady before they change their minds, and let's get going to find some dolls – you owe me a lunch."

How many of you have passed up that "camera" case?

(David M. Davies, 701 W. Albee Rd., Nokomis, FL 34275)



The Motorola Model 56T1 transistor radio.



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.

Thanks From a Non-Subscriber

Dear Editor,

Thank you so much for responding to my son's request for information on the two old radios we have. They (an Aeriola Sr. and a Radiola RC) have been kicking around for probably 50 years and have made 17 moves all over the country. I'm not sure that I'm ready to let them go, but thought that I'd check out the market.

Also, thank you for the free copy of your magazine. I was unaware that so many clubs and collectors existed. In the early 1920s, my dad sold a few radio sets to farm families in North Central Kansas to earn some money to go to college.

Dan E. Huston, Sequim, WA

Each month, we receive a number of inquiries, like the one described above. These inquiries are the result of our advertising in over a dozen magazines and on our Web site, as well as the occasional mention of A.R.C. in magazine and newspaper articles. We respond to these inquiries from non-collectors with a free sample copy and, if possible, an answer to their questions. This is one of the many services A.R.C. performs. The result often is a piece of history being offered to an A.R.C. subscriber, rather than to the local antique dealer or the town dump. (Editor)

Thanks From a Subscriber

Dear Editor:

I have received a good response to my free ads during the past year, and I appreciate the trust and honesty shown by the parties involved. Thanks!

Leroy Neal, Dyersburg, TN

Capacitor Article Kudos

Dear Editor:

Just a note to thank you for your exceptionally lucid treatise on capacitors. I've posted Part 1 from December's A.R.C. above the service bench. It summarizes what I know already — or ought to know — but would have to source from a dozen texts to prove.

Ray Bintliff's kind of submission is what makes A.R.C. very worthwhile. I'm looking forward to Part 2.

Kent Waterman, Oakland, CA

Dear Editor:

Good articles on various aspects of radio appear in every issue of A.R.C., and I can't give all the authors a pat on the back. I just read and learn something from them. Every once in a while one pops up that's outstanding, and I have to give a "thank you" for it. I just finished reading Ray Bintliff's Part 1 of the capacitor article in the December issue. Very well done and informative, and easily understandable to a self-taught and non-high tech collector like me. I'm looking forward to Part 2.

Jerry Larsen, Elmwood Park, IL

On New Communications Technology

Ads on the Internet!

Dear Editor:

Have you any plans to put the whole magazine on the internet with a charge for access? This would seem to be a solution whereby everyone would have access to the ads at the same time, rather than some getting it in 24 hours and others waiting a week or two. I'm sure you get mail like this every day, but it really is frustrating to know that other people have the ads days ahead.

Apart from that, A.R.C. is a great publication, and I look forward to receiving it each month.

Roger Hart, Morrisburg, Ontario, Canada

Yes, we do receive a number of complaints on the time it takes for the U.S. Postal Service to deliver A.R.C., and yes, the Internet as a delivery option is a frequent suggestion. However, the "everyone" who, in your comment, "would have access to the ads at the same time" would be those who have Internet access — currently about 20 percent of our subscribers. But, after all, we do offer a delivery option to about 25 percent of our subscribers — those who choose First Class Mail delivery. So, a precedent exists.

Access to the Internet is growing as more and more individuals purchase home computers, gain web access through their TVs, and take advantage of free access to the Internet at public libraries.

As we stated in our January "Editor's Comments," we continue to consider ways to embrace the new communications technologies fairly. (Editor)

Keep the Hard Copy!

Dear Editor:

First, I'd like to commend you and your staff for the fine job done on A.R.C. I've been a subscriber for about five years and look forward to its monthly arrival. I noticed in your *Editors Comments* column that you would like our thoughts on embracing new communications technologies. You have many options, but the one thing you cannot do is put the entire contents of A.R.C. on line in the current month. While the speed of receiving this information would be nice, it would be the deathknell of the hard copy.

Please understand how handy it is to slip A.R.C. under your arm or in a pocket and read it where computers just aren't practical. I don't relish the idea of trying to make my five children understand why Dad needs the computer and the phone line on that special night of the month.

Well, that's enough from me. Use your best judgement and keep up the good work.

Jeff Arndt, Manitowoc, WI

I expect that if we ever do offer Internet access, it will be for subscribers only, and they will continue to receive the hard copy as well. (Editor)

More on Minerva

Dear Editor:

I enjoyed Alan Douglas' article on the Minerva Midget and perhaps can add to the accumulated information. In early 1929, Minerva radios were advertised as products of the Miller-Welles Co., Inc, 14-20 West Kenzie St. in Chicago. Additionally, the company was seeking agents for Minerva sets and for Marwood dynamic speakers. Could it be that the West Kenzie St. address was that of the "mystery" factory?

Morgan McMahon's book, *Radio Collector's Guide — 1921-1932*, lists Minerva sets in the 1925 through 1930 section, and more in the 1931-1932 section. The later listing includes three 4-tube models. The first has a tube complement of (2) 36, (1) 37, (1) 38 tubes and the second has the National Union (NU) tubes (2) 64, (1) 68, (1) 67. The third 4-tube model has a significantly different tube lineup: (3) 36 and (1) 41. It is likely that the second listing is that of the AC-DC set under discussion.

Mr. Douglas lists a Minerva Co. at 10 North Clark St. in Chicago. It seems unlikely that more than one Minerva manufacturing company could have been in business in the Chicago area in a span of seven years. Possibly, the company either moved at least once or perhaps had separate sales and manufacturing addresses. Either the Minerva line or the brand name might have been sold to a different manufacturer — also a possible explanation of the different addresses.

There doesn't seem to be any connection between these early Minerva sets and those of the later Minerva Corporation of America. Perhaps other readers of A.R.C. will be able to add to the accumulated information on this first Minerva brand.

Dale Davenport, Fort Smith, AR

February Photo Review IDs

Dear Editor:

In the February 1998 *Photo Review*, Chuck Regan requested information about his Everbest Model TW 56H radio. This is a 1947 or 1948 Crosley Model 58TL (see Howard Sams' *Radios of the Baby Boom Era*, Vol. 2) or a 57TL (see Bunis, Vol. 4), which I have. Hope this helps.

Thomas Stockton, Waco, TX

Dear Editor:

In the February 1998 *Photo Review*, W.R. Cobb asked for the model number for his unusual Spartan push-button, tombstone radio, which has neither dial nor tuning capacitor.

The set is a Model 738, and the schematic page from Riders, Volume IX, page 9-13, shows the push-button trimmer assembly, the chassis parts layout, the chassis-mounted Type 6E5 tuning eye used in setting up the push buttons, and the clock and switch assembly, which allows the radio to be turned on manually or automatically with the built-in timer.

Rob Vanderwarker, Steilacoom, WA

Permeability Tuned TV Boosters

Dear Editor:

Just finished the article on permeability tuning in the February A.R.C. To clear up the "hazy" recollection of TV boosters, I have a Silvertone Cat. No. 6745 booster from the 1950s, which uses permeability tuning. It actually has separate tuning sections for channels 2-6 and channels 7-13. It uses two 6J5 tubes, and it still works after all these years.

Richard Gleitz, York, PA

More on Crocker-Wheeler

Dear Editor:

In reference to the article on the Crocker-Wheeler crystal set in the February issue, this company was a major manufacturer of heavy electrical equipment in the early part of the century. Industrial motors and generating equipment were its specialty, and its generators were used in many municipal and street railway power stations. I have no information about Crocker-Wheeler making radios, or any other consumer-oriented products for that matter, so I would suspect that the crystal set may have been built by someone else, perhaps Adams-Morgan, as Dave Crocker suggests. Perhaps it was simply an ill-fated experiment to broaden the company's product line.

Steve Baron, Lexington, KY

Dear Editor:

I saw the article on the Crocker-Wheeler crystal set in the February issue, and the name "Crocker-Wheeler" sounded very familiar. In the early days of wireless radio, Crocker-Wheeler Co. manufactured motor generators to power the wireless transmitters on many ships of those days. I wonder if Dave Crocker's crystal set was made by this company, as its vintage appears to be of the same age. Perhaps the set was part of a shipboard receiver in the early days.

Harry Cap, Bridgewater, MA

More on Insuring Old Radios

Dear Editor:

In reference to Ed Koment's inquiry in the February 1998 A.R.C. about insuring a radio collection, please be advised that Collectibles Insurance Agency, PO Box 1200, Westminster, MD 21558-0299 will insure radio collections along with other collectibles. Your quote on prices of less than 1 percent of the appraised value is in the ballpark, but this agency does not require an extensive inventory of the collection. The phone number is (410) 876-8833.

Ray Chase, Plainfield, NJ

Dear Editor:

I saw the letter regarding insurance for a radio collection. An insurance company ad appears regularly in *Classic Toy Trains*, but it can be used for any type collection, including radios. The company is American Collectors Insurance, Inc., 385 Kings Hwy., PO Box 8343, Cherry Hill, NJ 08002-0343. 1-800-360-2277.

J. Philpot, South Holland, IL

More On the "Down Under" Article

Dear Editor:

Thank you for the kind words and professional layout of my piece on old radio in Australia. It has already sparked interest and some very convivial conversations via the Internet.

One thing I did not make clear: all the early Australian sets illustrating the article, except one, belong to my friend Ralph Kettle, who kindly gave up an afternoon to make the pictures possible. Anyone interested in knowing more about them, or seeing them on a visit to our national capital, can contact Ralph via the net at mkett@interact.net.au

Your magazine continues to delight, to inform, and especially to put faraway Australians in contact with as agreeable a bunch of blokes as it has been my pleasure to deal with.

Richard Begbie, Bungendore, Australia, rbegbie@trax.net.au



Audio! Audio! by Jonathan Hill

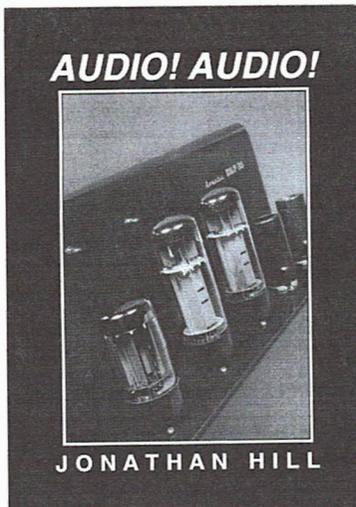
REVIEWED BY CHARLIE KITTLESON

In the world of audio history from the so-called "Golden Era," very few books exist. When I obtained a copy of *Audio! Audio!* by Jonathan Hill, I was pleased to see a compilation of data and photographs covering Golden Age valve hi-fi equipment. What makes this book even more appealing is that it covers early British audio!

Jonathan Hill has a considerable background in vintage electronics. In 1976, he cofounded the British Vintage Wireless Society, which is dedicated to the preservation of obsolete wireless equipment and broadcasting history.

Audio! Audio! covers over 850 different valve amplifiers, control units and early public address equipment from nearly 150 British manufacturers. The well-known ones like Quad, Leak, Lowther, Radford, Tannoy, etc., are featured, as well as ones I have never heard of. Models are listed with basic specifications, valve complements, power ratings, and years of manufacture. Some companies appeared to have lasted only two to three years, and then faded into obscurity.

There are 71 high-quality black and white photographs of your favorites, including the Leak mono and stereo units, early Quad amplifiers, U.S. export models of Heath, Fisher, H.H. Scott and many



more. The book has a glossy color cover and 96 pages.

A few added features in the book are a time-line of audio developments from the invention of the valve to the early transistor era. Hill also has two charts showing the steady rise in valve and valve equipment production from the 1940s to the 1960s when transistors came in.

For vintage hi-fi collectors British audio enthusiasts, and other interested tube heads, *Audio! Audio!* is an excellent reference book for your libraries. It contains information and photographs heretofore not available anywhere.

The very able technical editor of *Audio! Audio!* is John Howes. The book is published by Sunrise Press,

Spice House, 13 Belmont Rd., Exeter, Devon, England EX1 2HF. It is available for \$19.95 in an 11⁵/₈" x 8¹/₄" softcover format from A.R.C. and other A.R.C. advertisers. Please check these sources for shipping information.

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Charles Kittleson is the editor and publisher of "Vacuum Tube Valley," a quarterly publication for those interested in vacuum tube electronics. For more information, write to him at 1095 E. Duane Ave., Suite 106, Sunnyvale CA 94086.

About the Author and the Editor

Jonathan Hill. Jonathan Hill is a freelance writer and publisher. His interest in radio began in the early 1970s with his college thesis on wireless cabinet design, which led to his collecting receivers of the 1920s and 1930s. Among his many books and articles is *Radio! Radio!*, now in its third edition, which covers the British wireless set from its beginnings to the 1960s and includes the transistor radio.

Cofounder of the British Wireless Society, Jonathan is also the organizer of the National Vintage Communications Fair held at the NEC Hall 11 in Birmingham, U.K. A.R.C. will be an exhibitor at this event, which will

take place on May 10. For information, send to NVCF, Spice House, 13 Belmont Rd., Exeter, Devon EX1 2HF. (01392) 411565

John Howes. John Howes is the technical editor of *Audio! Audio!* His knowledge of vintage communications equipment goes back to 1950 and his father's radio and TV shop in Tunbridge Wells. He studied radio and television theory at Brighton College and later joined the family business — Howes of Southborough, Ltd. — in which he is still very active. In the late 1970s, he became hooked on vintage hi-fi after receiving a 1957 edition of the *Hi-Fi Year Book*.

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, l and I (the number one, the capital i and the small L.) Also: 0, O, o, Q and D; r and n; 6, b and G; V, U, u, v and Y; A and R; 5, S and s; 2, Z and z. We try to correct spelling errors, so when using an uncommon word or manufacturer which we might mistake as a more common word or manufacturer, note it so that we do not "correct" it. Editor's annotations are in [brackets].

Advertising is accepted only for early items related to radio, communication, etc. All items must be described fairly; reproductions, reprints and 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 illegally 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.



PERIODICALS

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

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