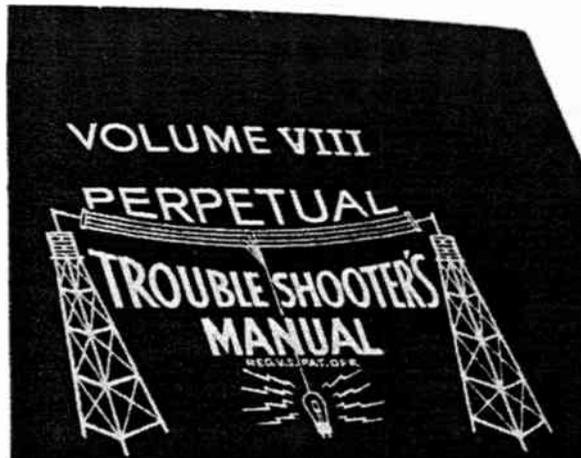


Collecting Radio Peripherals Part 1 - Service Literature

What first attracted you to our fascinating hobby? Your interest undoubtedly stemmed from a radio that happened to cross your path. Maybe it was an old set from the family attic or one that you saw at a friend or relative's house. Maybe you spotted it at antique store or flea market and just had to take it home. That first acquisition whetted your appetite for others, and you soon began acquiring the beginnings of a collection.

Now you've got the bug in earnest, and have begun to haunt garage sales, swap meets and flea markets for more sets. But at this point you've probably started to realize that a serious collector has to be on the lookout for more than just receivers. For example, in order to repair your relics, you need a stock of parts, tubes, service literature and test equipment. Before you can even think of playing most pre-1930's radios, you have to get your hands on accessory speakers and/or headsets. Old catalogues and advertisements in vintage magazines help date your finds and relate them to the era in which they were manufactured. At first, you may be drawn to these radio "peripherals" for their practical value in repairing, dating or playing the sets in your collections. But it's likely that you'll soon begin treating at least some of these accessory items as collectibles in their own right. The parts, tubes, test equipment, literature or advertising begin to add depth to your collection and color to your displays. Eventually, like some specialized collectors, you may become more interested in certain accessory items than in the radios themselves!

That's why, now that our series on the evolution of the broadcast



Rider manuals are easily identifiable by their massive proportions and quaint "antenna and towers" motif.

receiver has been completed, I thought it might be a good idea to spend some time on the "non-receiver" kinds of collectibles. If you are new to the hobby, this will help introduce you to the many such items that are waiting to pique your interest and add excitement to your radio hunting expeditions.

Your Own Schematic Library?

After several years of experience as an antique radio columnist, I can state with authority that most people become preoccupied with radio schematics and servicing literature soon after acquiring their first set. Certainly the majority of the letters and queries I've received are from readers looking for schematics and technical information for their latest finds. Accordingly, I've decided to kick off this series with a discussion of such literature.

Let me hasten to say that owning your own schematic library is not a necessity. There are many individuals and organizations (for example, check the A.G. Tannenbaum ad in this

issue) who will supply you with information on specific radios for a reasonable fee. However, if you have the space and the inclination, it can be very satisfying to build up your own resources in this area.

Rider's Monumental Manuals

A very good way to set about doing this is to keep your eyes open for volumes of John Rider's *Perpetual Trouble Shooter's manual*. Rider began publishing this series some time in the late 20's or early 30's, adding a new volume practically every year with some gaps during World War II. The complete set contains

23 tomes ranging in size from very large to massive, and requiring maybe 8-10 feet of shelf space. (Don't hold me to this measurement, you purists! My set isn't stored all in one place, so I had to guess.)

The series covers virtually every radio released from the start of publication to the early 1950's, when the last volume was published. The individual volumes still turn up regularly at radio meets. Their hefty binders are easy to identify. Most are dark blue with a quaint cover illustration, in silver, of an antenna strung between two towers. However, the volumes were sometimes produced in special editions (and colors) for promotional deals cooked up by tube manufacturers. From a practical point of view, volumes one through thirteen should be highest on your want list. These cover radios manufactured through about 1942, and thus include all of the "golden age" prewar sets. Pick up as many volumes as you can, however. In recent years, there has been growing interest in early postwar radios and, in any case,

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Display Advertising

Rates and size requirements for display advertising are posted elsewhere in this issue.

Contributions

The Radio Collector welcomes the submission of articles, tips, and/or photos covering any phase of radio collecting. We are particularly interested in contributions that will assist those who are just entering our hobby. Submissions will be printed at our discretion and may be edited. Unless special arrangements are made, submissions will not be returned and, if printed, become the property of this publication.

How to Reach Us

To order a subscription, or place an advertisement, write *The Radio Collector*, P.O. Box 1306, Evanston, IL 60204-1306. Please include full payment for financial transactions, including any fee for extra words. Classified ads should be submitted on a separate sheet from other correspondence. We can be reached by phone at (708) 869-5016 (answering machine picks up after 4th ring).

you'll add to the value of your Rider's set by making it more complete.

Cost and Availability

The earliest (one through four or so) and latest (after about volume 16, and particularly 20 - 23) tend to be somewhat rare and expensive. Asking prices for the more common books in the middle of the run fluctuate around fifteen dollars, depending on condition and the mood of the owner. As for the rest, it's whatever the traffic will bear. I had to pay forty bucks for the last volume (21) required to complete my set.

Keep your eyes open for alternate forms of the early books. There is an abridged version of volumes one through five that is cheaper and easier to find than the individual tomes. Or you may be lucky enough, as I was, to locate the combined (and unabridged) volumes one through three offered as a promotion by RCA. It's similar in size and design to the normal Rider books. But the cover is red instead of blue, and is decorated with a vacuum tube instead of the usual antenna-and-towers motif.

See you next month, when we'll have a little more to say about the Rider Manuals before continuing our discussion of radio servicing literature.

MARC F. ELLIS

COMMENTS FROM THE EDITOR

Extravaganza 94

If you attended EXTRAVAGANZA 94, the MARC - AWA meet at Lansing, MI, earlier this month, you may have spotted the Radio Collector booth. I had an opportunity to chat with readers David Poland (Columbus, OH) and Frank Brewster (Baxter Springs, KS). Others of you may have talked with Joy Denman, the charming Lansing lady who was my assistant for the show.



Joy Denman holds forth at the R.C. booth. Our setup may be a bit casual but, hey, this is our first show!

I'd like to take this opportunity to welcome Edward Janicki (South Lyon, MI), Larry Horvath (Milford, MI) and Robert Burton (Caledonia, MI)—all of whom became subscribers at

EXTRAVAGANZA 94. I also enjoyed talking with many other folks who stopped by to pick up our literature.

Though it actually rained very little during the day, the storm system hovering over the much of the Midwest during the 3-day meet was something of a dampening influence. It rained heavily most evenings, and there were flood and tornado warnings.

Not to be daunted, however, the attendees happily patrolled the swap meet, attended the seminars and, as always, turned out in force for the auction. I didn't have the opportunity to visit every event, but I particularly enjoyed Mark Oppat's Radio repair Clinic, viewing the radios and other displays assembled for the contest, and attending parts of the auction.

My friend Tony Flanagan, President of the New Jersey Antique Radio Club (Freehold, NJ) walked away with an impressive number of the contest awards. He took first place in the wood tabletop category with an Emerson "Stradivarius" model; first place in "anything goes" with a 1931 panoramic photograph of the employees of the Ingraham case shop-makers of fine cabinets for Emerson during the 1930's; and third place in the mantel/cathedral category with an Ingraham mantel clock radio.



Tony Flanagan makes a brief stop at the R.C. booth to fill us in on his awards.

At the auction, I watched a Motorola Catalin change hands for \$2,200 and a Radiola 7 cross the block for a breathtaking \$5,900.00. But apart from pricey items like these, there were many good buys to be had.

All in all, it was a good time. And if you couldn't catch us at Lansing, watch for the Radio Collector booth at RADIOFEST 94 (Elgin, IL - August 3, 4, 5 and 6). We'd like to make your acquaintance!

R.C. Welcomes New Columnist

The Radio Collector is pleased to announce that Dick Mackiewicz has joined our staff of volunteer columnists. Dick has published extensively in the Antique Radio press, and brings to his writing both a rich background in electronics and a love for vintage radios that dates back to his youth.

In preparation for introducing Dick to the R.C. readership, I asked him for some

(continued on p. 6)

PLAY IT AGAIN!

A No-Nonsense Course in Radio History, Evolution and Repair

VACUUM TUBE CHARACTERISTICS

Tube Manuals—An Essential

If you are serious about repairing your radios, you must have a tube manual. These were issued periodically by the major tube manufacturers, and provided characteristics, recommended and maximum operating conditions, outlines of tube shapes, and base connection diagrams for all tube types produced up to the date of the manual. Many also included theory and suggested circuits, as well as circuits and theory. Tube manuals are a gold mine of information. Get one and read it!

New tube manuals have not been issued for years, but reprints are available from such companies as Antique Electronic Supply, P.O. Box 27468, Tempe, AZ 85285. Founded by antique radio collector and author George Fathauer, AES is an excellent source of books and parts and probably has the largest stock of antique tubes in the country. Write for their catalog. Original manuals are frequently offered for sale in *Antique Radio Classified magazine* (PO Box 2, Carlisle, MA 01741). Get one issued in the 1940's if you can. The data on antique tubes will be more complete than in later issues.

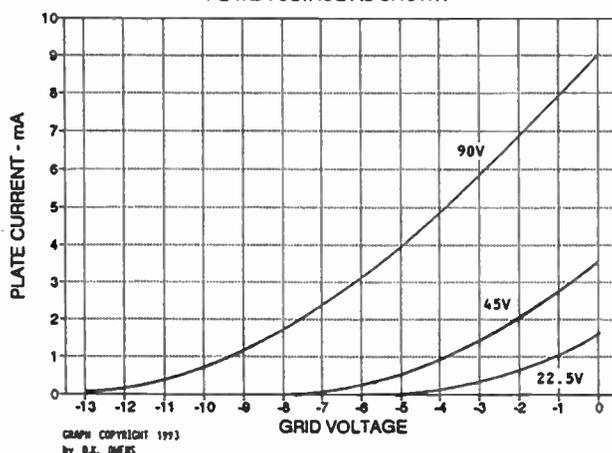
Tube base diagrams are essential for knowing which pins to test for various voltages. To those of you who grew up with IC's, whose pins are numbered as viewed from the top, I cannot emphasize enough that tube base diagrams are drawn *looking at the bottom of the tube* as you would see the connections with the chassis upside down.

Key Tube characteristics

The manuals list filament or heater ratings for each tube and maximum ratings for grid, plate and screen voltage and current. Some typical operating conditions are also given. These are helpful in deciding whether voltages on a tube in a defective set are abnormal.

Also provided in the manuals are the amplification factor and transconductance (g_m) of tubes. The latter, often called mutual

FIG. 1 - 201A PLATE CURVES
PLATE VOLTAGE AS SHOWN

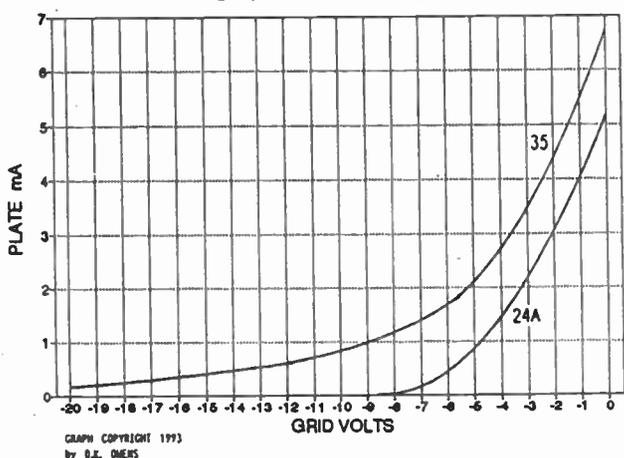


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By D.E. OWENS

conductance, is expressed in μmho and is a measure of the ability of the grid to control the plate current. The mho is the unit of conductance (Ohm spelled backwards). Numerically, g_m is the change in plate current divided by the change in grid voltage times 1000 ($\text{mA/V} \times 1000$).

Figure 1 shows how the grid controls the plate current in the type 201A, a tube that was used extensively in 1920's-era battery sets. The curves were run for 3 plate voltages popular in the 1920's. Note that the plate and grid voltages are interrelated. The higher the plate voltage, the more grid voltage is required to maintain the plate current at a predetermined level. Note also that there is a value of grid voltage where the plate current is zero. This is called the "cutoff" point.

FIG. 2 - 24A & 35 PLATE CURVES
PLATE=90V SCREEN=67V



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By D.E. OWENS

The cutoff point is important because it determines how much signal a tube can handle. Consider a 201A with +45v on the plate and -4V bias on the grid. Fig. 1 shows that the tube cuts off at -7V on the grid. If the signal has a $\pm 4V$ amplitude, the negative half-cycle added to the bias will cut the tube off. Since the tube cannot respond to a larger negative signal excursion, the negative half of the signal will be clipped resulting in severe distortion. Distortion from signal overload on strong stations was a common problem in early sets.

The Remote Cutoff Tetrode

This problem was solved with the introduction of the "remote cutoff" screen grid tetrode type 35 (RCA) and the equivalent type 51 (Arcturus) in 1931. In earlier tubes, the wires forming the grid were equally spaced; in the new tubes, the wire spacing was closer at the ends than in the middle. This gave the 35/51 a long, gradual cutoff characteristic (see in Fig. 2) as compared with the characteristic of the 24A "sharp" cutoff tetrode. You can see from Fig. 2 that the 35 can handle much larger signals than the 24A without being driven to cutoff. Such tubes were sometimes called "supercontrol" amplifiers. Since the screen grid tube replaced the triode as an RF amplifier, no remote cutoff triode was ever developed for radio.

The 35/51 was designed to replace the 24A as an RF or IF amplifier. It was common practice at the time to put them in pre-1931 sets which called for 24A's, often improving performance and sound quality. You can do this also, but switch amplifier tubes only. *Do not* replace 24A's used as detectors or oscillators with 35/51's. Next time we will discuss tube problems, repairs and testing.

Conducted by Ken Owens
478 Sycamore Dr.
Circleville, OH 45113

CORRESPONDENCE FROM OUR READERS

Letters may be paraphrased, shortened, or otherwise edited so that everyone gets a chance at the floor!

D-Day Re-Creation

Reader Sam Hevener (Richfield, OH), a World War II military communications equipment enthusiast and dealer (note his classified ad, this issue), made it to the 50th anniversary D-Day observance held in Chicago on June 3-5. Sam actually took part in the mock landing, though discretion overruled valor at the last moment—as this excerpt from his letter will attest.

...made it to the D-Day show in Chicago on June 3-5. I had a ball except for the landing. I was on the second wave of landing craft the Navy had at the show. All my buddies were on the first wave of about six boats and landed in water up to their knees. When my LCU landed, and the ramp dropped, the water was up to our necks. I was loaded with combat gear including a BC-611 handie-talkie and decided not to go in. There were about 60 of us on that LCU and about 90% decided to go for it. Not me. Other than that, the show was great. . .

Tuning Dial Lore

Just finished looking over the June issue of the Collector. I have been following with interest the evolution of the broadcast receiver. It's been fascinating and, as my memory tells me, very accurate. I was born in 1929, so grew up with the early plug in radios. I have in my collection a duplicate of the first radio we ever had. It still sounds great.

Anyway, my memory disagrees with you on the so-called "Airline" dial. I recall that we called it an "Airplane" (or Aeroplane as it was spelled then) dial. Airline, of course, was Monkey Ward's trade name for their line of radios. the airplane name came from the fact that it looked a little like an airplane propeller.

The early 30's dial window was usually called the "Dial Bezel." Where I come from (Canada), it was pronounced bee'-zel as opposed to beh'-zel. Many had the little pointer as shown in the article's photo, but later on one of the companies (Philco, I think) projected a shadow of a line from the rear of the celluloid dial. This was accomplished by using a stiff wire between the pilot lamp and the celluloid dial.

Prior to the tuning eye, Philco introduced "shadow tuning." This was accomplished by two metal shields between the celluloid dial and the pilot lamp that were closed together by a device similar to meter movement. This was powered by the AGC of the receiver. You might call it an early S meter! Enough light leaked by the shields to illuminate the dial, even if the

shields were closed.

Keep up the good work with your Radio Collector's pamphlet. - G.D. Peterson, Las Cruces, NM

Dick's Bio

We asked Dick Mackiewicz, whose new column *Dick's Corner* makes its debut this month (see announcement elsewhere in this issue) to send some biographical information so that we could give him a proper introduction. He sent a long letter with instructions to edit the information as appropriate. However, it was all so interesting that we didn't know where to begin. Accordingly, here's Dick's letter, more or less in its entirety!

My family moved to a rural location when I was five years old. there were no other children nearby, and radio became my companion. My dad had big Philco 38-116 console in the living room, an AK40 in the barn, and a Philco 54 upstairs. I spent many hours listening to The Shadow, The Green Hornet, and my favorite, Captain Midnight.

Five years later, we moved to the city. There was a nearby "dump" where I collected wagon loads of old radios, pinball machines, and anything else I deemed interesting in radio or electronics. I remember an early experiment, hooking up a salvaged car radio to a train transformer. The radio worked, but it sure buzzed a lot! At that time, I didn't understand the difference between AC and DC.

My dad equipped my work bench with a 5 amp fuse so my mistakes wouldn't black out the house. My mother was afraid to intrude on my wire-strewn bedroom for fear of being electrocuted. She left my clean sheets in the doorway, and I learned how to change a bed!

I became interested in SWL'ing in the early 1950's, and developed a parallel interest in DX'ing with crystal sets—winding coil after coil in an effort to develop more sensitive radios. I did get half way across the U.S. on one of these sets.

After high school, I joined the Navy—where I attended electronics schools and was then assigned as a technician in a Patrol Bomber squadron. These airplanes, used in anti-submarine warfare, had more electronics systems than any other naval aircraft. After the Navy, I had a short stint at Sperry, working as a quality control technician. There, I helped develop the world's first practical numerical controls for machine tools.

I next moved to Kaman Aircraft as an Experimental Radio Technician. There I attended to all one-of-a-kind installations (control tower equipment, etc.). While

working for Kaman, I attended night classes at the Ward School of Electronics, now a part of the University of Hartford. This was quite a tough grind; the initial enrollment in my class was about 130 people but, four years later, only nine of us graduated!

During this time, I also obtained my First Class Commercial F.C.C. license. I spent about twelve years working as an Engineer, Announcer and Newsmen in both AM and FM radio, variously on a part-time, full-time and consulting basis. I have held this license for over 30 years.

Another 3 1/2 years was spent in Kaman's Electronics Products Division. Among other things, I was in charge of the lab, environmental testing, certification of radio control units as ready for shipment, and field service on unique installations.

I next served as Vice President of a company that purchased rights to some of the Kaman products and moved on, after that company was sold, to become a Field Service Representative for numerically controlled machine tools at Warner and Swasey. By now, tubes had become obsolete and the circuitry used a combination of discrete components and IC's.

I left Warner and Swasey for a year and worked for United Aircraft, Pratt & Whitney division, spending most of this time working on lasers. Then it was back to another division of Warner and Swasey, where the electronics had progressed to CNC (computer numerical control). This job took me halfway around the world, working in France, Italy, Mexico, Columbia, Australia, etc. After seven years there, I became a district supervisor for another machine tool repair company until my retirement.

I then returned to my first love—Radio! I started to write articles for several antique radio publications and developed a correspondence with fellow radio collectors all over the world. I have a fairly extensive collection of radio publications and a radio collection including sets from 1920-1960. I serve on the board of the New England antique Radio Club, enjoy re-creating vintage crystal detectors, and am putting together a large collection of vintage headphones with the hope of writing a good book on the subject.

I'm also working on a collection of early radio antennas and parts, which should provide material for another interesting book. Another interest of mine is watch-case meters which, fortunately, don't take up much room. My workshop, which is the size of a 2-car garage, is crammed full or parts and tubes.

If anyone tells you that retirement is dull, don't believe it. I now wonder how I got everything done BEFORE I retired!

INFORMATION EXCHANGE

This is an open forum for interaction among our readers. Here you can ask questions about some aspect of our hobby, answer a question that's been posed or pass along other information of general interest. Send your questions, answers and information to The Radio Collector, P.O. Box 1306, Evanston, IL 60204-1306. Submissions may be edited or paraphrased.

QUESTIONS AWAITING ANSWERS

Needed: Tube Cement!

What type of cement was used to attach the base and grid caps in older tubes, and where can I get some?

I've asked this question of a lot of people, including engineers, and none had an answer. Thinking that the adhesive now used to attach the metal bases to light bulbs might work, I queried the Sylvania Bulb Division—but was unable to obtain a satisfactory answer. I haven't gotten around to writing the other bulb companies as yet. I have heard, but am unable to confirm, that the original adhesive was made by The Borden Company (makers of Elmer's glue).

Some people recommend using Epoxy to reglue bases and grid caps, but this seems to lose its grip (particularly on grid caps) when the tube gets hot. Any other suggestions? - Tony Jacobi, Ralston, NE

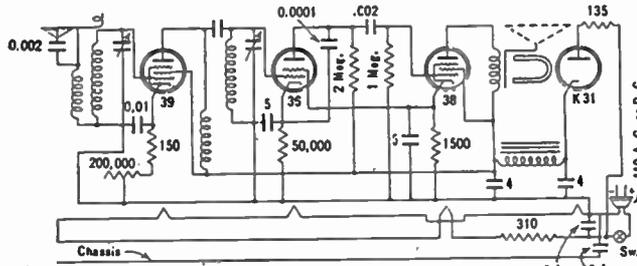
GENERAL INFORMATION

Isolation Transformers Revisited

The mailbag has yielded yet another suggestion for creating an affordable line isolation transformer from an inexpensive surplus transformer designed for a different use. This idea comes from C. Orval Parker (Pocono Summit, PA), who published it in *Antique Radio Classified* magazine a few years ago. Here's what to do: check the electronics surplus catalogues for heavy-duty transformers designed to operate on 120 or 240 volts. Some of these have a 240-volt primary center-tapped for a 120-volt use. Others, however (and these are the ones you are looking for), have two separate and independent 120-volt primaries; the primaries are intended to be connected in parallel for 120-volt use and in series for 240-volt use.

To use such a unit as

an isolation transformer, simply connect the a.c. line to one of the two windings and the set under test to the other. Of course, you'll want to mount your trans-



Schematic of International Kadette Universal, from Henney book, shows extreme simplicity of original a.c.-d.c. circuitry.

former appropriately and fit it up with a permanent line cord, plug and a.c. receptacle. For safety's sake, it would also be a good idea to insert a small fuse (a couple of amps should be about right) in series with either winding. A transformer rated at about 100 watts should be adequate. To estimate the wattage, just multiply the voltage and current ratings of the transformer's secondary. If there is more than one secondary, calculate the wattage for each and add the results.

If the transformer has a low-voltage secondary, you can obtain some degree of voltage control by connecting it in series with the "output" winding and the set under test. If this does not reduce the

voltage to the set, reverse the secondary leads and try again. If there is a center tap, experiment with that, too. After you've determined the hookup to obtain various stages of voltage reduction, wire in a switch to cut the appropriate secondary windings in and out of the circuit as desired.

Earliest A.C.-D.C. Sets

Our just-completed series *Evolution of the Broadcast Receiver* stimulated reader Ray Larson (W. Los Angeles, CA) to research the first commercially-produced a.c.-d.c. sets. The trail led to the International Kadette Universal

TRF receiver of about 1932.

As described in *Principles of Radio* by Henney (1934)—the only source Ray could find for a discussion of this receiver—the Kadette used four 6-volt tubes from a series designed for auto sets. Their heaters were connected in series across the a.c. or d.c. line with a 310-ohm power resistor in the string to drop the difference between the heater requirements (24 volts) and the line voltage (115).

So far, Ray hasn't been able to get his hands on a Kadette, but he was able to locate an Emerson Universal Compact Radio (Model 20), which is an exact electrical copy of the Kadette except for some minor changes in the power supply circuit. The Emerson has a type 39 r.f. amplifier,

36 detector, 38 audio amplifier and 37 (with plate and grid strapped together) connected as a rectifier. Ray has been enjoying going over the Emerson and tweaking it to improve sensitivity.

In addition to the Henney schematic and other material, Ray sent along an interesting ad for the Emerson photocopied from a 1932 dealer's publication. It conveys all of the excitement connected with the introduction of an inexpensive, shelf-sized radio in an era when receivers had been costly, clumsy and not easily moved.

Emerson presents the Amazing New UNIVERSAL COMPACT RADIO

Operates from any Lamp Socket

—on EITHER
A. C. or D. C. Current
110 Volts — 25 to 60 Cycles

SIZE: 10" Wide - 6 1/2" High - 4 1/2" Deep
WEIGHT: 6 Pounds

Can be used ANYWHERE
Office or Study Desk—Travelling (at Hotels or Summer Camp, aboard Steamships)
—An Ideal "Second Radio" in the Home or Apartment (Library, Bedroom, Guest Room, Children's Room).

Appeals to EVERYBODY
Business Man—College Student—Society Women (one sale often means two or three)—Sportsman—Gift Shopper (Excellent as a gift for any occasion. The recipient can find dozens of uses for this set although already owner of an ordinary radio).



Retail Price
\$25
COMPLETE with Cunningham Tubes and Built-In Aerial

Earliest a.c.-d.c. sets hit the market during the cash-starved depression era, quickly became popular because of their compactness and low cost.

DICK'S CORNER

Tips and Tidbits from the World of Antique Radio Collecting and Restoring

Filling in the White Lines

All too often, the white markings on old battery set knobs, dials and front panel lettering may be worn, faded, or virtually gone. As long as the indentations remain from the original molding, stamping or engraving, here's the way to restore all the marking.

Wash surface completely with warm water and mild dishwasher detergent. Let dry. Visit an office supply or stationary store and purchase a Pentel fine point correction pen. This contains white ink intended to correct typewriter mistakes.

Fill in markings with pen. Some ink may spread beyond markings. To remove the excess, wet small portion of soft flannel cloth with paint thinner. Wipe across markings at right angles. From time to time, turn the cloth to a clean area and wet with more thinner.

Now only the white in the markings should remain, and it will be very bright and permanent. Finish by polishing surface with a liquid non-abrasive car wax such as KIT. Enjoy your re-finished work!

Save Your Radio - Retrofit a Fuse!

Very few vintage radios came equipped with fuses. But it makes good sense to retrofit one now! Unless a set is fuse-protected, a shorted capacitor or rectifier tube can burn out a power transformer or other expensive and difficult to replace

components. Even if you replace all of the capacitors in a radio, the new ones may fail after the set has been in storage for a few years.

It's easy to add a fuse without disturbing the wiring in your receiver. To determine the value of the required fuse, divide the wattage rating of the radio (shown on a label in the cabinet or on the back of the set--or listed in Rider's) by 115, the normal a.c. line voltage. Example for a 50-watt radio: 50 divided by 115 equals about .435. This is the amperage of the fuse needed to protect the radio.

Fuses are commonly sold in increments of 1/8 ampere. Use the closest available value. In this example, a 1/2-amp fuse would be a good choice. Use "slo-blo" fuses to handle the extra inrush of current when the set is first powered up.

To set up the fuse for use with your radio, you need to make an adapter. Obtain a male and female plug, a short length of zip cord and an insulated in-line fuse holder (Radio Shack 270-1238 or 270-1281, depending on the size fuse you are using). Wire one of the plugs onto each end of the zip cord. Now cut one of the two zip-cord wires and wire the in-line holder across the free ends. Make sure your connections are secure, and insulate them well with electrical tape or shrink spaghetti.

Plug the adapter you have just made into the wall, plug your set into the adapter, and the fuse is now "on duty," protecting your set against "fried" components and possible fire hazard.

Conducted by Dick Mackiewicz

COMMENTS FROM THE EDITOR

(continued from p. 2)

information about his background. The long letter he sent in response was so interesting that I decided to run it in our "Correspondence" column so that Dick could speak for himself.

Because The Radio Collector is intended to be a progressively-published encyclopedia of radio lore, many of our columns are series-oriented; readers can anticipate their content for many months to come. That is as it should be, but I thought that R.C. would be better balanced if we could introduce an unpredictable element or two. Therefore, I asked Dick to write a short monthly column covering a different subject in each issue. We call it *Dick's Corner*, and Dick has *carte blanche* to write about anything he wants, provided that the columns are varied to cover the complete spectrum of radio collecting interests.

I know you're going to enjoy Dick's work. His first column appears on this page, and we look forward to receiving your comments and suggestions



CALENDAR OF EVENTS

Planning an auction, swap meet, convention or show? Send us a brief rundown for a free announcement. Be sure to include date, location and contact information. Plan on getting the information to us two months in advance for timely insertion of your item.

August 3-4-5-6. Radiofest '94 sponsored by the Antique Radio Club of Illinois. Holiday Inn Holidome and Convention Center, 345 River Rd., Elgin, IL 60123. Phone (708) 695-5000. Three and a half day flea market, presentations by Jeff Aulik (Atwater Kent, Chuck Dachis (Hallicrafters) and Brother Pat Dowd (vacuum tubes). Contest, awards banquet, auction. This is one of the major meets, so go if you can! And be sure to look for The Radio Collector booth. For more info, contact Jeff Aulik (815) 399-1902.

MONTHLY MINI QUIZ

Match wits with our quiz editor! See next month's issue for the answer, as well as the names of all readers who responded correctly.

A Russian investigator who some credit with having "invented" wireless a few years before Marconi.

Answer to last month's quiz: Valdemar Poulsen (1869-1942) was a major figure in the development of the electric arc wireless transmitter.

VINTAGE BOOK REVIEWS

Books from the era when vintage radios were new! Look for them at swap meets, flea markets and used book stores.

AN HOUR A DAY WITH RIDER ON ALTERNATING CURRENTS IN RADIO SERVICING, by John F. Rider, Publisher, Inc. New York City, NY. 1937. 94 pages. Hardbound.

This review concludes our series on the *Hour a Day With Rider* books. While there is evidence that Rider intended to write more of the books, this one was the last.

The first three chapters, covering electron motion, cycle and frequency, and the values of a.c. current and voltage, constitute an elementary text explaining the nature of alternating current. While these three chapters provide the basis for what follows, anyone with even the most elementary knowledge of electricity could easily skip them.

Chapter four consists of a lengthy explanation of how sine waves are generated and how the sine wave is plotted on a graph. The next chapter covers phase relations, an area where many people have difficulty, and the author goes to great lengths to make sure that the subject is understood.

The sixth chapter deals with complex waves, which Rider defines as "resulting from the combination of a number of sine waves of different frequencies." The wave forms of fundamental and harmo-

nic frequencies are tied in with electron motion and phase effects as discussed earlier in the book. Chapter seven explores the relationship between wavelength and frequency and shows how radio frequency carrier waves are modulated so as to permit the transmission of speech and music. Acquiring a grasp of these two chapters is the key to understanding why radio works.

The final chapter is devoted to a discussion of alternating currents in radio receivers. The differences between rms and peak-to-peak voltages are explained, and information on choosing the correct value of capacitors is given. Though there is a discussion of phase inverter circuits and audio distortion problems, there is no practical troubleshooting advice.

This book seems unnecessarily wordy, as if Rider was stretching out his material to fill a specific number of pages. It is recommended for anyone looking for a clear explanation of alternating currents in radio circuits, but those who seek practical advice should look elsewhere. I like this book the least of those in the series.

Conducted by Paul Joseph Bourbin
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COMPANY CHRONICLES

Brief Biographies of Classic Radio Manufacturers

SPARTON RADIO

THE PATHFINDER OF THE AIR

The Sparks-Withington Company, manufacturers of "Sparton" brand radios, had its beginnings in 1900. At that time, General W.H. Withington, head of a large agricultural-implement company in Jackson, Michigan, set up sons Philip and Winthrop in business making small steel parts. The two soon hired 27-year-old William Sparks, then a grocery store manager, to be their bookkeeper. Sparks, who had emigrated from England with his parents some 13 years before, became the company's driving force. Under his leadership, the company became a manufacturer of stamped steel parts, including radiator fans and horns, for the growing automobile industry. Like many automobile parts manufacturers of the era, the Sparks-Withington firm decided to have a crack at radio manufacturing.

The first Sparton sets, advertised in 1926, used the Kellogg a.c. tube in order to avoid paying royalties to RCA. But as insurance

against the eventuality that RCA might force Kellogg out of business, S-W soon set up its own tube production factory under the "Cardon" name. Sparton sets sold briskly, but a suit filed by RCA in 1928 forced the company to switch from the TRF circuitry it was using to a non-infringing hookup licensed from the Technidyne Corp. This led to the development of the *Equasonne* models of mid-1928, for which the company had to design, and manufacture under carefully controlled conditions, a special tube known as the type 484.

Later, when RCA began to sue Sparks-Withington under other patents, the firm did negotiate an agreement with RCA. Now there was no need for the tube-manufacturing operation, which was merged into the parent firm

THE RADIO COLLECTOR Display Advertising Dimensions and Prices

TYPE	H" x W"	1 MONTH	3 MONTHS	6 MONTHS	1 YEAR
1 page	9 0/0 x 6 3/4	\$65.50	\$177.00	\$319.00	\$574.50
1/2 page	9 0/0 x 3 1/4	33.00	88.50	160.00	288.00
1/2 page	4 3/8 x 6 3/4	33.00	88.50	160.00	288.00
1/4 page	4 3/8 x 3 1/4	16.50	45.00	81.00	145.50
1/8 page	2 0/0 x 3 1/4	8.50	23.00	42.00	75.00
Bus Card	1 1/8 x 2 1/8	-----	12.00	21.50	38.50

in 1930. Unlike most of its competitors, Sparks-Withington was
(continued on following page)

CLASSIFIED ADVERTISING

Subscribers may place one free classified ad, up to 30 words long, in each issue. Count your name, ham call (if desired), complete address and one phone number as six words. Additional words are 15 cents each per issue. Non-subscribers pay 30 cents each per issue for all words. Free ads will be automatically run in two issues, but expire after their second insertion unless renewed by mail or phone. Those wishing to run the same ad for extended periods of time may want to use a "business card" space (see Display Advertising Dimensions and Prices table elsewhere in this issue). This is a boxed area in which we can print your business card or any advertising message that will reasonably fit (no charge for setting type). We reserve the right to make editorial adjustments in classified ads without advance notification and to refuse advertising at our discretion. We will reprint, without charge, any ad containing typographic errors, but assume no other financial responsibility.

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Wanted McMurdo Silver radios and brochures. Zenith or Scott chrome chassis radios. Don Hauff, Box 16351, Minneapolis, MN 55416. 1-800-769-9980.

Wanted Buyers and sellers of WWII military radio sets and accessories. America's WWII radio surplus leader. Sam Hevener W8KBF, "The Signal Corps," 3583 Everett Rd., Richfield, OH 44286-9723. (216) 659-3244 before 8PM.

Wanted Schematic for Hallicrafters Model S-200 "Legionnaire" BC/SW set. Alton A. DuBois, Jr., 67 Peggy Ann Rd., Queensbury, NY 12804.

Wanted Old radio headphones. I will buy one set or a hundred! Please send list and your price. Dick Mackiewicz, 1549 N. River Rd., Coventry, CT 06238. (203) 742-8552.

For Sale first user-friendly circuit on early BC-348's. Send \$2 and three 29-cent stamps. Ray Larson, 12241 1/2 Gorham, W. Los Angeles, CA 90049-5214.

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For Sale/Trade McMurdo Silver and Scott parts, brochures, etc. Don Hauff, Box 16351, Minneapolis, MN 55416. 1-800-769-9980.

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COMPANY CHRONICLES

(continued from previous page)

still making a profit in 1930, struggling with red ink, however, through most of the Depression. The company did survive, though, manufacturing radios and television sets until 1958--when certain of its assets were sold to Maganvox. Sparks Withington (its name changed to The Sparton Corporation in 1956) still exists today, largely in the defense business, and

operates out of some of the original factory buildings.

The information for this Company biography was obtained from Alan Douglas' three-volume encyclopedia "Radio Manufacturers of the 1920's," published by The Vestal Press, Ltd., Vestal, NY and copyrighted 1988, 1989 and 1991 by Alan Douglas.



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