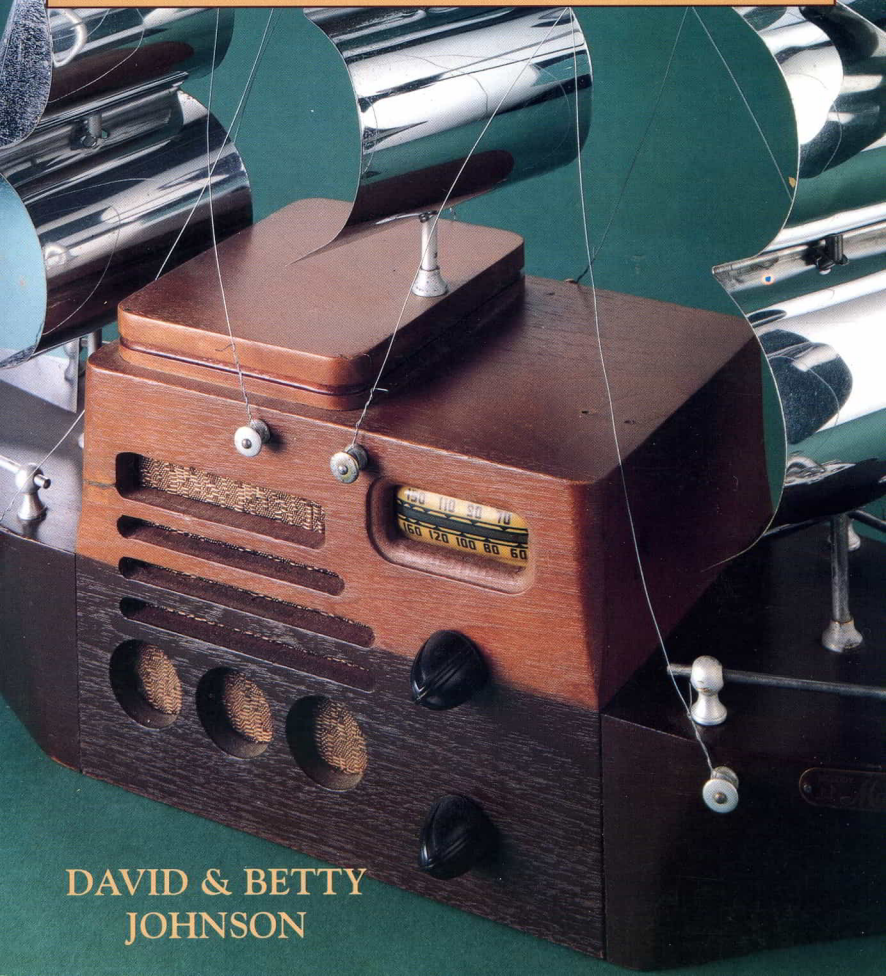


GUIDE TO OLD RADIOS

POINTERS, PICTURES AND PRICES

Second Edition



DAVID & BETTY
JOHNSON

GUIDE TO OLD RADIOS

Pointers, Pictures and Prices

GUIDE TO OLD RADIOS

Pointers, Pictures and Prices

Second Edition

David and Betty Johnson

Wallace-Homestead Book Company
Radnor, Pennsylvania

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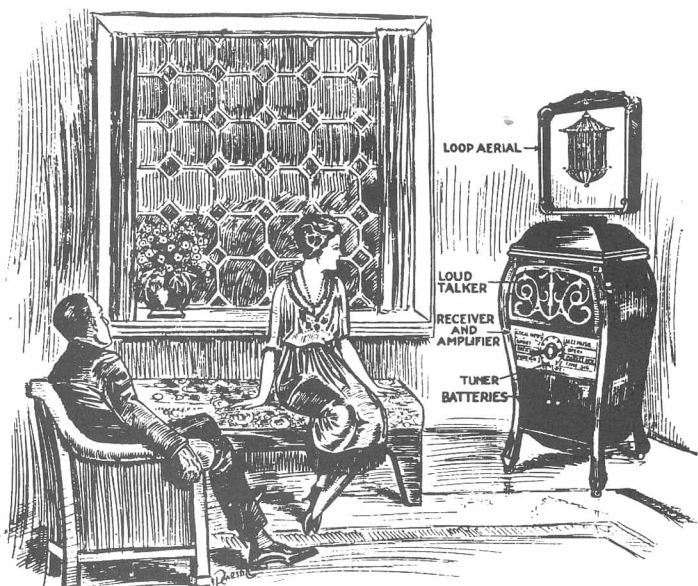
95-14943

CIP

On the cover: Majestic "Melody Cruiser," model 921, from the col-
lection of Dave Christiansen. Wood body with metal sails, 1946,
\$300–\$400.

1 2 3 4 5 6 7 8 9 0 4 3 2 1 0 9 8 7 6 5

We dedicate this book to Hugo Gernsback
—who made the impossible seem possible even before it was possible.



"Here is the 'Radiotrol', which will take the place of the phonograph in our homes soon. It could be so designed that only one adjustment would be necessary to tune in music, news, etc., which could be sent at the same time on different wave-lengths" (Radio News, December 1921). Hugo Gernsback felt that radios would have to be easy to use to make them popular. Looking at the 1921 sets, it's easy to see why he felt this way.

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Ed and Irene Ripley

John Wilson

Shirley Olson

Delayne Rand

Dave Christenson

Virgil Byng, "The Byng Studio"

Charles Auenson, "The Studio"
The Antique Center of LaCrosse
Limited
Gene Harris Auction Center of
Marshalltown, Iowa
General Electric Company
Radio Corporation of America
McGraw Hill Publishing Company
Zenith Radio Corporation

We also want to acknowledge the women and men who have made the restoring and collecting of old radios the fast-growing and exciting hobby and business that it has become these last 15 years. We have learned from many of those people and we hope that we have helped many others to know and enjoy those wonderful old radios.

INTRODUCTION

Back in 1872, Joshua Coppersmith was arrested in New York City. The charge: He was attempting to extort money from gullible people by convincing them to invest in an instrument that he said would transmit voices over wires. He called it a *telephone*. Coppersmith may or may not have been a con man. Within four years, however, Alexander Bell did send a voice over wires and did call it a telephone. What is interesting is the reaction of the Boston paper that re-

ported the case. “Well-informed people,” it said, “know that it is impossible to transmit the human voice over wires...(and) were it possible to do so, the thing would be of no practical value.”¹ What would that writer have said about something that seemed even more impossible—transmitting voices without wires!

Let us define terms. Transmission of code through the air was common in 1920. This transmission without wires was called *wireless*. It had an ex-



citement of its own, with an aura of mystery surrounding its operators. It enabled people, even in smaller towns and cities, to keep in regular touch with the world, but required someone to interpret those dots and dashes and convert them back into something that anyone could understand.

Radio, on the other hand, is the transmission of *voice* without wires. Anyone who could get a radio working could actually listen to voices from Pittsburgh or New York City, even though they were thousands of miles away.

In 1920, the very idea of plucking a voice or music out of the air from hundreds or thousands of miles away still had a magical quality that is very hard for us to imagine today. At this time, newspapers in cities could keep their readers up to date because they received the news by wireless. But for the person living in a small town or on a farm, current news might be a week or more old. Trips to town, often by horse, were a weekly rather than a daily event for many people. There was no daily mail delivery for farmers, so the only time to catch up on the news was on those weekly trips. Entertainment at home was a wind-up phonograph or a piano in the parlor. No wonder people took to radio with enthusiasm.

In spite of the difficulties of early radio, people gathered around tinny-sounding horn speakers or sat with earphones clamped to their heads, with a rapt look on their faces, as they listened to those voices from the sky. Houses and apartments sprouted huge antenna systems. Thousands of kids put together crystal sets and simple one-tube sets to the amazement of their parents



and relatives. Never had anything caught the imagination of the science-oriented young person the way radio did. A few years ago we saw this same kind of enthusiasm in the way kids took to the computer. Radio was as radical to most people in the 1920s as the computer was just a short time ago—and just as fascinating to the young!

Yes, radio was the miracle of the age. Now we simply consider it another appliance, and give it as little thought as a toaster, a washer, or an electric razor. Part of the joy of collecting old time radios is the discovery of some of that earlier excitement and awe. The old radio magazines and advertisements from the 1920s make fascinating reading, as you watch their enthusiasm about things we now take for granted.

The first decade of radio (1920–1929) was one of its most fascinating times. Things were happening with great rapidity. Something consid-

FROST-FONES FROST-FONES FROST-FONES

"A Quality Achievement"

Herbert H. Frost 154 West Lake St.
CHICAGO

FROST-FONES FROST-FONES FROST-FONES

The romance and enchantment of radio in the early 1920s is revealed in this ad for Frost-Fones (Radio News, June 1922).

DOUBLE HEAD PHONES



BOYS! A REAL RADIO SET ABSOLUTELY FREE

RUSH your name and address and we will tell you HOW you can get this RADIO SET ABSOLUTELY FREE. RADIO SET comes to you complete, with single slide tuning coil, crystal detector and phone condenser. AND DOUBLE HEAD PHONES. No batteries required; no experience. Write Today for Free Radio Plan. HOME SUPPLY CO., 110 Nassau Street, Dept. 761, New York City.

Sometimes radios were free if a child wrote for the Free Radio Plan.

cred impossible at the start of the decade (non-battery-operated radio, for instance) was common by the end of it. From being a home-built concoction, radio ended the decade in a place of honor in the living room. Instead of broadcasting studios operating out of the men's room or women's cloakroom, network broadcasting covered the entire United States.

The second decade (1930-1939) saw the maturation of the broadcasting business and the acceptance of the ra-



S.O.S. to Santa Claus

Tell Old Nick you want a Headset.

Whether you are an amateur or a regular operator, you'll slap yourself on the back if you get a Brandes—the wonderful MATCHED-TONE Receivers.

Brandes Headsets “get everything”; under all conditions; often when others fail. Give yourself the best.

Send 5c for catalog G—now, in time to get ahead of the Christmas rush.

Dealers WRITE FOR OUR PROPOSITION
C. BRANDES, Inc. Room 823, 32 Union Sq. New York City



BRANDES Matched-Tone HEADSETS

A 1921 Brandes headset made a perfect Christmas present.



TRESKO

Seven Years in Radio

—Think What That Means!

TRESKO

SECTIONAL UNIVERSAL

Licensed Under Armstrong U. S. Patent No. 1,115,149

The Tresco Tuners were among the first ever made under the Armstrong Patent. They are found in all parts of the world, giving satisfactory service. The sectional idea is original with us.

The instruments are identically the same as those we have been manufacturing for seven years—but we have made their casings on the plan of the sectional bookcase—each a separate unit which, when put together with a top and base, forms one complete section.

The set consists of three units:

1. Tuner and Detector.
2. Two-Stage Amplifier.
3. Case for "A" Storage Battery.

The sections are of oak, finished in French gray, making an extremely attractive piece of furniture—something you will be proud to have in your home, beside your phonograph or piano. No wires or battery on the floor.

PRICES

Tuner and Detector Unit without vacuum tube, head set or "B" Battery	\$ 50.00
Two-Stage Amplifier Unit without vacuum tubes or "B" Battery	35.00
"A" Battery Unit for holding "A" Battery	9.50
Top and Bottom, which, when added to the three other units, make a complete section all in one. Each, \$5.00; both	10.00
Complete set of five units—Total	\$104.50

The units when assembled make a cabinet 40 inches wide, 15 inches high and 10 inches deep.

We do not furnish vacuum tubes, batteries or head sets.

TRESKO SECTIONAL UNIVERSALS are being supplied to dealers and jobbers just as fast as possible. Order from your local dealer. If he cannot supply you, we will fill your order upon receipt of prices as given.

Dealers and jobbers are rapidly finding out that TRESKO is one of the very few manufacturers who are actually in position to take care of large volume orders for immediate shipment. Liberal discounts are given to jobbers and dealers for quantity orders. We do not furnish vacuum tubes, batteries or loud speakers.

Tresko

RADIO



Havenport

J. Matheson Bell, Sales Mgr.

Iowa, U.S.A.

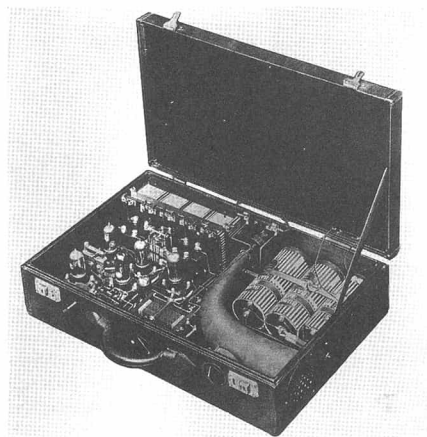
1922 Tresco Sectional Universal tuner; original price \$100.00.

dio and its entertainment into millions of homes. Radio indeed came of age in the 1930s.

It was a time of impressive growth. If we look in greater depth at the com-

ponents of radio during the 1920s and 1930s—technical improvements, usability and appearance, and broadcasting—we will gain a better understanding of early radio.

PART ONE



BACKGROUND FOR THE COLLECTOR



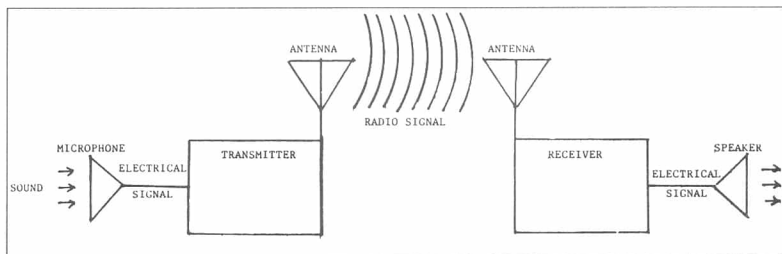
SOME RADIO BASICS

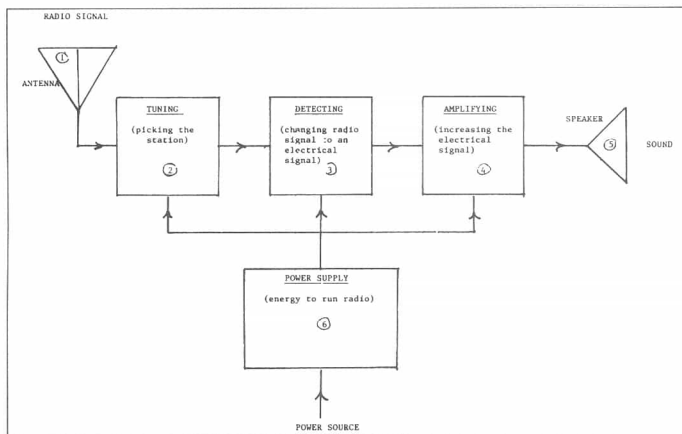
To collect, enjoy, and appreciate old radios, those “miracles from the past,” you do not have to understand everything about their workings. It is helpful, though, to have some idea of what happens in the broadcasting and receiving process. Let’s look at a drawing.

With all the technical jargon removed, we’ll try to break a complex task down into a few simple ideas. Broadcasting begins at the sending end, the *radio station*. A sound (voice or music) is converted by a microphone to an electrical signal, which in turn is converted by the transmitter to

a radio signal and sent into space through the antenna. That radio signal, or radio wave, will travel thousands of miles through space at the speed of light (which is an almost inconceivably fast 186,000 miles per second).

When we get to the other end of that radio signal, we see that the *radio receiver* works in a way exactly the opposite of the way the transmitter works. The radio receiver’s antenna captures a portion of that radio signal, its internal electronics convert this back into an electrical signal, and the loudspeaker produces the sound you hear.





This is the simplest picture we have of what happens. Unfortunately, the receiving end isn't quite that simple. To judge the radio receiver we're examining or buying, it is good to know a little more about radio reception. Let's take a closer look at that radio receiver.

Again, we will ignore electronic theory and stick to what happens in plain language. We see there are six basic parts in the receiver.

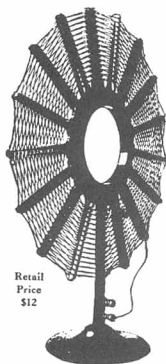
1. The *antenna* gathers the weak radio signals. There are dozens of different signals from as many stations, all crowding into the radio through the doorway of this antenna. The antenna will be a wire of some sort. It may be a wire outside the house, carefully insulated from everything but the receiver. It may be a short wire that you attach to your receiver. It may be hidden inside the radio as a "loop" wound on a

flat cardboard frame. In one form or another, your radio has an antenna.

2. You must select the particular signal you want through a process that is called *tuning in* the radio. To understand why this is necessary, you need to know that each radio signal has a frequency and a wavelength. The *frequency* is the rate at which the signal changes its character, measured in cycles per second, kilocycles (1000 cycles) per second, or megacycles (1000 kilocycles) per second. Every station on the air will have an assigned frequency. The usual broadcast band of frequencies is 550 kilocycles to 1600 kilocycles per second. This is usually called the standard broadcast band (shortened to BC) or the AM (amplitude modulation) band. Just to make things confusing, the word *cycle* has now been replaced by *hertz*. This means that what was once called "kilo-



1926 loop antenna made by Eclipse Radio Laboratories; a basketweave antenna could be rotated easily on its pivot.



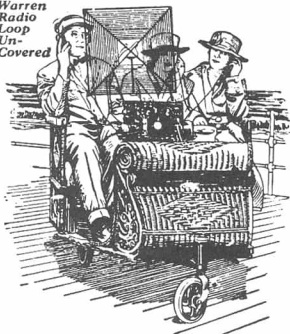
Retail
Price
\$12

1925 spiderweb antenna made by Paramount.

cycle" (kc) is now called kilohertz (kHz). Most old radio literature talks of kilocycles.

Since each of these radio signals travels out at a rate of 186,000 miles per second, you can also measure a signal in terms of its *wavelength*. The wavelength is the length in meters of one cycle (or one complete change in character and back) that the signal

Warren
Radio
Loop
Un-
Covered



*The Loop That Solves
So Many Radio Problems*

Warren Radio Loop

1922 Warren loop antenna proved that you could take radio with you.

travels in a second. If you want to move between the two ways of measuring, you can do a little algebra. The formula is frequency (in kilocycles) times wavelength (in meters) equals 300,000 ($F \times W = 300,000$).

You will find stations identified by either their frequency of transmission or the wavelength. Again, the tuning section of your receiver does the selecting of the station you wish to receive when you turn the tuning knob or knobs on the outside of the set.

3. The sound you want is encoded in the radio signal. Your radio must *detect* this sound signal, extracting an electrical image of the sound from the radio signal.

MARBLE ANTENNA

COMPLETELY replaces all ordinary wire aerials and outside wiring.

Connected to light-socket anywhere (alternating or direct current); fool proof and perfectly safe; uses no current, hence cannot blow fuses and will not interfere with Electric Lighting System.

Local static overcome and lightning proof; acts equally well with cheap-set as with most elaborate instruments. A beautiful ornament suitable for office or library; taken anywhere it makes your Receiving Set useful at all times and in all places.

IN U.S.A. \$3.00 POSTPAID
CANADA \$4.00

Packed complete in box with instrument cords and 2-piece light socket plug. Full directions.

MARBLE ANTENNA COMPANY
 CHICAGO, ILL. U.S.A.
 514 N. V. LIFE BLDG.
 "The Canned Aerial"

EDMONTON, CANADA
 CATTUOCE BLDG.
 1922

The manufacturer bragged about the marble, but it was only for looks; a capacitor actually coupled the antenna to the power lines.

RADIO ANTENNA TOWERS

Simple. Sturdy. Easy to erect. Built of galvanized steel. Will last for years. 100 ft. high or less. Fitted to take pipe mast at top. Immediate shipment. Write TODAY for prices.

Radio Department
STOVER MFG. & ENGINE CO.
 FREEPORT, ILLINOIS

A tower's height made a tremendous difference in the number of stations that could be received.

4. This weak electrical image must now be *amplified* (increased) to the point where it is strong enough to operate the loudspeaker.

5. The *loudspeaker* converts the electrical signal into sound waves that resemble the original sound at the radio station. Your ears do the rest.

Radio News for December, 1922



RADIO SCHOOL

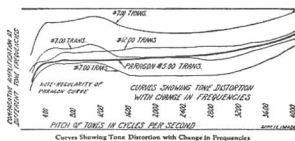
Send at once, if you are interested in obtaining a license, for our catalog explaining how and why, during the last two years, we have graduated and placed more licensed operators than any other school in New England.

MASSACHUSETTS RADIO and TELEGRAPH SCHOOL, Inc.
 18 Boylston St. Boston, Mass.
 G. R. ENTWISTLE, Radio Director
 Formerly Boston School of Telegraphy. Est. 1903

Radio schools were a great boon for the ambitious.

Distortion Kills Music

The Curves Show Why



Unless the Amplifier Transformer favors all tones in exactly the same manner, distortion will result. Notwithstanding their high prices some of the transformers whose curves are

shown above are totally unsuited to radio-phonograph reception. When you build use PARAGON, the same as is used in the famous Paragon DA-2 Amplifier.



A Home-Built Paragon Amplifier

Response curves have been around since 1922, as seen in this Paragon ad.

6. Electrical energy is needed to operate the radio. This is provided by the *power supply*. A power supply can be a group of batteries or an electrical circuit that provides the correct energy levels from an outside power source (usually the electrical outlet in the wall).

That's all there is to it. The complex and differing ways that various radios have of accomplishing their mission can provide you with many hours of study. Some people find it fascinat-

ing work to understand and fix the old sets.

If you want to service old radios, you will need to learn radio theory. Trying to skip this important step is futile and unsafe. Learning the theory of tube sets becomes a do-it-yourself project, since schools no longer teach it. Books that will help you to understand radio circuitry and teach you how to repair tube-type radios are available. Some of these books are listed in the section entitled "Further Reading."



POWERING THE FIRST RADIOS

Radio in the 1920s was a new field and, as such, it had major limitations. Radios were unwieldy, especially since most of them required both external batteries and an external speaker. It was at this time (1922) that Hugo Gernsback made a strong argument that radio would never become successful if it couldn't be used easily and attractively in the living room, by anybody. "The telephone would never have become as popular as it is to-day if you had tried to sell each man an instrument he had to connect himself, and in order to do so learn all the 'how and why' of telephony." The easier it was to use, he felt, the more necessary it would be in everybody's lives.¹

To better understand radios, their

workings, and some of the peripheral problems arising from the use of batteries, it's good to have a little background about radio in the 1920s.

CRYSTAL SETS

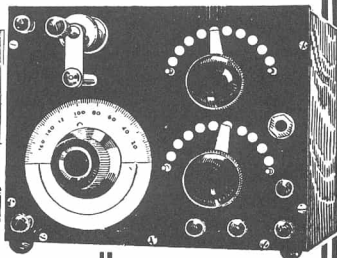
Admittedly, the earliest radios didn't require batteries and certainly couldn't supply enough power for a loudspeaker. These crystal sets did require a great deal of fiddling to receive the station properly, and anyone listening was forced to use headphones.

Oddly enough, a crystal set today would be thought of as a "solid state" set. What is more solid state than an electrical reaction taking place in a mineral? The crystal was, of course, a mineral that was receptive to radio waves. It took all of its energy from the radio frequency signal of the transmitter. Since the crystal could not amplify or increase the energy (loudness) of the received signal, it required a large antenna and a good ground to get the most out of it. Even with this help, you could only receive a station no further

¹Hugo Gernsback was one of the major forces in making radio popular. He was more of a futurist than an inventor, and could see practical applications of scientific knowledge. He wrote and edited books and magazines about radio, science, and science fiction. Always practical, he ran the earliest radio supply company. See his article entitled "The Radiotrolia" in *Radio News*, December 1921.

your hands can make a RADIO PHONE CRYSTAL SET

—at a fraction of what one would cost
made up!



Pattern No. 3
of "The Radio Con-
structor" Series—
Making Your Own

Our Complete Instructions and Blue Prints Are Designed For Those Without Technical Knowledge

No Machine Shop or Heavy Tools

You can build this splendid, reliable radio phone crystal set quite easily without a machine shop, or the use of any heavy tools. These patterns will make a handsome looking instrument with all the improvements to be found in the expensive, ready-made apparatus.

Only Standard Parts Used

One of the foremost radio engineers has constructed this set for us, especially for the amateur, and he has used only standard parts that may be procured from any supply house, and that are lowest in price.

As Simple to Make as to Read

All the fun of building your own without any of the hardship. In this set of patterns we do not merely give you pictures of how the apparatus looks, as in mere diagrams, but each and every pattern supplied is full size.

This does away with all fussy and calculating, as we have done all the laying out in our own shop, and you need not worry that the final instrument does not come out right.

Every Pattern is Full Size

Take for instance the pattern for the panel. It is printed on heavy blue-print paper exactly the size of the panel to be used. The position of the holes and other markings are exact, so that all you have to do is to paste the pattern on top of your bakelite panel by means of ordinary library paste, and when dry drill right through the pattern wherever the marks are located.

Pattern No. 3

Complete radio phone crystal set, which, when completed and hooked to aerial, phone and ground, is ready for action! You receive a Four-Page Illustrated Direction Pamphlet, Size 8 1/2 x 11 inches, One Blue Print Pattern, Size 16 x 22 inches, All Contained in a Heavy Two-Color Printed Envelope, 9 1/2 x 12 inches.

50¢

PATTERN NO. 3: HOW TO MAKE A RADIO PHONE

ORDER FROM YOUR DEALER—or write us

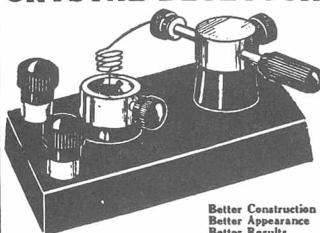
CONSOLIDATED RADIO CALL BOOK CO., Inc.
PUBLISHERS

98 Park Place

NEW YORK CITY

An example of a fairly sophisticated crystal set. This Radio Phone was available as a pattern only (Radio News, October 1922).

CRYSTAL DETECTOR



**Better Construction
Better Appearance
Better Results**

Base moulded of pure hard rubber, highly polished, measures $2\frac{1}{2} \times 4$. Brass parts machine turned, heavily nicked and polished. Cushion-bearing adjusting arm overcomes roughness and insures smooth and accurate operation. Every detector tested from broadcasting station 35 miles distance. No detail has been overlooked. The result is a perfect instrument.

Direct from Manufacturer Price \$3.00 POSTPAID
J. C. WILLIAMS
 389 50th Street, Oakland, California

Typical 1922 crystal detector.

than a few miles away. Exceptional distances were occasionally received—advertisements sometimes claimed 1000 miles—and were certainly bragged about.

EARLY TUBES

The development of the vacuum tube triode (Lee DeForest's Audion) made it possible to amplify the intensity of any electrical signal fed into its control grid. This characteristic was used to build a practical radio receiver.

Vacuum tubes, though, need power (energy) to work. There has to be a supply of electrons made available by a heated filament. The "A" battery is used to heat the filaments.

To pick up the electrons sent by the filament, the tube has a plate which attracts the electron stream because it has a strong positive (+) charge. Since

M.P.M.
MILLION POINT MINERAL
 The World's Greatest Radio Crystal

is revolutionizing radio. It is super-sensitive and is the only crystal which reproduces from every point on its surface. Allows maximum range and greatly increases the audibility. Send size and the name of your Radio Dealer for two M. P. M. crystals, convert test and contact.

Dealers: Write today—for complete information about M. P. M. and our attractive sales proposition.

M. P. M. SALES COMPANY
 Dept. N. 247 So. Central, Los Angeles, Cal.

U.S. RADIO CO.
 OF PENNSYLVANIA, INC.

U. S. Eagle Galena
 PRICE EACH 25 CENTS

Marvelous Crystals of Sensitivity. Improve your Radio Reception by the use of this Crystal. No better Galena on the American market. Each Crystal is packed in a tin container, labeled U. S. Eagle Galena, the galena itself being wrapped in tin foil and packed in cotton. DEALERS: Write for our proposition and catalogue, listing all popular makes of Apparatus.

"If it is anything in Radio, we have it."

U. S. RADIO CO. OF PENNA., Inc.
 Manufacturers, Distributors and Importers
 Corner Ferry and Diamond Sts. Pittsburgh, Pa., U. S. A.

Certain crystals were better than others for bringing in stations. Million Point Mineral (top) claims to be the "world's greatest" but doesn't mention what type of crystal it is. Generally, the galena crystal was preferred.

the charge of electrons is negative (-), the electrons are attracted by the positive plate. The intensity of the flow is controlled by the grid (the third part of the tube). The positive charge for the plate of the tube is supplied by the "B" battery, which has the higher voltage (22 to 135 volts) needed to do this job.

Some amplifying circuits need to put a certain negative voltage on the grid in order to operate well. When this is necessary, the battery providing the voltage is called the "C" battery.

The voltages a tube needs may come from either batteries or another power supply. The tube doesn't care, so long as the right amount of power



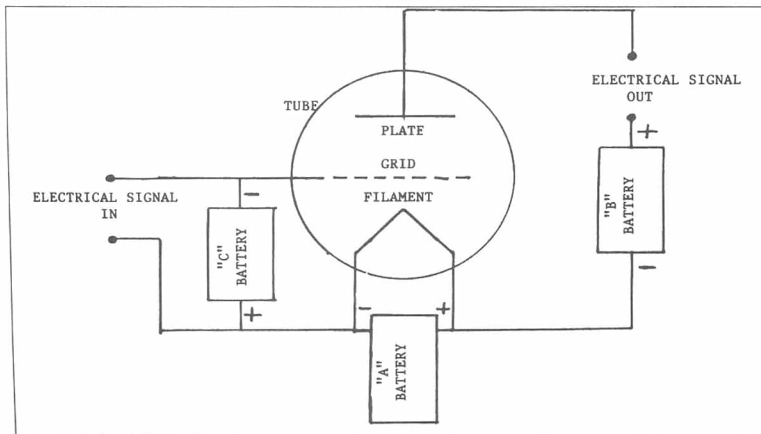
1925 Radiogem crystal set; available only as a kit and designed for the youthful builder, it is a simpler set than the Radio Phone.

at the right polarity (+ or -) reaches it. All batteries supply DC (direct current), which flows in one direction, from the - to the + connections. Later, when alternating current became the power source for homes, radio design made batteries unnecessary.

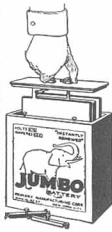
BATTERIES

Zinc-Carbon Batteries. The basic cell, called the zinc-carbon cell, is still commonly found in ordinary flashlight batteries. (The currently popular, better quality alkaline battery has a different composition.) A zinc-carbon cell obtains its electricity by a chemical process that gradually destroys the zinc metal casing. Once the zinc casing develops enough holes, the chemicals inside the battery dry out and the cell dies.

Batteries are made up of a group of dry cells, usually connected in series to provide a voltage that is some multiple of the dry cell's 1.5 volts. Thus B and



The Ideal Battery for WD12 or UV201A Tubes



The single Jumbo for WD12 tubes, the Double Jumbo for UV201 A tubes, will each operate 3 tubes four hours daily for forty days—with a renewal cost of 65¢ and 95¢, respectively. The statement is made after renting thousands of Jumbo Batteries to radio fans in the New York territory at a flat monthly rate, regardless of the number of times the battery might require recharging.

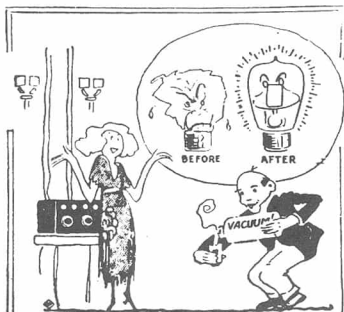
Instantly Renewable

Jumbo Batteries require no service station or electric current for recharging. Spare renewal plates may be obtained from your dealer or by mail from the factory.

Prices—Single Jumbo, \$5.25; Double Jumbo, \$10.00. Write for descriptive folder and special offer.

Primary Manufacturing Co.
442 West 42nd St. New York

Instead of taking the entire battery in to be recharged, the owner of a Jumbo could remove just the plates from the case and replace them with fresh ones.



REPAIR YOUR OWN VACUUM TUBES

For the small sum of 14c we will send you, by freight, collect, one bottle of the highest grade "hard" vacuum. This, when poured into your "exhausted" vacuum tubes, will immediately rejuvenate them. Satisfaction Guaranteed. Send \$25 for illustrated pamphlet. Money refunded if satisfied!

VACUUM FIZZ CO., OSKALOOSA, MICH.

There were spoofos in those days, too.

For Good Summer Radio Reception use JEFFERSON TUBE REJUVENATOR keeps tubes like NEW!

DON'T blame the weather for all summer radio troubles. . . . How are the tubes? All tubes, remember, grow weak with use—especially in summer when operated at higher voltage. Bring them back to full efficiency with the Jefferson Tube Rejuvenator! Takes only 10 minutes; attach to a convenient electric light socket. Used once a month, it DOUBLES and TRIPLES the life of tubes! Quickly pays for itself in saving of tubes and batteries. It's wasteful to be without one; it's economy to own one. Takes large or small tubes—201-A, 301-A, UV-199, C-299. Fully guaranteed. At leading stores selling radio supplies. If your dealer can't supply you, send \$7.50 to

JEFFERSON ELECTRIC MFG. CO.
501 So. Green St., Chicago, Ill.

Makers of Jefferson Radio, Bell Ringing and Tint Transmitters, Jefferson, Signal Cords for Automobile, Stratosphere and Marine Engines, Jefferson Oil Burner Ignition Cords and Transmitters.



\$7.50
\$10 in Canada

Tube rejuvenator brings back tubes to "full efficiency," especially in the summer when tubes are working at higher voltage.

C batteries are simply groups of cells and provide voltages like 3, 4.5, 6, 7.5, and so on.

The earliest radio sets using batteries were one-tube designs. The tube is an amplifying detector which changes the radio frequency signal from the transmitter into an increased audible signal for the listener. Sometimes a crystal detector was even used with a tube and the tube simply amplified the signal.

These early sets generally had tube filaments designed to run on about 1.1 volts. This was done so the common and cheaply available "No. 6 Cell" zinc-carbon cells could be used. (The 6 in the number means the battery is 6 inches tall.) These big single cells were used for doorbells, local telephones, and even automobile ignitions. They

OH! WHAT A DIFFERENCE
Here is the New NIAGARA
"SWITCH LEVER" "B" BATTERY
 The modern "B" Battery you have
 been wishing for



STOP FUSSING WITH BATTERY CLIPS OR CONNECTOR LEADS. JUST SELECT AND CHANGE VOLTAGE INSTANTLY. JUST MOVE THE special patented SWITCH LEVER to proper contact point—and there you are! Twice the Life of the Ordinary "B" Battery. Large Cells. Scientifically Proportioned Ingredients for Radio Service. Refillable of course like ALL NIAGARA Batteries and Noiseless too. The Most Handsome and Efficient "B" Battery Manufactured.

LIST PRICE ONLY \$3.50 EACH
 15 cells—22½ volts. Size 7¼" x 6" x 3"
 ASK YOUR DEALER or WRITE TO US DIRECT
 TO DEALERS—This will be the fastest selling "B" Battery. Immediate deliveries. Get behind this wonderful new item. Write for our liberal proposition now.

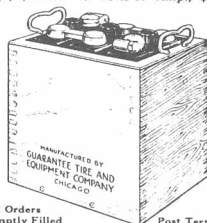
NIAGARA SALES CORPORATION
 Mfrs. of "SUPER QUALITY" RADIO ESSENTIALS
 No. 5 Waverly Place, New York City

A built-in switch allowed voltage adjustment for best results.

were relatively long-lasting and readily available. The cell supplied 1.5 volts, which was reduced to 1.1 volts by an adjustable resistor which could be changed as the A cell got older and its voltage dropped. This adjustment could be made from the front of the set using one of its knobs. In some cases, there was an adjustment for each tube.

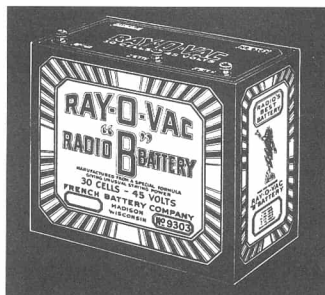
Since these early sets were something of a novelty, they weren't used a great deal. The simple A cell was satisfactory, and the B battery lasted a long time in such use. However, as multi-

Guarantee Radio "A" Batteries give perfect service with minimum of attention. Handy, sure-contact screw post terminal. Leak-proof. Quickly recharged. Built to U. S. Govt. specifications. Prices: 6 Volts-60 Amp., \$13.50. 6 Volts-80 Amp., \$15.50.



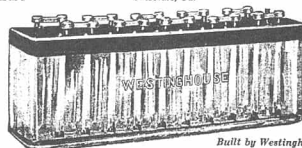
Mail Orders Promptly Filled Screw Post Terminals
GUARANTEE TIRE AND EQUIPMENT CO.
 3544-46 So. Michigan Avenue, Chicago

A typical early 6-volt A battery in a wood container.



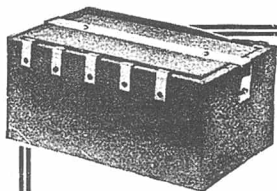
A typical replaceable B battery.

"B" Battery WESTINGHOUSE UNION BATTERY COMPANY
 22-31-2 Swissvale, Pa.



*Built by Westinghouse
 —you know it's right*

Rechargeable B batteries were never very popular; they required a special charger.



PREVENT WASTE

USE THE
NON-SOLDERED AND NON-WIRED

ENCO "B" BATTERIES

REFILLABLE WITH STANDARD
FLASHLIGHT UNIT CELLS

"WIRELESS BATTERIES
FOR WIRELESS"

603-607 W. 130th St.

ENCO ELECTRIC NOVELTY CO.

NEW YORK

This B battery was filled with standard flashlight batteries.

tube sets, and particularly loudspeaker sets, became popular, the use of non-rechargeable A batteries became too expensive and a cheaper source of filament power was sought.

A better nonrechargeable A battery was developed by Eveready during the early 1930s. This was a miracle battery called the Air Cell. Basically this Air Cell was a zinc-carbon cell, but an imaginative method was used to prevent hydrogen buildup on the carbon center electrode, a problem with any zinc-carbon cell.

The Air Cell promised longer life at a steadier voltage than the regular cell. It had one fault. If it was overloaded (if more current was drawn from it than it was designed to supply at one time), it was quickly ruined. It also was more expensive than its simpler competitor, and it didn't succeed.

Lead-Acid Batteries. Again designers looked to readily available sources of power. The 6-volt lead-acid battery was just coming into use in automobiles. It was used for starting the car as well as the rest of the electrical

TEST YOUR BATTERY IN 15 SECONDS

Your "A" Battery was costly, yet you run a chance of ruining it every time you allow it to go dead or whenever the acid fails to cover the plates.

The success of an evening's entertainment depends upon the condition of your battery; test it every day, and see that it is fully charged and plates fully covered,

CHASLYN
"Sink - or - Swim"
Ball Battery Tester

Green-Lean
White-Right
Red-Dead

makes this the work of a moment.

The *Depth-Gauge* tells you how much acid you have; the *Ball Hydrometer* tells its condition, and the *Air-Controlled Stopper* makes it easy to add just enough distilled water.

Hydrometer contains three Balls of different specific gravities:

"Float all three—Charged fully
Sinks the white—Charge still right
Sinks the green—Charge is lean
Sinks the red—Charge is dead."

More accurate than the graduated scale hydrometer, and ten times as easy to read. Also saves your carpets and rugs from acid burns. Order from your dealer. If he doesn't have it, send ONE DOLLAR and his name, and set of three parts, illustrated will be sent you postpaid.

CHASLYN COMPANY

4311 Kenmore Ave.

Chicago, Ill.



Radio batteries, like car batteries, had to be tested.

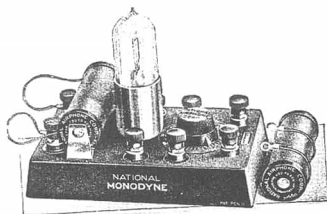
system. The battery had many faults: It was heavy, could have a foul smell, sometimes bubbled over or spilled corrosive sulfuric acid, and was expensive. However, it did have two excellent qualities. It was rechargeable, and it could supply a great deal of power.

Looking at the shelves of many old radio tables, you will see the results of spilled batteries in the acid burns on the shelves.

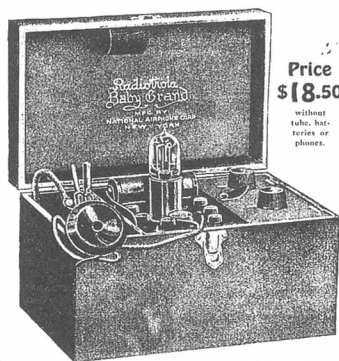
Because of its chemical composition, a lead-acid cell puts out about 2.2 volts. In the normal auto battery, 3 cells were packaged in a wood box (lined with tar to protect the wood) or, later, in a hard rubber container.

Nickel-Iron Batteries. Another rechargeable cell was designed by Thomas Edison. Used in Edison's electric trucks, it was able to supply about 1.2 volts per cell. It had several advantages: It supplied an even output voltage as it discharged, was not touchy about overcharging or storage, had a steel case that was indestructible, used a liquid alkaline electrolyte which was far less corrosive than the acid in the lead-acid battery, and could be recharged more times than a regular battery. So why didn't it succeed? It was much more expensive than the already high-priced lead-acid rechargeable battery.

Tubes. Tubes were designed to use the new filament power source. Now they had 5-volt filaments. Again it was decided to use adjustable resistances to cut down the voltage from 6.6 volts. As the battery discharged, its voltage dropped slowly, and the adjustable resistance would be reset to keep the voltage on the tube filaments at the correct level.



1923 National Airphone; one-tube set on a base; no cabinet; original price \$10.00.

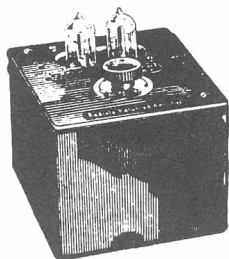
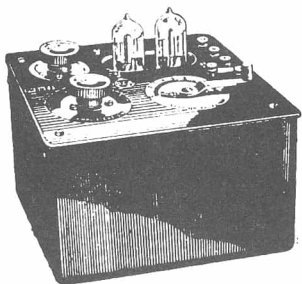


**Price
\$18.50**
without
tube, bat-
teries or
phones.

1924 Radiotrola Baby Grand made by National Airphone; one-tube set, with space for headphones; original price \$18.50.

This adjustable resistance knob could be used as a crude volume control to reduce the loudness of the radio on closer stations. It also meant that it was possible to run the filaments at too high a voltage in order to get just a little more power on weak stations, which shortened the life of the tubes.

Among the new tube types created by RCA (the preeminent tube design



1924 RCA Radiola III and Radiola III Balanced Amplifier, each housed in boxes. The combined model is the Radiola IIIA. Original prices: III, \$35.00; amplifier, \$30.00.

and manufacturing company) were the 201A, the 200A, and the 212A. Together these three types made more powerful radios possible.

Battery Charging and Chargers

Battery Charging. That big 6-volt A battery eventually had to be charged. There were “Charging Stations” in many towns and cities, to which the battery had to be taken to be recharged at a cost. There were a number of problems with this procedure. The heavy battery had to be physically taken to the station. Recharging cost money. If the battery was kept overnight, it meant another charged battery would have to be available in order not to miss favorite radio programs. There was no way to tape the broadcasts at your neighbor’s house back then.

If you had electricity (110 volts AC) coming into your home, you could purchase a battery charger for your A battery. There were chargers for rechargeable (lead-acid) B batteries,

but they never became very popular. Recharging a B battery was not cost-effective. Rechargeable C batteries were not used, since C batteries lasted for years anyway.

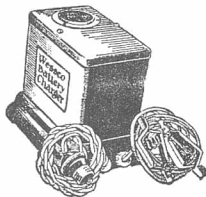
The battery chargers of the time were not sophisticated in design. If you were not cautious, you could overcharge your battery. Then it would give off fumes, heat up, and sometimes bubble over. Overcharging also shortened the life of the battery.

\$20 Wessco Battery Charger

De Luxe

\$12.95

Special
Introductory
Price



A typical 6-volt A battery charger.



HOMCHARGE your Radio Battery for a nickel!

A battery charger allowed recharging in the home. The ad also shows the problems of hiding the battery and battery charger.

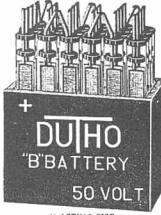
Battery Eliminators. For those with "wired" homes (those on 110-volt AC lines), battery eliminators came in all sizes and types. These were top-selling accessories in the late 1920s. You could do away with A batteries or with all of the batteries (A, B, C) together. Getting rid of the A battery was most important. The B lasted for several months of normal use and the C lasted for years.

Battery eliminators were not perfect. They often added some "hum" (buzz) to the sound heard from the receiver, because the DC produced was not as smooth as that from a battery. They were expensive, but for heavy radio users they made sense.

Experimenters who had a 110-volt AC line into their houses tried to do without the A eliminator altogether. Using a simple voltage-changing transformer, such as a doorbell transformer,

they reduced the 100 volts to the 5 volts AC that would operate a tube safely. It would operate a tube safely, but not successfully. The light weight of the filaments in tubes designed for battery use (needed to conserve batteries), coupled with the audible rate of

DUTHO Rechargeable Storage "B" Batteries



DUTHO
"B" BATTERY
50 VOLT

1/2 ACTUAL SIZE

Build a DUTHO into your set: will not leak, absolutely noiseless, emits no fumes, easily recharged, large capacity, small size, will last indefinitely.

25 Volt \$5.00
SIZE 3"x4 1/2"x4"

50 Volt \$9.00
SIZE 3"x4 1/2"x4"

100 Volt \$17.00
SIZE 3"x4 1/2"x4"

Chemical Rectifier \$1.95

Dealers: Write Today for our attractive Sales Proposition

DURKEE-THOMAS PRODUCTS CO.
1228 Folsom St.

San Francisco, Cal.

A rechargeable Dutho B battery; this is one of the more unusual-looking ones.

change in the AC current direction (60 times a second) produced a buzz that made the system—unless very carefully balanced—unlistenable.

ALTERNATING CURRENT TUBES

What was needed now was a tube designed for AC on the filament. The theory said that a tube shouldn't care what kind of current (AC or DC) is used to heat the filament. The designers set to work.

Any vacuum tube requires direct current on the plate to amplify, since a steady positive voltage must be present to attract the electrons from the filament. By necessity, the grid voltage (C) had to be DC as well. The AC coming into the grid was the signal that had to be amplified. So a radio still had to contain a B eliminator or power supply to provide the necessary DC voltages. The C voltage was usually produced in the radio itself, directly from the B supply.

It was much cheaper to heat the filament wire with AC. It did mean that the filament wire would have to be heavier than for DC tubes. This was done successfully in tubes like the 26 and the 45.

In another design, the *cathode* (electron emitter) was insulated from the filament (now called a *heater*). The cathode would be heated enough to provide the needed electrons. Common early types of this sort of tube were the 24A and the 27.

The AC-operated radio soon replaced the battery set in homes where AC was available. The radios were heavy and, in their early years, expen-

sive. However, they performed well and were inexpensive to run.

LATER BATTERY SETS

Battery sets are still being manufactured today; these are our portable radios. There are probably few people, however, still using them as home radios.

Technology kept improving the battery systems available for (primarily) rural homes. Until the Rural Electrification Agency came along in the 1930s, most farmers never expected to be on an AC line. Because electricity was important not only to their comfort, but more importantly to their farming operations, many farms had some sort of power plant. The Delco system that often is referred to was a 32-volt DC system that charged its batteries with a gasoline engine. Radios that ran on 32 volts were available for this system.

It was possible to avoid the B battery completely. Using a 6-volt car battery and a *vibrator* power supply, these radios could be used in nonelectrified areas. A number of Zenith radios during the 1930s were 6-volt radios.

There was never any doubt that farmers would bring in AC power when it was available. Allied Radio catalogs in 1938 advertised not only AC radios and battery radios of various voltages, but also AC/battery radios. The assumption was that AC power would reach farms during the lifetime of these radios, and the farmer could easily switch over his radio without having to go out and buy another one. Crosley also made radios designed to operate as either battery or AC radios.

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tery radios stopped being used in homes. They were produced until sometime in the early 1950s; Philco was advertising "Farm Radios" into the late 1940s in farm magazines. Many rural areas didn't get electricity until after World War II was over; the plans to bring light to the farms of America had been shelved for the duration of the war. It was almost 1950 before some parts of hilly, southwestern Wisconsin were hooked up to electric lines, for example, and it was probably still later in other parts of the country. Hence, farm radios remained around for a long time.

THE CHANGE FROM BATTERIES TO AC

Assuming that line power was available in a city in the 1920s, the change from battery radios to AC ones was rapid. As has been seen, batteries were pesky, expensive, short-lived, messy, and altogether a thing people were eager to get rid of.

There were, for instance, those dratted holes in the carpet. If one were unfortunate enough to spill the battery acid while moving the battery around, there would be a large burn hole. If the battery charger were unsupervised and the liquid started to bubble, small acid burns would be found in the rug. Because of this, many housewives tried to limit the location of the radio to the attic, where the spots wouldn't show. Inevitably, there would be an important broadcast that many of the family would want to hear. If the set was brought down to the dining room table, "just once, mind you," it generally remained downstairs. Clustering

around the loudspeaker or sharing the headphones brought a bit of the outside world to the family. Once people sampled radio, they didn't want to give it up.

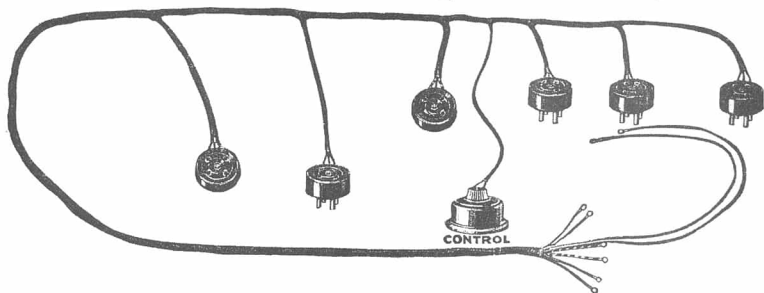
Trying to hide the big and cumbersome batteries was another problem. It would be like hiding today's car battery in the corner and hoping that no one would see it. Radio tables were developed that were long enough and narrow enough to hold one of the mid-1920s sets, with a shelf underneath to hold the batteries. Some of the tables had oak or wicker fronts to hide the batteries and make them more attractive. This meant getting behind the table to remove the battery for recharging, with the possible problem of spilling the battery acid.

Batteries had a bad habit of dying at important times. Numerous cartoons and advertisements from the late 1920s had men coming home from work and telling their wives that they had invited the Smiths in that night to listen to the radio, only to have the wife or child lament, "But the batteries are dead! I listened to the radio this afternoon." It must have happened often enough to make a point to the readers.

Then there was the constant cost of keeping up those batteries. As radio became more important to the family, the family started planning its life around certain programs. The radio was used more and more often, and for more and more hours.

The manufacturers and dealers were not at all reluctant to encourage this high regard for radio. The ads from the late 1920s implied, if not stated, that modern families used modern radios. There were many ways to get peo-

Here's the Simplest Way



To Change DC Receivers to AC

Absolutely no Rewiring Necessary on Standard Sets

The Eby AC Adaptor Harness can be used in practically any standard five or six tube set equipped with separate B battery and C bias feeders for the last AF stage *without changing the wiring in any way.*

An AC adapter harness; this wiring harness allowed the use of the new AC tubes in earlier battery sets.



General Electric Tungar charger (reprinted with permission).



This battery eliminator removed the problems of B batteries.

ple to turn in their old, "obsolete" battery sets and get one of the new, modern AC sets. Just in case the point was missed, National Radio Week in 1929 used a number of gimmicks. In Milwaukee, there was a parade, complete with decorated floats and trucks, that led to a giant bonfire where the old trade-in sets were destroyed. In St. Louis, nearly 3000 old sets were burned. The mayor himself lighted the fire in Buffalo. "The agreement on the trade-in allowances, the special window displays, the generous use of newspaper space, and propaganda of obsoles-

cence—by these many means the dealers, acting together, gave these campaigns a cumulative force to which the fire itself was a fitting climax."²

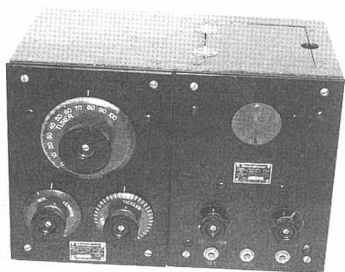
The AC set had won.

²Collectors of old battery sets flinch at the thought of this mayhem, but *Radio Retailing* proudly boasted of this coup. "Clearing the Way with Fire!" was the title of their article, which went on to state that National Radio Week "inspires many dealer associations to 'burn the bloopers'." For further information see page 72 of *Radio Retailing*, November 1928.



THE 1920s—FIRST STATIONS AND STATION FIRSTS

Radio history doesn't only include the history of radio technology and radio manufacturers, but it also includes the field of broadcasting—what was broadcast and how. Broadcasting is an increasingly popular field of radio



1921 Westinghouse model RC includes both the RA and DA in the same box; battery set sold by RCA; original price \$125.00 (Gene Harris Auctions).

history. Museums grow and clubs meet to listen to old programs and read aloud original scripts. When the fates are kind, they may even get a member of the original cast to join in one of these readings.

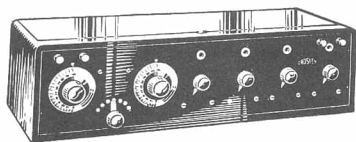
While the 1930s are considered the golden age of broadcasting in terms of programming, the mechanics of broadcasting itself already had become settled. During the 1920s, almost anything could happen, and sometimes did. There were no established standards, so each station tried to define broadcasting in the best way possible for its own particular audience. Trial and error played a large part as the stations learned on the air.

BROADCASTING: AN IMPORTANT PART OF RADIO

Probably the first question people ask about broadcasting is: What was



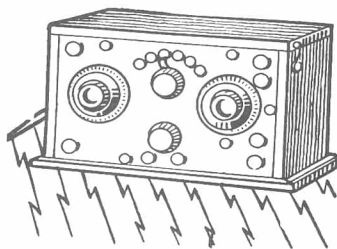
1922 RCA Aeriola Sr. made by Westinghouse; popular one-tube set (John Wilson).



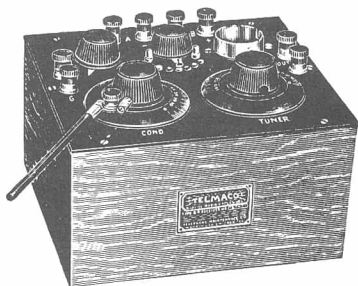
1922 Crosley model X; one of the larger Crosley models. Crosleys were famous for their low prices; even so, this model comes in a mahogany cabinet; original price \$55.00.

the first station? The answer to that depends on exactly what we mean by the question. The first station to broadcast voices? The first to broadcast a regularly scheduled program? The first to be licensed?

KDKA (Pittsburgh) has the honor of being the first station in the United States licensed not for experimental or amateur use, but for broadcasting un-



1922 Tuska type 224; original price \$35.00.



1923 Telmaco one-tube receiver; original price \$25.00.

der the 1920 federal regulations. Frank Conrad, Westinghouse's chief engineer, had been making experimental broadcasts from his garage since 1916. The broadcasts were to the Westinghouse plant in East Pittsburgh, where the Radio Engineering Section was working on developing radios better than the crystal sets of the day. Although the Department of Commerce suspended all amateur broadcasting licenses as a security mea-

When Marconi heard the AERIOLA GRAND



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Look for this
trademark at
your dealer

"It comes closest to the dream I had when I first caught the vision of radio's vast possibilities. It brings the world of music, news and education into the home, fresh from the human voice. It solves the problem of loneliness and isolation.

"The Aeriola Grand is at present the supreme achievement in designing and constructing receiving sets for the home—a product of the research systematically conducted by scientists in the laboratories that constitute part of the R C A organization."

G. Marconi

1922 RCA Aeriola Grand; testimonials were just as important then as now.

sure once the United States became involved in World War I, Conrad's test station was exempted. He continued to use it during the war, with government approval, to test military equipment for Westinghouse.

When the ban was lifted after the war, Conrad resumed his amateur broadcasting. World War I had pushed the whole field of radio into rapid development. The advancement of vacuum tubes during the war was remarkable, giving radio greater sensitivity and volume. Along with the tests he was conducting, Conrad occasionally played phonograph records. Letters arrived from listeners delighted with this type of programming. The Hamilton Music Store saw that there were advantages in radio broadcasting and provided the records in return for a mention on the air. The record concerts became a regularly scheduled event, once a week at first, but soon on a

daily basis. Until this point, those who listened were primarily experimenters and amateurs. But public attention was drawn to Conrad's broadcasts when the Joseph Horne Department Store ran an ad mentioning the broadcasts as an aid in promoting their new wireless department.

Harry Davis, a Westinghouse vice-president (and the reason for the "D" and the "A" in KDKA), saw the public relations value of a station. If you

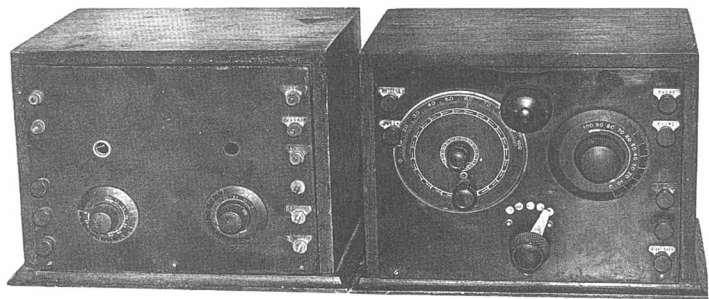
Broadcasting the Engagement by Wireless



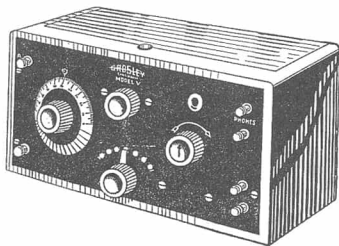
Up-to-date surely is the one who chooses radio as the basis of an engagement party.

A radio instrument may furnish the evening's entertainment. Then at the supper table the centerpiece and serving cups carry out the idea. Attached to a ribbon which comes from the receiving wires is a card on which is written "Hear the News." On the reverse side are the names of the engaged couple.

Radio was a cute idea for a party.



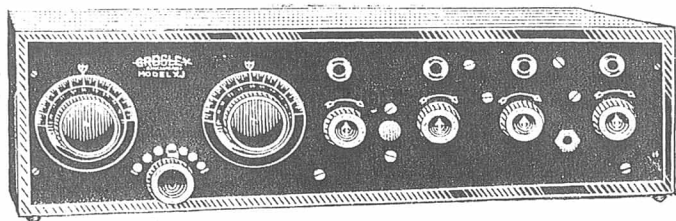
Tresco model W receiver and amplifier; not listed in Tresco literature.



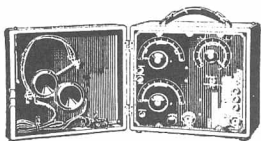
1923 Crosley model VC. This is a model V with an engraved front panel. One month later, in June 1923, it was being advertised as the Ace Model V, "formerly known as the Crosley VC;" original price \$20.00.

could broadcast interesting programs, people would buy your radios. With new federal guidelines in effect for licensing broadcasting stations, Westinghouse applied for a license and received it in only eleven days, on 27 October 1920. KDKA went on the air with the results of the Harding-Cox presidential election on 2 November 1920, less than a month after it had applied for a license.

What about the first voice broadcast? Certainly it was earlier than 1920? On Christmas Eve, 1906, Reginald



1923 Crosley model X-J; original price \$65.00.



Specifications

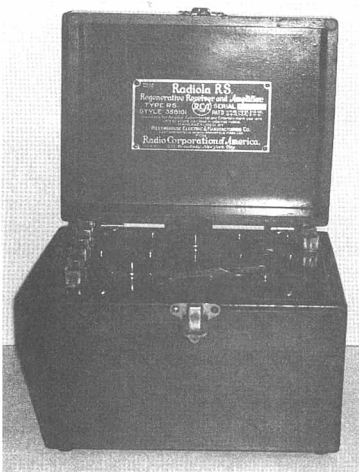
- Regenerative Tuner.
- Vernier Control of wave length adjustment.
- Detector and 1 stage Amplifier.
- Two telephone jacks.
- 1 Pair Brandes Head Telephones.
- 3 Flash Light Batteries.
- 2 B Batteries.

Price \$97.50

1925 RCA Radiola II.

Fessenden broadcast a program from Brant Rock, Massachusetts, that started with the "CQ, CQ" of Morse code and then switched to a human voice. There are no words that can adequately describe the surprise, shock, and amazement of shipboard radio operators who suddenly, at sea, heard a woman singing in their radio rooms. At that time, remember, wireless was all in code. The surprised operators didn't hear just an isolated song, either. In addition to the woman singing (taken from a phonograph record), someone read a poem, there was a violin solo (played by Fessenden himself), and a speech. It was a complete Christmas program. Fessenden then asked people listening to write him and let him know how far the broadcast had carried. The following New Year's Eve program was heard as far away as the West Indies.

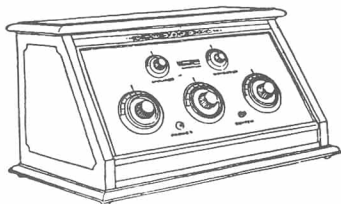
Many other stations claim various firsts, but the first regularly broadcasting station (Fessenden didn't broadcast on a regular schedule) has to be KQW (San Jose, California), which was



1923 Radiola RS; manufactured by Westinghouse; sold by RCA; original price \$87.00.



1923 Radak model C23; made by Clapp-Eastham; original price \$125.00.



1924 Work Rite Air Master model; original price \$160.00.



1924 Fada kit; original price \$25.00.

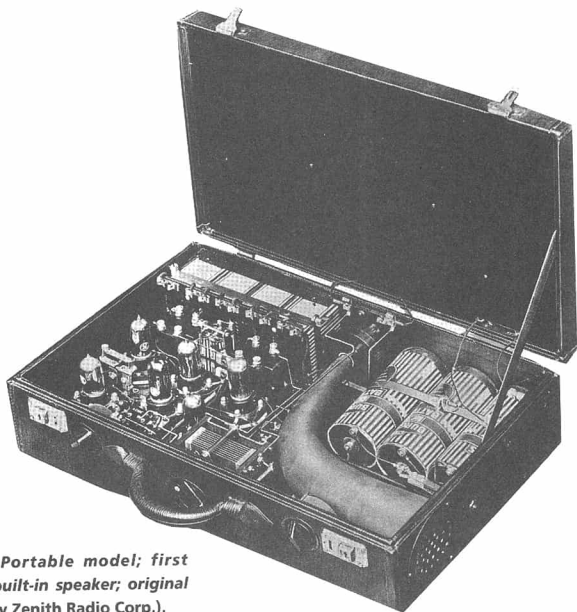
started by Charles Herrold in 1909. It wasn't known as KQW then—this was before there were call letters. In fact, this was before there were any regulations regarding broadcasting stations. The station announcement was “This is San Jose,” followed by the address of the college of engineering Herrold had started. Herrold, a self-trained engineering genius, at once made radio the focus of the college, with voice transmission his immediate goal.

At first Herrold made only occasional experiments, but soon voice broadcasts were a regular feature. Every Wednesday night the station was on the air with news bulletins and phonograph records (provided by a lo-

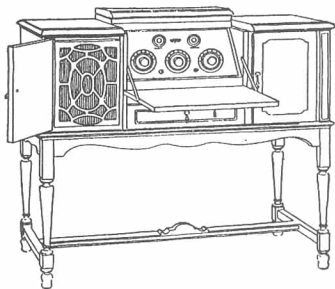
cal store). Anyone with a crystal set in the area planned on listening to these programs. Unfortunately, they didn't always hear the end of them. Herrold carefully planned the entire program, but pushed so much power (15 watts) through his carbon microphone that the program sounded more and more mushy as the evening went on. Often he had to simply stop and shut down. The next week he would apologize for the incident, but often the same thing would happen again. New Year's Eve, 1915, he decided to welcome in the new year with a blank shot from an old Army pistol. There was a sharp sound, and he was off the air again.

Herrold shut down the station during World War I. When he started it up after the war, he was unable to repeat his earlier success. Eventually he sold the station to a Baptist church, and it finally got call letters and became KQW. After several other sales, the station ended up as KCBS, the Columbia Broadcasting System station in San Francisco. Lee DeForest said in 1940 that KQW could “rightfully claim to be the oldest broadcasting station in the entire world.”

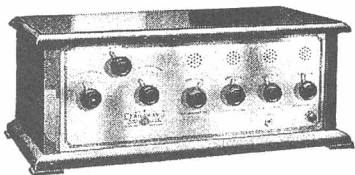
There were others—lots of oth-



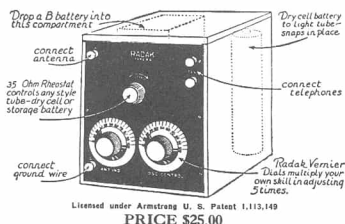
1924 Zenith Super Portable model; first portable radio with built-in speaker; original price \$240.00 (courtesy Zenith Radio Corp.).



1925 Work Rite Aristocrat model; designed to look like a buffet when the radio and speaker compartments are closed; original price \$350.00.



1924 Faraway model F. According to Radio Collector's Guide, Faraway made only four models. The light-colored front panel is different from most other sets of that date; original price \$59.50.



1924 Radak model R-4. The diagram shows that this is a self-contained small radio, including even the batteries; original price \$25.00.

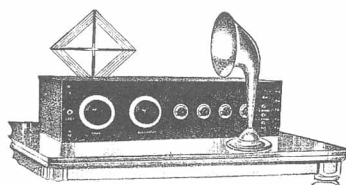


1924 Mu-Rad model MA-15. This ad reflects the excitement and mystery of radio.

ers—who had various claims to being first. Canada considers that the first scheduled broadcast in North America occurred over station XWA (Montreal) on 20 May 1920, over five months earlier than KDKA's. Europe was developing its own broadcasting. This is why the question we asked originally



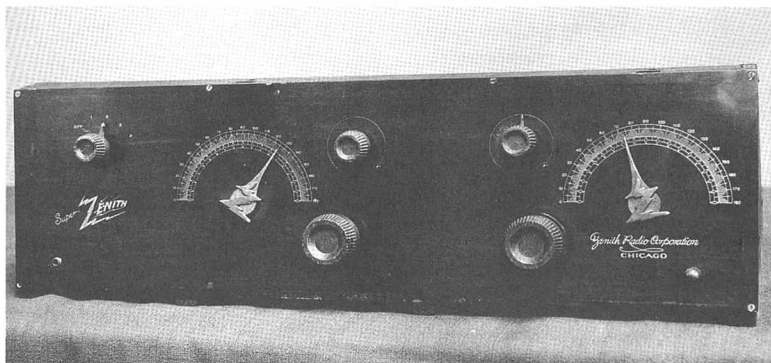
1924 Mu-Rad model MA-18. Notice the Radio Map on the wall—apparently the listener has been marking the stations he has picked up; original price \$110.00.



1924 Ultradyne; available in kit form; made by Phenix Radio Corp.; original price \$24.50.

has to be carefully phrased. There are so many answers. Everyone wants to be first, and the words “radio broadcast” or “regularly scheduled” can have many interpretations.

By the way, the firsts that took place the first year after KDKA began are awesome. Everything was a first, and the stations were willing to try just about anything. This list is selective and incomplete. There are certain to be other stations claiming some of these records:



1924 Zenith model Super-Zenith VII; original price \$240.00 (Courtesy Zenith Radio Corp.).

31 August 1920

First election returns, Detroit primary (WWJ in Detroit)

October 1920

First World Series (WWJ)

2 November 1920

First national election returns (WWJ, KDKA)

31 December 1920

First New Year's Eve celebration (WWJ)

2 January 1921

First church service (KDKA)

First remote broadcast was of this same church service.

3 January 1921

First weather forecasts given by voice (WHA in Madison, Wisconsin)

11 April 1921

First boxing match, Johnny Dundee and Johnny Ray (KDKA)

9 May 1921

First live broadcast from theater stage (KDKA)

4-6 August 1921

First Davis Cup matches (KDKA)

5 August 1921

First play-by-play baseball (KDKA)

16 October 1921

First radio section started by a newspaper (*Newark Sunday Call*). Although not a broadcast first, these newspaper departments were important in making people familiar with radio.

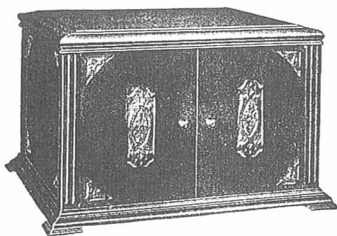
11 November 1921

First live opera performance (KYW, Chicago)

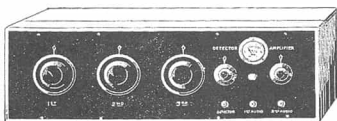
These first years of broadcasting were exciting. No one really knew where radio was going, nor how it would get there. But everyone was convinced that radio was a great benefit for mankind.

An article in *Radio News* in December 1922 said:

"There will be concerts such as we really want to hear, college courses for the boy who could



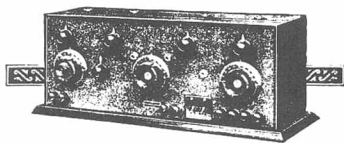
1924 Magnavox model TRF-50. Elaborate doors cover the workings of this table set; original price \$150.00.



1924 A&P. "The most beautiful and efficient neutrodyne set in the world," it claimed; original price \$97.50.

not go as far as the university, business information in condensed form so that dad will not have to ruin his eyes and fill all his home time with reading. All will be systematized and on time like the visits of the postman. Probably we shall have individual receiving sets for the different members of the family, so each can hear what he wishes. They will be cheaper and more efficient than they are now, and simpler to operate. Radio will not take the place of the telegraph or the telephone, the newspaper or the magazine, the theatre or the moving picture show. It is just one

HALLDORSON



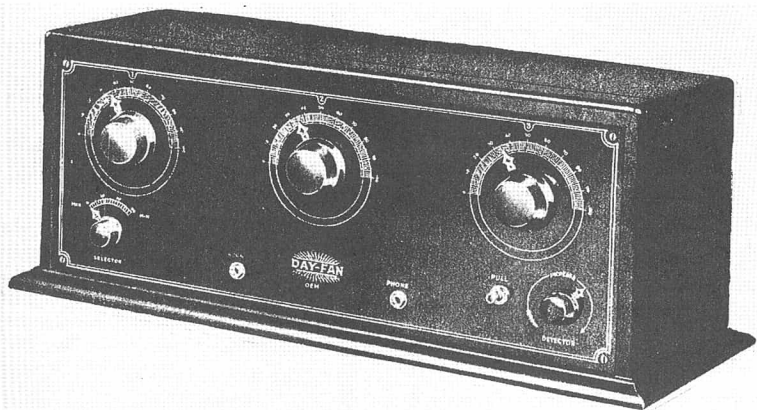
1924 Halldorson. The company made three models in 1924. Originally it was a transformer manufacturing company.

more marvel of modern science that enriches our lives and fills [them] with pleasant, useful entertainment."

Radio Studios

In the beginning, radio studios weren't even primitive, they were non-existent. They provide a perfect example of learning through trial and error, since there was no real information about what was necessary to produce a clear, understandable radio program. Accounts of early stations leave one wondering how the programs ever got on the air.

Take, for instance, the way KDKA developed its studio. Broadcasting the election returns was easy, with one man sitting in front of a microphone. When they tried to broadcast the Westinghouse band from a hall, they ran into acoustical problems they had never foreseen. Placing so many instruments inside a large room led to such reverberation that the broadcast sounded like bedlam. Up onto the roof of the building they went, and the broadcast went just fine. When rainy weather came, a tent was erected to protect the musicians. Finally a strong

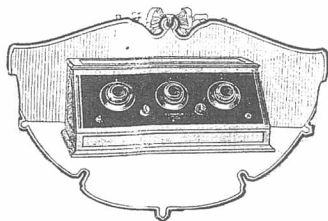


1924 Day-Fan. This cabinet can be either the OEM-7 (4-tube, original price \$98.00) or the OEM-11 (3-tube, original price \$90.00).

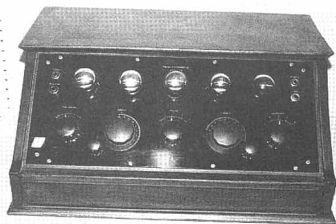
wind blew the tent down, and they went back inside again—but this time they erected the tent inside the building. The tent softened the room acoustics and allowed the broadcasts to sound good. As time went on, the tent was replaced by hangings to do the same job.

The WJZ studio in Newark, New

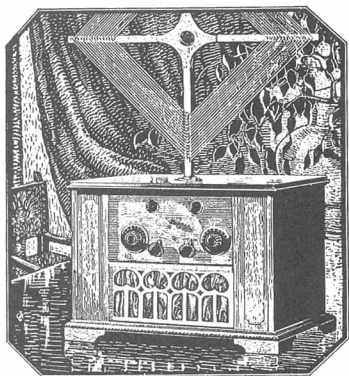
Jersey, was also on the roof of a Westinghouse building there. It put its new transmitter in a shack on the roof, reachable only by an iron ladder and through a hatchway. An Edison phonograph, which they were planning on using to play records, was too big to go through the hatchway to the



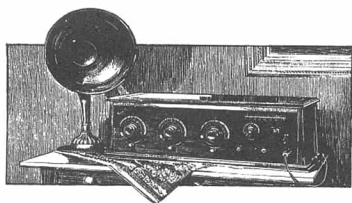
1924 Thompson Parlor Grand model; original price \$145.00.



1924 Colin Kennedy model XV-430; TRF, battery set; original price \$142.50 (Gene Harris Auctions).

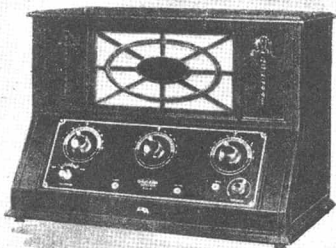


1924 De Forest model D-12. The loop antenna fits into a hole in the top of the cabinet. This particular model was available for either dry batteries or storage batteries. The case was gray-and-black Fabrikoid or two-tone mahogany. Original prices were from \$161.20 to \$195.00.



1924 Pfanstiehl model 7 Overtone. A bit of a radio table shows at the bottom. Not much wider than the radio itself, this table had a shelf on which to place the batteries; original price \$150.00 (radio only).

The DAYRADIA



1924 Day-Fan model 5107 Dayradia; slant-front radio with enclosed speaker; original price \$225.00.

roof. Instead it had to be hoisted up the outside of the building. After several weeks of tests and receiving letters of praise from people who were excited about this new entertainment, they began regular programming. A few performers made it up the ladder to the shack, but it soon became very evident that the studio should be easily accessible. Draping part of the ladies' cloak room with flannel was the solution to the problem.

Another example of how primitive early broadcasting could be was seen at what later became the Columbia flagship station, WOR (Newark). Their first programs were broadcast before there was a completed studio. With no studio, they needed a soundproof

room to monitor the first day's programs. They ended up using the men's room.

There were some ambitious opening shows for stations. KYW (Chicago), another Westinghouse station, took advantage of the expertise Westinghouse was developing in radio to begin its broadcasting with the most



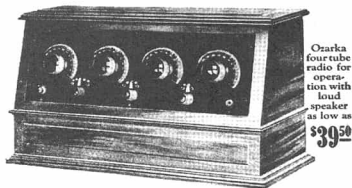
1925 RCA Radiola model 26; portable, loop antenna; battery operated; beautiful wood case with gold-colored dials; original cost \$225.00 (Gene Harris Auctions).

ambitious project one could think of: a live production of the Chicago Opera Company. The opening show was immensely successful and nightly broadcasts of the opera continued to the end of its season.

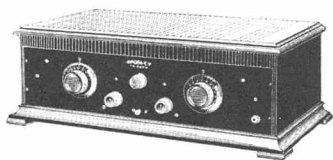
In an attempt to look elegant (and incidentally to hide the dirt), WJZ dyed its flannel red. Studios in the early 1920s tried hard to look like living rooms or front parlors. Since most of the performers were used to a live audience in an unamplified room, they were intimidated by the microphone. With no audience present for whom they could perform, many of them suffered "mike fright." To overcome this, studios went to great extremes to hide what they were. Photographs of early studios show many popular decorative ideas of the times. There were those elegant-looking draperies (made of flannel or burlap), a great way to disguise a plain room as well as to deaden the reverberations. Oriental carpets covered the floor, not only giving a comfortable

feel to the room, but also muffling footsteps. Pianos were a necessity, of course, to accompany the many soloists who appeared; like the piano at home, it was covered with a paisley scarf. Potted plants gave the room a nice, homey feel. Amplifiers could hide in innocent-looking, commonplace phonograph cabinets. There was still the microphone to handle. It had to be hidden to keep the performers from becoming nervous. Suddenly the studios had ornate, floor-standing "lamps" with the fringed lampshade carefully disguising the microphone. The feeling that comes from looking at the pictures is one of an over-elaborately decorated, tasteless, middle-class parlor.

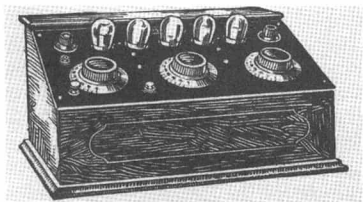
Glorious 1922! Radio was booming, stations were starting, and performers were delighted to be on the air. No one thought about wage scales and hours. WJZ, located across the river from New York City, had early access to a large number of performers. There was a problem in getting them, since the Westinghouse station was located in a factory district on the wrong side of the river. Undaunted, WJZ had limousines meet the artists at the ferry, a doorman to greet them at the studio, and an announcer who appeared in a



1924 Ozarka (no model number); original price \$39.50.



1924 Crosley model 3R3 Trirdyn Special; original price \$75.00; with tubes and earphones \$90.75.



1925 Jones model J-75. This set was made by Joseph W. Jones (New York City) rather than the Jones Radio Co.; original price \$75.00.

tuxedo or, occasionally, white-tie-and-tails. Artists wanted to come to perform on this new medium. It was modern; it was exciting.

The euphoria didn't last long, however. Soon stations in New York City were broadcasting. Without the need to bribe the performers to come, the amenities soon declined. The performers also learned that there was money to be made from radio and that performing for the thrill or the publicity was no longer necessary.

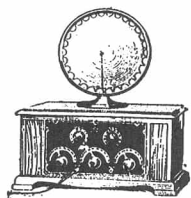
Advertising on the Air

Early broadcasting had certain ethical problems. One was the matter of advertising or not advertising on the air. Nowadays it seems impossible that

radio seriously considered being advertising-free. There was a possibility—remote to be sure—that it would be limited to announcements such as public radio uses today (“This program has been brought to you by the XYZ Corporation, a leading manufacturer of widgets, located at 123 State Street.”) This wasn't likely to last long, since businessmen already knew the value of the printed ad.

Back in 1916, the chief engineer of Western Electric had said, “We [do] not think it seemly to advertise on radio.” Even at the first Washington Radio Conference in 1922, Herbert Hoover, then Secretary of Commerce, said, “It is inconceivable that we should allow so great a possibility for service to be drowned in advertising chatter.” An attempt was made in 1925 to pass a law to prohibit advertising, but it failed. As time went on, the talk wasn't about banning all advertising, only “direct advertising.” The lines grew less distinct all the time.

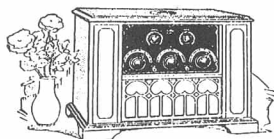
Even before radio advertising was acceptable, corporations found that they could gain early recognition of their products by naming the show after the company. Atwater Kent was sponsoring “The Atwater Kent Hour” as early as 1925. Kent felt that the extra cost of radio advertising was well worth the money, although it cost almost twice as much each week to put on the program as the entire year's cost for printed advertising. The Stromberg-Carlson Sextette, on weekly over the Blue Network, was “definitely designed to aid the dealer in selling Stromberg-Carlson receivers,” according to an ad they ran in *Radio Retailing* in May 1928.



DE FOREST F-5 AW

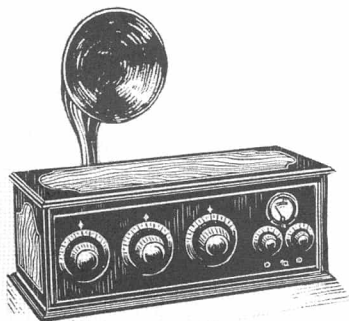
1925 De Forest F-5 AW; original price \$90.00.

Not everyone questioned the merits of advertising. American Telephone and Telegraph began station WEAf (New York City) in 1922. Since they had no radio equipment to sell, unlike most of the other parent companies, they weren't particularly interested in broadcasting. They were used to handling toll charges for telephones and telegraphs, however. It wasn't a big jump for them to conceive of the idea of "toll broadcasting," an opportunity for anyone who was willing to pay the time rate to basically own that period of time to do with it what he wanted. An indication of where this all was going came in WEAf's first paid program. On 28 August 1922, Mr. Blackwell of the Queensboro Corporation gave a ten-minute talk. The announcer who introduced him mentioned Nathaniel Hawthorne and his ideals about a healthful home life. Then Mr. Blackwell began. After a token mention of Hawthorne and those ideals, he got right to the point. The Queensboro Corporation was selling a group of apartments (in "Hawthorne Court," naturally). They exemplified Hawthorne's dreams about healthful living and, for the rest of the ten minutes, Mr.



DE FOREST F-5 M

1925 De Forest F-5 M; enclosed speaker; original price \$110.00.



1925 Gilfillan model GN-2; introduced in 1924; original price \$140.00 (without the horn).

Blackwell gave unarguable reasons for buying into this great opportunity.

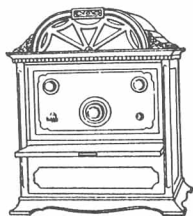
The battle against advertising was really lost almost as soon as it began. With the exception of educational and public radio, there was no way that broadcasting could remain unsullied by commercialism. Today there's a feeling that this is happening even to public radio, as sponsors not only give their names and locations, but also include some sort of slogan or short spiel.

Early Regulations

Radio grew. What had begun in 1920 as almost an experiment was by

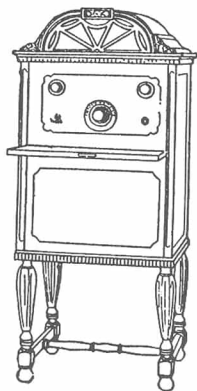


1925 Gilfillan model GN-1; introduced in 1924; original price \$175.00.



1925 Mohawk model 110, console version.
With its curved top, this table-top radio is
highly styled; original price \$175.00.

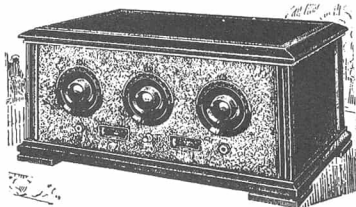
the end of the decade a vast, established business. David Sarnoff, of RCA, gained a reputation as a prophet for accurately predicting the growth of radio. His prediction was made early in 1920, before there were any licensed stations on the air. He visualized that the "Radio Music Box" could be made for \$75 per set, and that the first year there would be sales of \$7,500,000, the second year \$22,500,000 and the third year \$45,000,000. RCA didn't believe these figures and so was caught unprepared when KDKA went on the air and radio began booming. A shake-up the next year made Sarnoff the gen-



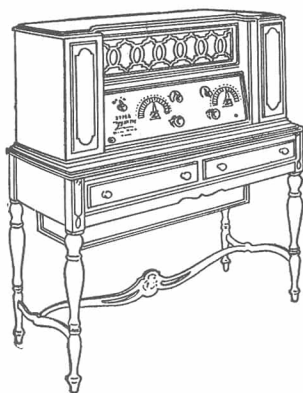
1925 Mohawk model 115 Console; same as the 110, but with a floor cabinet instead; original price \$225.00.

eral manager, while RCA rushed to make up lost time. The first year that RCA sold radios, they grossed \$11,000,000. The second year they matched the prediction, while the third year they sold \$50,000,000. This consolidated RCA's position in the field and Sarnoff's reputation as a visionary.

KDKA went on the air in 1920. By the end of that year, three stations were licensed. Nine months later, there were 451 stations, broadcasting from every state except Wyoming. Immediately a major problem arose. All of the stations (except those broadcasting governmental reports such as weather or crop news) were licensed at 360 meters. Crop reports and weather were to be found at 485 meters. A station would use 360 meters for entertainment and news, then switch to 485 meters for its weather reports. As soon

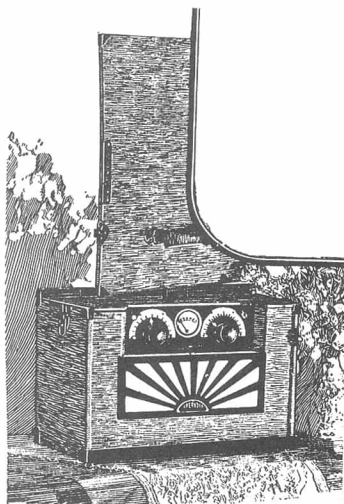


1925 Eisemann model 6-D; introduced in 1924; original price \$125.00.



1925 Super Zenith X. This horizontal highboy concealed the speaker in the top of the compartment; available as either an AC set or a battery set; original price \$550.00.

as two stations in the same area were broadcasting, some sort of compromise was necessary. The government had not allotted any broadcasting time periods, so it was up to the stations to make their own arrangements. With no supervision, a station could exceed its time and make life difficult for its companion station. Some sort of allocation

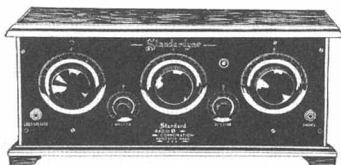


1925 portable Operadio; very early Deco style.

of the radio band was going to be necessary.

Meanwhile, every group wanted to be on the radio. Newspapers started their own stations, stores developed them to help sell radios, colleges and universities wanted them to help educate people in the remote parts of their states, and churches saw them as a method of expanding their ministries.

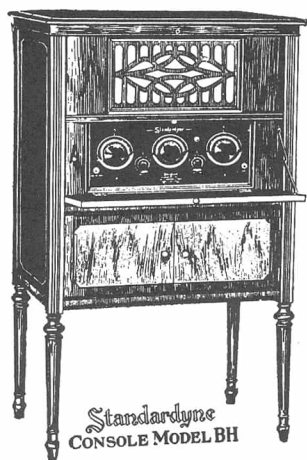
As the decade progressed, reassignment of radio frequencies was common, as was sharing a frequency with one or more other stations. The smaller stations were limited to certain hours of certain days, making it difficult for them to develop their own listening audiences. Since new listeners wanted to be able to brag about hear-



1925 Standard model B5; original price \$60.00.

ing one of the large stations (KDKA, WJZ, or WWJ, for instance), it was necessary to do something about the local stations that were broadcasting on the same wavelength. At first there was "Silent Night," one night a week when the local station would stay off the air and its listeners could try to catch one of the major stations. Different nights were chosen in different parts of the country. For a while it worked, but the local stations eventually became tired of losing revenue for that night, and the idea slowly died.

Stations were still starting up haphazardly, and something was going to have to be done about the chaos. When several stations were sharing the same frequency, it became a major undertaking to tune in any one of them clearly. The government attempted to solve the problem in 1922 when the Commerce Department added a 400-meter band for broadcasting, with strict limitations. It was for Class B stations, who would operate on 500 to 1000 watts and were prohibited from playing phonograph records. Those that couldn't meet these terms (the Class A stations) were fated to stay at the 360-meter band. Listeners liked this, as did all those who favored a few powerful stations rather than a plethora



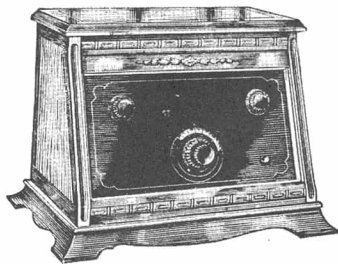
1925 Standardyne model BH; original price \$135.00.

ora of smaller ones. The 400-meter stations were relatively safe from overcrowding, at least for a while.

But the Class A stations saw no improvement in their situation. In fact, since there was still virtually no regulation of the airwaves, the plight of the smaller stations was becoming worse than ever. This predicament encouraged them to wander off their given frequency in the hope that somehow or other they could be picked up more easily by the listener. Voluntary time sharing wasn't working out. The Commerce Department was forced to assign frequencies and allocate time in an effort to bring some order out of this, even though there was no certainty that the law specifically permitted these actions.

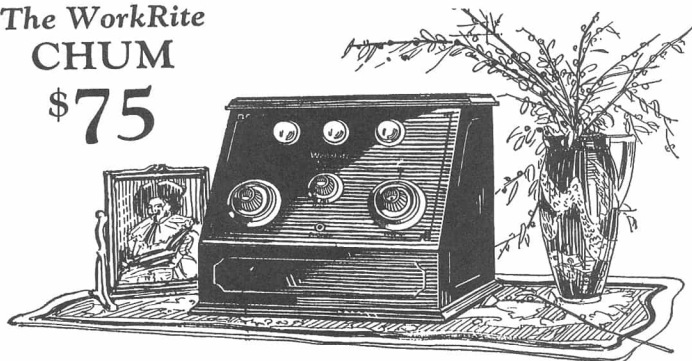


Wolper model RS5; slant-front radio in very deep case, with stepped-back enclosed speaker; mid-1920s. The radio is sitting on a separate table (Paul Johnson).



1925 Mohawk model A5. Some applied wood trim decorates this rather conventional slant-front cabinet; original price \$115.00.

The WorkRite CHUM \$75



1925 WorkRite Chum model; introduced in 1924.



1925 Hammarlund Roberts.

Although regional stations were located over more of the broadcast band, there were still 86 stations operating at 360 meters in 1924. To spread these out, an arbitrary decision was made—stations operating at 500 watts or more were assigned to the regional sections of the band, while those of less power were lumped together in still more time-sharing plans.

An example of this involved station KMA of Shenandoah, Iowa, the station of the Earl May Seed Company. Earl May purchased a 500-watt Class B transmitter and went on the air in the fall of 1925. Although it had a large enough transmitter to qualify as a Class B station, it was assigned Class A status and ordered to share its frequency (252 meters) with Western Union College of Le Mars, Iowa. Western Union would be broadcasting only once a week, while KMA was permitted to be on the air an hour at noon, an hour in the evening, and two hours on Tuesday and Thursday evenings. Like so many other stations, KMA didn't stick to the letter of the law about these hours.

Shenandoah was a town with two major (although Class A) radio stations. The Henry Field Seed Company had beaten KMA to the punch and gotten on the air earlier with KFNE. Now the two friendly competitors were assigned the same channel (461 me-

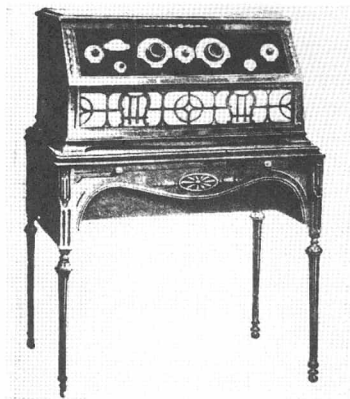
ters). Each station would broadcast for an hour or two, then go off the air to let the other one broadcast. The two stations looked around, found different little-used spots on the dial, and each began broadcasting at nonassigned frequencies.

It was inevitable that Congress would have to vote power to some organization to regulate radio stations. They established the Federal Radio Commission (FRC) in 1927. Herbert Hoover, then Secretary of Commerce, warned against channel jumping, citing (among others) KMA and KFNF of Shenandoah. The two stations decided that it was too risky to play around now and stayed at their newly assigned (in early 1927) weak frequency of 270 meters. With the situation in Washington, this didn't remain unchanged for long. In August 1927, KMA was offered a new frequency (740kc) if they would share it with a Shreveport, Louisiana, station.

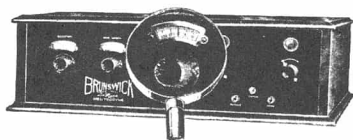
This meant that KMA had four different frequency assignments in three years, and had shared time with a college station, a competing seed company station, and finally with a rabidly anti-FRC station in Louisiana. Unlike many others, KMA's story ended happily. They are still broadcasting today.

Networks

Network broadcasting started seriously in 1923. American Telephone and Telegraph (AT&T), which owned the telephone lines, began developing "chain broadcasting." Through experiments, they found that the normal telephone lines were not good enough for radio broadcasting. Special circuits would be needed, as would cable de-

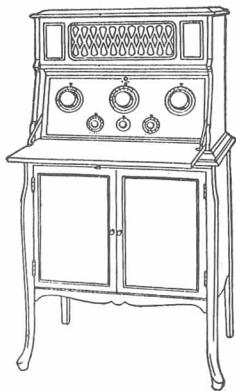


1925 Music Master model 215; spinet desk style; original price \$215.00.

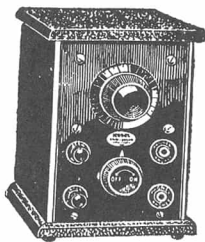


1925 Brunswick kit (no model information) sold by Radio Shack; original price \$39.49 (kit without the fancy illustrated dial).

veloped for this purpose. On 31 July 1923, the first transcontinental hookup took place between San Francisco and New York to broadcast Warren Harding's speech on his return from Alaska. At this point, chain broadcasting was a monopoly of AT&T. They had a rate card (ranging from \$150 per hour for Davenport, Iowa to \$500 per hour for their flagship station, WEAf) that let the sponsor choose which cities he wished to cover with his advertising.

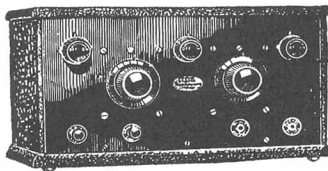


1925 Fada; model 185/90A Neutrola Grand.
The slant-front radio sits on a base with doors; enclosed speaker; original price \$295.00.

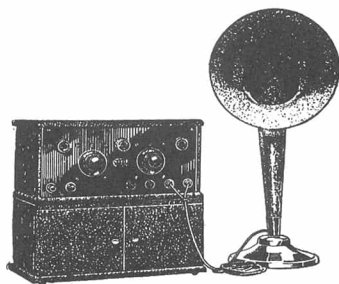


1925 Kodel model C-11; original price \$10.00.

As chain broadcasting developed for AT&T, other companies became interested. RCA, General Electric, and Westinghouse formed a new company, National Broadcasting Company, in 1926. This company bought out AT&T's stations and network broadcasting, as we know it today, began on 15 November 1926. This network, an-



1925 Kodel model C-13; original price \$28.00.



1925 Kodel model C-14; original price \$32.50.
The battery storage cabinet and horn speaker were extra.

chored by WEAF (New York), became NBC's "Red" Network. By the first of the new year, station WJZ (Newark) led the "Blue" network, the second NBC network.

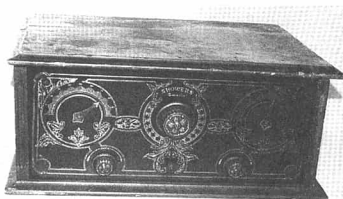
A question always arises about how NBC named its networks. "Red" and "Blue" aren't the sort of names we expect. There are two different stories about how this took place, both of them plausible. According to one of them, radio engineers knew it wouldn't be good to send out a "Blue" network program on the "Red" network, so there had to be some way to keep these straight in the control room.



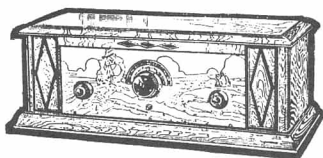
1925 Pfanstiehl model 10 Overtone; original price \$155.00.

The plugs on the patch cords were accordingly colored red or blue to aid in clarification. The other story says that this issue was decided even before the network was on the air. A group of NBC personnel, sitting on a train and trying to figure out what stations were being linked with either of the anchor stations, used a red pencil line for the one and a blue line for the other.

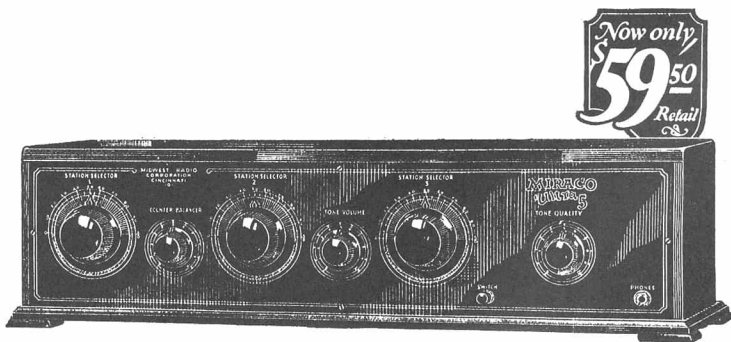
The Columbia Broadcasting System didn't start with the resources of three major communications companies behind it. Its original name was the Columbia Phonograph Broadcasting System, since the Columbia



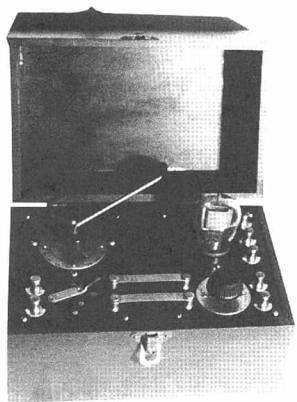
1926 Showers console model; gold-painted front; original cost \$60.00. (Gene Harris Auctions).



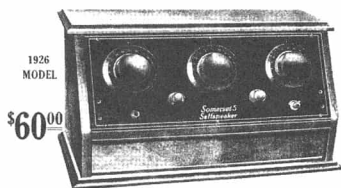
1926 Westinghouse single-dial set; interesting design painted on the front panel; original price \$57.00.



1925 Miraco Ultra 5.



1926 Masterphone made by the Boston Radio Manufacturing Co. (John Wilson).



1926 Somerset model 5.

This Remarkable Clock Does the Work of 12 Clocks . . . **\$3.75** Postpaid

This new time device is being used by DX fans everywhere—Frame may be removed and clock inserted in panel of your receiver. This radio clock girdles the globe—overcomes confusion in bringing in distant stations. A glance tells you the time anywhere.

Most essential to the traveler in foreign countries or those motoring 'cross country. Guaranteed mechanically perfect. Shipped promptly, postpaid, on receipt of check or money order for \$3.75. State time zone wanted.

SWIFT & ANDERSON, INC.
 Successors to Henderson Brothers
 Largest Importers of Field Glasses in America
 97 FEDERAL STREET BOSTON, MASS.

A radio-clock to straighten out the confusion of time zones. It could be taken out of its cabinet and installed in the panel of the receiver.

Phonograph Record Company was the parent company. In the late 1920s phonograph companies had lots of money, but due to radio, faltering sales. It was logical to consider getting into the new action. The first CBS program was broadcast on 18 September 1927, but financial disaster soon loomed. The company owed AT&T

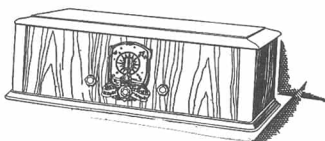
\$40,000 for rental of telephone lines and the Columbia Phonograph Record Company declined to put any more money into the network. Some fast footwork found enough money to keep the network afloat until it was re-financed in 1929. At that time William S. Paley became its president. For the



1928 Grebe Synchrophase Five; mahogany cabinet with mahogany Bakelite panel; original price \$105.00 (less tubes).



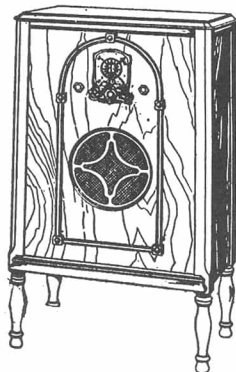
1928 Grebe model Synchrophase A-C Six; mahogany cabinet with burled walnut panel; original price \$197.50.



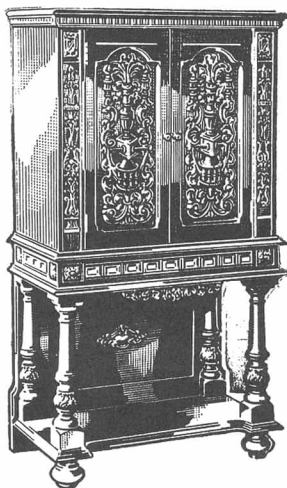
1929 A.C. Dayton Navigator model AC-98; walnut table with inlaid veneer top; original price \$98.00.

next five decades, CBS no longer had financial problems.

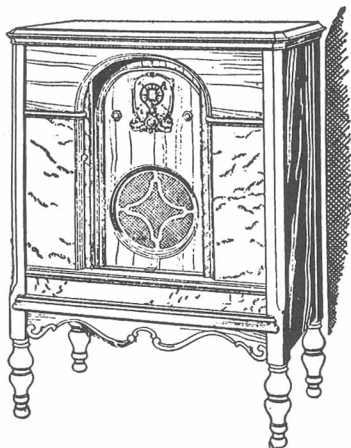
It wasn't until World War II that someone realized that NBC was actually two networks and was thus subject to anti-monopoly laws. Either the Red or the Blue network would have to be



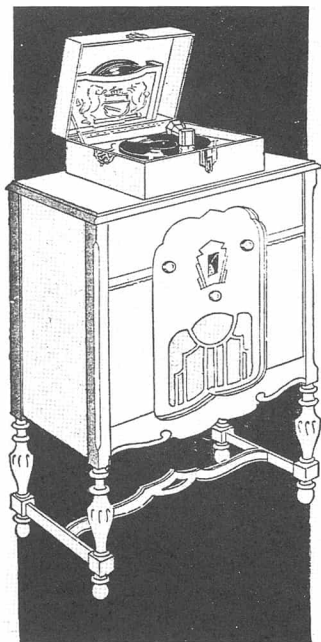
1929 A.C. Dayton Navigator model AC-9960; walnut lowboy; matte, not gloss, finish; original price \$148.50.



1929 Sparton model Equasonne 301; ornate highboy; elaborate applied decoration on both the doors and the back panel; original price \$274.00.



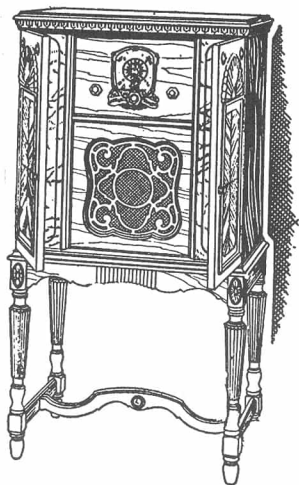
1929 A.C. Dayton Navigator model AC-9970; wood lowboy with sliding doors; original price \$165.00.



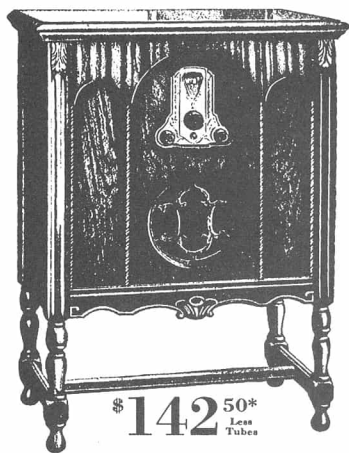
1929 Caswell PowerTone; a phonograph designed to be placed on top of a radio and blend in with it; original price \$49.50.

sold. The Red network was NBC's most important one, with the best shows and strongest stations. Obviously, it would be the Blue that went. As the time for the sale came, the two

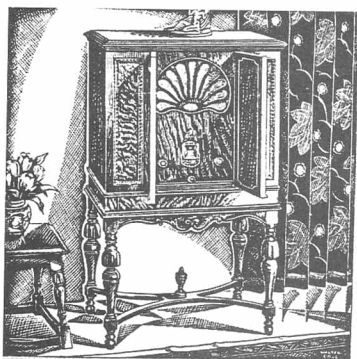
networks divided up stations, equipment, and personnel. The Blue Network, its legal name at this time, was sold in 1943 and became the American Broadcasting Company.



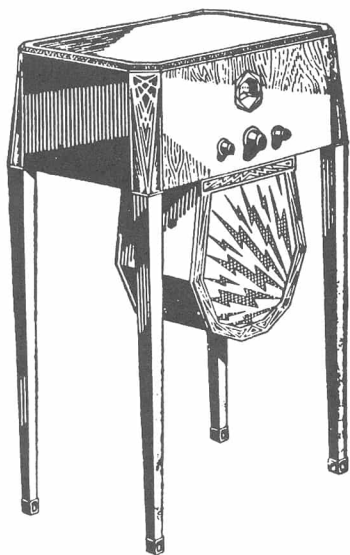
1929 A.C. Dayton Navigator model AC-9990; wood highboy with cabinet doors; original price \$188.00.



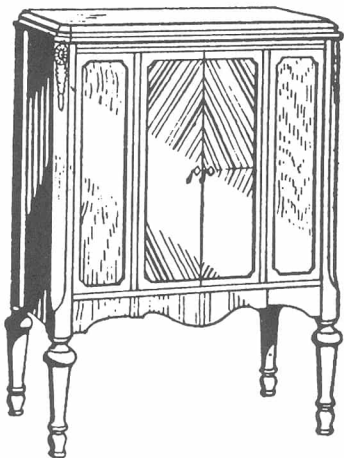
1929 Stewart-Warner model 900; "Approved Jacobean cabinet No. 35." Cabinet was made by Louis Hanson Co. (Chicago) or Burnham Phonograph Corp. (Los Angeles); original price \$142.50 with cabinet.



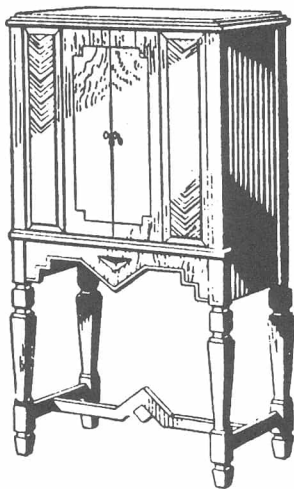
1929 Fada model 35-B; original price \$255.00.



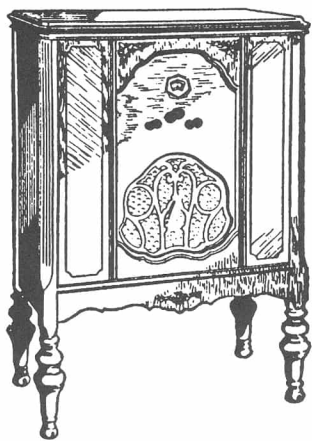
1929 Crosley model 31-S; original price
\$56.50-\$65.85. Legs were an additional \$5.00.



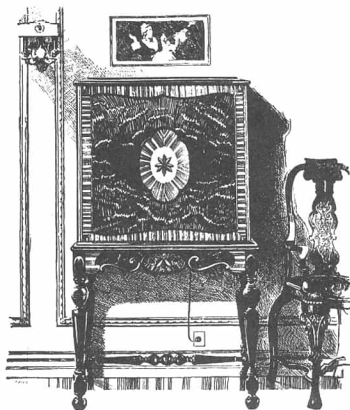
1929 Crosley model 34-S; original price
\$116.00-126.00.



1929 Crosley model 82-S; original price
\$160.00 (less tubes).



1929 Crosley model 33-S; walnut veneer; original price \$112.00 (less tubes).



1929 Colonial model 32 Cavalier AC; original price \$268.00.



FITTING IN AND LOOKING GOOD

A radio is not only a technical gadget, it's something the owner has to live with every day. One of the problems that early battery sets had was their looks. There was no truly satisfactory way to decorate a long, narrow box that required either a table, another box, or some floor space to stash the necessary batteries. Adding to the decorating worries was a good-sized horn speaker that stood on top of the radio or next to it.

Making the radio fit in with the rest of the living room was important. In a room already crowded with things, the cumbersome radio was a lot to cope with. As late as the 1920s, most people were still influenced by the Victorian front parlor, wherein every square inch of table and wall space was occupied. This crowding left rooms with a feeling of clutter.

SPEAKERS

Very early on, attempts made to improve the radio's looks often focused on the speakers, which were the

most noticeable part of the radio. Early speakers were horn speakers, using the technology that had gone into phonograph horns. (By the way, the same problems of decorating affected the phonographs; people were delighted to get enclosed horns and not have to cope with that external one.) The first magnetic cone speakers were produced around 1923, but it wasn't until 1927 that more cone speakers were sold than horn speakers.³ It was hard to get around the fact that most horn speakers looked exactly like a horn—curved, perhaps, but still with a narrow neck and a large bell. Ordinary cone speakers resembled a bowl-shaped piece of heavy paper standing on edge and held in a metal ring. Sometimes the cone speaker was enclosed in some sort of a metal box that, round or square, looked remarkably like everyone else's metal box.

³The best authority on horn and cone speakers is Floyd Paul. Much of the information in this section came from ads he has accumulated, as well as articles he has written. His book is listed in the section entitled Further Reading.

FOR EVERY RADIO STATION
THE MAGNAVOX COMPANY
 ANNOUNCES
A NEW DEVELOPMENT
 THE
RADIO MAGNAVOX
 TYPE R-3
 PRICE WITHIN REACH OF ALL
 AT
\$45.00
DEALERS WANTED Everywhere

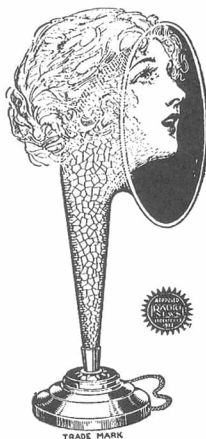
The Radio Magnavox is constructed under the same patents and on the same Electro-Dynamic principle as the Magnavox Radio Telephonograph and will emit the same volume of sound with a slight increase of field current. A 6-volt Storage Battery with Rheostat is recommended for continuous operation.

Consult

THE MAGNAVOX CO.
 OAKLAND - CALIFORNIA

1922 Magnavox horn speaker, type R-3.

An attractive horn speaker was harder to design than a cone speaker. Attempts were made to either glamorize the horn or to hide it. Probably the easiest way of hiding it was to build it into a speaker table. Now the horn was hidden in a long, narrow table, and there was enough space on the top of the table to place the radio itself. However, the speaker table was never as popular as the radio table. They look similar, the difference being that a speaker table incorporates the speaker into the table, while a radio table holds the batteries on a shelf under the table. Until batteries disappeared, it was more important to find a place for them than to hide the speaker. The physical design of a horn speaker (long neck and large bell) also created prob-



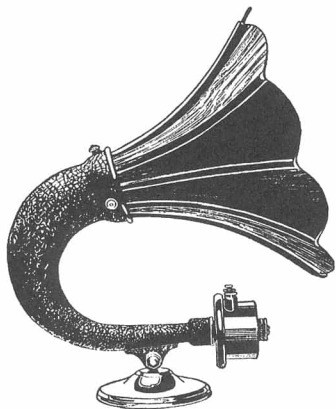
Complete
\$25

Atlas Radio-Reproduction Loud Speaker.

lems for anyone trying to design a table around it. Probably this is why there are few speaker tables shown for horn speakers.

Another design possibility was to stop trying to hide the shape and, instead, turn it into an asset. Take the horn, straighten its neck, cover the bell with a grille and grille cloth, and place it on the floor. Immediately it becomes a decorative column, 40 inches or so high, which might fit into the decor of a room better than a plain horn.

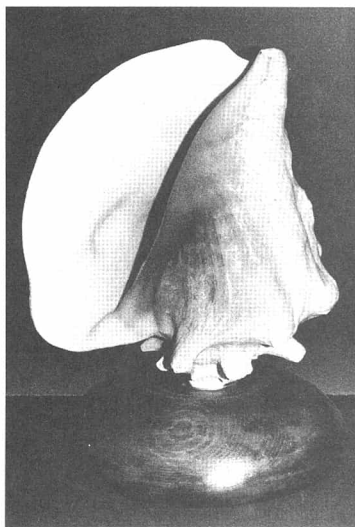
Victorians had always been in love with seashells. In England, where trips to the sea were a recognized holiday even for working people, the overcrowded parlor often housed a seashell as a souvenir from the beach. This



Amplion Dragon horn speaker model AR-19. A classic of speaker design, the horn is made of wooden sections; original price \$42.50.

wasn't as true in the U.S., where the distance to the beach from much of the country made trips there impractical. Thanks to innovation, it was possible to display a decorative seashell that also housed a speaker. Some of these speakers were installed in real conch shells. Because nature doesn't create shells to measure, the advertisements indicated size ranges (12 to 13 inches, for instance). There certainly would have been something striking about a mounted shell that stood 16 inches tall.

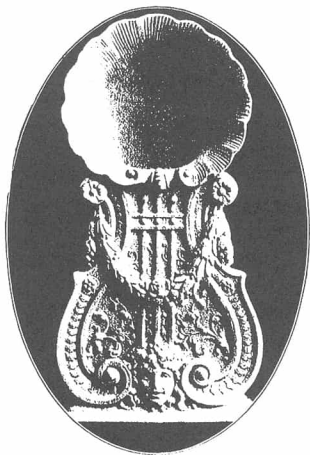
Perhaps the family wanted a more modern, less naturalistic shell and did not want to spend money on a loud-speaker. Sheltone (the name certainly explained its product) made a smooth-looking shell out of Pyralin (a Dupont celluloid) that saved the purchaser



Shell speaker, possibly homemade. A single Brandes headphone is glued in the bottom.

money, because he or she never had to buy a speaker at all. The Sheltone simply amplified the sound that came through the headphones of a set. Put the headphones in the correct location, and the shell shape did the rest.

If natural shells weren't formal enough, and plastic shells appeared a little cheap, Florentine Art Productions made a fantastic, artistic shell out of "Italian gesso." Gesso is something like papier-mache, is made with plaster instead of ground paper, and molds beautifully. These characteristics of gesso allowed Florentine to come up with the "Voice from the Sky"—a Grecian figure with flowing robes standing in front of a shell-shaped



1922 Madera horn speaker made from papier-mâché by the American Art Mache Co.; original price \$25.00.

horn. Available in walnut, mahogany, or ebony, this artistic figure would certainly have been the focal point in any room—after all, it stood 24 inches high.

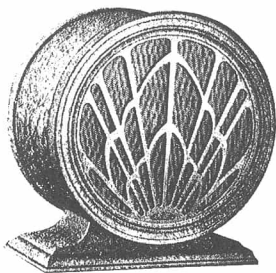
Another great way to hide a horn speaker was in a speaker lamp. Designed to look like normal table lamps, many of them actually could be used as lamps, while others were simply speakers. The speaker lamps were designed to fit with many different decorating styles. Most commonly, they had heavy fringe around the edge of the shade, making them suitable for the Victorian front parlor. At least one company (Bel-Canto) made a speaker that would have fit well into a mission-style room. Others were typical 1920s lamps. A floor model version was the

*Mellow Light
Beautiful Music*

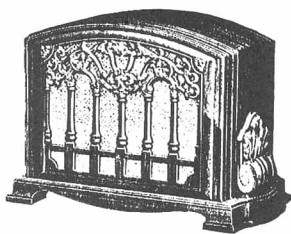
**Amazing Radialamp
a Perfect Loud Speaker**

© 1924. RAY -
R. D. WHILLAY

Radialamp speaker. It used the "lamp base" and the shade to create a horn speaker. This strategy neatly hid an eyesore, since horn speakers tended to dominate a room.



1928 Sterling Vari-tone speaker model R-2; original price \$25.00.



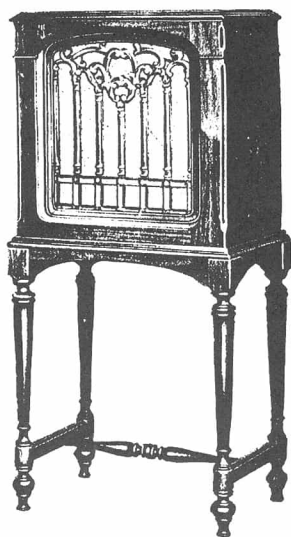
1928 Sterling cone speaker; original price \$75.00.

Speak-O-Lamp. It had an 11-inch-deep shade, either hand-painted or silk-covered. Still another model, known as the "DeLuxe," had a silk-pleated shade over a double silk-lined shade, trimmed with lace to match. But hiding your speaker did cost money; the "DeLuxe" model was \$65.00.

Cone speakers were not as difficult to place in an average living room. Although they took up space, they were relatively shallow. Because of that, companies didn't seem to spend as much time trying to hide the fact that a speaker was there. They spent more effort using the cone shape for decorative purposes.

There were still speaker tables. A cone speaker could be easily attached with screws to a hole in the front of a speaker table. The grille and grille cloth made the speaker less noticeable. It also gave a place on which to put the radio and, since tables could be found to harmonize with most living room styles, it kept the radio from overpowering the room.

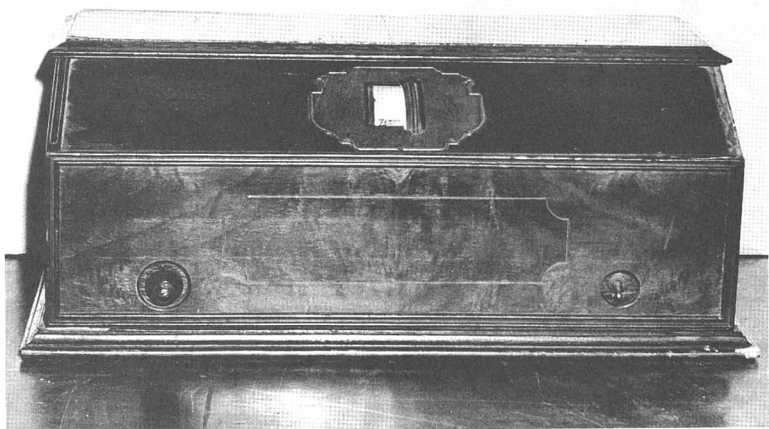
Otherwise, most of the decoration involved the cone itself or the metal



1928 Sterling speaker; floor model; original price \$90.00.

framework surrounding the cone. At its simplest, it meant painting some sort of design (a Greek key, for instance, or a fleur-de-lis) around the edge of the convex cone. Sometimes the decorations were more elaborate, such as the silhouette of a young woman with a branch or a painting of a full-rigged ship.

Ships gradually replaced shells as a major decorating theme. The full-rigged ship was more often seen cast with the metal frame of the speaker than painted on the cone. Tower, Vitalitone, and Timmons all used sailing ships. The ship sails across space with the speaker cone as background.



1927 Zenith model 11; walnut veneer; original price \$110.00 (courtesy Zenith Radio Corp.).

Because a cone speaker is relatively flat, it is possible to hang it on the wall, something that could never be done with a horn speaker. It also meant that a very large cone could be used.

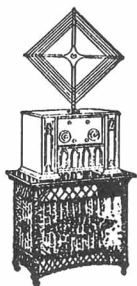
The eventual solution to the decorating problem was to enclose the speaker in the same cabinet as the radio. When this happened, visible speakers disappeared until the advent of high fidelity in the late 1940s.

RADIOS

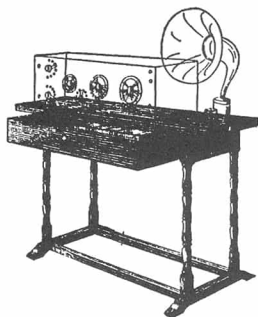
The earliest radios were table models. They were utilitarian-looking sets, with lots of knobs and dials housed in a long wooden box. They were nothing too terrible, but nothing very glamorous either. Sets eventually became more simple, one-dial tuning

came in, and tube voltages didn't need to be reset, but the cabinet remained the same. It was inevitable that someone would step into the gap and design a set to appeal to the women in the family.

In 1928 *Radio Retailing* pointed out the advantages of having the customer buy a good cabinet. For one thing, everything could now fit inside. The cabinets were being made of good wood (walnut, mahogany, oak, and gumwood) and were well constructed. The workmanship could be as good as that of conventional furniture, and hand carving was possible. Cabinets could harmonize with whatever style the homemaker had. Last but not least, customers could put \$200 to \$500 into a cabinet, knowing that a replacement radio could always go inside the



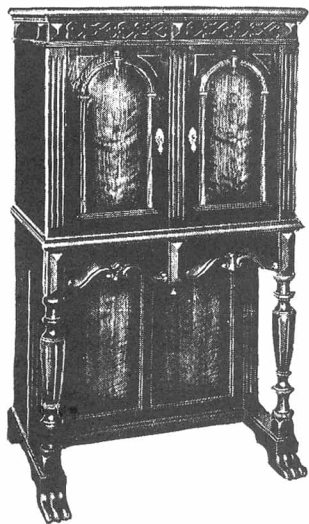
Wicker radio table. The batteries were hidden behind the solid wicker panel.



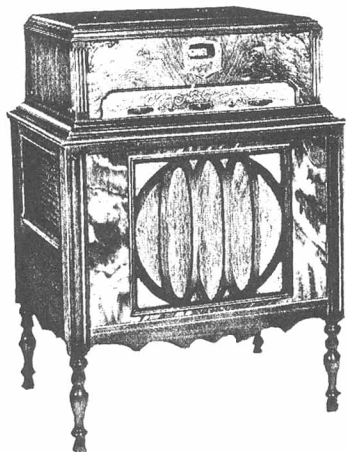
Radio table. Note the batteries in a drawer that opens from the front.

same cabinet. (This view changed rapidly. In 1930, after the stock market crash, manufacturers predicted that separate cabinets and speakers were no longer going to be strong sellers.)

Cabinets were generally being made by companies other than the radio manufacturer. For example, Atwater Kent made its first console set, the model 52, in 1928. Previously they had manufactured wood or metal table models. If an early Atwater Kent shows up at an auction in a fancy wood cabinet, the first thought may be that someone is trying to pull a fast deal, but this isn't necessarily true. Even though the company itself wasn't producing furniture, other companies were. They were even designing their cabinets to fit particular models of the Atwater Kent. In 1928, there were a number of ads in *Radio Retailing* in which Red Lion, Pooley, Bay View, and others advertised that their cabinets were designed to house the Atwater Kent. In fact, Red Lion advertised itself as "the authorized furniture for all Atwater Kent radios." Other



1928 model 820. Grebe sold this impressive cabinet to fit any of their radios; original price \$97.00 (console only).



1928 Grebe power amplifier table; shown with the Grebe Synchrophase A-C Six; original price \$227.00 (without tubes or radio set).

cabinets were produced for sets of different manufacturers who were still making only table radios. Certain cabinet manufacturers created cabinets that, even today, aid in selling a radio. A Pooley cabinet, for instance, is often mentioned in ads.

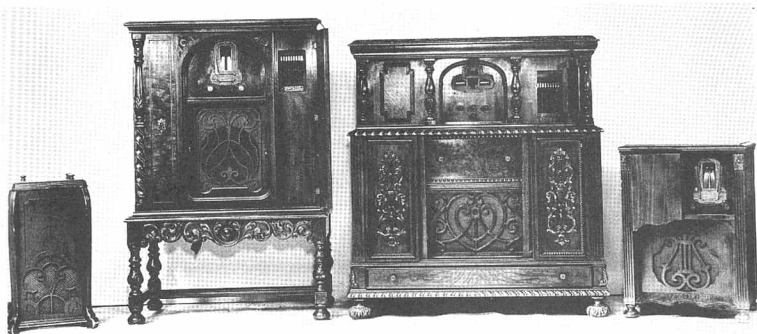
The cabinet most prominently mentioned in this era was the Kiel table. The Kiel table was six-legged and six-sided. It usually housed an Atwater Kent (either model 55 or 60) in the front skirt of the table, although it could handle other brands as well. The radio was hidden behind a door; when the door dropped down, the radio controls were within easy reach. The speaker was inside the table, pointed down toward the floor, and gave a smooth, non-directional sound.



1928 Grebe speaker table model 2250; shown with the Grebe Synchrophase Seven A-C; original price \$24.50 (table only, no speaker or radio).

The left rear leg housed the antenna and the ground wires, while the right rear leg housed the power cord. The ads truthfully said, "No unsightly wires." With a marquetry design in the hexagonal top, these tables are still attractive pieces of furniture.

Many companies had decided by this time to sell their radios in their own cabinets. Various elaborate cabinets were designed. Splitdorf had marketed one of their radios in 1928 in a model called "The Winthrop," a corner secretary including a desk, radio, and bookcase, and retailing for \$600. Sparton had highboys that not only had applied pressed-wood trim on the



Left to right: 1936 Zenith chairside, model Portola, manufactured by United Air Cleaners for Zenith; 1931 model 64, original price \$370.00; 1930 model 40A, original price \$850.00 (notice push button tuning to right of dial on these two models); 1929 model 60, original price \$145.00 (courtesy Zenith Radio Corp.).

doors covering the cabinet, but also a panel down the back to the floor, also with pressed-wood trim.

Radio as furniture was disappearing in late 1929. The first of the midget sets (midget by the standards of the day) were arriving. Cathedrals were coming into style. Now that everyone had a radio, there wasn't the necessity to have the set be a showpiece. The neighbors weren't being invited in any more; they had their own sets. The Depression meant that the radio became a workhorse and was no longer a

stylish thoroughbred. Utility was more important than looks.

These fine cabinets from the 1920s didn't disappear. People didn't throw a good cabinet like that away. The radio was used until it broke, and then the cabinet was saved. Sometimes it was saved in a barn, where the moisture and mice didn't do it any good. With luck, it stayed in the house. Often it was converted into a bookcase or a bar or a desk. So often at auctions now, one of these radio cabinets shows up, but minus a radio.



THE 1930s— A DECADE OF CHANGE

Radio began as a novelty. It was the “techies” of the 1920s who put sets together from parts, sat around wearing headphones, fiddled with several knobs to get the station tuned in, and were willing to spend one hundred dollars or more to have the fun of listening to a station miles away. Fortunately, radio developed quickly into what would now be considered a “user-friendly” operation.

There were many reasons why radio became so popular in the 1930s. For one thing, people became comfortable with it. They didn’t need to know how it operated. Anyone could go to a store, buy a set, bring it home, plug it in, tune it with only one knob, and sit back to hear favorite programs. The radio was now simple enough for anyone to use.

Radios were available at many different stores, making it easy to buy one as an impulse purchase. They also came in a large variety of styles. Table mod-

els, floor models, in wood or plastic, with curved or straight lines—there was something for everyone.

Programming was now nationally transmitted and received. Not everyone could receive all of the programming, of course, but by using special telephone lines, the broadcasts were brought to stations in many parts of the country. If you visited a large city, you could expect to hear the same network programs you heard at home.

The networks used the AM band. Radios, however, often came with shortwave and police bands. Shortwave let you listen to foreign countries, and the police band kept you in touch with your own town (much like a scanner does today).

At first glance it doesn’t make sense, but lack of money was another reason radio became popular. With little money to spend for entertainment during the Depression, people were careful how they used it. A family go-



Tatro. Cabinet model is CR-557, which may or may not be the radio model. An extremely plain lowboy, c. 1930.

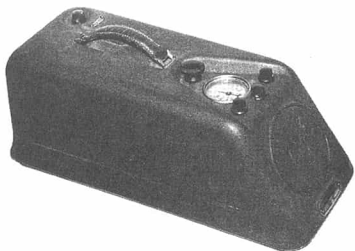


1930 General Electric. The model is actually called "Lowboy." Because it's wider than the normal lowboy, it looks quite impressive.

ing to a movie would have a good time, but, afterwards, there was nothing to show for it. If they bought a radio instead, the entire family could enjoy listening to it for years to come.

Development of new tubes and plastic cabinets meant that radios became smaller. These developments lowered the cost of radios. A single radio could be carried from room to room in the house, keeping the housewife company in the kitchen during the day and entertaining the family in the living room after supper.

By the end of the decade, radio became so much a part of daily life that it was taken everywhere. There were portables for a picnic and car radios to entertain while driving there.



1934 General Electric auto radio model B-52; operates at both 6 volts and 110 volts; brown crackle finish metal. This radio could be placed on the front seat; the dial would face the driver.

WHERE TO BUY THAT RADIO

During the 1930s, radio sales changed. When radio became popular in the 1920s, prominent department stores established radio sales departments; many stores even had their own broadcasting stations. These departments were impressive, and the radios they sold were expensive. Other people went to the local radio shop for ever-necessary batteries. The owner would try to sell the right set to each customer, since he would be the person who heard the complaints and did the repairs when things went wrong.

As the demand for radios increased further, large chain stores began selling radios. Not only did they sell various makes of radios, they sold their own brands as well. These were not manufactured by the retailer, but were bought from a manufacturer with the store's house brand nameplate on the front. Montgomery Ward had Airline, Sears Roebuck had Silvertone, Firestone had Airchief, Western Auto had Truetone, Spiegel's had Aircastle, Gamble's had Coronado, and Coast to Coast stores had Musicaire as house brands. The consumer found it easier to buy a radio while doing general shopping. People were already in these stores, so many sets were probably impulse purchases. A respectable small table set from Wards in 1941 cost only \$7.49. With easy credit terms, a person with little money could buy a \$50 radio for only \$5 a month. The small weekly or monthly payment made it easier to own a good radio.

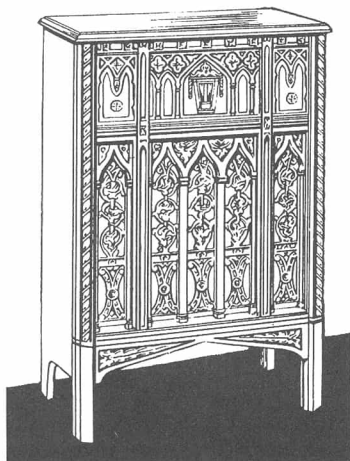
The small radio shop had to change if it wanted to stay in business. Small

retailers couldn't match the prices that the chain stores offered. Large stores got a better discount from the manufacturer and had a larger variety of sets than that little corner store. In addition, a small store would have problems handling credit sales, which would tie up too much of the owner's already-short supply of cash. Even the retailer in a small town wasn't safe. He had to look around for ways to make money, since Wards and Sears were as close as the local post office. In order to survive, many small radio shops phased out radio sales and offered radio repair as their primary occupation. It might be cheaper to buy a radio at a big store or through the mail, but getting it fixed was better done close to home.

THE NEW LOOK IN THE FAMILY RADIO

Now the family had decided it needed a radio. But what should they buy? Obviously, the wooden-box radios of the 1920s were outdated. Consoles of that time were big wooden boxes placed on their ends with turned legs holding them up. Doors were added and fancy "carving" was done on their fronts to make them look less like boxes. The radio of the 1920s was a featured piece of furniture in the living room; but it still was a box. Table radios were smaller boxes (although still large by our standards), with several knobs on the front. They were larger if they housed batteries, or, if they were AC like the RCA Radiolas, they were very heavy. They certainly couldn't be carried from room to room easily.

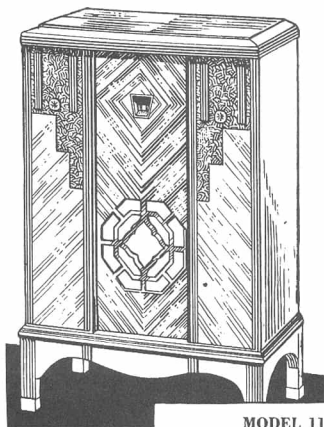
These styles might have continued



1930 Sentinel model 15. "Gothic design, superbly ornamented;" original price \$137.50 (less tubes).



1930 Stewart-Warner, St. James model; solid walnut front "with artistic genuine carving;" original price \$197.50 (less tubes).

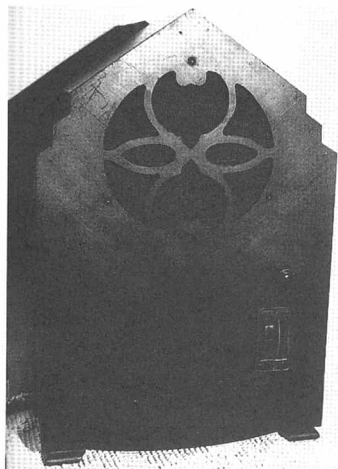


MODEL 11

well into the 1930s if it hadn't been for the Exposition Internationale des Arts Decoratifs et Industriels Modernes in 1925, commonly, although incorrectly, thought to be the start of the Art Deco period. The asymmetrical curves of Art Nouveau styling—the acanthus leaves and flowing draperies—now were out of style. Art Deco stressed symmetry with angular and tubular shapes.

Although the exposition did not really mark the start of Art Deco (it

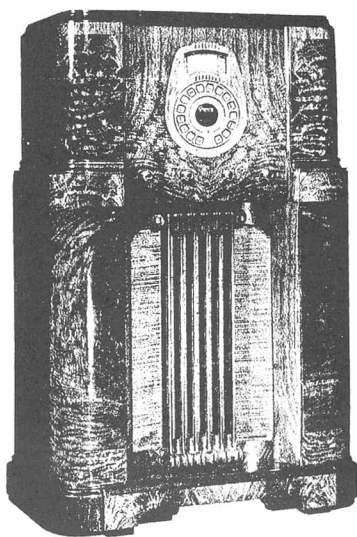
1930 Sentinel model 11; deco style; original price \$130.00 (less tubes).



1930 Gloritone model 27. Gloritone took a totally different approach to building cathedral radios. Strong angles were used instead of pointed arches. There is another version of this model with rope-like trim (John Wilson).

had been developing for several years), it did focus attention on the style and made it internationally known. It featured artists and craftspeople who made unique items or ones with small production runs. Such works were not suitable for mass production, and, since they also were expensive, were not readily marketable to the Depression-strapped masses.

The exposition did create a new image, however. "Modern" was the thing. Various styles were derived from Art Deco and applied to mass-produced items. In the United States, for example, skyscrapers and streamliners were the style-setters. These de-



1937 Grunow model 1183; wood console with telephone dial; original price \$149.95.

signs were strongly influenced by Art Deco.

Radio cabinets followed this American interpretation of Art Deco. Both consoles and table models used the stacked look of skyscrapers. The Arvin Rhythm King 1127 is an example of the skyscraper influence. (For a picture of the Rhythm King, see *Flick of the Switch*, pg. 58.)

Much more common was the streamliner motif. Streamliners were trains designed with aerodynamic concerns in mind. From the locomotive to the last car, train designers used smooth curves and avoided sharp angles. Radio cabinets, both console and table, fol-



1930 Crosley New Buddy. *The front is rep-wood, a type of molded wood (Ed and Irene Ripley).*

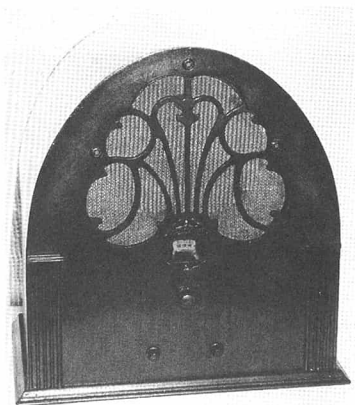
lowed this design. Large, rounded curves replaced the front corners of the cabinets. Rounded shoulders, with a much smaller radius curve, replaced the top edges. The most “streamlined” of all was the waterfall front, where the top curved down into the front in one large, sweeping curve. None of this would have been possible without the use of plywood. The cabinet frame could be built of mismatched pieces of solid wood; with the top surface covered by a thin layer of good plywood, however, it looked like a radio of high quality. These pieces also held up well, since there were no sharp corners to get chipped and pitted.

The Modern-style radio didn’t replace the large box of the 1920s quickly. The two styles overlapped for several years. Until 1933 or so, both styles were being produced. As the decade continued, Modern triumphed.

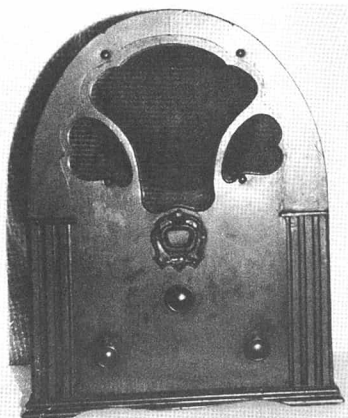


1932 General Motors model 252. *A sliding door pulls up to cover the dials when not in use. It’s an unusual radio because the speaker faces out the bottom of the set.*

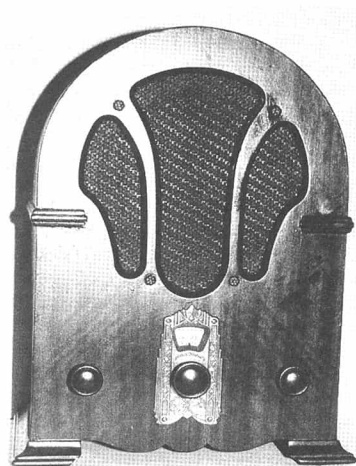
There was more variety in table radios than in consoles. Table radios were less expensive, and it wasn’t necessary to buy a radio that would last for years and look important during that time. Table radios featured many short-lived styles. There was the “tombstone,” which originally was a high table radio with rounded corners. Now the term has come to refer to any tall, vertical table radio. (The Philco 70B is a tombstone radio.) The most common radio from the 1930s is the horizontal table radio; this shape was carried over from the 1920s, but curves and smoothness were added while its size became smaller. Cathedral radios were popular for three years (1931-1933), with or without a sharp



1930 Philco model 20B; one of the traditional Philco cathedrals (Ed and Irene Ripley).



1932 Crosley model 125; cathedral radio (Ed and Irene Ripley).

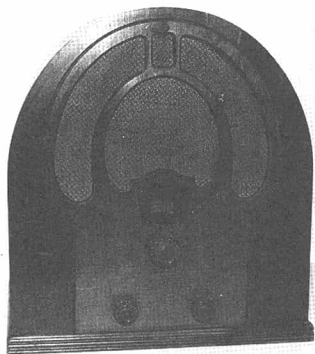


1931 RCA model R5, the "Radiolette;" cathedral style (Ed and Irene Ripley).

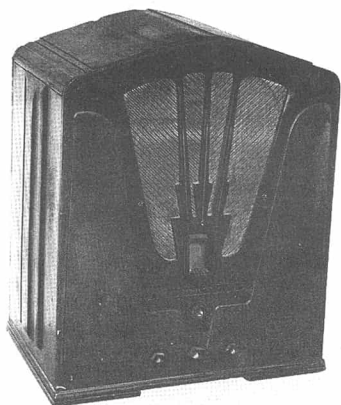
point at the top of the arch. These were made of wood or plywood, but even more modern and different were the plastic radios that arrived in quantity in the mid-1930s.

It is important for radio collectors to know the difference between plastics such as Bakelite and Catalin, the two major plastics used in radio cabinets. In today's market, Bakelite radios tend to be inexpensive, while Catalin radios are always expensive. The difference in the prices makes it essential to know something about these plastics.

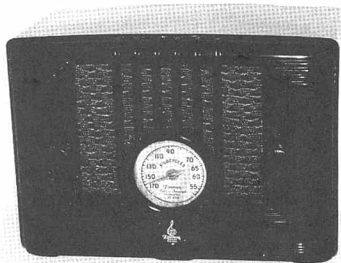
Bakelite, a thermosetting phenolic resin, is the trademark of the Bakelite Corporation (now a part of Union-Carbide). A thermosetting resin is heat-hardened; application of heat to the plastic forms its final shape. Because of this, high temperatures don't bother it. Bakelite radios could



1933 Philco model 81; a simple cathedral (Ed and Irene Ripley).



1933 Philco model 16B. The cathedral arch has disappeared, leaving only a slightly pointed top. This set is almost a console, with 11 tubes and a 10" speaker.



1938 Emerson model BA-199; brown Bakelite.

be manufactured successfully only in brown or black. If a Bakelite radio is colored (often ivory), it is by paint applied to the original dark cabinet. Other manufacturers made a Bakelite-type plastic that tends to be lumped together under the Bakelite name.

While other heat-set plastics also were used in the manufacture of radios, these are not Bakelite and don't resemble it at all. Two of them are found in radio cabinets.

Urea is a thermoset plastic that has the advantage that it can be colored. When colors are mixed in the plastic, they create swirled or mottled effects. Unlike Bakelite, however, urea does not stand up well under use. Urea cabinets today often will be found with warps or cracks.

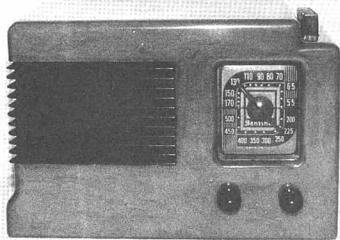
Styrene plastic is another heat-set plastic, but it does not use the same procedure as Bakelite. In styrene's case, the heat to set the plastic comes from a reaction in the compound itself. Instead of being thermoset, styrene's process is "endothermic." Styrene was stable, could be colored in just about

any imaginable way, and was inexpensive to make. It became the plastic of choice in the late 1950s and 1960s. It handled color beautifully, so bright red or orange radios could be made. Extremely colorful swirl designs were possible. Styrene's only major fault is that it scratches easily.

The other type of plastics used in radios were cast phenolic resins. Instead of needing heat to set up the plastic, it was simply poured into molds and allowed to harden. Catalin was the king of radio cabinet plastics. It took wonderful colors and had a depth like alabaster. It also was expensive to make, because a lot of hand labor was required to finish it for use. It was used only for a short period before and after World War II and thus is rare as well as beautiful. Catalin changes color with time. The butterscotch color so popular today really began as an off-ivory. Catalin sets are lovely to look at and expensive to buy. Even the simplest and most common sets sell for hundreds of dollars today.

Plastics changed the look of radios. Wooden radios needed a square frame which really held the shell together. Even the curved radios from the 1930s are basically rectangles with curves added. Plastics could stand alone. Plastic radios could have fanciful curves, compound curves, and narrow louvers covering the radio grille. If a mold could be designed, the radio could have that shape.

Plastics also meant that radios no longer had to be brown. They could harmonize or contrast with the color scheme of any room. Although the common Bakelite color was brown or black, other models of the same radio



System was the only national network to survive. Regional networks were started, but most of them were nothing more than outlets for regional sponsors and were no real competition to the big two.

Until the mid 1930s, NBC had been the major network. It was the first one, it had money, and it captured the primary classical musicians and the foremost vaudeville stars; because of this, it also got the largest corporations as sponsors. William Paley at CBS wasn't satisfied to be second-best. Paley began by attacking the NBC method of distributing its programs to its stations. NBC sold its nonsponsored programs to the local stations (irritating the smaller stations who didn't have a lot of money to spare) and paid stations to carry its sponsored programs (making the large stations unhappy because they weren't getting enough money for the programs). Paley allowed the CBS affiliates to carry all of its programs free with a proviso that CBS could, with notice, preempt local programs for a network presentation. With this, CBS gained effectual control over prime-time broadcasting on its stations. The local stations weren't unhappy. When CBS had a sponsored broadcast, the local station would receive a percentage of the advertising rate, and it didn't have to do anything extra for the money. By 1935, both networks could claim to be first: CBS had more stations, but NBC had greater wattage.

The major networks broadcast comedy, drama, variety shows, educational and cultural programs, children's shows, sports, news—much the same mix that TV uses today.

There were both stand-up comedi-

ans and sitcoms. Jack Benny could deliver a monologue that would nearly convulse listeners. His vaunted miserliness, his Maxwell, the continuing jokes with Rochester, and his everlasting thirty-ninth birthday made families chuckle, laugh and howl. *Fibber McGee and Molly* was a classic sitcom, the same characters doing the same things every week, but somehow it was funny. Fibber's closet (which always was stuffed to overflowing and would naturally spill out noisily whenever he opened the door) was a joke everyone understood. *Amos 'n' Andy* were visitors in innumerable homes, with the whole family sitting around and listening to their blackface humor.

Soap operas were the afternoon version of drama. The continuing saga of someone who had more problems than the listener was relaxing to people who were fighting the problems of the Depression. *Life Can Be Beautiful* was everyone's hope. *Ma Perkins* and *David Harum* and *Our Gal Sunday* were a regular part of the daytime schedule for many housewives. (Soap operas got their name, naturally, from the number of soap companies sponsoring them.)

Detective stories, suspenseful dramas, and westerns were evening and Sunday staples. *The Shadow* had "the mysterious power to cloud men's minds." *The Lone Ranger* rode out of a West that never was, along with his "faithful Indian companion, Tonto." Together they brought law and order to the West, and a great feeling of familiarity when, at the end of the show, someone would say, "Who is that masked man?" We all knew it was the Lone Ranger.

Plays were popular. *Lux Radio Theater* and *Screen Guild Theater* were well-done promotions for current Hollywood films. The drama most people think of from the 1930s, however, was the 1938 broadcast of *War of the Worlds*. Orson Welles and the Mercury Theater produced this frightening tale of an alien invasion of the United States. It was more frightening than the book, since it sounded like a “live” broadcast. People trusted the radio; if they missed the opening announcement, they had no idea that what was being broadcast was not a real event happening at that time. People were already nervous about the war in Europe. An invasion in New Jersey and Washington, D.C., was too close for comfort. The show was an excellent drama, so well-conceived and presented that it panicked much of the country.

Variety shows had their roots in vaudeville. Music and jokes were intermixed on these shows, with Kate Smith, Rudy Vallee, and George Jessel headlining.

Networks also broadcast educational and cultural shows on a weekly basis. CBS and NBC were in a battle for first place. When CBS moved ahead, NBC started “covering” the CBS shows. If CBS had a poetry show (*Norman Corwin’s Words Without Music*), NBC would have to have one, too (*Fables in Verse*). When CBS had the New York Philharmonic Orchestra, NBC came up with the idea of having its own orchestra, with Arturo Toscanini conducting. *The American School of the Air* got competition from *University of the Air*. Not only were both networks producing competing

shows, they were broadcasting them at the same time. However, the listener had many opportunities to learn from leaders in a particular field and enjoy cultural events not available in small towns.

Children’s programs, usually fifteen minutes long, featured the ongoing stories of Jack Armstrong, Captain Midnight, Little Orphan Annie, Roy Rogers, and others. They were there by the dozens and loved by millions of kids. Local programming of children’s material was common as well. But the network shows had adventures and prizes you could send for, and these shows usually became the ones that people remembered when they grew up.

News broadcasting in the early 1930s was practically nonexistent. NBC Red (the leading network) didn’t have a single daily news broadcast. NBC Blue had commentator Lowell Thomas. CBS had occasional commentaries from H.V. Kaltenborn (and couldn’t find a sponsor for them.) Bad news was not supposed to be broadcast. WLW, a 500,000-watt station that covered the Midwest, had a policy that no mention of strikes, including school strikes or walkouts, would be made. Afraid of alienating sponsors, the networks and stations left news reporting in the hands of the press.

In 1933, this changed. NBC started a one-man news department that gathered news using a telephone. Local NBC affiliates were expected to let the network know if something newsworthy happened in their city. CBS took up the challenge. They developed a news department, primarily of “stringers,” that was so good that

newspapers began boycotting the network. Eventually the networks promised the news services that they would limit their newscasts to two five-minute newscasts a day, both scheduled after people would have read the morning or evening editions of the local papers. They also promised to report only news at least twelve hours old.

Naturally, competition to the network news services, designed to be used by local radio stations, followed. Local stations began broadcasting news using Transradio. Corporate sponsors appeared, and the agreement fell apart when UP (United Press) and INS (International News Service) started making their news services available to radio.

TECHNOLOGY KEEPS IMPROVING

During the 1930s, technology advanced to make radios more useful and more powerful. They were easier to use, smaller, and the quality per-dollar was much higher. Radio tubes were the primary reason for these striking changes. Tube design had improved rapidly. New tubes were developed for special purposes, such as the oscillator-mixer tube in the superheterodyne. When several tasks were built into one tube, it meant that one tube could take the place of two. Surprisingly, the shrinking of the radio didn't worsen the quality; thanks to better tubes, the whole operation improved.

The quality of the loudspeakers also improved greatly as designs improved. The dynamic speaker (cone and voice coil) was more efficient and

gave a smoother sound and wider range than the horn speakers of the 1920s. This is the same basic design used today in radios and stereo systems.

Finally, the superheterodyne became the exclusive receiver design. It was easy to tune, received many stations, and didn't drift once it locked on a station. This also is the same basic circuit that is used today.

Other improvements contributed to ease of use and sound quality. Green tuning eyes became popular in the later 1930s. Although it only took one knob to tune in a station, it might be difficult to get the clearest sound. The tuning eye helped locate a station accurately. When the green light came together and formed a circle, the station was at its clearest. People who grew up with radios during the 1930s still remember the fun of tuning in the eye.

Push-button tuning made it easy to find often-used stations. Today it's often possible to find the original location of one of these radios by what local stations are set on the push buttons. Sound quality could be adjusted using tone controls. Multi-band sets with several shortwave bands and a police band opened new worlds to the radio user. Combining phonographs and radios into the same cabinet gave another dimension to the entertainment value of the radio.

Portables and Car Radios

As improvements in design and tubes made radio better, they also moved radio out of the home and onto the beach and into the car. In the mid 1930s, car radios became so common that automakers began designing space

for them in the dashboard. Previously they were loaded onto the running board, along with their cumbersome batteries. The dash-mounted radio didn't require separate batteries; they would be powered by the car battery.

By the end of the 1930s, portable radios were becoming popular. They carried their own batteries, and the better models could pick up shortwave stations. The basis for this popularity was the newly designed tubes. These became so efficient that radios could operate with batteries small enough to fit inside the set itself, while the set was still light enough to be carried easily. Some very small personal portables weighed only a pound or two. By 1940, the larger portables would run on batteries or could be plugged into a wall.

The Depression made radio an important part of any home. They were an affordable luxury. It was possible to get a 1932 Wards Airline table radio for \$24.95. A large console was \$72.50. (For comparison: by 1950, a small superheterodyne cost \$9.95 from Sears. For that, you got a better radio than you would have gotten even ten years earlier, and it cost less.) The radio became a center around which the family gathered. Networks supplied



General Motors portable; late 1930s; called a "plug in portable." The middle control switches from AC to battery operation.

programs that would entertain an entire family, whether it was comedy or music. There was enough cultural programming to justify the expense to some people.

The Depression helped radio become a major component of family life. If it weren't for the Depression, people would have gone off in separate directions, as cars were readily available. As it was, the family stayed home and listened to the same programs, laughed at the same jokes, enjoyed the same bands. Radio became indispensable to most American families during the 1930s.



AFTER 1940— CHANGE AND GROWTH

During the mid 1930s it seemed that everything that could have been done to improve radio had been done. Radios were economical, popular, and better than ever. Even before World War II, however, it became apparent that radio wasn't stagnant. Frequency Modulation (FM) was in its infancy, although no one knew how important it would become. Television was just becoming available. The war gave a push toward the development of better communications technology.

THE RADIO

Radios just prior to World War II and immediately after the war looked very similar. During the war there were not enough radios available to satisfy consumers. The manufacturers had little time to worry about consumer interests. They spent the war producing equipment for the armed forces, although by 1944, with the end of the

war in sight, companies were beginning to advertise that radios soon would be available. Hence, radios for the home showed little change during this period. Their cabinets were similar to the prewar models; even the insides hadn't changed much. This wasn't a time for redesigning. In 1946, the goal was to get radios out to consumers as quickly as possible. People were delighted to buy a new radio to replace the one that had been around since 1940 or before. People bought radios whether or not they were stylish or modern. If they looked like the ones from 1940, no one complained. They were new and they worked.

Within the cabinet, however, things had improved. While working with the military during the war, manufacturers improved tubes and other parts. Very High Frequency (VHF) and Ultra High Frequency (UHF) radio was more efficient. Tubes were designed that worked at high frequencies.



This Philmore crystal set was highly popular.

High frequencies led to the invention of new circuits and the development of better-designed insulators, resistors, capacitors, and inductors. This engineering applied directly to the new fields of FM and television.

Military communications engineers perfected VHF; it was more secure than conventional AM radio, and it provided greater protection from enemy eavesdropping because of the way the signal traveled. Large amounts of radio band space became available with wartime radio research and design, and it was practical to use it. Much of this development came in the realm of

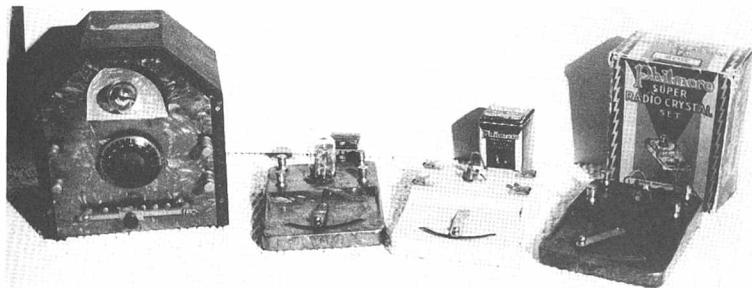
Frequency Modulation (FM) instead of the normal radio Amplitude Modulation (AM).

It's important to know the difference between AM and FM. AM uses a transmission technique that varies the power of the high frequency RF carrier wave at different rates. The rate of variation of the power is the pitch of the sound. The amount of variation is the loudness. It is easy to get rid of the RF carrier wave, leaving only the sound of varying volume. This system uses little band space (space on the dial), so well over a hundred stations fit into the standard broadcast band of 550 kHz to 1600 kHz. Until recently, AM did not provide high-quality sound. It was easily disturbed by storms, electric motors, and other interference, resulting in buzzes, whistles, and static that made it hard to hear a station.

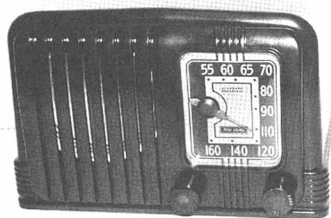
The search for a better system led Edwin Armstrong to develop FM. Here the frequency of the RF carrier varies at a rate equal to the pitch of the sound; the amount of variation reflects the loudness of the sound. This discovery resulted in many advantages. The sound quality was much better than AM, it had three times the audible range of AM radio, and there was almost no interference or background noise.

There were also disadvantages. First, FM didn't travel nearly as far as AM, going only 40 to 50 miles as opposed to the 1000 miles of AM. Second, it took a lot of RF frequency band space. The standard broadcast band had space for more than 100 AM stations. Five FM stations would fill that same amount of space.

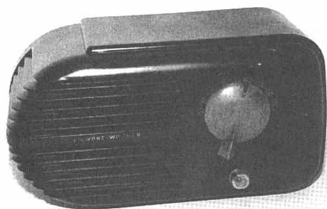
Armstrong ended up in a battle



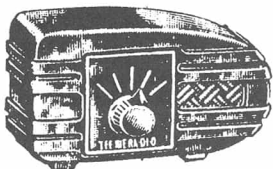
A selection of Philmore crystal sets from the World War II era (John Wilson).



1940 RCA Victor model 45X11; brown Bakelite (Ed and Irene Ripley).



1940 Stewart-Warner model 0751H (Ed and Irene Ripley).



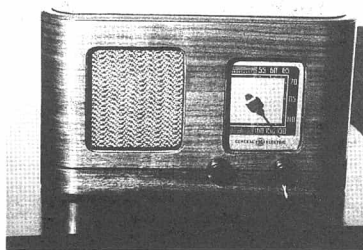
BAKELITE MODEL

Novel midget crystal radio with self-contained earphone. Very neat and compact. Complete set is housed in polished mahogany-color bakelite cabinet of modernistic streamlined design. Earphone fits conveniently into compartment in case. Average range is about 25 miles. Has extremely sensitive fixed crystal; one tuning knob controls reception. Weighs only 5 ounces; measures but $4 \times 2\frac{1}{2} \times 1\frac{1}{8}$ ". Supplied complete with earphone, aerial wire, and full instructions. Wt., 2 lbs. **\$1.62**
B9314. NET.....

This set from 1941 is designed to look like a modern small plastic radio. It comes from a 1941 Allied Radio catalog.



1941 General Electric model L-916; large console with pushbuttons; AM/25W.



1942 General Electric model JCP-562. Cabinet has been refinished.

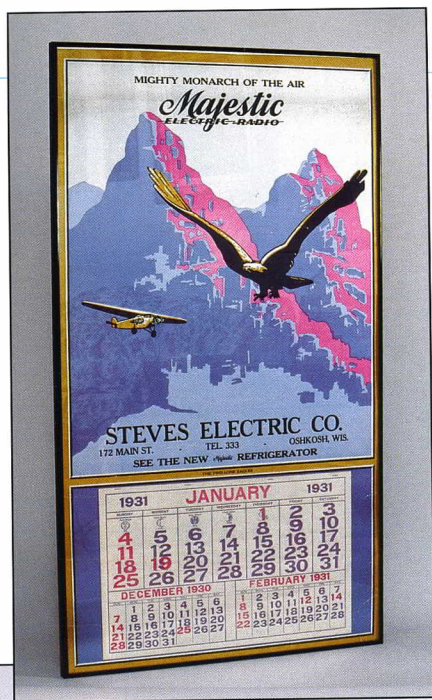
with David Sarnoff of RCA when he felt that RCA was neglecting FM for the more glamorous television. Without the active support of a major manufacturer, FM was still something of an experiment. There were only a few stations in the East (primarily in New York City) broadcasting in early 1939. When more license applications arrived than available space, the Federal Communications Commission (FCC) realized that it was necessary to rework the broadcast bands. There really was a channel 1 on television before this happened. In 1939, channel 1 was taken away from TV and given to prewar FM (42-50 MHz). There wasn't much growth in FM listening during the war, however. FM couldn't get more listeners when people could not buy a radio that would pick it up.

With development of radio during

the war, band space was opened up and technology improved. In 1945, broadcasting space was revised. FM got a new bandwidth (88-108 MHz), where there would be space for an amazing one hundred stations. One hundred stations shouldn't be a problem; since FM could only travel small distances, this seemed like all the space it would ever need. (This new band could have handled 20,000 of the old-style AM stations.) Several radios right after the war came with space on the dial for both the old and the new FM bands.

FM still had problems after the war. There were few sets. The FCC permitted identical broadcasting on both AM and FM, which eliminated innovative programming as a reason to buy the new-style radio. But the quality of FM broadcasting was so superior to AM that people began buying the sets. Around 1950, FM/AM radios became the standard, and sets with only the AM band became the inexpensive ones.

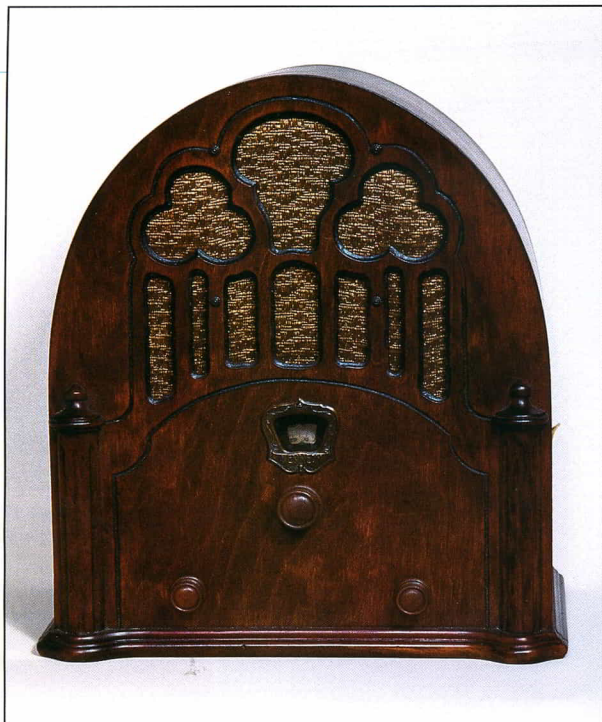
At the same time that FM was becoming strong, the high-fidelity boom began. Hi-fi made quality sound some-



This large 1931 calendar
advertises Majestic radios.

Cookie jar and salt
and pepper shakers are styled
like an RCA 65X1 radio.





*Kennedy model 63
cathedral radio.*



Little Wonder and Little Radio Mike (toy microphones attached to radios).





*This radio is styled after a
1928 Lincoln Town Car.*



*Weston DC voltmeter
from 1930 (radio testing
equipment).*



A collection of novelty radios, featuring a gas pump, Snoopy, ladies' shoe, and the Dukes of Hazzard.



Santa Bear lunch box and radio, a Dayton-Hudson company promotion.





Coke bottle radio with box, and Coke dispenser radio.



Frankoma advertising ashtray and a mug advertising a radio shop.



Collection of like-new old radio parts in original boxes, with tuning condenser, tubes, and other small parts.



Fleischmann's Gin bottle and Malibu Rum bottle radios.



Champion spark plug radio.

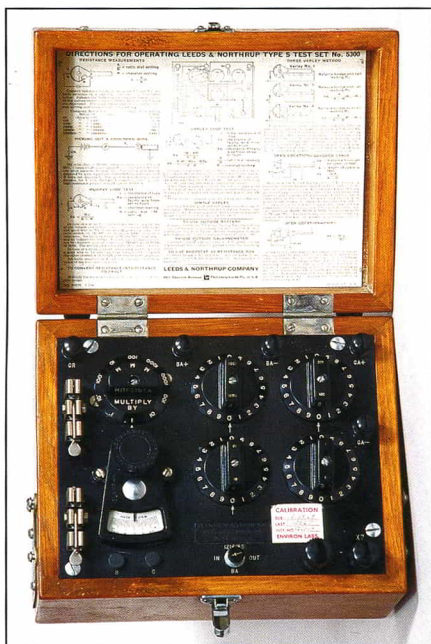


This "Soundmobile" Volkswagen van will play an LP record by driving in circles.



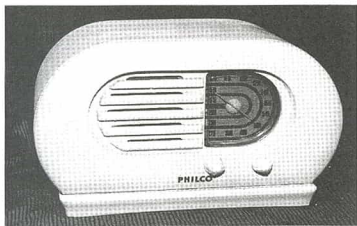


Advertising pieces. Back row: Permoflux (loudspeaker) ashtray, Atwater Kent playing card deck, and Newsette radio that receives only WTMJ from Milwaukee. Front row: Emerson radio bank, Philco Medallion, Sears WLS sharpening stone, and a Zenith logo for counter display.



Leeds & Northrup test bridge (radio testing equipment).



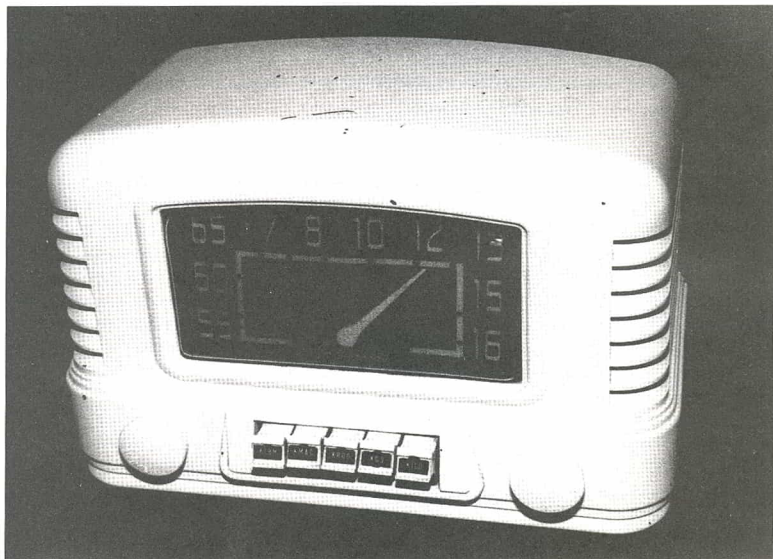


1942 Philco model 42-KR3; white painted wood radio.

thing most anyone could afford. FM tuners became part of a hi-fi system. But hi-fi is really another story.

Television was also around before the war, but it took the technical improvements from the war years to make it practical for home use. TV uses high-frequency RF bands, and the modern FM band is now tucked into the middle of the TV space. That's why television antennas make good FM antennas as well.

The next big change in radio technology was a quaint little device invented in Bell Telephone Laboratories in 1948 called the "transistor." This had the promise of doing most of the



1946 Airline model 54BR-1506A. The dramatic dial makes this ivory Bakelite radio stand out (Ed and Irene Ripley).

things a tube could do, while using less than 1/100th of the power and at a fraction of the tube's size. More powerful and smaller transistors made possible the pocket radio.

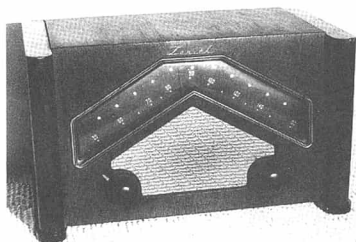
By the end of the 1950s, the transistor was fast replacing the tube in most electronic equipment. In time, it came to do everything a tube could do and do it better.

Styles didn't change much during the 1940s. Those that were around in the late 1930s were still around in the late 1940s. Wood table radios became less attractive. Plastics appeared in a blaze of color and became more popular. Catalin and styrene plastics made an unlimited variety of colors and shapes possible. Many plastic radios in the late 1940s were based on the striking models designed before the war. There was a strong similarity between the two eras. Shortly before the war consoles had become large, long pieces of furniture with a phonograph side by side with the radio instead of beneath it. After the war, this became the common style. Several companies even had elaborate consoles that included a television set built into the same cabinet. E. H. Scott produced some truly monumental consoles.

THE PROGRAMS

Programming was much the same before and after the war, continuing with the same mix of serious programs and lighthearted entertainment.

There was one exception: the news. With the threat of World War II, people bought and used shortwave sets. Shortwave allowed Americans to get the distressing news from Europe



1946 Zenith model 6D029; one of the most unusual shapes found for a dial (John Wilson).

at the same time as the Europeans. We could also worry along with Europeans on the status of the war.

Network news reporting in the early 1930s had been a farce. As the decade progressed, the networks became interested in having news departments. War and rumors of war caused the networks to expand their European news staffs. News coming out of much of Europe was censored, but Americans wanted to hear it anyway. Reporters were no longer anonymous voices. Eric Sevareid, William L. Shirer, Charles Collingwood, and Lowell Thomas were names and voices everyone knew. But the one reporter who made the most impact was Edward R. Murrow. Broadcasting directly from the rooftops of London during a blitz, he gave the nation a close-up glimpse of what war was really about. The war was in our living rooms and our lives even before we joined it.

All broadcasting during the war reflected America's total involvement in the war. The music portrayed the loneliness of those in the service and the concern and love of those on this side



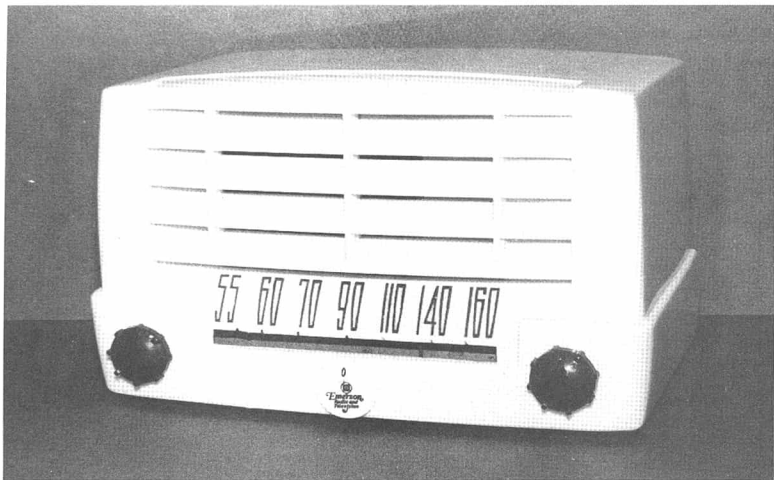
1946 Air King model 4604-D; AM/SW. Reverse painting on dial is flaking off. Watch out for this when buying a set.

of the ocean. Even the comedies were colored strongly by the war effort.

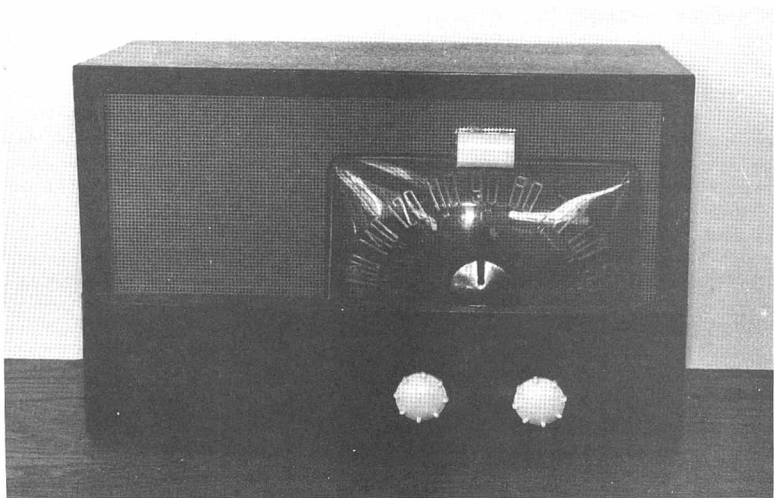
The war, and the years following it, changed broadcasting. There were now three different networks instead of two. NBC, which had the Blue and the Red networks, was required to sell one of them. After negotiations, NBC Blue was sold in 1943 and became the American Broadcasting Company. Red was dropped from the NBC name.

Television was gaining new viewers. Shows that had been on radio were making the switch to TV, leaving gaps in the radio schedule that had to be filled. Canned music and the disc jockey became important, and radio tended to become a background to whatever people were doing. When they wanted to pay attention, they watched TV.

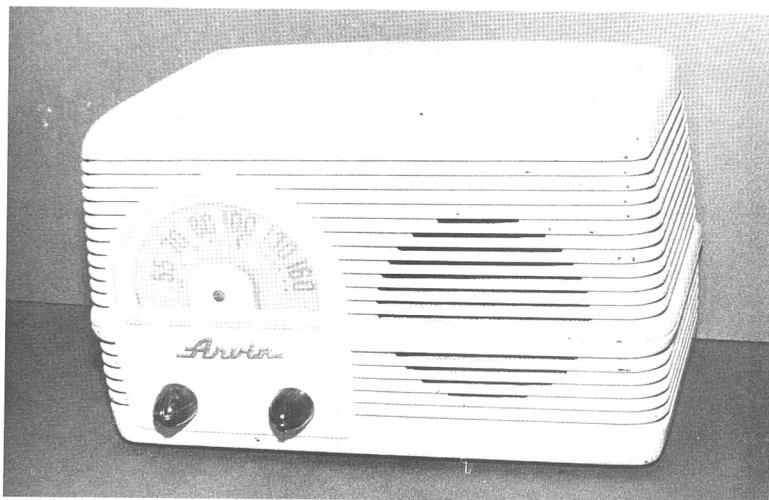
Public radio—that is, noncommercial radio—grew in importance. Back in the 1920s colleges, universities, and even churches owned their own stations. As the in-fighting continued in the late 1920s, many of these institutions gave up their stations. But some of them held on. WCAL, in Northfield, Minnesota, was a small station affiliated with a small Lutheran college. After the war it became one of Minnesota's earliest FM stations and a founding member of National Public Radio (NPR). KSJN, a similar station in Collegeville, Minnesota, became a founder of Minnesota Public Radio. College and university programming generally was more cultural and educational than what was available on commercial stations. College courses, some-



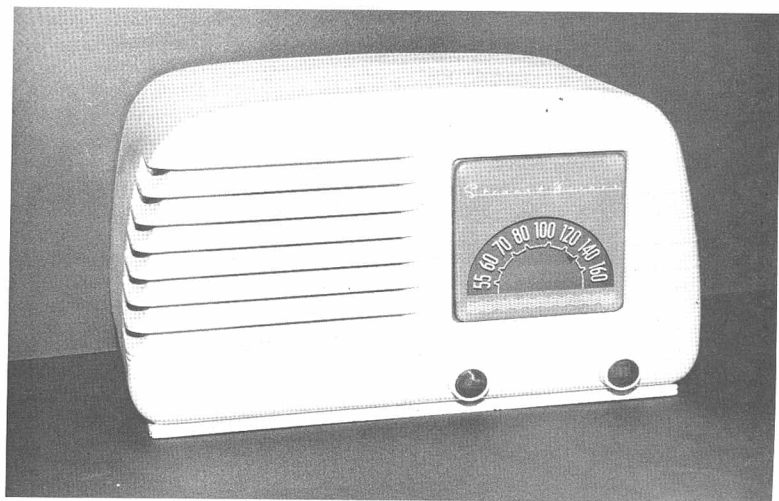
1947 Emerson model 547A (Ed & Irene Ripley).



1948 Emerson model 541.



1948 Arvin model 358T; beige plastic (Ed and Irene Ripley).



1949 Stewart Warner model C51T1; ivory Bakelite with blue dial (Ed and Irene Ripley).



1949 RCA model 8-X-71; brown Bakelite.

times with credit, were offered to people who couldn't attend classes.

During the 1950s public radio became important. Many states developed their own public radio networks, which tended to broadcast on FM. Wisconsin, one of the first, developed a network that eventually covered the entire state. Living in the boondocks didn't mean that you had to give up good listening.

The public radio movement reached its height when National Public Radio became almost a nationwide network. Excellence in news and commentary continue to be its greatest strengths. Today there are also a number of smaller networks providing specialized programming to public stations all over

the country. One example dedicates itself to news of native Americans and their concerns. Small noncommercial stations, unaffiliated with NPR, produce special-interest broadcasting for their listeners. WOJB in Reserve, Wisconsin, a station on the Lac Court Oreilles Indian Reservation, broadcasts Native American news and powwows, as well as many programs from NPR and some entertaining local programming.

Radio also changed as big entertainment moved to television. It became more of a traveling companion to Americans on the move. Their radios became smaller as transistors became affordable, making it easy to take radio with you. But that, too, is another story.



WHEN WAS THAT RADIO MADE?

The best way to date a radio is, of course, to know the model number of the particular set. With this information, it is moderately easy to come up with an approximate date. Through the use of service manuals, instruction books, and advertisements in magazines, a given radio can *usually* be dated within one year. The qualification in that sentence covers those exceptions that inevitably occur. Some companies reused the same model number for totally unrelated radios two or three times over a period of years. Here a general idea of the age of the set helps immensely. Some brands or models never seem to have made it into the service manuals, which eliminates one of the better sources, so the only thing possible is a rough dating. Advertisements were built around specific, highly salable radios, and ignored the vast majority of run-of-the-mill sets.

But, all things being equal, these sources should permit dating of the vast majority of radios.

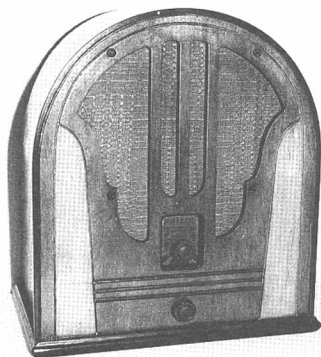
Trying to make a rough guess is more difficult. Like anything else for

the house, designs came and went, overlapped each other, and always tried to be new and different. In spite of this, it is possible to come up with some general guidelines. Why is this important? In the case of a model number showing up several times during a company's production, it makes it easier for anyone fixing the radio to find the service information. Someone may describe to you a radio they want to sell. Knowing how to roughly date the radio from a verbal description saves unnecessary trips to see unsuitable radios. At an auction, a clever buyer can sometimes pick up a good buy simply by having a better understanding of how old, and possibly how valuable in general, a certain radio may be. In none of these cases is an exact figure essential—a good ballpark figure gives a solid place to start.

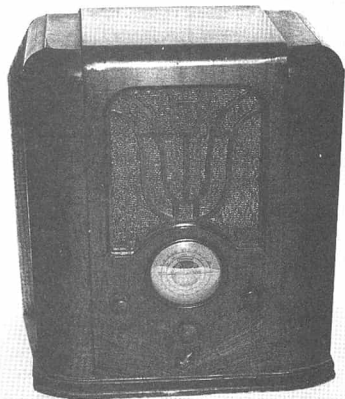
The following rough dates for various styles are exactly that—rough. They make no claims to accuracy. All rough dating must take into account that eras overlapped. Battery sets were finished by the 1940s, but some were



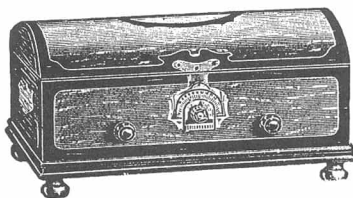
1934 Powertone sold by Reliable Radio Co., New York; original price \$9.95 (4 tube); \$12.95 (5-tube). (Both prices without tubes.)



1934 Philco model 84B. The later cathedrals tended to modify the pointed arch (Ed and Irene Ripley).



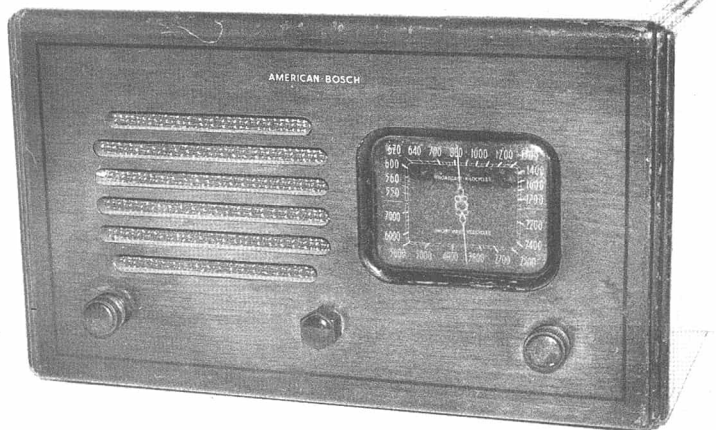
1934 Grunow model 750.



1934 Reliable Treasure Chest model sold by Reliable Radio Co., New York; original price \$9.50 (less tubes).

made into the 1950s. Highboys went out around 1932, but someone didn't tell RCA. They made one model in 1934. Nothing is cut and dried. Practically every style started before there was a demand for it and lasted until after most people had switched to something different.

Regardless of the style or its popu-



1935 American Bosch model 604. Note that the center knob is not original.

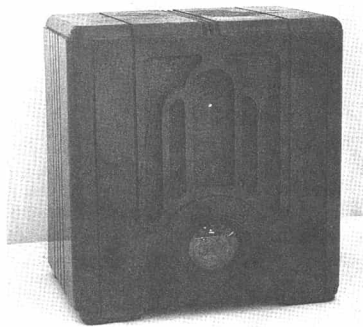
larity, people eventually became tired with it. Change is different and exciting and has always been a factor in the radio industry.

DIALS

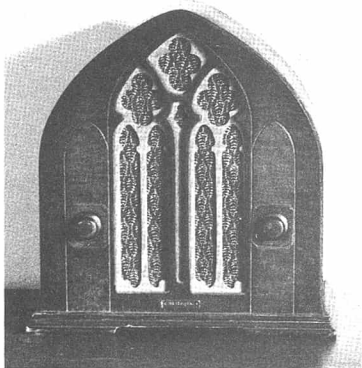
Multi-dial sets. These were common from the beginning of radio until 1927. In all but one-tube sets, two or more dials were necessary to adequately tune in the radio. Generally there were three dials for tuning in the station and two knobs, one that controlled the detector filament while the second controlled the filaments of other tubes. The tuning scale wasn't marked with the 550 to 1600 kc we use today. Instead there was a linear scale (0 to 100) on each dial. All of the dials would be set at

approximately the same place, but not exactly. For instance, one dial might be at 20, the second at 22, and the third at 18. To avoid the nuisance of fiddling with all the dials each time the station was tuned in, and trying to remember where exactly each was set, a log book was kept with the radio. In it the listener noted the numbers where the station had come in, and started with those the next time. It still might require a little more tinkering to come up with a clear station, but at least he was close when he started. (By the way, some early radios still have their log-books. Whether used or unused, these are a plus when buying a set.)

One-dial tuning. One-dial tuning came onto the scene around 1925. There was an overlap of several years



1935 Crosley model 555; AM/SW.



St. Regis miniature cathedral; no model identification; no year known.



Garod model 769; AM/SW; pushbutton; mid-1930s.

from this feature's arrival to the time when multi-dial tuning was out. One-dial tuning simplified radio, making it possible to tune in a station by ear. Remembering the station location using one number was much easier than keeping three numbers straight.

Airplane dial. The airplane dial appeared about 1934. This feature was reminiscent of airplane instruments, with a round dial housing a pointer that went around in a circle. The de-

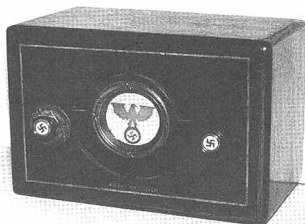
sign was still around after World War II. Zenith made a design statement out of the airplane dial by making theirs very large (dominating the entire front of the set) and coloring it black. Big Zeniths are easily recognized by this feature. If big and round was stylish, then the new style would have to be very different. It was.

Slide-rule dial. The slide-rule dial became popular around 1938. This dial is a long rectangle with the pointer moving straight across the scale to mark the stations. The slide rule dial is still found on stereo systems today.

Telephone-dial tuning. In 1936 telephone-dial tuning was developed. Put a finger in the hole, just like on a telephone dial, and turn it until it stopped; the station would then be tuned in. It seemed much more up-to-date than turning a knob and watching a pointer move. It was replaced quickly with easier to use push buttons.



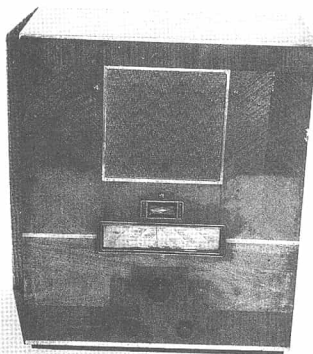
1935 Coronado model 686; 3-band.



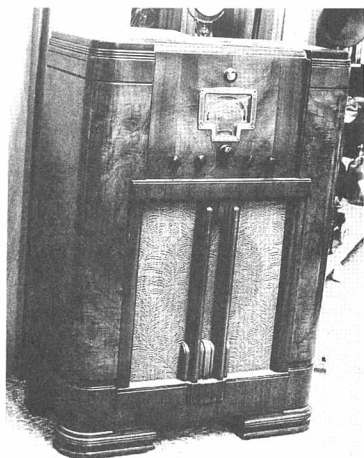
1935 American Bosch (paper label is missing). This unique set was sold by the German American Bund to raise money for the 1936 Berlin Olympics.

FLOOR MODELS

Floor models have gone through several styles. There was the highboy of the 1920s, the lowboy of the 1920s and 1930s, and the to-the-floor con-



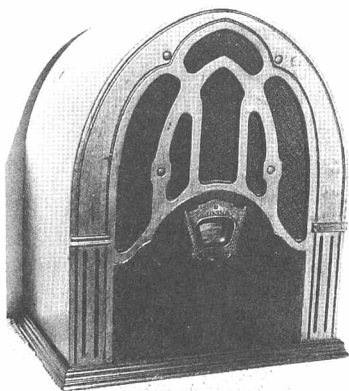
GEC model 8336; made by General Electric Co. (England), c. 1936.



1936 RCA model 13K; 4-band console.



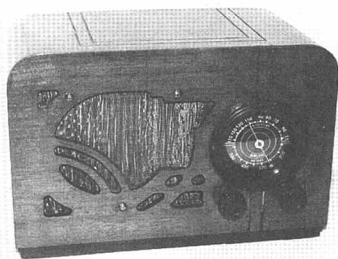
1936 Zenith model 6B129; a 6-volt farm radio.



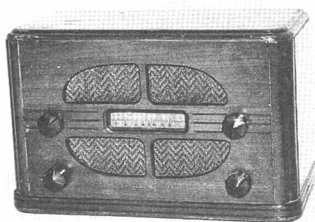
1936 Crosley model 167; cathedral radio (Ed and Irene Ripley).



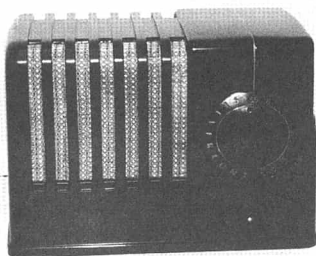
1936 Grunow model 1291, chassis 12B; tele-dial; 12-tube, 4-band (Gene Harris Auctions).



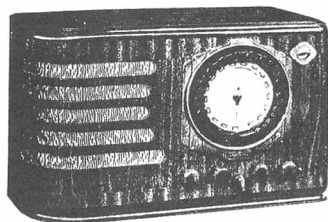
1936 Airline model 62-425; wood table model with decorative grille (Ed and Irene Ripley).



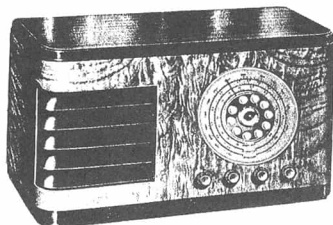
1936 General Electric model E-52.



1936 Silvertone model 4500; black Bakelite; first plastic radio offered by Sears (Ed and Irene Ripley).



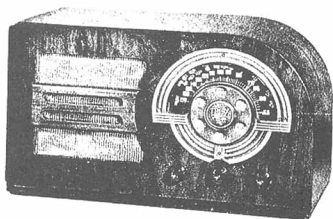
1937 Wells-Gardner model 108A1-704; wood table with telephone dial.



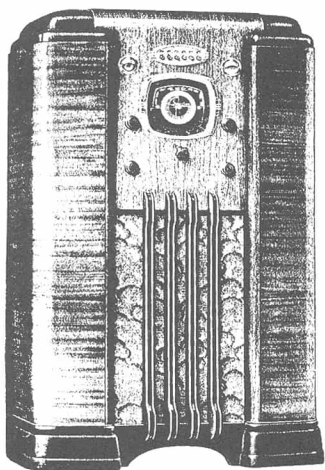
1937 Clarion model 691; wood table with telephone dial; original price \$49.95.

sole of the 1930s and 1940s. Another striking style was the long, horizontal console of the 1940s. There were variations to each of these major styles.

Highboy. The height of popularity for this style was 1927 to 1932. The highboy is, by definition, a radio on legs where the legs are approximately one-half the height of the radio. (This is not what the term means in the antique furniture field. As with many terms, manu-

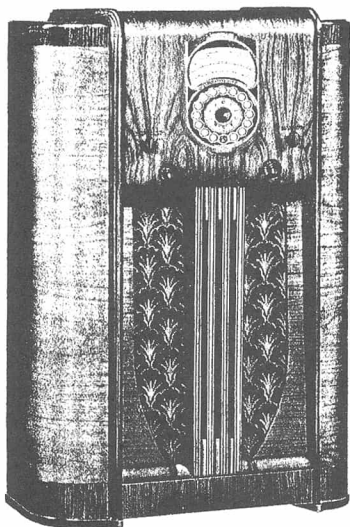


1937 Troy model 100; wood table with telephone dial; original price \$32.50.



1937 Sparton model 1068; wood console with push-button tuning.

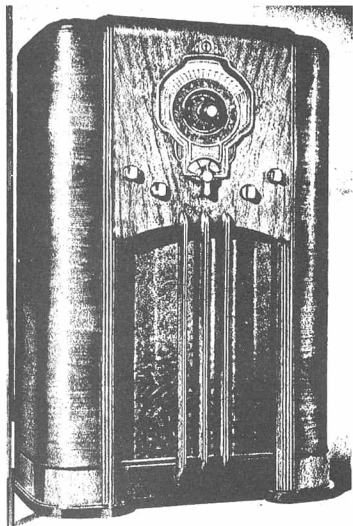
facturers took it to mean what they wanted it to mean. There was no industry standard defining a highboy.) Highboy radios usually had four legs. It wasn't until it looked like radio was here to stay, and particularly after AC



1937 Fairbanks-Morse model 9AC-4; wood console with automatic tuning; original price \$105.00.

radios became common and found a place in the living room, that people began putting money into an attractive cabinet, rather than into the radio itself.

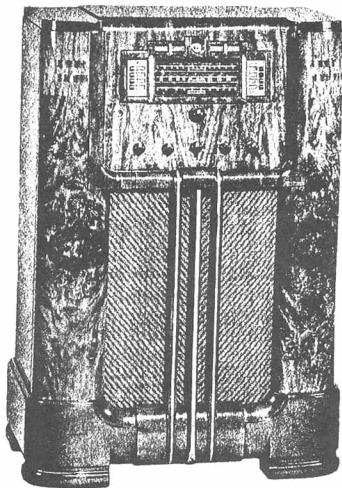
Lowboy. This style began at approximately the same time as the highboy. These two styles were the first of the nontable, floor-model styles to become popular. The lowboy continued in popularity longer than the highboy, lasting until about 1934 (although sets were built like this until the end of the 1930s). The lowboy by definition has legs that are anywhere from 6 inches high to half the height of the cabinet, with four or more legs. Many lowboys



1937 Motorola model 10Y; wood console; original price \$99.95.

had six legs, and there is at least one model (Stewart-Warner, model 51) that had five. The vast majority of early floor model radios will be lowboys. They won't all look alike, since the proportions of the cabinet to the leg height can be very different.

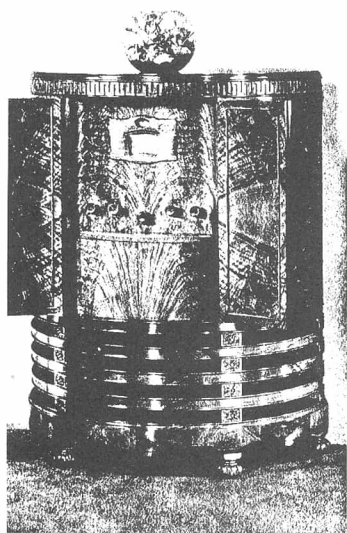
Highboy or lowboy with doors. These styles were popular from 1927 to 1931. Doors to hide the radio were popular at the beginning of the radio era, just as they were with early television sets, when many sets came with doors to close off the screen from the room. Later, when the sets became commonplace, no one felt they had to hide them. The same appears to be true of radios.



1937 RCA-Victor model 811K; wood console with automatic tuning; original price \$150.00.

Console. What we consider the floor model or console became popular around 1932 and continued to be in vogue through the 1940s. The console has sides that go to the floor, or it has feet less than 4 inches high. The word "console" in the 1920s could refer to all floor radios in general but, by the end of the 1930s, it had come to mean this style. Because of World War II, when all radio building for the home ended, these radios stayed around until nearly 1950.

Console radio-phonograph. These were popular from just before World War II (approximately 1938) to 1942. The phonograph was built into a console radio, either rolling out to play or, more usually, tipping out.

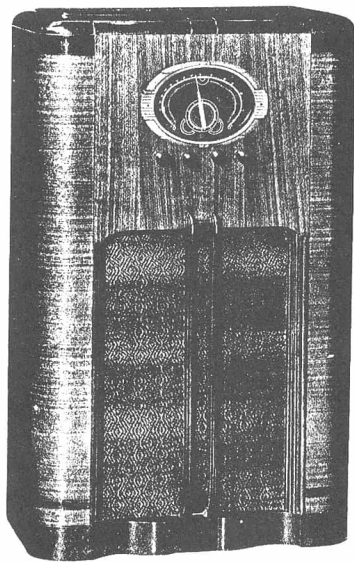


1937 Stromberg-Carlson model 249-R; fancy, unusual, semicircular Deco design; original price \$197.50.

Remember that this phonograph will be a 78-rpm record changer only. If it's a three-speed changer, either the changer has been replaced or the radio was made in 1948 or after.

Phonographs had been built into radios since the 1920s. They appeared in highboys, lowboys, and some massive affairs that seem to defy mere words to describe them. However, unlike the radio-phonograph consoles of the late 1930s, they never were a dominant style. If one of them shows up, date it by its cabinet style.

Horizontal radio-phonograph



1937 Belmont model 840; all wave, with tuning eye included in dial design; wood console.

console. Although the horizontal style was around from before World War II, it became important after the war. These radio-phonographs had the phonograph side-by-side with the radio, making them as wide as or wider than they were high. They came in all sorts of styles to harmonize with the living room. Virtually the same arrangement could fit into a blond modern living room or a Chippendale room. All it took was a change of wood color and trim.

Chairside. The chairside, popular from 1936-1941, started with Philco



1938 Philco model 38-7.

in 1933 and gained renown quickly. By the middle of the 1930s, the chairside was an important style, with the dial right in the table, making changing a program exceptionally easy to do. This style is defined by its function (chairside) rather than its looks. The chairside came in rectangular shapes, as well as oval and semi-circular ones. Bookshelves or magazine storage was often built into the chairside cabinet.

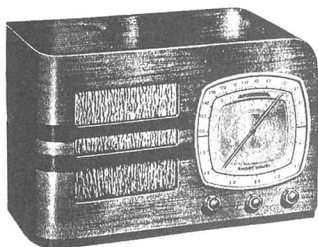
TABLE RADIOS

It all began with table radios and, long after television has become dominant, it is table radios that we still use today. They have lasted this long because of their immense practicality.

Slant-front wood table radios.

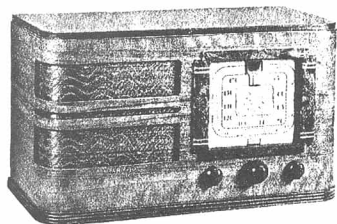


1938 Zenith chairside model 7-S-240; walnut finish, large black dial; 3-band (courtesy Zenith Radio Corp.).

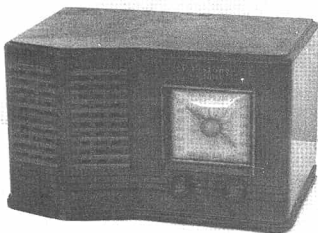


1937 Clarion model 770; AM/SW; wood table; original price \$19.99.

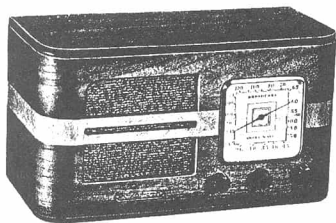
The slant-front table radio, popular from 1924 to 1926, was an attempt to dress-up the original plain wooden table radio. Looking at pictures of the early sets, it isn't surprising that they needed to be glamorized. There was nothing exciting about the cabinets of most of the sets. They were sensible wood boxes



1937 RCA model 87-T; AM/5W; wood table; original price \$49.95.



1939 Firestone Air Chief model S-7403-4; small wood radio with angled wood grille.



1937 Freed-Eisemann model FE-28; wood table; AM/5W; original price \$29.95.

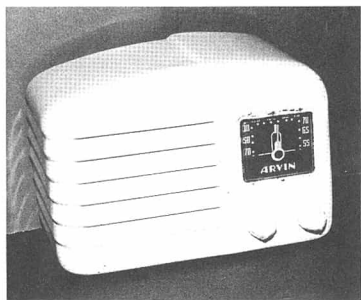
designed to hold the necessary apparatus to permit radio listening. In a slant-front set, the panel (of Bakelite, Formica, or the like) was angled back from the front of the set instead of being set in vertically, creating a more dressy look. (Philco revived this style for both large table and console models in the 1940s. Again, the general style of the radio itself will clearly show that it is from the 1940s, not the 1920s.)

Metal table radios. Metal table radios appeared in two different eras: 1926 to 1928, and 1940 to 1948. The earliest ones were the bright idea of

Atwater Kent. He was fascinated by the new steelmaking technology, and he couldn't see why it shouldn't be adapted for radios. Metal radios made a clear statement that radio was Modern, a technology come of age. It had a real benefit, as well, in providing electrical shielding to the set, which permitted it to work better. The cabinet was simply a metal box in which the radio chassis was placed and fitted with a metal cover. The finish was often brown crinkled paint. Atwater Kent, Crosley, RCA, and Philco all produced metal sets. The style only lasted for three to four years.

In 1928, for one year only, Philco decorated its plain metal sets with hand-painted floral designs to appeal to women. Their ad stated they "are offered in a variety of hand-decorated, softly modulated, two-tone effects... which (are) enhanced with color effects by Mlle. Messaros, one of the foremost colorists in the decorative arts. The colors are applied *by hand* under her personal direction."

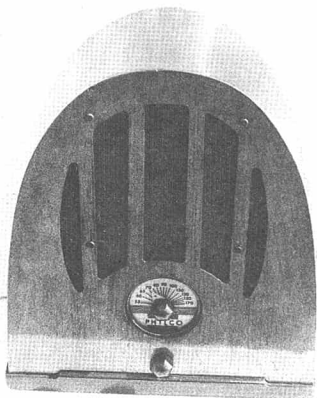
The later metal table radios (from the 1930s and 1940s) were midget



1939 Arvin model 502. *This radio is in a metal cabinet that looks very much like the plastic cabinets of 1939.*

sets, usually inexpensive, always small, and in appearance like normal radios. They are very similar to the small plastic sets of the same period. Where the earlier metal sets had removable tops to permit servicing the radio chassis, the later ones slid the chassis in through an open back.

Wood midget set. From 1930 onward, wood midget sets were available. These sets were shaped like a normal horizontal table radio. They became popular because their timing was right. The first ones were manufactured just before the Depression. When money became tight, the midget sets continued to sell well, while sales of the large, impressive sets sagged. In 1931, midgets were still considered as stopgaps by the larger manufacturers. Predictions were made that "midget radios will never replace the console receiver as the major radio installation." As time went on, midgets became smaller and smaller. Midget sets from 1930 would seem to be very large table radios to people in



1937 Philco cathedral model 37-93. *By this time, cathedrals had become much simpler. The peak was gone, and so was much of the wood trim (Arie Breed).*

the late 1950s. Usually the sets were varnished or lacquered, although some of them were painted. (These radios are considered traditional and inexpensive by people over fifty. Under fifty, the traditional set would probably be a plastic table radio.)

Cathedral radio. The cathedral style came onto the scene around 1930 to 1934—just before the Depression wiped out the market for more prestigious sets. They weren't expensive at the time, and as such could substitute for the more-expensive lowboy. They were certainly more impressive than the plain wood table radios. Because they stayed popular for many years, there were style modifications. Some versions had very pointed, Gothic arches; others had rounded arches



1937 Zenith model 65229; AMI/2SW.



1939 Firestone model S-7403-8; AMI/2SW.

where the basic proportions (height to width) remained the same as the pointed arch models; and there were models where the curve of the top was completely removed and straight lines were substituted. The almost square (height equals width), rounded-top beehive (1933) is usually included in this last category. In all cases, there was a lot of overlapping of substyles. The manufacturers, by the way, never referred to them as “cathedrals,” but instead called them “Gothic.”

Cathedrals not only looked impressive, but they also could sound that way. In some of the large cathedrals, such as the Philco 90B, the same radio chassis was used as in the large consoles.

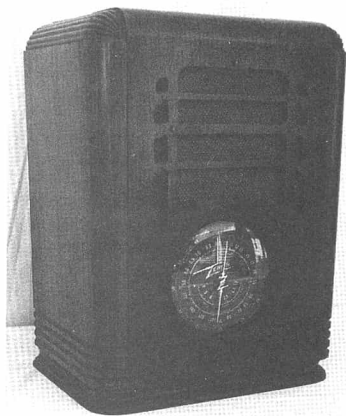
Upright wood table radio.

Upright wood table radios appeared between 1933 and 1940. Taller than they are wide, these, too, include many substyles. Rounded-corner tomb-

stones, stacked-top Deco sets, even cathedrals would fit into this classification. The emphasis was on the Modern look of an upright table radio as contrasted with the Gothic look of the cathedral. By World War II, the upright wood table radio had been replaced in turn by the conventional horizontal wood and plastic table radios. Once money was freer than during the Depression; anybody who wanted to buy an impressive radio bought a console instead.

Table radio-phonograph. Starting about 1938 and lasting until 1950, these large square boxes held both a 78-rpm phonograph and a radio. After 1948, they might have a two- or three-speed changer instead of a single-speed 78-rpm one. They usually had wood cabinets but occasionally were housed in Bakelite. They were designed to go into a living room or a recreation room and look nice, while not taking up valuable floor space. High-fidelity systems eventually replaced these sets.

Plastic table radios. Plastic table radios have been around since 1931. Plastic was still a novelty when first used in radios. Although plastics had been around for 50 years, to date they hadn't

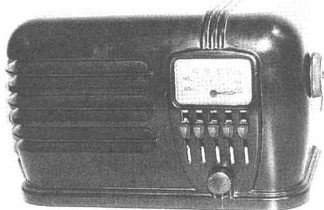


1941 Zenith model 5F134; farm (6-volt) set; AM/35W bands.

been usable for radio sets. The earliest plastics (celluloid, for instance) would soften and melt when hot. This wouldn't do for a radio, in which the tubes produced much heat. The advent of thermoset plastics (Bakelite, Catalin, and urea) was a boon for radios. These plastics, unlike some others, won't soften or melt in heat. Even leaving them on the back shelf of a car on a 100-degree day won't faze them. Once set, the plastic retains its shape until it is hot enough to simply burn, and it takes a bonfire to get that much heat. Plastics became the set of choice for a number of reasons. First, molding a cabinet of plastic is cheaper than the manual work of gluing a cabinet together and putting a finish on it. Second, the particular properties of the thermoset plastics meant that the heat buildup inside a tube set



1939 Zenith model 6D414; brown Bakelite; inverted Bakelite chassis.

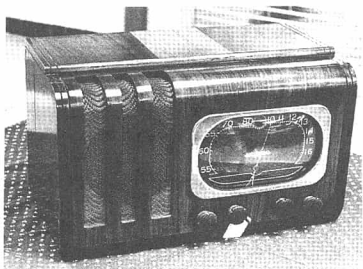


1939 Belmont model 636; brown Bakelite.

was no longer a problem. Third, because various plastics could be used in making radios, many colors could actually be molded into the radio. These colors may alter with age, but they won't chip off the way paint does. (Remember, though, that Bakelite radios in light colors are painted, and have all the same problems with chipping that a wood cabinet would have.)

STYLING DETAILS

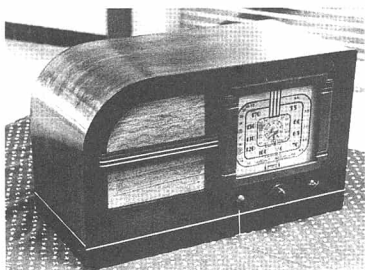
Sometimes it is the little things that help to date a set. So often a cabinet



1938 Howard model 368; 3-band.



1939 General Electric model HJ-624; pushbutton.



1938 RCA model 867; 3-band; curved wood.



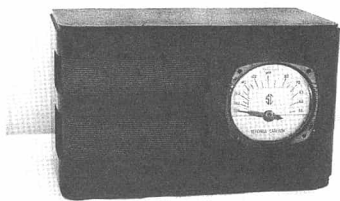
1939 Majestic model 1A-59.



1939 Stewart Warner model 03-5C1-WT.



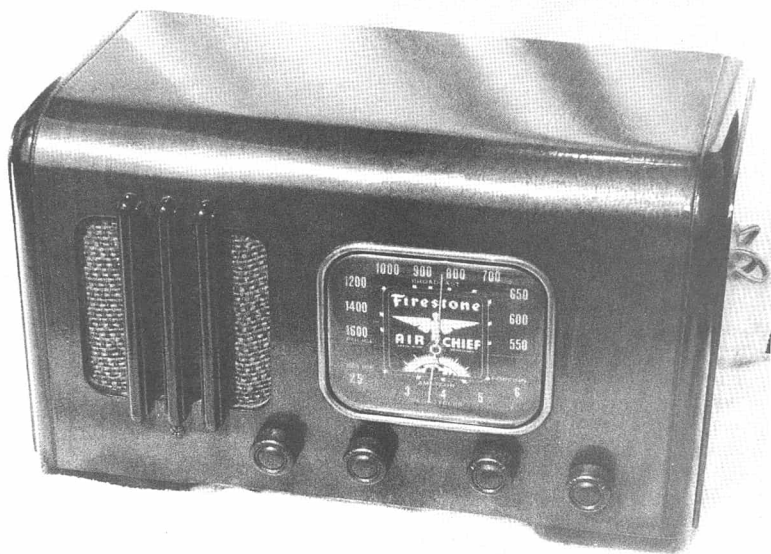
1939 Zenith portable; chassis no. 5416; battery only.



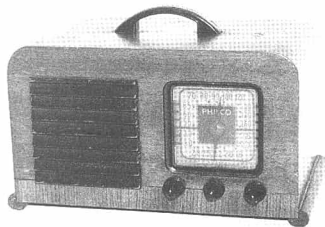
1939 Setchell Carlson model 588.

style lasted over most of a decade or more. But many of the styling details were around only briefly. This makes dating a set relatively easy.

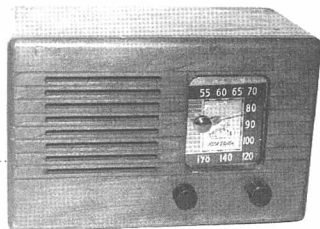
Pressed-wood fronts. Pressed-wood fronts were available in 1933-1934. Crosley loved using pressed-wood fronts on its table radios. This gave a lot of detail and interest to an otherwise plain set. This had been done earlier, in the 1920s, when additions of carved or pressed-wood moldings had made highboys and lowboys more expensive looking. But rarely had the pressed-wood design dominated the set as it did with Crosley's.



1939 Firestone Air Chief model R-3051; 2-band (David Tuttle).

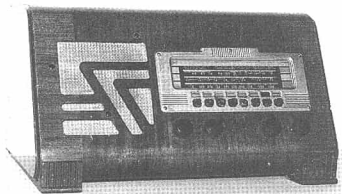


1940 Philco model 40-120. The handle is for convenience only. This is not a battery radio.



1940 RCA Radiola 520; maple finish (Ed and Irene Ripley).

Deco. From 1933 to World War II, the Art Deco style was popular. This was inspired by the Chicago World's Fair (1933-1934), with reinforcement of the style found at the New York World's Fair (1939-1940). The style had started in Europe with an exhibition in 1925, but the Chicago World's Fair popularized it in the U.S. While the style didn't dominate radio design of this period, it made an impressive statement. Deco radios reflected the spirit of the Deco movement. They could be angular cathedrals, stacked-top upright radios, or radios with wrap-around modern



1940 Philco model 40-155; 3-band table radio.



Continental model 1000; striking lines; c. World War II (Ed and Irene Ripley).

grilles. They were found in both plastic and wood. Radio design relied much on fronts curved boldly into one or both sides, emphatic vertical or horizontal straight lines, and strong contrasts of color (chrome against dark wood, two-tone plastic, two-tone wood). For a short period, strongly designed chrome grilles were used. Probably the best adjective to describe the Deco style is *bold*.

Chrome-plated grille. Chrome-plated grilles, available in 1934, primarily were popular for one year. This extremely Deco-styled detail seems to have been inspired by the Chicago World's Fair.

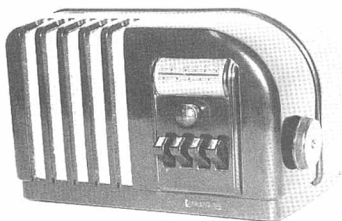
Mirror radios. Another short-lived (1935-1936) Deco fad, mirror



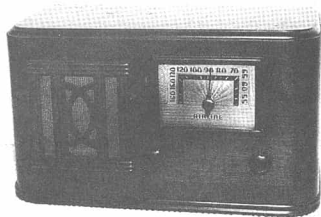
1940-41 Zenith Trans-Oceanic portable model 7-G-605; black leatherette (courtesy Zenith Radio Corp.).



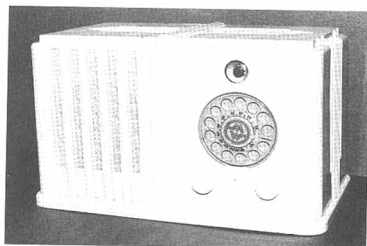
1940 Philco Transitone model PT33; brown Bakelite (Ed and Irene Ripley).



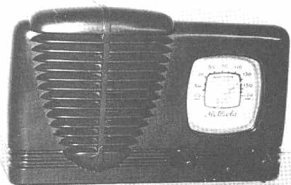
Airline; c. 1940; made by Belmont (Ed and Irene Ripley).



Airline; no model identification on this radio—the paper label generally found has disappeared. c. 1940 (John Wilson).



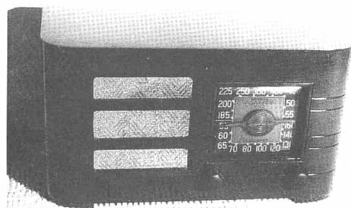
1941 Airline model 62-476; available in both white and brown Bakelite; complete with both a tuning eye and a telephone dial. There are leaves embossed on the top, and pillars on the sides (Ed and Irene Ripley).



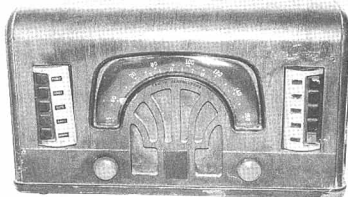
1940 Motorola model 41A; brown Bakelite. Grille looks like an auto's; 1½ and 90 volts. This particular radio was given a battery eliminator sometime in its past.



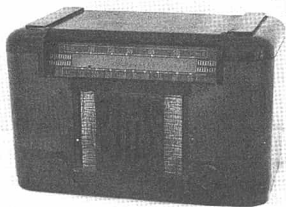
1941 Airline model 14WG-806A. Curving the grille out from the front of the radio adds design interest.



1941 Crosley, probably model 52-TG (label is partially gone); (John Wilson).



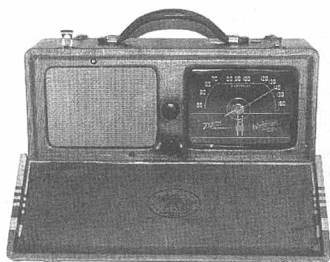
1941 Zenith model 6R631; tone controls on left, station pushbuttons on right.



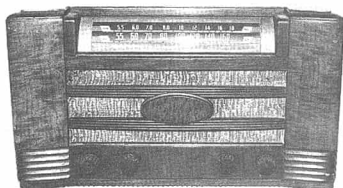
1941 Admiral model 4204-B6; interesting lyre-shape grille.



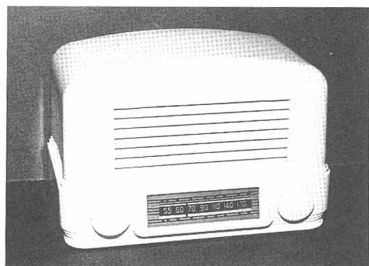
1941 Emerson portable model FU-427.



1941 Zenith portable model 6G-601-M; cloth-covered.



1942 General Electric model L-641; AM/SW (John Wilson).



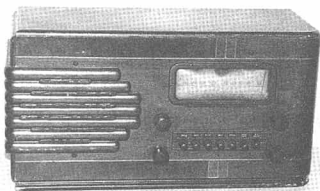
1941 Airline model 14BR-522A; white plastic radio with simple lines.



1942 Philco model 42-321 (John Wilson).



1942 Philco model 42-350. The large curves give it a heavy modern look.



Musicaire (model unknown), straightforward wood table radio with interesting grille; probably made around World War II (pre- or post-war).



1946 Farnsworth model ET-067. The distinctive feature of this wood radio is the grooves on the top of the case. The log scale on the dial gives the impression that this set has more than just the broadcast band.

radios ranged from mirrors basically screwed on to flat panels to the highly collectible Sparton "Bluebird" and "Nocturne," where the radio was of secondary importance to a large round

mirror. In the 1930s colored mirrors were popular, and many of these radios came with blue or peach mirrors. Although Sparton was the best-known company producing mirrored radios, there were many other companies as well.

Green tuning eyes. Green tuning eyes were featured on radios from 1935 until World War II. The round eye was found on middle-and higher-priced radios; in fact, it was almost a standard feature on these radios. The more exactly the station was tuned in, the closer the green lights came to touching each other. For many people, this is the single feature they remember from the sets they grew up with.



BUYING THAT SPECIAL RADIO

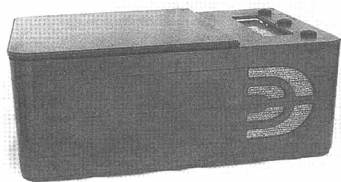
Anyone hunting for a radio wants two things—the perfect radio and the lowest possible price.

Fortunately for collectors, not everyone considers the same radio as “perfect.” One person wants a bread-board, whose price is already high, while another wants a console, which is still relatively low priced. Sometimes, however, everyone wants the same set. At present, this is happening to Catalin radios, and their prices have skyrocketed. Several years ago, you could get them for \$5 to \$10; they were considered cheap, plastic radios. Now they are hard to find at any price.

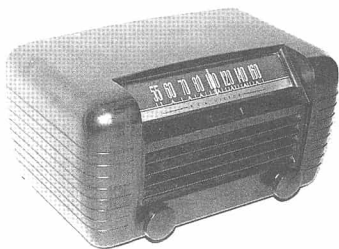
Everyone wants to find and purchase that special radio inexpensively. Here are some hints on where to look for radios and what sort of prices you may have to pay. (Remember, the prices in the price guide are based on radios in working condition sold in the retail market.)

WHERE TO LOOK

Your neighbor. Most often these radios will have come out of the attic or basement, and the owner considers



1946 Puritan radio-phonograph model 503.



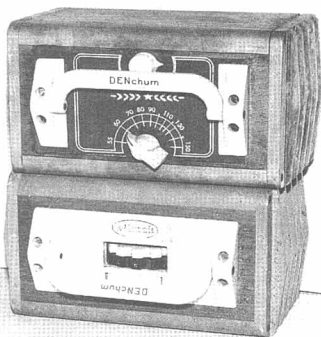
1946 RCA model 65X1.



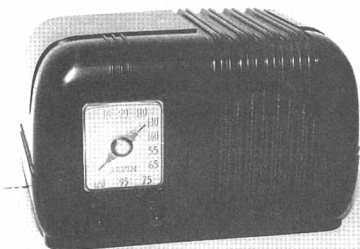
1946 Philco radio-phonograph model 46-1201.
Record is placed in drawer in bottom.



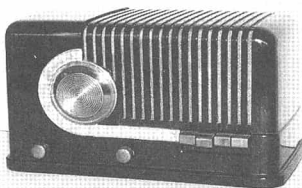
1946 Westinghouse model H-130.



1946 Den Chum made by Wilmak, model W-446. Although it would appear that the top radio is the earlier model, this isn't true. The knobs on the bottom radio have detents and only tune the stations that are preset on the bottom of the radio.



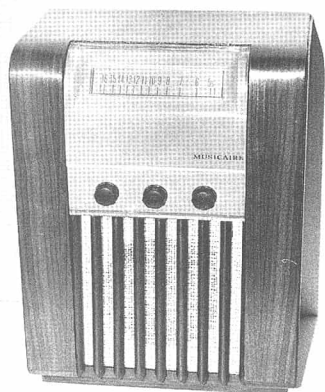
1946 Arvin model 544 (Ed and Irene Ripley).



1946 Silvertone model 07025; brown Bakelite; Deco.

them surplus. Because you know the owner, there is a good chance that the price will be low. The condition of the cabinet may be only fair, but if it doesn't cost much, it may be a good

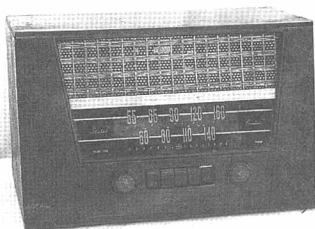
deal anyway. Up to a point, the same goes for the electronics. If the insides look too terrible (extensive mouse nests or wires that don't go anywhere), it may not be a good buy at any price.



1946 Musicaire model 576. Some people claim it looks like a miniature console, others think it resembles a jukebox. Sold by Coast-to-Coast Stores, same model as the Detrola model 576-1-6A.

Garage Sales/Yard Sales. The biggest problem with trying to find things cheaply at garage sales is that there is a wide variety of sellers. They range from people who are trying to clean out things they don't want and just hope to pick up some extra cash to the person who is a professional dealer in everything but name. Some garage sales feature prices similar to those found in antiques shops.

It may take many visits to garage sales to find the right radio. Many won't have any radios; others will consider theirs almost priceless. Some people swear by shopping at these sales, while others swear at the time they've spent with few results.



1946 General Electric model 321.



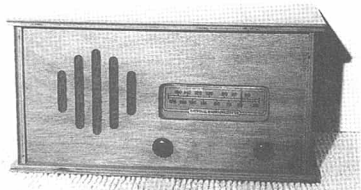
1946 Trav-Ler model 5066; brown plastic (Ed and Irene Ripley).

One smart idea is to concentrate your garage sale trip into a logical route, through older neighborhoods. Most young couples won't have moved radios into an already-crowded starter home. Read the local newspaper ads to find out who's having garage sales and where. Spotting the most common days for sales saves time and gas. Near a city, driving around and watching for those cardboard signs nailed to light posts will lead you to many sales, even some you might have missed in the paper.

Auctions. There is no way to predict prices realized at an auction. The



1946 Artone model R-1046-U; white painted Bakelite with aqua dial; identical to an Olympic model.



National Radio Institute model 7AN2. Kit was probably built as part of a home radio course. Cabinet is homemade (John Wilson).

prices depend on so many things: how many people come, whether there is another auction that is draining off many of the bidders, the weather, and how long it looks like it will take to get to the things you want.

At an auction, find out what guarantees are given by the auctioneer. If you can't talk to the auctioneer, ask the clerk. Some auctions guarantee an electrical item to be working. If you plug it in and it doesn't work, you can imme-

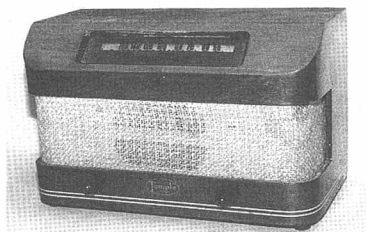


1946 Crosley, cabinet marked 63TJWC; label missing—probably model 66TC; "Victory" model.

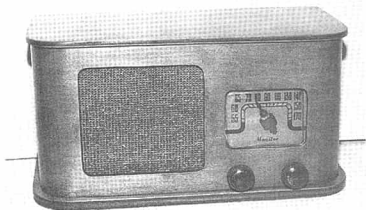


1946 Motorola portable model H57; cloth-covered.

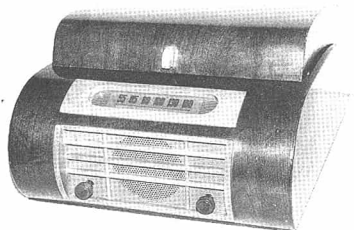
diately bring it back to be resold. Before you do this, however, check the line cord. *If it's in bad condition, do not plug it in.* Assume that you're going to have to replace the cord before you do anything else. Auctioneers often say that the radio was working before the sale. "Working," in their parlance, means that there was sound coming



1946 Temple model F616; wood table.



1946 Monitor; no model number; almost a "generic" radio—no identifying characteristics; date approximate.



1946 Electromatic radio-phonograph; model 512; wood cabinet; one of two models the company made.

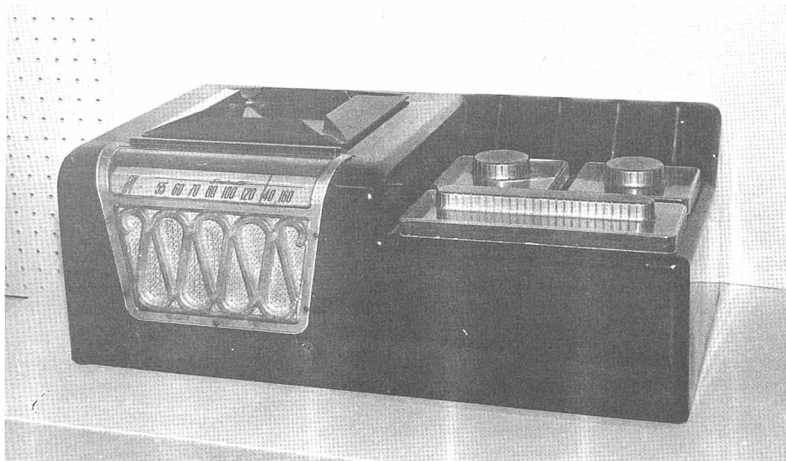
from the set. This does not mean that the radio actually picks up stations, or it may mean that it picks up only the strongest local station. Don't count on more than that.

Radio Swap Meets. If you live near a medium-size city, there is a good chance that there is a local radio club. These clubs run swap meets/parking lot sales periodically. Because the members of the club are often tinkerers, you may find the radios are not working. The sellers will tell you this, and often give you hints for repairing

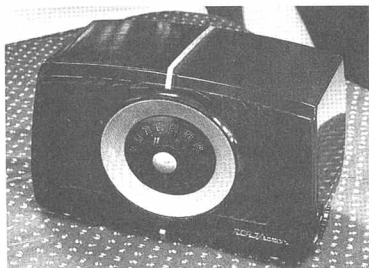
the radio. Many times the radios are duplicate sets, so the seller has little ego tied up in them. Therefore the prices are often reasonable.

There are two practical methods for finding a radio club. One is to contact the public library in your city. Libraries usually have a list of local organizations. With luck, a radio club will be listed. The other method is to write the Antique Wireless Association, Inc. (Holcomb, NY 14469) to find what clubs are nearby and a current address for you to contact.

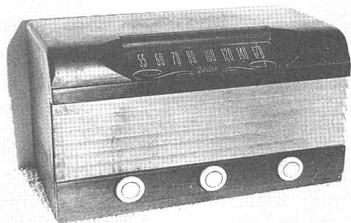
Flea Markets. Flea markets can be a good source for radios. If there are many dealers, there's a good chance that someone will have brought along several old radios. Prices will generally be higher than garage sales, because the dealer has an idea of what his merchandise is worth. There is some leeway on prices, however. Attempting to get a better price is well worth trying. If the dealer says "no," you're no worse off than if you hadn't tried. If the price can be substantially lowered, you'll be happy. Flea market dealers like bargaining. A good idea is to make



1947 Smokerette made by Porto Products; radio built into smoker's stand; includes ashtray, humidors, and pipe stand (John Wilson).



1947 RCA model X551.

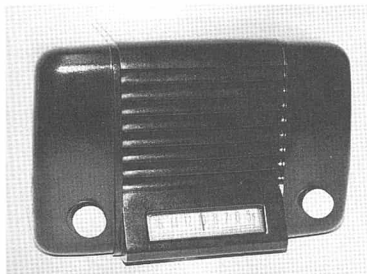


1947 Delco model R-1229; two-tone wood radio (John Wilson).

a fair offer. It may be accepted, or you may come to some compromise price.

Mail Order. Radio magazines contain information and addresses for mail-order radios. It seems that more and more radio collectors are advertis-

ing their sets. It can be difficult to tell the real condition of the set by reading a classified ad. Some dealers print a list that tells what you'll find—scratches, repairs, tubes missing, etc. Others use one of the various grading systems. No



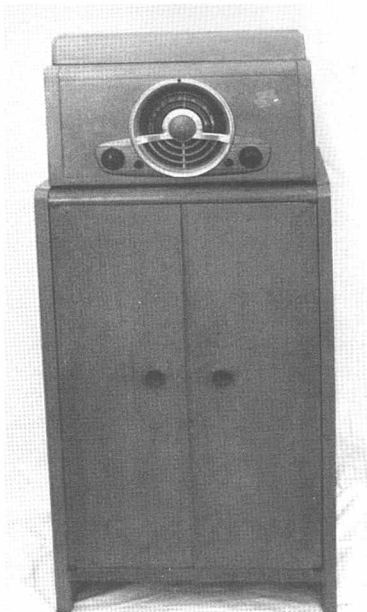
1947 Firestone model 4A27; black plastic (Ed and Irene Ripley).



1947 Zenith model 6R886; blond wood table model radio-phonograph.

grading system has been universally accepted.

There have been numerous attempts to standardize grading of radios. The Antique Wireless Association tried on two different occasions. "Excellent" meant perfect both in 1979 and 1983. "Very Good" meant that the finish could have some



Matching stand for 1947 Zenith radio-phonograph.

scratches. But when they came to the poorer radios, the grading moved upwards during those four years. What had been "Poor" now became "Fair" (extensive repairs needed), and "Fair" became "Good" (refinished cabinet). A controversy developed when, in 1984, another suggestion was made. "Mint" meant perfect, "Excellent" meant the finish was scratched, "Very Good" included refinished cabinets, and "Good" meant extensive repairs would be necessary. Of course this led to still more suggestions. One system would



1947 Airline model 64BR-1808; push-button; 3-band.

have coded in virtually all electrical and cabinet flaws, which would have made the system too complicated. This is why one mail-order dealer prefers describing the radio in plain English. Here's an example from one of their sales lists: "PHILCO 1949 #49-602 hand bag-shaped 3-way portable, chocolate brown styrene with black leather carrying handle, horiz. louvered grille, slide rule dial, cracks bottom & back, clean." You have a good idea of what this radio looks like just from reading the description. This is the same information you want from any seller.

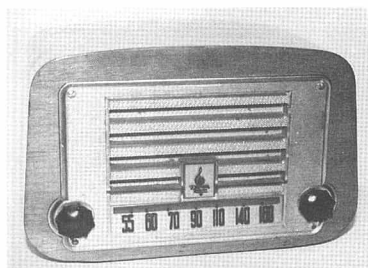
Beware of seller's claims. "Mint" should be exactly that: never used, absolutely perfect original finish, all parts original. Very few items fifty years old are mint. "Near Mint" is a better de-

scription. If you put two identical "mint" radios together, most likely one would look more "mint" than the other. Since it's virtually impossible to make this comparison, be cautious and believe that the radio is NM (Near Mint). If you've come across a set you want, the first thing to do is to call the dealer and find out what, precisely, is its condition. Is it original? refinished? restored? Does it have the correct knobs? Does it work? Can you return it (at your expense) if it isn't as you expect? Before you send a check, understand what you're getting. Ask lots of questions. Don't worry if you sound foolish; it's more foolish to send off the money trustingly.

If a picture would make you feel better about buying the set, ask the seller to send a Polaroid print. If



1947 Gilfillan portable model 66B, "The Overland;" leatherette covered with unusual copper grille.



1947 Emerson model 578A; wood, European styling (Ed and Irene Ripley)

there's a charge for this, it's still a good investment. Certainly it's cheaper than sending a radio back.

Also find out how long it is before you can expect to receive the radio. Since the seller may want to have your check clear before he ships, a three-week wait is not unreasonable. If it's



1947 Regal portable model 747; metal case with plastic front and back; flip-up cover; AC/battery operation.



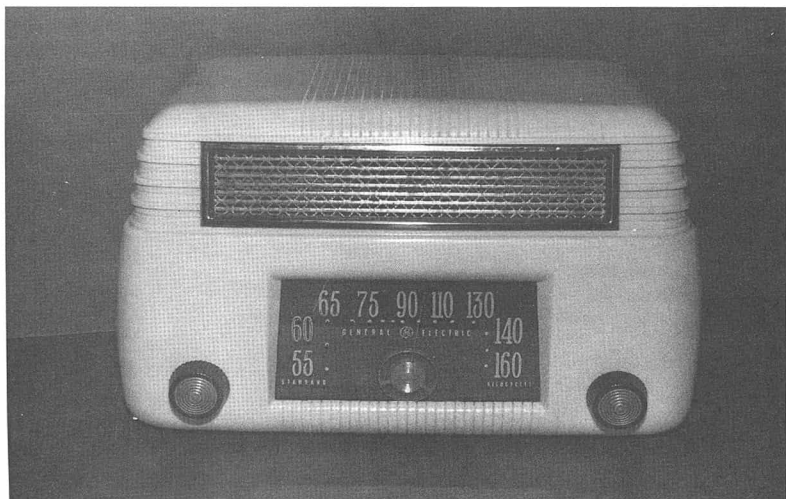
1947 Pilot FM tuner model T-601; played through the phonograph input on a conventional AM radio.

going to be much longer than that, find out how long. Everyone has at some time ordered something and then waited for it to come through, all the time becoming angrier and angrier. Avoid the problem: know in advance.

If you're planning on spending a lot of money for your radios and you don't know the seller, consider having the order sent C.O.D. It avoids the problem of someone taking the money and disappearing.

Antiques Shops/Antiques Malls.

You will find the highest prices at an antiques shop or mall. The dealer has the regular costs of any business (rent, utilities, salaries). These are not major expenses for any of the other sellers listed. The dealer is also concerned about his reputation and will not want



1947 General Electric model 202.

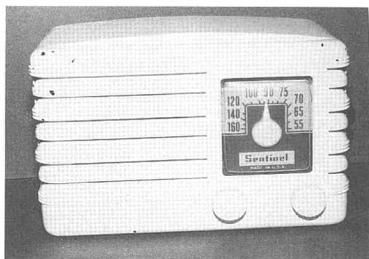


1947 Fada; wooden table, similar to series 652 Catalin radios.

to sell an unsafe item (unless it's clearly marked "not working" or "as is"). Many dealers have refinished poor cabinets so the radio looks fresh. This is the retail level reflected in this price guide.

As with flea marketers, there may be some flexibility in dealers' prices. Some antique dealers do not believe in dickering. They consider themselves professional retailers and believe that since local department stores don't make deals, they shouldn't either. There are some dealers who love to wheel and deal, and who consider a sale more enjoyable if this has gone on. Making an offer, instead of asking for the "best price," will allow any dealer to state his policy without anyone being insulted.

An article several years ago stated that dealers were buying items for 25 to 30 percent of the selling price. This would have allowed a good deal of bargaining room. Unfortunately, most dealers buying from individuals or at auctions today are paying closer to 50 percent of the selling price. Be reasonable when you make an offer.



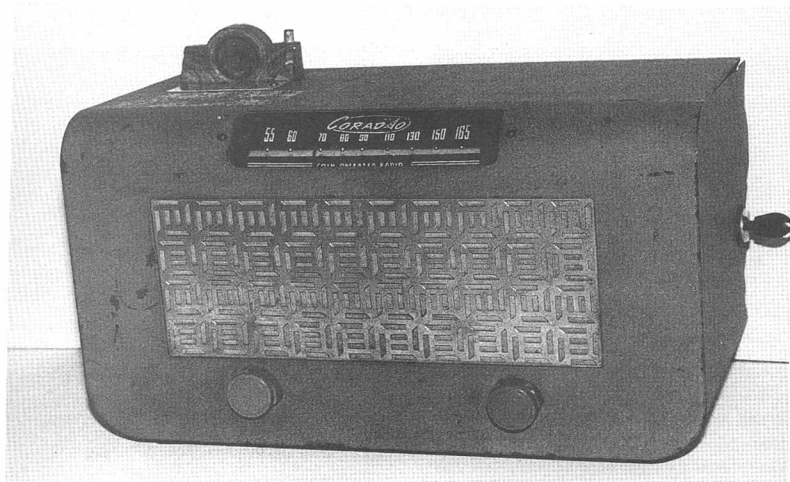
1947 Sentinel model 309-I; ivory Bakelite (Ed and Irene Ripley)

EXAMING THE RADIO CHASSIS

When repairing either a radio cabinet or chassis, remember the rule of thumb: Don't do anything that can't be undone later if it's wrong.

Condition. The price guide assumes that the radio is in working order. That means the knobs should all be there and match. It doesn't guarantee that the knobs are the correct ones, but that's an assumption you'll have to make. If they don't match, there's obviously something wrong. All the tubes should be there. The cord should be in good condition. (If it isn't, do not, repeat, *do not* plug it in. Replace it immediately.) The dial should move and the knobs should work. If not, lower the price accordingly. When looking at the chassis from the back of the set, don't worry about dust. You may find a little rust or some oily looking spots. These are not problems.

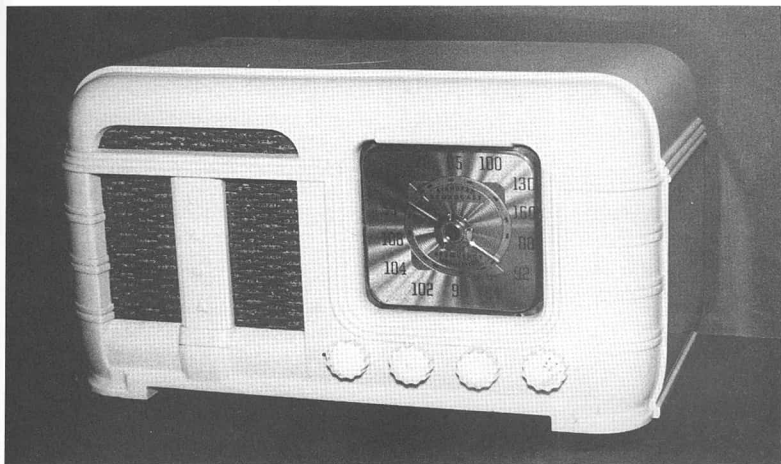
Those are the simple, first steps in checking out a radio. Sometimes it's all you can do. You really don't have any idea of whether or not the set will be



Coradio coin-op radio; gray metal; from a hotel in Black River Falls, Wisconsin.



Unknown coin-op radio; gray metal.



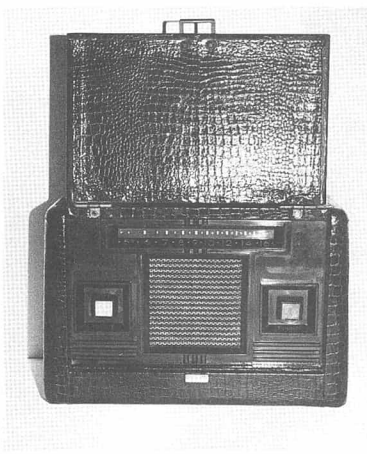
1948 Fada model 790; white urea. The Deco style of this radio is misleading in that the radio appears to have been made in the late 1930s instead of 1948, when it actually was manufactured.



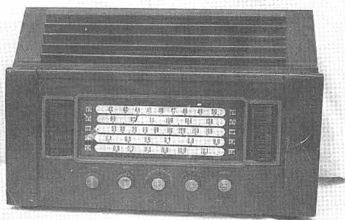
1948 Philco model 48-250.

good, or how expensive it will be to fix. If possible, check further.

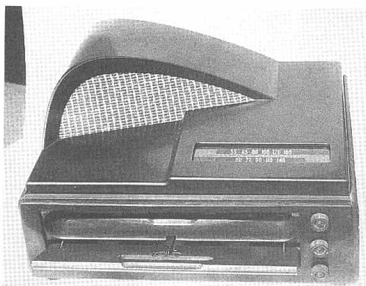
Problems. If you see a good deal of greasy wax or black tar on the chassis, something is wrong. The radio likely has overheated at some time. It will take an evaluation by a repair per-



1948 Motorola portable model 67L11; simulated alligator. Note square knobs.



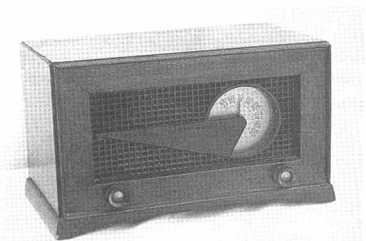
1948 General Electric model X-415. This multi-band set has both of the FM bands.



1948 Philco radio-phonograph model 48-1401; slide-in record player; black plastic top, wood bottom (David Tuttle).



1948 RCA model 75X16. The frame around the radio is brass.



1949 Philco Transitone model 49-506; wood cabinet.



1948 RCA portable model 8 BX 6; operates on both AC and batteries; aluminum and plastic.



1949 Sentinel model 332.



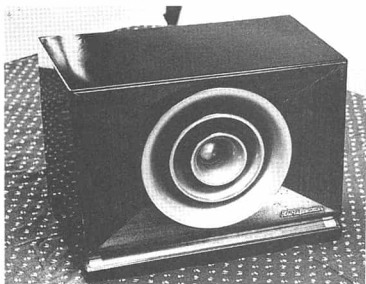
1949 Coronado model 43-8360A; brown plastic with aqua front.

son to know how serious the problem is. Unless you know about radio repairs, don't pay too much, and don't tinker yourself unless you know what you are doing.

If you have a chance, try the radio before you buy it. If you're only buying it for the cabinet, this is not necessary. Go on to the section about cabinet condition instead.

This is important! Before you plug it in, make sure the power cord is in safe condition. If you can see any copper wire or the insulation is badly broken, ***do not plug it in!***

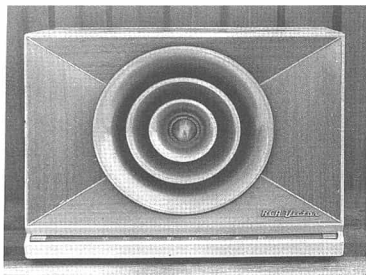
Look in the back at the chassis. If any tubes are missing from their sockets, don't bother to plug it in. It won't work anyway. Is the loudspeaker in there? This is a separate circular metal



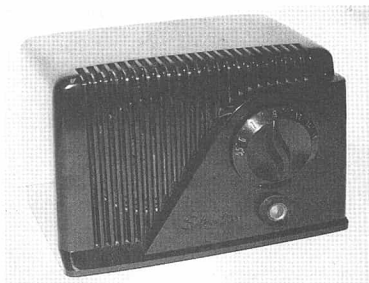
1949 RCA model 9X571; brown plastic case with brown fake wood front.

frame with a paper cone. If it's missing, don't bother to try the set. If there are a bunch of wires that are not attached to anything, don't turn it on.

There may be, however, two wires



1949 RCA Victor model 9X572; blond plastic.



1949 Silvertone model 132.857; brown Bakelite (Ed and Irene Ripley).



1949 Silvertone model 7054; chassis number 101.808. Postwar styling with rounded cabinet corners.

coming through a hole in the back of the chassis. These are the antenna and ground wires. Normally, there will be nothing attached to their ends (which is not a problem). You may have to add a little wire to one of these to get many stations, though.

If nothing seems amiss, you can turn on the radio. Turn the volume control up about half way. Now watch the back of the radio. If there is a loud sputtering sound, any sparking, or any smoke, do not turn the set off.

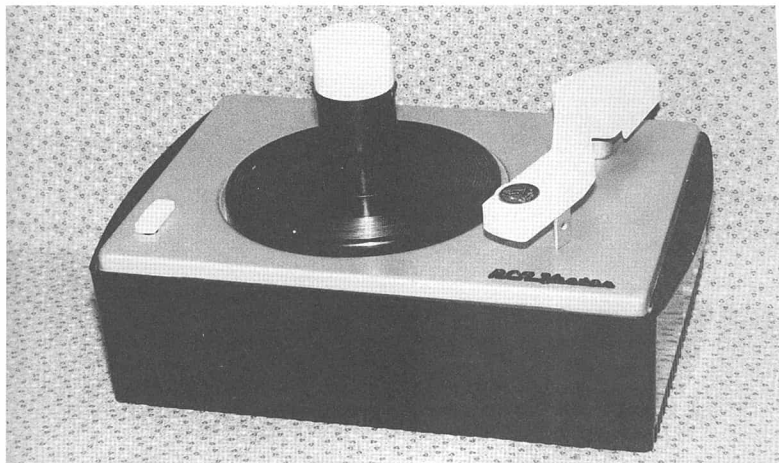
Instead, pull the plug! You've got problems.

If all is still going well, continue to watch the back. The tubes should light up. Any black-painted metal tubes should get warm after a few minutes. Any small bulbs used to light up the dial most likely will be burned out. They aren't hard to replace.

After a couple of minutes, you should hear something. Is there a soft humming sound from the speaker? Good, that's fine. If it is dead silent, there is something wrong. If all is well, you will hear some soft crackling sounds and hiss, showing that most of the circuits are functioning.

Now try the switches on the front of the set. Band switches (AM/SW/PHONO) produce a noticeable pop in the speaker when they are moved. If they produce any other strange sounds, it shows that they are in need of cleaning (not a difficult task).

If there is a band switch, make sure it is set to the regular broadcast band. Turn the volume control almost all the



45-rpm phonograph attachment for radios. Usually these are found with the top of the changer in red rather than white. They were designed to plug into the phono jack on the back of many table radios; original price \$12.95; c. 1948-49.

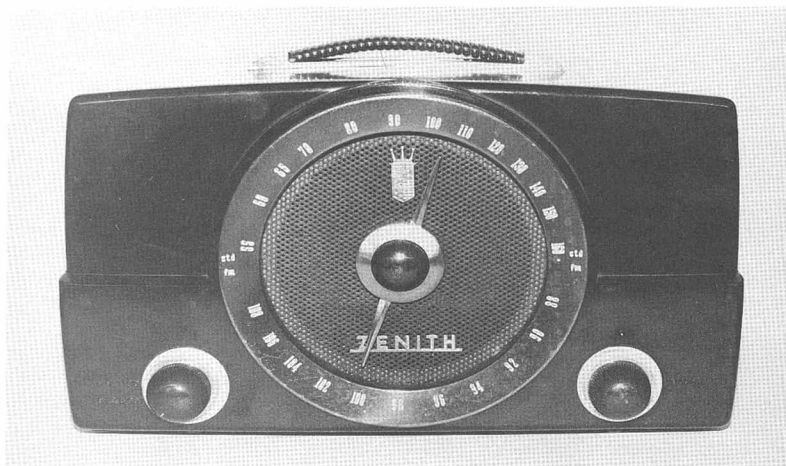
way up. If there is a loud scratching sound in the speaker when you move the knob, this control will need cleaning as well. Try tuning the dial from one end to the other. It should, of course, move. There should be some sort of sound from a local station. If you hear any station at all, the set is not in bad condition.

By now you have had the set operating for several minutes. It's time to check again. Does it smell hot or waxy? Is there any burned smell (even if there is no smoke)? If there is any strong smell from the set, some component is going bad and will need fixing.

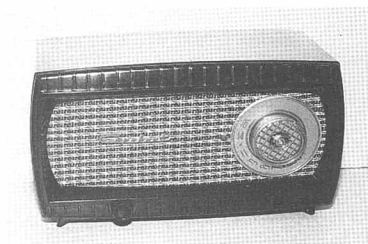
If you do receive a local station, you may still have one or two problems needing attention. There may be a



1949 Philco portable model 49-602; purse-shaped, brown plastic; slide rule dial (Ed and Irene Ripley).



1950 Zenith model H-725.



1950 Capehart model 3T55E; brown plastic.

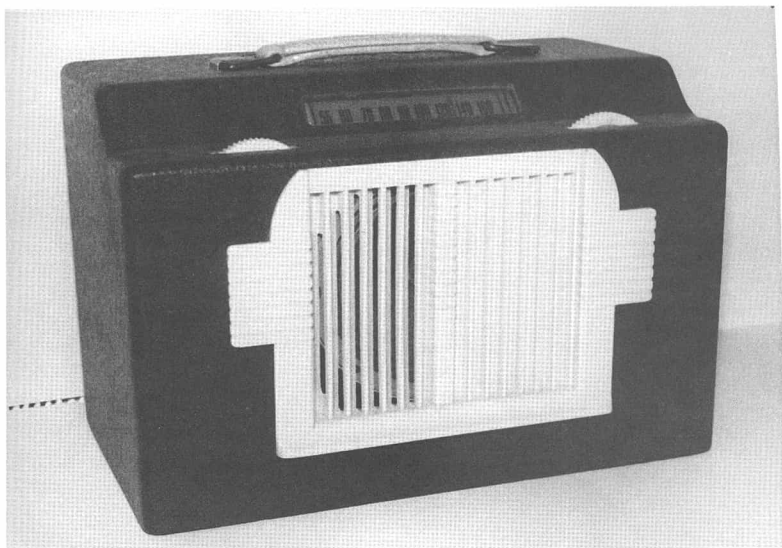
loud hum that makes it hard to hear the station. If so, filter capacitors will need replacing. The sound may be very disagreeable, distorted, and hard to listen to. If this is the case, you may have problems with your speaker or need replacement coupling capacitors.

These radios are not high fidelity,

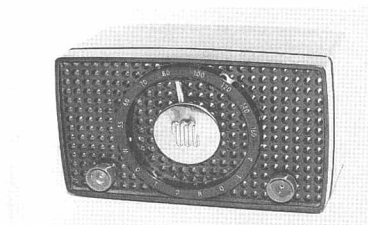
but they do sound good. A properly operating old tube-type radio will have a mellow, pleasant sound on local stations, with just barely noticeable background hum and a little hiss and crackle. Anything other than this shows a radio that is not as good as it could be. It still may be good enough for you. You are the judge.

The very small (and cheap) old radios, by the way, will not sound very mellow. They will sound very much like the cheap transistor sets which followed them.

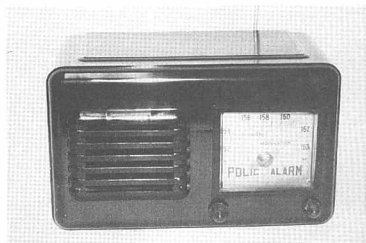
WARNING! If the label on the bottom or on the inside of the radio says anything about "AC-DC" operation, use extreme caution when plugging it in. Some—not all—of these radios have a dangerous design fault which places 110 volts on the metal



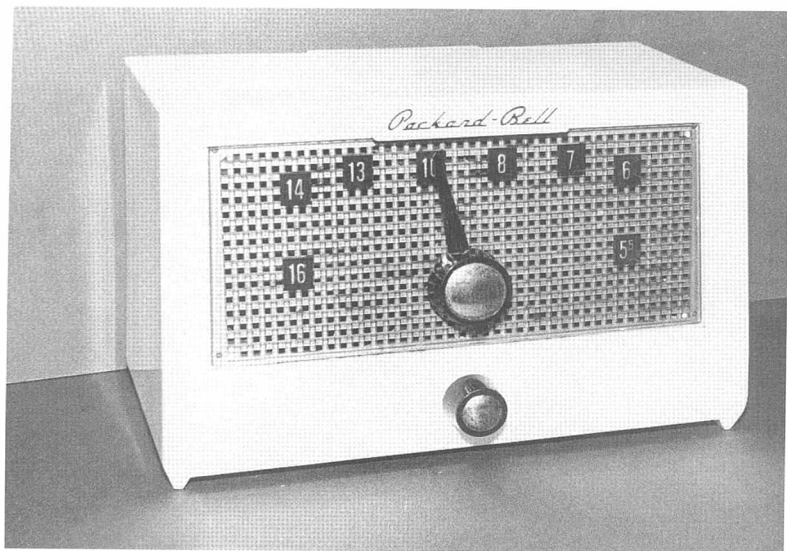
1948 Setchell-Carlson portable model 447; AC/battery (Ed and Irene Ripley).



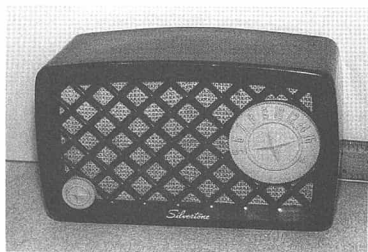
1950 Motorola model 5H11; brown plastic with red knobs.



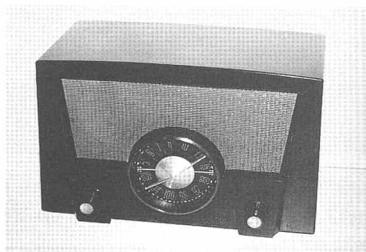
1950 Policalarm model PR8; a police-band radio, made by Regency Electronics (Ed and Irene Ripley).



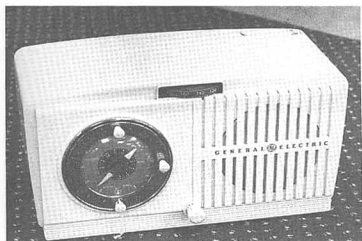
1950 Packard Bell model 5R1 (Ed and Irene Ripley).



1950 Silvertone model 2001; metal cabinet.



1950 Coronado model 05RA22-43-8515;
AM/FM.



1950 General Electric clock radio model 65.

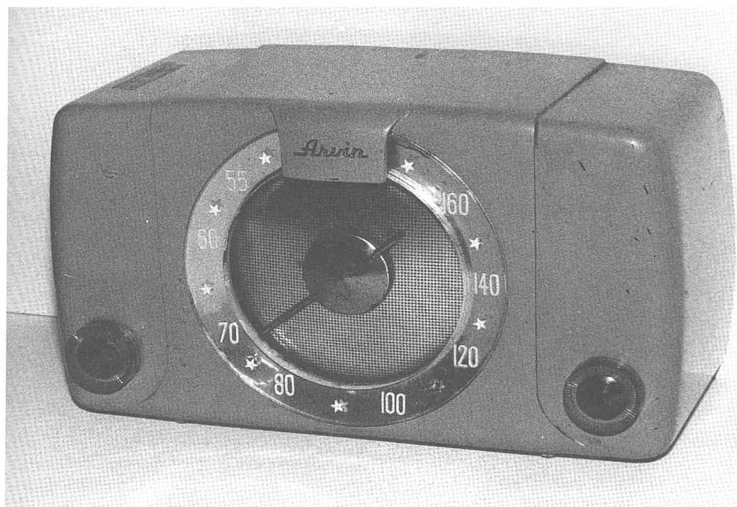
parts of the radio. If you touch a metal part and are standing on damp ground or touching a sink, *it could be fatal!*

If you want to test an AC-DC set before you buy, you can do all of the above checks, but be careful that you

are not on anything damp or touching any metal on or off of the radio. You might prefer to test nothing at all until you know conditions are safe.

For further information on testing, evaluating, and repairing old radios, see our other book, *Antique Radio Restoration Guide, 2nd edition* (Wallace-Homestead Books).

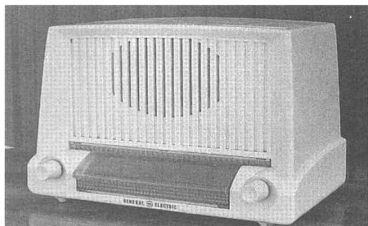
Repairs. How do you decide how much to lower your offer if the radio has problems? Find a local radio repair person and ask about the cost of an average radio repair. Your radio won't be average, but this will give you a place to start. Once you have a figure in mind, subtract it from the suggested price to come up with what you can spend.



1950 Arvin model 451T; aqua plastic. Once painted plastic starts chipping, it looks just as bad as chipped metal.



1950 Setchell Carlson intercom-radio model 458R.



1951 General Electric model 423; white plastic; original price \$34.95.



1951 Zenith model H-615 (Ed and Irene Ripley).



1951 General Electric model 422; marbled maroon plastic.

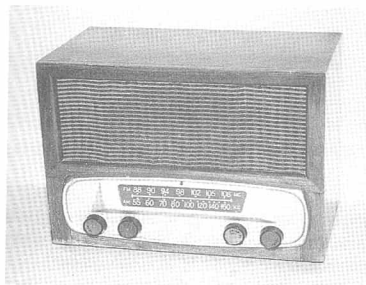
To find someone who can repair radios, start with the local television service shops. They are unlikely to work on old radios, but they may know someone who does. Ask at the local antiques shops. Many dealers have a list of repair

places that they use. If there's a local radio amateurs' organization, someone in it may do the work. The best place to find people to work on old tube-type radios is a local radio club. A member is bound to know someone who works on old radios. Information about finding radio clubs is given in the section on buying at radio swap meets.

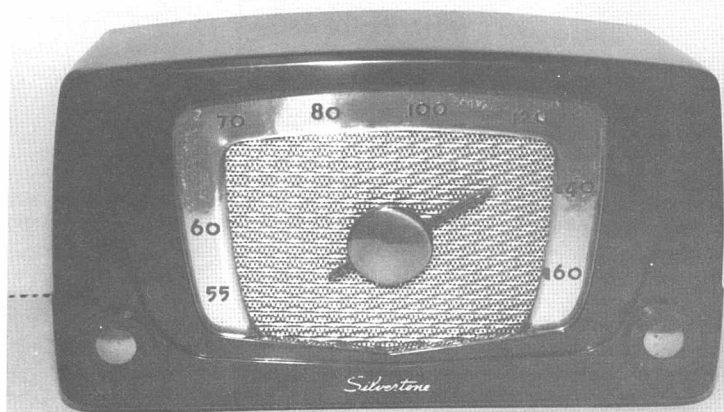
If you're seriously interested in collecting old radios, figure out how to handle the repairs before you get a garage full of nonworkers.

EXAMINING THE RADIO CABINET

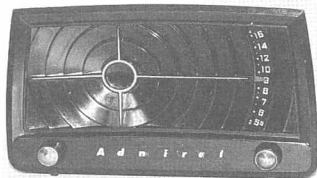
Condition. This is the single most-important item to consider in looking at a radio cabinet. If the condition is good, you won't have any fur-



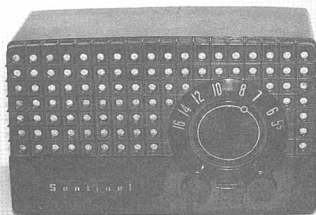
1951 Sparton model 141XX; AMISW.



1951 Silvertone model 132.881; brown Bakelite (Ed and Irene Ripley).



1951 Admiral model 5S22A N; brown Bakelite.

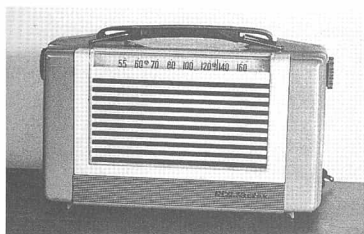


1952 Sentinel model IU-343; black Bakelite.

ther expense in getting the set into your house. If it's not so good, then you have to lower your offer. After all, you're the one who's going to have to pay for those repairs.

If you're going to pay price guide

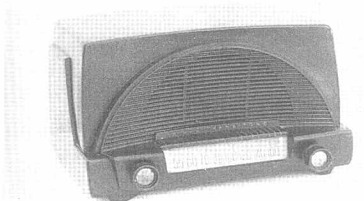
prices, wood cabinets should be good enough to place in your living room without work. This doesn't mean that the finish must be great, but it certainly shouldn't require a complete



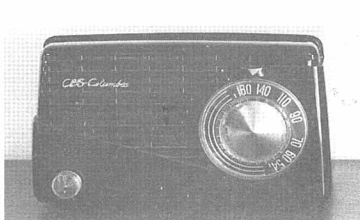
1952 RCA portable model 6BX63; gray plastic.



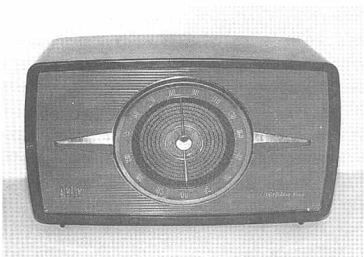
1952 Coronado model 15RA2-43-8230A; burr-gundy plastic with gold grille.



1952 Philco Transitone model 52-542.



1953 CBS Columbia model 515.



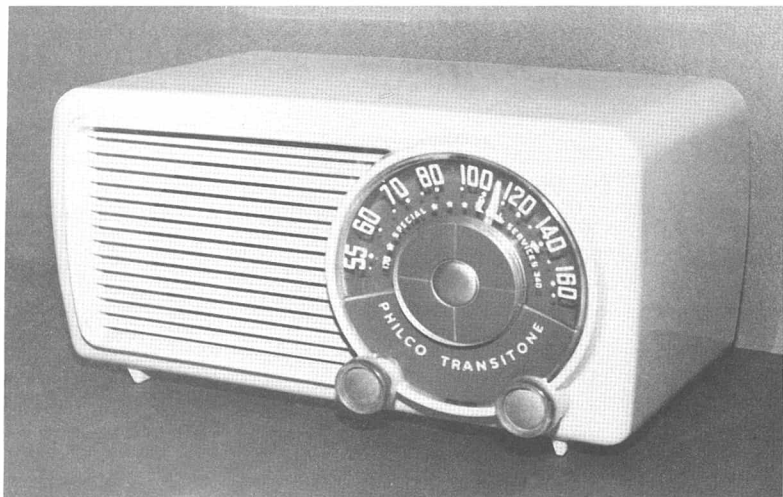
1952 RCA model 3-RF-91; AM/FM.

facelift. If cabinet repairs or refinishing will be necessary, lower your offer.

Problems. If you see that gluing will be necessary when you are considering a radio for purchase, or that major

cabinet repairs are essential, the cost of the repairs is probably going to make the set worth very little. Unless you have the skills to do the job yourself and like doing it, make sure this is a radio you desperately need for your collection.

Veneer repair is costly. It's possible to get a replacement piece the right thickness and the right grain to go into a place where the original is missing, but it takes patience and careful work to do the job right. If the missing piece is on the side of the cabinet, it won't be too noticeable, even if the repair is not perfect. If the repair is on the top or the front of the radio, on the other hand, it needs to be extremely well



1953 Philco Transitone model 53-561; white plastic (Ed and Irene Ripley).

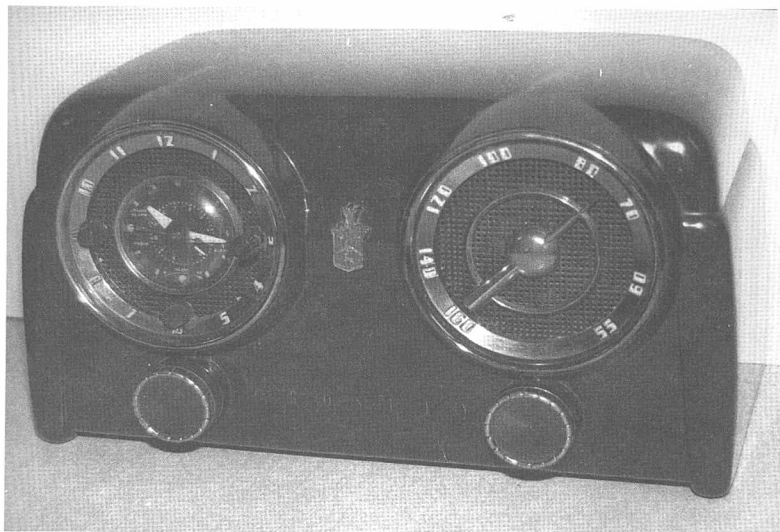
done. Think carefully about buying a cabinet with a piece missing.

Beware of painted grain. When it is new, it looks great—almost as good as the expensive veneer that it copies. Unfortunately, when it becomes badly scratched, the temptation is to have it stripped and refinished as any other wood. If you try this, you will find that the stripper removes the underlying paint (used to get the correct base color) and you will have a sludgy mess on your hands and nothing resembling fancy wood on your radio. If painted grain is in bad condition, avoid the radio. Paper veneer is even worse when in bad condition. Stripping this leaves you with a mess of stripper-soaked, soggy paper and a cabinet usually constructed of unmatched, cheap woods.

Missing trim can be more difficult to repair than poor cabinet finishes. If it's wood trim, you have to find someone to duplicate it, which can be a time-consuming, expensive project. Then you have to get it stained and finished to match the cabinet. If hardware is missing from the cabinet itself, you may be able to replace it with something similar.

If the plastic or glass dial cover is cracked or broken, do not buy the set unless you like it the way it is. If the plastic or metal dial surround is gone, do not buy the radio. You're unlikely to ever find replacements in either case.

At this time plastic cabinets are not repairable. There is no way to repair a cracked or broken Bakelite or Catalin set. It seems that you should be able to



1953 Crosley clock radio model D-25MN. A striking design, with gold bezels on burgundy plastic; definitely the 1950s look.

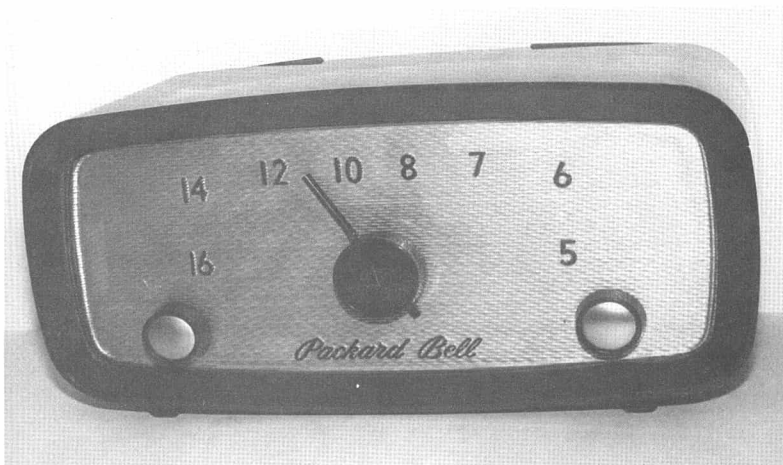
melt some scrap Bakelite to fill the crack. It won't work! Bakelite is a thermoset plastic. Instead of softening and melting, it burns like wood when the temperature gets hot enough. Currently there is no glue that works either. This leaves you with a decision. If the crack isn't going to bother you (on the bottom of the cabinet, for instance), you may want the radio anyway. But know that your chances of reselling it for close to book value are very low.

Repairs. Getting a rough idea of the cost of repairing or refinishing the cabinet is easier to do than determining the cost of fixing the chassis. Many professional firms do stripping and re-

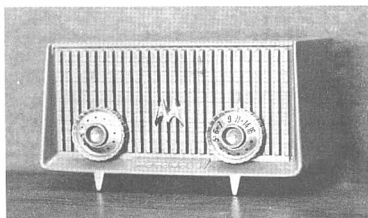
finishing. You still have to find one who can handle old radios, however.

Most of the cabinets were veneered. The glues holding the veneers together are forty or fifty years old and are drying out and crumbling. Many of the cabinets were made of mixed woods. When the manufacturer finished them with colored varnish or lacquer, they looked like a single species. When the finish comes off, they may be completely unmatched and look nothing like the radio you bought.

That means you have to search for a good refinisher as carefully as you searched for a good radio shop. If you know someone who has had lots of luck with having old furniture refin-



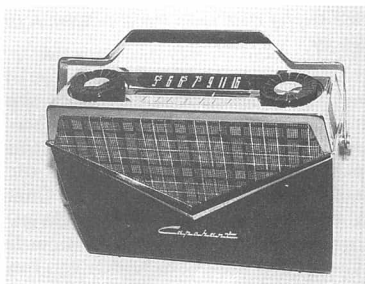
1954 Packard Bell model 631; made by Teledyne (Ed and Irene Ripley).



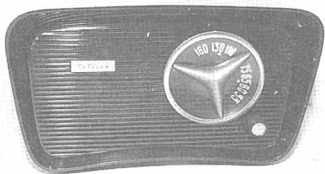
1955 Motorola model 56R; red plastic.

ished, start there. Do you like what you see? Find out if any of the furniture they had done had a veneer finish. How long ago was the work done and how well is it holding up?

Otherwise, check with local refinishers. No matter what stripping technique they use, find out if they have handled any old veneer. If they're not



Capehart portable model number 213; green metal-and-plastic case with interesting tartan grille; mid-1950s.



Trav-Ler, mid-1950s; black plastic (Ed and Irene Ripley).

careful, the veneer can loosen and the job will become a major repair.

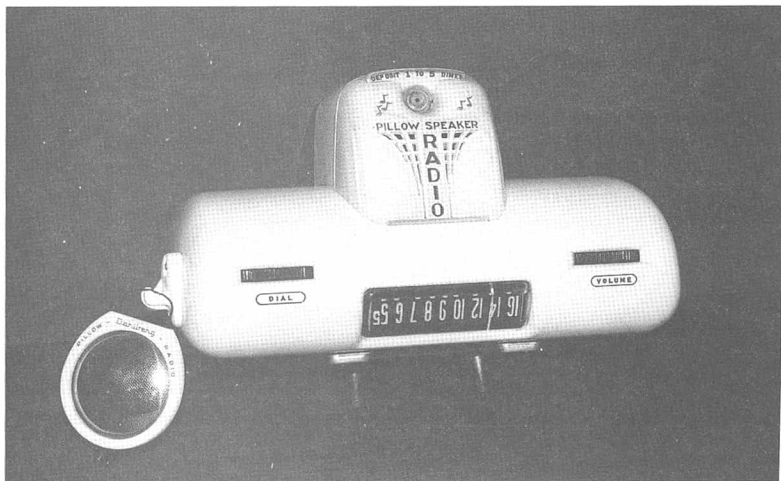
Subtract the price of estimated repairs from the figures in the price guide. If you can do either the chassis

or cabinet repairs yourself, you have more flexibility. Remember, however, that your time is valuable, too.

WHAT TO PAY?

Condition. This is the single most unpredictable factor in deciding what to pay. The prices given are for working radios in good condition. Then you begin subtracting the things that need fixing. There are some fine-quality radios out there, but most of them aren't in very good condition.

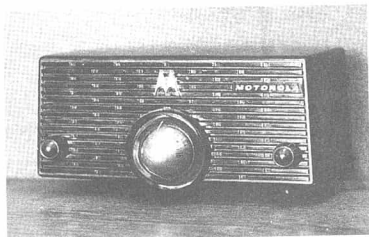
Styles and fads. When something is in style, its price changes rapidly and unpredictably. This has happened with some (but certainly not all) plastic radios during the last few years. In the 1970s, collectors turned up their noses



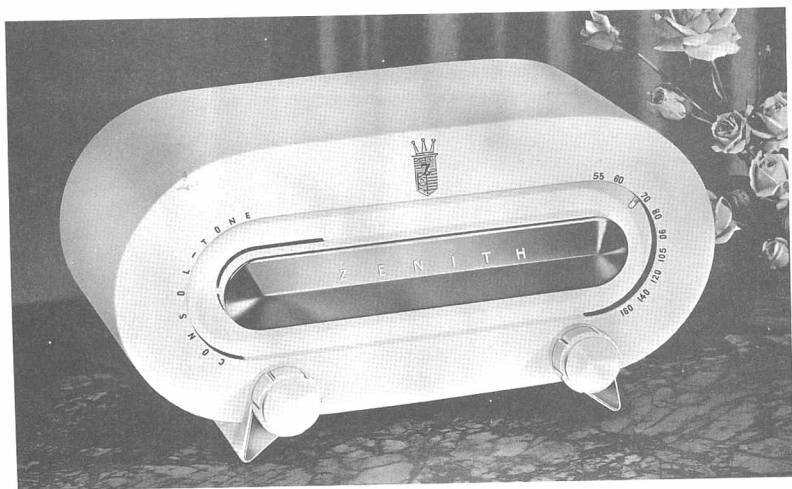
Dahlberg coin-op radio model 430-D1; also known as 'Pillow Speaker.' The speaker, hanging on a hook on the left of the radio, goes under a pillow to keep from disturbing another sleeper, c. 1955.



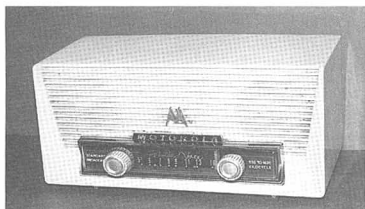
1956 Silvertone radio-phonograph model 6057A; 3-speed phonograph; blond wood.



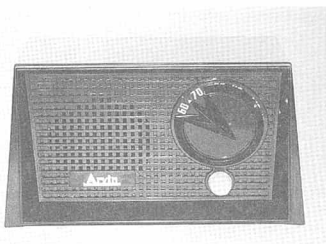
1956 Motorola model 56H; dramatic gold tuning dial on a brown plastic radio.



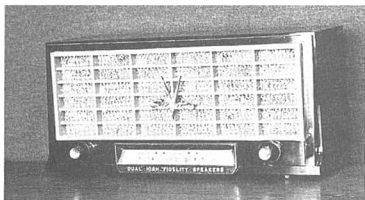
1954 Zenith model H511W; white plastic, also walnut or ebony (courtesy of Zenith Radio Corp.).



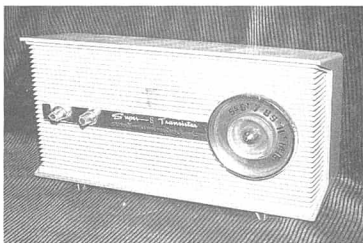
1957 Motorola model 66X.



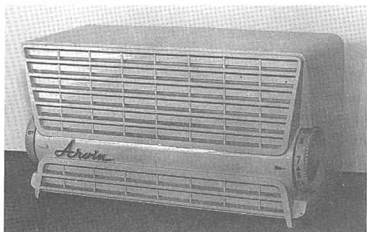
1958 Arvin model 950T2; one of the most striking designs for an inexpensive radio.



1957 Silvertone model 7013; black plastic.



1959 Admiral model 566; transistor table radio; chartreuse and white plastic.

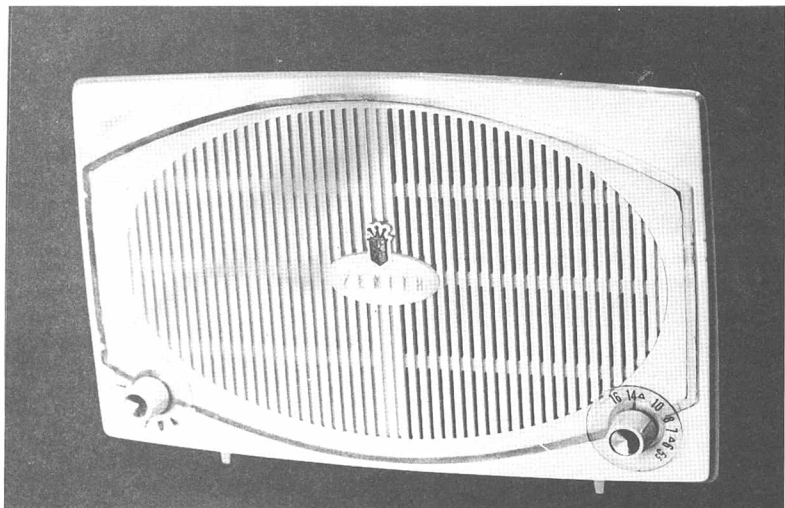


1958 Arvin model 1581; ivory plastic.

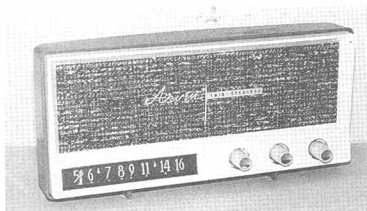
at these cheap sets. The popular area then was cathedral radios. Today, certain plastic sets have been discovered. Catalin, urea, and some Bakelite sets are immensely collectible; their prices have increased tenfold to one hundred-fold. Presumably they will settle down again, but no one knows when, or

even if, that will happen. Who knows what other style will become the "in" radio? No price guide can predict these fads, and the prices can soon be badly out of date.

Regional preferences. Price guides reflect averages. If a particular style of radio is popular in one part of the country, the prices there will be higher than those listed. People from that area look at the guide and wonder why in the world they're paying so much. If local premium prices were included in the guide, people in the rest of the country would wonder how the authors could be so far off in their figures.



1959 Zenith model B-513V.



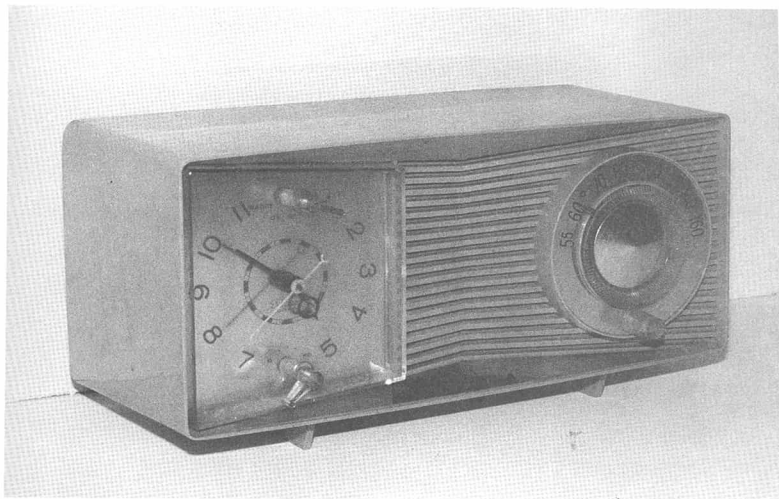
1959 Arvin model 2585; definitely a 1950s look, in coral and white plastic

If something is popular where you are and not elsewhere, you'll just have to expect to pay more for it than we suggest. It's the law of supply and demand.

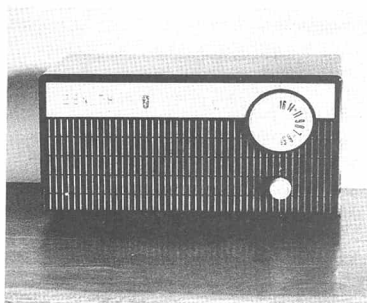
Crossover buyers. These are the buyers who turn the whole pricing

structure into a shambles. There is the Coca-Cola collector, for instance, who is bidding against you for that Coke cooler radio. Not because it's a radio, but because it's Coke. The Disney collector wants a Mickey Mouse radio, because it's Mickey. When two fields like this collide, prices usually become very high.

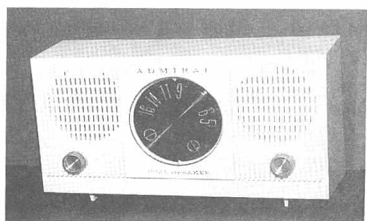
At an antiques shop, the price that goes on the radio depends on what customers the dealer expects. If there are few Disney collectors around, Mickey's price may remain comparatively low. The dealer will think of it as a "cute" radio, price it for a quick sale, and you'll have a chance of getting it at a moderate price. If there are a number of Disney collectors, the price will reflect that group of buyers and



1960 Motorola model C9G13; green plastic clock radio.



1961 Zenith model J506C; green plastic.

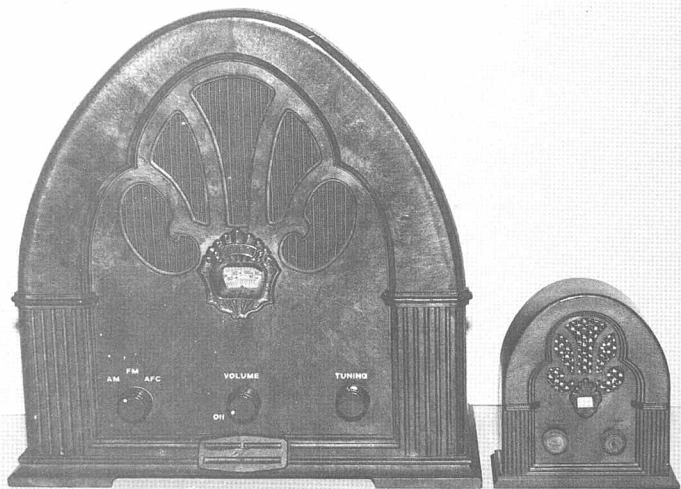


1964 Admiral model Y3523; white plastic with black dial.

may be higher than you are willing to pay.

Our general feelings about prices. Personally, we feel that there

are certain guidelines to radio prices. If you're looking at radios as an investment, these might be useful. We consider buying radios (or any collectible, for that matter) as an investment particularly risky, however. No one can predict what people will want



These are two of the current replicas of the Philco 90B. Philco started it all with its own transistorized, smaller version in 1976. The larger one here is a Windsor, made in Hong Kong. It's AMIFM. The smaller one is a Greenland, made in Taiwan and only 5' high.

in ten years. If we could, we'd all be wealthy. So buy it because you like it. If the price goes up, that's great. If the price falls it doesn't matter, because you've got something you enjoy.

These are general statements about the current levels of radio prices.

High priced

Catalins

ureas

extremely colorful plastics

mirrored radios

Moderately high priced

Deco (whether wood or plastic)

cathedrals

Average

Upright wood table

metal table

Low priced

Horizontal wood table

console

portable

plain small wood radio

plain plastic

ALTERATIONS AND FAKES

With the surge of interest in Catalin and other early small sets, certain myths have started. Bakelite radios



Many products have used radio as a selling point. The 'microphone' is a glass Avon bottle. The 'Radio Bank' is plastic. The jigsaw puzzle is from the 1920s.

were often painted; now it's possible to find them in color schemes that the designers of the 1930s never thought of.

Also, the chrome plating of inexpensive Arvin and Silvertone metal sets from the late 1940s has begun. The sets originally were painted black or brown or white or ivory. (It's very difficult to imagine Sears Roebuck chrome-plating sets they were selling through the catalog.) Beware of these if someone is selling them as original.

Occasionally you will find a modern transistor radio lurking inside an old cabinet. This may become more common in the future. It can happen to anyone; it certainly happened to us. We bought a Radiola 60, sight unseen,

only to find someone had switched the insides. Although it had probably been done a number of years ago, that did not make us feel any better. If we had checked that radio out properly, we never would have bought it.

Many classic radios have been reproduced, but are no problem for the collector. They are solid state instead of tube radios and frequently come with a slot for playing cassettes. Neither transistors nor cassettes existed when the original sets were made. A careful look will easily identify these sets. They can be attractive additions to a collection and they generally do not cost much. You simply need to know what you have.