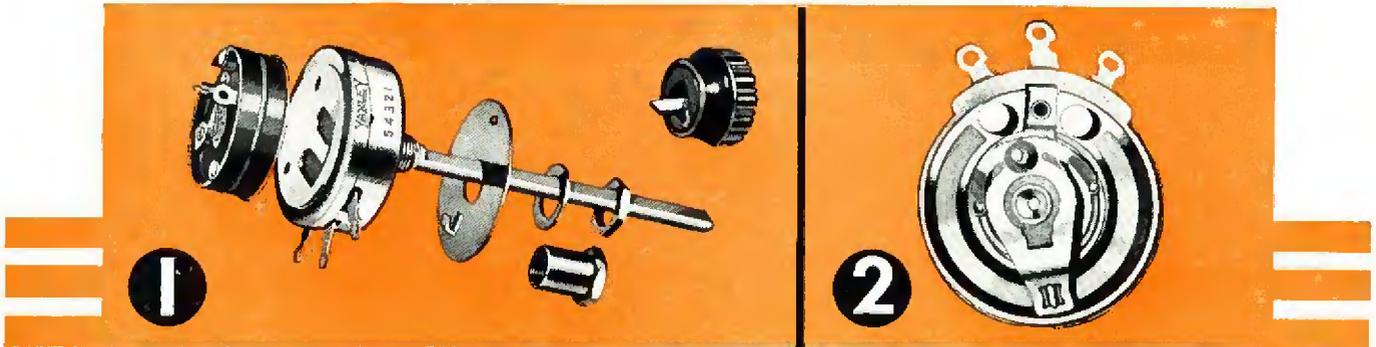


These 4 Volume Control Developments
"Speak Volumes" for what MALLORY-YAXLEY
has done to make the Service Man's job
easier and more profitable

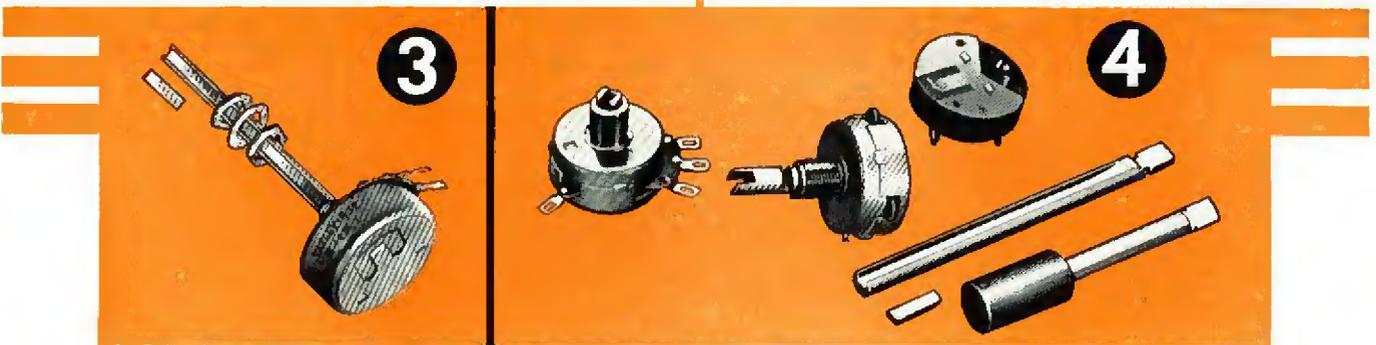


1 *Universal Design*—for extreme flexibility and quick, sure replacements. Mallory-Yaxley engineering made it possible to develop universal designs to meet all service needs.

2 *Velvety Smooth Operation* — through the silent carbon element, the "non-rolling" roller, the silent "M" construction, perfect smooth tapers, silver-to-silver contacts — all Mallory-Yaxley contributions.

3 *Channel Shaft* — to fit all types of knobs by use of the special insert. An easy-to-cut aluminum shaft may be fitted to any knob and any one of five attachable switches. A Mallory-Yaxley help for swift servicing.

4 *Universal Midget Controls* — with Plug-in Shafts. Flexible, adaptable and universal. 10 Mallory-Yaxley Midget Controls plus 17 Plug-in Shafts now give the servicing range of 170 ordinary exact replacement controls.



The "M. Y. E." makes the service man's job easier, too—

Read what the magazine SERVICE says of the Mallory-Yaxley Radio Encyclopedia:—"Let it be said that here is a book primarily for the service man—written in his language, and one which will give its readers many profitable hours in more ways than one . . . the book is on the 'must' list of every radio service man . . . an almost inexhaustible store of up-to-the-minute information."

Get your copy today from your distributor

Use
P. R. MALLORY & CO., Inc.
MALLORY
 REPLACEMENT
 CONDENSERS...VIBRATORS

P. R. MALLORY & CO., Inc.
INDIANAPOLIS INDIANA
 Cable Address—PELMALLO

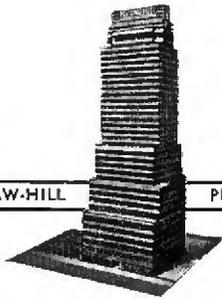
Use
YAXLEY
 REPLACEMENT
 VOLUME CONTROLS

RADIO RETAILING

A McGRAW-HILL

PUBLICATION

SEPTEMBER, 1938



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Radio Trade-in Allowance Blue Book

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SALES STATIC . . . "It's my own action display idea"





"I'm on the Night Shift ... and the day gang is working overtime"

Orders are pouring in. Need for increased production, coupled with Stromberg-Carlson's careful inspection requirements, now more rigid than ever, has called for employment of the factory day force all of the time allowed by law, as well as the addition of night shifts.

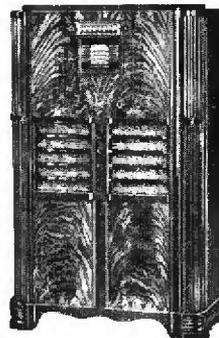
Distributors, dealers, and buyers everywhere are delighted with the exquisite Authentic Design Cabinets; the Corner Cabinet Radios; Labyrinth models at the price of ordinary sets; Standard Consoles that out-class and out-price all competition; horizontal Table models starting at \$39.95; the big assortment of Radio-Phonographs.

You can make money selling Stromberg-Carlsons; they please customers and stay sold; they are so well made that service calls are few; profit is worth while on every unit of sale. Prices range from \$39.95 to \$795, f.o.b. factory. Write for information on line and franchise.

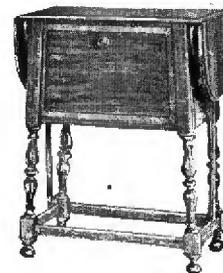
STROMBERG-CARLSON TELEPHONE MFG. CO., ROCHESTER, N. Y.



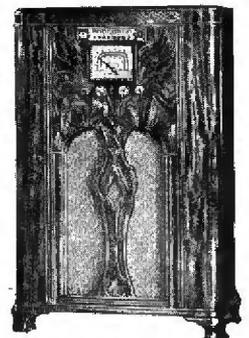
No. 340-V—Authentic Early American Corner Cabinet Radio. Acoustical Labyrinth. Electric Flash Tuning. Maple Cabinet.



No. 350-M—Conventional Console. Walnut Cabinet.



No. 325-S—Authentic Early American. Maple Cabinet.



No. 345-F—Authentic Chippendale. Mahogany Cabinet.

There is nothing finer than a

Stromberg-Carlson



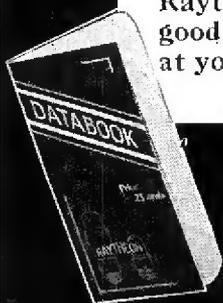
CRASH!

BUT THE *RAYTHEON* TUBES IN RADIO-EQUIPPED U. S. ARMY TANKS WILL STAND UP UNDER TERRIFIC JARRING AND POUNDING

Smashing, crushing drives over and through insurmountable obstacles! Terrible punishment even for a giant U. S. Tank!

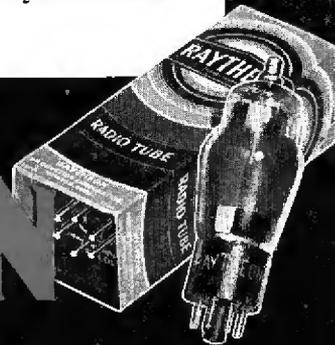
Yet, Raytheon tubes operate constantly under these adverse conditions—flashing and receiving “behind the lines” messages as efficiently as in the quietude of a home or your customer’s automobile!

No wonder thousands of dealers and servicemen use and recommend Raytheon tubes. No wonder they save on unprofitable callbacks . . . build good-will . . . yet, RAYTHEONS cost no more! And you can always sell them at your full profit.



An amazing new 200-page book with receiver tube data previously known by only a limited number of receiver design engineers. Get yours from your Raytheon jobber for only 25c.

RAYTHEON



NEWTON, MASS. NEW YORK CHICAGO SAN FRANCISCO ATLANTA

“WORLD’S LARGEST EXCLUSIVE RADIO TUBE MANUFACTURERS”

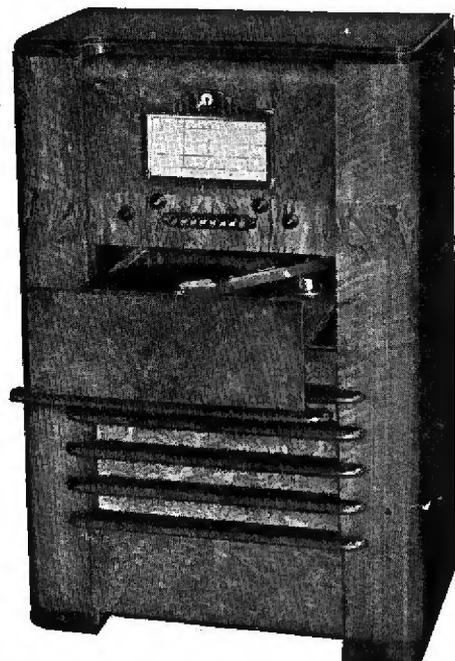
Andrea SELLS TWICE AS FAST— at ONE-HALF the DEALER INVESTMENT

Only 8 sets required to show prospects 15 models!

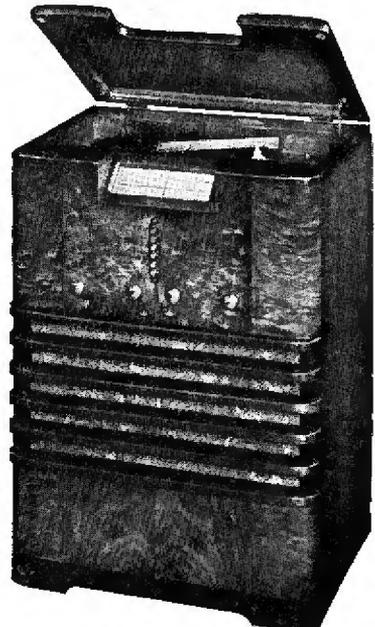
Think what that means to you, Mr. Dealer—only one-half the usual amount of money tied up in stock—only one-half the usual floor space required—a turn-over that is twice as fast and no “dead numbers.”

With eight Andrea models, you can demonstrate and sell a price range from \$19.95 to \$239.50—including table models, consoles, and manual and automatic combinations—a line so complete that every prospect can be pleased.

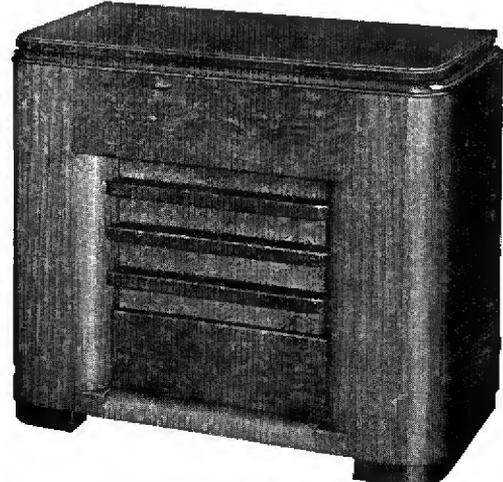
SELL 8 MODELS FROM THESE THREE Phono-Radio Combinations ALONE



AC combination or console in which phonograph can be installed later. 8- or 11-tube chassis, or AC-DC with 12 tubes plus 3 ballast tubes.



AC combination, or console, in which phonograph can be installed later. AC-DC models also available.



AC automatic with 8- or 11-tube chassis. Also AC-DC with 12 tubes plus 3 ballast tubes.

CLIMATE SEALED to assure constant "Studio Tone"

Years of testing under various difficult climatic conditions in 90 countries throughout the world have resulted in the Andrea CLIMATE SEALED construction. Vital parts are treated to withstand the effects of temperature changes and the destructive action of moisture and humidity. Andrea sets give years of perfect service.

Phone, wire or write for full details today.



4820—48th Ave. Woodside, L. I., N. Y.

F. A. D. ANDREA Policies Assure Profits

From the very beginning of radio, Frank Andrea's policy as a manufacturer has been one of close cooperation with jobber and dealer to assure adequate profits all along the line. On his re-entry into the domestic radio business as owner and manager of Andrea Radio Corp., these same proven policies are being followed. As always, the jobbers and dealers who sell Andrea's sets are doing so *at a profit*.

Remote Control



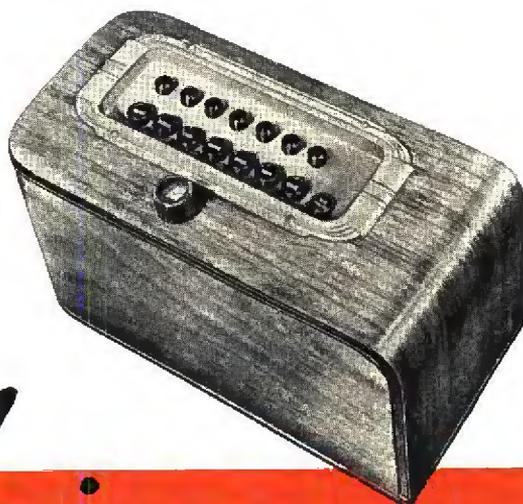
May be used with any receiver

Push-Button selection of 7 favorite stations *plus volume control* from any convenient location!

Simply connect to the aerial and ground posts of any receiver by means of a special 15-foot cable supplied, and plug into any 110 volt AC or DC outlet! A turn of the fingers sets each button to a station—permanently.

Each Remote Control comes, complete with tubes, all tested and ready to operate. Housed in a handsome light Walnut cabinet $4\frac{1}{2}$ " high, $5\frac{3}{8}$ " wide, $9\frac{13}{16}$ ". Retail for only \$26.50.

Write Dept. R-9 for full details on the Meissner Remote Control and Push-Button Converter units.



SERVICE PARTS

VIBRATORS

ANT., R.F., OSC., COILS

ADAPTER KITS

AMATEUR PARTS

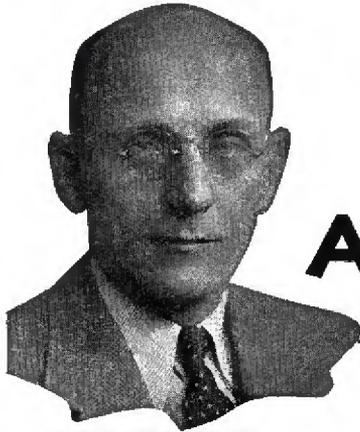
COMPLETE RECEIVER KITS

MT. CARMEL,
ILLINOIS



Meissner

"A FAMOUS NAME FOR TWO DECADES"



HARRY BOYD BROWN
National Merchandising
Manager of Philco

No Radio Dealer Ever Made A Dime Advertising Low Priced Radios

PHILCO always has devoted every engineering effort and every merchandising and advertising effort—to the tune of millions of dollars—pushing the sale of higher priced quality radios so that the retail dealer and everybody else connected with Philco business could make a proper and satisfactory profit.

Year after year—the average retail selling price on Philco home sets in the United States has been 25% above the rest of the radio industry. And it is exactly that high average Philco selling price that has kept thousands of radio dealers and radio departments in business and in the *black*.

No retail radio dealer ever made a dime *advertising* low priced radio merchandise—\$10 compact radios for instance. As a matter of fact, spending advertising money on \$10 compact radios is the best way I know of to go broke. This is proven with a little arithmetic.

As an illustration, let us take the advertising sum of \$300. Every radio dealer knows that if he spends \$300 in newspaper advertising on a \$10 compact radio, he will be doing better than the average if as many as 60 people respond by calling at his store.

And even if he sells them all—this means an advertising cost of \$5 for each retail sale. The dealer's gross profit on the \$10 compact at the most is probably \$4. At that rate, his entire gross profit on the 60 sales would only total \$240, which means he has already lost \$60 without even considering rent, heat, light, investment and selling commissions.

And even assuming that the dealer does some selling-up—you and I know that \$9.95 radio prospects are not often sold-up beyond \$14.95. And even if enough selling-up is done to average \$5 gross on each sale, the dealer is merely breaking even on the advertising cost. All other expenses certainly put him well in the *red*.

On the other hand—think what you can do with Philco Mystery Control as an advertising and selling weapon! Now, for the first time in radio history, the retail dealer—on higher priced radios—has an advertising story of tremendous pulling power—a far greater traffic-getter than any low priced radio compact ever could be.

“NO WIRES! NO CORDS! NO PLUG-IN CONNECTIONS OF ANY KIND! AND YET PHILCO MYSTERY CONTROL OPERATES YOUR RADIO FROM ANY ROOM IN YOUR HOME.” In those opening words of Philco newspaper copy, you have an advertising story so new and different—so amazing and exciting—so almost unbelievable that it will pack your store with people—with interested prospects.

And bear in mind—Philco Mystery Control prospects do not come to your store with \$9.95 in mind—or with ‘\$1.00 down’ in mind—or with a big trade-in allowance in mind. They do not come looking for bargains. They come instead to see a radio invention that is fundamentally and vitally new—exceedingly desirable. And when these prospects buy—your gross profit on each sale is 15 to 20 times as much as on a \$10 radio compact.

Harry Boyd Brown

PHILCO

The RADIO MONTH

SEPTEMBER

1938

Blue Book This issue contains the second edition of Radio Retailing's Trade-in Allowance Blue Book. The general format and classifications of allowances as used in the first edition were found so satisfactory in practical use that they have been retained in this new edition.

The amount of each suggested allowance is based on averages as determined by an extensive field study of actual practices, but due consideration was given also to the prevailing trend of sales toward medium and low priced models, which reduces the dealer's gross margin and therefore makes a conservative trade-in policy essential if operating expenses and net profits are to be earned.

Dealers are reminded that this Blue Book was designed to serve as a practical sales tool and quite properly may be shown to prospective customers when trade-in allowances are discussed. Its use is recommended particularly in those 43 states where Fair Trade Laws have been enacted.

Extra copies of the Blue Book are obtainable while the supply lasts—at 50 cents per copy.

No Alibi Once more the retailer's biggest selling season is at hand. Last year in the four months from September through December dealers moved 55% of all the radio sets sold in the whole year. This means that, during those last four months, sales clicked at better than double speed when compared with the first eight months of the year, and then we were tobogganing into a depression.

This year we are coming out of that depression as the same big selling season starts. Whether sales will click at double speed or triple the speed of the first eight months, depends upon the steam that retailers put back of their sales effort.

Radio sets of 1939 represent the biggest values that have ever been offered in the history of the industry. Manufacturers are backing up their distributors and dealers with the finest

array of promotional advertising and sales helps that men and money can produce. From every direction appear unmistakable signs that the public is buying more freely than in 12 months and that this reflection of returning consumer confidence will gain momentum in the months to come.

Radio dealers will have no comforting alibis if they fail to cash in on that combination of favorable factors.

Records Less than six months ago one of the set manufacturers launched a plan to popularize radio-phonograph combination sets, and with them the wider use of records, by offering the public membership in a so-called "Record Society," under certain easy-to-comply-with, specified conditions.

Today the public is "joining up" at the rate of 2,000 new members per week, and it is reported that there are no signs of any slackening of the pace, but, instead, almost every week shows gains.

We have repeatedly urged radio dealers to get into the record business. It fits in admirably as a direct accessory to radio, shows a nice profit, brings added year-round sales volume, builds repeat sales and last, but not least, keeps a flow of potential buyers of new radio sets coming to the store.

Regardless of which line of records may be involved, every first class radio dealer should have a record department.

More Customers Prices on electric shavers are being shaved down to a point where this former luxury appliance becomes a popular-priced, fast-moving item with an almost unlimited market.

Pioneer manufacturers have announced cuts up to 50%, their low advertised list prices now ranging from \$9.50 to \$12.50. Other makers saw the handwriting on the wall, met the challenge, and the \$7.50 price of a razor recently launched by a well known radio manufacturer.

Point is that electric razors properly

displayed not merely draw the cash out of men's pockets, but were one of the most popular gift items of the last two holiday seasons—bought by wifey, sister, mother, for hubby, son or brother.

Those drastically lower retail prices widen the market tremendously, will draw thousands of buyers during the next few months. Along with cameras—another fast moving cash item—shavers will put thousands of extra dollars into smart retailer's tills.

Television Visitors in New York, who consider Rockefeller Center one of the important points of interest, hereafter will have a chance to take in a so-called television tour. They will see some of the earliest, as well as the most up-to-date, sending and receiving equipment, but the thrill of a lifetime will come to many when they themselves are televised in a completely equipped studio while other members of their party can see them in the latest type of experimental receiver, installed in a separate room some distance away.

Each tour is in charge of a most competent lecturer whose duty it is to sketch the history of television and explain its workings. His monolog includes two statements that bear repeating here: "Today 45 miles is the extreme limit of effective reception of television broadcasts. In the last six months science and engineering has produced seven major improvements that successively would have made all existing receiving sets not merely obsolete but practically inoperative unless and until each time they were sent back to the factory to be modernized."

Just keep those two statements handy when some prospective buyer talks about "waiting for television" and, incidentally, remind him that no responsible manufacturer will offer sets for sale until he and his dealers can assure the customer that he will have a chance for reasonable continuity of satisfactory performance and more than reasonable certainty that there are going to be regular programs within effective range.



EDITOR

Most Sensational Home Entertainment Value ever Offered!

ONLY RCA Victor GIVES YOU ALL THIS

Look at this amazing 3-WAY OFFER

- | | |
|---|-----------------|
| 1. Magnificent 1939 "Console Grand" Radio | VALUE \$85.00 |
| 2. RCA Victrola Attachment for playing records | 14.95 |
| 3. Your choice of \$9.00 worth of Records plus \$2.00 Subscription to Record Review and Membership in Victor Record Society | 11.00 |
| TOTAL VALUE | \$110.95 |

FOR ONLY \$99⁹⁵

SMALL DOWN PAYMENT
EASY TERMS



1 \$9.00 Worth of Records—Your Choice! Plus \$2.00 Year's Subscription to Record Review and membership in Victor Record Society!
\$11.00 Value

2 RCA VICTOR "Console Grand"
• Genuine Electric Tuning
• Victrola Button

3 RCA Victrola Attachment (as illustrated) Also offered separately with \$9.00 worth of records



This kind of advertising—running in leading newspapers in September, plus one of the most powerful window displays you have ever seen—plus a sales making array of promotional material—will make profitable sales for you. See your distributor today—and cash in on this sensational 3-way offer!

GENUINE RCA ELECTRIC TUNING AS LOW AS \$19



SEE YOUR **RCA Victor** DEALER TODAY!

*The Magic Key of RCA—Sunday, 1:00 to 2:00 p. m.
*O. B. Carideo, N. J.

BUSINESS BAROMETER

RETAIL set sales during August not only held the 4-point gain made in July but climbed slightly further—to within a fraction of 92 per cent—the highest point reached this year in comparison with last year's sales for the same month which always are represented by the 100 per cent level in our barometer.

This sales performance must be considered as most encouraging, in view of the fact that August is one of the most doubtful radio months of the year. In that month weather and particularly vacations have a decided influence on consumer buying, and it is an established fact that during August selling on the part of many dealers is at lowest ebb, some smaller retailers even closing their shops entirely and going fishing while the fishing is good.

Some States Did Well

Careful study of retailers' sales reports from individual states reveals that a general leveling off of highly contrasting sales curves is in progress. It will be recalled that during the early months of the year set sales held up surprisingly well in some states, here and there even staying above the 1937 unit sales. In other states sales dropped drastically and down to rather hopeless levels. Those apparent inconsistencies in sales performance now have disappeared almost entirely.

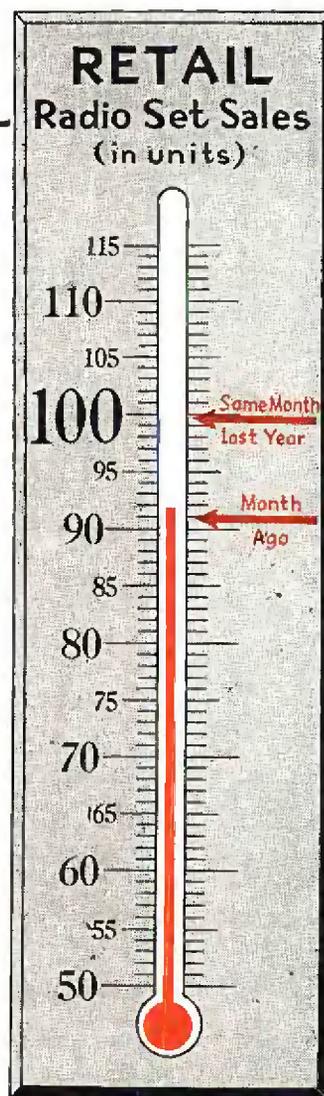
Instances of sales curves coming

down to meet the average for the entire country are: The Pacific Coast States a few of the states below the Mason and Dixon Line, and one or two of the northwestern granary states.

Among the states that appear to be pulling up nicely out of a deep sales depression, Ohio and Michigan very definitely lead the procession. Although reports from those states still show decidedly spotty conditions, there are enough dealers equalling last year's sales or even topping them, to indicate that improving conditions in the steel, automobile and allied industries are having a favorable effect on set sales.

That same reflection of increased industrial activity appears in sales reports of dealers who are operating in factory cities of Illinois, Pennsylvania, New York and New Jersey, while sales in the rural areas of those same states are not yet up to the National average.

Performance of the six New England states might be termed typical of the territory. The gap between last year's and this year's sales is narrowing steadily, but it appears that summer resort buyers are helping to bring this about as



AUGUST

some dealers in resort areas are moving small and low priced sets in considerable quantities at little profit, so they say.

Set sales in the agricultural states apparently have begun to reflect the farmer's struggle with a "paradox of plenty." These bumper crops, that up to a few weeks ago were a

matter of hopeful expectation now have become a most formidable reality but—the farmers are not getting the prices that the administrators at Washington had promised them on the assumption that Mother Nature would cooperate in the crop-control program.

Instead Nature double-crossed the fixers and now the farmers are beginning to sit tight—at least temporarily—until they see what prices Washington is going to conjure up for those bumper crops. When that is settled we may expect radio set and accessories sales to take a decided jump, particularly in the wheat, cotton and corn growing states.

Additional favorable factors for September are: The steady but slow rise in industrial employment, the manufacturers starting their sales and advertising campaigns.

KADETTE'S UTTERLY NEW AND REVOLUTIONARY 1939 LINE TO BE SOLD DIRECT TO DEALERS!



“A WHOLE SERIES OF RADIOS AND ACCESSORIES TOTALLY UNLIKE ANY OTHERS WILL PUT NEW LIFE INTO RETAIL SALES... NEW SALES POLICY WILL INCREASE RETAIL PROFITS!”

ANNOUNCES C. A. VERSCHOOR
President, International Radio Corporation

THIS COMPANY has always considered direct dealing between manufacturer and retailers as the ideal relationship. Under present market conditions, it is all the more desirable so that the two may work closely together to promote increased sales and greater profits. With the conventional type of radio line, however, the jobber is indispensable, and, in our opinion, always will be.

But the 1939 KADETTE line is decidedly not of the conventional type. Kadette, as always, is a step ahead. Not one model is an ordinary radio set. All are unique innovations that will neither look like, nor compete with, anything else in

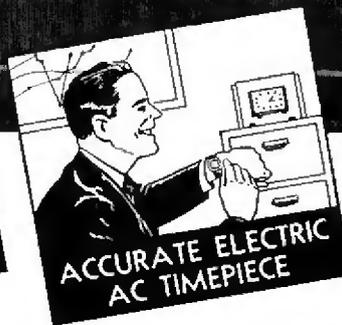
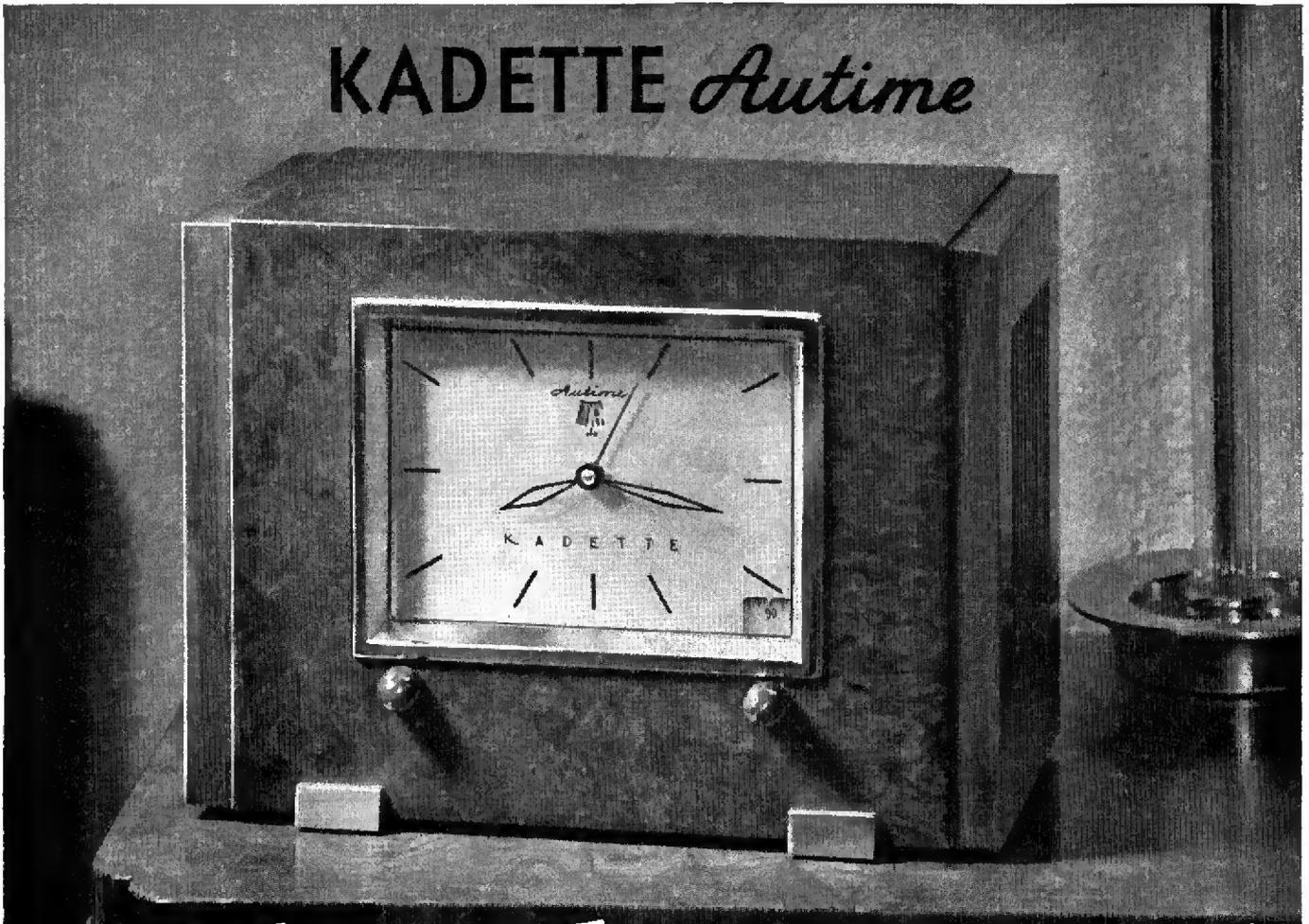
radio. On the contrary, they will so augment present lines that no dealer's stock will be really complete without KADETTE.

We have, therefore, decided to distribute our 1939 line solely on a direct-to-dealer basis and under Fair Trade Agreements only. Unprofitable competition and price cutting will be eliminated by limiting the number of dealers to those we can be sure will do full justice to our line. First to qualify in any community will be awarded a franchise—immediate action is by all means advisable.

(Signed) *C. A. Verschoor* President

KADETTE RADIO INTERNATIONAL RADIO CORPORATION
ANN ARBOR MICHIGAN

KADETTE *Autime*



ANOTHER GREAT "FIRST" FOR KADETTE SALES PAGE MAKER FOR 1939

YES—KADETTE is first again—more than a step ahead with amazing Autime. As a clock, it rivals the costliest in accurate time keeping and the case is of rich burl walnut. As a conventional radio, it covers the broadcast band with superb tone. But, when clock and radio work together, it's a veritable miracle!

You can tune it to any station, set it like an alarm clock, and at the desired moment, in comes your sta-

tion—automatically. Use it this way to wake you up with music instead of a raucous gong—to avoid missing a favorite program—to play you to sleep. It automatically shuts off after 90 minutes.

With all these advantages and more—of course you'll sell Autimes galore, not only for homes but for offices, hospitals, schools—everywhere! Mail the coupon now to get full details about Autime and further Kadette innovations to follow soon.

INTERNATIONAL RADIO CORP.
Dept. M-60, Ann Arbor, Mich.

Rush me full description of *Autime* with details of new plans and put me on your special mailing list.

Firm Name

By

Address

City State



Radiotrons

THE LINE WITH THE LEAST RESISTANCE



A CONSISTENT advertising strategy over a period of 15 years has given RCA Radiotrons an unmatched public acceptance . . . public acceptance that will continue.

RCA presents the Magic Key every Sunday, 2 to 3 P.M. E.D.S.T., on the NBC Blue Network

Ask your RCA Radio Tube Distributor for complete details concerning the new "Money Back" merchandising program designed especially for radio tube dealers.



Radiotrons

THE MICRO-SENSITIVE RADIO TUBES

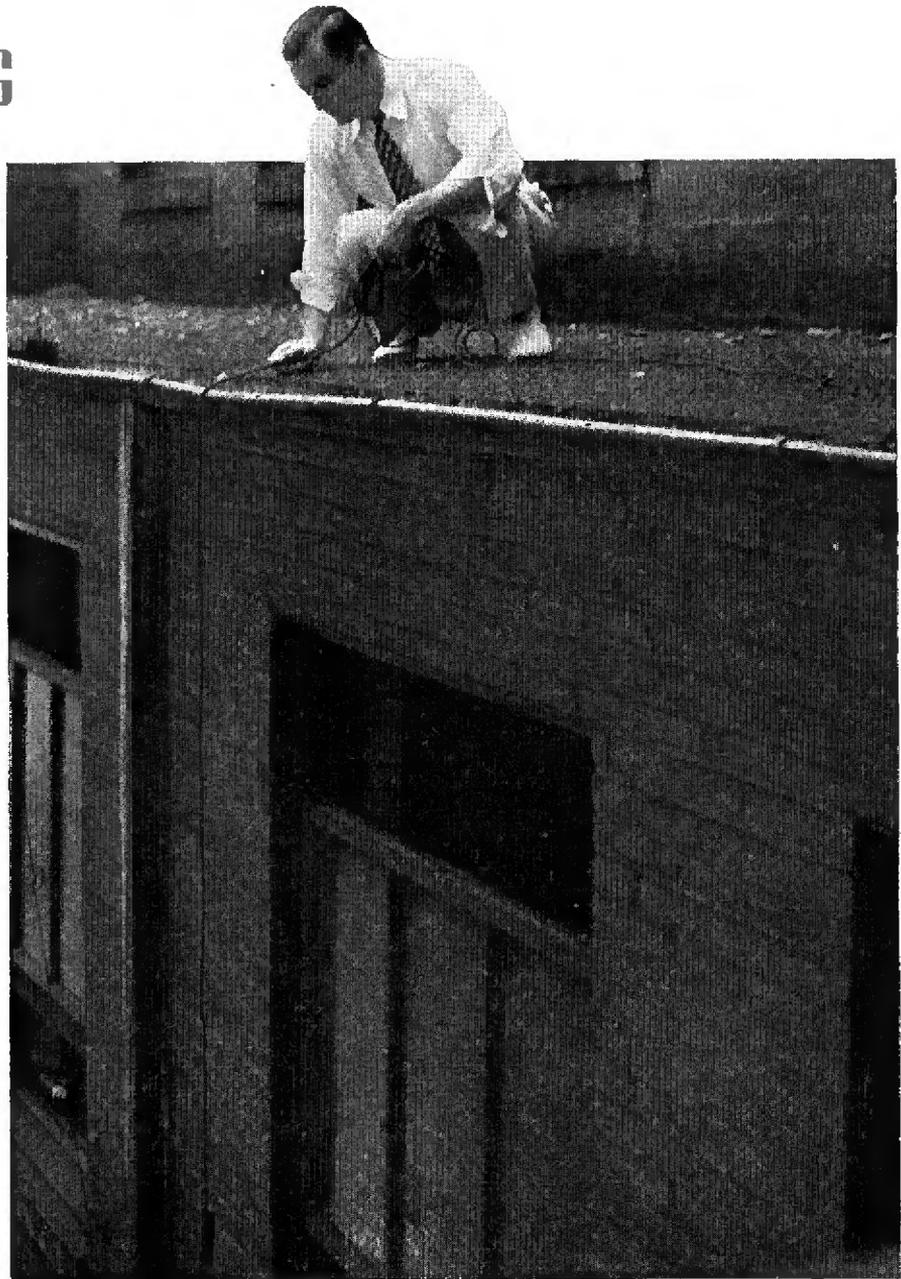
RCA MFG. CO., INC., CAMDEN, N. J. • A SERVICE OF THE RADIO CORPORATION OF AMERICA



Over 325 million radio tubes have been purchased by users . . . in radio sets, go RCA All

RADIO RETAILING

SEPTEMBER
1938



W I R E T A P S T E R

LESS than ever does crime pay since sound specialists like C. Arnold Austin have applied their science to the business of aiding G-men.

Over the parapet of a loft building on a thin cable goes an inconspicuous little cylinder containing an ingenious new pickup coil designed to intercept telephone messages when suspended within 35 inches of a bell box and backed by a high-gain audio amplifier. Pickup is by induction, avoiding antiquated direct connection so

awkward from several angles.

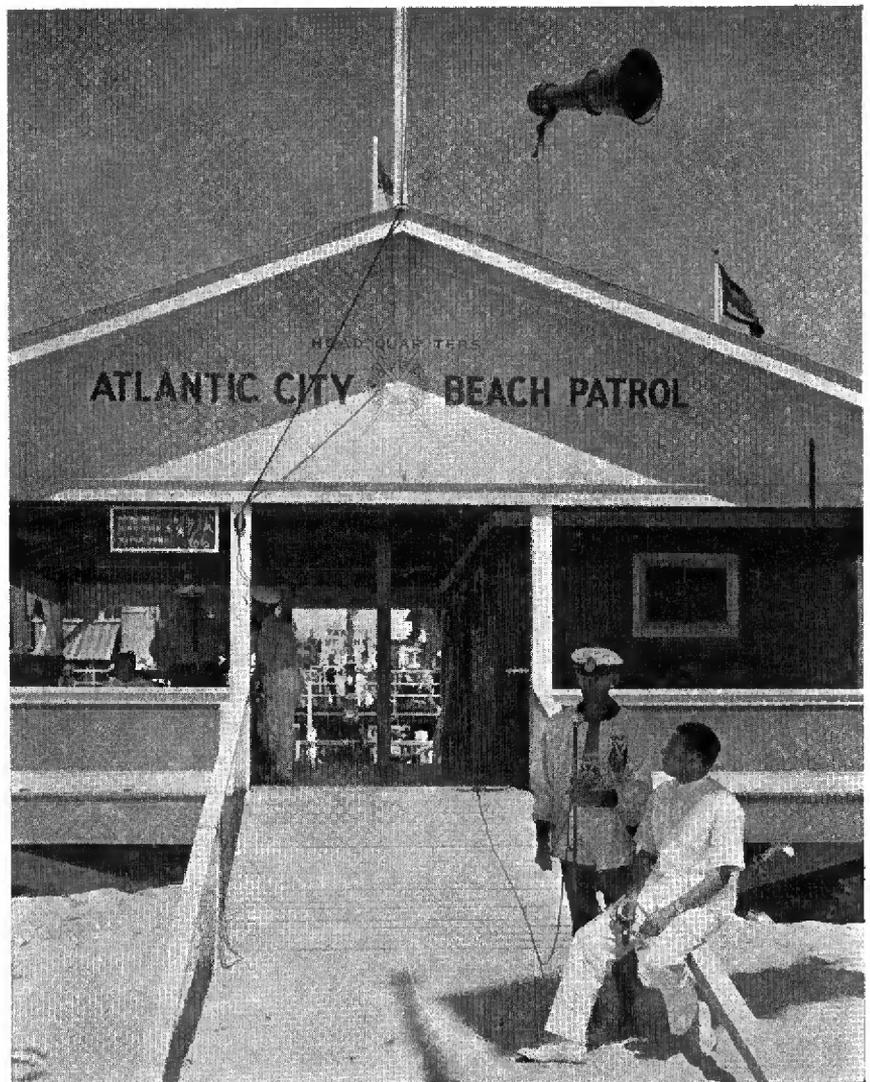
More modern, too, than the planting of microphones in rooms of distant suspects is the pressing of a crystal contact type against an intervening partition, a rubber band and two thumbtacks providing a simple anchor. Here, again, today's efficient amplifiers deliver satisfactory volume.

Nor is it necessary in this streamlined age to take stenographic notes. Operatives may listen in, simultaneously record conversations for production in court.



SUITCASE RADIO

Some 1,508,283 salesmen, 560,720 saleswomen, write their names on hotel registers each year. Standard forms of evening entertainment, aside from whoopee, have been movies, detective story magazines. Into this list radio now crowds itself, says "move over boys"



HALF-MILE VOICE

A captain of Atlantic City beach guards and a physician assigned to the headquarters station prepare to make an announcement over a newly installed sound system equipped with a novel 60-watt, rotating RCA speaker designed to police bathing areas, direct life-saving operations and locate straying children or wandering husbands



BY INVITATION ONLY

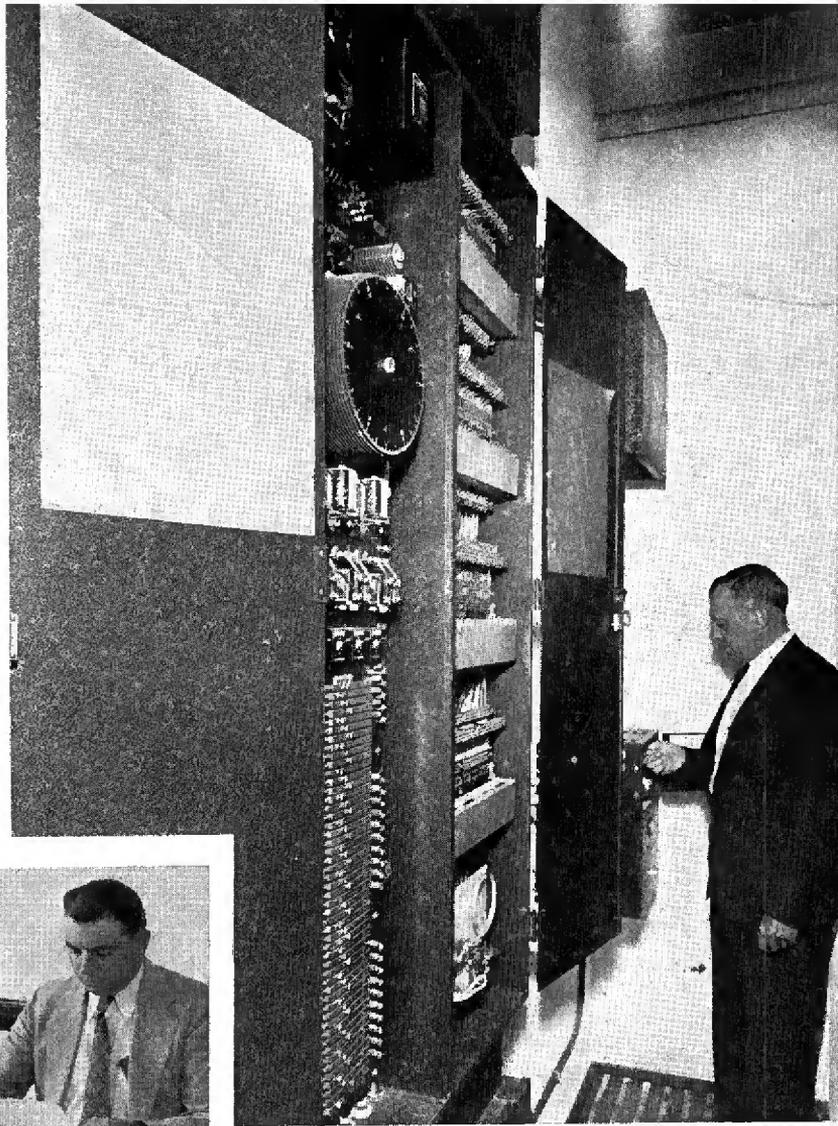
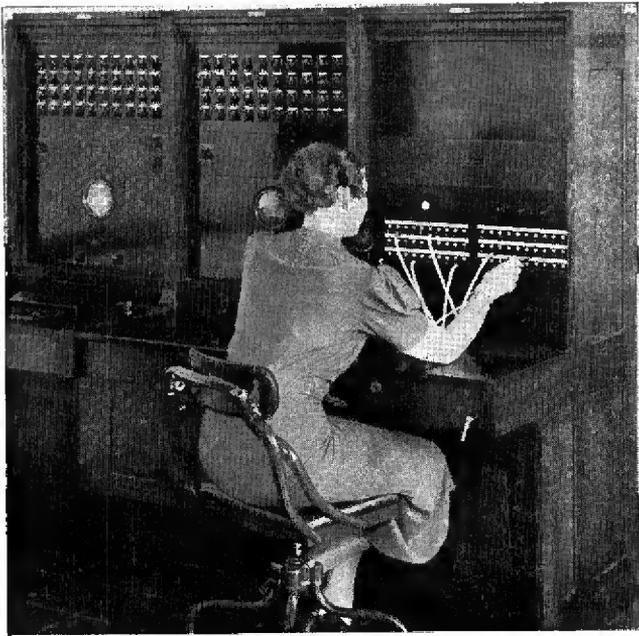
In Jefferson City, Missouri, Pem Gordon achieved a business scoop in social circles by inducing prominent people, including the state's lieutenant-governor, to attend a formal dinner party and hear a Stromberg-Carlson high-fidelity demonstration. Engraved invitations brought them to the city's finest hotel

PAGE 14

DOES EVERYTHING BUT WAVE

A fire-gong, extinguishers, red lanterns, sirens, loudspeakers, are stop-look-listen fixtures of this unique service truck maintained by Home Radio of St. Louis. It brings the firm much business, rarely fails to gather a crowd from which new contacts are gleaned when drawn up in front of a home. Everything works but the gong. This the city fathers permit only as an ornament





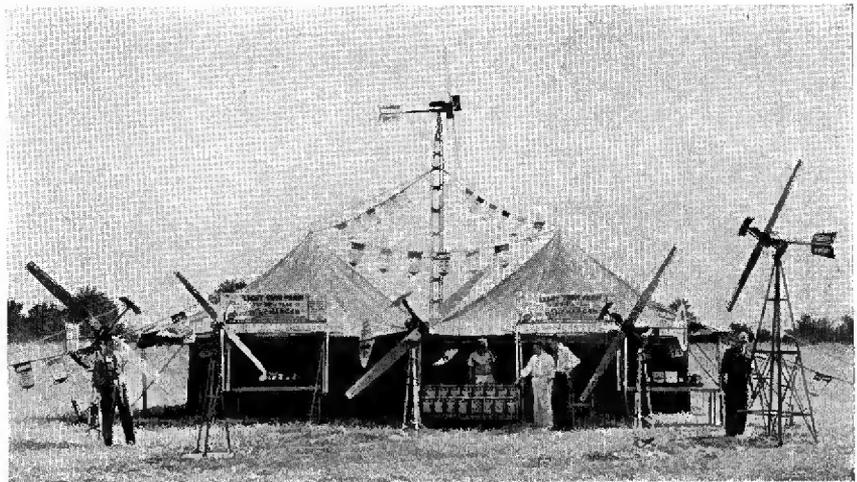
RADIO—PHONOGRAPH— CHIMES—COMMUNICATOR

The elaborate equipment illustrated in the three pictures above and right, made by Philco and sold through International Business Machines to Kansas City's Southeast High School, is a radio-phonograph-chimes-sound-intercommunicator system completely covering 80 classrooms. There are two radio receiving channels and any desired combination of rooms may receive one program while the others listen in on a second. Loudspeakers in every room are individually controlled from the principal's office. An older signalling system was replaced by this new installation



PROSPECT-STOPPER

"Why wait? As little as 15 cents a day will deliver an electric refrigerator now. Low terms on our own budget plan." So reads a sign on a large refrigerator displayed before the door of Pasch Radio, Milwaukee, throughout the summer season. Morris Pasch says the idea has brought in many prospects, attributes its effectiveness to the "why wait" theme



DESIGN FOR COUNTRY FAIRS

To 26 rural shindigs went the pictured Wincharger exhibit during the summer season. Carefully planned in all its details by the factory, the display will serve as a useful guide for rural dealers who want to get the maximum of attention value with the minimum of expense into their own tents



25% BRAINS

WHEN each supervisor has three or four good men clicking, and the salesman has three or four supervisors clicking, you really have an organization that can get a lot of business—and with 75% of your man-power not finished salesmen. (Don't forget that you can't get finished salesmen, and that if you did get them they wouldn't work anyway, by themselves.)

Seventy-five per cent of the effort put forth to get business is brawn, 25% is brains plus experience—and what brains and experience you do have is being used to the best advantage.

As for the brawn, there is really nothing you can do about it, in a short space of time. When a man develops into a good salesman there is a better job waiting for him—that of a supervisor. Until that time, during the period leading up to that time, he is useful, profitable.

During the radio season there are two ways to work. Each has its advantages.

Trailers Versus Footwork

When working with a trailer, the important advantage is that you have the merchandise with you. The canvassers can use more pressure. The possibility of a prospect "cooling off" before the radio can be put in is practically eliminated—if you have the proper model on the trailer. On the other hand, the supervisor is forced to stay with the men.

Working without a trailer, the supervisor, after he is sure he has no loafers, can make both morning and afternoon calls while his men are working. This is a distinct advantage because his men should, and in all probability will, give him all the prospects he can handle even then.

While I do not say it is always the best way, I personally prefer working without a trailer. Not only because it allows the supervisor more freedom but because, while it may lessen the number of demonstrations, it increases the quality of each—and the supervisor will no doubt have all he can do *either* way. When we consider the fact that any woman who "cools off" before the radio goes in has usually been the victim of terrific pressure, it is quite likely that the time would be wasted with her anyway. This, of course, is not true in every case.

The supervisor's own experience will tell him which way of working is best for him. One supervisor may do better without a trailer, another better with one. The supervisor with experienced men is *usually* better off without a trailer—his men can sell a woman on the idea of a demonstration so she stays sold. I would say that any supervisor, finding himself without enough to do (I'd like to see one!) should use a trailer. And any supervisor with too much to do should forget the trailer.

Delivery and Demonstration

In all cases the canvasser should be on hand when the radio is delivered to the home. If the lady has cooled off slightly, he is the man to warm her up again.

Even if he doesn't use a trailer, the supervisor should deliver the radio in his own car, unless it is too large, or there are too many to be put in that day—more than he



*How
to help experienced
sales supervisors make
the most of leads sup-
plied by canvassers*

75% BRAWN

By CASWELL ODEN

can deliver himself. It is usually wise for the supervisor to go in with the man and help hook up the radio. In this way the lady has a chance to meet the man who will come back later and try to sell it to her, although she need not know this at the time, and also the supervisor has an opportunity to check the quality of the prospect.

Only when it is absolutely necessary should a serviceman, or a delivery man, be allowed to deliver a radio for demonstration. These men, not being salesmen, will put up no protest at all, or at best only a feeble one, when they meet a woman who says she has decided not to take the radio in.

Small Sales and Service

The supervisor will have a little trouble, at first, with new men turning in to him prospects—or even “sure sales”—of electric irons, floor lamps, toasters, baby coaches, and what not. He should give them to the collectors, if they want them, or throw them in the gutter. Any sale of less than fifty dollars, for an organization such as this, isn't worth the time it will take. It isn't even worth the *canvassers* time.

Although the men should not waste their time on small sales, they should always be on the lookout for radio service work. A flat rate per job for such work, or a percentage basis, can be arranged. But the men do not look for service work for the pin money involved; they do it because a prospect's need for a repair job can often be turned into a desire for a new set. (What you do is your own business. I don't have the nerve to sell a new set to somebody who doesn't actually need one.)

When a man runs across a serv-

ice job, he should turn it over to the supervisor. The supervisor calls on the people to size up the situation: age of radio, extent of trouble, possibility of selling new set, and even chances of credit passing.

Credit? Yes. Not that the lady will know it. A good supervisor can tell, after a ten minute conversation,

The thing he's really there for is to decide, in his own mind, whether or not he can sell a new set. If he thinks he can't, or thinks he shouldn't, he turns the lead over to the service man and forgets it.

If he thinks he has a good chance of selling a new set, the old one is taken out. He takes a new one around. “Just so you won't be without music,” he explains, and she really thinks that is some service!

While the old one is out, and before anything is done to it, he goes back some evening and tries to sell the new one. If he does, fine. If he doesn't the old one is then repaired.

Now, in a case like this, if the service man is on a salary basis he may be allowed to cooperate, when giving the estimate on the repair job, or in any other way the supervisor wishes. But if he gets a cut on all service work, he is better left out of the deal entirely—until the supervisor either sells or fails to sell the new set.

Sales Meetings, “Switching”

When training a man to *sell*, the supervisor takes him on evening calls. He should do this only at his own convenience, and take only the men he thinks are worth it. Training a man to sell radio and electrical appliances is a subject for several volumes, and the man can learn more by simply sitting in the house and watching his supervisor than he can in any other way.

There should be a sales meeting at least once a week, and the men should be familiarized with each selling feature of each major appliance the dealer carries. And while they should naturally push their own merchandise, they should not

(Please turn to page 64)

Conclusion of a Series about OUTSIDE SELLING



- APRIL
You Can't Sell Radios at the Door
- MAY
One to Canvass and One to Close
- JUNE
Men Must Have Money
- JULY
How to Pick Outside Salesmen
- AUGUST
Training Green Men

whether credit will pass or not. And be right in nine cases out of ten.

Extent of trouble? He doesn't have to be a service man. All he has to do is look wise; look behind the set, nod his head and stroke his chin.

4 Moves

to Fit the Times

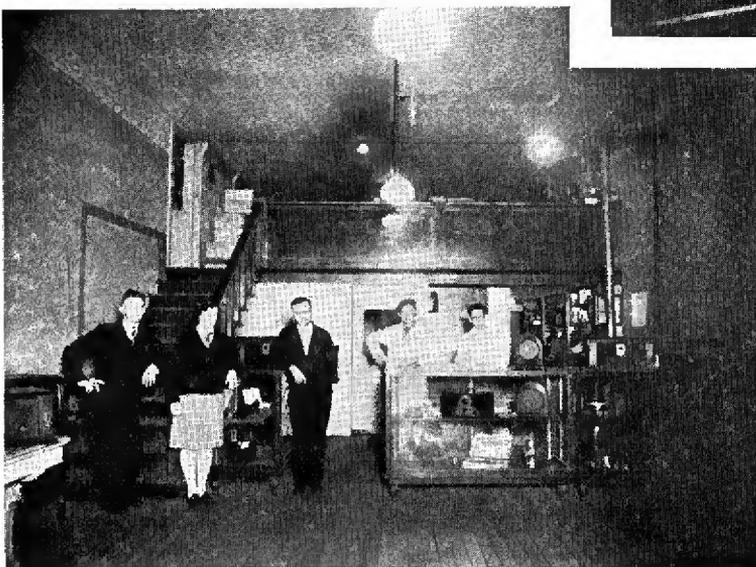
1 9 2 2

PARTS—Out of the Navy, into his own radio store went Carl Donaldson (white coat). Assembled receivers were just coming on the market but the only one he offered at first was a crystal set, invitingly priced at \$16 with two pairs of 'phones. Like others of his day Donaldson found it worth while to brag about his commercial radio license



1 9 2 5

PARTS Plus SETS—To a new store in the heart of the shopping district went this dealer, intrigued by the first workmanlike factory-made receivers. He put in a stock, increased his staff from one to four. In this same year McGraw-Hill began publication of *Radio Retailing*





One jump ahead of consumer demand, quick to diversify and expand in allied fields, has been Donaldson Radio of Kansas City



1936 and TODAY

RADIO, REFRIGERATION, OIL BURNERS and SOUND—Home at last in a building of its own (below) is the business, feels its owner. Front and center is a store for selling. Around it is space for servicing, still the backbone of an expanding operation

Inside, the diversification of the business is obvious, yet no department (lower left) plays second-fiddle with respect to space, advertising or personnel. Fifteen is the roster of employees

1933

HOME RADIO, AUTO RADIO and REFRIGERATION—Relying heavily on service, believing it to be the lowest cost sales producer, Donaldson next moved to this corner store, pioneered in the auto-radio field. Then he took what at the time was considered a plunge for any radio dealer, tackling refrigeration



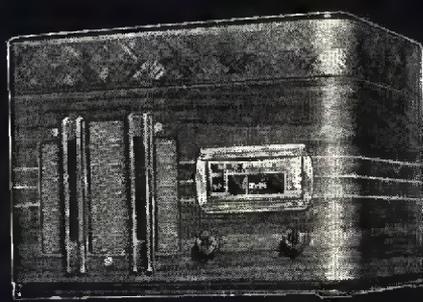
Latest expansion (lower right) is into the sound field. One man pushes it full time. Throughout the firm's quarters, too, are inter-communicators, invaluable in use and ready for demonstration right there to any customer. Next product, says the irrepressible Donaldson (standing beside car) may be diathermy and radio surgery machines. He's already experimenting with them!



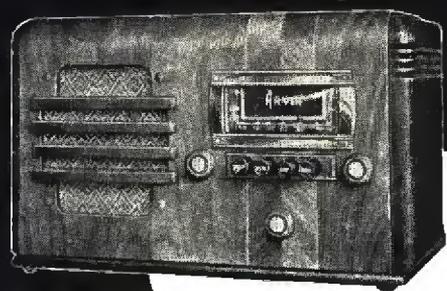
RADIO RETAILING, SEPTEMBER, 1938

Fine Quality

Beautifully Styled . . .
Full-Sized SUPERHETS



Radio-Phonograph
AC Model 88 \$39.95
Fine quality 6-tube superheterodyne. Reproduces both radio broadcasts and recordings beautifully. Plays 10" and 12" records. All in attractive walnut cabinet.



AC Model 78
\$29.95
Four push button automatic tuning and dial tuning. Provides excellent American and foreign reception. Beautiful walnut wood cabinet.

Distinctive 5 and 6-tube table sets, including all-enclosed radio-phonograph model, in modern plastic and walnut wood cabinets . . . at moderate prices

• These new Arvin table radios are fine quality superheterodynes—built large enough and well enough to give the selectivity, sensitivity and rich tone everyone likes. Their honest-to-goodness performance appeals to those who want fine radio reception at low cost. Five models give you a diversified selling set-up that meets the demand for push button tuning, dial tuning or a combination of both. Profit-minded dealers are ordering these new Arvin radios in quantities now. They are stream-

lined profit-builders—engineered and built to satisfy radio users and stimulate sales for you. Every model is a full-sized table set, not to be confused with midget radios. Don't overlook this Arvin radio opportunity to boost your sales and profits. The Arvin catalog shows the complete line of fine quality Arvin radios priced for every selling bracket. Order from your Arvin jobber. NOBLITT-SPARKS INDUSTRIES, Inc., Columbus, Indiana.
Prices slightly higher in extreme South and West.



Modernistic Gold Foil Display
Free with the Arvin No. 30 Deal
Here's a honey of a merchandiser for window or counter, that you get free with an order for 3 Arvin table radios. Ask your jobber about this Arvin profit deal.

ARVIN RADIOS

A complete line of console, chairside, table and battery radios



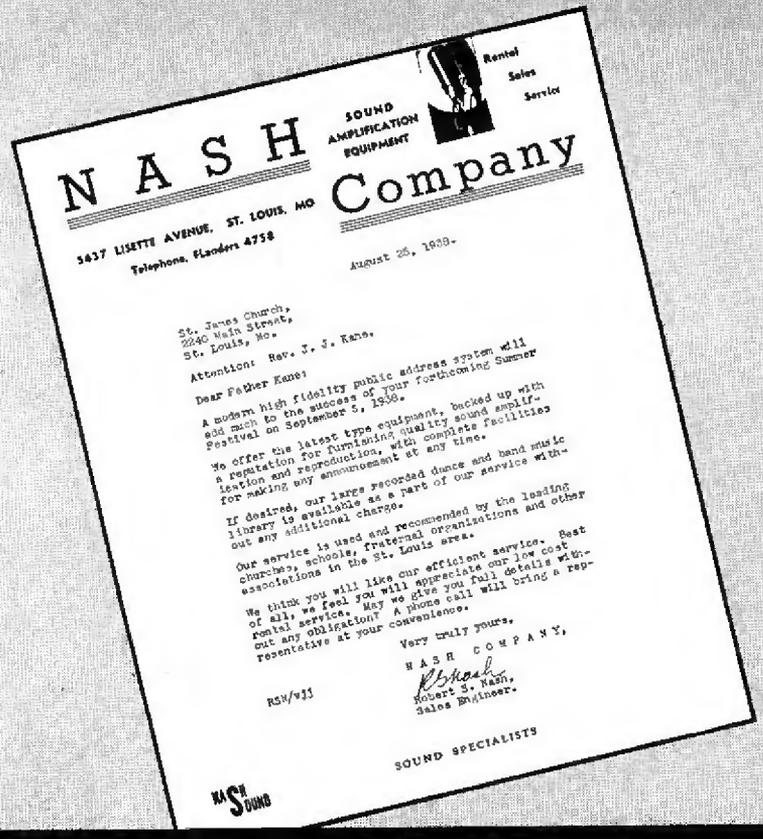
AC-DC Model 58 \$16.95
Fine quality superheterodyne. Beautiful ebony black plastic cabinet. Dial tuning.



AC-DC Model 58A \$19.95
Fine quality superheterodyne. Striking Ivory plastic cabinet and dial tuning.



AC Model 68 \$24.95
Six push buttons with variator for tuning. In additional stations. Walnut plastic.



FINDeM

By Robert S. Nash

A SOUND SPECIALIST'S LETTERS

1. An example of quick action following close scrutiny of the daily paper, this letter is the sound-specialist author's first step toward new business
2. A fight for business is never over until the final bell rings starting the event so Nash follows up with another letter if his first goes unanswered.
3. After the job is over the prospect of a return engagement looms. This, too, is the time when a third letter might sell the equipment outright

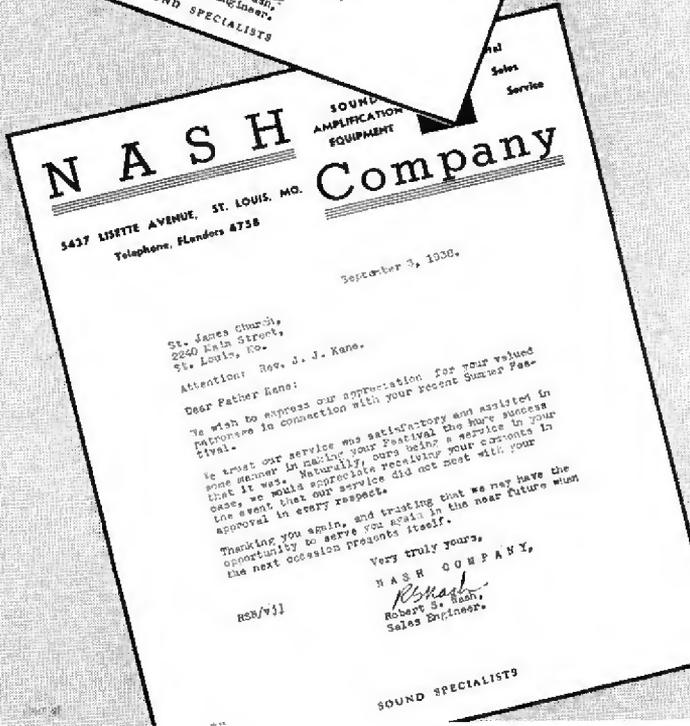
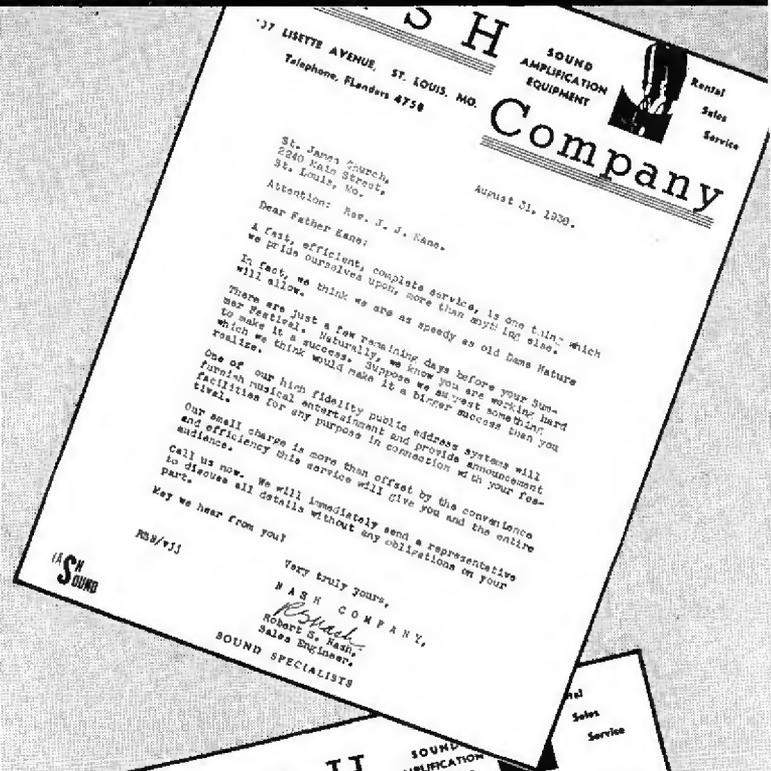
I HAVE PROVEN to my own satisfaction that, despite competition from part-time men who play around with amplifiers, microphones and speakers as a side-issue for a mere day's pay or the "publicity," it is possible to develop a legitimate, profitable and promising sound equipment business.

The secret . . . if common sense can be called a secret . . . is specialization. Specialization in the business of unearthing prospects, specialization in the business of arranging initial contact with them, specialization in the business of finally selling them your truly expert service and reliable merchandise.

You've got to find 'em, tell 'em and sell 'em like a specialist. If you are a specialist, or do a businesslike job as manager of some radio dealer's sound department, no rank amateur's haphazard effort can long be much more than an annoying flea-bite.

Prospect Sources

The biggest prospect source for day-by-day rentals is the newspapers. On the society pages, on the sports pages and in the news columns opportunities are every day laid before you. Another prospect source which should not be overlooked is the wedding announcement and marriage license listing. You can point out to these people that music and announcement facilities can be furnished for the wed-



TELL'em, SELL'em

How to locate *sound equipment* prospects . . . develop effective direct-mail circulars, ads and telephone solicitations . . . close a high percentage of your deals

ding reception at less than $\frac{1}{2}$ what a mediocre orchestra would cost.

These newspaper announcements should be clipped and immediately followed up. The methods are obvious. Follow leads by a personal call, telephone, or if the event is a few weeks off, sales letters along the lines of the ones illustrated. Personal or telephone calls are the most efficient.

No doubt you have missed many such occasions because announcements came too late to reach the sponsors of the events. Right now, clip all such announcements from the papers and date them, filing them away in envelopes marked with the different months. It is then a simple matter to contact the sponsors of the annual picnics and home-comings a month or so in advance *next* year.

Card Index System

A card system along the lines of the type illustrated will prove especially helpful and convenient.

This is an inexpensive proposition if you use 3 by 5-inch standard index cards. These cards are best filed according to the following designations:

CHURCHES—Listing the various creeds.

FRATERNAL ORGANIZATIONS—Elks Club, Masonic Lodges, etc.

HALLS—Mostly public, not duplicated by the church and school halls.

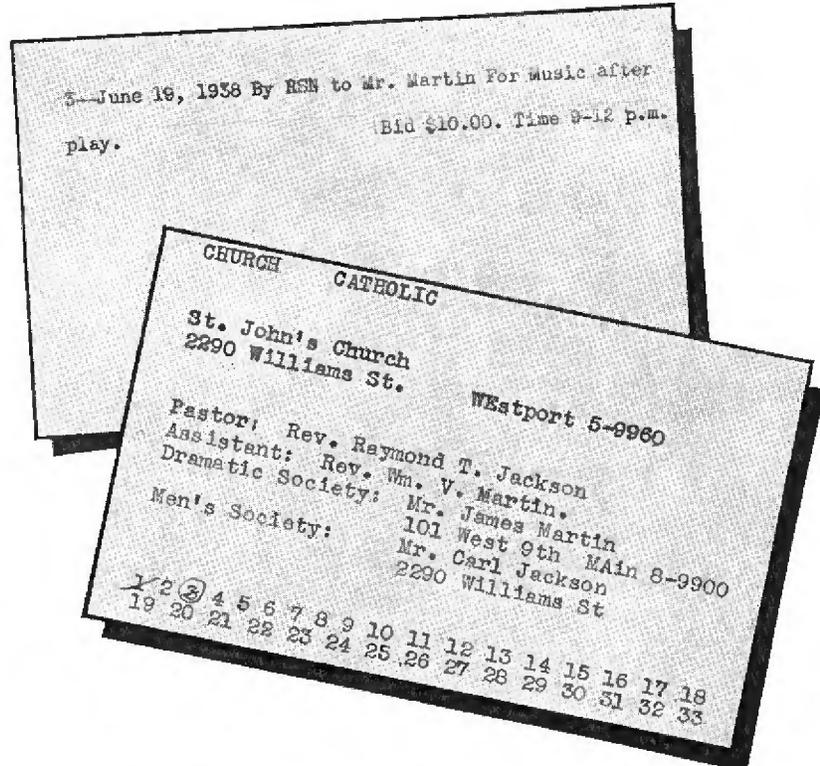
HOSPITALS—General alphabetical listing.

HOTELS—General alphabetical listing.

PARKS—Other than public, such as amusement parks, picnic grounds, etc.

SCHOOLS—Listed under public, high schools and colleges. No listing to duplicate church schools.

SWIMMING POOLS—General alphabetical listing.



THIS CARD MEANS CASH—On the front, Nash records prospect names, addresses, phone numbers well in advance so he is ready when a job "breaks." Numbers at the bottom (see text) indicate the effectiveness of various advertising methods, sales letters. On the reverse side of the card data regarding bids submitted is recorded

THEATRES—Public theatres. No duplication of school theatres and church theatres.

From the above list, easily found in the classified telephone book, city guides and city directory, it is simple to make a complete file of most potential users of your service.

A suggestion to obtain telephone numbers of the various churches whenever possible and record such numbers on these cards is necessary because of the fact that churches are rarely listed by name but usually under the pastor's name.

The sample card illustrates more completely. It shows a Catholic Church card with full name, ad-

dress and telephone number and also the names of the various officers in charge of special events. The number system at the bottom was adopted to show the return from the various advertising forms sent. By establishing a scrap book record of your various advertising pieces and giving each a number, it is possible to establish which of your advertising pieces or methods is most effective.

In the sample case illustrated, the prospect was mailed advertising form No. 1, which is designated by a line drawn through 1. A circle is used to designate that a reply was

(Please turn to page 68)



A Nine Point Star to Solve Your **CONDENSER PROBLEMS**

This entirely new Mallory development brings you all the advantages you've ever had in condensers, plus new improvements of tremendous significance to you.

9 Star Points Feature the New

P. R. MALLORY & CO., Inc.

MALLORY Type BB Condensers

- 1 Positive, non-corroding connections.
- 2 Positive acting gas seal... condensers cannot explode.
- 3 One piece drawn aluminum can.
- 4 Heavy leads...no thin foil tabs.

- 5 New separator material...impervious to surge voltage.
- 6 Extremely low power factor and series resistance.
- 7 Uniformly low RF impedance.
- 8 Uses new Mallory fabricated plate. Much shorter than other types of plate for given capacity. No acid etching. No squeezing to fit can. Plenty of room for separator and electrolyte.
- 9 No temperature limitations due to small size.

Another Star of the First Magnitude the 2nd Edition Mallory-Yaxley Radio Service Encyclopedia . . .

You'll agree with thousands of other service men that the 2nd Edition "MYE" is the greatest help a service man ever had. Covers every phase of automatic tuning...every system. Nearly twice the information given in the 1st Edition. Second printing just off the press. Be sure to have your distributor reserve a copy for you now.



USE
P. R. MALLORY & CO., Inc.
MALLORY
REPLACEMENT
CONDENSERS . . . VIBRATORS

P. R. MALLORY & CO., Inc.
INDIANAPOLIS, INDIANA
Cable Address—PELMALLO

USE
YAXLEY
REPLACEMENT
VOLUME CONTROLS

last call

TO ENTER
RADIO RETAILINGS

TUBE SALES IDEA CONTEST

IN PRIZES \$150. IN PRIZES

RADIO DEALERS, SERVICEMEN, DISTRIBUTORS

For the Best Letters on the Subject

"How to Build Bigger Tube Sales"

RADIO RETAILING will award the following four prizes, subject to contest rules here published.

CLASS A For radio dealers, servicemen and those employed by them
1ST PRIZE..... \$50.00
2ND PRIZE..... \$25.00

CLASS B For regularly established tube distributors and their employees
1ST PRIZE..... \$50.00
2ND PRIZE..... \$25.00

CONTEST RULES

1. The prizes as above announced will be awarded by three impartial judges for the four letters of 500 words or less which contain the most simple, practical and widely usable sales plan or sales idea through which *radio dealers or servicemen* can increase the sale of replacement tubes without engaging in unethical, unbusinesslike or loss-producing practices.

2. Letters submitted will be judged strictly on the merits of the ideas they contain and not on the manner of presentation or literary style. They should be written on business stationery.

3. All letters submitted become the property of *Radio Retailing*. None can be returned.

4. Eligible to enter this contest are all regularly established radio retailers, servicemen, tube distributors and any regular employees or sales persons in such establishments. Before the final awards are made the judges will require satisfactory evidence from nominated winners that they are eligible under this rule.

5. Letters must specify whether entered for Class A Dealers' prize or Class B Distributors' prize. Remember, there are two classes of prizes, but all sales ideas submitted should be suitable for use by dealers and servicemen only.

6. NOT ELIGIBLE are officials or employees of the McGraw-Hill Publishing Co., or of any manufacturer, or of any advertising agency, or any individual not strictly within the classification of Rule No. 4.

7. This contest closes at midnight, September 30, 1938. All letters entered must be addressed to the *Tube Contest Editor, Radio Retailing, 330 West 42nd St., New York, N. Y.*, and must bear postal cancellation stamp of September 30, 1938, or a prior date.

8. Each entry will be judged by the following board of judges, whose decision is final:

BOND GEDDES, Executive Vice President,
Radio Manufacturers Association

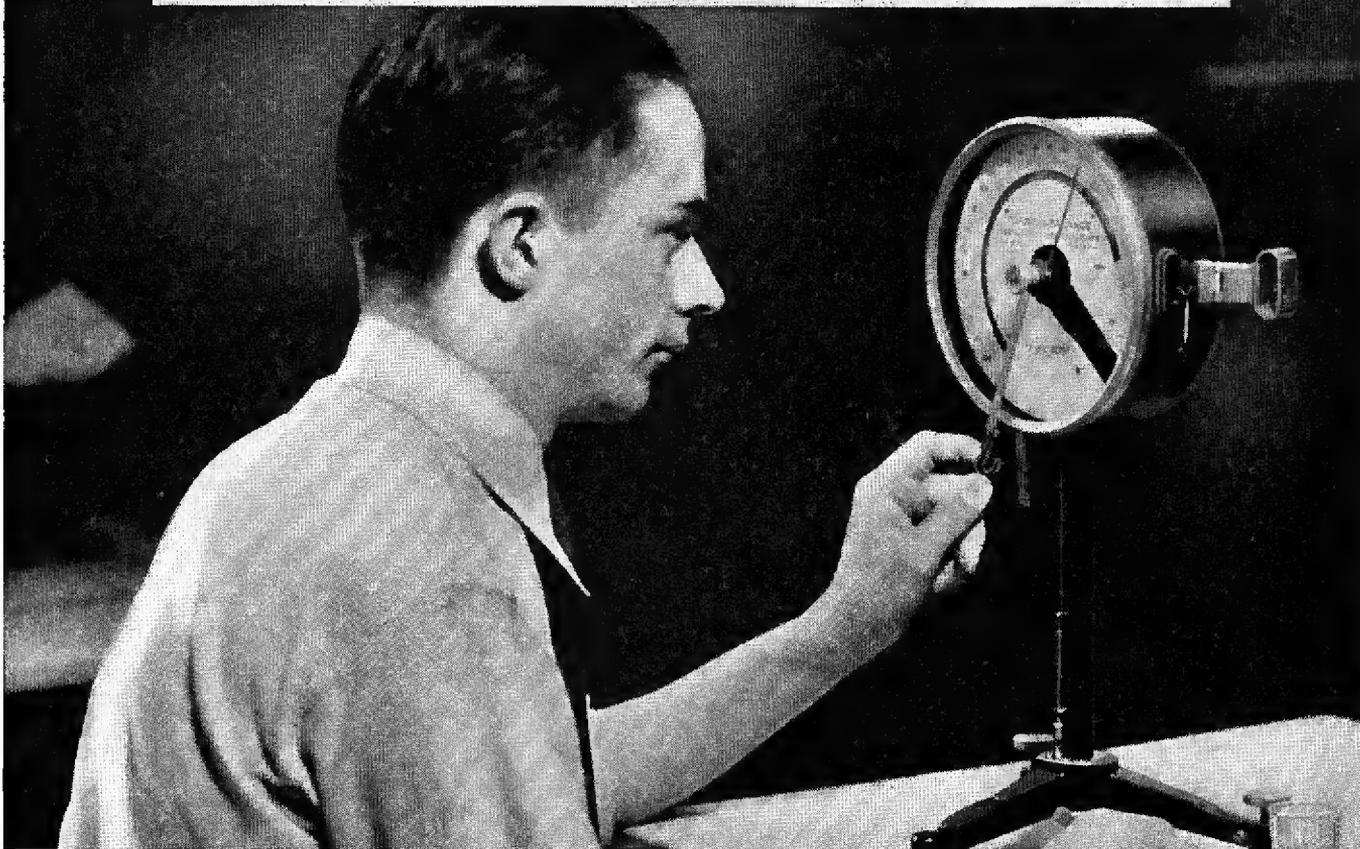
JOE MARTY, Executive Secretary,
Radio Servicemen of America, Inc.

O. FRED. ROST, Editor,
Radio Retailing

9. Duplicate prizes will be awarded in case of ties.

10. A Complete list of winners will be published in the October, 1938 issue of *Radio Retailing*.

How Much is a **MILLIGRAM?**



THOUGH a milligram is only 35/100,000ths of an ounce—it means a lot to this Sylvania workman.

Just the right amount of coating material must be sprayed on a cathode to insure its long life. So as a check-up to this process—a Sylvania expert precision-weighs samples from each batch of cathodes coated. Then he completely removes the coating . . . weighs them again. The difference in weight repre-

sents the amount of coating present—and this amount *must* meet a set Sylvania standard of perfection.

Intricate? — Yes. Difficult? — Very. Worth it?—*Decidedly!* For only by precautions such as this—taken at every step of manufacture—can we be sure of A-1 quality in the finished tube . . . and satisfied customers and repeat sales for you. Hygrade Sylvania Corp., Emporium, Pa. Cable HYSYLVANIA, N. Y.

Hygrade Sylvania Corporation Also Manufactures The Famous Hygrade Lamp Bulbs.

SYLVANIA

SET-TESTED RADIO TUBES



NEWS

FCC Drafts Remote Control Rules

Proposed liberal interpretation of existing r.f. transmission laws would open up important new markets in radio and electronic fields

WASHINGTON—The Federal Communications Commission is now considering a draft of proposed regulations designed to govern the operation of low power devices utilizing radio frequency currents. It has invited members of the Radio Manufacturers Association and other interested parties to study and comment on these proposed regulations before final adoption, holding a meeting at its offices for this purpose September 19 at 10 a.m.

Proposed rules, printed in their entirety because of their importance to manufacturers producing or contemplating production of devices such as remote control mechanisms actuated by radio frequency currents, are as follows:

1. Pending the acquiring of more complete information regarding the character

and effects of the radiation involved, the terms "radio communication" or "communication by radio", and "apparatus for the transmission of energy of communications or signals by radio" as used in Sections 3 and 301 of the Communications Act of 1934, as amended, are considered not to extend to or include apparatus which generates a radio frequency field and utilizes only a small part of this field in the functioning of the apparatus, provided:

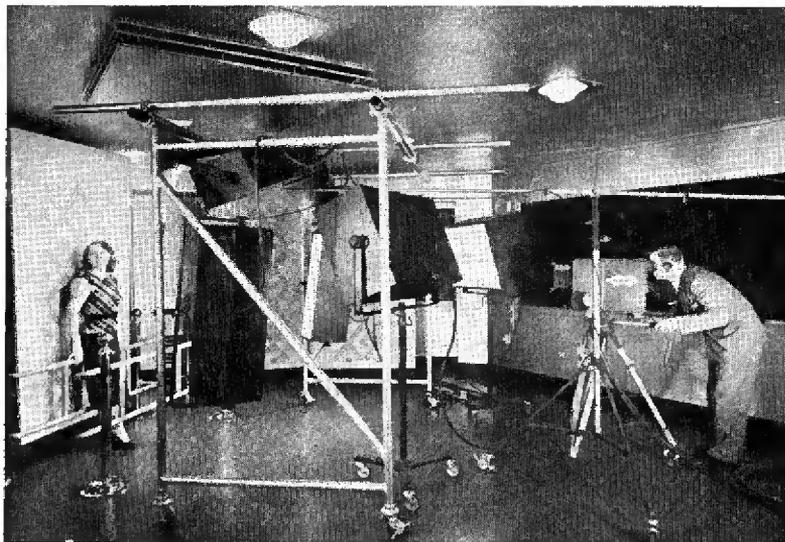
- (a) That such apparatus shall be operated with the minimum power possible to accomplish the desired purpose.
- (b) That the best engineering principles shall be utilized in the generation of radio frequency currents so as to guard against interference to established radio services, particularly on the fundamental and harmonic frequencies.
- (c) That the total field at any point a distance of $\frac{157,000}{f(\text{kc.})} \text{ ft.} \frac{\lambda}{2\pi}$ from the apparatus shall not exceed 15 microvolts per meter.
- (d) That the apparatus shall conform to such engineering standards as may from time to time be promulgated by the Commission.

2. For the purpose of facilitating compliance with said conditions, the Commission will inspect and test any such apparatus submitted to it, and on the basis of such inspection and test, formulate and publish findings as to whether or not such apparatus does or does not comply with said conditions.



HEADS CHICAGO CLUB—E. S. Riedel of Raytheon Production, who has been named president of the Sales Managers Club, Radio Sales Executives, Western Group

3. If the radio signals emitted by such apparatus cause interference to radio reception at a distance beyond $\frac{157,000}{f(\text{kc.})} \text{ ft.} \frac{\lambda}{2\pi}$ from the apparatus, a license for operation from the Commission is required.



TELECAST TOUR—Between two railings before a pickup camera in NBC's New York studios walks John Q. Public beginning September 1 . . . for a modest admission fee. His picture is piped to a transmitter in the next room, sent over coaxial cable to typical television receivers in a third room. Groups make the tour designed to familiarize the consumer with present television technique every ten minutes, all day every weekday, see preceding groups telecast, look at a marionette show, study a historic exhibit of early television equipment

Chicago Gets Next Parts Show

Committee salves eastern sentiment by recommending New York in 1940

CHICAGO—The National Radio Parts Trade Show will be held here in 1939, during the RMA convention. This announcement comes from the RMA and the Sales Managers Club, joint sponsors, who also advise that Ken Hathaway continues as show manager.

In view of strong sentiment for an eastern parts show during the committee meeting at which this decision was reached recommendations favored the holding of a 1940 show in New York City.

Bigger, Better Bell Building

COLUMBUS—Bell Sound Systems, Inc., has moved to new and larger quarters at 1183 Essex Avenue, this city.

Radio May Always Top Television In Average Home

British makers sense public demand for allwave sound receivers in same cabinet, think continuous picture programs unnecessary, says National Union's globe-trotting Marshall P. Wilder

NEW YORK—British television receiver makers, merchandising such equipment through established retail channels for the past two years, have, almost without exception, following their experience with units comprising solely a picture and associated ultra high frequency sound track receiver, reached the conclusion that sales volume may be most effectively swelled by including allwave radio receivers supplying conventional broadcast programs in the same cabinet hereafter. So stated National Union's Marshall P. Wilder (who will be remembered by *Radio Retailing* readers for his article entitled: "Testing Tomorrow's Televisors," in the February issue) during a luncheon for the press held August 23.

Of even greater significance, according to Wilder, may be the generally expressed British opinion that television programs need not necessarily be continuous throughout a full day but might, rather, effectively supplement regular broadcasts during peak "look in" hours alone and when events most suitable for picturization occur. Returning from an extensive European study, Wilder informed the press that in England, at least, and probably throughout the world, radio may always be acknowledged star performer for the mass of the public, who cannot concentrate on visual entertainment, however good, for more than an hour or two, and yet may play their radios virtually from breakfast to bedtime as "background" entertainment.

Both in England and in Continental Germany, Wilder was particularly impressed by new television cathode ray tubes incorporating element structures which permit their length to be materially reduced with respect to their screen diameter. One tube mentioned had a 12-inch screen and was less than 11 inches

long. This, together with the use of permanent magnets with shaded poles in place of the usual electro-magnetic deflecting yoke and obtaining of extremely high-voltage, low current supply for the tube as a by-product of other chassis circuit functions, permitted construction of a receiver no larger than an American mantel type radio of the better, multi-tube variety at a price in the neighborhood of \$175.

Other technical refinements reported by Wilder included the standardization of 4.5 megacycles as the intermediate frequency in German television receivers, permitting pickup of modulated television carrier transmitted at this frequency within a few miles of the station over existing telephone lines (possibly to provide for future telephonic-television service or perhaps simply to facilitate operation of more stations than existing air channels can take care of); a motion picture camera which can take pictures, develop them and turn out dry negatives for insertion into a television transmitter in 80 seconds; a 10 by 14-ft. screen equipped with many minute mirrors to permit projected television enlargements without serious sacrifice of picture brilliancy.

Judging from snapshots in Wilder's collection it would appear that, technically, the pictures actually produced in the British Isles on home-type televisors suffer slightly by comparison for detail with those demonstrated recently in the United States while those seen in Germany have a slight "edge" due probably to refinement of principles known but not yet thoroughly exploited in American laboratories.

No Aerovox Stock Shortage

BROOKLYN—An emergency stock of all standard types of condensers, set up in the middle west, is sufficient to handle all jobber needs for at least five months despite a C.I.O. strike at the Aerovox Corporation plant here, according to company management.

Stated president A. I. Cole September 1: "During the months of April, May and June, when business generally was more or less at a standstill among set



TALK TELEVISION—Marshall P. Wilder (top), National Union's television expert, on his feet before the press with a wad of data gleaned from a European trip. (Bottom) Interested listener was N-U's S. W. Muldowny.

manufacturers, we received much less business from that source than usual. However, rather than lay off our employees in drastic fashion, we concentrated our efforts on the manufacture of jobber stock. As a result, we have a tremendous stock of all jobber items on hand to take care of requirements for at least the balance of the year. Most of this stock has been transferred to a middle west warehouse and shipments from that point are already rolling."

40 Franchises Lost

BROOKLYN, N. Y.—According to Percy Peters, chairman of the Electrical Appliance Dealers Association of this city, forty local dealers largely in the metropolitan area have lost their franchises on certain lines for the remainder of the 1939 season for violating fair-trade agreements.



FIFTY PHILCO DISTRIBUTORS—Their host in Philadelphia late in August was Philco's Atlantic Division manager Peter Kain, with execs Sayre M. Ramsdell, Arthur Nodine and Julian Pollock in attendance. Ramsdell demonstrated a Mystery Control model said to be the first off the Philco production line

Brunswick Means "Plus" Business

You can add 25% and even more to your radio sales

—because period furniture
radio and radio-phonograph customers
won't buy your conventional modern designs.

But they *will* buy Brunswicks . . . for 2 reasons: first, Brunswick cabinets are authentic period furniture. Second, the tone and special features of the Brunswick cabinets are unexcelled by any models at comparable prices.

Show Brunswick in your line and add this business to your radio sales. Brunswick business is *PLUS* business!

Remember that since the Brunswick models have fewer competitors than conventional models, there is less "shopping around" and the sale is easier to close. Then too Brunswick

list-prices and consumer trade-in allowances are registered under the various state fair trade acts.

We have ready a beautifully illustrated twenty-four page catalog with full page illustrations and descriptions of all Brunswick models. Send the coupon today and you will receive your copy immediately.

SEVEN STEPS TO SALES SUCCESS

1. AUTHENTIC PERIOD-STYLED FURNITURE
2. PUSH-BUTTON AUTOMATIC TUNING
3. ELECTRIC TUNING INDICATION
4. CONTINUOUS TONE CONTROL
5. AUTOMATIC VOLUME CONTROL
6. ELECTRO-DYNAMIC SPEAKERS
7. BEAM POWER OUTPUT



List Prices begin at \$49.50. Slightly higher on West Coast.

Brunswick

RADIO AND
PHONOGRAPH
COMBINATIONS

Send for
Illustrated
Brochure



The Mersman Bros. Corporation,
BRUNSWICK RADIO DIVISION,
206 Lexington Ave., New York, N. Y.

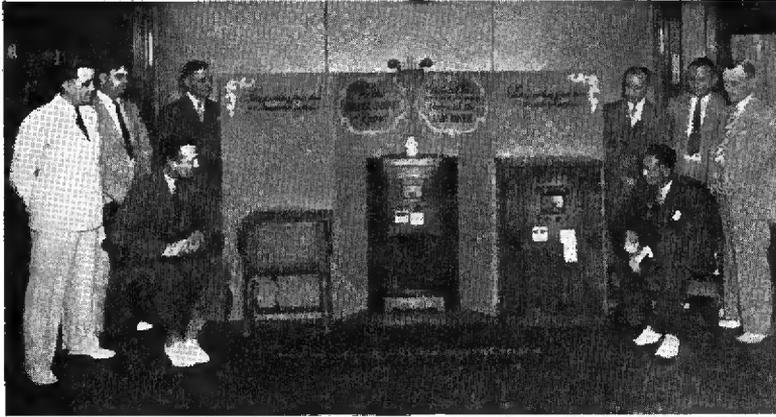
Please send a copy of your 24-page catalog giving descriptions of the Brunswick line.

Name

Street

City State

Brunswick — A Dependable Name for 93 years



KEEN ABOUT EARLY AMERICAN—Personnel of Jenkins Music, Kansas City: (Standing, l. to r.) H. B. Powell, J. C. McMillen, T. M. Ward, D. H. McKelvey, J. T. Allen and A. B. Tuttle. (Seated) E. J. McGrannahan, K. G. Gillespie of Stromberg-Carlson

Radio-Refrigerator Trade-In Schedule Proposed

Chicago dealer association cooperating with salesmen's union to iron out difficulties

CHICAGO—A dealer organization, 150 strong, and a salesmen's union with probably 2000 specialty salesmen in it, are working this autumn in Chicago to iron out the radio trade-in situation.

A code of ethics and fair trade practices worked out by the dealers reads as follows: "Where the manufacturer, distributor or wholesaler authorizes a stated trade-in allowance this may be used plus 5 per cent maximum additional allowance for cash on the net selling price on radios selling for more than \$49.95.

"Where there is no stated allowance by the distributor, manufacturer or wholesaler, the dealer may allow 10 per cent of the new receiver's list price for any old radio manufactured prior to 1937, provided the allowance does not exceed 50 per cent of the list price of the radio being turned in. Where there is no stated allowance by the distributor, manufac-



UP 500%—Diego Fernandez, Parris-Dunn's export manager, supervises shipment of a full carload of his chargers to Scandinavia, says the firm's exports are up 500 per cent

turer or wholesaler, the dealer may allow up to 25 per cent of the list price of any radio manufactured after 1937 provided the allowance does not exceed 50 per cent of the list price of the radio being traded in.

"All auto radios must be sold at the list price, can be installed at no extra charge, with a maximum guarantee of 90 days. All accessories used at the time of installation must be sold at the list price. A maximum trade-in allowance of up to 15 per cent on auto radios not older than 1936 model. Auto radio antennas must be sold at regular list price."

Here's the Chicago setup on electric refrigerator trade-ins:

"Up to 8 per cent of list price on an ice box. Up to 15 per cent of list price on electric refrigerators manufactured before 1934. Up to 25 per cent of list price on electric refrigerators manufactured in 1934 or 1935. Up to 33 1/3 per cent of list price on electric refrigerators manufactured after 1935."

"Ten per cent from list prices may be allowed on sales consisting of two or more boxes delivered to one address at the same time and 15 per cent on three boxes delivered to one address at the same time. Where four or more boxes are sold to one address in one delivery it will be on a cost plus 10 per cent profit basis.

Guarantees on used electric refrigerators shall be as follows:

"On used electric refrigerators selling for \$39.50 or less the maximum guarantee shall be three months. On used electric refrigerators selling for \$39.50 to \$69.50 the maximum guarantee shall be six months. On used electric refrigerators selling over \$69.50 the maximum guarantee period shall be one year."

Salesmen of the Retail Appliance Salesmen's Union, Local 164, have been signed up in a blanket agreement with the Illinois Radio and Electrical Dealers Association. A \$25 weekly minimum salary is being paid to the salesmen, who of course must earn it. If salesmen fall below the minimum, it is assumed that the store is supporting too many salesmen and the list must be cut down.

Harwell Leaves Cinaudagraph

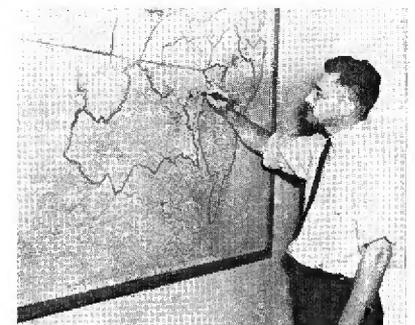
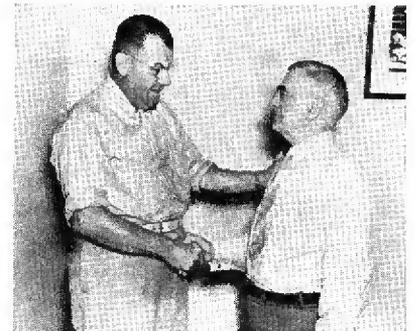
STAMFORD—Cinaudagraph Corporation of this city has announced the resignation of Harold W. Harwell as vice president and general manager. Sherman Reese Hoyt, vice president, takes over the general managership. John Sherman Hoyt continues as president and Howard C. Seaman as secretary and treasurer.

New Met Policy For Cinaudagraph

NEW YORK—The Cinaudagraph Corporation of Stamford, Connecticut, has announced a new sales policy for this metropolitan area. In order that closer cooperation may be rendered to customers in the manufacturing and jobbing fields, company engineers well versed in speaker manufacture will shortly be appointed to contact customers direct from the plant. D. P. O'Brien, general sales director, will supervise them.

NRPDA Designs Emblem

NEW YORK—Members of National Radio Parts Distributors Association are working on the design for a new emblem so that members may use it for identification. Approval of a satisfactory design by the membership is momentarily expected.

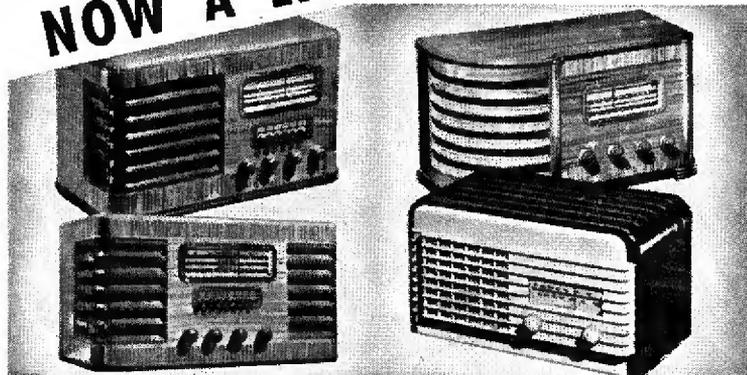


PHILCOMEN AT WORK — (Top) Thomas A. Kennally, Philco's sales manager, greets D. J. MacKillop (on right) the company's manager for the southern states. (Bottom) Ad manager Ernest B. Loveman maps out aggressive advertising efforts scheduled to break throughout the nation shortly

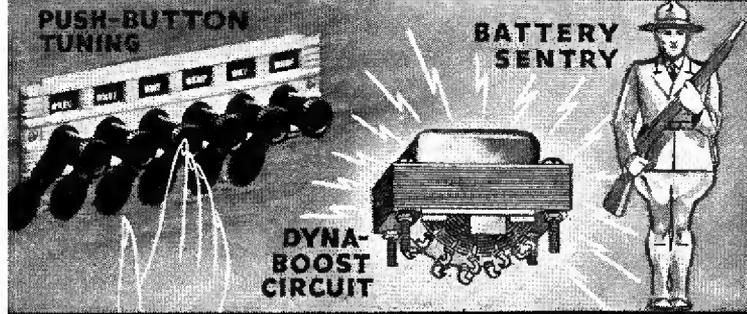


Clear as a Bell

NOW A LEADING NAME IN THE RADIO INDUSTRY



"EYE APPEAL" THAT SELLS

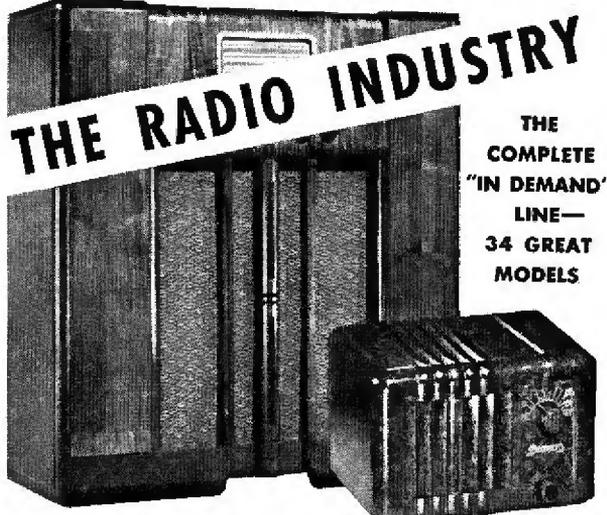


OUTSTANDING 1939 FEATURES

FOR PROFITABLE DISTRIBUTOR OPERATION

*A GREAT NAME—a line that's SMART—
PRICES that pack sales appeal!*

SINCE 1914 — THE LEADING NAME IN THE MUSIC REPRODUCING WORLD



**THE COMPLETE "IN DEMAND" LINE—
34 GREAT MODELS**

SONORA takes a place with the Leaders in the Radio Industry! And there's no mystery—no magic about this sudden rocketing to leadership. SONORA has come through with a new opportunity—an unparalleled opportunity for profitable distributor operation. SONORA offers a complete quality line of 1939 radios with a powerful sales "punch"—a line of 34 magnificent models with "eye" appeal and "Clear-as-a-Bell" tone appeal—priced right for this year's market—with distributor net prices that mean exceptional profits. SONORA fits the big, waiting market that only a quality-built, richly-toned, intelligently-priced line of radios can command—and the twenty-five year old SONORA reputation backs this new line of sets—a great line ranging from a hand-sized "Teeny-Weeny" to a luxurious 12-Tube all-wave console. In engineering, in features, in styling, in beauty of tone and of cabinet artistry, SONORA is a logical distributor choice. In price-range, in national policy, too, SONORA brings you the outstanding radio opportunity for 1939!

Sonora
Clear as a Bell
RADIO & TELEVISION CORP.
MERCHANDISE MART • CHICAGO



FOR VOLUME RADIO SALES IN '39

✓ **CHECK**
 THE WESTINGHOUSE
 FEATURES THAT CLOSE SALES!

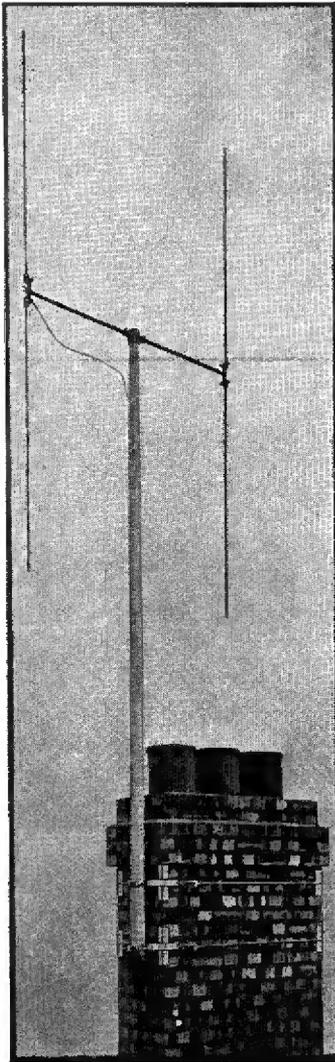
✓✓ **DOUBLE CHECK**
 THE WESTINGHOUSE
 MERCHANDISING PROGRAM
 THAT PULLS PROSPECTS!

Here's a radio line and advertising program specially planned to sell radios f-a-s-t . . . in volume . . . at a profit! Never before has Westinghouse offered such radio values . . . packed with features easy to demonstrate, easy to sell. They're the talk of the trade! New, Instantaneous, Push-Button Tuning! Styling by America's foremost radio designers. Furthermore, Westinghouse offers you a new

and effective merchandising program designed expressly for your local use! Cooperative newspaper advertisements! Colorful floor and window displays! 2-color Selling Book. Consumer literature and other profit-building helps. It will pay you to check and double check this unusual business-getting proposition. Call your local Westinghouse Representative *today*.

Merchandise Headquarters — Westinghouse Radio — 150 Varick Street — New York City

Westinghouse Precision RADIO



TOMORROW'S ROOFTOP—Typical television antenna now sold in England is this vertical dipole, half-wave reflector. It is made by Belling & Lee, Ltd., costs 7 guineas (approx. \$36) complete with mast

subject to possible revision, are as follows:

- Evolution of Radio
- Structure of Vacuum Tubes
- How Radio Communication Operates
- Atoms and Electrons
- Operation of Vacuum Tubes; Advanced: Beam Power Tubes
- Alternating Current
- Amplifier Principles; Advanced: Single Signal Receivers
- Speech Amplifiers; Advanced: Directional Antennae
- REVIEW: SECTION 1**
- Rectifiers
- Radio Frequency Oscillators
- Crystal Oscillators
- Radio Frequency Amplifiers
- Radio Telegraph Transmitters
- Plate Modulation
- Grid Modulation
- Radio Telephone Transmitters
- REVIEW: SECTION 2**
- Transmission and Reception
- Detection
- Autodyne Receiver
- Tuned Radio Frequency Receiver
- Superheterodyne Receiver
- Superregenerative Receiver
- Radio Waves in Space
- Automatic Volume Control
- REVIEW: SECTION 3**
- Automatic Frequency Control
- Antenna Systems
- Direction Finding
- Frequency Measurement
- Facsimile Transmission
- Cathode Ray Tube
- Television Transmission
- Television Reception
- REVIEW: SECTION 4**
- REVIEW OF ENTIRE COURSE**

While it is possible to follow the scheduled lectures solely by listening, W1XAL advises that they will prove even more useful if the listener possesses a series of four booklets prepared by Dr. Belcher and containing diagrams and descriptive matter to be referred to on the air. Each booklet covers eight lectures of an entire section, may be obtained from the station whose address is W1XAL, University Club, Boston, Massachusetts, for \$1. Or the four may be obtained for a total of \$3.50.

RCA Contest Winners Announced

CAMDEN—Winners in the RCA Modernization Contest conducted among radio service engineers and dealers by the company's Radiotron Division have just been announced by L. W. Teegarden, in charge of Renewal Tube Sales.



ALL OUT OF STEP BUT TOM—Tom Joyce, RCA Victor's advertising manager, realized a secret ambition of long standing when he led the Philadelphia Summer Orchestra recently when it played before 5,000 company employees

Gene N. Henderson, of Seattle, copped first prize of five test instruments and all RCA bench tools, Gibson Brindley, of Trenton, won second, Emil J. Giara, of Carlin, Kentucky, third and fourth and fifth prizes went to Gaylord Walter of Riceville, Iowa and David J. Krassen of Philadelphia.

Stromberg-Carlson Shows

ROCHESTER—A series of Stromberg-Carlson showings for dealers in the southwest are in progress as we go to press, under the direction of Ken Gillespie, sales manager of the firm's Kansas City Division. Dallas saw new sets August 29 and 30, Fort Worth September 1 and 2, and San Antonio September 6 and 7 and the schedule calls for an exhibit in Houston September 12 and 13.

Terminal Adman

NEW YORK—Robert Corenthal, formerly with Reiss Advertising, has resigned to become advertising manager of the Terminal Radio Corporation, distributor of amateur and allied equipment.

W1XAL To Broadcast Technical Lectures

On air 37 consecutive Mondays, repeated by transcription each Friday

BOSTON—Beginning October 3 at 8 p.m., E.S.T., continuing each Monday through June 12, Dr. C. Davis Belcher transmits for the World Wide Broadcasting Foundation over shortwave station W1XAL on 6.04 megacycles one-hour "chapters" in this organization's Modern Radio Course for servicemen, amateurs and experimenters.

Unique feature of the broadcast series is repetition of each Monday lecture by electrical transcription on Friday of the same week at 5 p.m., E.S.T., over the same station but on 11.79 megacycles.

There are 37 consecutive lectures to be broadcast, in all. Titles, in order but



PARTS DISTRIBUTOR HOLDS OWN SHOW—Good attendance, much interest in new test equipment, parts, accessories is reported by the Standard Radio Parts Company of Dayton following its August 28-29 home office exhibit pictured here

Advise NAPRI

EAST ROCKAWAY, N. Y.—Advisory council of the National Association for Prevention of Radio Interference, just appointed by secretary Frank Carter, is as follows: O. B. Hanson of NBC, J. R. Poppele of Mutual, James W. Baldwin of NAB, Edward F. Kloter of IBEW, L. A. Hammarlund, McMurdo Silver, Joseph E. Foster of Long Island Lighting, R. R. Beale of RCA, Charles Belous of New York City Council, Joe Marty, Jr. of the RSA, Walter Jablon of the Sales Managers Club, Francis J. Sherman of the Nassau Police Conference, I. A. Mitchell of United Transformer, Will Arvin of Ryswyk, Holland; P. S. Parker of Australia, Alvin Hackshaw of Trinidad, Austin T. Rogers of Scripps-Howard, Arthur L. Hodges of the Nassau Daily Review Star, Captain Horace L. Hall, Si Steinhauer of the Pittsburgh Press, Don Felix Gunther, W. W. MacDonald of *Radio Retailing*, Arthur J. Green of the International Short Wave Club, Charles W. Morrison of the International DXers Alliance, Irving R. Potts of the Newark News Radio Club, E. C. M. Philpott of the New Zealand DX Radio Association, Page Taylor of Radex, Arthur Lynch, Ed Berliant, Bill Harrison.

Television Courses Announced

NEW YORK—Announced by RCA Institutes this month are four television courses. For persons without previous training in radio engineering, the prescribed period is two years in the day school or five years in the evening school. Students possessing an adequate technical background may enroll for six months day school training or one year in the evening sessions.

School executives, announcing the courses, express the opinion that the basic system of television is unlikely to undergo any immediate major change.

Ken-Rad Making 1.4's

OWENSBORO, KY.—The Ken-Rad Tube & Lamp Corporation has just announced a new line of 1.4 volt filament type battery tubes, including the 1A5G output pentode, 1A7G pentagrid converter, 1C5G output pentode, 1H5G triode-single diode and 1N5G r.f. pentode. All with the exception of the 1C5G draw 0.50 amperes, the 1C5G drawing 0.100. All will operate with 90 volts of "B" battery.

Arcturus Deal Sweetened

NEWARK—New items just included in the Arcturus Equipment Deal, according to sales manager Jack Geartner, are instruments from the Weston, Precision and Supreme lines, push-button testers, a Standard cash and change register, an electric clock and a neon sign.



HALLICRAFTER'S HALLIGAN—No chair-warming exec is Hallicrafter's Bill Halligan (right) here seen discussing his company's line of communications receivers with ham equipment specialist Harvey Sampson in the latter's New York showroom

Storm With Halson

MERIDEN, CONN.—Eric Foster Storm has just been named general sales manager of Halston Radio and Television, Inc. Storm holds a commission as captain in the United States Signal Corps Reserve assigned to the Procurement Section, office of the Chief Signal Officer, was for a number of years associated with such firms as the Connecticut Telephone and Electric Manufacturing Company, Trumbull Electric Manufacturing Company and Cooper Thermometer. He has traveled extensively, both in this country and abroad and is past president of the Electrical League of South Jersey and a member of the American Society of Military Engineers.

O'Donnell Upped

EAST PITTSBURGH—J. F. O'Donnell has been appointed assistant sales manager of the Westinghouse merchandising division.



BREAK FOR BETTINGER—Philco's Pacific Division manager Cliff Bettinger demonstrates Mystery Control outdoors on the grounds of Pasadena's Hotel Huntington

Package Plan By Victor

CAMDEN—A combination merchandising "package" which includes a radio, a Victrola attachment and a quantity of Victor records at a special overall price is the nucleus of an RCA promotional campaign under way this month.

Included is the model 97KG console (\$85 list), \$14.95 list Victrola attachment, \$9 list of records of the purchaser's own selection, a subscription to the Victor Record Review valued at \$2 and membership in the Victor Record Society, all for the special sale price of \$99.95.

Record School Days

PITTSBURGH—Fifty-five RCA Victor musical merchandise dealers and salesmen, representing 38 retail outlets in 31 cities, attended classes for two days of instructions at a novel "dealer school" held here last month by Hamburg Brothers, distributor. On deck from the factory was assistant Victor Record sales manager W. W. Early; John K. West, Jack Williams and Jack Hallstrom of the field staff.

Radiolab Buys Lyon-Wyatt

KANSAS CITY, MO.—Radiolab, local wholesale distributor of radio parts, supplies, transmitters, public address equipment, has purchased the Lyon-Wyatt Radio Company of Wichita, Kansas in a cash transaction including merchandise, fixtures, lease, goodwill but excluding accounts receivable.

All purchases for Radiolab's main office and for its new store at Wichita are to be made from Kansas City by Robert M. Smith, Guy E. Wilson or H. Kenneth Payne. D. F. Wyatt and his former employees remain with the Radiolab branch. S. J. Lyon leaves to enter the service business. Craig Hare of Kansas City becomes manager of the Wichita store.

More NBC Programs For Farmers

NEW YORK—Immediately following the NBC Blue Network's old established National Farm and Home Hour broadcast weekdays from 12:30 to 1:15 p.m., EDST, additional 15-minute "regional" programs are to take the air beginning September 26.

The country has been divided into five zones with common crop interests. Programs designed to be of specific interest and value to each group are to be prepared, with the Goodyear Company sponsoring presentation in three zones, NBC itself providing the extra service in the remaining two zones on a sustaining basis. Ruralites, therefore, will have the original National Farm and Home Hour program each day, immediately followed by 15 minutes concentrated on more specific local affairs.

It's always open season
 with the **Sentinel**
DOUBLE BARRELLED LINE!



CITY RADIO

- ★ Strikingly Different, Front-Adjusted **ELECTRIC Push-Button Tuning System.** (Pat. Pend.)
- ★ Smart Molded Bakelite Cabinets.
- ★ **RAD-O-FONE**, the private telephone for the home.
- ★ Novel Thermometer-Type Dial.

With Sentinel's amazing new features as decoys to bring in customers, Sentinel Dealers everywhere are bagging record profits in both City and Farm Radio. It's an irresistible line, packed with selling features, and at the lowest price in Sentinel history—every model a smashing value! Mail the coupon today for complete details on this feature-packed line.

FARM RADIO

- ★ Battery Drain slashed 60%—with the lowest operating cost in history.
- ★ **RAD-O-FONE**, the private telephone for the farm.
- ★ Distinctive Cabinets.
- ★ 1½ Volt, 6 Volt, 32 Volt, 6-110 Volt and Hi-Line Models.

SENTINEL QUALITY



AT LOWEST PRICES EVER OFFERED!

Sentinel

MAIL THIS COUPON

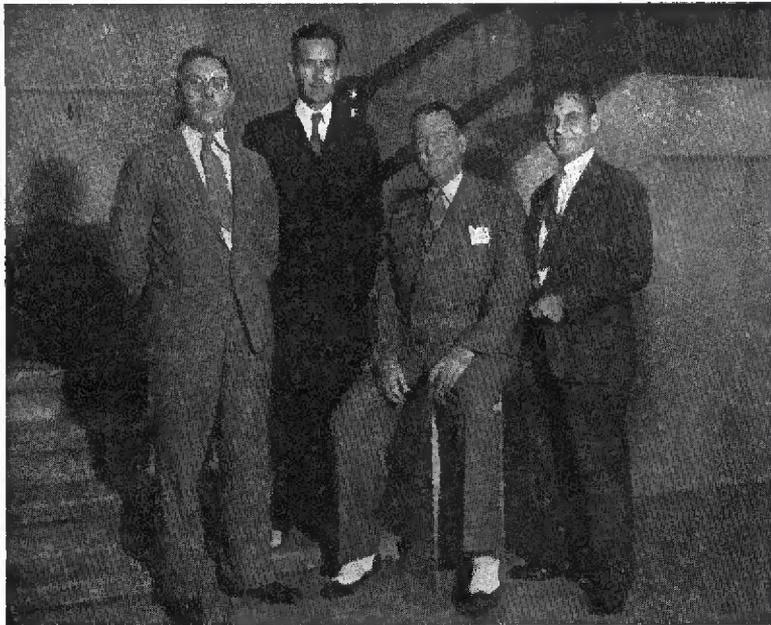
SENTINEL RADIO CORPORATION
 Dept. R. R. 9 2222 Diversey Parkway, Chicago, U. S. A.
 Please rush me complete details of 1939 Sentinel Line.
 Farm Radio City Radio

Name

Address

City

QUALITY RADIO SINCE 1920



ANDREA EXECS—President Frank A. D. Andrea of the Andrea Radio Corporation sends us this shot of his excellent executive staff. Left to right: Export Sales Manager J. J. Whyte, Chief Engineer Harry Heindel, General Sales Manager Herbert A. Brennan and District Sales Manager Milton B. Sleeper

New RSA Chapters

Chicago, Duluth, Cleveland,
plan special events

CHICAGO—From Joe Marty of the Radio Servicemen of America, Inc., comes word that Tulsa, Oklahoma and St. Paul, Minnesota now have RSA chapters. Several other groups are considering affiliation, according to Marty.

RSA's Chicago chapter announces a Test Equipment Show to be held at the Stevens Hotel, September 28. Duluth will hold a Jamboree for servicemen September 24 and 25. Cleveland will hold its annual picnic on September 25 at Haag's Grove, Parma, Ohio.

Garod Television Kit Ready

Placed on market September 7
for \$99.90 list with tubes

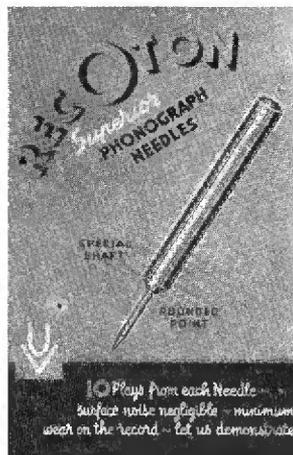
NEW YORK—Demonstrated to the press at the Tudor Hotel, September 6 by president Max W. Weintraub of Garod Radio Corporation and his chief engineer, Barnet S. Trott, was a television receiver designed to function on 441-line transmissions such as those used by NBC's Empire State equipment and the proposed Chrysler Building station of CBS. Ready for the market immediately in kit form is the video portion of the receiver, advised Weintraub, who said the two chassis and all parts for the cathode-ray tube assembly, its video impulse receiver and associated power supply would list at \$49.95 less tubes. The two chassis require 15 tubes plus a 5-inch cathode-ray tube and may be obtained

knocked down with tubes for \$99.90.

Licensed by RCA and Hazeltine, the video television chassis are to be assembled by the purchaser from instructions furnished with the kit. A special service bureau has been set up by Garod to aid experimenters who require additional advice when assembling.

Brennan Joins Andrea

LONG ISLAND CITY—Herb Brennan, aggressive big oldtimer once rep for Victor Talking Machine, later with Cutting & Washington and perhaps best remembered as the Brennan of New York's Gross-Brennan, has just been appointed sales manager of the Andrea Radio Corporation.



NEEDLES—Dramatic full-colored display card just produced by the Recoton Corporation to help dealers sell its new phonograph needles

Handbooks, Catalogs, Guides

SILENT SALESMAN—Emerson Radio and Phonograph has devised and improved the design of its combination sign and shelf for displaying new table models. The revised "Silent Salesman" is in three pieces, a center display plus two attractive wing pieces.

TALKING TAGS—Control knobs of all Stromberg-Carlson receivers are this season equipped with tags that explain every merchandising feature of the set.

MYSTERY SOLVED—A complete bulletin has just been released to all Philco distributors, detailing every phase of service preparation for the perfect performance of Mystery Control models. This is the first technical information of any kind released since announcement of the remote control unit at the company's national convention in Chicago.

AROUND THE DIAL—"Around the Dial with Tung-Sol" is a new spiral-bound booklet in which listeners may log their own program favorites conveniently. Part of Tung-Sol's new advertising material package. Write the company direct for details.

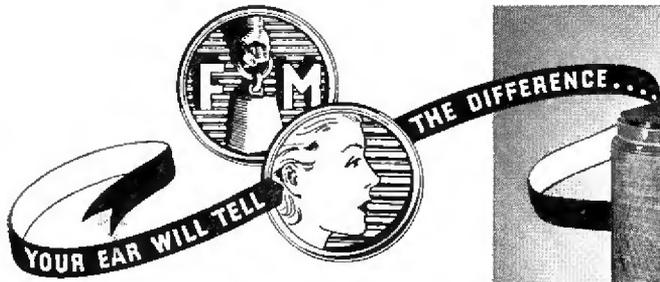
TRANSCeptORS, TRANSMITTERS—Frank Jacobs of the Radio Transceiver Laboratories, Richmond Hill, New York, tells us he'll send new data sheets describing his firm's transmitter-receivers, transmitters, transceptors and other equipment primarily designed for the ultra-highs and for mobile or portable work to *Radio Retailing* readers on request.

CHANALYST DOPE—John F. Rider has a 16-page booklet just off the press going into the design and use of his new test instrument called the "Chanalyst". Address *Service Instruments, Inc.*, 404 Fourth Ave., New York City.

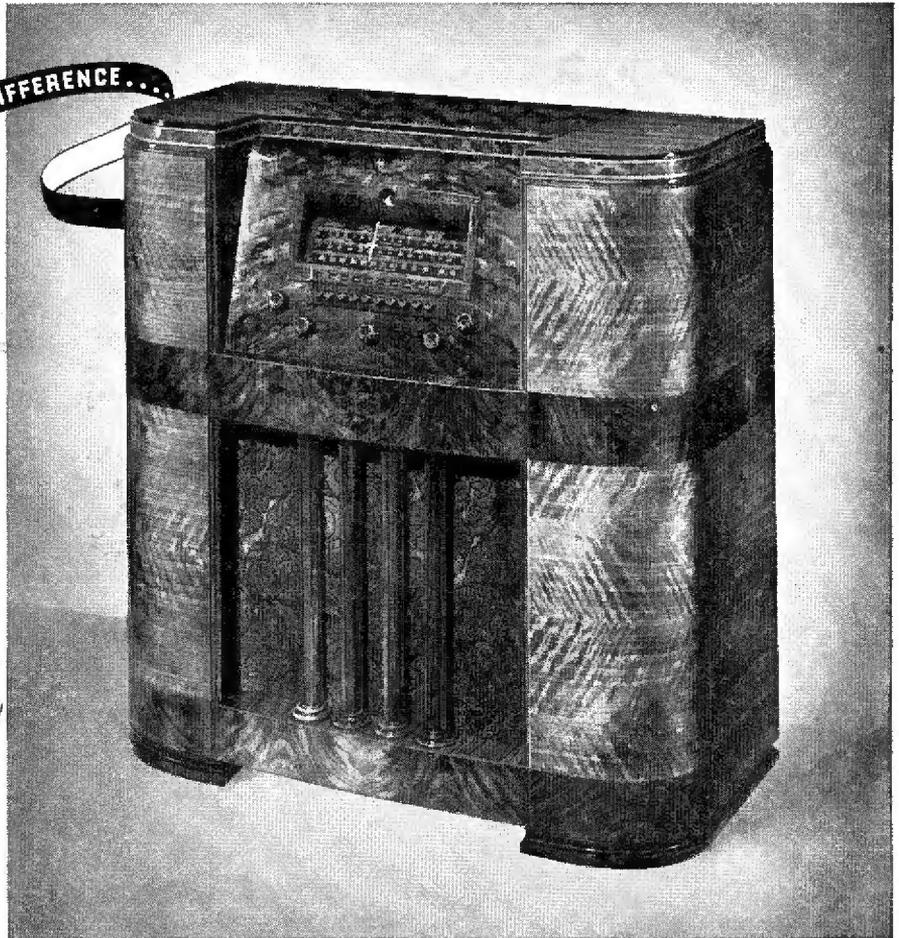
JOBBERS ONLY—Jobbers are invited by *Triad Manufacturing Company* of Pawtucket, R. I. to write for new bulletin number 115 dealing with ballast units as replacement items. Describes numbering system, wiring code, voltage drop characteristics etc. Available in quantity for distribution through jobbers to the dealer and serviceman.

ANTENNA POSTER—Ward Products has a new 10½ by 30½-inch wall poster equipped so that any one of 11 different Ward aerials may be mounted right on the display, enhancing its effectiveness.

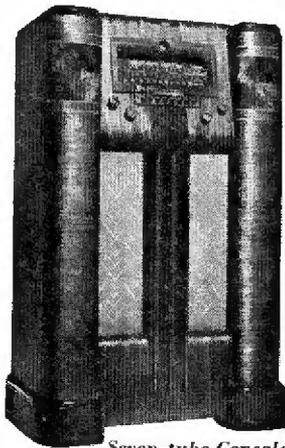
POWER FROM AIR—*Ruralite Engineering Co.* of Sioux City, Iowa, has two new illustrated folders describing its line of air-powered generators, batteries, towers. Prices, shipping weights are given in a separate sheet.



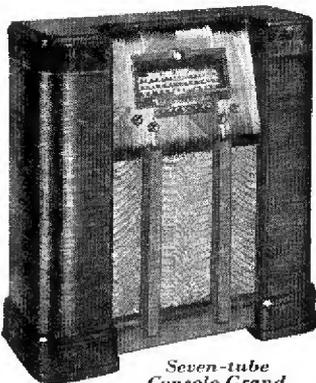
Not a
"Me, Too" Model
in the Line



Twelve-tube Console Grand



Seven-tube Console



Seven-tube Console Grand

● The new series of Fairbanks-Morse radios is built for the *profitable* type of customer who *can* and *will* buy when he (or she) sees and *hears* the difference between these and ordinary radios. There is not a "me, too" model in the line—not one that is like some other radio the prospect has seen elsewhere. Each is a *fine* musical instrument that gives a new thrill to listening. The line includes *no superfluous stock* which serves only to increase inventory. There are no short-discount models. You get your normal and rightful profit from every sale, while selling is made easier by a name that has enjoyed public confidence for more than 100 years. For complete details, write or wire Fairbanks, Morse & Co., Home Appliance Division, 2060 Northwestern Ave., Indianapolis, Ind.

PROFITABLE MODELS THE NEW FAIRBANKS-MORSE LINE OF RADIOS INCLUDES TABLE, CONSOLE, AND CONSOLE-GRAND MODELS WITH 7-, 9-, AND 12-TUBE CHASSIS

WORTH-WHILE FEATURES:

- Instant Electric Tuning
- Acousti-Sealed Tone Chamber
- Monitor Panel
- Cabinetry of highest quality with interlocking construction
- Complete permeability tuning
- Clearer and stronger short-wave reception
- Plus the most startlingly realistic tone you have ever heard in a radio

FAIRBANKS-MORSE RADIO

A TRULY *fine* RADIO

Labyrinth Week In October

Stromberg-Carlson develops effective tone-demonstrating display for dealer tie-in

ROCHESTER—"Labyrinth Radio Tone Week" will be held this year by Stromberg-Carlson dealers and distributors early in October. Radio sales manager Lee McCanne advised that a special campaign will invite the public to learn about the Labyrinth invention for which radical improvement in radio tone and freedom from cabinet acoustic distortion is claimed.

Continues McCanne: "Something entirely new for dealers' floors is an adaptation of a special laboratory instrument by means of which the elimination of tonal defects by the labyrinth may be convincingly demonstrated. It consists of two tubular chambers mounted next to each other on an attractive standard. One is plain in finish, the other lined with the same sound absorbent material as the Labyrinth. The demonstrator creates sound effects at one end of the tube while the customer listens at the other and notes the difference."

Brunswick Staff Grows

CELINA, OHIO—The Brunswick Radio Division of the Mersman Brothers Corporation, whose entry into the business was announced in July, now has 37 men on the road appointing key dealers to merchandise its new sets, advises sales manager H. L. Weisburgh.

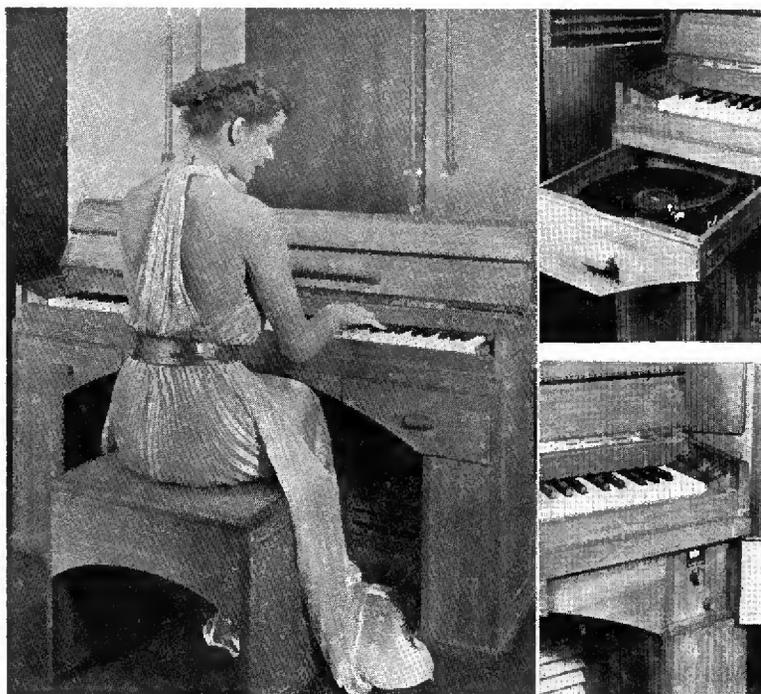
Ritter Replaces Warner

CAMDEN—Eugene W. Ritter, formerly manager of research and engineering at RCA Manufacturing Company's Harrison, New Jersey, Radiotron tube plant, has been elevated to the position of general manager of this plant, replacing J. C. Warner, deceased.

D. F. Schmit, formerly in charge of radio receiving and cathode ray tube design and development, moves up into the position vacated by Ritter.

Some Philco Firsts

PHILADELPHIA — First quarterly standing of Philco distributors in the concern's 1939 sales campaign has been tabulated by sales manager Thomas A. Kennally. Walther Brothers of Montgomery, Alabama, leads the entire country as well as the Memphis division. Listenwalter & Gough of Long Beach, California, takes first place in the Pacific Coast Division. Other division leaders include: Empire State of Albany, United Tire of Trenton, Philco Distributors of Providence, McComb Supply of Harlan, Jones Philco of Saginaw, Loifgren's of Moline, Southwest Radio of Oklahoma City and Pensacola Hardware of Pensacola.



THREE-WAY MUSIC—Hit of Chicago's musical merchandise show was this new Ansley instrument. It's a standard keyboard miniature piano obtaining grand volume and tone electrically. And (see small inserts) it includes a Dynaphone for playing records as well as an Ansley radio. Keys, grooves and radio waves . . . all produce sweet music via the same amplifier

About REPS and JOBBERS

HYTRON—James H. Clements of Detroit is in charge of equipment business for this firm in Michigan and Indiana.

STROMBERG-CARLSON—Five new distributors: *Cloud Brothers* of South Bend, Ind.; *Radio Studios, Inc.*, of Salt Lake City; *The Killian Company* of Cedar Rapids; *Rogers Maytag Company* of Moline; *Electric Sales & Service* of Atlanta.

STEWART-WARNER—Put on in the last few weeks were *Griffith Distributing* of Indianapolis (Radios, refrigerators, ranges); *Ridge Company* of South Bend (Radios, refrigerators); *B. J. DeJarnatt* of Fresno, Calif., (Radios, ranges); *W. R. Moore Dry Goods* of Memphis (Radios); *Kaemper & Barrett* of San Francisco (Radios); *Peaslee-Gaulbert* of Louisville (Radios, refrigerators); *Hughes-Bozarth-Anderson* of Oklahoma City (Radios, refrigerators); *Air-Ola* of Huntington, W. Va., (Radios); *Reitz Sales & Service* of Omaha (Radios, refrigerators) and *Graybar* of Los Angeles (Radios).

SENTINEL—Newly appointed are *Jones Brothers*, Little Rock, and *Milton-Brooks*, Meridian, Mississippi.

FREED TRANSFORMER—Two new reps: *Harry Marshall*, San Francisco, and *Vaughn & Company*, Houston.

HOWARD—Handling this firm's line of communications receivers are: *Royal Amusement* of Auburn, Me.; *House*

Sherman, Inc., of Rockland, Me.; *H. Jappe Company* of Boston and Worcester, Mass., and Dover and Manchester, N. H.; *Wholesale Radio* of Boston; *T. F. Cushing* of Springfield, Mass.; *Aaron Lippman* of Newark; *Dymac Radio* of Buffalo; *Niagara Radio* of Niagara Falls; *Fort Orange Radio* at Albany; *Roy C. Stage* at Syracuse; *E. Berndt* of Syracuse; *Beaucaire* of Rochester and in metropolitan New York *Davega-City Radio*, *Gross Radio*, *Harrison Radio*, *Terminal Radio* and *Harvey Radio*.

WILCOX-GAY—Newly appointed to distribute record-players and radio receivers: *Clary-Marsh*, Birmingham; *United Radio*, New Britain; *Sechtman-Hardware*, Hartford; *Capital Paper*, Indianapolis; *H. E. Sorenson*, Des Moines; *Union Supply*, Burlington; *Warren Electric*, Sioux City; *Lincoln Sales*, Baltimore and Washington; *Dygart Distributing*, Grand Rapids; *Disco Distributing*, St. Louis; *H. C. Noll*, Omaha; *Wehle Electric*, Binghamton, Rochester, Elmira and Buffalo; *Herrlinger Distributing*, Cincinnati; *Standard Radio*, Dayton; *Hood Electric*, Youngstown; *Ellicott-Lewis*, Philadelphia; *Tydings Company*, Pittsburgh; *Tennessee Valley*, Nashville; *Momsen-Dunnegan-Ryan*, El Paso; *McLendon Electric*, Waco; *Sound Systems*, Huntington; *Bluefield Hardware*, Bluefield.

MAJESTIC—*Fisher-Aeschbach* of Cincinnati now has this line. Holding open house to show it to dealers in vicinity September 12 to 16 inclusive.

You Can't Lose!

... with this unbeatable
**ARCTURUS
 MERCHANDISING
 COMBINATION**

Here you are! . . . just what you need to win the big sales contest that goes on *right in your own store*—every day—all year round!

ARCTURUS gives you a real business-building combination . . . a three-way sales plan that puts you way ahead of competition. (1) ARCTURUS TUBES—dependable, well-engineered tubes that assure customer satisfaction on every sale. (2) ARCTURUS DEALER HELPS—skillfully planned promotional pieces that make all your sales efforts more effective. (3) The ARCTURUS EQUIPMENT DEAL—to give you worthwhile EXTRA PROFITS in the form of modern shop and store equipment.

"GO ARCTURUS" for PROFIT!

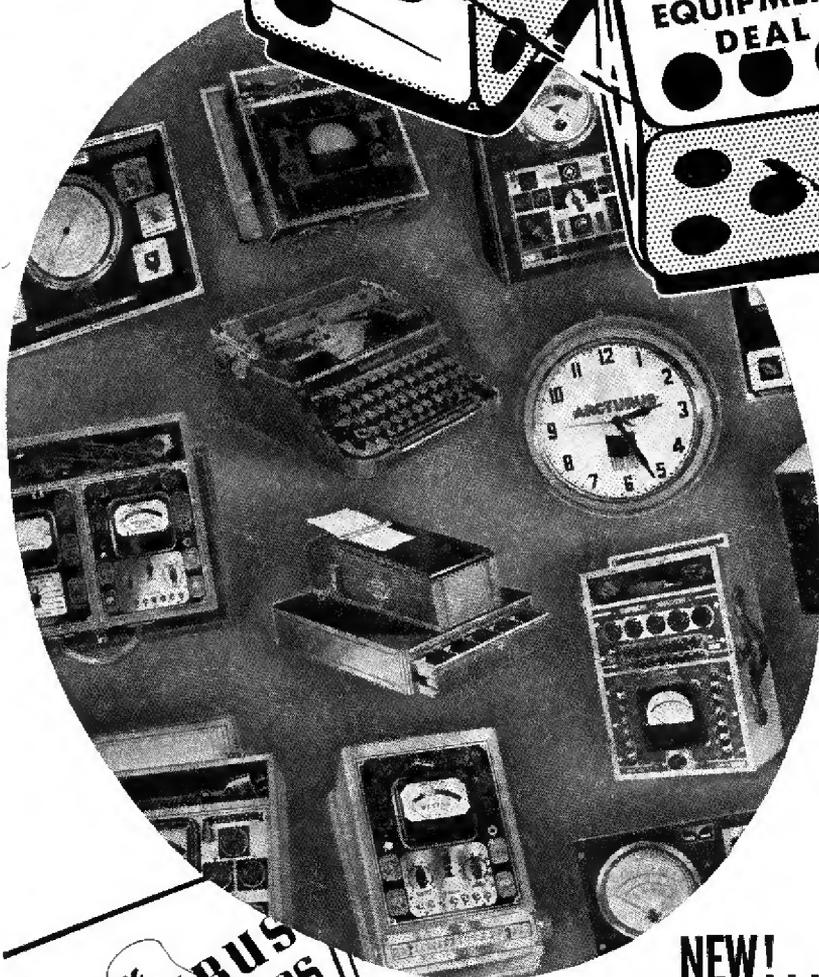
The new ARCTURUS DEALER HELPS include a wide variety of sales-pullers . . . new displays, window posters, direct mail pieces, newspaper ads, tested promotional material, office and store necessities—items that you need every day in the year—most of them absolutely FREE to Arcturus dealers.

NEW EQUIPMENT—almost FREE!

Better, more complete than ever—with new assortment of the latest models—the Arcturus Equipment Deal enables you to equip your shop with the most efficient test equipment on the market . . . at almost no cost to you!

Low Down Payments . . . Low Tube Requirements . . . Tubes at Standard Prices . . . make it the finest, easiest and fairest Deal ever offered. Cash in on it!

FREE! . . . Your copy of the ARCTURUS DEALER HELP FOLDER and latest information about the ARCTURUS EQUIPMENT DEAL. WRITE TODAY!



NEW!..

LATEST MODELS!

Push Button Testers, Analyzers, Signal Generators, Oscilloscopes, Combination Units, Neon Signs, Cash Registers, Typewriters and Electric Clocks are now included in the Arcturus Deal.

ARCTURUS

RADIO TUBES

ARCTURUS RADIO TUBE COMPANY, NEWARK, N. J.

More Power to Your Sales!

In three vital directions
RCA serves the men who sell radio



Shown above is the extremely popular 1939 RCA Victor Radio Model 97KG, in the new Console Grand cabinet, price \$85 (f.o.b. Camden, New Jersey).

Transmission—The better the quality of broadcast transmission, the greater the interest in listening, and hence in buying radio instruments. Starting with radio message services, RCA research has constantly contributed to the improvement of radio broadcasting. Today RCA equipment is in almost universal use by broadcasters.

Programs—The second incentive to buy radio sets is the quality of programs. Through NBC, one of the RCA family, the art of broadcasting has been continuously improved.

Receivers—Given broadcasting of fine technical quality, and interesting in its material, the public wants radios with which they can hear the programs at their best. They want these instruments at reasonable prices. Here again RCA research delivers the goods. The 1939 RCA Victor Radios that offer Electric Tuning for All mark the greatest advances yet made in providing the listening public with great values.

Thus in three vital directions RCA research means more power to your sales.

RCA presents the Magic Key every Sunday, 2 to 3 P. M. E. D. S. T., on the NBC Blue Network.



Radio Corporation of America

RADIO CITY, N. Y.

RCA MANUFACTURING CO., INC. RCA INSTITUTES, INC. RCA COMMUNICATIONS, INC.
RADIOMARINE CORPORATION OF AMERICA NATIONAL BROADCASTING COMPANY

Directory

OF DEALER

MAXIMUMS

for RECEIVERS

MADE in U. S. A.

Years

1933

1934

1935

1936

1937



RADIO

TRADE - IN

ALLOWANCE

Blue Book



PUBLISHED . . . September 1938

EXPIRES September 1939

RADIO

RETAILING

RADIO

TRADE-IN ALLOWANCE

Blue Book

PUBLISHED September 1938
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RADIO RETAILING

Directory
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1933
1934
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1937

THIS Blue Book was designed for the use of reputable radio dealers in acquainting prospective buyers of new radio sets with the fair and reasonable top value of the set they wish to trade in.

It is assumed that the average consumer wants to buy from an established and responsible retailer who is interested in giving satisfaction to each customer and who handles his trade on such basis that he can expect to stay in business and stand back of the goods he has sold.

To accomplish this, the reliable dealer must base any allowance for an old set on the following factors: (1) The brand name, original price, age and condition of the old set, as they determine its actual cash value in the second-hand market or its salvage value; (2) The list price of the new set, as that determines its cost to the dealer and the amount of the margin that is available for investment in second-hand sets.

Those are the factors which received major consideration in the determination of the schedules of trade-in allowances, as published in this Blue Book.

Consumers, as prospective buyers of a new radio set, are reminded that an established radio retailer cannot afford to protect the interests of his customers and give them satisfactory attention if he is forced to meet or compete with the often ridiculous offers made by itinerant or irresponsible traders.

Dealers are reminded that in any retail business, where the acceptance of old units as part payment on new ones is of necessity an important factor in selling, the use of a reasonable schedule of trade-in allowance, when sponsored by a responsible authority, will avoid arguments, simplify and speed up selling, and at the same time build confidence and good will in the customer.

HOW TO USE THIS BLUE BOOK

- To determine the amount of a sound allowance you must know the name, year and model of the old set.
- Turn to the page showing the yearly models of the brand involved. If the old set is not marked with its model number, the style of cabinet and number of tubes might furnish the necessary clue.
- There are four columns of suggested allowances, that apply as follows:

Column A—If list price of new set is \$50 or less
Column B— " " " " " " \$51 to \$100
Column C— " " " " " " \$101 to \$150
Column D— " " " " " " over \$150

- Show your prospective customer this Blue Book, explain just how you have arrived at the amount of the allowance that you are offering.

IMPORTANT NOTICE. This Blue Book is presented by Radio Retailing solely as a contribution toward improvement of merchandising practices and in the hope that it will aid in building better relations between the public which buys radio sets, and the dealers who sell them.

The allowances as quoted are considered as fair and reasonable and fully justifiable in the interest of the consumer. The use of these schedules is strictly optional and in each case it will be voluntary on the part of each individual dealer. Radio Retailing does not represent any particular organization or group.

Year	Model	Cabinet	Tubes	A	B	C	D
ANSLEY							
1936	D-6	Midget Radio-Phono	5	\$3.00	\$5.00	\$7.00	\$9.00
	D-7	Port. Radio-Phono	5	3.50	6.00	8.00	12.00
	D-9	Port. Radio-Phono	6	4.00	7.00	10.00	14.00
	D-10	Table Radio-Phono	6	4.00	7.00	10.00	14.00
	U-10	Midget	6	3.00	5.00	7.00	9.00
	D-1	Port. Elect. Phono	4	3.50	6.00	8.00	12.00
	D-12	Port. Elect. Phono	6	4.00	7.00	10.00	14.00
	DA	Turn. and Pickup	5	3.00	5.00	7.00	9.00
	D-7	Port. Comb.	5	4.50	8.00	12.00	15.00
	D-9	Port. Comb.	7	5.00	9.00	15.00	18.00
	D-10	Table Comb.	7	5.00	9.00	15.00	18.00
	D-17	Console Comb.	7	6.00	10.00	18.00	22.50
	D-15	Auto Comb.	7	8.00	20.00	25.00	30.00
	D-1	Port. Phono	6	4.50	8.00	12.00	15.00
	D-17	Cons. Phono	6	5.00	9.00	15.00	18.00
	D-12	Port. Phono	6	5.00	9.00	15.00	18.00
	DA	Rec. Player	4	4.00	7.00	10.00	12.00
	B-1	Portable	4	4.00	7.00	10.00	12.00

Year	Model	Cabinet	Tubes	A	B	C	D
ATWATER KENT							
1933	387	Compact	7	\$1.00	\$1.25	\$2.00	\$3.00
	427-Q	Console	7	1.00	1.50	2.25	3.25
	217	Compact	7	1.00	1.25	2.00	3.00
	427	Console	7	1.00	1.50	2.25	3.25
	667	Console	7	1.00	1.50	2.25	3.25
	510	Console	10	1.00	1.75	2.50	3.75
	275	Compact	5	1.00	1.25	2.00	3.00
	310-T	Console H'b.	10	1.00	2.00	3.00	4.50
	310-J	Console L'b.	10	1.00	1.75	2.50	3.75
	711-T	Console H'b.	11	1.25	2.25	3.75	6.25
	711-R	Console	11	1.25	2.25	3.75	5.25
	711-J	Console L'b.	11	1.00	2.00	3.00	4.50
	808-A	Console	8	1.00	1.75	2.50	3.75
	165	Compact	5	1.00	1.25	2.00	3.00
	708	Compact	8	1.00	1.50	2.25	3.00
	217-D	Compact	7	1.00	1.25	2.00	3.05
	427-D	Console	7	1.00	1.50	2.25	3.25
	667-D	Console	7	1.00	1.50	2.25	3.25
	155	Chest	5	1.00	1.25	2.00	3.00
	555	Chest	5	1.00	1.25	2.00	3.00
	246	Chest	6	1.00	1.25	2.00	3.00
	266	Console	6	1.00	1.25	2.00	3.00
	808	Console	8	1.00	1.50	2.25	3.25
	448	Console	8	1.00	1.75	2.50	3.75
	499-Q	Console	9	1.00	1.75	2.50	3.75
	427-Q	Console	7	1.00	1.50	2.25	3.25
	387	Midget	7	1.00	1.25	2.00	3.00
1934	112-N	Console	12	1.75	3.00	5.25	7.50
	112-S	Console	12	1.75	3.00	5.25	7.50
	135	Midget	5	1.25	1.75	2.60	4.00
	145	Midget	5	1.00	1.50	2.25	3.50
	206	Midget	6	1.00	1.50	2.25	3.50
	206-D	Midget	6	1.25	1.75	2.60	4.00
	215-E	Console	5	1.25	1.75	2.60	4.00
	318-K	Console	8	1.25	2.00	3.00	4.50
	318-N	Console	8	1.25	2.00	3.00	4.50
	325-E	Console	5	1.00	1.50	2.25	3.50
	185	Midget	5	1.00	1.50	2.25	3.50
	185-A	Midget	5	1.00	1.50	2.25	3.50
	310	Console	10	1.25	2.00	3.00	4.50
	318C	Console	8	1.25	2.00	3.00	4.50
	525	Console	5	1.00	1.50	2.25	3.50
	788J	Console	8	1.25	2.00	3.00	4.50
	788R	Console	8	1.25	2.00	3.00	4.50
	376-E	Console	6	1.00	1.75	2.50	4.00
	376-DE	Console	6	1.00	1.75	2.50	4.00
	376-KX	Console	6	1.00	1.75	2.50	4.00
	447	Midget	7	1.00	1.75	2.50	4.00
	465-Q	Midget	5	1.00	1.50	2.25	3.50
	511-W	Console	11	1.75	3.00	5.25	7.50
	559-N	Console	9	1.50	2.25	3.75	5.25
	559-S	Console	9	1.50	2.50	4.50	6.00
	655-QE	Console	5	1.25	1.75	2.60	4.00
	768-Q	Midget	8	1.25	1.75	2.50	4.00
	825	Midget	5	1.00	1.75	2.25	3.50
	944	Midget	4	1.00	1.75	2.25	3.50
	978-QK	Console	8	1.25	2.00	3.00	4.50
1935	184	Compact	4	1.25	1.75	2.60	4.00
	545	Compact	5	1.25	1.75	2.50	4.00
	435	Compact	5	1.25	2.00	3.00	4.75
	856	Compact	6	1.25	2.00	3.00	4.75
	976	Console	6	1.50	2.25	3.75	5.50
	317	Console	7	1.50	2.25	3.75	5.50
	337	Compact	7	1.25	2.00	3.00	4.75
	328	Console	8	1.50	2.25	3.75	5.50
	649	Console	9	1.75	2.50	4.50	6.25
	509	Console	9	2.00	3.75	6.00	9.00
	810	Console	10	1.75	3.00	5.25	7.50
	412	Console	12	2.00	3.75	6.00	9.00
	237Q	Compact	7	1.50	2.25	3.75	5.50
	487QH	Console	7	1.50	2.25	3.75	5.50
	285Q	Console	5	1.25	2.00	3.00	4.75
	565Z	Console	5	1.50	2.25	3.75	5.50
	755	Midget	5	1.25	1.75	2.50	4.00
	854	Midget	4	1.25	1.75	2.50	4.00
	875F	Console	5	1.25	2.00	3.00	4.25
	286B	Console	6	1.25	2.00	3.00	4.75
	286C6	Console	6	1.50	2.75	3.75	5.50
	305Z	Midget	5	1.25	2.00	3.00	4.75
	318C	Console	8	1.50	2.25	3.75	5.50
	328L	Console	8	1.75	2.50	4.50	6.25
	356	Midget	6	1.25	2.00	3.00	4.75
	415Q	Midget	5	1.25	1.75	2.50	4.00

Year	Model	Cabinet	Tubes	A	B	C	D
	435T	Console	5	1.25	2.00	3.00	4.25
	475B	Console	5	1.25	2.00	3.00	4.25
	487C	Console	7	1.50	2.25	3.75	5.50
	735	Midget	5	1.25	1.75	2.50	4.00

AUDIOLA

1933	10731	Console	10	\$2.00	\$3.50	\$5.00	\$7.50
	8557	Console	8	2.00	3.50	5.00	7.50
	7558	Console	7	1.75	3.00	4.50	6.50
	1016	Table	7	2.00	3.50	5.00	7.50
	816	Compact	7	1.75	3.00	4.50	6.50
	716	Compact	7	1.50	2.50	4.00	6.00
	5WB	Compact	5	1.50	2.50	4.00	6.00
	4MB	Compact	4	1.50	2.50	4.00	6.00
	816-32	Compact	..	2.00	3.50	5.00	7.50
	520	Midget	..	1.50	2.50	4.00	6.00
	506	Midget	5	1.50	2.50	4.00	6.00
	516-V	Midget	5	1.50	2.50	4.00	6.00
	5W	Chest	5	1.50	2.50	4.00	6.00
	1054	Lowboy	10	1.75	3.00	4.50	6.50
	1068D	Highboy	10	2.00	3.50	5.00	7.50

AUTOCRAT

1933	80	Midget	5	\$1.50	\$2.50	\$4.00	\$6.00
	6	Midget	6	1.50	2.50	4.00	6.00
	682	Console	6	1.50	2.50	4.00	6.00
	840	Console	6	1.50	2.50	4.00	6.00
	4-DL/LW	Chest	4	1.50	2.50	4.00	6.00
1935	4C	Compact	4	2.25	3.50	5.00	8.00
	4M	Compact	4	2.25	3.50	5.00	8.00
	42	Compact	4	2.25	3.50	5.00	8.00
	40	Compact	4	2.25	3.50	5.00	8.00
	40M	Compact	4	2.25	3.50	5.00	8.00
	42-S-W	Compact	4	2.25	3.50	5.00	8.00
	40-S-W	Compact	4	2.25	3.50	5.00	8.00
	45-S-W	Compact	5	2.25	3.50	5.00	8.00
	52	Compact	5	2.25	3.50	5.00	8.00
	45	Compact	5	2.25	3.50	5.00	8.00
	26C-UL	Compact	6	2.25	3.50	5.00	8.00
	66-US	Compact	6	2.25	3.50	5.00	8.00
	61-UL	Table	6	2.25	3.50	5.00	8.00
	661-US	Table	6	2.25	3.50	5.00	8.00
	16-AC-S	Table	6	2.25	3.50	5.00	8.00
	26-AC-L	Table	6	2.25	3.50	5.00	8.00
	51-UL	Table	5	2.25	3.50	5.00	8.00
	25-AC-L	Table	5	2.25	3.50	5.00	8.00
	BA-41	Table	6	2.50	4.00	6.00	9.50
	900	Console	4	2.50	4.00	6.00	9.50
	910	Phono-Comb	5	3.00	4.50	7.50	11.00
	900	Table	5	2.50	4.00	6.00	9.50
1936	4C	Compact	4	3.00	5.00	7.00	9.00
	4M	Compact	4	3.00	5.00	7.00	9.00
	42	Compact	4	3.00	5.00	7.00	9.00
	40	Compact	4	3.00	5.00	7.00	9.00
	40M	Compact	4	3.00	5.00	7.00	9.00
	42-S-W	Compact	4	3.00	5.00	7.00	9.00
	40-S-W	Compact	4	3.00	5.00	7.00	9.00
	52-S-W	Compact	5	3.00	5.00	7.00	9.00
	45-S-W	Compact	5	3.00	5.00	7.00	9.00
	52	Compact	5	3.00	5.00	7.00	9.00
	45	Compact	5	3.00	5.00	7.00	9.00
	260 UL	Compact	6	3.00	5.00	7.00	9.00
	86US	Compact	6	3.00	5.00	7.00	9.00
	61UL	Table	6	3.00	5.00	7.00	9.00
	681US	Table	6	3.00	5.00	7.00	9.00
	16-AC-S	Table	6	3.00	5.00	7.00	9.00
	26-AC-L	Table	6	3.00	5.00	7.00	9.00
	51-UL	Table	5	3.00	5.00	7.00	9.00
	25-AC-L	Table	5	3.00	5.00	7.00	9.00
	BA-41	Table	6	3.50	6.00	8.00	12.00
	900	Console	4	3.50	6.00	8.00	12.00
	910	Phono-Comb	5	4.00	7.00	10.00	14.00
	900	Table	5	3.50	6.00	8.00	12.00

BELMONT

1933	425	Midget	4	\$1.50	\$2.50	\$4.00	\$6.00
	525	Midget	5	1.50	2.50	4.00	6.00
	530	Midget	5	1.50	2.50	4.00	6.00
	545	Midget	5	1.50	2.50	4.00	6.00
	625	Midget	6	1.50	2.50	4.00	6.00
1934	575	Table	5	2.00	3.00	4.50	7.00
	775T	Midget	7	2.25	3.50	5.00	8.00
	675E	Console	6	2.25	3.50	5.00	8.00
	675	Table	6	2.00	3.00	4.50	7.00
	650	..	6	2.00	3.00	4.50	7.00
	540	..	5	2.00	3.00	4.50	7.00
	675-E	Console	6	2.25	3.50	5.00	8.00
1935	401M	Table	4	2.25	3.50	5.00	8.00
	404	Table	4	2.25	3.50	5.00	8.00
	540	Midget	5	2.25	3.50	5.00	8.00
	585	Table	5	2.25	3.50	5.00	8.00
	777T	Table	7	2.25	3.50	5.00	8.00
	777L	Console	7	2.50	4.00	6.00	9.50
	1077	Console	10	3.00	4.50	7.50	11.00
	585R	Midget	5	2.25	3.50	5.00	8.00
	777T	Midget	7	2.25	3.50	5.00	8.00
	777K or L	Console	7	2.50	4.00	6.00	9.50
	1077	Console	10	3.00	4.50	7.50	11.00
1936	401M	Table	4	3.00	5.00	7.00	9.00
	404	Table	4	3.00	5.00	7.00	9.00
	540	Midget	5	3.00	5.00	7.00	9.00
	585	Table	5	3.00	5.00	7.00	9.00
	777T	Table	7	3.00	5.00	7.00	9.00
	777L	Console	7	3.50	6.00	8.00	12.00
	1077	Console	10	4.00	7.00	10.00	14.00
1937	401-M	Mantel	4	4.00	7.00	10.00	14.00

Year	Model	Cabinet	Tubes	A	B	C	D
	522-C	Mantel	5	4.00	7.00	10.00	12.00
	586-J	Mantel	5	4.00	7.00	10.00	12.00
	601-F	Mantel	5	4.00	7.00	10.00	12.00
	686-B	Mantel	6	4.00	7.00	10.00	12.00
	778-A	Mantel	4	4.00	7.00	10.00	12.00
	778-M	Console	5 or 8	4.50	8.00	12.00	15.00
	1079-N	Console	10	5.00	9.00	15.00	18.00

CAPEHART

1936	404-DR	Auto. Phono-Comb	21	\$7.00	\$15.00	\$20.00	\$25.00
	405-DR	Auto. Phono-Comb	21	7.00	15.00	20.00	25.00
	406-DR	Auto. Phono-Comb	21	7.00	15.00	20.00	25.00
	404-D	Auto. Phono-Comb	21	7.00	15.00	20.00	25.00
	405-D	Auto. Phono-Comb	21	7.00	15.00	20.00	25.00
	406-D	Auto. Phono-Comb	21	7.00	15.00	20.00	25.00
	302-D	Auto. Phono-Comb	17	7.00	15.00	20.00	25.00
	202	Auto. Phono-Comb	9	7.00	15.00	20.00	25.00

CASE

1936	500	Mantel	5	\$3.00	\$5.00	\$7.00	\$9.00
	501	Console	5	3.00	5.00	7.00	9.00
	700	Mantel	7	3.50	6.00	8.00	12.00
	701	Console	7	3.50	6.00	8.00	12.00
	1001	Console	10	4.00	7.00	10.00	14.00
	1003	Console	10	5.00	8.00	12.00	19.00
	1000	Mantel	10	4.00	7.00	10.00	14.00

CASE-HALLICRAFTERS

1937	601	Console	6	\$4.00	\$7.00	\$10.00	\$12.00
	701	Console	7	4.50	8.00	12.00	15.00
	801	Console	8	4.50	8.00	12.00	15.00
	802	Console	8	5.00	9.00	15.00	18.00
	1001	Console	10	6.00	10.00	18.00	22.50
	1101	Console	11	6.00	10.00	18.00	22.50
	1102	Console	11	7.00	15.00	20.00	25.00
	53	Table	5	4.00	7.00	10.00	12.00

CLIMAX

1937	7	Midget	4	\$4.00	\$7.00	\$10.00	\$12.00
	10	Midget	4	4.00	7.00	10.00	12.00
	12	Midget	4	4.00	7.00	10.00	12.00
	10	Midget	4	4.00	7.00	10.00	12.00
	30	Midget	5	4.00	7.00	10.00	12.00
	40	Midget	6	4.00	7.00	10.00	12.00
	41	Midget	6	4.00	7.00	10.00	12.00
	35	Midget	7	4.00	7.00	10.00	12.00
	35A	Midget	7	4.00	7.00	10.00	12.00
	90	Table	6	4.00	7.00	10.00	12.00
	91	Table	6	4.00	7.00	10.00	12.00
	92E	Table	7	4.00	7.00	10.00	12.00
	92E238	Console	7	4.50	8.00	12.00	15.00

CONTINENTAL (Admiral)

1936	ML477	Table	7	\$3.00	\$5.00	\$7.00	\$9.00
	ML266	Table	6	3.00	5.00	7.00	9.00
	X140	Table	5	3.00	5.00	7.00	9.00
	X141	Table	5	3.00	5.00	7.00	9.00
	MX241	Table	6	3.00	5.00	7.00	9.00

Year	Model	Cabinet	Tubes	A	B	C	D
CROSLEY 1933 (continued)							
	Repose, Jr.	Midg. Cons.	4	1.50	2.50	4.00	6.00
	Repose	Console	2	1.50	2.50	4.00	6.00
	Fire-Screen	Screen	2	1.50	2.50	4.00	6.00
	Bat. 5	Midg.	5	1.50	2.50	4.00	6.00
	Bat. 5 Lowb	Lowboy	5	1.50	2.50	4.00	6.00
	Bat. 8	Compact	8	1.50	2.50	4.00	6.00
	Bat. 9 Lowb	Lowboy	8	1.75	3.00	4.50	6.50
	32-DC	Table	5	1.50	2.50	4.00	6.00
	32-DC Lowb	Lowboy	5	1.75	3.00	4.50	6.50
	Ten.	Compact	3	1.50	2.50	4.00	6.00
	40	Midg.	4	1.50	2.50	4.00	6.00
	60	Midg.	6	1.50	2.50	4.00	6.00
	60	Lowboy	6	1.50	2.50	4.00	6.00
	Totem	Portable	4	1.50	2.50	4.00	6.00
	Totem DeLuxe	Chest	4	1.50	2.50	4.00	6.00
	148 Fiver-D	Midg.	5	1.50	2.50	4.00	6.00
	154 Leader-D	Midg.	4	1.50	2.50	4.00	6.00
	157	Midg.	10	1.50	2.50	4.00	6.00
	160 Twelve	Midg.	12	1.50	2.50	4.00	6.00
	160 Twelve	Lowboy	12	1.75	3.00	4.50	6.50
	Dual 10						
	Moderna	Console	10	1.75	3.00	4.50	6.50
	Dual 12						
	Moderna	Console	12	2.00	3.50	5.00	7.50
1934	814FA	Midg.	8	2.50	4.00	6.00	9.00
	814QB	Lowboy	8	2.50	4.00	6.00	9.00
	714GA	Midg.	7	2.25	3.50	5.00	8.00
	714NA	Console	7	2.50	4.00	6.00	9.00
	614EH	Midg.	6	2.00	3.00	4.50	7.00
	614PG	Console	6	2.25	3.50	5.00	8.00
	8AF	Midg.	8	2.25	3.50	5.00	8.00
	8AF	Console	8	2.25	3.50	5.00	8.00
	80AW	Lowboy	8	2.50	4.00	6.00	9.00
	80	Midg.	8	2.50	4.00	6.00	9.00
	72AF	Midg.	7	2.25	3.50	5.00	8.00
	72LB	Lowboy	7	2.50	4.00	6.00	9.00
	61DL-LB	Lowboy	6	2.25	3.50	5.00	8.00
	61AF	Midg.	6	2.00	3.00	4.50	7.00
	61LB	Lowboy	6	2.25	3.50	5.00	8.00
	60LB	Lowboy	6	2.00	3.00	4.50	7.00
	51	Compact	5	2.00	3.00	4.50	7.00
	50AF	Lowboy	5	2.25	3.50	5.00	8.00
	50AF	Compact	5	2.00	3.00	4.50	7.00
	5DL-LB	Lowboy	5	2.00	3.00	4.50	7.00
	5DL	Midg.	5	2.00	3.00	4.50	7.00
	140	Console	14	2.50	4.00	6.00	9.00
	4	Midg. (Battery)	4	2.00	3.00	4.50	7.00
	5	Midg. (Battery)	5	2.00	3.00	4.50	7.00
	8	Console (Battery)	8	2.25	3.50	5.00	8.00
	41	Compact	4	2.00	3.00	4.50	7.00
	41DL	Compact	4	2.00	3.00	4.50	7.00
	64MD	Lowboy	6	2.25	3.50	5.00	8.00
	70	Midg.	7	2.00	3.00	4.50	7.00
	10-LB	Lowboy	10	2.50	4.00	6.00	9.00
	10	Console	10	2.25	3.50	5.00	8.00
	12	Console	12	2.50	4.00	6.00	9.00
	70-LB	Lowboy	7	2.25	3.50	5.00	8.00
	Fiver	Midg.	5	2.00	3.00	4.50	7.00
	Fiver Jr.	Midg.	5	2.00	3.00	4.50	7.00
	Fiver Jr.	Lowboy	5	2.00	3.00	4.50	7.00
	52	Compact	5	2.00	3.00	4.50	7.00
	4C1	Portable	4	2.00	3.00	4.50	7.00
	5M3	Table	5	2.00	3.00	4.50	7.00
	5V1	Table Console	5	2.00	3.00	4.50	7.00
	5C2	Portable	5	2.00	3.00	4.50	7.00
	5H1	Table	5	2.00	3.00	4.50	7.00
		Console	5	2.25	3.50	5.00	8.00
	6H2	Table	6	2.00	3.00	4.50	7.00
		Console	6	2.25	3.50	5.00	8.00
	7V2	Table	7	2.00	3.00	4.50	7.00
		Console	7	2.25	3.50	5.00	8.00
	7H2	Table	7	2.25	3.50	5.00	8.00
		Console	7	2.50	4.00	6.00	9.00
	8H1	Table	8	2.50	4.00	6.00	9.00
		Console	8	2.50	4.00	6.00	9.00
	10P3	Console	10	2.50	4.00	6.00	9.00
	5B2	Table	5	2.00	3.00	4.50	7.00
		Console	5	2.00	3.00	4.50	7.00
	8B2	Table	8	2.00	3.00	4.50	7.00
		Console	8	2.25	3.50	5.00	8.00
1935	425-H New Travo	Portable	4	2.25	3.50	5.00	8.00
	515-AC Fiver	Table	5	2.25	3.50	5.00	8.00
	525-B Galleon	Table	5	2.25	3.50	5.00	8.00
	505-MK Galleon	Console	5	2.25	3.50	5.00	8.00
	1014	Midg.	10	3.00	4.50	7.50	11.00
	1014	Lowboy	10	3.00	4.50	7.50	11.00
	545-AD Privateer	Table	5	2.25	3.50	5.00	8.00
	615-C Cruiser	Table	6	2.25	3.50	5.00	8.00
	617-M Cruiser	Console	6	2.50	4.00	6.00	9.50
	635-C Buccaneer	Table	6	2.50	4.00	6.00	9.50
	635-M Buccaneer	Console	6	2.50	4.00	6.00	9.50
	655-C Olympia	Table	6	2.25	3.50	5.00	8.00
	655-M Olympia	Console	6	2.50	4.00	6.00	9.50
	715-D Corsair	Table	7	2.50	4.00	6.00	9.50
	855-N Merrimac	Table	8	2.50	4.00	6.00	9.50
	855-D Merrimac	Table	8	3.50	6.00	8.00	12.00
	855-N Merrimac	Console	8	4.00	7.00	10.00	14.00
	725-F Viking	Table	7	3.50	6.00	8.00	12.00
	725-P Viking	Console	7	4.00	7.00	10.00	14.00
	865-F Monitor	Table	8	4.00	7.00	10.00	14.00
	865-P Monitor	Console	8	4.00	7.00	10.00	14.00
	915-EK Clipper	Table	8	4.00	7.00	10.00	14.00
	915-RA Clipper	Console	8	4.00	7.00	10.00	14.00
	1055-EK Const.	Table	10	4.00	7.00	10.00	14.00
	1055-EK Const.	Console	10	5.00	8.00	12.00	18.00
	415-AA	Table	4	3.00	5.00	7.00	9.00
	555-KC	Table	5	3.00	5.00	7.00	9.00
	555-SA	Console	5	3.00	5.00	7.00	9.00
	625-E	Table	6	3.50	6.00	8.00	12.00
	625-NB	Console	6	4.00	7.00	10.00	14.00
	815-EC	Table	8	3.50	6.00	8.00	12.00
	815-NC	Console	8	3.50	6.00	8.00	12.00
	645-CB	Table	6	3.00	5.00	7.00	9.00
	645-MB	Console	6	3.50	6.00	8.00	12.00
1937	Fiver	Table	5	4.00	7.00	10.00	12.00
	250	Table	5	4.00	7.00	10.00	12.00
	295	Table	5	4.00	7.00	10.00	12.00
	251	Portable	5	4.00	7.00	10.00	12.00
	299	Portable	5	4.00	7.00	10.00	12.00
	349	Table	5	4.00	7.00	10.00	12.00
	395	Table	5	4.00	7.00	10.00	12.00
	499	Console	5	4.00	7.00	10.00	12.00
	449	Table	6	4.00	7.00	10.00	12.00
	495	Table	6	4.00	7.00	10.00	12.00
	699	Console	6	4.50	8.00	12.00	15.00
	899	Console	8	5.00	9.00	15.00	18.00
	117	Console	9	6.00	10.00	18.00	22.50
	137	Console	10	7.00	15.00	20.00	25.00
	167	Console	13	8.00	20.00	25.00	30.00
	46	Table	4	4.00	7.00	10.00	12.00
	B-375	Table	4	4.00	7.00	10.00	12.00
	B-445	Table	5	4.00	7.00	10.00	12.00
	B-675	Console	5	4.50	8.00	12.00	15.00
	B-695	Table	6	4.50	8.00	12.00	15.00
	R-899	Console	8	5.00	9.00	15.00	18.00
	Fiver	Table	5	4.00	7.00	10.00	12.00
	B-250	Table	5	4.00	7.00	10.00	12.00
	B-345	Table	5	4.00	7.00	10.00	12.00
	B-425	Table	5	4.00	7.00	10.00	12.00
	B-499	Console	5	4.00	7.00	10.00	12.00
	B-495	Table	6	4.00	7.00	10.00	12.00
	B-599	Table	6	4.50	8.00	12.00	15.00
	B-699	Console	6	4.50	8.00	12.00	15.00
	Batt. 8	Console	8	4.50	8.00	12.00	15.00
	Batt. 8	Table	8	4.50	8.00	12.00	15.00
	6	Table	6	4.00	7.00	10.00	12.00
	Con. 6	Console	6	4.50	8.00	12.00	15.00
EMERSON							
1933	420	Compact	5	\$1.50	\$2.50	\$4.00	\$6.00
	410	Compact	4	1.50	2.50	4.00	6.00
	250-AW	Compact	5	1.50	2.50	4.00	6.00
	33-AW	Compact	5	1.50	2.50	4.00	6.00
	30-AW	Compact	5	1.50	2.50	4.00	6.00
	321-AW	Compact	5	1.50	2.50	4.00	6.00
	350-AW	Compact	5	1.50	2.50	4.00	6.00
	35	Midg.	6	1.50	2.50	4.00	6.00
	375	Compact	6	1.50	2.50	4.00	6.00
	20A	Compact	4	1.50	2.50	4.00	6.00
	250-LW	Compact	5	1.50	2.50	4.00	6.00
	25A	Compact	4	1.50	2.50	4.00	6.00
	33-LW	Compact	5	1.50	2.50	4.00	6.00

Year	Model	Cabinet	Tubes	A	B	C	D	Year	Model	Cabinet	Tubes	A	B	C	D	
	300	Compact	5	1.50	2.50	4.00	6.00		108-LW	Compact	5	4.00	7.00	10.00	12.00	
	30-LW	Compact	5	1.50	2.50	4.00	6.00		L-117-LW	Table	5	4.00	7.00	10.00	12.00	
	409	Midget	4	1.50	2.50	4.00	6.00		L-122LW	Table	5	4.00	7.00	10.00	12.00	
	321-LW	Compact	5	1.50	2.50	4.00	6.00		L-141-LW	Table	5	4.00	7.00	10.00	12.00	
	411	Midget	4	1.50	2.50	4.00	6.00		F-133-LW	Table	6	4.00	7.00	10.00	12.00	
	350-LW	Compact	5	1.50	2.50	4.00	6.00		D-140-LW	Table	10	5.00	9.00	15.00	18.00	
	M-755	Midget	7	1.50	2.50	4.00	6.00		L-135-LW	Console	5	4.00	7.00	10.00	12.00	
	S-755	Midget	7	1.75	3.00	4.50	6.50		C-138-LW	Console	8	5.00	9.00	15.00	18.00	
	L-755	Midget	7	1.75	3.00	4.50	6.50		C-142-LW	Console	8	5.00	9.00	15.00	18.00	
	40	Consolette	6	1.50	2.50	4.00	6.00		D-139-LW	Console	10	6.00	10.00	18.00	22.50	
	50	Consolette	7	1.75	3.00	4.50	6.50		L-143-LW	Phono. Comb.	5	4.50	8.00	12.00	15.00	
	50-S	Consolette	7	1.75	3.00	4.50	6.50		L-144-LW	Phono. Comb.	5	4.50	8.00	12.00	15.00	
	50-L	Consolette	7	1.75	3.00	4.50	6.50		C-134-LW	Table	8	4.50	8.00	12.00	15.00	
1934	416	Compact	4	2.00	3.00	4.50	7.00		C-145-LW	Phono. Comb.	8	8.00	20.00	25.00	30.00	
	23	Compact	4	2.00	3.00	4.50	7.00									
	28	Up. Table	5	2.00	3.00	4.50	7.00		ERLA							
	31-AW	Compact	5	2.00	3.00	4.50	7.00		1933	72	Table	..	\$2.00	\$3.50	\$5.00	\$7.50
	19	Compact	4	2.00	3.00	4.50	7.00		73	Console	..	2.00	3.50	5.00	7.50	
	26	Midget	4	2.00	3.00	4.50	7.00		1934	4143	Table	4	2.00	3.00	4.50	7.00
	32	Compact	5	2.00	3.00	4.50	7.00		4536	Table	6	2.00	3.00	4.50	7.00	
	39	Midget	5	2.00	3.00	4.50	7.00		5211	Table	5	2.00	3.00	4.50	7.00	
	49	Midget	6	2.00	3.00	4.50	7.00		5721	Table	5	2.00	3.00	4.50	7.00	
	50	Console	5	2.25	4.00	6.00	9.00		6315	Table	6	2.25	3.50	5.00	8.00	
	59	Console	5	2.25	3.50	5.00	8.00		6317	Console	6	2.50	4.00	6.00	9.00	
	69	Console	6	2.25	3.50	5.00	8.00		6323	Table	6	2.25	3.50	5.00	8.00	
	70	Console	7	2.25	3.50	5.00	8.00		6241	Table	6	2.00	3.00	4.50	7.00	
	77	Console	7	2.25	3.50	5.00	8.00		6232	Console	6	2.25	3.50	5.00	8.00	
	100	Console	7	2.50	4.00	6.00	9.00		7741	Table	7	2.00	3.00	4.50	7.00	
	38	Table	6	2.00	3.00	4.50	7.00		7732	Console	7	2.25	3.50	5.00	8.00	
	45	Up. Table	6	2.00	3.00	4.50	7.00		5628	Table	5	2.00	3.00	4.50	7.00	
	71	Up. Table	7	2.25	3.50	5.00	8.00		1937	60BT	Table	4	4.00	7.00	10.00	12.00
	770	Console	6	2.50	4.00	6.00	9.00		60BC	Console	4	4.00	7.00	10.00	12.00	
	38-LW	Up. Table	6	2.00	3.00	4.50	7.00		65BT	Table	5	4.00	7.00	10.00	12.00	
	45-LW	Up. Table	6	2.00	3.00	4.50	7.00		65BC	Console	5	4.50	8.00	12.00	15.00	
	450	Up. Table	6	2.00	3.00	4.50	7.00		63BT	Table	4	4.00	7.00	10.00	12.00	
1935	109	Compact	4	2.25	3.50	5.00	8.00		63BC	Console	4	4.00	7.00	10.00	12.00	
	106	Compact	6	2.25	3.50	5.00	8.00		68BT	Table	6	4.00	7.00	10.00	12.00	
	107	Table	6	2.25	3.50	5.00	8.00		68BC	Console	6	4.50	8.00	12.00	15.00	
	111	Table	6	2.25	3.50	5.00	8.00		68BTE	Table	7	4.50	8.00	12.00	15.00	
	36	Table	5	2.25	3.50	5.00	8.00		68BCE	Console	7	4.50	8.00	12.00	15.00	
	108	Compact	5	2.25	3.50	5.00	8.00		66BT	Table	8	4.50	8.00	12.00	15.00	
	110	Compact	5	2.25	3.50	5.00	8.00		66BC	Console	8	5.00	9.00	15.00	18.00	
	34-C	Table	6	2.25	3.50	5.00	8.00		67LT	Table	6	4.00	7.00	10.00	12.00	
	104	Table	8	2.50	4.00	6.00	9.50		67LC	Console	6	4.50	8.00	12.00	15.00	
	105	Console	11	3.50	6.00	10.50	15.00		ESPEY							
	101	Console	6	2.50	4.00	6.00	9.50		1936	545	Midget	4	\$3.00	\$5.00	\$7.00	\$9.00
	101-U	Console	6	2.50	4.00	6.00	9.50		553	Table	5	3.00	5.00	7.00	9.00	
	102	Console	7	3.00	4.50	7.50	11.00		555	Table	5	3.00	5.00	7.00	9.00	
	101-F7	Console	7	2.50	4.00	6.00	9.50		560	Chassis, Tubes, Speak.	..	3.00	5.00	7.00	9.00	
	103	Table	5	2.25	3.50	5.00	8.00		564	Table	6	3.50	6.00	8.00	12.00	
	34-F7	Table	7	2.25	3.50	5.00	8.00		505	Table	6	3.50	6.00	8.00	12.00	
	102-LW	Console	8	3.00	4.50	7.50	11.00		453	Table	5	3.50	6.00	8.00	12.00	
	105-LW	Console	11	3.50	6.00	10.50	15.00		5191	Chassis & Speak.	19	3.50	6.00	8.00	12.00	
	104-LW	Table	8	2.50	4.00	6.00	9.50		1937	641	Table	4	4.00	7.00	10.00	12.00
	107-LW	Table	6	2.25	3.50	5.00	8.00		671	Portable	6	4.50	8.00	12.00	15.00	
	108-LW	Compact	5	2.25	3.50	5.00	8.00		7A	Phono. Comb.	6	4.50	8.00	12.00	15.00	
	110-LW	Compact	5	2.25	3.50	5.00	8.00		7B	Phono. Comb.	7	6.00	10.00	18.00	22.50	
	111-LW	Compact	6	2.25	3.50	5.00	8.00		7C	Auto. Comb.	11	8.00	20.00	25.00	30.00	
1936	109	Compact	4	3.00	5.00	7.00	9.00		7D	Auto. Comb.	11	8.00	20.00	25.00	30.00	
	106	Compact	6	3.00	5.00	7.00	9.00		FADA							
	107	Table	6	3.00	5.00	7.00	9.00		1933	141	Compact	6	\$1.75	\$3.00	\$4.50	\$6.50
	111	Table	6	3.00	5.00	7.00	9.00		131	Console	8	1.75	3.00	4.50	6.50	
	36	Table	5	3.00	5.00	7.00	9.00		132	Console	6	1.75	3.00	4.50	6.50	
	108	Compact	5	3.00	5.00	7.00	9.00		133	Console	8	2.00	3.50	5.00	7.50	
	110	Compact	5	3.00	5.00	7.00	9.00		134	Console	6	2.00	3.50	5.00	7.50	
	34-C	Table	6	3.00	5.00	7.00	9.00		135	Console	6	2.50	4.50	7.50	10.50	
	104	Table	8	3.50	6.00	8.00	12.00		106	Midget	5	1.50	2.50	4.00	6.00	
	105	Console	11	6.00	10.00	15.00	20.00		107	Midget	5	1.50	2.50	4.00	6.00	
	101	Console	6	3.50	6.00	8.00	12.00		112	Carrying	5	1.75	3.00	4.50	6.50	
	101-U	Console	6	3.50	6.00	8.00	12.00		103	Compact	4	1.50	2.50	4.00	6.00	
	102	Console	8	4.00	7.00	10.00	14.00		98	Lowboy	7	1.75	3.00	4.50	6.50	
	101-F7	Console	7	3.50	6.00	8.00	12.00		1934	1462D	Compact	6	2.00	3.00	4.50	7.00
	103	Table	2 or 4	3.00	5.00	7.00	9.00		1470E	Console	7	2.50	4.00	6.00	9.00	
	34-F7	Table	7	3.00	5.00	7.00	9.00		1490C	Midget	8	2.25	3.50	5.00	8.00	
	102-LW	Console	8	4.00	7.00	10.00	14.00		1470C	Midget	7	2.25	3.50	5.00	8.00	
	105-LW	Console	11	6.00	10.00	15.00	20.00		1450F	Console	5	2.25	3.50	5.00	8.00	
	104-LW	Table	8	3.50	6.00	8.00	12.00		1452F	Console	5	2.25	3.50	5.00	8.00	
	107-LW	Table	6	3.00	5.00	7.00	9.00		126	Midget	..	2.25	3.50	5.00	8.00	
	108-LW	Compact	5	3.00	5.00	7.00	9.00		127	Console	..	3.50	6.00	8.00	12.00	
	110-LW	Compact	5	3.00	5.00	7.00	9.00		128	Console	..	2.50	4.00	6.00	9.00	
	111-LW	Compact	6	3.00	5.00	7.00	9.00		1450A	Midget	..	2.00	3.00	4.50	7.00	
1937	126	Compact	5	4.00	7.00	10.00	12.00		1452A	Midget	5	2.00	3.00	4.50	7.00	
	A-132	Compact	6	4.00	7.00	10.00	12.00		150T	Midget	6	2.25	3.50	5.00	8.00	
	A-130	Compact	6	4.00	7.00	10.00	12.00		150C	Console	5	2.50</				

Year	Model	Cabinet	Tubes	A	B	C	D
FADA 1935 (continued)							
	1462D	Compact	6	2.25	3.50	5.00	8.00
1936	150C	Console	5	3.50	6.00	8.00	12.00
	150T	Table	5	3.00	5.00	7.00	9.00
	155	Compact	5	3.00	5.00	7.00	9.00
	157	Compact	5	3.00	5.00	7.00	9.00
	160C	Console	6	3.50	6.00	8.00	12.00
	160T	Table	6	3.50	6.00	8.00	12.00
	170C	Console	7	4.00	7.00	10.00	14.00
	170CK	Console	7	4.00	7.00	10.00	14.00
	170T	Table	7	3.50	6.00	8.00	12.00
	190C	Console	9	5.00	8.00	12.00	18.00
	190CK	Console	9	6.00	10.00	15.00	20.00
	190T	Table	9	4.00	7.00	10.00	14.00
	192C	Console	9	4.00	7.00	10.00	14.00
	192CK	Console	9	5.00	8.00	12.00	18.00
	192T	Table	9	3.50	6.00	8.00	12.00
	1462D	Compact	6	3.00	5.00	7.00	9.00
1937	162T	Table	6	4.50	8.00	12.00	15.00
	162C	Console	6	5.00	9.00	15.00	18.00
	163T	Table	6	4.50	8.00	12.00	15.00
	163C	Console	6	5.00	9.00	15.00	18.00
	164T	Table	7	4.50	8.00	12.00	15.00
	164C	Console	7	5.00	9.00	15.00	18.00
	172	Table	6	4.00	7.00	10.00	12.00
	211T	Table	11	6.00	10.00	15.00	18.00
	211C	Console	11	7.00	15.00	20.00	25.00
	211CK	Console	11	7.00	15.00	20.00	25.00
	212T	Table	12	6.00	10.00	15.00	20.00
	212C	Console	12	7.00	15.00	20.00	25.00
	212CK	Console	12	8.00	20.00	25.00	30.00
	216T	Table	16	6.00	10.00	15.00	20.00
	216C	Console	16	7.00	15.00	20.00	25.00
	216CK	Console	16	8.00	20.00	25.00	30.00
	250T	Table	5	4.00	7.00	10.00	12.00
	250C	Console	5	4.00	7.00	10.00	12.00
	250W	Table	5	4.00	7.00	10.00	12.00
	260B	Table	6	4.00	7.00	10.00	12.00
	260T	Table	6	4.00	7.00	10.00	12.00
	260G	Table	6	4.00	7.00	10.00	12.00
	260D	Table	6	4.00	7.00	10.00	12.00
	262W	Table	6	4.00	7.00	10.00	12.00
	262D	Table	6	4.00	7.00	10.00	12.00
	262G	Table	6	4.00	7.00	10.00	12.00
	262T	Table	6	4.00	7.00	10.00	12.00
	270T	Table	7	4.50	8.00	12.00	15.00
	270C	Console	7	5.00	9.00	15.00	18.00
	270CK	Console	7	5.00	9.00	15.00	18.00
	272W	Table	7	4.00	7.00	10.00	12.00
	280T	Table	8	4.50	8.00	12.00	15.00
	280C	Console	8	4.50	8.00	12.00	15.00
	290T	Table	9	5.00	9.00	15.00	18.00
	290C	Console	9	6.00	10.00	18.00	22.50
	290CK	Console	9	7.00	15.00	20.00	25.00
FAIRBANKS-MORSE							
1934	5212	Table	5	\$2.00	\$3.00	\$4.50	\$7.00
	5241	Console	5	2.00	3.00	4.50	7.00
	5312	Table	5	2.00	3.00	4.50	7.00
	5341	Console	5	2.25	3.50	5.00	8.00
	5106	Table	5	2.00	3.00	4.50	7.00
	5112	Table	5	2.00	3.00	4.50	7.00
	7014	Table	7	2.25	3.50	5.00	8.00
	7040	Console	7	2.50	4.00	6.00	9.00
	814	Table	8	2.25	3.50	5.00	8.00
	841	Console	8	2.25	3.50	5.00	8.00
	1014	Table	10	2.25	3.50	5.00	8.00
	1040	Console	10	2.50	4.00	6.00	9.00
	516	Table	5	2.00	3.00	4.50	7.00
	541	Console	5	2.25	3.50	5.00	8.00
	816	Table	8	2.50	4.00	6.00	9.00
	840	Console	8	2.50	4.00	6.00	9.00
1935	4015	Table	4	2.25	3.50	5.00	8.00
	5619	Table	5	2.25	3.50	5.00	8.00
	5416	Table	5	2.25	3.50	5.00	8.00
	6317	Table	6	2.50	4.00	6.00	9.50
	8218	Table	8	3.00	4.50	7.50	11.00
	4115-B	Table	4	2.25	3.50	5.00	8.00
	6416-B	Table	6	2.25	3.50	5.00	8.00
	5645-A	Console	5	2.25	3.50	5.00	8.00
	5445	Console	5	2.50	4.00	6.00	9.50
	6346	Console	6	3.00	4.50	7.50	11.00
	8247	Console	8	3.00	4.50	7.50	11.00
	8248	Console	8	3.25	5.00	9.00	12.50
	10049	Console	10	3.50	6.00	10.50	15.00
	10050	Console	10	4.00	7.50	12.00	18.00
	6445-B	Console	6	2.50	4.00	6.00	9.50
	5107	Midget	5	2.50	4.00	6.00	9.50
	5112	Midget	5	2.50	4.00	6.00	9.50
	5143	Console	5	2.25	3.50	5.00	8.00
	5312	Midget	5	2.25	3.50	5.00	8.00
	5341	Console	5	2.50	4.00	6.00	9.50
	6010	Midget	6	2.25	3.50	5.00	8.00
	6044	Console	6	2.50	4.00	6.00	9.50
	6616	Midget	6	2.50	4.00	6.00	9.50
	6645	Console	6	2.50	4.00	6.00	9.50
	7042	Console	7	3.00	4.50	7.50	11.00
	7117	Midget	7	2.50	4.00	6.00	9.50
	7146	Console	7	3.00	4.50	7.50	11.00
	8110	Midget	8	2.25	3.50	5.00	8.00
	8141	Console	8	2.50	4.00	6.00	9.50
	9018	Midget	9	3.00	4.50	7.50	11.00
	9047	Console	9	3.25	5.00	9.00	12.50
	9048	Console	9	3.25	5.00	9.00	12.50
	11049	Console	11	4.00	7.50	12.00	18.00
	11050	Console	11	4.00	7.50	12.00	18.00
1936	4015	Table	4	3.00	5.00	7.00	9.00
	5819	Table	5	3.00	5.00	7.00	9.00
	5416	Table	5	3.00	5.00	7.00	9.00
	6317	Table	6	3.50	6.00	8.00	12.00

Year	Model	Cabinet	Tubes	A	B	C	D
	8218	Table	8	4.00	7.00	10.00	14.00
	4115-B	Table	4	3.00	5.00	7.00	9.00
	6416-B	Table	6	3.00	5.00	7.00	9.00
	5645-A	Console	5	3.00	5.00	7.00	9.00
	5445	Console	5	3.50	6.00	8.00	12.00
	6346	Console	6	4.00	7.00	10.00	14.00
	8247	Console	8	4.00	7.00	10.00	14.00
	8248	Console	8	5.00	8.00	12.00	18.00
	10049	Console	10	6.00	10.00	15.00	20.00
	10050	Console	10	7.00	15.00	20.00	25.00
	6445-B	Console	6	3.50	6.00	8.00	12.00
1937	57-T-O	Table	5	4.00	7.00	10.00	12.00
	58-T-1	Table	5	4.00	7.00	10.00	12.00
	72-C-2	Console	7	4.50	8.00	12.00	15.00
	91-C-4	Console	9	5.00	9.00	15.00	18.00
	12-C-6	Console	12	7.00	15.00	20.00	25.00
GAROD							
1936	26	Console "C"	6	\$3.50	\$6.00	\$8.00	\$12.00
	26	Table	6	3.50	6.00	8.00	12.00
	49	Table	9	4.00	7.00	10.00	14.00
	512A	Table	12	5.00	8.00	12.00	18.00
	512A	Console "B"	12	6.00	10.00	15.00	20.00
	M33	Compact	7	3.00	5.00	7.00	9.00
	M33LW	Compact	7	3.50	6.00	8.00	12.00
	M32	Table	7	3.50	6.00	8.00	12.00
	M32	Console "C"	7	3.50	6.00	8.00	12.00
	104	Table	10	3.50	6.00	8.00	12.00
	311	Chassis & Speak.	11	4.00	7.00	10.00	14.00
	311	Console B	11	5.00	8.00	12.00	18.00
	311LW	Chassis & Speak.	11	4.00	7.00	10.00	14.00
	311LW	Console B	11	5.00	8.00	12.00	18.00
	514	Table	14	5.00	8.00	12.00	18.00
	514	Console B	14	6.00	10.00	15.00	20.00
	520	Chassis & Speak.	20	7.00	15.00	20.00	25.00
	520	Console B	20	7.00	15.00	20.00	25.00
	8	Table	8	3.50	6.00	8.00	12.00
	8	Console B	8	4.00	7.00	10.00	14.00
GENERAL ELECTRIC							
1933	K-126	Console	12	\$2.50	\$4.50	\$7.50	\$10.50
	K-52	Compact	5	1.50	2.50	4.00	6.00
	K-53	Chest	5	1.50	2.50	4.00	6.00
	K-63	Compact	6	1.50	2.50	4.00	6.00
	K-48	Humidor	4	1.50	2.50	4.00	6.00
	K-58	Lowboy	5	2.00	3.50	5.00	7.50
	K-78	Console	7	2.50	4.50	7.50	10.50
	K-79	Console	7	3.00	5.00	9.00	12.00
	K-107	Console	10	2.50	4.50	7.50	10.50
	K-43	Compact	4	1.50	2.50	4.00	6.00
	BX	Compact	4	1.50	2.50	4.00	6.00
	J-72	Midget	7	1.50	2.50	4.00	6.00
	J-83	Midget					

Year	Model	Cabinet	Tubes	A	B	C	D	Year	Model	Cabinet	Tubes	A	B	C	D
	51	Midget	5	2.25	3.50	5.00	8.00								
	66	Console	6	3.00	4.50	7.50	11.00								
	85	Console	8	3.25	5.00	9.00	12.50								
1936	A-53	Table	5	3.00	5.00	7.00	9.00								
	A-63	Table	6	3.00	5.00	7.00	9.00								
	A-65	Console	6	3.50	6.00	8.00	12.00								
	A-70	Table	7	3.50	6.00	8.00	12.00								
	A-75	Console	7	4.00	7.00	10.00	14.00								
	A-82	Table	8	4.00	7.00	10.00	14.00								
	A-87	Console	8	5.00	8.00	12.00	18.00								
	A-125	Console	13	7.00	15.00	20.00	25.00								
1937	E61	Table	6	4.00	7.00	10.00	12.00								
	E62	Table	6	4.00	7.00	10.00	12.00								
	E68	Console	6	4.00	7.00	10.00	12.00								
	E71	Table	7	4.00	7.00	10.00	12.00								
	E72	Table	7	4.00	7.00	10.00	12.00								
	E76	Console	7	4.50	8.00	12.00	15.00								
	E79	Phono. Comb.	7	5.00	9.00	15.00	18.00								
	E81	Table	8	4.50	8.00	12.00	15.00								
	E86	Console	8	4.50	8.00	12.00	15.00								
	E91	Table	9	4.50	8.00	12.00	15.00								
	E95	Console	9	5.00	9.00	15.00	18.00								
	E101	Table	10	5.00	9.00	15.00	18.00								
	E105	Console	10	5.00	9.00	15.00	18.00								
	E126	Console	12	7.00	15.00	20.00	25.00								
	E129	Auto. Comb.	12	8.00	20.00	25.00	30.00								
	E155	Console	15	8.00	20.00	25.00	30.00								
	U50	Table	5	4.00	7.00	10.00	12.00								
	U51	Table	5	4.00	7.00	10.00	12.00								
	U55	Console	5	4.50	8.00	12.00	15.00								
	U70	Table	7	4.50	8.00	12.00	15.00								
	U75	Console	7	5.00	9.00	15.00	18.00								
	E106	Console	10	7.00	15.00	20.00	25.00								
	A51	Table	5	4.00	7.00	10.00	12.00								
GILFILLAN															
1936	42A	Table	4	\$3.00	\$5.00	\$7.00	\$9.00								
	43A	Table	4	3.00	5.00	7.00	9.00								
	52A	Table	5	3.00	5.00	7.00	9.00								
	53A	Table	5	3.00	5.00	7.00	9.00								
	54A	Table	5	3.00	5.00	7.00	9.00								
	55A	Table	5	3.00	5.00	7.00	9.00								
	62B	Table	6	3.00	5.00	7.00	9.00								
	62X	Table	6	3.00	5.00	7.00	9.00								
	63B	Table	6	3.00	5.00	7.00	9.00								
	63X	Table	6	3.00	5.00	7.00	9.00								
	76A	Table	7	3.50	6.00	8.00	12.00								
	77A	Table	7	3.50	6.00	8.00	12.00								
	78B	Console	7	3.50	6.00	8.00	12.00								
	78X	Console	7	4.00	7.00	10.00	14.00								
	96B	Table	9	3.50	6.00	8.00	12.00								
	96X	Table	9	4.00	7.00	10.00	14.00								
	97B	Console	9	5.00	8.00	12.00	18.00								
	97X	Console	9	5.00	8.00	12.00	18.00								
	116B	Table	11	4.00	7.00	10.00	14.00								
	117B	Console	11	6.00	10.00	15.00	20.00								
	117X	Console	11	7.00	15.00	20.00	25.00								
	116X	Table	11	4.00	7.00	10.00	14.00								
GRUNOW (Gen'l. Household)															
1933	501	Midget	5	\$1.50	\$2.50	\$4.00	\$6.00								
	500	Midget	5	1.50	2.50	4.00	6.00								
	700	Table	7	1.75	3.00	4.50	6.50								
	801	Console	8	2.00	3.50	5.00	7.50								
	901	Console	9	2.25	4.00	6.00	9.00								
	1101	Console	11	2.25	4.00	6.00	9.00								
	1201	Console	12	3.00	5.00	9.00	12.00								
	902	Console	9	2.25	4.00	6.00	9.00								
1934	450	Table	4	2.00	3.00	4.50	7.00								
	530	Table	5	2.00	3.00	4.50	7.00								
	630	Table	6	2.25	3.50	5.00	8.00								
	631	Console	6	2.25	3.50	5.00	8.00								
	660	Table	6	2.00	3.00	4.50	7.00								
	661	Console	6	2.25	3.50	5.00	8.00								
	750	Table	7	2.25	3.50	5.00	8.00								
	751	Console	7	2.50	4.00	6.00	9.00								
	752	Console	7	2.50	4.00	6.00	9.00								
	1151	Console	11	3.00	5.00	9.00	12.00								
1935	1241	Console	12	4.00	7.50	12.00	18.00								
	1171	Console	11	3.50	6.00	10.50	15.00								
	871	Console	8	3.00	4.50	7.50	11.00								
	761	Console	7	3.00	4.50	7.50	11.00								
	681	Console	6	2.50	4.00	6.00	9.50								
	641	Console	6	2.50	4.00	6.00	9.50								
	640	Table	6	2.25	3.50	5.00	8.00								
	581	Table	5	2.25	3.50	5.00	8.00								
	580	Table	5	2.25	3.50	5.00	8.00								
	520	Table	5	2.25	3.50	5.00	8.00								
	470	Table	4	2.25	3.50	5.00	8.00								
	621	Console	6	3.00	4.50	7.50	11.00								
	721	Console	7	2.50	4.00	6.00	9.50								
	621	Table	6	2.50	4.00	6.00	9.50								
	720	Table	6	2.25	3.50	5.00	8.00								
1936	1241	Console	12	7.00	15.00	20.00	25.00								
	1171	Console	11	6.00	10.00	15.00	20.00								
	871	Console	8	4.00	7.00	10.00	14.00								
	761	Console	7	4.00	7.00	10.00	14.00								
	681	Console	6	3.50	6.00	8.00	12.00								
	641	Console	6	3.50	6.00	8.00	12.00								
	640	Table	6	3.00	5.00	7.00	9.00								
	581	Table	5	3.00	5.00	7.00	9.00								
	580	Table	5	3.00	5.00	7.00	9.00								
	520	Table	5	3.00	5.00	7.00	9.00								
	470	Table	4	3.00	5.00	7.00	9.00								
	621	Console	6	4.00	7.00	10.00	14.00								
	721	Console	7	3.50	6.00	8.00	12.00								
	620	Table	6	3.50	6.00	8.00	12.00								
	720	Table	6	3.00	5.00	7.00	9.00								
HALSON															
1933	40														

Year	Model	Cabinet	Tubes	A	B	C	D	Year	Model	Cabinet	Tubes	A	B	C	D
HOWARD (continued)															
1935	47-U	Table	4	2.25	3.50	5.00	8.00	463	Compact		6	1.50	2.50	4.00	6.00
	57-UA-S.W.	Table	5	2.25	3.50	5.00	8.00	55	Compact		5	1.50	2.50	4.00	6.00
	67-T	Table	6	2.25	3.50	5.00	8.00	59	Compact		5	1.50	2.50	4.00	6.00
	67-C	Console	6	2.50	4.00	6.00	9.50	67	Console		6	2.00	3.50	5.00	7.50
	77-T	Table	7	2.50	4.00	6.00	9.50	68	Console		6	1.75	3.00	4.50	6.50
	99-C	Console	9	3.25	5.00	9.00	12.50	69	Console		6	2.00	3.50	5.00	7.50
	Grand	Console	19	4.00	7.50	12.00	18.00	85	Console		8	2.25	4.00	6.00	9.00
	77-C	Console	7	3.00	4.50	7.50	11.00	86	Console		8	2.00	3.50	5.00	7.50
	AA-25	Compact	4	2.25	3.50	5.00	8.00	491	Compact		6	1.75	3.00	4.50	6.50
	CC-23	Console	6	2.50	4.00	6.00	9.50	493	Console		6	1.75	3.00	4.50	6.50
	CC-24	Midget	6	2.25	3.50	5.00	8.00	194	Midget		4	1.50	2.50	4.00	6.00
	CC-100	Midget	6	3.25	5.00	9.00	12.50	195	Compact		5	1.50	2.50	4.00	6.00
	D-101A	Console RP	8	4.00	7.50	12.00	18.00	196	Compact		6	1.50	2.50	4.00	6.00
	D-102	Console RP	8	4.00	7.50	12.00	18.00	77	Consolette		7	1.50	2.50	4.00	6.00
	E-14	Midget	6	2.25	3.50	5.00	8.00	Queen Anne							
	E-23	Console	6	2.50	4.00	6.00	9.50	105	Midget		5	1.50	2.50	4.00	6.00
	E-24	Midget	6	2.25	3.50	5.00	8.00	Estate							
	E-107	Console	6	2.50	4.00	6.00	9.50	331	Midget		7	1.50	2.50	4.00	6.00
	EAA-25	Compact	4	2.25	3.50	5.00	8.00	336	Console		7	1.50	2.50	4.00	6.00
	EG-26	Compact	4	2.25	3.50	5.00	8.00	337	Console		7	1.75	3.00	4.50	6.50
	F-101	Console RP	12	4.00	7.50	12.00	18.00	344	Console		11	2.50	4.50	7.50	10.50
	F-101A	Console RP	12	4.00	7.50	12.00	18.00	Sheraton							
	G-26	Compact	4	2.25	3.50	5.00	8.00	363	Console		11	2.00	3.50	5.00	7.50
1936	47U	Table	4	3.00	5.00	7.00	9.00	Gothic							
	57-UA S.W.	Table	5	3.00	5.00	7.00	9.00	Cathedral							
	67-T	Table	6	3.00	5.00	7.00	9.00	371	Midget		5	1.50	2.50	4.00	6.00
	67-C	Console	6	3.50	6.00	8.00	12.00	373	Midget		5	1.50	2.50	4.00	6.00
	77-T	Table	7	3.50	6.00	8.00	12.00	393	Console		8	1.75	3.00	4.50	6.50
	99-C	Console	9	5.00	8.00	12.00	18.00	NOBLITT-SPARKS (Arvin)							
	Grand Console		19	7.00	15.00	20.00	25.00	1936	41	Table	4	\$3.00	\$5.00	\$7.00	\$9.00
	77-C	Console	7	4.00	7.00	10.00	14.00	51	Table	5	3.00	5.00	7.00	9.00	
ICA								61	Table	6	3.00	5.00	7.00	9.00	
1931	Insul	Midget	4	\$1.00	\$2.00	\$3.00	\$4.00	61M	Table	7	3.50	6.00	8.00	12.00	
	Env	Midget	5	1.25	2.25	3.50	4.50	62	Console	6	3.50	6.00	8.00	12.00	
	Env	Midget	5	1.25	2.25	3.50	4.50	62M	Console	7	3.50	6.00	8.00	12.00	
	Insul	Midget	4	1.00	2.00	3.00	4.00	81	Console	8	4.00	7.00	10.00	14.00	
	Env	Midget	5	1.25	2.25	3.50	4.50	81M	Console	9	4.00	7.00	10.00	14.00	
	Env	Midget	5	1.25	2.25	3.50	4.50	1937	407	Table	4	4.00	7.00	10.00	12.00
	Env	Midg. Comb	5	1.50	2.50	4.00	5.00	417	Table	4	4.00	7.00	10.00	12.00	
	Env	Midg. Comb	5	1.75	2.75	4.50	5.50	507	Table	5	4.00	7.00	10.00	12.00	
	Env	Midg. Comb	5	1.75	2.75	4.50	5.50	467	Table	4	4.00	7.00	10.00	12.00	
	Env	Midg. Comb	5	2.00	3.00	5.00	6.50	517	Table	5	4.00	7.00	10.00	12.00	
1934	Mascot-1	Bakelite	1	2.00	3.00	4.50	7.00	527	Console	5	4.00	7.00	10.00	12.00	
	Mascot-2	Chassis only	2	2.00	3.00	4.50	7.00	617	Table	6	4.50	8.00	12.00	15.00	
	Mascot-3	Chassis only	3	2.00	3.00	4.50	7.00	627	Console	6	4.50	8.00	12.00	15.00	
	Mascot-4	Chassis only	4	2.00	3.00	4.50	7.00	927	Console	9	5.00	9.00	15.00	18.00	
	Mascot-5	Chassis only	5	2.00	3.00	4.50	7.00	1127	Console	11	7.00	15.00	20.00	25.00	
	Scout	Midget	2	2.00	3.00	4.50	7.00	517B	Table	5	4.00	7.00	10.00	12.00	
	Marvel	Bakelite	1	2.00	3.00	4.50	7.00	527B	Console	5	4.50	8.00	12.00	15.00	
INTERNATIONAL (Kadette)								617B	Table	6	4.50	8.00	12.00	15.00	
1933	B-1	Midget	5	\$1.50	\$2.50	\$4.00	\$6.00	627B	Console	6	5.00	9.00	15.00	18.00	
	B-2	Midget	5	1.50	2.50	4.00	6.00	PATTERSON							
	B-3	Midget	5	1.50	2.50	4.00	6.00	1933	74-AW-4	Chassis	7	\$1.50	\$2.50	\$4.00	\$6.00
	A-4	Midget	5	1.50	2.50	4.00	6.00	70-AW-4	Compact	7	1.50	2.50	4.00	6.00	
	A-5	Midget	5	1.50	2.50	4.00	6.00	307-AW-4	Console	7	1.75	3.00	4.50	6.50	
	A-6	Midget	5	1.50	2.50	4.00	6.00	84-AW-4	Chassis	8	1.75	3.00	4.50	6.50	
	Jr.	Midget	2	1.50	2.50	4.00	6.00	80-AW-4	Compact	8	1.75	3.00	4.50	6.50	
1934	CB	Table	5	2.00	3.00	4.50	7.00	308-AW-4	Console	8	2.00	3.50	5.00	7.50	
	ES25	Table	5	2.00	3.00	4.50	7.00	104-AW-4	Chassis	10	1.75	3.00	4.50	6.50	
	ES19	Table	5	2.00	3.00	4.50	7.00	310-AW-4	Console	10	2.00	3.50	5.00	7.50	
	ES20	Table	5	2.00	3.00	4.50	7.00	P.R.-10	Professional	10	2.25	4.00	6.00	9.00	
1935	Jewel 41		3	2.25	3.50	5.00	8.00	1934	65SW	Compact	6	2.00	3.00	4.50	7.00
	Jewel 43		3	2.25	3.50	5.00	8.00	65LW	Compact	6	2.00	3.00	4.50	7.00	
	Jewel 44		3	2.25	3.50	5.00	8.00	65AW	Compact	6	2.00	3.00	4.50	7.00	
	Jewel 47		3	2.25	3.50	5.00	8.00	75AW	Chassis	7	2.00	3.00	4.50	7.00	
	Jewel 48		3	2.25	3.50	5.00	8.00	175AW	Compact	7	2.25	3.50	5.00	8.00	
	26		4	2.25	3.50	5.00	8.00	275AW	Console	7	2.25	3.50	5.00	8.00	
	52		5	2.25	3.50	5.00	8.00	85AW	Chassis	8	2.25	3.50	5.00	8.00	
	53		5	2.25	3.50	5.00	8.00	185AW	Compact	8	2.25	3.50	5.00	8.00	
	61		6	2.25	3.50	5.00	8.00	285AW	Console	8	2.50	4.00	6.00	9.00	
	120		7	2.25	3.50	5.00	8.00	105AW	Chassis	10	2.25	3.50	5.00	8.00	
	1200		7	2.50	4.00	6.00	9.50	1105AW	Compact	10	2.50	4.00	6.00	9.00	
	72		5	2.25	3.50	5.00	8.00	2105AW	Console	10	2.50	4.00	6.00	9.00	
	40	Compact	3	2.25	3.50	5.00	8.00	3105AW	Console	10	3.50	6.00	10.50	15.00	
	42	Compact	3	2.25	3.50	5.00	8.00	4105AW	Console	10	3.50	6.00	10.50	15.00	
	66	Compact	6	2.25	3.50	5.00	8.00	1935	86AW	Chassis	8	2.50	4.00	6.00	9.50
	70	Midget	5	2.25	3.50	5.00	8.00	186AW	Table	8	2.50	4.00	6.00	9.50	
	85	Midget	5	2.25	3.50	5.00	8.00	286AW	Console	8	3.00	4.50	7.50	11.00	
	90	Compact		2.25	3.50	5.00	8.00	386AW	Phono-Comb	8	3.50	6.00	10.50	15.00	
1936	Jewel 41		3	3.00	5.00	7.00	9.00	106AW	Chassis	10	2.50	4.00	6.00	9.50	
	Jewel 43		3	3.00	5.00	7.00	9.00	1106AW	Table	10	3.00	4.50	7.50	11.00	
	Jewel 44		3	3.00	5.00	7.00	9.00	2106AW	Console	10	3.00	4.50	7.50	11.00	
	Jewel 47		3	3.00	5.00	7.00	9.00	3106AW	Phono-Comb	10	3.50	6.00	10.50	15.00	
	Jewel 48		3	3.00	5.00	7.00	9.00	126AW	Chassis	12	3.00	4.50	7.50	11.00	
	26		4	3.00	5.00	7.00	9.00	1126AW	Table	12	3.00	4.50	7.50	11.00	
	52		5	3.00	5.00	7.00	9.00	2126AW	Console	12	3.25	5.00	9.00	12.50	
	53		5	3.00	5.00	7.00	9.00	3126AW	Phono-Comb	12	4.00	7.50	12.00	18.00	
	61		6	3.00	5.00	7.00	9.00	PR16-CTS	Chassis	16	3.50	6.00	10.50	15.00	

Year	Model	Cabinet	Tubes	A	B	C	D
	PR16-CTS.	Chassis.....	16	8.00	10.00	15.00	20.00
	PR16-CTS.	C.....	16	8.00	10.00	15.00	20.00
	PR16	Table.....	16	6.00	10.00	15.00	20.00
	PR16-C	Table.....	16	7.00	15.00	20.00	25.00
	PR16K	Console.....	16	7.00	15.00	20.00	25.00
	PR16-CK	Console.....	16	7.00	15.00	20.00	25.00
	PR16-KP	Phono-Comb.....	16	7.00	15.00	20.00	25.00
	PR16-CKP	Phono-Comb.....	16	7.00	15.00	20.00	25.00

PHILCO

Year	Model	Cabinet	Tubes	A	B	C	D
1933	57-C	Compact.....	4	\$1.50	\$2.50	\$4.00	\$6.00
	60-B	Baby Grand.....	5	1.50	2.50	4.00	6.00
	60-L	Lowboy.....	5	1.50	2.50	4.00	6.00
	54-C	Compact.....	5	1.50	2.50	4.00	6.00
	89-B	Baby Grand.....	6	1.50	2.50	4.00	6.00
	89-L	Lowboy.....	6	1.50	2.50	4.00	6.00
	19-LZ	Lazyboy.....	6	1.75	3.00	4.50	6.50
	18-B	Baby Grand.....	8	1.75	3.00	4.50	6.50
	18-J	Lowboy.....	8	1.75	3.00	4.50	6.50
	18-H	Highboy.....	8	2.00	3.50	5.00	7.50
	18-D	Highboy.....	8	2.00	3.50	5.00	7.50
	18-X	Inclined.....	8	2.00	3.50	5.00	7.50
	14-B	Baby Grand.....	9	1.75	3.00	4.50	6.50
	14-L	Lowboy.....	9	2.00	3.50	5.00	7.50
	14-X	Inclined.....	9	2.25	4.00	6.00	9.00
	14-RX	End Tab. Cont.					
		Cons. Speaker.....	9	2.50	4.50	7.50	10.00
	17-L	Lowboy.....	11	2.25	4.00	6.00	9.50
	17-D	Highboy.....	11	2.50	4.50	7.50	10.50
	17-X	Inclined.....	11	2.50	4.50	7.50	10.50
	16-B	Baby Grand.....	11	2.00	3.50	5.00	7.50
	16-L	Lowboy.....	11	2.50	4.50	7.50	10.50
	16-X	Inclined.....	11	3.00	5.00	9.00	12.00
	16-RX	End. Tab. Cont.					
		Cons. Speaker.....	11	3.00	5.00	9.00	12.00
	47-B	Baby Grand.....	8	1.75	3.00	4.50	6.50
	42-H	Highboy.....	8	2.00	3.50	5.00	7.50
	43-X	Inclined.....	8	2.00	3.50	5.00	7.50
	38-B	Baby Grand.....	5	1.50	2.50	4.00	6.00
	38-L	Lowboy.....	5	1.75	3.00	4.50	6.50
	47-B	Baby Grand.....	8	1.75	3.00	4.50	6.50
	47-H	Highboy.....	8	2.00	3.50	5.00	7.50
	47-D	Highboy.....	8	2.00	3.50	5.00	7.50
	17B	Midget.....	11	1.75	3.00	4.50	6.50
	19TX	Portable.....	6	1.75	3.00	4.50	6.50
	71X	Console.....	7	2.00	3.50	5.00	7.50
	91H	Highboy.....	9	1.75	3.00	4.50	6.50
	91LZX	Highboy.....	9	2.00	3.50	5.00	7.50
	19B	Midget.....	6	1.50	2.50	4.00	6.00
	19H	Highboy.....	6	1.50	2.50	4.00	6.00
	19X	Console.....	6	1.75	3.00	4.50	6.50
	80B	Midget.....	4	1.50	2.50	4.00	6.00
	80P	Portable.....	4	1.50	2.50	4.00	6.00
	37C	Compact.....	5	1.50	2.50	4.00	6.00
	57C	Compact.....	4	1.50	2.50	4.00	6.00
	26L	Console RP.....	6	1.75	3.00	4.50	6.50
	81B	Midget.....	4	1.50	2.50	4.00	6.00
	38B	Midget.....	5	1.50	2.50	4.00	6.00
	48L	Compact.....	5	1.50	2.50	4.00	6.00
	48C	Compact.....	5	1.50	2.50	4.00	6.00
		Century of Progress.....					
		Inclined.....	8	3.00	5.00	9.00	12.00
	47X	Inclined.....	8	2.00	3.50	5.00	7.50
	27-L	Lowboy.....	9	1.75	3.00	4.50	6.50
	23-L	Lowboy.....	9	2.25	4.00	6.00	9.00
	25-L	Lowboy.....	8	2.50	4.50	7.50	10.50

Year	Model	Cabinet	Tubes	A	B	C	D
1934	200X	Console.....	10	3.50	6.00	10.50	15.00
	16X	Console.....	11	3.50	6.00	10.50	15.00
	118X	Console.....	8	2.50	4.00	6.00	9.00
	144X	Console.....	6	2.50	4.00	6.00	9.00
	118MX	Console.....	8	2.50	4.00	6.00	9.00
	13MX	Console.....	8	2.50	4.00	6.00	9.00
	29X	Console.....	6	2.25	3.50	5.00	8.00
	12RX	Console.....	11	3.50	6.00	10.50	15.00
	118RX	Console.....	8	2.75	4.50	7.50	10.50
	29TX	Console.....	6	2.50	4.00	6.00	9.00
	118D	Highboy.....	8	3.00	5.00	9.00	12.00
	118H	Highboy.....	8	2.50	4.00	6.00	9.00
	13H	Highboy.....	8	2.50	4.00	6.00	9.00
	144H	Highboy.....	6	2.50	4.00	6.00	9.00
	14MX	Console.....	9	2.50	4.00	6.00	9.00
	16PX	Console RP.....	11	3.50	6.00	10.50	15.00
	17RX	Console.....	11	3.50	6.00	10.50	15.00
	28C	Compact.....	6	2.00	3.00	4.50	7.00
	28L	Lowboy.....	6	2.25	3.50	5.00	8.00
	29X	Console.....	6	2.25	3.50	5.00	8.00
	29TX	Console.....	6	2.50	4.00	6.00	9.00
	44B	Midget.....	6	2.25	3.50	5.00	8.00
	16L	Lowboy.....	11	3.00	5.00	9.00	12.00
	45L	Lowboy.....	6	2.25	3.50	5.00	8.00
	89L	Lowboy.....	6	2.00	3.00	4.50	7.00
	60L	Lowboy.....	5	2.00	3.00	4.50	7.00
	118B	Baby Grand.....	11	2.50	4.00	6.00	9.00
	118B	Baby Grand.....	8	2.25	3.50	5.00	8.00
	144B	Baby Grand.....	8	2.25	3.50	5.00	8.00
	88B	Baby Grand.....	5	2.00	3.00	4.50	7.00
	89B	Baby Grand.....	5	2.00	3.00	4.50	7.00
	80B	Baby Grand.....	5	2.00	3.00	4.50	7.00
	84B	Baby Grand.....	5	2.00	3.00	4.50	7.00
	45C	Compact.....	4	2.00	3.00	4.50	7.00
	54S	Compact.....	5	2.00	3.00	4.50	7.00
	54C	Compact.....	5	2.00	3.00	4.50	7.00
	59S	Compact.....	4	2.00	3.00	4.50	7.00
	59C	Compact.....	4	2.00	3.00	4.50	7.00
	500X	Console.....	11	3.50	6.00	10.50	15.00
	44H	Console.....	6	2.50	4.00	6.00	9.00
	47B	Midget.....	8	2.25	3.50	5.00	8.00
	47H	Console.....	8	2.50	4.00	6.00	9.00

Year	Model	Cabinet	Tubes	A	B	C	D
	47D	Console.....	5	2.50	4.00	6.00	9.00
	60MB	Midget.....	5	2.00	3.00	4.50	7.00
	66L	Console.....	5	2.00	3.00	4.50	7.00
	144B	Midget.....	6	2.25	3.50	5.00	8.00
	201X	Console.....	10	3.50	6.00	10.50	15.00
	509X	Console RP.....	10	3.50	6.00	10.50	15.00
	38H	Console.....	5	2.25	3.50	5.00	8.00
	58C	Compact.....	4	2.00	3.00	4.50	7.00
	501X	Console RP.....	11	3.50	6.00	10.50	15.00
	501X	Console.....	11	3.50	6.00	10.50	15.00
	507L	Low Console.....	8	3.00	5.00	9.00	12.00
	503L	Low Console.....	8	3.00	5.00	9.00	12.00
	506L	Low Console.....	6	3.00	5.00	9.00	12.00
	505	Highboy.....	5	2.50	4.00	6.00	9.00
	34B	Table.....	7	2.25	3.50	5.00	8.00
	32B	Table.....	6	2.25	3.50	5.00	8.00
	34L	Console.....	7	2.50	4.00	6.00	9.00
	32L	Highboy.....	6	2.50	4.00	6.00	9.00
	38L	Highboy.....	5	2.25	3.50	5.00	8.00
	38B	Table.....	5	2.00	3.00	4.50	7.00
	49D	Highboy.....	7	3.00	5.00	9.00	12.00
	49X	Console.....	7	2.50	4.00	6.00	9.00
	49H	Highboy.....	7	2.50	4.00	6.00	9.00
	49B	Table.....	7	2.25	3.50	5.00	8.00

1935

Year	Model	Cabinet	Tubes	A	B	C	D
	38B	Table.....	5	2.25	3.50	5.00	8.00
	38F	Console.....	5	2.50	4.00	6.00	9.50
	54C	Compact.....	5	2.25	3.50	5.00	8.00
	54S	Compact.....	5	2.25	3.50	5.00	8.00
	59C	Compact.....	4	2.25	3.50	5.00	8.00
	59S	Compact.....	4	2.25	3.50	5.00	8.00
	60B	Table.....	4	2.25	3.50	5.00	8.00
	60F	Console.....	5	2.25	3.50	5.00	8.00
	84B	Table.....	4	2.25	3.50	5.00	8.00
	89B	Table.....	6	2.25	3.50	5.00	8.00
	89F	Console.....	6	2.25	3.50	5.00	8.00
	116B	Table.....	10	3.00	4.50	7.50	11.00
	116X	Console.....	11	4.00	7.50	12.00	18.00
	610B	Table.....	5	2.25	3.50	5.00	8.00
	610F	Console.....	5	2.25	3.50	5.00	8.00
	611B	Table.....	5	2.25	3.50	5.00	8.00
	611F	Console.....	5	2.50	4.00	6.00	9.50
	620B	Table.....	6	2.25	3.50	5.00	8.00
	620F	Console.....	6	2.50	4.00	6.00	9.50
	623B	Console.....	6	2.50	4.00	6.00	9.50
	623F	Console.....	6	2.50	4.00	6.00	9.50
	630B	Table.....	6	2.50	4.00	6.00	9.50
	630CSX	Console.....	6				

Year	Model	Cabinet	Tubes	A	B	C	D
PHILCO 1936 (continued)							
	630X	Console	8	4.00	7.00	10.00	14.00
	650PX	Phono-Comb	8	7.00	15.00	20.00	25.00
	650RX	Tuning Unit and Console Speaker	8	6.00	10.00	15.00	20.00
	650MX	Console	8	6.00	10.00	15.00	20.00
	660L	Console	10	6.00	10.00	15.00	20.00
	660X	Console	10	6.00	10.00	15.00	20.00
1937	116X	Console	15	8.00	20.00	25.00	30.00
	675X	Console	12	8.00	20.00	25.00	30.00
	DeLuxe	Console	12	7.00	15.00	20.00	25.00
	675X	Console	12	7.00	15.00	20.00	25.00
	670X	Console	11	7.00	15.00	20.00	25.00
	670B	Baby Grand	11	5.00	9.00	15.00	18.00
	2670X	Console	11	7.00	15.00	20.00	25.00
	2670B	Baby Grand	11	5.00	9.00	15.00	18.00
	665X	Console	9	6.00	10.00	18.00	22.50
	665B	Baby Grand	9	5.00	9.00	15.00	18.00
	660X	Console	9	6.00	10.00	18.00	22.50
	660B	Baby Grand	9	5.00	9.00	15.00	18.00
	656X	Console	8	5.00	9.00	15.00	18.00
	656B	Baby Grand	8	5.00	9.00	15.00	18.00
	2650X	Console	8	6.00	10.00	18.00	22.50
	2650B	Baby Grand	8	5.00	9.00	15.00	18.00
	646MX	Console	7	5.00	9.00	15.00	18.00
	646X	Console	7	5.00	9.00	15.00	18.00
	640B	Baby Grand	7	4.50	8.00	12.00	15.00
	630X	Console	6	5.00	9.00	15.00	18.00
	630T	Table	6	4.50	8.00	12.00	15.00
	620J	Console	6	4.50	8.00	12.00	15.00
	620B	Baby Grand	6	4.50	8.00	12.00	15.00
	2620J	Console	6	4.50	8.00	12.00	15.00
	2620B	Baby Grand	6	4.50	8.00	12.00	15.00
	616J	Console	5	4.50	8.00	12.00	15.00
	610T	Table	5	4.00	7.00	10.00	12.00
	610B	Baby Grand	5	4.00	7.00	10.00	12.00
	61F	Console	5	4.00	7.00	10.00	12.00
	61B	Baby Grand	5	4.00	7.00	10.00	12.00
	641MX	Console	7	5.00	9.00	15.00	18.00
	641X	Console	7	5.00	9.00	15.00	18.00
	641B	Baby Grand	7	4.50	8.00	12.00	15.00
	611J	Console	5	4.50	8.00	12.00	15.00
	611F	Console	5	4.50	8.00	12.00	15.00
	611T	Table	5	4.00	7.00	10.00	12.00
	611B	Baby Grand	5	4.00	7.00	10.00	12.00
	604C	Compact	5	4.00	7.00	10.00	12.00
	643X	Console	7	6.00	10.00	18.00	22.50
	643B	Baby Grand	7	5.00	9.00	15.00	18.00
	624J	Console	6	5.00	9.00	15.00	18.00
	624B	Baby Grand	6	4.50	8.00	12.00	15.00
	623J	Console	6	5.00	9.00	15.00	18.00
	623B	Baby Grand	6	4.50	8.00	12.00	15.00
	89F	Console	6	4.00	7.00	10.00	12.00
	89B	Baby Grand	6	4.00	7.00	10.00	12.00
	60F	Console	5	4.00	7.00	10.00	12.00
	60B	Baby	5	4.00	7.00	10.00	12.00
	600C	Compact	4	4.00	7.00	10.00	12.00
	84B	Baby Grand	4	4.00	7.00	10.00	12.00
	602C	Compact	5	4.00	7.00	10.00	12.00
	38J	Console	6	4.50	8.00	12.00	15.00
	38F	Console	6	4.50	8.00	12.00	15.00
	38B	Baby Grand	6	4.00	7.00	10.00	12.00
	34F	Console	5	4.50	8.00	12.00	15.00
	34B	Baby Grand	5	4.00	7.00	10.00	12.00
	33F	Console	5	4.00	7.00	10.00	12.00
	33B	Baby Grand	5	4.00	7.00	10.00	12.00

PIERCE AIRO

1936	805A	Table	8	\$3.50	\$6.00	\$8.00	\$12.00
	805C	Console	8	4.00	7.00	10.00	14.00
	610SA	Table	6	3.00	5.00	7.00	9.00
	610SA-LW	Table	6	3.00	5.00	7.00	9.00
	611SA	Table	6	3.00	5.00	7.00	9.00
	611SA-LW	Table	6	3.00	5.00	7.00	9.00
	610SC	Console	6	3.50	6.00	8.00	12.00
	610SC-LW	Console	6	3.50	6.00	8.00	12.00
	609SA	Table	6	3.00	5.00	7.00	9.00
	510B	Table	5	3.00	5.00	7.00	9.00
	612SA	Table	6	3.00	5.00	7.00	9.00
	612SA-LW	Table	6	3.00	5.00	7.00	9.00
	403A	Table	4	3.00	5.00	7.00	9.00
	506A	Table	5	3.00	5.00	7.00	9.00
	505R	Table	5	3.00	5.00	7.00	9.00
	505RLW	Table	5	3.00	5.00	7.00	9.00
1937	518	Table	5	4.00	7.00	10.00	12.00
	520	Table	5	4.00	7.00	10.00	12.00
	618	Table	6	4.00	7.00	10.00	12.00
	619	Table	6	4.00	7.00	10.00	12.00
	620	Table	6	4.00	7.00	10.00	12.00
	621	Table	6	4.00	7.00	10.00	12.00
	1109	Console	10	5.00	9.00	15.00	18.00
	805A	Console	8	4.50	8.00	12.00	15.00
	805C	Console	8	5.00	9.00	15.00	18.00
	515	Table	5	4.00	7.00	10.00	12.00

PILOT

1933	L-8	Midjet	8	\$1.75	\$3.00	\$4.50	\$6.50
	E20	Compact	6	1.50	2.50	4.00	6.00
	L-30	Midjet	8	2.00	3.50	5.00	7.50
	D-3	Compact	5	1.50	2.50	4.00	6.00
	L-28	Midjet	8	1.75	3.00	4.50	6.50
	Dragon	Midjet	8	1.75	3.00	4.50	6.50
	Monarch	Midjet	8	1.75	3.00	4.50	6.50
	L-32	Midjet	8	2.00	3.50	5.00	7.50
	F-12	Midjet	6	1.50	2.50	4.00	6.00
	H-7	Midjet	8	1.75	3.00	4.50	6.50
	H-34	Midjet	8	1.75	3.00	4.50	6.50
	H-38	Midjet	8	1.75	3.00	4.50	6.50
	H-36	Midjet	8	1.75	3.00	4.50	6.50
	B-2	Compact	5	1.50	2.50	4.00	6.00

Year	Model	Cabinet	Tubes	A	B	C	D
1934	63	Table	6	2.25	3.50	5.00	8.00
	68	Table	6	2.25	3.50	5.00	8.00
	P-63	Console	6	3.00	5.00	9.00	12.00
	53	Table	5	2.25	3.50	5.00	8.00
	73	Table	7	2.25	3.50	5.00	8.00
	93	Table	5	2.00	3.00	4.50	7.00
	103	Table	5	2.00	3.00	4.50	7.00
	114	Table	11	2.50	4.00	6.00	9.00
	C-114	Console	11	3.00	5.00	9.00	12.00
	C-63	Console	6	2.50	4.00	6.00	9.00
1935	41	Table	4	2.25	3.50	5.00	8.00
	43	Table	4	2.25	3.50	5.00	8.00
	123	Table	6	2.25	3.50	5.00	8.00
	103	Table	5	2.25	3.50	5.00	8.00
	108	Table	5	2.25	3.50	5.00	8.00
	X63	Table	6	2.50	4.00	6.00	9.50
	X68	Table	6	2.50	4.00	6.00	9.50
	X73	Table	7	2.50	4.00	6.00	9.50
	X114	Table	11	3.00	4.50	7.50	11.00
	183	Table	6	2.25	3.50	5.00	8.00
	213	Table	6	2.50	4.00	6.00	9.50
	303	Table	12	3.00	4.50	7.50	11.00
	CX63	Console	6	3.00	4.50	7.50	11.00
	CX68	Console	6	3.00	4.50	7.50	11.00
	PX63	Phono-Comb	6	3.50	6.00	10.50	15.00
	PX68	Phono-Comb	6	4.00	7.50	12.00	18.00
	CX114	Console	11	3.50	6.00	10.50	15.00
	PX114	Auto Comb	11	4.00	7.50	12.00	18.00
1936	41	Table	4	3.00	5.00	7.00	9.00
	43	Table	4	3.00	5.00	7.00	9.00
	123	Table	6	3.00	5.00	7.00	9.00
	103	Table	5	3.00	5.00	7.00	9.00
	108	Table	5	3.00	5.00	7.00	9.00
	X63	Table	6	3.50	6.00	8.00	12.00
	X68	Table	6	3.50	6.00	8.00	12.00
	X73	Table	7	3.50	6.00	8.00	12.00
	X114	Table	11	4.00	7.00	10.00	14.00
	183	Table	6	3.50	6.00	7.00	9.00
	213	Table	6	3.50	6.00	8.00	12.00
	303	Table	12	4.00	7.00	10.00	14.00
	CX63	Console	6	4.00	7.00	10.00	14.00
	CX68	Console	6	4.00	7.00	10.00	14.00
	PX63	Phono-Comb	6	6.00	10.00	15.00	20.00
	PX68	Phono-Comb	6	7.00	15.00	20.00	25.00
	CX114	Console	11	6.00	10.00	15.00	20.00
	PX114	Auto Comb	11	7.00	15.00	20.00	25.00
1937	X-41	Table	4	4.00	7.00	10.00	12.00
	X-43	Table	4	4.00	7.00	10.00	12.00
	103	Table	5	4.00	7.00	10.00	12.00
	203	Table	5	4.00	7.00	10.00	12.00

Year	Model	Cabinet	Tubes	A	B	C	D	
126-B	Table	6	2.00	3.00	4.50	7.00		
128	Table	5	2.25	3.50	5.00	8.00		
135-B	Table	5	2.25	3.50	5.00	8.00		
RCA-100	Midget	4	2.00	3.00	4.50	7.00		
101	Midget	4	2.00	3.00	4.50	7.00		
102	Compact	4	2.00	3.00	4.50	7.00		
115	Midget	5	2.00	3.00	4.50	7.00		
114	Compact	5	2.00	3.00	4.50	7.00		
142B	Midget	8	2.00	3.00	4.50	7.00		
241B	Console	8	2.25	3.50	5.00	8.00		
210	Console	5	2.25	3.50	5.00	8.00		
301	Midget RP	4	2.25	3.50	5.00	8.00		
26	Console	10	2.75	4.50	7.50	10.50		
124	Midget	8	2.00	3.00	4.50	7.00		
220	Console	6	2.25	3.50	5.00	8.00		
221	Console	6	2.25	3.50	5.00	8.00		
222	Console	6	2.60	4.00	6.00	9.00		
223	Console	6	2.60	4.00	6.00	9.00		
322 Duo	Console RP	6	3.50	6.00	10.50	15.00		
261	Console	10	2.75	4.50	7.50	10.50		
321	Console RP	6	3.00	5.00	9.00	12.00		
380 Duo	Console RP	12	3.50	6.00	10.50	15.00		
143	Table	6	2.60	4.00	6.00	9.00		
211	Console	5	2.25	3.50	5.00	8.00		
224	Console	5	2.50	4.00	6.00	9.00		
235-B	Console	5	2.60	4.00	6.00	9.00		
242	Console	6	2.75	4.50	7.50	10.50		
262	Console	5	3.00	5.00	9.00	12.00		
281	Console	6	3.50	6.00	10.50	15.00		
341	Console	6	3.50	6.00	10.50	15.00		
381	Console	6	3.50	6.00	10.50	15.00		
1935	BT6-3	Table	6	2.25	3.50	5.00	8.00	
BC6-4	Console	6	2.50	4.00	6.00	9.50		
BT6-5	Table	6	2.50	4.00	6.00	9.50		
BC6-6	Console	6	3.00	4.50	7.50	11.00		
BT7-8	Table	7	2.50	4.00	6.00	9.50		
BC7-9	Console	7	3.00	4.50	7.50	11.00		
T4-8	Table	4	2.25	3.50	5.00	8.00		
T4-9	Table	4	2.25	3.50	5.00	8.00		
T4-10	Table	4	2.25	3.50	5.00	8.00		
T5-2	Table	5	2.25	3.50	5.00	8.00		
117	Table	5	2.25	3.50	5.00	8.00		
214	Console	5	2.25	3.50	5.00	8.00		
125	Table	6	2.25	3.50	5.00	8.00		
225	Console	6	2.60	4.00	6.00	9.50		
T8-14	Table	8	3.00	4.50	7.50	11.00		
C8-15	Console	8	3.00	4.50	7.50	11.00		
C9-4	Console	9	3.25	5.00	9.00	12.50		
T10-1	Table	10	3.00	4.50	7.50	11.00		
C11-1	Console	11	3.50	6.00	10.50	15.00		
C13-2	Console	13	4.00	7.50	12.00	18.00		
C15-3	Console	15	4.00	7.50	12.00	18.00		
D9-19	Phono-Comb	9	4.00	7.50	12.00	18.00		
D11-2	Auto. Comb	11	4.00	7.50	12.00	18.00		
D22-1	Auto. Comb	16	4.00	7.50	12.00	18.00		
C7-6	Console	7	3.00	4.50	7.50	11.00		
103	Midget	4	2.25	3.50	5.00	8.00		
121	Midget	5	2.50	4.00	6.00	9.50		
119	Compact	5	2.25	3.50	5.00	8.00		
238	Console	6	3.00	4.50	7.50	11.00		
243	Console	8	3.25	5.00	9.00	12.50		
263	Console	10	4.00	7.50	12.00	18.00		
1936	BT6-3	Table	6	3.00	5.00	7.00	9.00	
BC6-4	Console	6	3.50	6.00	8.00	12.00		
BT6-5	Table	6	3.50	6.00	8.00	12.00		
BC6-6	Console	6	4.00	7.00	10.00	14.00		
BT7-8	Table	7	3.50	6.00	8.00	12.00		
BC7-9	Console	7	4.00	7.00	10.00	14.00		
T4-8	Table	4	3.00	5.00	7.00	9.00		
T4-9	Table	4	3.00	5.00	7.00	9.00		
T4-10	Table	4	3.00	5.00	7.00	9.00		
T5-2	Table	5	3.00	5.00	7.00	9.00		
117	Table	5	3.00	5.00	7.00	9.00		
214	Console	5	3.00	5.00	7.00	9.00		
125	Table	6	3.00	5.00	7.00	9.00		
225	Console	6	3.50	6.00	8.00	12.00		
T8-14	Table	8	4.00	7.00	10.00	14.00		
C8-15	Console	8	4.00	7.00	10.00	14.00		
C9-4	Console	9	5.00	8.00	12.00	18.00		
T10-1	Table	10	4.00	7.00	10.00	14.00		
C11-1	Console	11	6.00	10.00	15.00	20.00		
C13-2	Console	13	7.00	15.00	20.00	25.00		
1937	4-T	Table	4	4.00	7.00	10.00	12.00	
4-X	Table	4	4.00	7.00	10.00	12.00		
4-X-3	Table	4	4.00	7.00	10.00	12.00		
4-X-4	Table	4	4.00	7.00	10.00	12.00		
5-T	Table	5	4.00	7.00	10.00	12.00		
5-X	Table	5	4.00	7.00	10.00	12.00		
5-X-3	Table	5	4.00	7.00	10.00	12.00		
5-X-4	Table	5	4.00	7.00	10.00	12.00		
6-BK	Console	6	4.50	8.00	12.00	15.00		
6-BK-6	Console	6	4.50	8.00	12.00	15.00		
6-BT	Table	6	4.00	7.00	10.00	12.00		
6-BT-6	Table	6	4.50	8.00	12.00	15.00		
6-K	Console	6	4.00	7.00	10.00	12.00		
6-K-2	Console	6	4.50	8.00	12.00	15.00		
6-T	Table	6	4.00	7.00	10.00	12.00		
6-T-2	Table	6	4.00	7.00	10.00	12.00		
7-K	Console	7	5.00	9.00	15.00	18.00		
7-T	Table	7	4.50	8.00	12.00	15.00		
7-U	Phono. Comb	7	5.00	9.00	15.00	18.00		
7-X	Table	7	4.00	7.00	10.00	12.00		
8-BK	Console	8	5.00	9.00	15.00	18.00		
8-BK-6	Console	8	5.00	9.00	15.00	18.00		
8-BT	Table	8	5.00	9.00	15.00	18.00		
8-BT-6	Table	8	5.00	9.00	15.00	18.00		
8-K	Console	8	5.00	9.00	15.00	18.00		
8-T	Table	8	4.50	8.00	12.00	15.00		
8-U	Phono. Comb	8	8.00	20.00	25.00	30.00		
9-K	Console	9	5.00	9.00	15.00	18.00		
9-K-2	Console	9	7.00	15.00	20.00	25.00		

Year	Model	Cabinet	Tubes	A	B	C	D
REMLER							
1936	26	Portable	5	\$3.00	\$5.00	\$7.00	\$9.00
	40	Portable	4	3.00	5.00	7.00	9.00
	41	Portable	7	3.00	5.00	7.00	9.00
	43	Table	5	3.00	5.00	7.00	9.00
	62	Table	5	3.00	5.00	7.00	9.00
	88	Table	10	4.00	7.00	10.00	14.00
1937	89	Table	12	5.00	9.00	15.00	18.00
	71	Table	8	4.50	8.00	12.00	15.00
	64	Table	6	4.00	7.00	10.00	12.00
	60	Table	5	4.00	7.00	10.00	12.00
	46	Compact	5	4.00	7.00	10.00	12.00
	45	Table	7	4.00	7.00	10.00	12.00
	41	Compact	5	4.00	7.00	10.00	12.00
	28	Compact	6	4.00	7.00	10.00	12.00
	51	Compact	4	4.00	7.00	10.00	12.00
	91	Table	5	4.00	7.00	10.00	12.00
ROYALE							
1936	48	Table	4	\$3.00	\$5.00	\$7.00	\$9.00
	48A	Table	4	3.00	5.00	7.00	9.00
	53A	Table	5	3.00	5.00	7.00	9.00
	63A	Table	6	3.00	5.00	7.00	9.00
SENTINEL							
1933	501	Midget	5	\$1.50	\$2.50	\$4.00	\$6.00
	551	Midget	5	1.50	2.50	4.00	6.00
	502	Console	6	1.50	2.50	4.00	6.00
	581	Compact	5	1.50	2.50	4.00	6.00
	599	Midget	5	1.50	2.50	4.00	6.00
	564	Compact	5	1.50	2.50	4.00	6.00
	623	Midget	6	1.50	2.50	4.00	6.00
	625	Console	6	1.75	3.00	4.50	6.50
	634	Compact	6	1.50	2.50	4.00	6.00
	5001	Midget	5	1.75	3.00	4.50	6.50
	635	Compact	6	1.75	3.00	4.50	6.50
	1046	Console	10	2.00	3.50	5.00	7.50
	1046	Console	11	2.00	3.50	5.00	7.50
	Duola-A	Console	1	1.75	3.00	4.50	6.50
	625	Console	6	1.75	3.00	4.50	6.50
1934	4143	Table	4	2.00	3.00	4.50	7.00
	4536	Table	4	2.00	3.00	4.50	7.00
	5211	Table	5	2.00	3.00	4.50	7.00
	5721	Table	5	2.00	3.00	4.50	7.00
	6315	Table	6	2.25	3.50	5.00	8.00
	6317	Console	6	2.50	4.00	6.00	9.00
	6323	Table	6	2.25	3.50	5.00	8.00
	6241	Table	6	2.00	3.00	4.50	7.00
	6232	Console	6	2.25	3.50	5.00	8.00
	7741	Table	7	2.00	3.00	4.50	7.00
	7732	Console	7	2.25	3.50	5.00	8.00
	5628	Table	5	2.00	3.00	4.50	7.00
1935	32B69	Table	4	2.25	3.50	5.00	8.00
	33B70	Table	5	2.25	3.50	5.00	8.00
	33B71	Console	5	2.50	4.00	6.00	9.50
	35B70	Table	6	2.25	3.50	5.00	8.00
	35B72	Console	6	2.50	4.00	6.00	9.50
	34B73	Table	4	2.25	3.50	5.00	8.00
	34B71	Console	4	2.50	4.00	6.00	9.50
	31B74	Table	6	2.50	4.00	6.00	9.50
	31B72	Console	6	3.00	4.50	7.50	11.00
	36L73	Table	6	2.25	3.50	5.00	8.00
	36L71	Console	6	2.50	4.00	6.00	9.50
	30A83	Table	4	2.25	3.50	5.00	8.00
	20A73	Table	5	2.25	3.50	5.00	8.00
	20A71	Console	5	2.25	3.50	5.00	8.00
	19A68	Table	6	2.25	3.50	5.00	8.00
	19A71	Console	6	2.50	4.00	6.00	9.50
	25A74	Table	6	2.25	3.50	5.00	8.00
	25A72	Console	6	2.50	4.00	6.00	9.50
	14A86	Table	9	2.50	4.00	6.00	9.50
	14A72	Console	9	3.00	4.50	7.50	11.00
	40A	Table	6	2.25	3.50	5.00	8.00
	40A	Console	6	2.50	4.00	6.00	9.50
1936	32B89	Table	4	3.00	5.00	7.00	9.00
	33B70	Table	5</				

Year	Model	Cabinet	Tubes	A	B	C	D	Year	Model	Cabinet	Tubes	A	B	C	D
SILVER MARSHALL 1933 (continued)															
	HV	Midget	8	2.00	3.50	5.00	7.50								
	HR	Midget	8	2.00	3.50	5.00	7.50								
	HX	Midget	7	1.75	3.00	4.50	6.50								
1934	All World De Luxe	Table	8	2.50	4.00	6.00	9.00								
	All World De Luxe	Console	8	2.75	4.50	7.50	10.50								
	All World De Luxe	Console	8	2.75	4.50	7.50	10.50								
	All World 5	Table	5	2.00	3.00	4.50	7.00								
SIMPLEX RADIO															
1936	4Z	Compact	4	\$3.00	\$5.00	\$7.00	\$9.00								
	V	Compact	5	3.00	5.00	7.00	9.00								
	Y	Table	5	3.00	5.00	7.00	9.00								
	Y	Console	5	3.00	5.00	7.00	9.00								
	5C	Compact	5	3.00	5.00	7.00	9.00								
	5D	Table	5	3.00	5.00	7.00	9.00								
	5DA	Console	5	3.00	5.00	7.00	9.00								
	5DB	Table	5	3.00	5.00	7.00	9.00								
	5DB	Table	4	3.00	5.00	7.00	9.00								
	5DB	Console	4	3.00	5.00	7.00	9.00								
	5DF	Table	4	3.00	5.00	7.00	9.00								
	5DF	Console	4	3.00	5.00	7.00	9.00								
	6G	Table	6	3.00	5.00	7.00	9.00								
	6G	Console	6	3.00	5.00	7.00	9.00								
	6GM	Table	6	3.00	5.00	7.00	9.00								
	6GM	Console	6	3.50	6.00	8.00	12.00								
	8J	Table	8	3.50	6.00	8.00	12.00								
	8J	Console	8	3.50	6.00	8.00	12.00								
	8JM	Table	8	3.50	6.00	8.00	12.00								
	8JM	Console	8	4.00	7.00	10.00	14.00								
	6GH	Table	6	3.00	5.00	7.00	9.00								
	6GH	Console	6	3.50	5.00	7.00	9.00								
1937	Z	Table	4	4.00	7.00	10.00	12.00								
	Z DeLuxe	Table	4	4.00	7.00	10.00	12.00								
	RK	Table	5	4.00	7.00	10.00	12.00								
	RK DeLuxe	Table	5	4.00	7.00	10.00	12.00								
	D	Table	6	4.00	7.00	10.00	12.00								
	D DeLuxe	Table	6	4.00	7.00	10.00	12.00								
	DA	Console	6	4.00	7.00	10.00	12.00								
	DA	Table	5	4.00	7.00	10.00	12.00								
	G	Table	6	4.00	7.00	10.00	12.00								
	G	Console	6	4.50	8.00	12.00	15.00								
	GH	Table	7	4.00	7.00	10.00	12.00								
	GH	Console	7	4.50	8.00	12.00	15.00								
	GB	Table	5	4.00	7.00	10.00	12.00								
	GB	Console	5	4.50	8.00	12.00	15.00								
	NT	Table	10	4.00	7.00	10.00	12.00								
	NT	Console	10	4.50	8.00	12.00	15.00								
	AA	Portable Batt.	4	4.00	7.00	10.00	12.00								
	OP	Public Addr.	3	4.00	7.00	10.00	12.00								
	KL	Comm. System	4	4.00	7.00	10.00	12.00								
SPARTON (Sparks-Wilmington)															
1933	71	Mantel	6	\$1.50	\$2.50	\$4.00	\$6.00								
	18	Console	10	2.00	3.50	5.00	7.50								
	71-B	Console	6	1.50	2.50	4.00	6.00								
	14	Console	7	1.75	3.00	4.50	6.50								
	72	Console	7	1.75	3.00	4.50	6.50								
	74	Console	9	2.25	4.00	6.00	9.00								
	58	Console	8	2.00	3.50	5.00	7.50								
	61	Compact	5	1.50	2.50	4.00	6.00								
	62	Compact	5	1.50	2.50	4.00	6.00								
1934	134	Console	8	3.50	6.00	10.50	15.00								
	83	Console	8	3.00	5.00	9.00	12.00								
	80	Console	8	2.50	4.00	6.00	9.00								
	691	Console	6	2.50	4.00	6.00	9.00								
	66	Console	6	2.25	3.50	5.00	8.00								
	68	Console	6	2.25	3.50	5.00	8.00								
	67	Table	6	2.25	3.50	5.00	8.00								
	65	Table	6	2.00	3.00	4.50	7.00								
	57	Table	5	2.00	3.00	4.50	7.00								
	53	Table	5	2.00	3.00	4.50	7.00								
	74	Console	9	2.75	4.50	7.50	10.50								
	78	Console	8	2.50	4.00	6.00	9.00								
	75	Midget	8	2.25	3.50	5.00	8.00								
	475	Console	8	2.75	4.50	7.50	10.50								
	75A	Console	8	2.25	3.50	5.00	8.00								
	475A	Console	8	2.75	4.50	7.50	10.50								
	84	Console	8	3.00	5.00	9.00	12.00								
	86-X	Midget	8	2.50	4.00	6.00	9.00								
	104	Console	10	3.50	6.00	10.50	15.00								
	478A	Console	8	2.50	4.00	6.00	9.00								
	76	Console	13	3.50	6.00	10.50	15.00								
1935	135	Console	10	4.00	7.50	12.00	18.00								
	136	Console	13	4.00	7.50	12.00	18.00								
	594	Midget	5	2.25	3.50	5.00	8.00								
	655	Midget	6	2.25	3.50	5.00	8.00								
	685	Console	6	2.50	4.00	6.00	9.00								
	835	Console	8	3.25	5.00	9.00	12.50								
	1176	Console	11	4.00	7.50	12.00	18.00								
	1180	Console	11	4.00	7.50	12.00	18.00								
	1476	Console	14	4.00	7.50	12.00	18.00								
	506	Compact	5	2.25	3.50	5.00	8.00								
	516	Table	5	2.25	3.50	5.00	8.00								
	618	Table	6	2.25	3.50	5.00	8.00								
	666	Console	7	2.50	4.00	6.00	9.50								
	716X	Table	7	3.00	4.50	7.50	11.00								
	766	Console	7	3.00	4.50	7.50	11.00								
	966	Console	9	3.25	5.00	9.00	12.50								
	1086	Console	10	4.00	7.50	12.00	18.00								
	1166	Console	11	4.00	7.50	12.00	18.00								
	1466	Console	14	4.00	7.50	12.00	18.00								
	1166	Console	11	4.00	7.50	12.00	18.00								
	1466	Console	14	4.00	7.50	12.00	18.00								
STEWART-WARNER															
1933	1155	Midget	6	\$1.50	\$2.50	\$4.00	\$6.00								
	1111	Midget	6	1.50	2.50	4.00	6.00								
	1152	Sm. Dun. Phy.	6	1.50	2.50	4.00	6.00								
	1153	Dun. Phyfe	6	1.50	2.50	4.00	6.00								
	1154	Commode	10	1.75	3.00</										

Year	Model	Cabinet	Tubes	A	B	C	D
43	Console	10	3.00	5.00	9.00	12.00	
51	Console	11	3.00	5.00	9.00	12.00	
48	Console	11	3.00	5.00	9.00	12.00	
50	Highboy	11	3.00	5.00	9.00	12.00	
52	Console	12	3.00	5.00	9.00	12.00	
54	Console	12	3.00	5.00	9.00	12.00	
55	Console	8	2.50	4.50	7.50	10.50	
56	Lowboy	8	3.00	5.00	9.00	12.00	
53	Concealed	12	3.00	5.00	9.00	12.00	
1934	52	Console	12	3.50	6.00	10.50	15.00
54	Console	12	3.50	6.00	10.50	15.00	
49	Console	11	3.50	6.00	10.50	15.00	
51	Console	11	3.50	6.00	10.50	15.00	
55	Console	8	3.00	5.00	9.00	12.00	
56R	Console	8	3.50	6.00	10.50	15.00	
64	Console	8	2.75	4.50	7.50	10.50	
60T	Table	7	2.25	3.50	5.00	8.00	
60L	Console	7	2.50	4.00	6.00	9.00	
68	Console	10	3.50	6.00	10.50	15.00	
69	Table	4	2.25	3.50	5.00	8.00	
1935	58-T	Table	6	2.50	4.00	6.00	9.50
58-L	Console	6	3.00	4.50	7.50	11.00	
58-W	Console	6	3.00	4.50	7.50	11.00	
61-T	Table	7	2.50	4.00	6.00	9.50	
61-L	Console	7	3.00	4.50	7.50	11.00	
61-W	Console	7	3.00	4.50	7.50	11.00	
62	Console	7	3.25	5.00	9.00	12.50	
63	Console	7	3.50	6.00	10.50	15.00	
82	Console	10	4.00	7.50	12.00	18.00	
70	Console	13	4.00	7.50	12.00	18.00	
72	Auto. Phono-Comb.	13	4.00	7.50	12.00	18.00	
74	Auto. Phono-Comb.	16	4.00	7.50	12.00	18.00	
65	Te-tek-tor-et	9	3.50	6.00	10.50	15.00	
60M	Console	7	3.25	5.00	9.00	12.50	
61H	Console	7	2.50	4.00	6.00	9.50	
68R	Console	10	4.00	7.50	12.00	18.00	
84	Console	12	4.00	7.50	12.00	18.00	
1936	58-T	Table	6	3.50	6.00	8.00	12.00
58-L	Console	6	4.00	7.00	10.00	14.00	
58-W	Console	6	4.00	7.00	10.00	14.00	
61-T	Table	7	3.50	6.00	8.00	12.00	
61-L	Console	7	4.00	7.00	10.00	14.00	
61-W	Console	7	4.00	7.00	10.00	14.00	
62	Console	7	6.00	10.00	15.00	20.00	
63	Console	7	6.00	10.00	15.00	20.00	
65	Te-tek-tor-et	9	6.00	10.00	15.00	20.00	
1937	58-T	Table	6	4.50	8.00	12.00	15.00
58-L	Console	6	5.00	9.00	15.00	18.00	
61-LZ	Console	7	5.00	9.00	15.00	18.00	
62	Console	8	7.00	15.00	20.00	25.00	
63	Console	8	7.00	15.00	20.00	25.00	
65	2-Piece	7	5.00	9.00	15.00	18.00	
115	Console	7	4.00	7.00	10.00	12.00	
125-H	Table	5	4.50	8.00	12.00	15.00	
130-H	Table	7	5.00	9.00	15.00	18.00	
130-L	Console	7	5.00	10.00	18.00	22.50	
130-M	Console	8	6.00	9.00	15.00	18.00	
130-R	Table	9	5.00	9.00	15.00	18.00	
130-U	Table	9	5.00	9.00	15.00	18.00	
140-H	Table	9	5.00	9.00	15.00	18.00	
140-K	Console	9	7.00	15.00	20.00	25.00	
140-L	Console	9	7.00	15.00	20.00	25.00	
140-P	Console	9	8.00	20.00	25.00	30.00	
TRANSFORMER CORP. (Clarion)							
1933	423	Midget	5	\$1.50	\$2.50	\$4.00	\$6.00
451	Midget	6	1.50	2.50	4.00	6.00	
470	Midget	6	1.50	2.50	4.00	6.00	
471	Midget	6	1.50	2.50	4.00	6.00	
472	Console	8	1.75	3.00	4.50	6.50	
490	Console	8	2.00	3.50	5.00	7.50	
486	Console	10	1.75	3.00	4.50	6.50	
321	Midget	5	1.50	2.50	4.00	6.00	
322	Console	5	1.50	2.50	4.00	6.00	
340	Midget	8	1.50	2.50	4.00	6.00	
341	Console	8	1.50	2.50	4.00	6.00	
366	Console	10	1.50	2.50	4.00	6.00	
360-C	Console	10	1.50	2.50	4.00	6.00	
400	Compact	5	1.50	2.50	4.00	6.00	
420	Compact	5	1.50	2.50	4.00	6.00	
440	Compact	4	1.50	2.50	4.00	6.00	
450	Compact	4	1.50	2.50	4.00	6.00	
460	Console	14	2.00	3.50	5.00	7.50	
500	Midget	7	1.50	2.50	4.00	6.00	
501	Midget	8	1.75	3.00	4.50	6.50	
1934	TC-1	Table	7	2.25	3.50	5.00	8.00
TC-20	Table	5	2.00	3.00	4.50	7.00	
TC-60	Table	6	2.25	3.50	5.00	8.00	
TC-30	Table	4	2.00	3.00	4.50	7.00	
TC-2	Console	7	2.75	4.50	7.50	10.50	
TC-52	Table	5	2.00	3.00	4.50	7.00	
6A	Console	10	2.00	3.00	4.50	7.00	
7A	Midget	6	2.00	3.00	4.50	7.00	
8A	Compact	5	2.00	3.00	4.50	7.00	
13A	Console	6	2.00	3.00	4.50	7.00	
1935	TC-35	Midget	5	2.25	3.50	5.00	8.00
TC-36	Midget	6	2.50	4.00	6.00	9.50	
TC-37	Midget	7	3.00	4.50	7.50	11.00	
TC-39	Midget	7	2.50	4.00	6.00	9.50	
TC-47	Console	7	3.00	4.50	7.50	11.00	
TC-53	Midget	9	3.00	4.50	7.50	11.00	
TC-59	Compact	5	2.25	3.50	5.00	8.00	

Year	Model	Cabinet	Tubes	A	B	C	D
TRAV-LER							
1935	50A	Compact	4	\$2.25	\$3.50	\$5.00	\$8.00
51	Midget	5	2.25	3.50	5.00	8.00	
53A	Midget	5	2.25	3.50	5.00	8.00	
60A	Compact	5	2.25	3.50	5.00	8.00	
76	Midget	7	2.25	3.50	5.00	8.00	
100	Console	6	2.25	3.50	5.00	8.00	
1937	48R		4	4.00	7.00	10.00	12.00
50A			4	4.00	7.00	10.00	12.00
50AM			4	4.00	7.00	10.00	12.00
41	Deluxe		4	4.00	7.00	10.00	12.00
442	Oval		4	4.00	7.00	10.00	12.00
512			5	4.00	7.00	10.00	12.00
60A			5	4.00	7.00	10.00	12.00
623			5	4.00	7.00	10.00	12.00
511A			5	4.00	7.00	10.00	12.00
633			5	4.00	7.00	10.00	12.00
634	Flat table		5	4.00	7.00	10.00	12.00
163	Flat table		5	4.50	8.00	12.00	15.00
733	Console		7	4.50	8.00	12.00	15.00
173	Console		7	4.50	8.00	12.00	15.00
525	Console		5	4.00	7.00	10.00	12.00
TROY RADIO							
1936	TR4	Table	4	\$3.00	\$5.00	\$7.00	\$9.00
TR4A	Table	4	3.00	5.00	7.00	9.00	
TR5A	Table	5	3.00	5.00	7.00	9.00	
TR711	Table	6	3.00	5.00	7.00	9.00	
TR63	Table	6	3.00	5.00	7.00	9.00	
TR84	Table	8	3.50	6.00	8.00	12.00	
UNITED AMERICAN BOSCH							
1933	501	Personal	5	\$1.00	\$1.25	\$2.00	\$3.00
350	Personal	5	1.00	1.25	2.00	3.00	
355	Personal	5	1.00	1.25	2.00	3.00	
370-T	Consolelette	7	1.00	1.50	2.25	3.25	
360-T	Consolelette	7	1.00	1.50	2.25	3.25	
370-E	Console	7	1.00	1.50	2.25	3.25	
370-M	Console	7	1.00	1.75	2.50	3.75	
370-S	Console	7	1.00	1.75	2.50	3.75	
360-E	Console	7	1.00	1.75	2.50	3.75	
360-M	Console	7	1.00	1.75	2.50	3.75	
360-S	Console	7	1.00	1.75	2.50	3.75	
260-R	Console	10	1.25	2.00	3.00	4.50	
260-C	Console	10	1.25	2.00	3.00	4.50	
312-C	Console	12	1.25	2.25	3.75	5.25	
312-G	Console	12	1.25	2.25	3.75	5.25	
1934	402	Personal	5	1.00	1.50	2.25	3.50
420	Personal	5	1.00	1.50	2.25	3.50	
357	Personal	5	1.00	1.50	2.25	3.50	
352	Compact	5	1.00	1.50	2.25	3.50	
360W	Midget	7	1.25	1.75	2.50	4.00	
360T	Midget	7	1.25	1.75	2.50	4.00	
360E	Console	7	1.25	2.00	3.00	4.50	
360X	Console	7	1.25	2.00	3.00	4.50	
360Y	Console	7	1.25	2.00	3.00	4.50	
370W	Midget	7	1.25	1.75	2.50	4.00	
370X	Console	7	1.25	2.00	3.00	4.50	
430T	Midget	5	1.25	1.50	2.25	3.50	
430T	Console	5	1.25	1.75	2.50	4.00	
480R	Console	10	1.50	2.50	4.50	6.00	
502	Compact	5	1.00	1.50	2.25	3.50	
440T	Table	6	1.25	1.75	2.50	4.00	
440C	Console	6	1.25	1.75	2.50	4.00	
460A	Table	7	1.25	1.75	2.50	4.00	
460B	Table	7	1.25	1.75	2.50	4.00	
460R	Console	7	1.25	2.00	3.00	4.50	
480D	Console	9	1.50	2.50	4.50	6.00	
480D	Console	5	1.00	2.50	2.25	4.00	
376BT	Table	5	1.25	1.75	2.50	4.00	
376S	Console	5	1.25	1.75	2.50	4.00	
462A	Table	7	1.25	1.75	2.50	4.00	
462B	Table	7	1.25	1.75	2.50	4.00	
462Y	Console	7	1.25	2.00	3.00	4.50	
1935	04	Table	5	1.25	1.75	2.50	4.00
05	Table	5	1.25	1.75	2.50	4.00	
505	Table	6	1.25	1.75	2.50	4.00	
510	Table	5	1.25	1.75	2.50	4.00	
430T	Table	5	1.25	1.75	2.50	4.00	
510E	Console	5	1.25	2.00	3.00	4.75	
430J	Console	5	1.25	2.00	3.00	4.75	
575F	Table	7	1.25	2.00	3.00	4.75	
585Y	Table	8	1.50	2.25	3.75	5.50	
575Q	Console	7	1.50	2.25	3.75	5.50	
585Z	Console	8	1.50	2.25	3.75	5.50	
395F	Console	10	1.75	3.00	5.25	7.50	
480D	Console	10	2.00	3.7			

Year	Model	Cabinet	Tubes	A	B	C	D	Year	Model	Cabinet	Tubes	A	B	C	D
UNITED AMERICAN BOSCH 1936 (continued)								WESTINGHOUSE							
	575F	Table	7	3.50	6.00	8.00	12.00	1934	WR20	Table	4	\$2.00	\$3.00	\$4.50	\$7.00
	585Y	Table	8	4.00	7.00	10.00	14.00		WR21	Table	5	2.00	3.00	4.50	7.00
	575Q	Console	7	4.00	7.00	10.00	14.00		WR22	Table	5	2.00	3.00	4.50	7.00
	585Z	Console	8	4.00	7.00	10.00	14.00		WR23	Table	7	2.25	3.50	5.00	8.00
	595P	Console	10	6.00	10.00	15.00	20.00		WR24	Console	7	2.50	4.00	6.00	9.00
	480D	Console	10	7.00	15.00	20.00	25.00		WR27	Table	4	2.00	3.00	4.50	7.00
	595M	Console	10	7.00	15.00	20.00	25.00		WR28	Table	6	2.25	3.50	5.00	8.00
	385	Table	5	3.00	5.00	7.00	9.00		WR29	Console	6	2.25	3.50	5.00	8.00
	386	Table	6	3.50	6.00	8.00	12.00		WR30	Console	10	3.00	5.00	9.00	12.00
	376N	Table	5	3.50	6.00	8.00	12.00	1935	WR100	Midget	5	2.25	3.50	5.00	8.00
1937	604	Personal	5	4.00	7.00	10.00	12.00		WR101	Midget	6	2.25	3.50	5.00	8.00
	515	Personal	5	4.00	7.00	10.00	12.00		WR201	Table	5	2.25	3.50	5.00	8.00
	610	Personal	6	4.00	7.00	10.00	12.00		WR203	Table	6	2.25	3.50	5.00	8.00
	605	Personal	5	4.00	7.00	10.00	12.00		WR303	Console	6	2.50	4.00	6.00	9.50
	640	Personal	6	4.00	7.00	10.00	12.00		WR204	Table	7	3.00	4.50	7.50	11.00
	620	Personal	7	4.00	7.00	10.00	12.00		WR304	Console	7	3.00	4.50	7.50	11.00
	605C	Console	5	4.00	7.00	10.00	12.00		WR205	Table	8	3.00	4.50	7.50	11.00
	660T	Personal	7	4.50	8.00	12.00	15.00		WR305	Console	8	3.00	4.50	7.50	11.00
	650	Console	6	4.50	8.00	12.00	15.00		WR306	Console	10	3.50	6.00	10.50	15.00
	625	Console	7	4.50	8.00	12.00	15.00		WR601	Table	5	2.25	3.50	5.00	8.00
	660C	Console	7	5.00	9.00	15.00	18.00	1936	WR100	Midget	5	3.00	5.00	7.00	9.00
	670S	Console	9	5.00	9.00	15.00	18.00		WR101	Midget	6	3.00	5.00	7.00	9.00
	670C	Console	9	6.00	10.00	18.00	22.50		WR201	Table	5	3.00	5.00	7.00	9.00
	680	Console	13	8.00	20.00	25.00	30.00		WR203	Table	6	3.00	5.00	7.00	9.00
	600	Table	4	4.00	7.00	10.00	12.00		WR303	Console	6	3.50	6.00	8.00	12.00
	601	Table	5	4.00	7.00	10.00	12.00		WR204	Table	7	4.00	7.00	10.00	14.00
	602C	Console	6	4.50	8.00	12.00	15.00		WR304	Console	7	4.00	7.00	10.00	14.00
	602T	Table	6	4.50	8.00	12.00	15.00		WR205	Table	8	4.00	7.00	10.00	14.00
									WR305	Console	8	4.00	7.00	10.00	14.00
									WR306	Console	10	6.00	10.00	15.00	20.00
									WR601	Table	5	3.00	5.00	7.00	9.00
UNIVERSAL BATTERY								1937							
1937	8410	Console	8	\$5.00	\$9.00	\$15.00	\$18.00	WR102	Compact	5	4.00	7.00	10.00	12.00	
	8210	Mantel	8	4.50	8.00	12.00	15.00	WR209	Table	5	4.00	7.00	10.00	12.00	
	6310	Console	6	4.50	8.00	12.00	15.00	WR210	Table	5	4.00	7.00	10.00	12.00	
	6110	Mantel	6	4.00	7.00	10.00	12.00	WR310	Console	5	4.00	7.00	10.00	12.00	
	5010	Mantel	5	4.00	7.00	10.00	12.00	WR211	Table	6	4.00	7.00	10.00	12.00	
	8432	Console	8	5.00	9.00	15.00	18.00	WR311	Console	6	4.50	8.00	12.00	15.00	
	8232	Mantel	8	4.50	8.00	12.00	15.00	WR116	Table	7	4.00	7.00	10.00	12.00	
	6332	Console	6	4.50	8.00	12.00	15.00	WR 316	Console	7	4.50	8.00	12.00	15.00	
	8432	Mantel	6	4.00	7.00	10.00	12.00	WR212	Table	8	4.50	8.00	12.00	15.00	
	5032	Mantel	5	4.00	7.00	10.00	12.00	WR312	Console	8	5.00	9.00	15.00	18.00	
	7446	Console	7	5.00	9.00	15.00	18.00	WR214	Table	10	5.00	9.00	15.00	18.00	
	7246	Mantel	7	4.50	8.00	12.00	15.00	WR314	Console	10	6.00	10.00	18.00	22.50	
	63A6	Console	6	4.50	8.00	12.00	15.00	WR315	Console	12	7.00	15.00	20.00	25.00	
	61A6	Mantel	6	4.50	8.00	12.00	15.00								
	50A6	Mantel	5	4.00	7.00	10.00	12.00								
UNITED MOTORS SERVICE								WILCOX-GAY							
1936	1101	Table	5	\$3.00	\$5.00	\$7.00	\$9.00	1933	3J5-55	Midget	5	\$1.50	\$2.50	\$4.00	\$6.00
	1105	Table	5	3.00	5.00	7.00	9.00	Carillon	Midget	7	1.50	2.50	4.00	6.00	
	1108	Table	5	3.00	5.00	7.00	9.00	3S5-66	Midget	5	1.50	2.50	4.00	6.00	
	117	Table	6	3.00	5.00	7.00	9.00	Coronet	Highboy	7	1.75	3.00	4.50	6.50	
	1108	Console	6	3.50	6.00	8.00	12.00	3T6-66	Midget	6	1.50	2.50	4.00	6.00	
	1109	Console	8	4.00	7.00	10.00	14.00	Cantata	Compact	5	1.50	2.50	4.00	6.00	
	1110	Console	10	6.00	10.00	15.00	20.00	2VB7-67	Compact	5	1.50	2.50	4.00	6.00	
	3205	Table	5	3.00	5.00	7.00	9.00	Hilo	Compact	5	1.50	2.50	4.00	6.00	
	3206	Table	8	3.50	6.00	8.00	12.00	3LB7-22-24	Portable	7	1.75	3.00	4.50	6.50	
	6010	Table	4	3.00	5.00	7.00	9.00	Cameo	Portable	7	1.50	2.50	4.00	6.00	
	3207	Console	8	4.00	7.00	10.00	14.00	3LB7-24A	Portable	7	1.75	3.00	4.50	6.50	
								Corona	Console	10	2.00	3.50	5.00	7.50	
								3LB7-22-706	Console	7	1.75	3.00	4.50	6.50	
								3PA6-66	Console	6	1.50	2.50	4.00	6.00	
								3F7-67	Console	7	1.75	3.00	4.50	6.50	
								1934	3KE5-26	Midget	5	2.00	3.00	4.50	7.00
								4CD5-29	Table	5	2.00	3.00	4.50	7.00	
								35B-566	Table	5	2.00	3.00	4.50	7.00	
								3VB6-73	Table	6	2.25	3.50	5.00	8.00	
								3VB6-710	Console	6	2.25	3.50	5.00	8.00	
								1935	3JE5-93	Table	5	2.25	3.50	5.00	8.00
								5E5-89	Table	5	2.25	3.50	5.00	8.00	
								5B5-800	Console	5	2.25	3.50	5.00	8.00	
								4JC6-84	Table	6	2.25	3.50	5.00	8.00	
								4JC6-780	Console	6	2.50	4.00	6.00	9.50	
								5E7-91	Table	7	2.25	3.50	5.00	8.00	
								5E7-750	Console	7	2.50	4.00	6.00	9.50	
								5A6-89	Table	6	2.25	3.50	5.00	8.00	
								5A6-810	Console	6	2.25	3.50	5.00	8.00	
								3J4-11	Table	4	2.25	3.50	5.00	8.00	
								5F8-90	Table	8	2.50	4.00	6.00	9.50	
								5F8-790	Console	8	2.50	4.00	6.00	9.50	
								4H13-840	Console	13	3.50	6.00	10.50	15.00	
								4G8-840	Console	8	3.00	4.50	7.50	11.00	
								1936	3JE5-93	Table	5	3.00	5.00	7.00	9.00
								5B5-89	Table	5	3.00	5.00	7.00	9.00	
								5B5-800	Console	5	3.00	5.00	7.00	9.00	
								4JC6-84	Table	6	3.00	5.00	7.00	9.00	
								4JC6-780	Console	6	3.50	6.00	8.00	12.00	
								5E7-91	Table	7	3.00	5.00	7.00	9.00	
								5E7-750	Console	7	3.50	6.00	8.00	12.00	
								5A6-89	Table	6	3.00	5.00	7.00	9.00	
								5A6-810	Console	6	3.00	5.00	7.00	9.00	
								3J4-11	Table	4	3.00	5.00	7.00	9.00	
								5F8-90	Table	8	3.50	6.00	8.00	12.00	

Year	Model	Cabinet	Tubes	A	B	C	D
	5F8-790	Console	8	3.50	6.00	8.00	12.00
	4H13-840	Console	13	6.00	10.00	15.00	20.00
	4C8-840	Console	8	4.00	7.00	10.00	14.00
1937	A-11	Table	5	4.00	7.00	10.00	12.00
	A-15	Table	6	4.00	7.00	10.00	12.00
	A-16	Table	5	4.00	7.00	10.00	12.00
	A-17	Table	6	4.00	7.00	10.00	12.00
	A-18	Table	6	4.00	7.00	10.00	12.00
	A-19	Console	6	4.00	7.00	10.00	12.00
	A-20	Console	8	4.50	8.00	12.00	15.00
	A-21	Console	10	5.00	9.00	15.00	18.00
	A-22	Table	4	4.00	7.00	10.00	12.00
	A-23	Console	4	4.00	7.00	10.00	12.00
	A-24	Table	4	4.00	7.00	10.00	12.00
	A-25	Console	4	4.00	7.00	10.00	12.00

WURLITZER

Year	Model	Cabinet	Tubes	A	B	C	D
1933	C-4-L	Midget	4	\$1.00	\$1.25	\$2.00	\$3.00
	C-4-LI	Midget	4	1.00	1.25	2.00	3.00
	M-4-L	Midget	4	1.00	1.25	2.00	3.00
	M-4-LI	Midget	4	1.00	1.25	2.00	3.00
	P-5-L	Midget	5	1.00	1.25	2.00	3.00
	U-5-L	Midget	5	1.00	1.25	2.00	3.00
	U-5-LI	Sheraton	5	1.00	1.25	2.00	3.00
	U-5-DP	Side Table	5	1.00	1.25	2.00	3.00
	U-5-QA	Queen Anne	5	1.00	1.25	2.00	3.00
	A-5-L	Midget	5	1.00	1.25	2.00	3.00
	W-88	Midget	8	1.00	1.50	2.25	3.25
	RS-2	Console	1	1.00	1.25	2.00	3.00
	A-46	Console	4	1.00	1.25	2.00	3.00
	A-99	Console	8	1.00	1.50	2.25	3.25
	A-133	Console	13	1.00	2.00	3.00	4.50
	W-89	Console	8	1.00	1.50	2.25	3.25
	A-6L	Console	6	1.00	1.50	2.25	3.25
	A-6LI	Queen Anne	6	1.00	1.50	2.25	3.25
	A-5LI	Console	5	1.00	1.25	2.00	3.00
	A-5LI2	Console	5	1.00	1.50	2.25	3.25
	U-55	Compact	5	1.00	1.25	2.00	3.00
	408	Console	8	1.00	1.75	2.50	3.75
	B-80	Console	8	1.00	1.75	2.50	3.75
	SA65	Midget	6	1.00	1.25	2.00	3.00
	M-405	Console	5	1.00	1.25	2.00	3.00
	SA-130	Console	13	1.25	2.25	3.75	5.25
	SA-120	Console	12	1.00	1.75	2.50	3.75
	412	Console	12	1.00	1.75	2.50	3.75
	SA-66	Console	6	1.00	1.50	2.25	3.25
	SA-91	Console	9	1.00	1.50	2.25	3.25
	SW80	Console	8	1.00	1.75	2.50	3.75
	SU-5	Console	5	1.00	1.25	2.00	3.00

ZENITH

Year	Model	Cabinet	Tubes	A	B	C	D
1933	701	Midget	5	\$1.50	\$2.50	\$4.00	\$6.00
	705	Midget	6	1.50	2.50	4.00	6.00
	706	Midget	6	1.50	2.50	4.00	6.00
	707	Midget	6	1.50	2.50	4.00	6.00
	711	Midget	6	1.50	2.50	4.00	6.00
	750	Console	6	1.50	2.50	4.00	6.00
	715	Midget	6	1.50	2.50	4.00	6.00
	755	Console	6	1.50	2.50	4.00	6.00
	760	Console	6	1.75	3.00	4.50	6.50
	250	Midget	2	1.75	3.00	4.50	6.50
	240	Console	2	2.25	4.00	6.00	9.00
	245	Console	2	2.25	4.00	6.00	9.00
	411	Console	10	2.25	4.00	6.00	9.00
	473	Console RP	8	3.00	5.00	9.00	12.00
	288	Console	8	1.75	3.00	4.50	6.50
1934	801	Midget	5	2.00	3.00	4.50	7.00
	293	Console	8	2.50	4.00	6.00	9.00
	725	Console	7	2.50	4.00	6.00	9.00
	805	Table	5	2.00	3.00	4.50	7.00
	730	Midget	6	2.25	3.50	5.00	8.00
	735	Console	6	2.00	3.00	4.50	7.00
	807	Table	5	2.00	3.00	4.50	7.00
	885	Console	9	3.00	5.00	9.00	12.00
	970	Console	9	2.75	4.50	7.50	10.50
	808	Table	6	2.00	3.00	4.50	7.00
	975	Console	9	2.75	4.50	7.50	10.50
	10002	Console	25	3.50	6.00	10.50	15.00
	809	Table	6	2.25	3.50	5.00	8.00
	811	Table	6	2.25	3.50	5.00	8.00
	825	Midget	7	2.00	3.00	4.50	7.00
	827	Midget	7	2.25	3.50	5.00	8.00
	829	Table	7	2.25	3.50	5.00	8.00
	835	Table	10	2.50	4.00	6.00	9.00
	845	Console	5	2.00	3.00	4.50	7.00
	847	Console	5	2.00	3.00	4.50	7.00
	850	Console	5	2.25	3.50	5.00	8.00
	860	Console	6	2.25	3.50	5.00	8.00
	861	Console	6	2.50	4.00	6.00	9.00
	870	Console	7	2.50	4.00	6.00	9.00
	871	Console	7	2.50	4.00	6.00	9.00
	880	Console	10	2.75	4.50	7.50	10.50
	DeLux	Console	25	3.50	6.00	10.50	15.00

Year	Model	Cabinet	Tubes	A	B	C	D
1935	4T26	Table	4	2.25	3.50	5.00	8.00
	945	Midget	6	2.50	4.00	6.00	9.50
	4T51	Console	4	2.25	3.50	5.00	8.00
	990	Console	12	4.00	7.50	12.00	18.00
	5829	Table	5	2.25	3.50	5.00	8.00

Year	Model	Cabinet	Tubes	A	B	C	D
	5856	Console	5	2.50	4.00	6.00	9.50
	6827	Table	6	2.50	4.00	6.00	9.50
	6852	Console	6	2.50	4.00	6.00	9.50
	7828	Table	7	2.50	4.00	6.00	9.50
	7853	Console	7	3.00	4.50	7.50	11.00
	9830	Table	9	3.00	4.50	7.50	11.00
	9854	Console	9	3.00	4.50	7.50	11.00
	9855	Console	9	3.25	5.00	9.00	12.50
	12A57	Console	12	3.50	6.00	10.50	15.00
	12A58	Console	12	4.00	7.50	12.00	18.00
	16A61	Console	16	4.00	7.50	12.00	18.00
	16A63	Console	16	4.00	7.50	12.00	18.00
	1000ZStrato- sphere	Console	25	4.00	7.50	12.00	18.00
	4V31	Table	4	2.25	3.50	5.00	8.00
	4V59	Console	4	2.50	4.00	6.00	9.50
	6V27	Table	6	2.50	4.00	6.00	9.50
	6V62	Console	6	3.00	4.50	7.50	11.00

Year	Model	Cabinet	Tubes	A	B	C	D
1936	4T26	Table	4	3.00	5.00	7.00	9.00
	4T51	Console	4	3.00	5.00	7.00	9.00
	5829	Table	5	3.00	5.00	7.00	9.00
	5856	Console	5	3.50	6.00	8.00	12.00
	6827	Table	6	3.50	6.00	8.00	12.00
	6852	Console	6	3.50	6.00	8.00	12.00
	7828	Table	7	3.50	6.00	8.00	12.00
	7853	Console	7	4.00	7.00	10.00	14.00
	9830	Table	9	4.00	7.00	10.00	14.00
	9854	Console	9	4.00	7.00	10.00	14.00
	9855	Console	9	5.00	8.00	12.00	18.00
	12A57	Console	12	6.00	10.00	15.00	20.00
	12A58	Console	12	7.00	15.00	20.00	25.00
	16A61	Console	16	7.00	15.00	20.00	25.00
	16A63	Console	16	7.00	15.00	20.00	25.00
	Stratosphere	Console	25	7.00	15.00	20.00	25.00
	4V31	Table	4	3.00	5.00	7.00	9.00
	4V59	Console	4	3.50	6.00	8.00	12.00
	6V27	Table	6	3.50	6.00	8.00	12.00
	6V62	Console	6	4.00	7.00	10.00	14.00

Year	Model	Cabinet	Tubes	A	B	C	D
1937	1000-Z	Console	25	8.00	20.00	25.00	30.00
	16-A-63	Console	16	8.00	20.00	25.00	30.00
	16-A-61	Console	16	8.00	20.00	25.00	30.00
	12-U-159	Console	12	8.00	20.00	25.00	30.00
	12-U-158	Console	12	7.00	15.00	20.00	25.00
	10-S-160	Console	10	7.00	15.00	20.00	25.00
	10-S-155	Console	10	6.00	10.00	18.00	22.50
	10-S-147	End Table	10	6.00	10.00	18.00	22.50
	10-S-157	Console	10	6.00	10.00	18.00	22.50
	10-S-156	Console	10	6.00	10.00	18.00	22.50
	10-S-153	Console	10	5.00	9.00	15.00	18.00
	10-S-130	Table	10	5.00	9.00	15.00	18.00
	8-S-154	Console	8	5.00	9.00	15.00	18.00
	8-S-129	Table	8	4.50	8.00	12.00	15.00
	6-S-147	End Table	6	5.00	9.00	15.00	18.00
	6-S-157	Console	6	5.00	9.00	15.00	18.00
	6-S-152	Console	6	4.50	8.00	12.00	15.00
	6-S-137	End Table	6	4.50	8.00		



RADIO

TRADE - IN
ALLOWANCE

Blue Book



PUBLISHED . . . September 1938

EXPIRES September 1939

RADIO
RETAILING

Directory

OF DEALER

MAXIMUMS

for RECEIVERS

MADE in U. S. A.

Years

1933

1934

1935

1936

1937

Bigger and Better than "Tricks of Trade"
This new 160-page Radio Manual is

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If you subscribe to **RADIO RETAILING**—Now!

Contains 7 complete chapters filled with practical ways to sell and service Radios, Sound Equipment, Records, etc.

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THE RADIO SALES AND SERVICE MANUAL is not just another radio book. It is 160 pages of the kind of help that every radio dealer, radio serviceman, and radio salesman can use every day to make more money in the radio game.

It gives you hard-hitting answers to the many problems in managing a radio store—training and paying radio salesmen—making window displays—selling phonograph records—selling and installing sound equipment—handling service methods—and in short, running a radio business successfully.

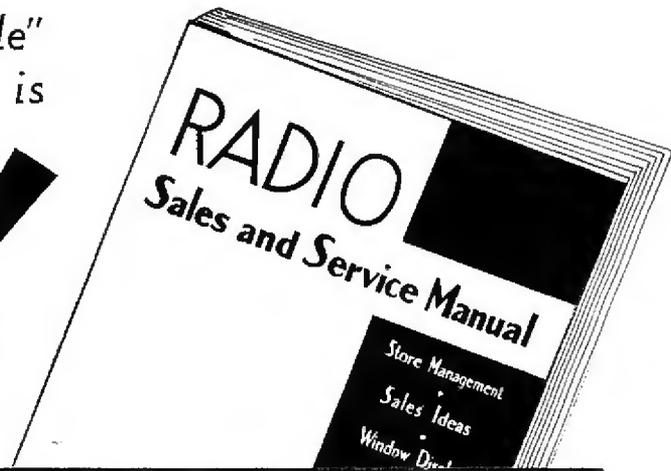
It Answers Questions Like These

Do you know how to run a radio store on limited capital effectively? How to get a new business at low cost? How to rent radios profitably? How to make an action window to sell short-wave? How to demonstrate records? How to get started in sound? How to canvass for more service jobs? How to estimate on master antenna systems? How to test televisions? How to service phonocombinations? These, and 100 more everyday problems are answered for you in this new book. It is worth its weight in gold. Yet with all its value it costs you nothing.

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We will send you a FREE copy of this new 160-page MANUAL if you enter a subscription to *Radio Retailing* at the low cost of \$1 a year. Simply fill in the coupon below—mail with \$1—and your FREE MANUAL will be sent at once. Your subscription will start with the current issue.

Mail this coupon and payment—Today!



PRACTICAL FACTS, FIGURES AND EXPERIENCES LIKE THESE FILL EACH PAGE!

- | | |
|---|---|
| <i>Cost accounting for the service department.</i> | <i>How to get started with records.</i> |
| <i>What the fair trade laws mean to the radio dealer.</i> | <i>How to keep from overstocking on records.</i> |
| <i>Why radio credit terms have been shortened.</i> | <i>How to find record prospects.</i> |
| <i>Things to know about new battery sets.</i> | <i>How to get record customers into your store.</i> |
| <i>7 steps to a successful sale.</i> | <i>How to get started with sound.</i> |
| <i>Modern methods of paying radio salesmen.</i> | <i>Proper installation of sound systems.</i> |
| <i>A recipe for selling refrigerators successfully.</i> | <i>Surveying an auditorium for sound.</i> |
| <i>What radio trade-ins bring as junk.</i> | <i>Speaker placement for good sound.</i> |
| <i>How to sell radios to women.</i> | <i>Why good service can't be cheap.</i> |
| <i>A window display that won't wear out.</i> | <i>How to canvass for more service jobs.</i> |
| <i>A motion window that sells tone.</i> | <i>Ways to improve the service bench.</i> |
| <i>A window any radio dealer can install.</i> | <i>Testing tomorrow's televisions.</i> |
| <i>An inexpensive, all-season action window.</i> | <i>How to service automatic tuning.</i> |
| | <i>Service price schedule.</i> |
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RADIO RETAILING
330 West 42nd Street
New York, N. Y.

This offer expires December 31, 1938.

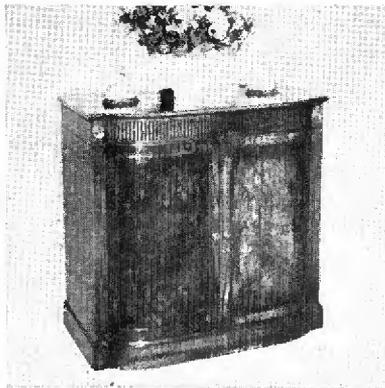
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\$1 or \$2
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En route to press, comes word of I.R.C.'s new resistors for ultra high frequencies, made possible through unique adaptation of their metalized coating applied to a ceramic tube . . . Adding to their line a new exponential sound projector, Kainer and Co., Chicago, combine durability in shipping and handling with low cost . . . A "Try it yourself" demonstration unit with built-in sterilizing facilities has been evolved by the Chicago Flexible Shaft Co. so that Shavemaster dealers can give on-the-spot demonstration to customers.

Preview of New

DYNAPHONE

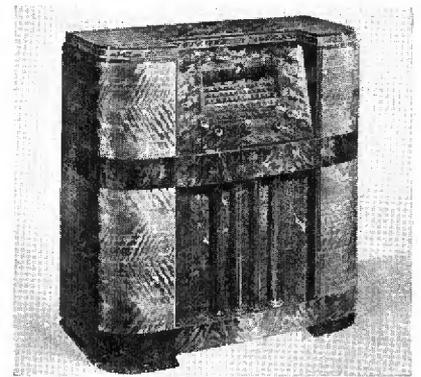
Ansley Radio Corp.
128 W. 57th St., New York, N. Y.



THE AYLESBURY — Housed in a specially designed Eighteenth Century Sheraton style cabinet this 15-tube combination radio phonograph with R-2 automatic record changer offers the Ansley 15-tube Dynaphone combination with high fidelity amplifier and speaker and correctly proportioned resonance chamber. A.c.-d.c. lists at \$485.

FAIRBANKS-MORSE

Fairbanks, Morse and Co.
2060 Northwestern Ave., Indianapolis, Ind.



MODEL 128G — A 12 tube quality set which supplies 8 button gyro speed tuning, dual automatic volume control, tuning bands from 535-1725, 2,200-7,200, 7,000-23,000 kc. Equipment includes acousti-sealed tone chamber, 12 in. dynamic speaker, rubber floated chassis, connector for record player.

CROSLEY

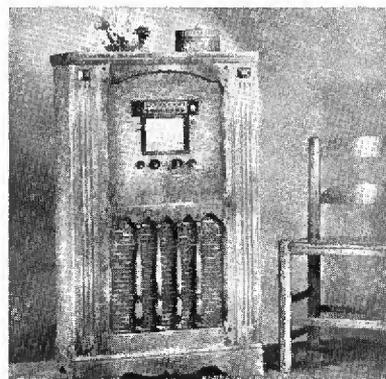
Crosley Radio Corp.
Cincinnati, Ohio



MODEL 1128M — The broad massive lines and matched woods in the cabinet of this receiver house an 11 tube, superhet, with 8 pushbuttons, covers three bands from 535 kc. to 22,000 kc. Remote plug-in control available. List \$99.50.

STROMBERG-CARLSON

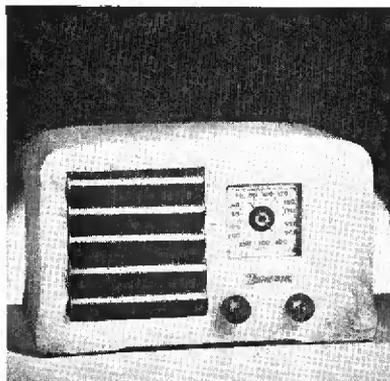
Stromberg-Carlson Tel. Mfg. Co.
100 Carlson Road, Rochester, N. Y.



MODEL No. 430-F — Utilizing Early American designs in planning its line of radios housed in maple cabinets, the manufacturer has adapted the console illustrated from a distinctive piece in the "Furniture Treasury".

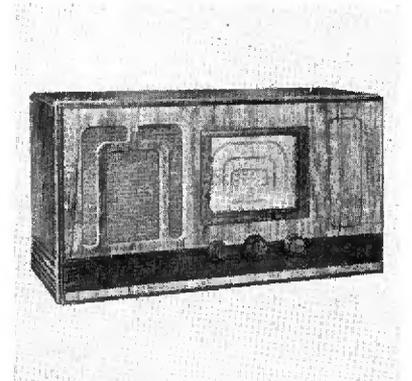
EMERSON

Emerson Radio and Phonograph Co.
111 8th Ave., New York, N. Y.



MODEL AX-235 — Offered in a selection of colors — natural onyx and ebony, Tyrolean red and ivory, Brazilian onyx with emerald green, this 5 tube a.c.-d.c. superhet with Miracle Tone chamber covers standard American broadcast and police calls. List \$17.95.

MODEL 310-H — A 5 tube, three band, horizontal table set which operates from a 6 volt storage battery or 50/60 cycles, 110 volt a.c. Rotary switch knob gives instantaneous change-over from a.c. to battery power.



Radio Merchandise

Developed to answer a difficult soldering problem was Ohio Carbon Co.'s new solder flux on the market—claimed to penetrate quickly and cleanly . . . Casco Products Co., of Bridgeport, announces the "Casco 75" electric shaver as self cleaning, non-clogging and delivering 11,000 lineal inches of cutting action per minute . . . Miniature panel instruments by Westinghouse are available in Rectox and Thermocouple types . . . Record Lube, product of Nash Radio Products Company, St. Louis, is applied directly on record while recording to prolong life.

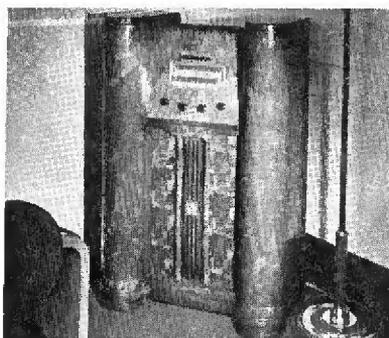
MAJESTIC

Majestic Radio and Television Corp.
2600 W. Fiftieth St., Chicago, Ill.



COMBINATION — Model 519P. An attractive cabinet of matched walnut houses a 5-tube superhet with automatic volume control, tuning from 535 to 1750 kc. The phonograph unit is equipped with crystal pickup and automatic stop.

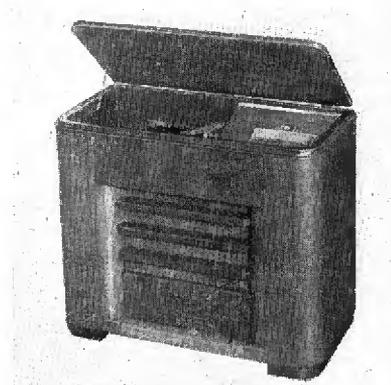
Model 739—A 7 tube a.c. superhet which covers tuning range in 3 bands 538 to 1750 kc., 2300 to 7500 kc., 7000 to 22000 kc. Ten inch speaker with automatic volume control, base compensated audio system, 6 button mechanical mute tuning. Phonograph attachment.



ANDREA

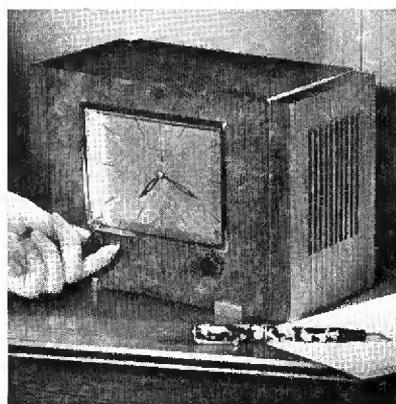
Andrea Radio Corp.
48-20 49th Ave., Woodside, L. I.

Models 10-E-11, 9-E-11 —Concert grand automatic phono-combinations; a.c. operation; matched walnut veneers; sloping tuner panel; 12-in. speaker; changer handles eight 10-in. or seven 12-in. discs; wide-range pickup; motor runs on 110 or 220; 10-E-11 is standard band, 9-E-11 standard and long waves.



KADETTE

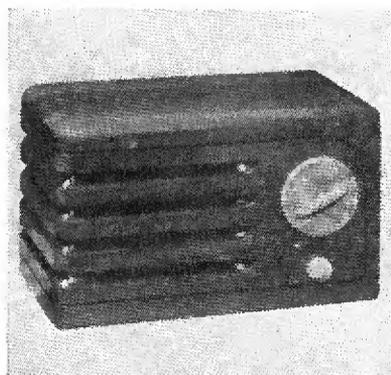
International Radio Corp.
Ann Arbor, Mich.



AUTIME—Six tube superhet receiver has the appearance and performs time-keeping functions of an electric clock in addition to function as a radio receiver. Can be set in advance for any program. Dynamic speaker, attached antenna, automatic volume control.

DETROLA

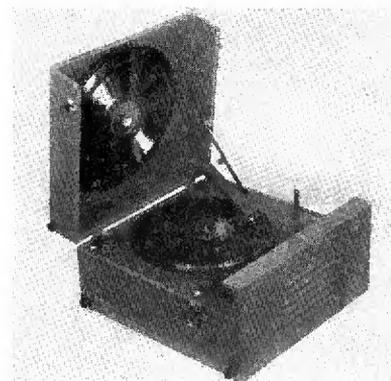
Detrola Corp.
Detroit, Mich.



MODEL 199W—Cased in a solid walnut cabinet 8x4x5 in., the new "Pee-Wee Super" lists at \$14.95, is a 5 tube a.c.-d.c. superhet with automatic volume control. Tunes from 540 to 1720 kc. and employs beam power output.

PORTOMATIC

The Portomatic Corp.
1013 Madison Ave., New York, N. Y.



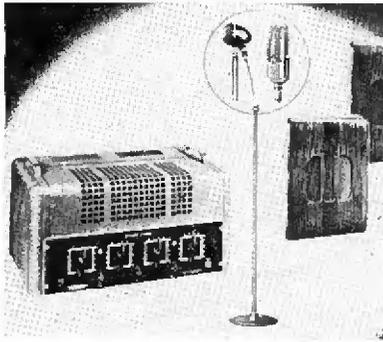
PHONOGRAPH —Series 50, an electric portable model which accommodates 10 or 12 in. records, provides generous record carrying space, crystal pickup, constant speed electric motor, "wonder-tone" chamber, compact and lightweight.

PREVUE OF NEW RADIO MERCHANDISE

WEBSTER-CHICAGO

Webster-Chicago
5622 Bloomingdale Ave., Chicago, Ill.

SOUND SYSTEM — For critical installations where seating capacity is from 7,000 to 9,000; the remote control, smooth acting high speed volume expander, low distortion and inherent noise level give quality reproduction. Featured are high speed expander, multi-stage degeneration and dual tone compensation.



REMLER

Remler Co., Ltd.
San Francisco, Calif.

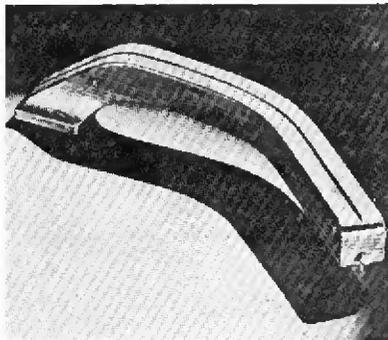


INTERCOMMUNICATOR — M-30 for users who require an inexpensive system with five or less secondary stations. Secondary units (illustrated) may lie or hang, come with or without calling switch

WEBSTER ELECTRIC

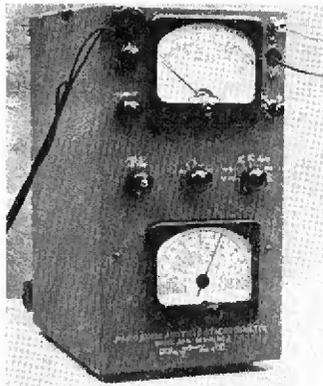
The Webster Electric Co.
Racine, Wis.

CRYSTAL PICK UP — Model X-78A-3 combines a solid wood tone arm and new "Standard" rubber sealed cartridge with leads directly from the cartridge. Metal outer shell serves as electromagnetic or electrostatic shield. Tone arm designed to minimize tracking errors.
List \$5.90.



FERRIS

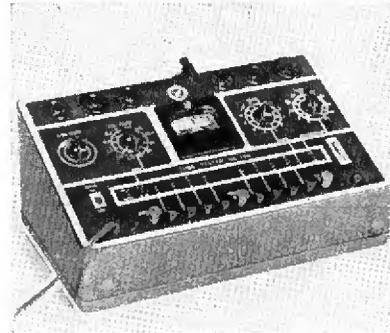
Ferris Instrument Corp.
Boonton, N. J.



TESTER — Radio noise and field strength meter offers (1) self-contained calibrating generator which allows noise-meter gain calibration (2) logarithmic scale of the output meter (3) adaptability to a variety of measurements. Frequency range 150 to 350 and 550 to 20,000 kc., voltage range 1 to 100,000 microvolts, field intensity 2 to 200,000 microvolts per meter with antenna supplied.

RCA

R C A Mfg. Co.
Camden, N. J.

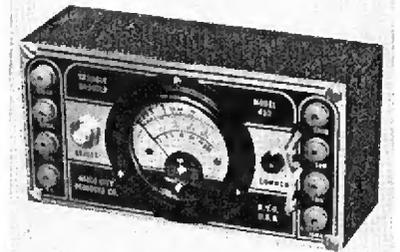


TESTER — Tests all tube types, also gas tubes, ballast tubes and battery tubes, including 1½ volt types. Equipped with five active sockets and one spare socket to allow for tube innovations. Figures on roller chart, guide lines to proper controls, automatic push buttons simplify operation

TROUBLE SHOOTER

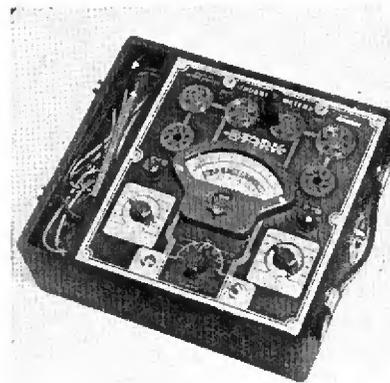
Radio City Products Co.
New York, N. Y.

TESTER — Pocket size volt - ohm - milliammeter measures d.c. volts 0-5, 0-50, 0-500, 0-1000 at 1000 ohms per volt; ohms 0-500/0-50,000/0-500,000; milliamperes 0-1/0-10. Meter has zero adjustment in addition to circuit zero adjustment.



STARK

Stark Electrical Instruments
418 S. Wells St., Chicago, Ill.



TESTER — Operated from a self-contained power supply, this tube tester and analyzer is especially suited to rural areas where electric current is not available. Three d.c. voltage ranges 0-10-100-300; three resistance ranges 0-1000-100,000-1 meg. Accurate test of self-contained batteries by flipping switch.

CLOUGH-BRENGLE

The Clough-Brengle Co.
Chicago, Ill.

TESTER — Protected by safety sequence of function-switch, No. 135 uni-checker is controlled by 2 switches to provide 29 measurement ranges, including capacity and power output in a.c. volts or db.

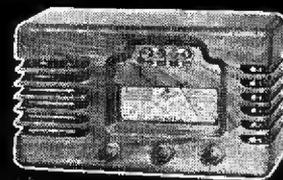




Majestic

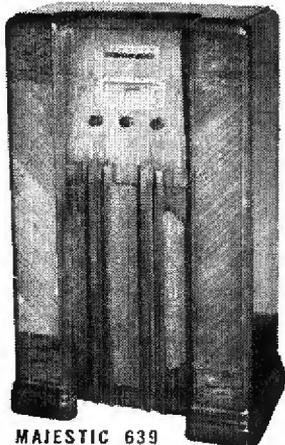
Offers an **UNEQUALLED MERCHANDISING OPPORTUNITY FOR '39!**

MIGHTY MONARCH OF THE AIR!

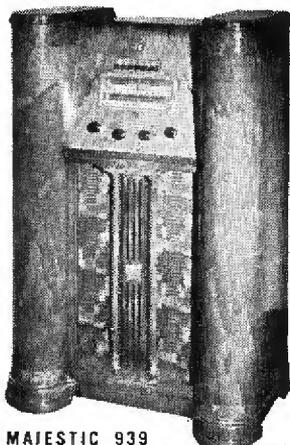


MAJESTIC 62A

MAJESTIC FOR '39 PROVIDES VARIETY—STYLE—PERFORMANCE PRICES that YOU CAN MERCHANDISE FOR PROFITABLE SALES!



MAJESTIC 639



MAJESTIC 939

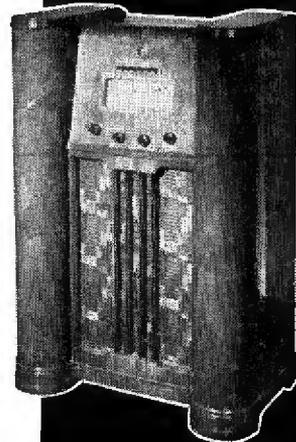
● MAJESTIC 62A—6 Tube AC Superheterodyne table set, 2 band-4 button mechanical tuning, Full vision slide-rule dial, Genuine walnut cabinet.

● MAJESTIC 639—6 Tube AC Superheterodyne console, 3 band-6 button mechanical tuning, Phono attachment, Cabinet of walnut.

● MAJESTIC 739—7 Tubes, AC Superheterodyne, 3 band-6 button mechanical mute tuning, Front adjustment, Vitatone cabinet, of matched walnut.

● MAJESTIC 939—9 Tubes, AC Superheterodyne, 3 band-6 button mechanical mute tuning, front adjustment, Vitatone cabinet of matched walnut and Bird's-Eye maple.

Catalog and complete information will be mailed on request.



MAJESTIC 739

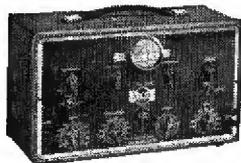
MAJESTIC RADIO & TELEVISION CORP.

2600 W. 50TH ST. CHICAGO, ILL., U. S. A.

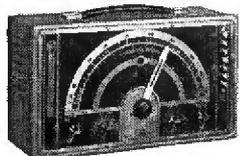
EXPORT SALES OFFICE: 330 S. WELLS ST., CHICAGO, ILL., U. S. A. Cable "MAJESTICO-Chicago"

Majestic's the Line for '39!

RCA INSTRUMENTS DO A BIG JOB AT SMALL COST



NEW RCA 2" CATHODE RAY OSCILLOGRAPH... uses the RCA-902 2" cathode ray tube... Has new, easily-read, tilt-mounted screen. All controls on front panel. Amplifiers, both horizontal and vertical—gain 50—sensitivity 0.5 (RMS) per inch... Has built-in, saw-tooth oscillator.
Stock No. 151-2. **Net Price \$49.95**



RCA BEAT FREQUENCY AUDIO OSCILLATOR... range—30 to 15,000 cycles. For testing loudspeakers, P. A. systems, etc. Three output impedances. Has large, easily-read dial.
Stock No. 154 . . . **Net Price \$49.95**

RCA presents the Magic Key every Sunday, 2 to 3 P. M., E. D. S. T., on the NBC Blue Network.

Over 325,000,000 RCA radio tubes have been purchased by radio users... In tubes, as in parts and test equipment, it pays to go RCA All the Way.

RCA Parts FOR PROFIT
RCA Manufacturing Co., Inc., Camden, N. J.
A Service of the Radio Corporation of America

AGED..

FOR EFFICIENCY

No better vibrator is made than the Meissner. But to our knowledge *no other vibrator*—even the other well designed ones—are aged at the factory to *guarantee* their uniform efficient operation!



Lying on a jobber's shelf, the several metals used in any vibrator undergo slight metallurgical changes which may seriously affect its efficiency and life. *Only Meissner goes to the expense of aging vibrators at the factory and re-testing them to eliminate those where the efficiency has deteriorated.*

Order Meissner from your parts jobber and *know* that you can *always* guarantee a replacement.

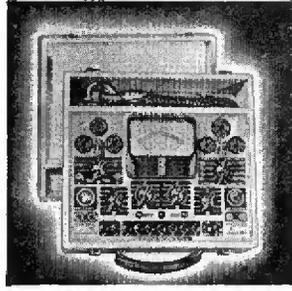
Meissner MT. CARMEL ILLINOIS
VIBRATORS

PREVIEW OF NEW RADIO MERCHANDISE

PRECISION

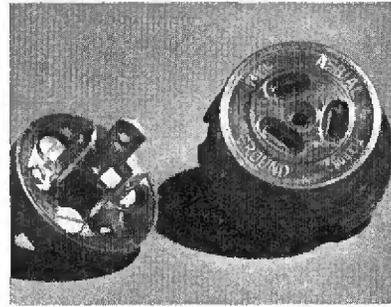
Precision Apparatus Corp.
821 E. New York Ave., Brooklyn, N. Y.

TESTER — Series 900 portable type of mutual conductance tube tester is push button operated and combined with a.c.-d.c. volt-ohm decibel-milliammeter and ampere ranges. Paper condenser leakage tests; measurement of leak-ages all types of electrolytic condensers.



HANDY TAP

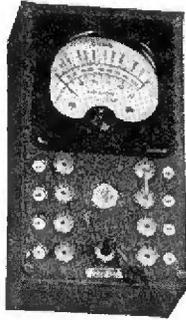
M. M. Fieron and Son, Inc.
113 N. Broad St., Trenton, N. J.



AERIALAND GROUND CONNECTOR — No. 329, polarized surface mounting 3 wire connector for use on radio or electrical circuits. Particularly adaptable for use as connector between doublet aerial leads and ground to radio set.

MILLION

Million Radio and Television Laboratories
685 W. Ohio St., Chicago, Ill.

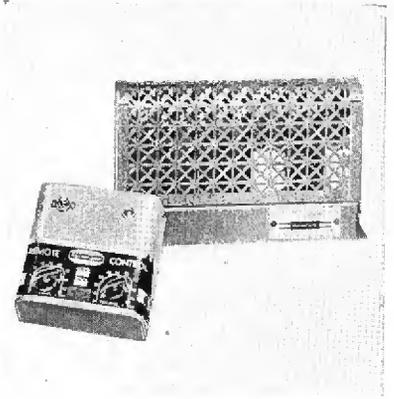


TESTER—Model S, volt-ohmmeter, covers a range of 0-5-50-500-1000 volts d.c. at 1000 ohms per volt; resistance ranges from 0-100 and 0-500,000 ohms; 0-1 m.a. Cased in durable metal. Net, \$7.95

BOGEN

David Bogen Co., Inc.
New York, N. Y.

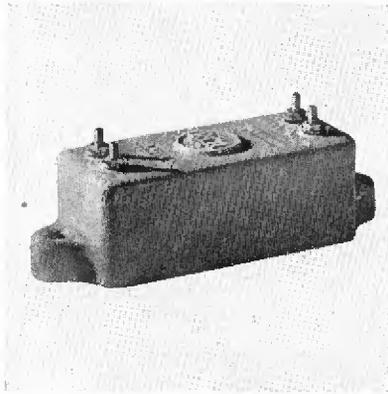
REMOTE CONTROL—Wireless, needing only to be plugged in at any convenient a.c. or d.c. outlet and grounded, gives operator complete control from a remote point of sound system employing any Bogen amplifier. Operator governs on and off, level of volume, etc.



RCA

R C A Mfg. Co.
Camden, N. J.

TRANSFORMER — Antenna coupling transformer allows operation of as many as 16 radios at one time from a single antenna when used with associated distribution and receiver coupling transformers. Built-in lightning arrester. List \$2.00.



C-D

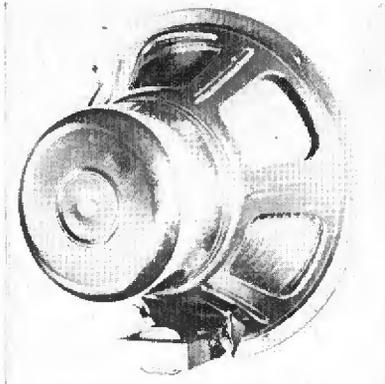
Cornell-Dubilier Electric Corp.
South Plainfield, N. J.



CAPACITORS — Of a size and shape similar to electrolytic capacitors which allows simple and neat assembly in a power unit, type TLA capacitors are impregnated with fireproof Dykanol. Suited for use in high power amplifiers and medium power transmitters.

JENSEN

Jensen Radio Mfg. Co.
6601 S. Laramie Ave., Chicago, Ill.

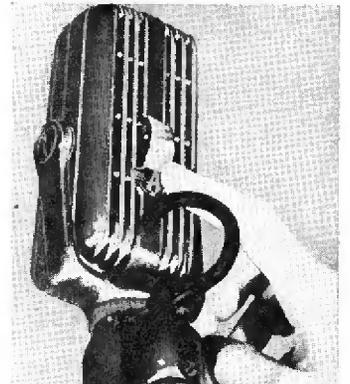


SPEAKERS — Five models of 12 in. speakers varying in sensitivity, power handling capacity and response characteristics, in a price range from \$9.85 to \$34.75.

AMPERITE

Amperite Company
561 Broadway, New York, N. Y.

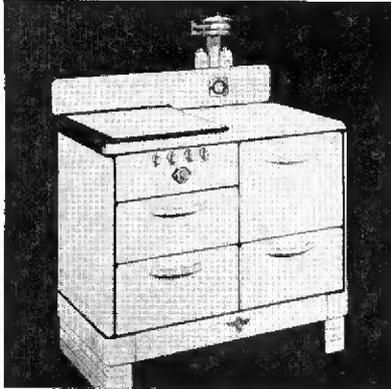
MICROPHONE — A mechanical shutter which opens or closes the back of the microphone, forming an air cushion behind the ribbon when room conditions call for adjustment, the acoustic compensator in effect changes velocity to a dynamic microphone. Now available in lower priced models RSHK and RBSK. RSHK lists at \$32.



STEWART-WARNER

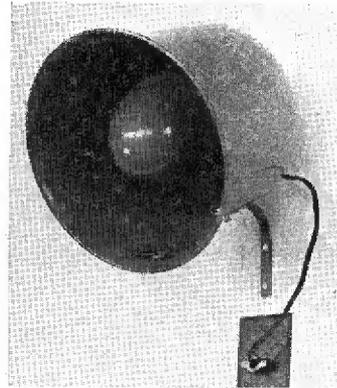
Stewart-Warner Corp.
1826 Diversey Parkway, Chicago, Ill.

GAS RANGE—Model 8039 is equipped with 4 Blue Ribbon Burners, oven heat control, automatic timer, automatic lighter, 2 service drawers, porcelain grates and cooking top.



ATLAS

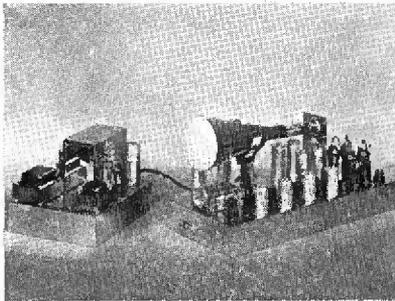
Atlas Sound Corp.
1451-39th St., Brooklyn, N. Y.



MARINE MIDGET—P. M. Reproducer and "Talk Back" unit in which new inverted reflex design offers an air column length of 15 in. with a speaker frequency response wide enough to allow good reproduction of music as well as speech. List Price \$11.50.

GAROD

Garod Radio Corp.
115 Fourth Ave., New York



TELEVISION KIT—Video receiver, 5-inch magnetic deflection cathode-ray tube mounting and control circuits, associated power supply in knockdown, kit form. \$49.95 list less tubes. \$99.90 list with 15 tubes and cathode-ray tube. With assembly and wiring instructions.

SPEEDWAY

Speedway Mfg. Co.
1834 S. 52nd Ave., Cicero, Ill

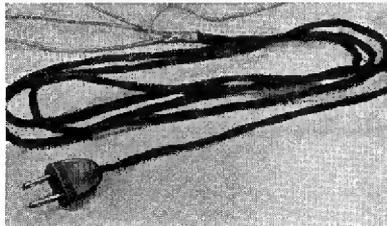
ELECTRIC DRILLS—Miniature matched drill and grinder set for the home workshop. Drill size and shape similar to that of a pocket revolver, operates at 1000 r.p.m., rated for 1/4" steel. Grinder is about the proportions of a small apple, operates at 20,000 r.p.m.



CLAROSTAT

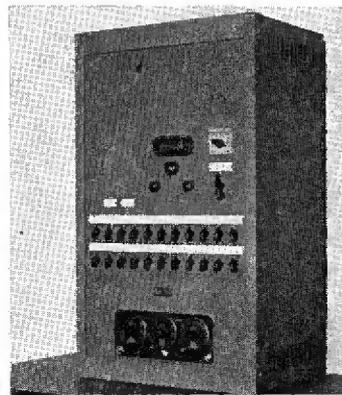
Clarostat Mfg. Co., Inc.
285 N. Sixth St., Brooklyn, N. Y.

POWER CORDS—Voltage dropping power cords are made up of three conductors enclosed in heavy braided covering and including the resistance winding. Tie cord at end removes strain on conductors proper. Eight types cover standard 110-v. a.c.-d.c. sets.



BELL

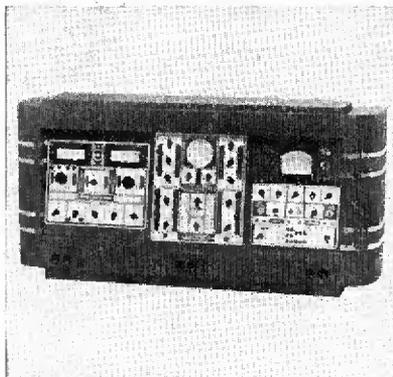
Bell Sound Systems
61 E. Goodale St., Columbus, O.



SOUND SYSTEM—To serve schools with 30 rooms or less and prices for a low budget allowance, Bell offers sound system consisting of desk panel with switches for 10 rooms, amplifier, bass and treble compensation and set of tubes for \$295.00. Additional 10 switch panels and schoolroom speakers available.

HICKOK

The Hickok Electrical Instrument Co.
Cleveland, Ohio



SERVICE PANEL—To aid radio dealers in efficient radio tube and set service. Panel is arranged to give eye-level accuracy when set on counter. Set-up illustrated shows Hickok P S G-15 microvolter, RFO-4 oscillograph, 51-X radio tube and set tester.

SIMPSON

Simpson Electric Co.
5218 W. Kinzie St., Chicago, Ill.

TESTER—Model 333 fused tester weighs only 7 pounds; tests pilot lamps, ballast tubes direct in socket for burn outs and opens, also gaseous rectifiers of the O Z 4 type. Provides jack for "noise test" and double filament switching. Price \$26.50.



25% BRAINS

(Continued from Page 17)

confine their knowledge to only the makes their dealer carries and no others. So help me, a man will sell more, say, Easy-Tune radios by leading his prospect to believe that he has every make on the market, than he will by letting her know that the Easy-Tune is the only one he has to sell.

I don't know whether you believe that or not. I wouldn't say so unless I was sure of it. But it is a proven fact.

Let's suppose our dealer is carrying only one make, say the XYZ radio, and the canvasser runs across a lady who wants a PDQ radio. He shouldn't start telling the lady how much better the XYZ is than the PDQ. If he does that the lady is very apt to *insist* upon a PDQ.

"Yes, indeed," says the canvasser, "we sell a lot of PDQ's. It's a mighty fine radio, let me tell you. Of course, it hasn't got a such-and-such like the XYZ, and the thingmajig isn't quite as large, but it's a mighty fine radio, and don't you let anybody tell you it isn't."

He keeps that up for about five or six minutes. Every time he opens his mouth he tells her what a fine radio the PDQ is . . . but he always winds up with something about what the XYZ has got that the PDQ hasn't got. "I'll send up a PDQ, now, if you wish, but I honestly think you'll like the XYZ better."

Talk about knowing your product! All you've got to do is have them *all* (apparently) and the lady will finally ask *you* which one is best.

Even then you don't tell her. They're all good. With competition the way it is today they *have* to be good. "It just seems that we sell more XYZ's—especially where they're demonstrated first, as nearly all the radios we sell are." (I hope you got that "especially where they're demonstrated first.")

If the lady still wants a PDQ, then the man gets the supervisor on it. If the supervisor himself can't switch her, she is probably unswitchable.

Furniture, Appliance Commissions

The canvasser should leave a business card with his name on it

at every house he canvasses. These should be inexpensive cards, of course, but no matter how much they cost they will still be the cheapest and most effective advertising the dealer can get. And the man should be paid on all store sales when his card is presented even if they are not radios.

The supervisor probably won't have time to handle these leads. But the salesmanager can handle them, or the dealer, or one of the furniture salesmen. Anybody with a car, to bring the customer to the store, or take her to the house.

So there you have your outside sales force. Brawn and Inexperience making a living by giving the only thing it has to offer, and being held together only by the moral support and assistance of Brains and Experience; Brains and Experience making a better living because they exert themselves only where they should, and being *forced* to exert themselves by the Brawn; Executive Ability keeping a budget; to see that Money increases itself, and in a measure commensurate with the responsibility it assumes.

There may be a better outside selling plan in theory, but there is not a better one in practice, today.

AMPLIFIERS

By THORDARSON

Built by Audio Experts for Audio Experts

*The Amplifier
of "Tomorrow"
in*

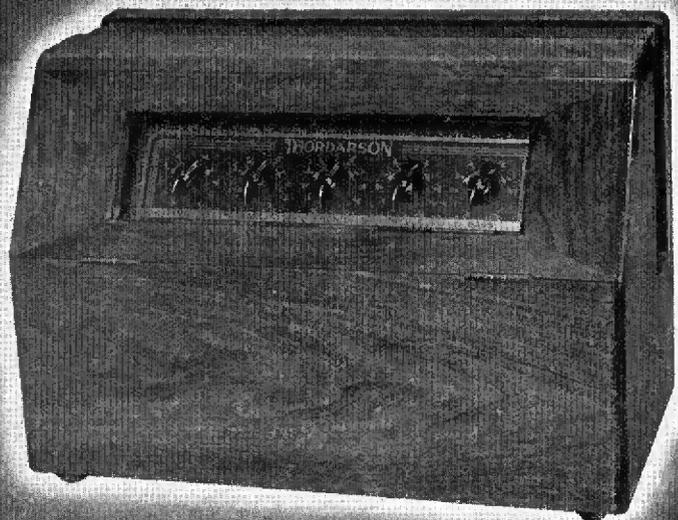
- PERFORMANCE
- APPEARANCE

See Your Jobber or
Write Factory for
Catalog No. 600-C

THORDARSON ELECTRIC MFG. CO.

Amplifier Division

500 W. HURON ST. CHICAGO, ILL.



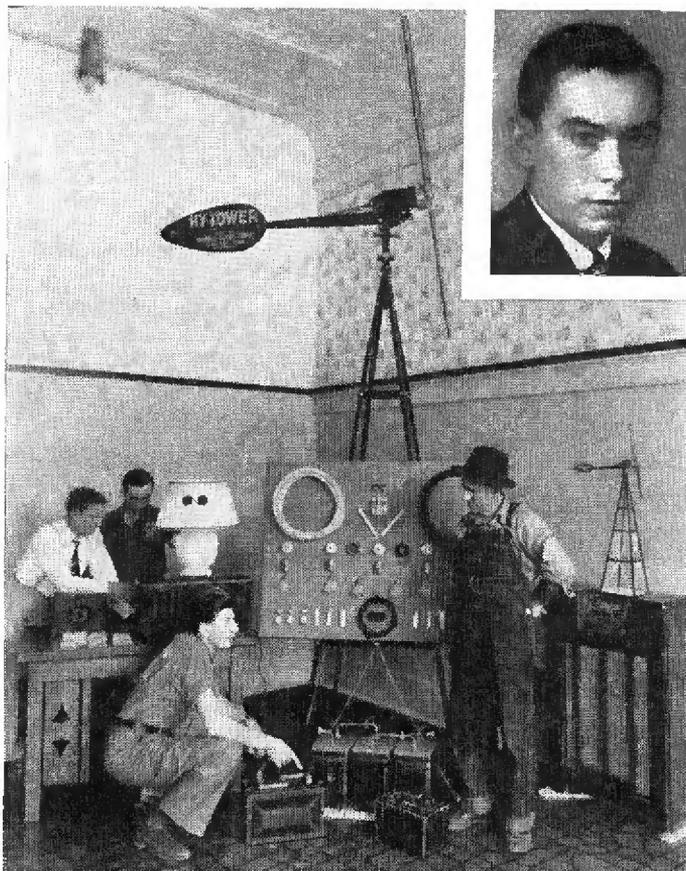
TAKE A TIP FROM THESE YOUNG LIVE WIRE FARM RADIO MERCHANTS



THEY SELL FARM RADIOS THE E-Z PARRIS-DUNN WAY

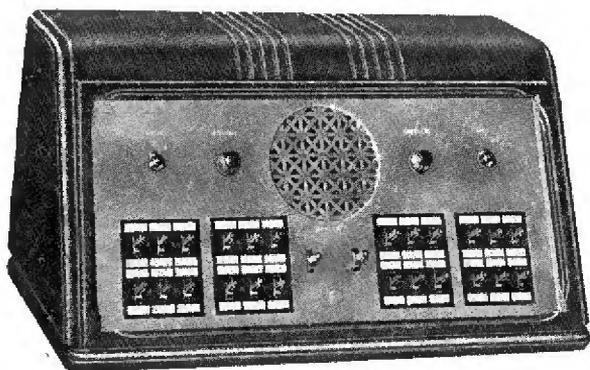
Say Harold C. Cook and Charles Pfeiffer, graduates of a famous radio school: "We found, in starting out in radio business, that the service field and the AC radio field were decidedly flooded. However, through the E-Z Parris-Dunn selling plan, we discovered the Farm Market to be the ideal radio field. By displaying at fairs, 4H achievement shows, etc., the Parris-Dunn Complete Package Unit illustrated at the left, we secured an unlimited number of good prospects. Many of these were turned into quick, 4-profit sales by leaving with them overnight a 6-volt radio, heavy duty battery and reading lamp, thus enabling the farmer to enjoy electric lights and modern radio reception. We usually found sales easy to make the next evening when we returned to close the deal. By following the E-Z Parris-Dunn plan, we have in a remarkably short time built up a good business with a most promising future." We helped these boys get started and we want to help you. Write us today.

PARRIS - DUNN CORPORATION
20 Years of Successful Manufacturing Experience
CLARINDA IOWA



DISPLAYING THE
COMPLETE PACKAGE DEAL

REMLER



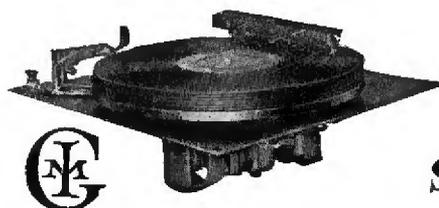
**PUBLIC ADDRESS • INTER-COMMUNICATION
and PAGING SYSTEMS • QUALITY • PROFITS**

Build a permanent business with reliable Remler equipment—famous for quality since 1918. Modern inter-communication systems to meet every requirement. Portable P.A. units and complete Sound systems for permanent installations. New 1939 selective communication and paging system (master unit illustrated) serves up to 24 secondary stations. Dealers and distributors given fullest cooperation. Territories open. Write for details.

REMLER COMPANY, Ltd.

19th at Bryant

San Francisco



*Sell More
Automatic Combinations*

Test Them
Order samples and
test them out in
your own cabinets.

WORK into a bigger volume, bigger-profit demand, with popular-priced radio-phonographs equipped for record changing. Install General Industries Record Changer Units. Thoroughly established high-dependability of operation and high-fidelity reproduction. Priced for volume sales.

READY ASSEMBLED, EASILY INSTALLED

Model "M", latest improved type, plays and changes eight 10-inch or seven 12-inch records. Model "K" plays and changes seven 10-inch records, plays 12-inch records changed by hand . . . Order samples and test them out in your own cabinets.

The **GENERAL INDUSTRIES CO.** 3837 Taylor St., Elyria, Ohio

RADIO DISPLAYS

(Continued from page 20)

superheterodyne receiver to full output at a distance of 500 feet. Two small one and one-half volt flashlight cells furnish the filament current which is delivered only when the dial is being operated. At rest, the current is disconnected. This is accomplished by modifying the contact springs on a dial impulse mechanism. The plate voltage, obtained from built-in midget "B" batteries, is applied only on the

return motion of the dial from the finger stop, the number of interruptions governing the number of RF impulses transmitted. The dial acts both as filament switch, plate voltage control and transmission governor. The flashlight batteries had a life of about 30 days, and the transmitter was operated almost continuously for 10 hours daily without any noticeable decrease in output signal strength.

The receiver, not shown in the photographs or diagrams, can be of

any good superheterodyne type containing a noise rejection circuit. The output from the receiver is connected to a sensitive control relay. The noise control governs the permissible amount of excitation impressed upon the detector, the proper excitation must be greater than one-half the time duration of the input signal impulse, so as to allow the receiver to discriminate between static transients and signal impulses. The receiver is manually tuned to the transmitter. A 6-foot antenna is required, no ground being necessary.

Operation

The operation of the selection circuit can be followed from the appended schematic wiring diagram. Each time contacts 'a' close, relays B and C are energized. Relay B closes the circuit to the impulse coil on the rotary selector switch. The rotary arm on this switch normally rests on an open circuit, off control contacts 1 to 9. In this position, auxiliary contact springs L1 and L2 are normally held open; the contacts are provided to isolate the a-c power from the rotary arm before beginning its motion.

As long as the 'a' contact opens and closes, relay C will remain open (back contacts open) and the rotary arm will accordingly traverse its contact quadrant, stepping up one position for each impulse. When no more impulses are received, relay C will be de-energized and close the circuit through the rotary switch arm which in turn closes the 110-volt a-c power relay in the circuit selected.

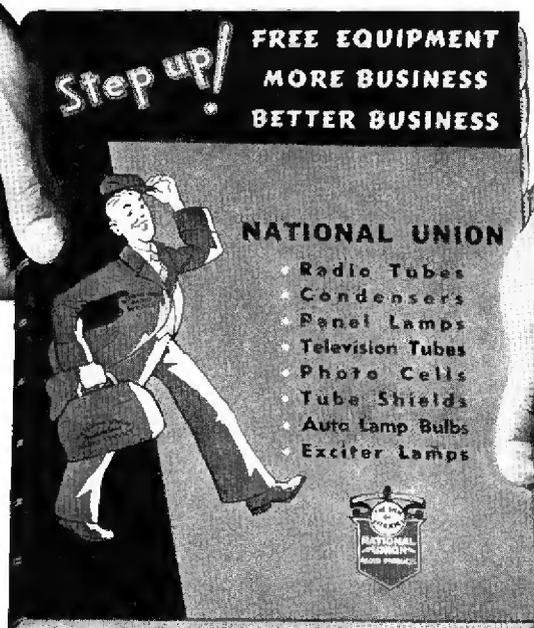
A transfer relay is placed in the rotary switch arm circuit to open the B and C relay connections and to close the time delay motor circuit. Opening B and C prevents the selection system from being operated until the time delay relay closes and energizes the restoring coil on the selector switch to cause the rotary contact arm to return to its normal off-contact position. Relay D takes the a-c power off the controlled circuit and rotary arm during the time the rotary contact is returning to its home position.

For controlling various receivers, it is only necessary to have the control switches placed in the respective voice-coil circuits, the receivers always being turned on so that there is no delay in heating of the tubes. Other control arrangements are possible.

BE SURE YOU SEE THIS BIG NEW CATALOG!

Ask your Jobber to show it to you . . . Get the equipment you need to do More business . . . better business this year FREE with your purchases of . . .

NATIONAL UNION RADIO TUBES AND CONDENSERS



For nearest Distributor's name write:

NATIONAL UNION RADIO CORP.
Newark, New Jersey

When it comes to electric shavers a radio dealer should handle only the best!

ROTO-SHAVER

Thousands Have Been Sold for \$18.75

NOW **\$12.50** LIST

WITH 2 HEADS, INSTANTLY INTERCHANGEABLE

A Shaving Head for Him—A Depilator for Her

The public is tired of make-shift shaving devices—and is ready and waiting for a shaver that performs its promises. That's the only kind you should carry. Retailers everywhere *proved* this to themselves with the Roto-Shaver at \$18.75. Now—at the new low price of \$12.50 it represents the greatest electric shaver value on the market. Roto-Shaver shaves as close as a fine blade razor the first time

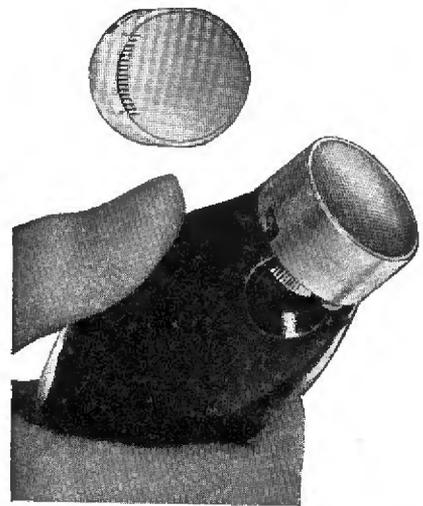
it's used—won't irritate even the most sensitive skin—is sturdy, easy to clean, doesn't spray "whisker-dust."

A hard-hitting national advertising campaign is already building demand. Ride on the crest of this wave. Order a supply today—being sure to mention your jobber's name so we can refer your order to him.

REGULAR DISCOUNTS CONTINUE

On orders of one to five shavers, 33 1/3%. On orders of six or more shavers, 40%.

PROGRESS LEKTRO SHAVE CORP., 521 Fifth Ave., New York City
 Canadian Dist. Progress Corp. (Canada) Ltd., 55 York St., Toronto, Can.



NO BALLYHOO
 NO FANCY
 DEALS BUT
**MORE
 PROFIT**

THE QUALITY NAME
 IN RADIO TUBES



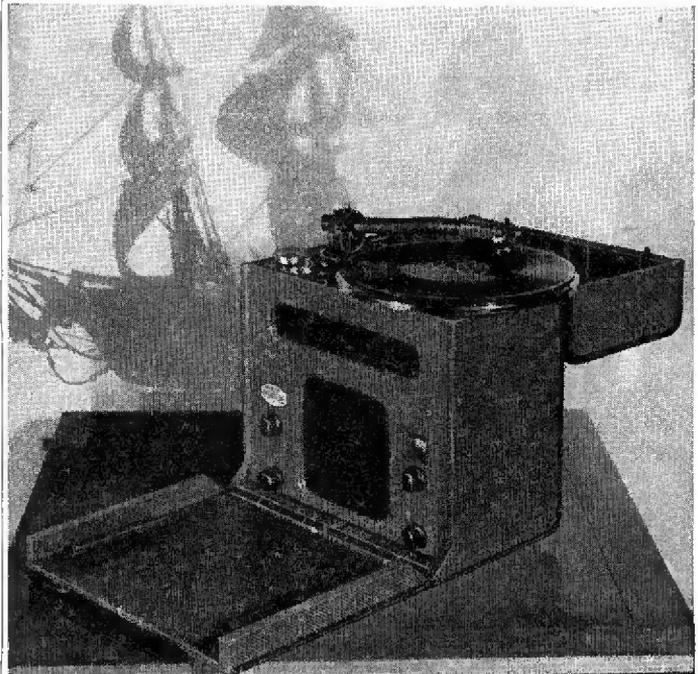
Triad "peaked" tubes not only give you a larger installation profit but they cut down unprofitable call backs.

Pre-tested elements and rigid inspection and intermediate tests make TRIAD a uniformly long life tube that must satisfy! No wonder TRIAD Tubes are initial equipment with over 20 leading set manufacturers.

DEALERS! SERVICEMEN!

Write for our New Profit Making Proposition!

TRIAD THE QUALITY NAME
 IN RADIO TUBES
MANUFACTURING CO., INC.
PAWTUCKET, RHODE ISLAND



PORTABLES to PERIOD CONSOLES
ANSLEY Dynaphone

the Complete Phonograph Line
 sold only through Authorized Dealers

ANSLEY RADIO CORPORATION
 240 W. 23rd St. New York, N. Y.



The
AMPERITE
ACOUSTIC
COMPENSATOR

gives you
HIGH OR LOW PITCH
WITH THE SAME MICROPHONE

With the flip of a finger you can now (1) lower or raise the response of the microphone. (2) adjust the microphone for most desirable response for close talking or distant pickup. (3) adjust the system to any "taste", room condition, or equipment.

MODELS RBHk, RBMk with Acoustic Compensator, frequency range 40 to 11000 cps, output, -65 db., complete with switch, cable connector and 25' of cable. \$42.00 LIST

NEW! MODEL RSHk (hi-imp); RBSk (200 ohms) Frequency range 60 to 8000 C.P.S. Output -63db. . . Chrome or Gun-metal . . . \$32.00 LIST

NEW LOW-PRICED CONTACT "MIKE" \$12.00 LIST



The new popular-priced Amperite Contact Microphone can be used on most radio sets made since 1935 and on all P.A. systems. It "makes an ordinary violin sound like a Strad" . . . gives a small piano the tone of a Grand. And yet, there is no distortion. No unnatural effects. No "fingering noises." No changes in strings or instrument. Attached without tools.

Operates with either high or low gain amplifiers. Has frequency response of 40 to 9000 cps. Output, -40 db. 20' of cable.

MODEL SKH (Hi-imp); SKL (200 ohms), \$12.00 LIST
Professional Model KTH (or KTL). \$22.00 LIST

NEW COMPACT "MIKE"



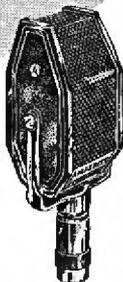
A new velocity microphone of compact size, having a head only 1 1/4" x 2 3/4" x 1 1/4". Good for speech and music. May be used as hand mike as well as for stand mounting. Complete with output transformer, cable connector and switch. Output, -70 db. into open line. Frequency response 60 to 7500 cycles.

MODEL ACH (Hi-imp); ACL (200 ohms) \$25.00 LIST

MODEL RAH...\$22.00 LIST

P.A. Men, you can improve those "price" jobs by using the popular Amperite Model RAH (or RAL). You will get better results because (1) it is excellent for both speech and music; (2) has flat response without undesirable peaks; (3) reduces feedback; (4) stands up under rough handling and changes in temperature, pressure or humidity. . . . Frequency range 60 to 7500 cps. Output, -68 db.

MODEL RAH (Hi-imp); with 12' of cable; RAL (200 ohms) with 8' of cable, ONLY \$22.00 LIST



Write for Complete Illustrated Bulletins and Valuable Sales Helps.

AMPERITE Co. 561 BROADWAY, N. Y. Cable Address: Alkret, New York

AMPERITE Velocity **MICROPHONE**

received from advertising form No. 3. On the reverse side of the card a space is provided for the bids you gave, with pertinent information concerning same. This is helpful in future bidding, and places information at your hand in a moment's notice concerning a certain prospect.

The officer's names for these cards can be obtained through personal contacts and through news items and provide a record of who is in complete charge of events. With such a system, you may designate when a customer has a system and remove to another file for possible servicing calls or rentals.

When the prospect turns into a customer, his card should be removed to another file called a "sound rental record." By using an order number system with a number 10 size envelope and entering this order number in the ledger account it is possible to keep an accurate record, with a layout of any previous rental installation which you have serviced.

What Ads Pay?

After the prospect file has been completed along the foregoing lines, the second feature enters the picture, that is to tell 'em. This can be accomplished in two ways.

The first is by printed advertising addressed to the prospects and the second by personal calls to one person at a time as previously explained. Obviously it is impossible to call on each and every prospect, so advertising is the logical way to reach all prospects. There are two common advertising medias:

(1) *The Newspapers.* This is a mass approach and its effectiveness is too well known to warrant detailed analysis here.

(2) *A Systematic Mailing Campaign.* This can take the form of a twice-monthly or monthly mailing of advertising pieces illustrating your service and suggesting how it can be used. It is best to mail each prospect an advertising card at least once a month. Mailings can be post-cards or the large 5 1/2 by 8 1/2-inch cards which can be sent in quantities of 200 or more at one mailing for 1c each under section 562 of the Postal Laws and Regulations. By using the larger card, the advertising presentation can, of course, be made more elaborate.

Probably the biggest question in sound advertising is just what to call your equipment as far as the public is concerned. They understand microphones and speakers, but today we hear terms defining sound service as "loud-speakers," "amplifier service," "sound amplifying device service," "public address service," and "sound service systems." Probably the most effective are the terms "loud-speakers," and "sound systems."

Check These Copy Points

When you make up your copy check it against these points:

- (a) Does it tell what I have to sell?
- (b) Is it neat and easy to read?
- (c) Does my name stand out, and especially the number of the telephone?
- (d) Do I tell or show the salient features I have to offer?
- (e) Has it something to attract attention at the start?

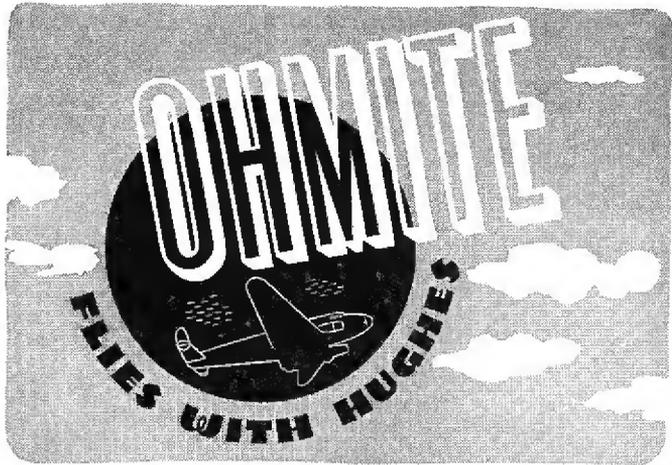
A good example to follow in writing sound service advertising is the advertising of the various telephone companies. Telephone advertisements tell how convenient, efficient and reasonable service is. The equipment is the finest available and the service is always friendly. By a direct comparison it is simple to present your similar sound service in a way which will attract the prospect to you.

One point in sound advertising that must be watched carefully, and sometimes checked, is that of making extravagant claims for any make of sound equipment. For instance, "Best sound equipment in the world," "there is no finer system available in the world," and other such claims are nothing more than plain "bull" to the prospect. A straightforward presentation is more effective in the long run than an elaborate, meaningless adjective diffusion.

From the above it is not hinted that anything suggestive of quality is out of line. Far from it. An assertion that "_____ brand of sound equipment is used," carries weight anywhere if the company is known to the public.

Look Before You Bid

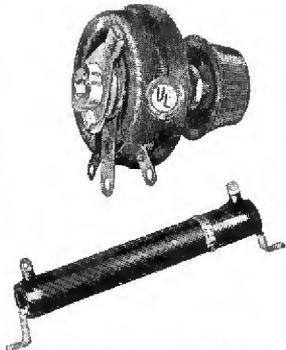
At long last you come to the moment when you have a call for



Lockheed Plane Ohmite-Equipped

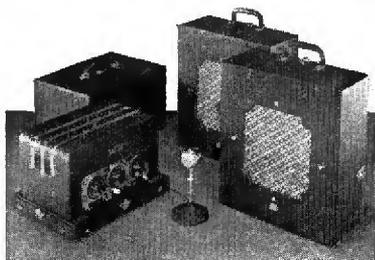
Hughes' dash around the world in his LOCKHEED Plane adds another "case history" to the service-record of Ohmite Vitreous-Enameled Rheostats and Resistors. Their ability to withstand overloads and abuse, shock and vibration, heat and humidity, has made Ohmite resistance units standard equipment on such major airways as Pan-American, United Air Lines, and others, both here and abroad—as well as in the general radio and communications fields. Send for New Catalog 17 today—or ask your Jobber for Ohmite Rheostats and Resistors.

OHMITE MANUFACTURING CO.
4845 W. Flournoy Ave., Chicago, U.S.A.



OHMITE ★ *Rheostats
Resistors
Tap Switches* ★

BELL SOUND EQUIPMENT



The brilliant tone fidelity and smart, modern appearance of Bell Public Address Systems bring quick sales and profitable repeat rentals. Model P. A. 435, a complete, compact and easily portable unit, is ideal for either permanent or temporary installation. It has 35 watt output, tone compensating controls, beam power tubes, three input channels, two 12" permanent magnet speakers, streamlined crystal microphone and many other "plus" features. Like all Bell equipment, it is expertly engineered, precision-built, and rigidly inspected for dependable, lasting service. And it's attractively priced! Write today for catalog on this and other Bell Systems!

BELL SOUND SYSTEMS, INC.

1185 ESSEX AVE. COLUMBUS, OHIO

Export Office: 308 W. Washington Street
Chicago, Illinois

for
PERFORMANCE
that brings
PROFITS!

**PERMANENT
P. A. SYSTEMS**
•
**PORTABLE
P. A. SYSTEMS**
•
**MOBILE
P. A. SYSTEMS**
•
**INTEROFFICE
COMMUNICATING
SYSTEMS**
•
**CUSTOM-BUILT
EQUIPMENT**
•
**SIZES AND
TYPES FOR
EVERY NEED**

it takes

more than a slap on the back



IT TAKES a Nationally known and accepted brand

IT TAKES a policy of dealer merchandising cooperation

IT TAKES insurance against slow turnover and obsolescence

IT TAKES protection from cut-price houses

IT TAKES guarantee of only *clean* competition

IT TAKES a proposition which gives the dealer ample stock without tying up his capital

IT TAKES a tried and tested program which is making money for better dealers everywhere

**IT TAKES THE
TUNG-SOL CONSIGNMENT PLAN
TO TURN TUBE SALES INTO
TUBE PROFITS**

*Take time out now and ask the nearest
Tung-Sol wholesaler or branch office*

TUNG-SOL LAMP WORKS, INC.
Dept. B Radio Tube Division

TUNG-SOL
Tone-flow Radio Tubes

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Model A-57
List \$29.95

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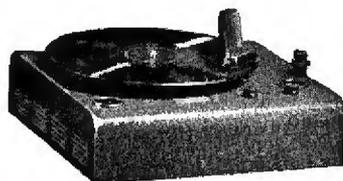
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Sell one of these units with every new radio — Every old customer too is a good prospect — for it will work with any radio — any type — any age.

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CHARLOTTE, MICHIGAN, U.S.A.

FIND 'EM — TELL 'EM — SELL 'EM

(Continued from page 68)

your service. If someone 'phones for a sound bid by all means try and get out on the scene if possible. When you go to the prospect look presentable and convey an impression of ability. Don't start talking about decibels, power ratios, gain and loss and peak power. Your prospect will tell you what he wants. Find out before giving your bid what is expected. Then make a suggestion or two.

When you have all the details, figure a price and give it to him. Don't apologize for the price asked and stick by it. You know how much it will cost to put your equipment out there and assure yourself a reasonable profit.

Sometimes there comes a question of "what a wonderful amount of publicity you will receive from this rental installation," and the prospect thinks you should install it gratis, or at a greatly reduced figure. It is better to determine a fair price and not allow discounts, or soon you will be in the discount business with everybody.

Rent, Then Sell

When on the job, if possible try and get a mention in the program that you have furnished the sound equipment. This is generally granted gratis if requested. If no program is issued, get an announcement over your equipment in the following vein:

"This public address system is furnished by _____ Street.

Such advertising costs you nothing and cannot do you any harm. If the installation is big enough for you to afford an advertisement in the program, take it and figure it in the job. Sooner or later someone will call up from another organization and say you had an advertisement in one program. How about theirs? Your catch is, "Sure, if I get the sound installation."

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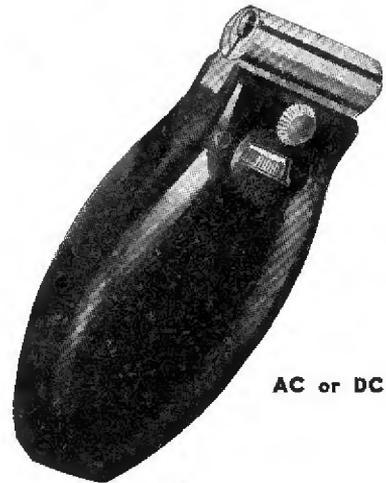
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A Million Have Been Sold for \$15

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A moment's thought—and you'll agree. For now Packard is the only recognized, established, top-quality shaver available anywhere near its price. The nation knows Packard—knows it always sold for \$15. Feature Packard at this new price! And the thousands of men in your community who have always wanted Packards but couldn't afford \$15 will flock to your store. Order through your jobber.



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15 Watts



● The new Bogen DP 615 system, for Universal 6 volt and 110 volt operation, will prove ideal for permanent or mobile installations where economy and medium power is desired. Provision for remote control is built in and two input channels can be operated from any remote point. The remote control permits mixing, fading, and complete control of volume.

The D615 Amplifier has no outside Power Packs of any kind. Change over from 6 volt to 110 AC operation is accomplished instantly.

Systems are furnished complete with D615 amplifier and tubes, choice of either the Model MB-HF No-Voltage Velotron or the D71 dynamic microphone with 25 feet cable and plug, and two 12" PM dynamic speakers with 10 feet cable and plug on each.

DP 615D system—Complete as described above with D71 microphone—less phono assembly.

Price
each system

Model D615—Amplifier only, with tubes—less UT15 assembly.

\$87.50

DP 615 VT system—Complete as above but with Model MB-HF No-Voltage Velotron microphone—less phono assembly.

\$140.00

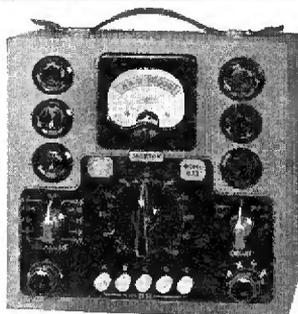
Model UT15—Phono assembly, complete with Universal phono motor for 6 and 110 volt operation, and crystal pickup, mounted in streamline cover as illustrated on amplifier.

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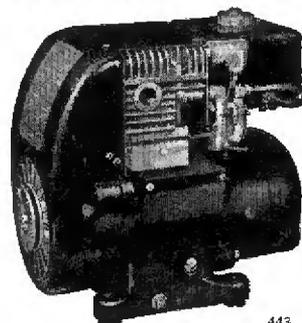
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Thank Utah Vibrators



... for this convenience on modern railroad cars!

WHENEVER there's an unusual application for a vibrator, where dependability is really vital, there you'll find Utah Vibrators selected for the job.

For instance, on modern high speed steam trains equipped with 32 Volt generators, Utah Vibrators are used to step this current to 110 Volt A.C. so that passengers may have a source of current for their electric razors. In this application as in many others where breakdowns mean a loss of customer good will and inconvenience to passenger, Utah Vibrators are selected for their absolute dependability under severe service conditions.

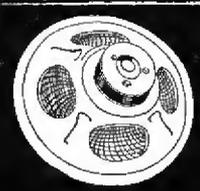
For the same reason, radio servicemen throughout the country are using Utah Vibrators—they insure customer satisfaction.

Insist on UTAH—it pays.



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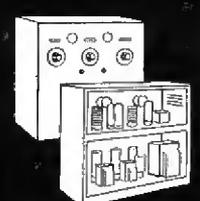
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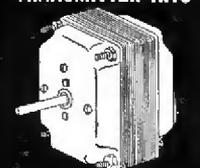
SPEAKERS



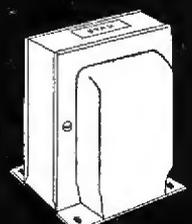
VIBRATORS



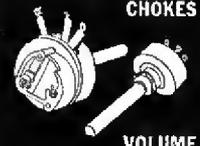
AMATEUR TRANSMITTER KITS



MIDGET MOTORS



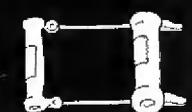
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PLUGS AND JACKS



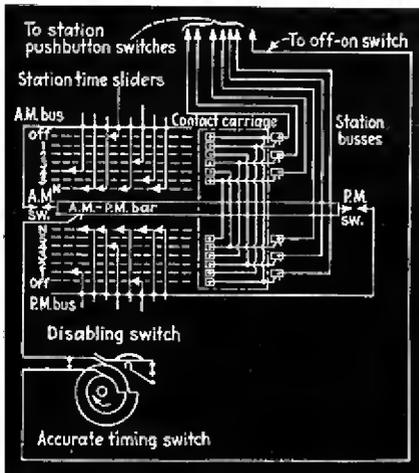
VITREOUS RESISTORS



SWITCHES

TECHNICAL TOPICS

SERVICE • SOUND • CIRCUITS • INSTALLATION • PARTS



Automatic Time Tuner

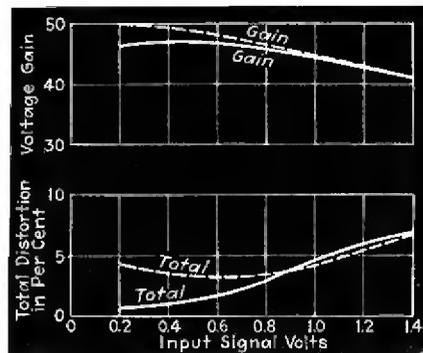
The pretimer used by G. E. in some of their new models is quite similar to their remote control in operation in that it works in parallel with the regular station keys; turning the set on or off and tuning stations. The operation, however, instead of being controlled manually, is controlled by a synchronous motor. This allows a parallel circuit to be made with a selected station key by a pre-set timing contact.

There are 96 timing contacts projecting through slots in the clock panel. As shown in the circuit, a carriage is propelled from left to right during the 12 hours of the AM period, and from right to left during the PM period by means of a lead screw having right and left hand threads which is rotated continuously by the clock motor. Projections on the timing contacts engage sliders on the carriage corresponding to the stations to which the contacts are set. When the contact is made, the pretimer energizes the corresponding station button on the fantail (in back of the gang condenser) and thus drives the tuning motor to the desired station.

In order to differentiate between AM and PM operations, a limit switch is provided that is operated by the carriage at the end of its travel. This switch causes the AM sliders to be energized during the AM period, and

the PM sliders during the PM period.

As the contact carriage moves very slowly the accuracy with which it makes and breaks the control circuits is not sufficient. In order to obtain accurate timing, the contacts on the carriage are arranged so as to engage the sliders several minutes before, and to disengage several minutes after the quarter hour and a cam operated switch is provided in series with the common return lead. This switch closes the circuit exactly on the quarter hour, and opens it after ample time has elapsed for the completion of the tuning operation.



Zero Bias Amplifiers

The conventional method of operating most audio amplifier tubes is with cathode bias. For best performance the size of resistor, properly bypassed, is important if high gain and low distortion are to be realized. Recently, as shown by Sylvania, attention has been directed to a mode of operation which is particularly adapted to high mu triode tubes, such as 75, 6F5G, 6Q7G and others similarly employed. This method has been termed "zero bias operation" since the cathode is connected directly to ground while the grid resistor is increased from about 1 megohm to 10 megohms or greater.

Operation of high mu triodes at zero bias offers economy in parts and chassis space through the elimination of the cathode resistor and its by-pass

condenser. Although this could be accomplished by returning the grid leak to the proper negative point of a voltage divider circuit, such a method would require another tap on the voltage divider resistor and usually necessitates additional hum filtering where this voltage is applied to the control grid of a first audio amplifier tube.

The performance of high mu triodes at zero bias has been investigated and found to be satisfactory providing certain precautions are observed in the design of the associated circuit. Tube types especially applicable are those having low plate current values. The plate load resistor should not be less than 0.1 megohm while the grid resistor ought to be 10 to 15 megohms for best performance. The principal advantages of using 15 megohms are the higher gain and lower distortion secured at low input signal levels.

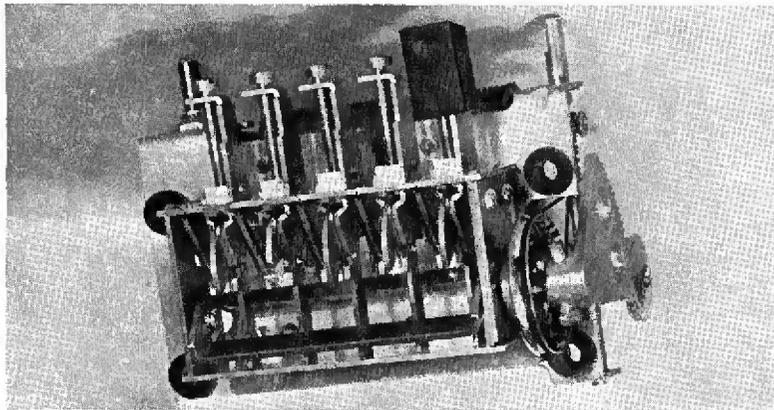
Results of comparative measurements on a 6Q7G illustrate voltage gain and distortion for various values of input signal. Data for the regular biased condition are shown by the solid lines. The plate load resistor was 0.25 megohm; the value of the grid resistor is 15 megohms.

Attempts were made to obtain performance curves for gassy tubes. The results were extremely erratic, as was to be expected, and could not be repeated due to the tendency for gas clean-up.

Universal Ballast Resistor Caution

When installing a universal ballast resistor service men should carefully check the ballast tube socket to determine whether some of the extra socket connections have not been used as dummy-lugs for other circuits.

As a safety measure, determine the prongs that give the needed resistance for the particular set. If only three prongs are needed, cut off the additional prongs with diagonals. This instantly removes the above mentioned danger as outlined by Clarostat.



Auto Push Button Tuner

Mechanical push button tuning is built into RCA's auto radio model 9M2. Five station tuning is permitted; the photo shows the tuning mechanism.

The tuning movement is actuated through a push-arm, cam, rocker plate and sector gear, which meshes with a scissor gear directly fastened to the tuning condenser shaft. The scissor gear is composed of two gear plates held together by a spring, so that the gear teeth on opposite plates are forced toward each other like a scissor, preventing backlash between the sector gear and the tuning condenser. Since the sector gear is mounted directly on the rocker plate shaft, the position of the rocker plate will accurately determine the position of the tuning condenser.

The cams which determine the stop points for each button are mounted on the push arms and are locked in place by the locking screws and lock-shoes.

Adjustments for push button tuning are made as follows:

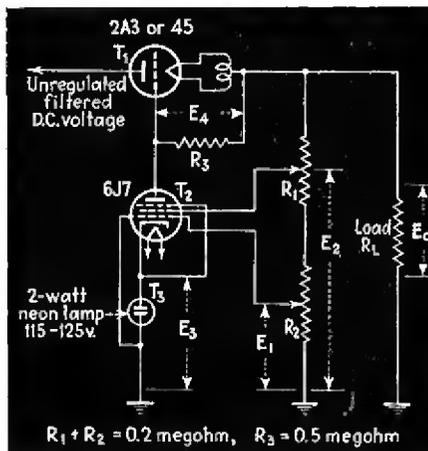
Pull push button off push arm; loosen the cam locking screw which is directly under button one half turn; tune in a station on the dial; press the push button arm as far as it will go and accurately retune station. With the push button still held down, tighten cam locking screw; then replace push button.

Power Supply Voltage Regulator

It is often desirable to use a well-regulated source of d-c voltage when using equipment which is critically dependent on the value of the d-c voltage. As described by RCA, laboratory test equipment using vacuum tubes often employs a regulated B-supply unit to improve performance; the plate voltage of oscillator tubes

may be obtained from a regulated power-supply unit to increase frequency stability.

The circuit of the regulator is shown herewith. It consists essentially of a regulator tube (T_1), a control tube (T_2), a neon glow lamp (T_3), and several resistors. The unregulated d-c voltage from a conven-



tional power-supply unit is fed to the plate of the regulator tube; the regulated d-c voltage is obtained from the cathode of the regulator tube. In normal operation of the regulator, current from the unregulated source flows through the regulator tube to its cathode; at the cathode, this current divides into three branches: (1) R_3 , T_2 , T_3 to ground; (2) R_1 , R_2 to ground; and (3) the external load (R_L).

Because the resistance of the neon tube T_3 is non-linear, its voltage drop (E_3) is substantially independent of current through it over a wide range of current values. It is this property of T_3 that accounts for the good regulation of the system.

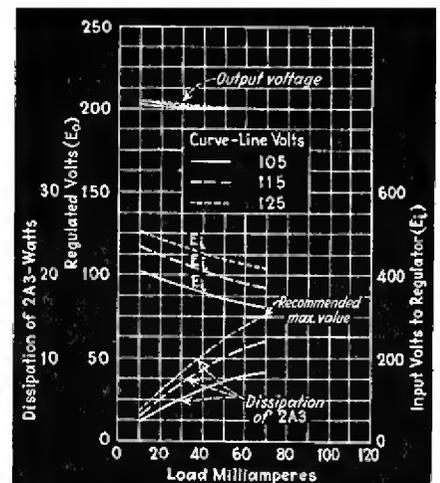
It is seen from the circuit that T_2 has a bias equal to $-(E_3 - E_1)$, a screen voltage equal to $(E_2 - E_3)$, and a plate voltage equal to $(E_0 - E_4 - E_3)$. Assume, now, that the load current is increased from rated value, at which

rated output voltage is obtained. Any increase in load current tends to decrease the output voltage. Because E_3 is substantially independent of current, a decrease in E_0 causes a proportional increase in the negative bias of T_2 , which reduces the plate current of T_2 ; consequently, the bias of T_1 decreases. A reduction in the bias of T_1 reduces the voltage drop across T_1 , which tends to increase E_0 . The net result is a small change in the value of E_0 . In other words, voltage is stored across T_1 and is released by the action of the control tube, which, in turn, is actuated by a change in the value of E_0 . Should the load current decrease and tend to cause a rise in the value of E_0 , the action of the control tube increases the voltage drop across T_1 to reduce the change in E_0 .

Changes in the value of E_0 due to changes in line voltage or to hum-voltage input are also reduced. An increase in the value of the unregulated voltage (E_1) due to an increase in line voltage or to hum-voltage causes an increase in E_0 ; however, this increase in the value of E_0 is small because of the action of the regulator.

It is desirable to use a high ratio of screen voltage to plate voltage on T_2 in order to obtain a high ratio of cathode current to plate current. The plate current of T_2 determines the initial bias on T_1 , which, in turn, controls the voltage drop across T_1 . The cathode current of T_2 flows through the neon lamp and should have a sufficiently high value under full load and minimum line-voltage conditions to permit of stable operation.

With the values of components suggested in the circuit, the cathode current of the control tube should be approximately 25 microamperes under full load and minimum line-voltage conditions; the voltage drop across the neon lamp is approximately 50 volts.

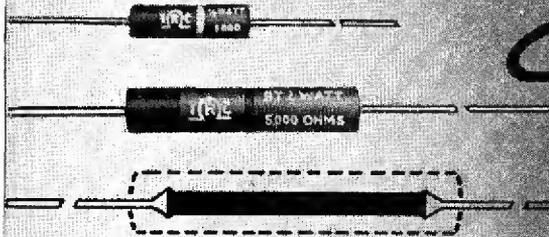


IRC

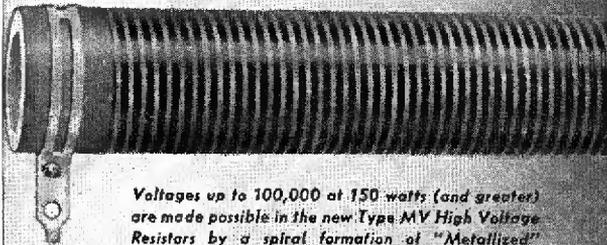
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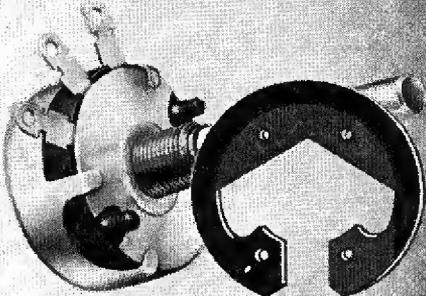
This Type BT Resistor is an example of the homogeneous "Metallized" resistance material bonded to the outer surface of a sturdy glass tube and encased in a protective covering.



Voltages up to 100,000 at 150 watts (and greater) are made possible in the new Type MV High Voltage Resistors by a spiral formation of "Metallized" resistance element on a ceramic base.



In IRC Type MP High Frequency Power Resistors, the "Metallized" element is applied solidly over a ceramic surface. Excellent characteristics at ultra-high frequencies of more than 75 mc result.



Bonded to a phenolic base in IRC Controls, the "Metallized" element set new standards for quietness, smoothness and protection against moisture.

WHAT ARE "Metallized" RESISTORS?

"Metallized" Resistors differ from conventional units in that a homogeneous film of high resistance material is applied and bonded at high temperatures to insulating bases of various types. The result of this process is a resistance element of predetermined resistance value and accuracy. This process, time-tested throughout 16 years, has been utilized and perfected for seven distinctive types of resistors, each one internationally known for its exceptional quality:

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Types FH and MG, protected by ceramic or glass, are made from 100 to 100,000 megohms and have long been standard for certain kinds of scientific apparatus.

The Types C and CS (Silent Spiral Connector) "Metallized" Controls have established new standards for volume control, tone, and potentiometer applications wherever radios are made.

Type MP — a recently developed resistor for high frequency needs—is rapidly solving dummy load and rhombic problems for transmitting engineers in the ultra high frequency field.

The New Type MV, a high voltage "Metallized" Resistor, is capable of carrying 50,000 volts on a 10 1/2" x 1 1/8" tube with characteristics similar to that of a standard BT unit of low value. It opens new possibilities for the design of high voltage equipment.

The inherent characteristics of "Metallized" Resistors are stability, low noise level, uniformity, non-ageing, low voltage and temperature coefficient and freedom from major humidity effects.

No other type of resistance material holds such an outstanding record of success. None holds such broad possibilities for future development.

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Successful servicemen stick to test equipment which measures in fundamental quantities. The reasons are obvious:

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Remember, when buying your next equipment, that all WESTON test units measure in radio fundamentals. That's why WESTON radio instruments remain serviceable for years . . . *never discarded, never idle*, because of changes in receiver circuits. Remember, too, that WESTON instruments are used by practically all leading manufacturers because of their greater dependability . . . greater economy. This name also is *your best assurance* of dependability and satisfaction in radio test instruments. The coupon will bring you complete data.

WESTON
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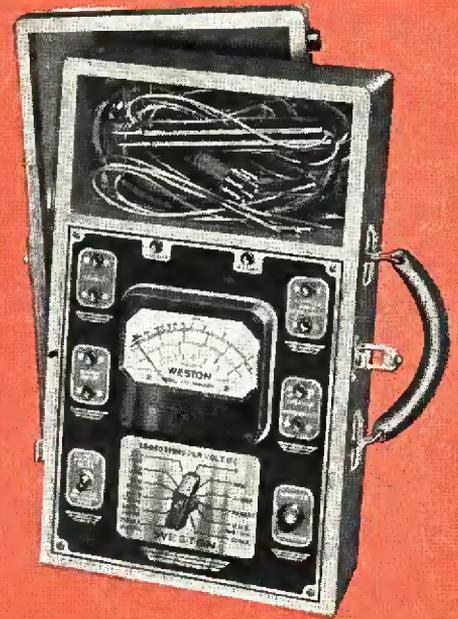
WESTON ELECTRICAL INSTRUMENT CORPORATION
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Send full information on WESTON fundamental test instruments and WESTON tube checkers.

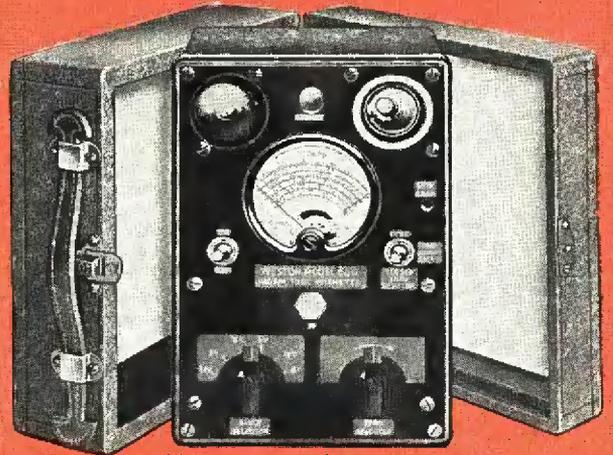
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WESTON Model 772 Super-Sensitive Analyzer (sensitivity 20,000 ohms-per-volt). Big, dependable 50 microampere WESTON meter. Broad ranges meet every test requirement for receivers, transmitters, auto testing, television, sensitive relay circuits, etc.



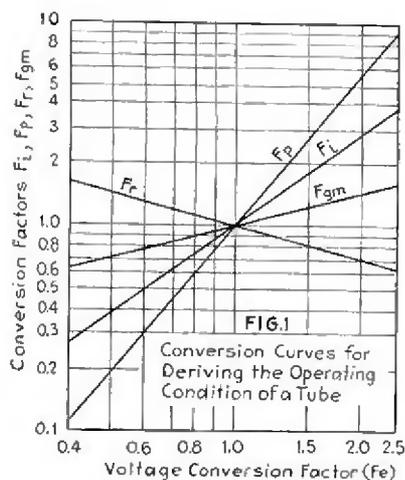
WESTON Model 669 Vacuum Tube Voltmeter. Direct reading, measures gain per stage—r.f. amplitude in oscillator circuit of superhets—all test on AVC circuits, PA systems, and all measurements where high frequency is a factor.



**WESTON 773 "quick-test"
Tube Seller**

Like WESTON fundamental instruments, this attractive counter tube checker has been designed for speed, simplicity and dependability. Minimum number of proved switches assures long, trouble-free operation. Rotator tube chart simplifies test procedure. Makes all tests on all tubes. Impressive looking, in polished wood case. Also available in portable carrying case.

DYNAMIC and or STATIC



FROM time to time during the past ten years this or that specific testing method has been touted as the *only* way to find trouble in a set. The suggested methods themselves have rarely been new. Rather, resurrection of long-known testing methods has been dictated by instrument refinements and, at times, without even this logical excuse.

Servicemen are humanly gullible and so have been frequently stirred up to the point where they believed scrapping of conventional testing methods necessary. Because scrapping of existing instruments was simultaneously inferred, this has from time to time placed an inexcusable and wholly unnecessary extra financial load on technician's shoulders. And what is much worse . . . this recurrent glorification of Utopian systems has befogged the main issue, which is encouragement of basically sound technical knowledge, reasoning, analysis and procedure. It has lead some servicemen to believe that by adopting one highly publicized system of testing they could, in large measure or entirely, eliminate the necessity to *think*.

Actually, there are two basic systems of testing. Each, in my humble opinion, is complimentary to and . . . for complete results . . . dependent upon the other. These are: (a) Static Testing and, (b) Dynamic Testing. Each supports many different types of test instruments, virtually all of which have useful functions but *none* of which completely solve the serviceman's problems in one, fell stroke.

Let's review these basic principles and see just where specific types of test instruments fit into the picture. Eventually we'll probably want to own 'em all but certainly we want to build up our lab in some logical order.

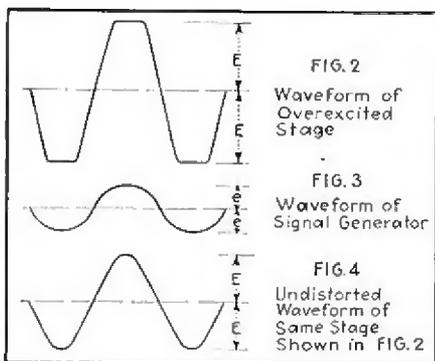
What "Static" Testing Means

Before a vacuum tube can amplify, oscillate or detect, it must be supplied with proper d.c. voltages between the tube elements and proper d.c. currents must flow to and in each tube ele-

BOTH methods of testing are indispensable in radio servicing where trouble must be quickly traced to a particular circuit and then nailed down to a specific part. Neither system offers a complete solution in itself

By **BRUCE BURLINGAME**

Eastern Rep., Supreme Instruments Corp.



ment. This also means that each associated circuit must be at a certain d.c. voltage, or potential, with respect to the cathode or ground and that each circuit must also carry a proper d.c. current.

D.c. voltage is supplied by the power pack and is distributed properly to each tube element by resistance or similar networks which automatically, in conjunction with the vacuum tubes, determine the amount of current flowing in each circuit.

These conditions of voltage, current and resistance are all set up by the radio design engineer and are primarily based on the type of tube selected for the job and what characteristics of the tube it is desired to emphasize to get the best efficiency out of it for the particular circuit of the particular set in question.

These conditions of voltage, current and resistance are known as the "static" characteristics of the tube. While there is some difference in opinion as to whether it should be done first or last in order to facilitate rapid trouble-shooting, it is a basic fact that static values must at one time or another either directly or indirectly be

corrected during a repair to the values initially determined by the design engineer if the set is to function properly.

Back in the days when sets were simple, parts few, and resistors used almost not at all, a voltage test at each tube element quickly disclosed the offending circuit and component. Then, with the advent of the superheterodyne and later, the all electric set, circuits became so complex that methods of checking current distribution became an important servicing factor.

At that time the socket analyzer came in, first in simple fixed-reference, push-button form. The analyzer was later refined because of the complexity of tube types into a "free reference" instrument, employing pin-jacks and jumpers, rotary switches or equivalent devices. And today we have even more flexible types employing push-buttons.

The basic test on all these testers was current . . . plate, screen, cathode, etc., with supplementary voltage and resistance tests available. Why was the socket analyzer first developed? Simply because it afforded a simple, direct means of breaking a milliammeter into any desired tube circuit for current testing. Why current testing? Look at Fig. 1. It is a standard tube characteristic conversion chart used by all radio engineers to determine the effect that changes of voltage have on the current in the various tube circuits.

Notice this interesting fact: If we reduce (or increase) the plate voltage by 20 per cent the plate current decreases (or increases) by 30 per cent. In other words, when the plate voltage changes from normal the plate current changes 50 per cent faster! Hence it is evident that current readings will quickly show up by wide meter variations faulty circuits due to de-

fective resistors, leaky condensers and other bad circuit components. And do it quicker than will relatively smaller voltage variations.

Around a tube there are usually several circuits besides the plate circuit, each composed of several resistors, condensers and possibly other components, any of which may be causing trouble. Current analysis is *still* a basic test for definitely tracing trouble to one of these.

Socket analysis was pooh-poohed terrifically in 1932, in spite of these facts. "Point-to-point" was to be the *only* method from then on. Just take a volt/ohmmeter and go to it! Volts and ohms were everything! The important element of current analysis was almost talked out of existence. And yet the operations required by point-to-point testing were multiplied many times over as compared with current testing. Just add up the number of plate current readings you have to make on a set and compare this figure with the number of voltage and resistance tests that have to be made to check individually each component as called for in point-to-point checking. The relative simplicity of current testing will be obvious.

Point-to-point testing is valuable. In the hands of a distributor's serviceman, for instance, it often isolates trouble quickly because that man is working on one specific make of set

whose characteristics are completely familiar to him. The system likewise has adherents among independent and dealer servicemen as a means of roughly isolating grief with a minimum of instrument manipulation. But it is *not* a complete, all-inclusive system in itself and does *not* render current testing equipment obsolete. It simply supplements it.

Before going further, an essential but often missing link to good servicing is Ohms Law and its a.c. corollary Kirchoffs Law. Modern sets depend on current and voltage being developed and distributed properly by resistances and resistance networks. Until you know these laws backwards and forwards you cannot completely understand why certain circuits are so. By all means endeavor to get these facts thoroughly in mind by referring to a good textbook.

What "Dynamic" Testing Means

"Dynamic" testing is the testing of a radio set to see how it handles a *signal*, without worrying at all for the moment about d.c. voltages and currents or about the actual value of associated resistors, condensers and other components. The usual method of making a dynamic test is to feed a modulated r.f. signal into the antenna post of the set and then by means of suitable instruments note if the r.f.

amplifier is producing reasonable gain, if the oscillator and mixer are performing their required functions, if the second detector is actually detecting and if the a.f. amplifier is actually amplifying.

The subject of dynamic testing includes as a sub-division r.f. peaking, oscillator tracking, i.f. alignment, a.f.c. adjustment.

What is necessary for dynamic testing? Certainly a good allwave signal generator is essential as a substitute for unreliable broadcast stations. It should be possible to modulate this generator with at least a 400 cycle and a 1000 cycle note. The usual method of determining just how the receiver on the bench handles the signal produced by such a generator is to check at the final audio amplifier with some sort of an output indicating device rather than by ear. It can be done, of course, with a simple output meter. The most effective instrument would be an oscilloscope because in dynamic testing it is possible and desirable to check not only for gain but also for *distortion* and the 'scope can do both in one operation. To delve further, the oscilloscope may be used for r.f.-i.f. alignment by simply adding a frequency modulator or "wobulator," if it does not already have one built in.

When repairing a set you must correct distortion as well as restore gain. What you are after is maximum *undis-*

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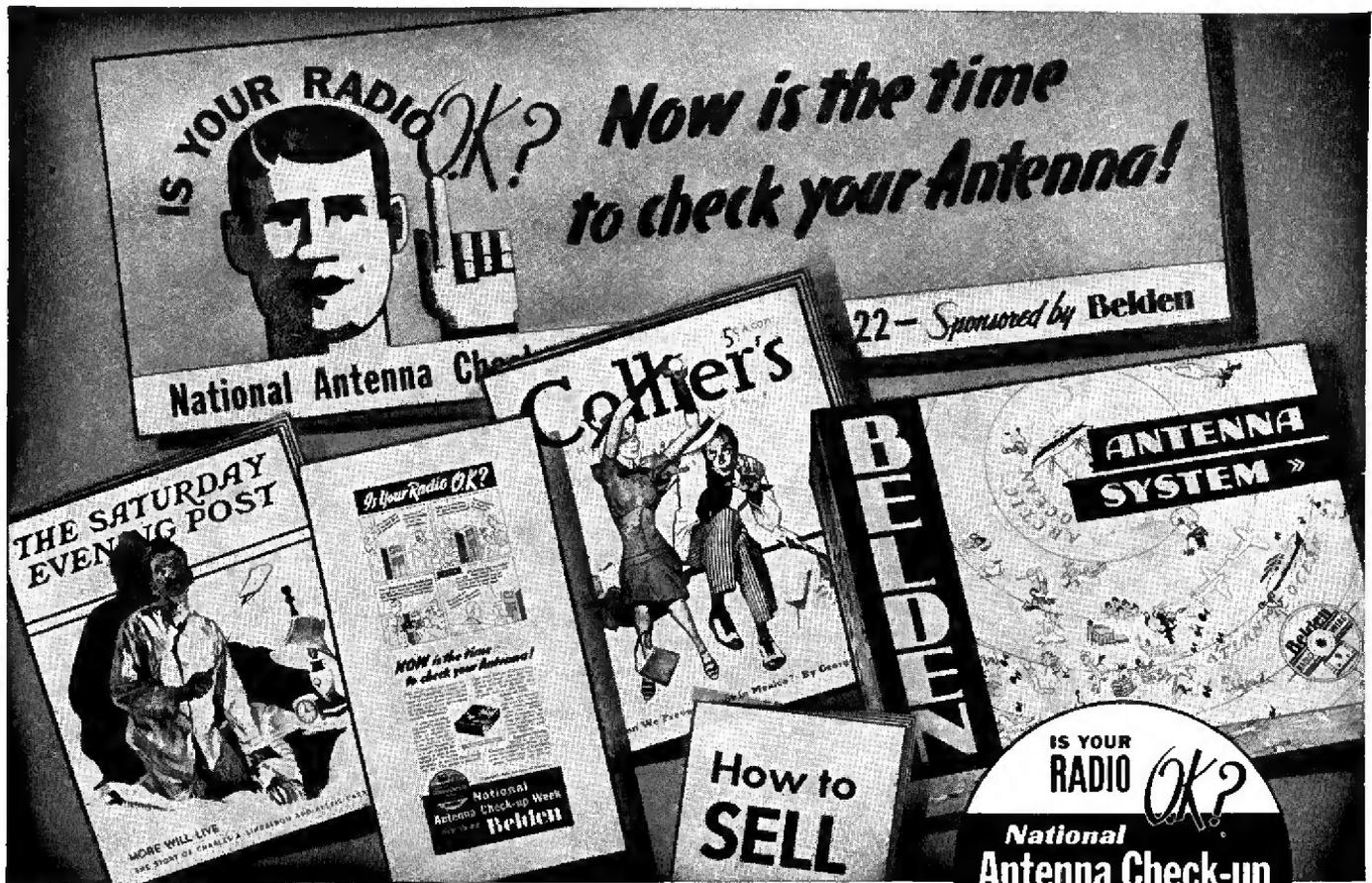
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It will pay you to be *Ready to Go!* NATIONAL ANTENNA CHECK-UP WEEK

The week of October 15 to 22 is National Antenna Check-up Week sponsored by Belden.

The purpose of this week is three-fold—

- 1st—To benefit the radio receiver owner by improving reception.
- 2nd—To increase the sales of antennas and parts.
- 3rd—To sell more labor in essential servicing operations.

Behind National Antenna Check-up Week is a tremendous publicity program. Large advertisements are appearing in Saturday Evening Post and Collier's with a total circulation of 5,500,000. Publicity is being released to the leading trade papers, magazines, and radio stations

throughout the country. Twenty-six million set owners are going to become antenna conscious and "better-listening" conscious.

How You Can Tie In with National Antenna Check-up Week

During the next few days, tie-in material will be sent radio dealers and servicemen throughout the country. Window streamers will be included to identify your shop with National Antenna Check-up Week. Large distinctive lapel buttons to be worn by servicemen and clerks will be sent you. An instructive book will be

included showing how to sell better antenna installations.

Other tie-in material is available, such as postcards imprinted with your name, ad mats for use in your local newspapers—everything to help you make a great success of National Antenna Check-up Week.

Write for complete information—get on the band wagon and increase your service and antenna sales during National Antenna Check-up Week.

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Belden *The Radio Wiring Line*

orted output and indicating devices other than the oscilloscope can be awful liars about this. Why? Let's take a look:

If you feed too much signal into the set (assuming that all the tubes are accurately biased for maximum output, which is a hard thing to accomplish) the output wave of the set will in all probability look like Fig. 2. Assume that the wave generated by the oscillator looks like Fig. 3. The ratio E/e is proportional to the voltage gain. Now suppose that the input voltage "e" in Fig. 3, from the oscillator is gradually reduced until the output wave has cleared up as in Fig. 4. At this moment "e" is the same as in Fig.

2 and in Fig. 4 the set is delivering its maximum *undistorted* output.

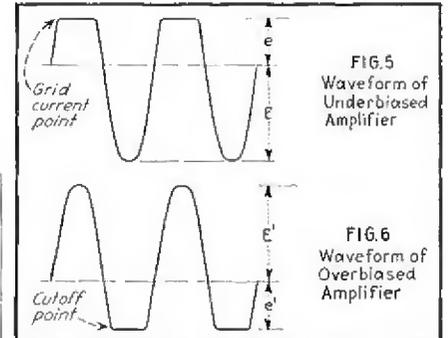
Just as a case in point, let us assume that our input wave now has a value of $\frac{1}{4}e$ (volts). Our true gain figures

out to be $\frac{E}{\frac{1}{4}e} = 4 \frac{E}{e}$. In other words

we have four times the gain we thought we had, or four times the gain we probably would have figured if we had not used the 'scope to check with. Results when using a vacuum-tube voltmeter in place of the 'scope might be totally different.

Now, another thing: VT voltmeters read peak voltage. Some types read the value of the positive peaks only

while others read just the negative peaks. Suppose the grid bias on an amplifier under test is too low. Then the output wave would tend to look like Fig. 5. If your VTVM was a positive peak type it would read voltage "e" and be in error by the ratio of e/E . If it happened to be a negative peak type then its reading would be correct as far as the undistorted



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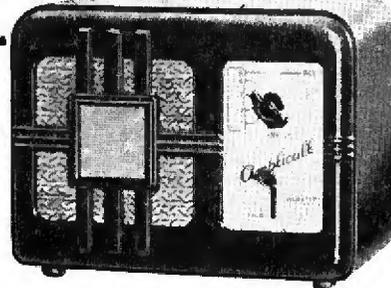
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part of the sine wave "E" was concerned but it would not indicate distortion, naturally.

Again, assume that the amplifier tube we are interested in were overbiased. Then your output wave would look like Fig. 6. Now your positive peak VT voltmeter would read voltage "E" which is correct for the undistorted part of the wave but the distortion, again, would not be disclosed. If your VT voltmeter was a negative peak type it would be in error because it would read voltage "e".

If you are pumping in a modulated signal at the receiver's antenna post and wish to study the handling of the signal throughout the set by noting its effect at the final audio stage a 'scope is obviously the most complete instrument as it shows gain and distortion too. Even so, it would be foolhardy to claim that the 'scope system was the *only* way to make a good dynamic test of this kind. It is *one* way, and a good one, but there are stages in every serviceman's life, perhaps, where it could be unnecessarily good.

Some men like to pump a signal into a set and then check the performance of the receiver stage by stage rather than at the final audio output. It is practical to probe with an infinite impedance VTVM. This is a legitimate method and sometimes saves time if the serviceman has a good technical background and knows how to do it. If you care to use several VTVM's individually, or built into the one case, so that you can connect one to the r.f. output, another to the i.f. output, another to the oscillator, etc., or substitute external r.f. amplifiers, i.f. amplifiers, oscillators and audio stages for those incorporated in the receiver itself for purposes of comparison this too is good technical practice, provided you are not at the moment concerned with distortion. A VTVM, while a peak voltage reading instrument, can be calibrated to read average, or RMS

push-button TESTING

THAT IS PROTECTED AGAINST OBSOLESCENCE

for 1939 Servicing



Rotating Chart Shows Correct Buttons To Push

Push-button Testing must have wide flexibility to safely guard against obsolescence. Triplet has protected the service dealer with an unique circuit together with push-button individual selection to balance.

DYNAMIC MUTUAL CONDUCTANCE

Tube Tester and Volt-Ohm-Milliammeter

Many misleading names indicate a Dynamic Mutual Conductance Circuit... Triplet's is a true dynamic mutual conductance tester in every sense of the word.

Push-button control gives a new order of simplification. The buttons are clearly marked on chart at base. Just rotate the chart to the tube to be tested—then the button to push is indicated in line under each row of push buttons. What could be simpler?

A second revolutionary improvement is the arrangement of the measuring circuit of the dynamic mutual conductance test for amplifiers and power tubes. The tube tested not only shows GOOD or BAD but the percentage of μ to the 100%. Good Condition also is indicated. In critical sets this permits the service dealer to pick his tubes with confidence.

Diodes and rectifiers are tested for emission according to the latest approved engineering standards. Ballast tube continuity test. Gas test also included.

Rotate chart to Volt-Ohm-Milliammeter settings—push button for D.C. scale: 0-10-50-250-500-1000 Volts at 1000 Ohms per Volt; 0-10-50-250 M.A.; 2 to 500 Ohms—300,000 Ohms—1/2 Megohms—3 Megohms; 0-10-50-250-500-1000 A.C. Volts at 400 Ohms per Volt; decibel chart furnished to 42 db's. (Ohmmeter is line powered.) Uses two interchangeable plug-in type rectifiers, simplifying replacement in case of unintentional damage. Replacement rectifiers are all precalibrated at the factory.

Installed in attractive, all-metal case with lustrous finish. Removable cover. For portable or counter use... sloping panel.

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MODEL 1615

• Dynamic Mutual Conductance Tube Tester only with Push-Button testing. Same tube tester circuit and push-button panel as Model 1616, but for tube testing only.

Dealer Price ... \$63.34

MODEL 1610

• Emission Type Tube Tester with Push-Button testing. Has new R.M.A. approved circuit with every essential for dependable emission test on all type tubes. Testing greatly simplified by Triplet push-button operations. Installed in metal case with removable cover.

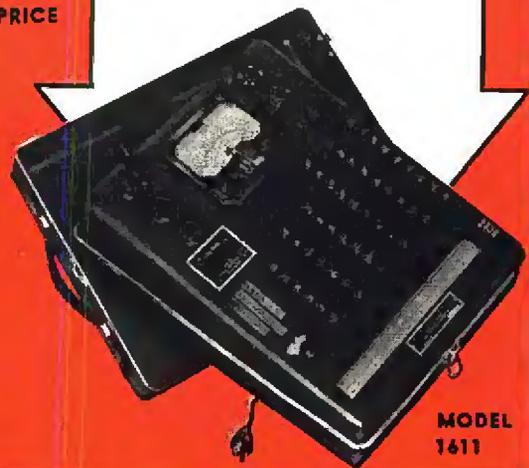
Dealer Price \$39.00

MODEL 1611

• Emission Type Tube Tester with Push-Button Testing and Volt-Ohm-Milliammeter. Similar to Model 1610 above described except Volt-Ohm-Milliammeter added. Ranges similar to those of Model 1616. Complete with accessories.

Dealer Price \$49.50

MODEL 1616
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MODEL 1611

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voltage, and does a good job on a sine wave. Certainly instruments of this type are desirable in every shop.

Much information has been given from time to time as to the best and simplest method of detecting intermittents. It stands to reason that unless the intermittent is actually causing trouble at the moment, no instrument can foretell just what circuit is acting up. It is essential that the intermittent testing it is well to point out that a

testing is going on. Under these conditions a signal generator and an oscilloscope or any of several other methods, may be used to track down the trouble. It is only necessary to connect a 'scope to the voice coil of the set under test. Feed in a constant signal from a signal generator and go on about your work. When the intermittent occurs, move the 'scope up, stage by stage, until the signal is found again or until the jagged flashes (indicating circuit noise) are absent from the oscilloscope screen. The defective stage is the one following the last oscilloscope test.

An oscilloscope, by the way, can also be used for stage-by-stage checking of gain. Leave it across the voice-coil and move the signal generator! Suppose you fed your signal into the

absolute gain measurements until the set manufacturers begin to give out this information (which they may never do). The amount of gain per stage engineered into radio sets varies between such wide limits in various makes and models that not even a good rule-of-thumb guide can be given, to say nothing of accurate figures.

While on the subject of dynamic instruments. Each has at least one

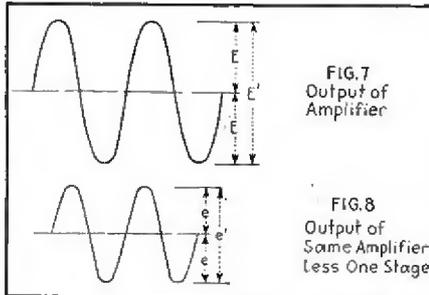


JIM QUAM
Says

I suppose it's the same in all industries, but I can't help but be amazed at the progress this radio business is constantly making. Every time some really startling development is introduced, I think now we've really reached the peak—there can't be anything better than this—and then along comes another step toward absolute perfection. Even in our own branch of the business—we're working and improving all the time, but all of a sudden we hit on the new Peramic Speaker—and find we've really got something that's revolutionary!

Any time that you can produce a speaker with the same performance as a Dynamic at 70% of the cost, you've done something for the industry—and we feel mighty proud! If you haven't seen the new PERMANIC, we'll be glad to show it to you any time!

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grid of a tube and the 'scope (connected across the voice-coil) showed a pattern like Fig. 7. Move the oscillator or signal generator to the grid of the following tube in the same amplifier (r.f., i.f. or a.f.) and you get Fig. 8 on the screen. Measure either e or e' on Fig. 7. The ratio E/e or E'/e' equals the voltage gain of that stage you passed when you moved the oscillator from one grid to the next grid. It is accurate enough for any ordinary service job and you are not misled by distortion.

Now, a word here about actual voltage gain: I would not worry about



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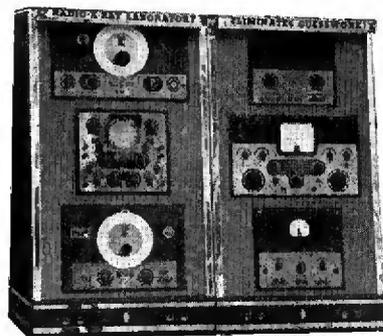
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by Kendall Clough, president and chief engineer, is the key to top notch service profit through teaching how to diagnose, in quickest fashion, any trouble in any receiver, including audio deficiencies, and so to apply swift and sure correction. Best of all, it takes no college degree to learn, but can be put to work by anyone able to read receiver diagram, in quick time.

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good "plus" instrument is a beat-frequency audio oscillator. You may not absolutely need it in the same sense that you need some means of making current tests but it is useful if you wish to make overall frequency runs on audio and sound amplifiers. Within the limitations of your pocketbook it is virtually impossible to have too many condition be present at the time the important function at which is excels and all dovetail together to make an efficient shop. Basically, remember that both the dynamic and static methods constitute bedrock upon which radio servicing procedure is built, supplementing rather than bucking each other. No instrument, or even a collection of them for that matter, can ever relieve the serviceman of the necessity of thinking.

Dynamic and/or Static? In my estimation this question might be positively answered for all time with the admonition to do your testing by methods both Dynamic and Static!

SHORTCUTS

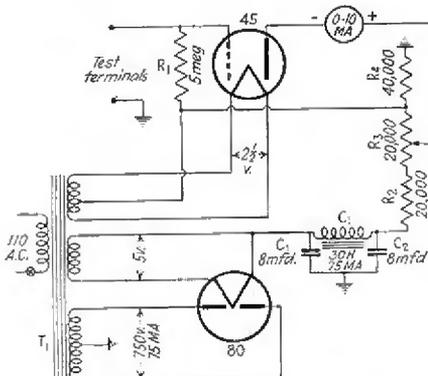
Condenser Tester

By W. A. Austin

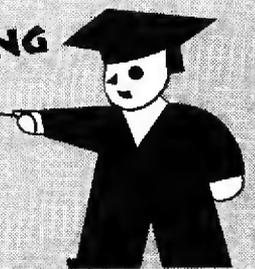
A novel condenser test circuit is shown herewith. Working on the vacuum tube voltmeter principle the tester has an input resistance of 5 megohms.

Referring to the diagram, the action of the unit is as follows: The 45 receives a plate voltage of approximately 400 volts from the self-contained power supply. Part of this voltage is fed to the grid circuit to bias the tube to a plate current of 8 ma.

In operation, when a condenser is connected across the input terminals the plate current falls to zero. As the condenser charges, the plate current will rise to the original value if the condenser is good. If a shorted condenser is found, plate current will remain at zero. Leaky condensers are characterized by a lower reading on the meter.



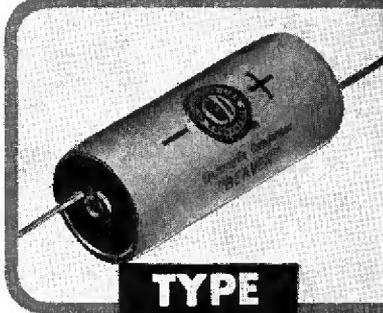
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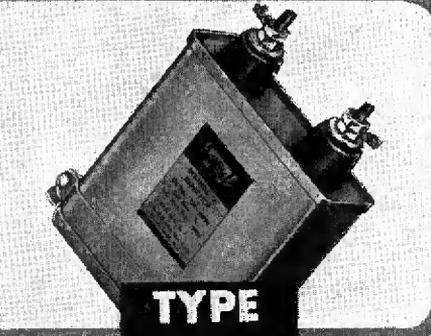
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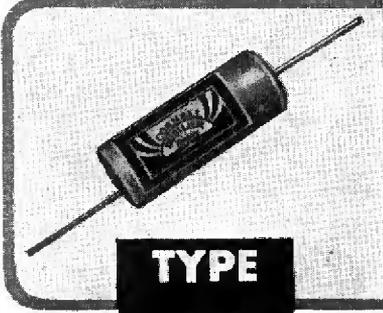
TYPE BR

The type BR Blue Beaver is a typical example of the C-D "experience-tested and quality built" capacitor line. Hermetically sealed and vented, they eliminate drilling of chassis, use of pal nuts and washers as well as minimize assembly operations. You'll like the results you get from C-D's NEW Blue Beavers.



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TYPE DT

C-D famous "Dwarf-Tiger" paper tubular capacitors are non-inductively wound and specially sealed. Extensively used by leading set manufacturers, C-D has produced millions of these tubulars—more than any other company in the world. Type DT is a real quality capacitor at the lowest price ever offered.



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Complete in attractive, sturdy quartered-oak case; suitable for counter or portable use. Sloping etched panel of silver and black.

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SHORTCUTS

Auto Radio Test Supply

By J. Le Moine

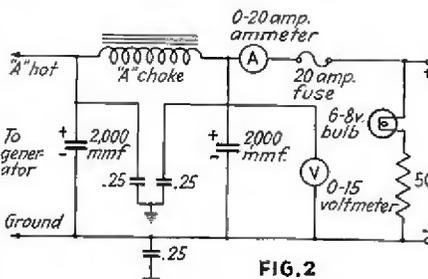
A simple supply for testing auto sets which duplicates car conditions may be constructed from an old generator and small a. c. motor.

The generator used in the original setup was taken from a Chevrolet. However, any 6-8 volt type will be satisfactory; one with ball bearings is better than the sleeve bearing type. This was belt coupled to a 1/6 hp. 1425 r.p.m. motor. Possibly a 1/4 hp. motor would be more satisfactory.

The only necessary generator change is to remove the lead from the third brush. Run a lead from this brush through a 40 ohm rheostat to ground. The rheostat should be wire-wound and capable of handling 3 or 4 amps.

In order to secure quiet operation the filter circuit in Fig. 2 is shown. This needs little explanation since it is a familiar circuit to most radiomen.

One disadvantage of the setup is the presence of mechanical noise. An easy remedy for this is to mount the unit away from the test bench. Run number 8 or 10 wire leads to the test bench to avoid large voltage drop.



Cure for Motorboating

By Gerald Evens

A few radio sets have a diode detector and first audio amplifier in the same tube, followed by a second audio amplifier tube which works into a pentode output stage. It always seemed that this was too much audio amplification, but they are in use and must be stopped from motorboating now and then.

The most satisfactory solution to this trouble is to lose part of the gain from the first audio tube, in what is essentially a voltage divider. This will materially improve the tone of the set, and greatly reduce the chances of the motorboating again taking place as B battery resistance rises with age.

This will at the same time remove much of the trouble caused by back-coupling between the second detector and input RF circuits, which result in whistles on various parts of the dial.

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SPACE will be used in six national magazines reaching over 2,000,000 of the wealthier homes where recorders are used for entertainment . . . six additional magazines reaching musicians, actors and executives in the business, advertising, educational and entertainment fields . . . men and women who make important uses of sound and recording equipment.

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- One hundred steel playing needles75
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Send in your order for this equipment today. Be the first in your community to profit from the fastest growing business in the radio and music industries.

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TRICKS

ADMIRAL BA41

Dead . . . Check for shorted .01 mfd condenser in power pack can connected from one side of vibrator prong to ground.

APEX 7

Live sound when antenna post is touched but no reception. . . . Check 20,000 ohm second detector bias resistor. A similar condition may be caused by 1,800 ohm section of bleeder resistor.

APEX 9B

Weak . . . inspect dial light socket for partial short. This lowers filament voltage, resulting in poor reception.

APEX 31

Rumbling noise when set is jarred . . . tighten the r.f. chokes located inside the r.f. coils by cementing with an acetate base cement or jamming with a toothpick.

ARVIN 28

Continually blowing fuses . . . examine vibrator for sticking points.

ARVIN 10A

Intermittent . . . Check brown lead on if transformers for poor contact.

ARVIN 618

Excessive hum . . . ground lug on 6Q7G tube socket is fastened to chassis by rivet that holds socket. Bend lug over and solder direct to chassis. Be sure a good solder connection is made.

ARVIN 1427

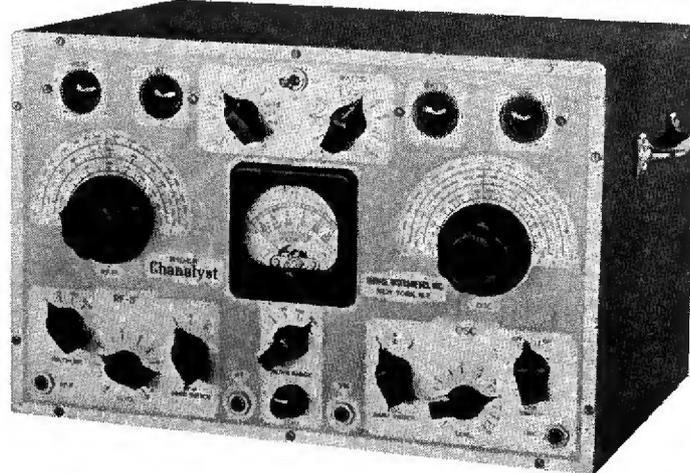
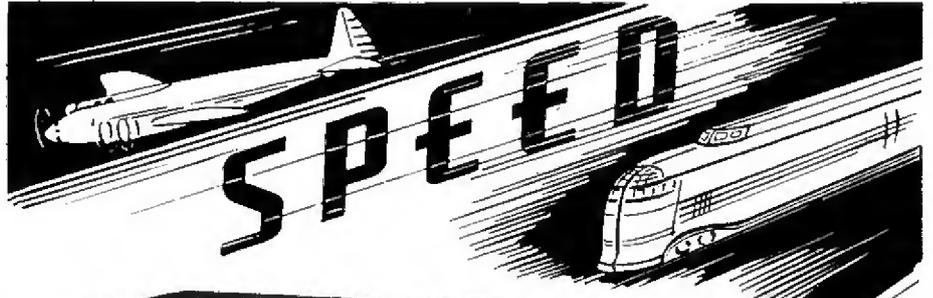
Bad frequency drift . . . check the lower paddler condenser strip. If of the bakelite base type, replace with one of porcelain.

ATWATER KENT 55

Distortion on locals, even with switch in local position . . . remove low side of volume control lead from cathode at cathode condenser terminal and connect to ground.

BOSCH AUTO RADIOS (UP TO AND INCLUDING 79C)

Insensitive . . . check continuity of tuning condenser leads. In several cases the resistance of these leads will be found between 2 and 6 ohms. Tighten the screws that hold the insulating bracket on the stator plates.



The Rider Chanalyst Provides The *Fastest* Method of Trouble-Shooting Ever Devised

JOHN F. RIDER
in whose Successful Servicing Laboratories this revolutionary instrument was developed.

Speed saves time—and time means money in any business! In radio, the serviceman who does faster work leaves his competition 'way behind. The Rider Chanalyst provides you with a method of testing that is fast because it is logical. Being of fundamental design the Chanalyst enables you to trace the passage of the signal from antenna to ground and localize troubles in any single part of the receiver. It permits a method of testing offered by no other single servicing instrument . . . It is the one instrument every progressive serviceman will want to own. See the Rider Chanalyst in actual operation, go to your jobber for a

demonstration. You'll see: How any check of the receiver is made simply by placing the proper probe at the point under test . . . how you can determine, almost immediately, the conditions existing at any point . . . how you can "move" through the receiver as fast as you can switch the probe! Whatever you want to check—grid, plate, cathode, resistor, condenser, coils, voltage, wattage—all you do is apply the probes, without adaptors or plugs and, quick as a wink, trouble is located. You check every point accurately, no guess work, no doubt, no waste motions. See the Rider Chanalyst at your distributors—operate it yourself.

**HOLD EVERYTHING
UNTIL YOU READ ABOUT THE CHANALYST**

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Tells everything you want to know about the Rider Chanalyst . . . what it is, what it does, how it works. Profusely illustrated with diagrams and clear explanations. This booklet was written by John F. Rider in whose Successful Servicing Laboratories the Chanalyst was developed. Send for your copy immediately. Go to your jobber for a demonstration.

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Address.....

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New Life for Old Sets

- Replace wornout condensers and that old set is ready for many years of extra service. To aid you in such rejuvenation, AEROVOX provides two means:

... with EXACT-DUPLICATE REPLACEMENTS

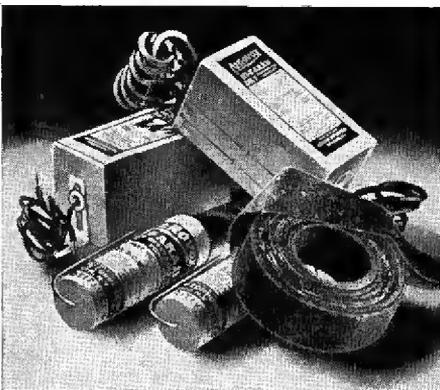
AEROVOX offers the outstanding line of exact-duplicate replacement condensers, positively matched to initial equipment. These units fit right, look right, work right. Restore any set to original factory status. The only sensible way to service a set for a fussy owner, or to make a trade-in salable at a fair price. And remember, AEROVOX Exact Duplicates usually cost less than a batch of general-utility condensers for the same purpose.

... with GENERAL UTILITY REPLACEMENTS

For emergency and hurried repairs, where chassis appearance is secondary, AEROVOX provides a wide choice of general-utility condensers—cardboard case, tubular, metal-can, dwarf metal-can electrolytics, etc.

- Ask for DATA . . .

AEROVOX issues the largest listing of Exact-Duplicate Replacements. Indicates correct unit for any set. Ask local AEROVOX jobber for copy—or write us direct.



AEROVOX
CORPORATION
70 Washington St. Brooklyn, N. Y.
IN CANADA: AEROVOX CANADA, Limited, Hamilton, Ont.

TRICKS

MOTOROLA 10Y, 12Y

Cuts out . . . replace 2700 ohm bakelite cased resistor.

MOTOROLA 860, 880

Quivery effect when driving over rough roads. May be accompanied by sharp loss of volume and tone . . . muting switch has insufficient clearance between its contact points. Moving contact vibrates, touching fixed contact. Bend down part of the bracket holding spring of moving contact until gap is great enough without hindering closing action.

ORIOLE 400

No plate or screen voltages . . . open 750 ohm filter choke. Bridge choke with similar 10 watt resistor. No noticeable increase in hum.

PHILCO 54

Distortion and rapid motorboating when strong signal is tuned in . . . replace 12 mfd filter condenser. This condenser will usually test okeh but will open with a signal.

PHILCO 59

Erratic, intermittent, squeals . . . replace .09 mfd screen bypasses. If this does not eliminate trouble check .015 mfd bypass from high voltage centertap winding of transformer to ground.

PHILCO 76

Intermittent volume, opening and closing line switch restores operation . . . replace R19 and R20 plate dropping resistors with new 100,000 ohm units.

PHILCO CT2

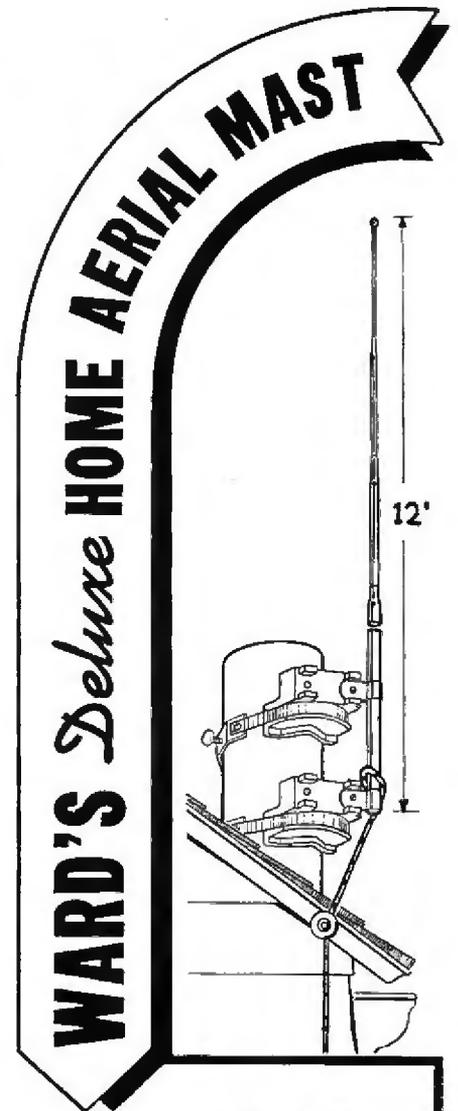
Sizzling whistle . . . rotor wiper in first r.f. section of tuning condenser not making good contact. Clean and bend spring to insure good contact.

PHILCO CT11

Noisy, unstable . . . this auto set has two transformer cans in the center of the chassis held in place by springs which in time weaken. Insert lugs under the nuts on top of cans and bond to chassis with flexible wire. Connection to chassis can be made at point where gang condenser is grounded.

RCA 48

Dead or intermittent . . . Check the detector plate choke under the oblong shield at right of tuning condenser. Also, the r.f. choke under the shield at left of tuning condenser.



Check These "ALL-STAR" Features!

- ★ PROVIDES BETTER RECEPTION. Operating on same principle as modern broadcasting stations with their vertical antenna masts, WARD'S new home aerial assures better pickup, better reception than old style "clothesline" aerials.
- ★ GUARANTEED RUSTPROOF. Constructed of attractive, nickel-plated, super-size bronze tubes. 4 sectional, 12 ft. in height.
- ★ EXTRA SAFE. Lightning Arrester on WARD'S new aerial houses a .002 MFD condenser for additional capacity required by old and new sets.
- ★ EASY TO INSTALL. No poles, supports or guy wires required. Everything needed for installation comes picked with aerial. WARD'S new home aerial mounts vertically to soil pipe, or against chimney, cornice, window frame, garage, etc.

FREE!! Write or wire today for free catalog of WARD'S complete line of low-priced, fast-selling aerials for car and home.

The **WARD PRODUCTS Corp.**
WARD BUILDING CLEVELAND, OHIO

TRICKS

COLUMBIA C-80A.

Distortion . . . check audio coupling condenser enclosed in capacitor case mounted above chassis. Also check grid coupling resistor of 47 which has tendency to change value. Correct resistance is 300,000 ohms.

CROSLY 42-S

Low volume, noisy reception . . . bottom plate of chassis touching center terminal of volume control. Glue a piece of insulating material to the plate to prevent contact.

CROSLY ROAMIO 98

Dead . . . look for defective tone control. Replace with new control.

CROSLY 124

Intermittent . . . partially shorted tuning condenser. A dead set which oscillates when finger is placed on 35 first i.f. tube indicates a defective 24 first detector tube.

CROSLY 125

No plate voltage on oscillator detector. Check i.f. trimmer condensers. Inspect the mica separators for possible short.

CROSLY 160

Weak . . . replace the 20,000 ohm oscillator cathode resistor with 5,000 ohms.

EMERSON 116

Dead on portion of the broadcast band. . . This is caused by the 6D6 mixer oscillator popping out of oscillation. Replace 6D6 with a 6C6.

FORD PHILCO FT6

Insensitive . . . check a.v.c. action. Connect a 1 or 2 meg resistor in place of the 190,000 ohm resistor connected between second detector cathode and 25,000 ohm resistor in grid return of second i.f. transformer. Also, remove the 25,000 ohm bleeder located below tuning condenser under chassis.

FORD PHILCO 1935, 1936

Intermittent . . . check .01 mfd condenser connected to volume control for loose connection.



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A Better
12" JENSEN P. M.
Speaker for
EVERY PURPOSE**

A COMPLETE PERFORMANCE RANGE

A COMPLETE PRICE RANGE

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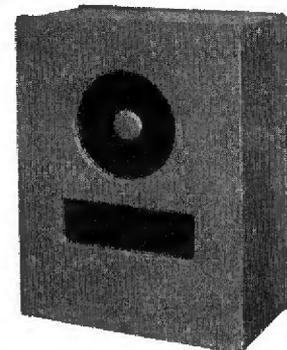
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● Jensen policy is not to make one twelve-inch PM speaker and claim that it is best for all applications. We know that different applications require different models and that is why five models of Jensen Permanent Magnet Speakers are offered the trade. Choice lies between consideration of price, sensitivity, power handling capacity and response characteristics; but no matter which model is chosen there is no price premium for Jensen uncompromising quality.

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Use Jensen Peri-dynamic Reproducers with BASS REFLEX with all Jensen quality of performance and convenience PM Speakers where the utmost in installation is required.

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JUL-938

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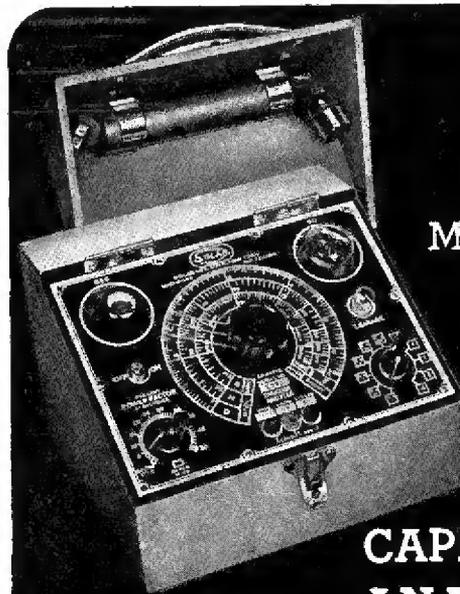
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Triumph offers the most accurate simplified tube tester—tests radio and ballast tubes. Dynamic electronic conductance testing with synchronized load compensation gives a true test of tube merit. You can test tubes as fast as you can push buttons! Direct reading meter—built-in roller tube index. Model 430 Counter or Portable Model—\$34.50. Write for circuit and instructions FREE. Early Triumph models can be modernized.

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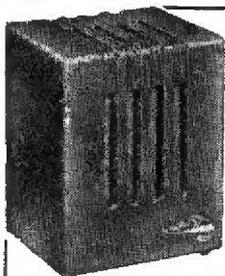
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Model CC



CAPACITOR ANALYZER

This advanced new model has all the good features of our famous CB model . . . PLUS high capacity scale, high test voltage, simplified scales and sloping panel. A.C. operated. Illustrated model, No. CC-1-60, for 110 volts, 60 cycles operation, less tubes, costs \$24.90 Net . . . through your jobber.

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Operates on 110 volts
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INTER-COMMUNICATION SET

Plug-in and Talk • No Installation • Fool Proof

FULLY LICENSED AND GUARANTEED

ROOM to ROOM — UPSTAIRS and DOWN
HOUSE to HOUSE—CHILDREN'S PLAYROOM
NURSERY or PLAYROOM—HOUSE or GARAGE

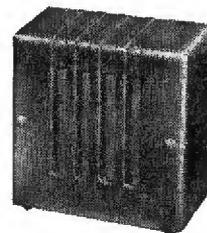
#47 Master Unit and Sub-Station Complete with Wire READY-TO-USE. Will operate efficiently with added wire up to 500 feet without additional attachments.

Weight 8 lbs. complete in air-cushioned cartons.

LIST PRICE

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COMPLETE

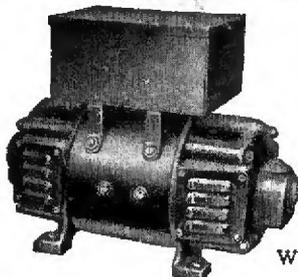


Send for catalogue showing complete line up to \$79.50 list price.

REGAL AMPLIFIER MFG. CORP.

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Janette Rotary Converters



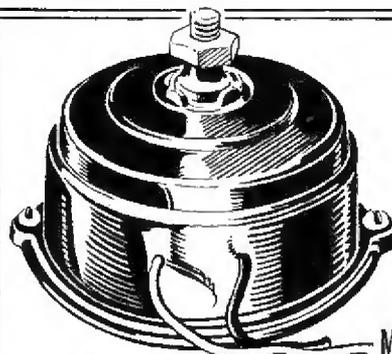
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Built for radio and sound apparatus—capacities 110 to 3250 volt amperes—with or without all wave filters. Dynamotor construction—economical to operate—ruggedly built for years of trouble-free service—used or recommended by the largest manufacturers of radio and sound apparatus—in use all over the world.

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Think of the millions of outside aerials that now need replacement—and the countless new sets to be sold this year! No wonder that five merchandisers everywhere are making a cleanout profit on ANTENEX—the Indoor Aerial. It's a sell-on-sight device, with a market already prepared. Stock ANTENEX with its attention-compelling display and note how quickly you have to reorder.

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PERFORMANCE that has accounted for scores of unsolicited testimonials
SIMPLICITY—a novice can attach Antenex
APPEARANCE—its polished Bakelite case has powerful eye appeal
No bigger than a door knob

PRICE—How that dollar retail price attracts customers, enriches dealers!

TRICKS

GE A66

Static but no reception . . . oscillator not operating. If new 6A8 tube does not restore action, replace .05 mfd condenser bypassing the 40,000 ohm grid resistor.

GE 1937 AUTO RADIOS

Periodic distortion at low volume . . . check for trouble in power tube socket as wax from r.f. .1 mfd bypass runs in tube prongs. Erratic operation in these sets is often due to a defective discriminator-transformer winding.

GLORIATONE 26P

Intermittent . . . suspect r.f. plate bypass. Cut out red condenser leads from condenser bank. Solder lead from first r.f. B plus to second r.f. B plus.

GRUNOW 11G

Dead . . . Check .1mfd screen bypass. Replace with 600 volt type.

HOWARD 67, 77

Weak . . . look for short between positive leads of filter condenser. This shorts speaker field.

INTER OCEAN P-71

Weak erratic. . . . Open .1 mfd condenser from screen of 24 tube to ground.

KOLSTER 6J

Hum. . . . Check number 1 lug on power pack for ground to eyelet.

MAJESTIC 15

Weak or dead . . . open second i.f. coil.

MOTOROLA 65

Distortion after warming up . . . change in value of bleeder resistors. Replace 22,000 ohm plate and screen dropping resistors. Also, 300 and 1,500 ohm resistors in cathode of 75.

MAJESTIC 130

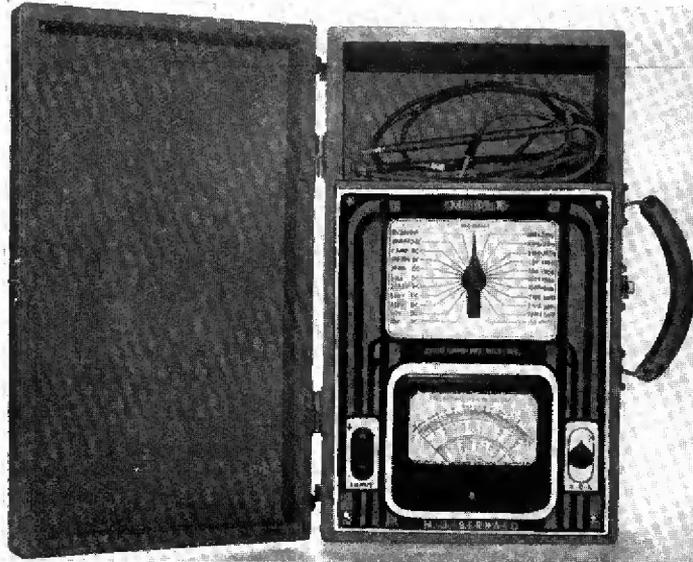
Fading, poor sensitivity . . . check .04 mfd condenser furnishing the coupling for the band pass tuner. There are three of these mounted on a vertical upright to which the gang condenser is mounted. Replace all three condensers.

RADIO RETAILING, SEPTEMBER, 1938

MY STARTLING POLICY:

PRECISION radio test equipment heretofore has been costly, due largely to critical circuits that handicapped production, necessitated expensive bug-chasing and sometimes compelled practical remaking. I have engineered and fully-tested basic circuits that are so simple they overcome these difficulties, and have developed a manufacturing technique free of the usual obstacles. So for the first time precision and low cost are combined. Fetching appearance adds still more distinction to each product. So my startling policy is: Treasure at the Price of Trash.—H. J. BERNARD

MASTER MICRO-MULTIMETER WITH 35 RANGES

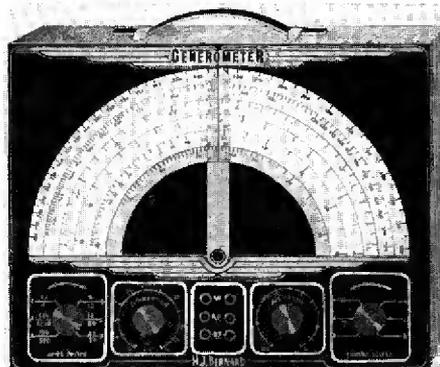


MAXIMETER, the do-all micro-multimeter, in a big, handsome cabinet with removable hinged cover, is an example of the new achievement: more numerous services at less cost. Affording the unheard-of number of 35 ranges in one instrument (average cost per service less than 86c), MAXIMETER alone is operated with only two controls and from only two input posts. It makes all the basic measurements in electricity, d.c. volts measured at 5000 ohms per volt, a-c volts at 1200 ohms per volt. So sensitive it reads second detector diode current, it is also remarkable in permitting output meter readings across voice coils before the a.v.c. starts. The 0-200 microammeter has a d'Arsonval movement and is housed in a molded square Bakelite case, 4 1/2" wide. Voltage multiplier resistors are insulated; shunts are manganin. Switch stops, meter scale and pointer are color coded for quickly knowing ranges.

RANGES
 5 D-C VOLT: 10-50-250-500-2500 v. @ 5000 ohms per v.
 5 D-C CURRENT: 1-10-100 ma; 1-10 amp.
 5 RESISTANCE: 3000 ohms (11-ohm center); base times 10-100-1000-10000 to 30 meg.
 4 A-C VOLT: 1.5-15-150-1500 v. @ 1200 ohms per volt
 4 DECIBEL: Minus 15 to plus 50 db @ 1200 ohms per volt
 4 OUTPUT METER: 1.5-15-150-1500 v. @ 1200 ohms per volt
 3 CAPACITY: 0.2 mfd. (.015 mfd. center); base times 10-100 to 20 mfd.
 3 INDUCTANCE: 30-300-3000 henries
 1 WATTAGE: 150 watts.
 1 A-C CURRENT: 1.5 amp.
 35 Ranges Total, using a Single Selector Switch.

Nothing even approaching MAXIMETER ever has been offered before at anything near the price and no instrument better combines accuracy, handsome appearance, ruggedness, originality, convenience, safety and low price. Shipping weight, completely contained with all batteries and test leads, in a large portable luxuriously-finished wood case. Shipping weight, 16 lbs. Price..... **\$29.90**

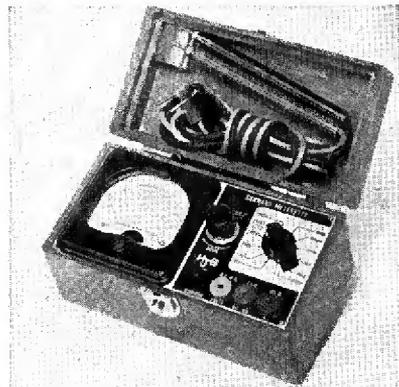
POCKET MICRO-MULTIMETER



IN Generometer you have the first combination of low price and the perfection found only in costly instruments. Covering 120 kc-70 mc, all on fundamentals, it alone among service signal generators, goes down to 4.3 meters. It enables accurate alignment of all receivers at all intermediate and radio frequencies, and even at ultra frequencies, including television bands. The delta T-pad constant-impedance attenuator is effective on all bands. In each instrument the operator is afforded choice of two output impedances, 200 and 10,000-ohms. Six frequency bands, wobbler posts, sine-wave modulation (on-off by switching), and separate audio output are other features. The bands are: A, 120 kc-380 kc; B, 380-1100 kc; C, 1.1-4 mc; D, 4-12 mc; E, 12-50 mc; F, 25-70 mc. GENEROMETER, Model 382, for 50-60 cycle, 90-130 v. a.c.; complete with tubes. Shipping weight, 12 lbs. **\$19.90**

Price

TELEVISION SIGNAL GENERATOR



SMALLEST micro-multimeter made, Meterette, 5000 ohms per volt d.c., costs less than 1000-ohms-per-volt instruments, reads higher voltage and measures higher resistance. So sensitive it responds to detector diode current. It has insulated voltage multiplier resistors and manganin shunts. The 3" square meter is a 0-200 microammeter. Switch stops, dial scales and meter needle are color coded.

RANGES
 5 D-C VOLT: 10-50-250-500-1000 v. @ 500 ohms per volt
 4 D-C CURRENT: 200 microamperes; 10-100-1000 ma
 3 A-C VOLT: 10-100-1000 v. @ 1200 ohms per volt
 2 RESISTANCE: 0-2000, 0-2000000 ohms.
 14 Ranges Total, or less than \$1 per Range.

Complete with self-contained 3-v. battery and test leads. Shipping weight 3 lbs. Price..... **\$13.90**

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The Vari-swiv mounting is another feature. It enables the mike to be used in an upright position or tilted to any angle. Mike obtainable with three prong male plug assembly if specified.

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A GOOD NAME GOES A LONG WAY



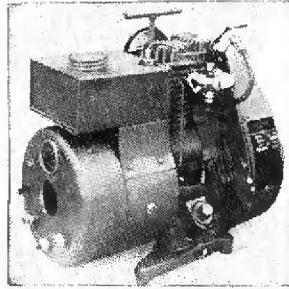
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DEPENDABLE RADIO TUBES

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List prices \$50.00 and up.

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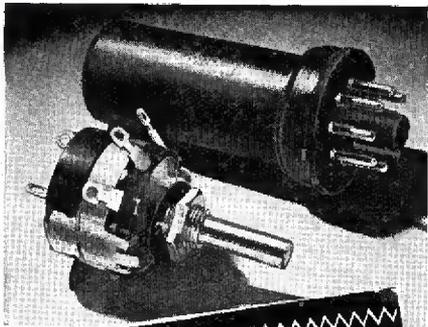
Servicemen must keep abreast of the times. Membership in RSA helps servicemen to be better business men. It provides advance technical information, it lets you know what other servicemen are doing, it provides an organization composed only of qualified servicemen, its membership reaches every state in the union, it has the sponsorship and backing of the entire industry. We want you as a member if you are a good serviceman.

THE BEST \$2.00 YOU EVER INVESTED

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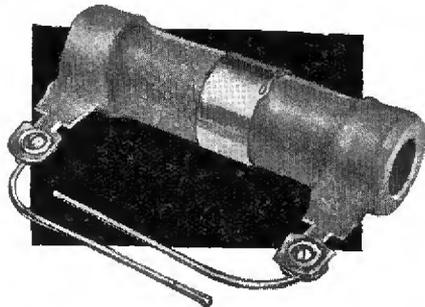
JOE MARTY, Jr., Executive Sec'y

304 S. Dearborn St., Chicago

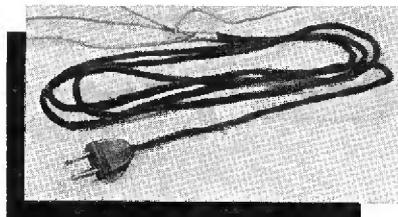


Let **CLAROSTAT**
Solve
YOUR RESISTANCE PROBLEM

● No matter what set you service, bank on CLAROSTAT when it comes to control and resistor replacements. Here is ONE source of supply for ALL requirements. For instance: Exact-duplicate controls for every standard set. Likewise metal-tube resistors and ballasts matched with initial equipment.



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● Voltage-dropping power cords for AC-DC sets. Resistance winding provides proper voltage for rectifier plate and for tube filaments. Replacement for every AC-DC set.

Ask for DATA Your local CLAROSTAT jobber can supply these and other servicing aids. Ask for your copy of latest pocket-sized 208-page CLAROSTAT Service Manual. Or write us direct.

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MANUFACTURING CO.
Incorporated
245 North Sixth St.
Brooklyn, N. Y.

TRICKS

VICTOR RE 20

Loud hum . . . open .1 mfd condenser from cathode of 27 second detector to one side of $\frac{1}{4}$ watt 1 meg resistor. This condenser is in condenser pack and has two blue leads.

Oscillation over entire dial . . . open .002 mfd 400 volt condenser from plate of second detector to cathode.

VICTOR R32

Normal except for loud hum . . . suspect the 20 ohm resistor across the heater of the 27.

WELLS GARDNER 40, 40A

Bad distortion at low volume . . . remove all wires from dummy lugs on candohm resistor. The lugs can be identified by the double layer of insulating paper at these points. Interaction takes place between the a.v.c., volume control and grid bias due to leakage between these lugs.

Also, change the 40,000 ohm resistor (R16) to 500,000 ohms.

WELLS GARDNER 752, 754, 756

Weak on all stations . . . check volume control for grounded rotor.

WESTINGHOUSE WR14

Can't control volume on strong locals even with antenna disconnected. . . . The r.f. coil and volume control leads are unshielded supplying sufficient pick-up. Shield r.f. coil with large tube shield or other shield can. Also replace 8 mfd wet electrolytic with dry unit. Shield control grid lead of first 24 tube.

WESTINGHOUSE WR203, 303

Excessive code interference. . . . Set IFs to 450 and carefully adjust wave trap to minimum. Re-align all circuits. If antenna coupling transformer is used, bolt directly to chassis and run wires to set from it as short as possible. Run 6A8 grid lead down along condenser gang as close as possible.

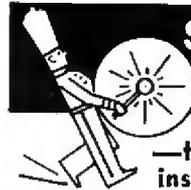
WINDCHARGERS

When the charge rate cannot be made to exceed three or four amperes check the lugs on the collector arm leads for good contact. In many cases the lugs are crimped on the lead instead of soldered. Solder all connections.

ZENITH 52

Loud hum which increases as set operates . . . replace 36 mfd wet filter condenser with a wet or dry unit.

SERVICE IS ON THE MARCH!



—these new Simpson instruments will help you keep up with the parade

EACH year service becomes more complex . . . each year adds new models, new circuits and new problems . . . but through it all the Simpson organization has more than kept pace.

The new up-to-the-minute Simpson line of instruments have been designed by men who know every angle of the testing job. Each model has been built to help you do a better job . . . to enable you to make more out of the service end of the business.

A few of the important features of just a small part of the Simpson line are presented below. Give them the once over and then write for complete information. It will pay you to keep up with the service parade and Simpson instruments will help you do it.

SIMPSON ELECTRIC CO.
5204 Kinzie Street, Chicago, Ill.

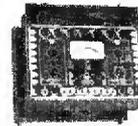
You have never seen a tube tester the equal of this at a price of \$26.50.

The New Simpson Model 333

Tests ballast tubes. Has provision for testing pilot lamp and gaseous rectifiers of the OZ type new double filament switching. Jack for noise test with neon bulb of super sensitivity for checking shorts. Latest R.M.A. standard circuit. Convenient size only $7\frac{1}{2}$ "x10 $\frac{1}{2}$ "x5" and weighs 7 lbs.



And now the master of all set testers, the new Simpson Model 440 "Testmaster".



A tube tester of improved design—based on R. M. A. standards, employing double switching of filament terminals for testing special tubes without adaptors or special sockets.

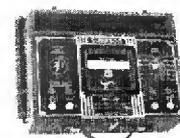
A set tester of tremendous scope—As a set tester the Model 440 has six A. C. and D. C. voltage ranges. Four milli-ampere ranges are provided and there are six decibel ranges and D. C. current range of 0-15 amperes for auto work. Capacity range is 0-30 microfarads. Meter leakage test for all condensers including electrolytics is provided.

It will do more for you at its moderate price of \$59.00 than any tube or set tester on the market.

A midget with a big service range—the Model 230 Volt-Ohm Milliammeter.



The smallest "Pocket-Type" A. C. and D. C. service instrument on the market. Measures only $5\frac{1}{4}$ " high by $2\frac{1}{2}$ " wide by $1\frac{1}{2}$ " deep, yet it contains a sufficient number of ranges for the experienced man to do a complete servicing job. Net Price. . . . \$14.25



Another member of the Roto-Ranger family Model 275

10,000 Ohms per volt

Service men everywhere are sold on the Roto Ranger "direct-reading" convenience. To change from scale to scale the selector switch is moved to any of the markings around it and—presto!—the right scale pops into view . . . a scale that is designed for easy, accurate reading and not one where you have to multiply by 10 and divide by 50 before you guess at the result. Net Price. . . . \$42.50

SIMPSON ASK YOUR JOBBER
Instruments that STAY accurate

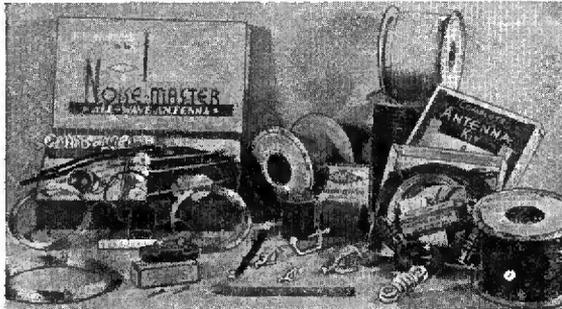
Simpson Electric Co., 5204 Kinzie St., Chicago

Send bulletin describing No. 333 No. 230
model checked No. 440 No. 275

Name _____

Address _____

A Quality Standard since Radio's Beginning



ANTENNAS and WIRE PRODUCTS

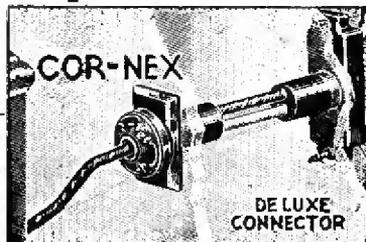
The Radio industry annually purchases a large percentage of its lead-in, hook-up and microphone wire under this world-famous diamond trademark. NOISE-MASTER, peerless all-wave antenna that eliminates man-made static on broadcast as well as short-wave lengths, is increasing Service profits and prestige everywhere. Specify CORWICO . . . and get the best.

A practical service man invented

COR-NEX

De Luxe Connector between Aerial and Receiver

Clean, easily installed, profitable! Eliminates haphazard wiring and window-strips . . . delights home-owners by its neatness and efficiency. Complete with DOUBLET lightning arrester, decorative inside plates and polarized plug with cord . . . \$2.50



Write for complete literature

CORNISH WIRE CO., INC.

30 Church Street New York, N. Y.

TRICKS

ZENITH 55-127, 55-150

After a few minutes of operation all signals but locals fade completely. Replace the 6A8G cathode resistor. This is mounted directly on the tube socket near the front of the chassis. Replace with 400 ohm $\frac{1}{2}$ watt resistor.

ZENITH 715, 755, 756

Frying noise at low volume levels . . . If this condition still exists when the antenna is removed and the antenna post grounded replace the 55 second detector and a.v.c. tube. In some cases the same tube causes a peculiar popping noise which is often attributed to local disturbances.

ZENITH 870

Dead below 700 kc. . . check for shorted or leaky .01 mfd 400 volt condenser in the oscillator plate circuit.

ZENITH CHASSIS 5709

Dead on broadcast band, alright on short waves . . . 10 mmf. condenser shorted in antenna transformer. This is part #22-601, C21 in diagram.

ZENITH 4B231

Vibrator hash on all but local stations . . . replace .5 mfd 400 volt paper condenser across input filter condenser (C11 in diagram).

ZENITH BATTERY MODELS 4F227, 5F223, 5F251

Complaints of short "B" battery life and poor tone quality after battery voltage has dropped below 120 volts may be corrected by eliminating "C" battery and converting circuit to automatic bias. Also by bypassing plate voltage with 4-8 mfd electrolytic condenser.

To accomplish this, disconnect negative "B" lead where it connects inside chassis and connect a 300 ohm $\frac{1}{4}$ watt carbon resistor in series to chassis. Run the bias leads from the 1H4G grid and 1K6G grid to the "B" lead (yellow). Disregard green lead as "C" battery is omitted.

ZENITH 6S-128, 137, 147, 152, 157

Inoperative . . . open voltage divider section between B plus end and screen tap. Replace with 10 watt 10,000 ohm unit.

ZENITH 12A57, 12A57-58

Too deep over all tone control positions. . . Remove .01 mfd C10 and much better tone will result.

Number One Speaker Line

NEW, finer performance . . . new competitive prices—Cinaudagraph speakers are America's No. 1 "buy"! Cinaudagraph's precision engineering has long been "tops". Now Cinaudagraph offers this same fine quality in a complete line at the same price you would pay for ordinary speakers. Extensively used by the majority of leading set and P.A. manufacturers and servicemen, Cinaudagraph speakers will be found wherever quality and lasting performance are a necessity.

A complete line of indoor and outdoor speakers in both electro-dynamics and permanent magnets from 5" to 27" are available. Send for new catalog to Dept. 101.

QUALITY

COMPLETE LINE

COMPETITIVELY PRICED

CINAUDAGRAPH CORPORATION

SPEAKER DIVISION
STAMFORD, CONNECTICUT
EXPORT DEPARTMENT
100 VARICK ST., NEW YORK



"A MILLION DOLLAR BABY!"

THAT DOES A MAN-SIZED JOB

That's the way servicemen are referring to the new Sprague ATOMS! For ATOMS (midget dry electrolytics) have all the quality of a real "million dollar baby." They're backed with all the engineering resources of the world's largest manufacturer of quality condensers. They're built better, more scientifically than larger old-style units they're designed to replace. And they're selling like hot cakes among those who know them best—wherever the demand is for really good condensers at rock-bottom prices.

SAVE TIME • MONEY • SPACE

Made by an exclusive Sprague etched-foil process, ATOMS are available in all standard capacities including DUAL COMBINATIONS. You save real money. If you haven't tried them yet—TRY THEM NOW!

SPRAGUE PRODUCTS COMPANY
NORTH ADAMS, MASS.

SPRAGUE ATOMS

"Mightiest Midgets of All" . . .



"PINCOR" POWER SUPPLY UNITS

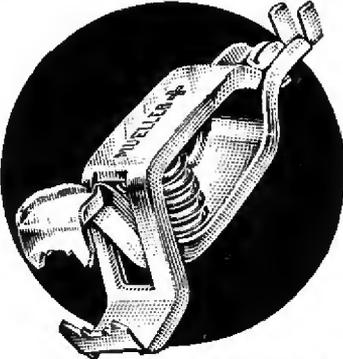
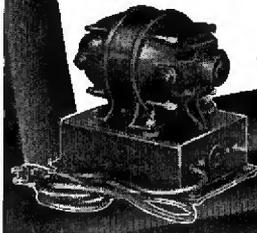
DYNAMOTORS GEN-E-MOTORS CONVERTERS

"PINCOR" dynamotors, gen-e-motors and rotary converters provide the last word in power supply units for air craft, police, marine and auto radios; also for public address systems. Now widely used by leading air lines and municipal and federal agencies throughout the world. Available in a wide range of capacities for every requirement. Compact, light-weight. Sturdily constructed to assure long dependable service. Write for catalog and complete information.

PIONEER GEN-E-MOTOR CORP.
Manufacturer of "PINCOR" Products
Dept. R-11
466 W. Superior Street, Chicago, Illinois

OTHER "PINCOR" PRODUCTS

BLUE DIAMOND and GOLD CROWN gas-engine driven electric light and power plants, up to 5000 watts; alternating or direct current; air or water cooled; remote control. Send for literature.



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The Original and Only Complete Line of

CLIPS

- Alligator Clips
- Copper Clips
- Insulated Clips
- Wee-Pee-Wee Clips
- 300 Ampere Clips

KNOWN FOR 30 YEARS AS THE BEST MADE!

SEND FOR FREE SAMPLES & CATALOG 701
Mueller Electric Co. 1584 E. 31st St.
Cleveland, Ohio

No. 1 PROTECTING THE JOBBER GUARANTEE—

RADIO WIRE CABLES
CORDAGES
AERIAL KITS AND ACCESSORIES
CONDENSERS
RESISTORS
TONE CONTROLS
SPECIALTIES FOR THE RADIO TRADE

• The Consolidated "GUARANTEE" is a blanket guarantee of customer satisfaction. It is accompanied by no qualifying phrases. It is not bounded by any terms of evasion or equivocation. It is a moral responsibility we assume—predicated on the idea that the customer must be satisfied—in the service, the quality—the length, weight and even the saleability of the merchandise. When you buy CONSOLIDATED you buy satisfaction in its fullest measure, and with it you get 100% jobber protection. . . . and you are the judge.

512 South Peoria Street



CHICAGO, ILLINOIS

"THE JOBBER PROTECTED LINE"

I'D RATHER HAVE A BOTTLE OF BEER...

Customers are grateful for good service work. Some do express their appreciation by gratuities . . . all by continued patronage. That is how a business is built up. The use of Ward Leonard Replacement Parts goes a long way toward giving satisfaction. They are conservatively rated . . . that's why they stand up.



WARD LEONARD ELECTRIC CO.
35 South Street, Mount Vernon, N. Y.

Please send me Price List Bulletin 507A.

Name

Street

City..... State.....

Jobber

Announcing
RIDER MANUAL
VOLUME IX



OUT
NOV. 19TH
ORDER TODAY

1650 pages \$10.00

ANOTHER great Rider Manual—Volume IX, covering 1938-39 American-made radio sets. Here is one of the most important volumes of them all. Every serviceman—bar none—will need it. At your finger tips are 1650 pages of the most complete and authentic compilation of service data available in the industry. Rider Manual Vol. IX features an entirely new "How It Works" Section—the most "talked-of" feature of Vol. VIII. It makes clear by practical example the complicated circuits and baffling service problems which you must cope with in repairing modern radio sets. There is also a new 140-page easy-to-find index included in Vol. IX, at no extra cost, which covers all NINE volumes, now containing a total of 11,270 pages.

Remember, Rider Manual Vol. IX will be ready for you November 19th. You'll want to put this great volume to work for you right away, so place your order with your jobber without delay.

Vol. IX - \$10.00—Covering 1938-39	Vol. IV - \$7.50—Covering 1933-34
Vol. VIII - \$10.00—Covering 1937-38	Vol. III - 7.50—Covering 1932-33
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Vol. VI - 7.50—Covering 1935-36	Vol. I - 7.50—Covering 1930-31
Vol. V - 7.50—Covering 1934-35	

RIDER BOOKS
SAVE YOU TIME

AFC SYSTEMS—144 pp. Hard Covers \$1.00
CATHODE RAY TUBE—366 pp. 450 illus. . . . \$2.50
Other Rider Books: Servicing Superheterodynes; Aligning Philco Receivers—\$1.00 each. "Hour a Day with Rider" books on AVC Control, on Resonance & Alignment, on A-C Distribution in Radio Receivers; on D-C Distribution—60c for each book.

JOHN F. RIDER, Publisher
404 FOURTH AVENUE, New York City



DID YOU SAY 9?

YOU NEED ALL
Rider
MANUALS

YES, I SAID 9!



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Why RCP INSTRUMENTS
will help you increase sales on all merchandise.

Because the line has those FIVE points SMART MERCHANDISERS demand in a LEADER!

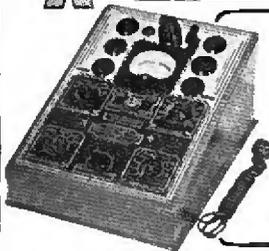
-  **QUALITY**
-  **LOW PRICE**
-  **QUICK TURNOVER**
-  **COMPLETE LINE**
-  **STRONG DISTRIBUTOR POLICY PLUS INTEL-LIGENT ADVERTISING.**

HERE IS a quality line—built to the finest standards—incorporating the latest engineering developments—a leader for all merchandise.

HERE IS a complete line—featuring all popular models vital to modern service and laboratory work—backed by one of the strongest distributor policies, protecting territory, preventing unfair competition.

Add to this a progressive-intelligent advertising campaign, creating still greater demand for RCP products—and you have the big reason "WHY" RCP instruments should be in your "varsity" lineup this fall.

FEATURE RADIO CITY PRODUCTS TEST EQUIP'T.



Model 307C
Dynoptimum
Tube Tester.
A typical RCP value at \$16.95. Tests all types tubes—glass or metal. Attractively finished with finely etched panels. Uses 3" square meter, 2% accurate.

Remember—with us, it's QUALITY PRODUCTS, PRICED LOW, BACKED BY STRONG DISTRIBUTOR POLICY—REINFORCED WITH PROGRESSIVE ADVERTISING.

CLIP AND MAIL THE COUPON NOW FOR MORE DETAILS.

RADIO CITY Products Co.
88 PARK PLACE NEW YORK CITY

RADIO CITY PRODUCTS CO., INC. R.R.9
88 PARK PLACE, NEW YORK CITY.
I am interested in your jobber set-up. Please send me complete details. . . . I am interested in your testers, send me catalog. . . .
Name.....
Firm name.....
Address.....
City.....State.....

SEARCHLIGHT SECTION

EMPLOYMENT and BUSINESS OPPORTUNITIES—SURPLUS STOCKS—DISCONTINUED MODELS

UNDISPLAYED RATE:

15 cents a word, minimum charge \$3.00
Positions Wanted (full or part-time salaried employment only) 1/2 the above rates, payable in advance.

(See ¶ on Box Numbers.)

Proposals, 50 cents a line an insertion.

INFORMATION:

Box Numbers in care of our New York, Chicago and San Francisco offices count 10 words additional in undisplayed ads. Replies forwarded without extra charge. Discount of 10% if one payment is made in advance for four consecutive insertions of undisplayed ads (not including proposals).

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1 inch\$8.00
2 to 3 inches..... 7.50 per inch
4 to 7 inches..... 7.00 per inch

An advertising inch is measured vertically on one column, 3 columns—30 inches—to a page. Contract Rates on request.

Radio Retailing

(New advertisements must be received by October 3rd for the October issue)

**YOU
ARE
ONE**

of more than 25,000 readers of
RADIO RETAILING.

Your problems of selling radio sets, accessories and other home merchandise—whether business or individual—are duplicated with other readers, but—

Still OTHER readers can provide the solution of your problem IF THEY KNOW WHAT IT IS!

Tell them! Here!

Through classified advertising in the Searchlight Section of **RADIO RETAILING**—your business paper and theirs.

SELLING OPPORTUNITIES OFFERED—WANTED
Selling Agencies—Sales Executives
Salesmen—Additional Lines

OPPORTUNITY OFFERED

WANTED, established radio dealer outlets for Univex movie, candid cameras. Write on letterhead. H. P. Jenkins, 103 W. Church, Elmira, N. Y.

RADIO IN ITS ENTIRETY!

"B-A" serves the trade with every need in radio—complete 160-page catalog of nationally known radio receivers, public address, parts, supplies and equipment. Orders shipped same day received.

COMPLETE CATALOG AVAILABLE

BURSTEIN-APPLEBEE CO. 1912-14 McGEE ST. KANSAS CITY, MO.

OVER 10,000 PARTS FOR VACUUM CLEANERS AND WASHING MACHINES

24-HOUR SERVICE!
Attach this "Ad" to Your Inquiry and Receive "Special Inventory Reduction Price Sheet" Manufacturers Factory Representatives
MIDWEST APPLIANCE PARTS CO.
2722 W. Division St. CHICAGO, ILL.

BARGAIN TUBES!

ALL GUARANTEED					
24A	\$.25	55	\$.15	5Z3	\$.30
36/51	.25	71A	.20	25Z5	.30
45	.20	75	.25	G Type	.35
47	.30	80	.25	Metal	.35

and many others. Write for Catalog!
NEW YORK RADIO SUPPLY CO.
152 WEST 42 ST. NEW YORK, N. Y.

FREE! Allied's 1939 RADIO CATALOG
Ready Now—Send For It!

Every Radio Dealer, every Service Dept. needs this big guide to Everything in Radio at lowest prices! Over 14,000 exact duplicate and replacement parts; all leading lines of Test Equipment, including new Push-Button Testers; newest Sound Systems, Kits, Amateur Gear, books, tools, etc.—and 62 amazing 1939 KNIGHT Radios—sets for every purpose—ideal price-leaders as low as \$7.95! 180 pages of values—write today for ALLIED's new 1939 Catalog. It's first choice wherever high-grade, low-cost radio equipment is required!

NEW SETS



NEW P. A.



NEW TESTERS



FREE
Send Coupon!

Allied Radio Corporation
Dept. 18-J-9.

833 W. Jackson Blvd., Chicago, Ill.

Send me your 1939 Catalog—FREE

Name
Address

STOP! Here is the Most Complete Radio BUYING GUIDE!



The new 1939 Radolek Radio Profit Guide contains complete showings of Radio Repair Parts, Radio Receivers, Public Address Amplifiers, Speakers, Microphones, Service Test Instruments, Radio Technical Books, Special Radio Tools, Leading Standard Brands! Everything you will ever need in the Radio Business all at Lowest Prices. You save money at Radolek!

- Every item you get from Radolek is guaranteed. It must be right or we make it right. Standard merchandise produced by leading Manufacturers with Radolek's guarantee added!
- Everything in Radio promptly when you want it—and exactly what you want. Radolek's efficient organization backed by a huge stock of standard guaranteed quality merchandise insures you the fastest service in the Radio business. Twenty-five Thousand Servicemen customers depend on Radolek service and benefit by Radolek's **LOWEST PRICES**. Send Now for your copy of the Radolek Radio Profit Guide. It will help you make more money.



RADOLEK

601 W. Randolph St., Dept., A-23, CHICAGO

Name
Address

Serviceman? Dealer? Experimenter?

Send for Your **FREE COPY** Now!

Audio Frequency...

Help, or Hindrance

Let's talk about tubes . . . tubes in sealed cartons.

Sometimes we have to put a new tube in a set to show a customer that he needs it. To do this it must generally be removed from a sealed carton. And yet frequently the customer decides that he is not going to buy it just yet after all.

Now, we have to put the tube back into the carton, the sealed carton which is of course all ripped to hell. We place the carton back on the shelf. Notice how neatly it stacks . . . and how well it displays. It looks like a square firecracker with one end blown out! (Just like the over-zealous sponsors of such !!!*??**! cartons would look to a sur-realist artist.)

And, you see, we must attempt to sell this same tube. But, if we attempt to sell it in the clean, honest way we used to before the manufacturers convinced themselves that dealers and servicemen were designing crooks we must furtively sneak

the tube into the set after dexterously mauling the carton to make it appear like it had just been broken open.

The sealed carton leads people to believe that they stand a chance of being victimized by any or all the dealers and servicemen in the United States. Manufacturers have almost succeeded in turning the former good faith of a tube sales transaction into an unfounded suspicion that the trade, by and large, consists of potential "heels."

HOLLYWOOD CHARLES CRADDOCK
Hollywood Radio & Repair Co.

Virtually all promotional ideas designed to speed up merchandise sales, no matter how carefully thought out, have some weaknesses. The important question in connection with sealed tube cartons, however, is whether or not the disadvantage you describe is outweighed by the obvious advantage of packaging which assures the consumer genuine and new merchandise. Most manufacturers evidently think it is.

Excess Shortwaves?

I find that the trade wants a good mantel set *without* shortwave and at the cheapest price possible. Why do manufacturers insist upon adding the shortwave bands to even the cheaper, smaller radios? It is no good, useless, and only complicates the radio and increases the cost of production and the selling price.

The average customer who comes to me for service will say: "Fix my radio so it works good on the broadcast band, the hell with the shortwave bands. I don't use them anyway."

O. H. NOSTR

Two Sides To This?

The other day I went to a home in response to a call about a 15 tube set. Upon arrival the lady told me that the set had been bought 10 months ago and had already needed servicing on two occasions. On the first call the serviceman found necessary a complete replacement of tubes. On the second call a "transformer" was shorted and again a new set of tubes was needed. All this in the time of only ten months!

My call was the third and the symptoms were the same as on the other two calls. The lady had been told the "filter" was blown, \$15 please. I tested the tubes, replaced two poor 6F6's, cleaned up the set a little and was gladly paid \$5, which I consider a fair price.

The reason I tell you this story is that perhaps through you it will reach some of the gentlemen indulging in this practice and make them realize they are hurting not only themselves but the en-

tire industry by driving people to use poorly playing sets because they are afraid of high and crooked repair charges.
WOODSIDE, L. I. HENRY MILLER

Falsifying the nature of repairs required cannot be condemned too strongly. While the bulk of it is done by men who would be unethical in any business there are those who occasionally stray from the straight-and-narrow because it appears to be the only way to counterbalance the licking administered by other customers who refuse to pay a reasonable service charge. The whole standard of radio servicing must be raised in the mind of the consumer, therefore, before we'll eliminate the practice entirely.

And A Harp

Summer being about over and the busy season approaching, in a moment of melancholy reverie I bethought of the evils that infest our servicing fraternity. I append an initial tabulation. Under the influence of more observant minds it will surely grow:

What We Servicemen Need This Winter

1. Non-intermittent by-pass condensers.
2. Better soldering-line inspectors at the factory.
3. Non-kinking test prod leads. Larger sizes for soldering irons.
4. An indestructible, non-metallic screwdriver for aligning.
5. A speaker cable connector for those sets that the manufacturer wires in the speaker with the shortest possible leads. To be put on without solder after the diagonals have left.
6. Scratch-proof varnish.
7. Auto-ignition noise-finder and locator, with attachment for electric-razors and heating pads.
8. A tube-tester.
9. Smaller junk-boxes, with an automatic bottom emptying into the sewer as soon as the junk is one layer deep.
10. C.O.D. customers.
11. January 1st billings. (Jobbers, please note.)
12. Half as much grey matter as we think we've got and the inclination to use it.

OROVILLE, CALIF. J. A. MAYR.

Among the Fortunate

Your REA map in the July issue has been a great help to me.

With the hope for energized REA lines nearing realization here radio sales will be tripled for August and September.

SCHOOLCRAFT, MICH. STRAUBE ELEC. CO.



TELLS CONSUMERS TOO—In this July issue article *Copper's Farmer*, widely read rural magazine, told its readers substantially what *Radio Retailing* told dealers in this same month. We quote: "Farmers should be realistic about rural electrification and should not expect miracles to happen. It seems unlikely that more than 100,000 to 125,000 additional farm homes will be electrified in any one year. There are now some 1,125,000 farm homes supplied by high-lines. Ten years would be required to double the number. And there still would be more than 3,000,000 farms in this country without electrical service."

1939 will be a great year for every **CROSLEY** dealer

FASTEST SELLING RADIO IN MANY MARKETS

CROSLEY
PUSH BUTTON
YEAR★

Compare Crosley radios with all competitive models and note the reason dealers are making more sales is better tone, better performance, more tubes, bigger speakers and better circuits AT ALL PRICE LEVELS.



at \$19.99

Crosley presents a value in a superheterodyne 6 tube regular and shortwave receiver (the "SIXER") even greater than the famous "FIVER". 5 push buttons for quick, positive tuning in addition to conventional knob tuning. 5-inch dynamic speaker. Brown plastic cabinet. Out-performs anything in its price class.

at \$49.95

Crosley presents a CONSOLE ELECTRIC RADIO PHONOGRAPH of beauty and great efficiency. Power transformer with Beam Power tube delivers exquisitely true record reproduction. Illuminated Radio Log dial. Push button radio tuning as well as conventional knob tuning. Simple walnut-finished cabinet suggests elegance. Thousands will buy now that such quality is at this price level.

Prices slightly higher in South and West



at \$9.99

Crosley offers a traffic builder that rolls up amazing sales totals. AC-DC. Push button and knob tuning. Electro-dynamic speaker.

at \$24.95

Crosley will win a great market with this portable push button electric radio-phonograph. Beam Power tube delivers greatly improved record reproduction. New self-starting motor and high impedance pick-up. Leather strap on flush cover makes it easy to carry. Radio is tuned by knob or by instantaneous positive push buttons



NOTHING LIKE IT FOR THE MONEY

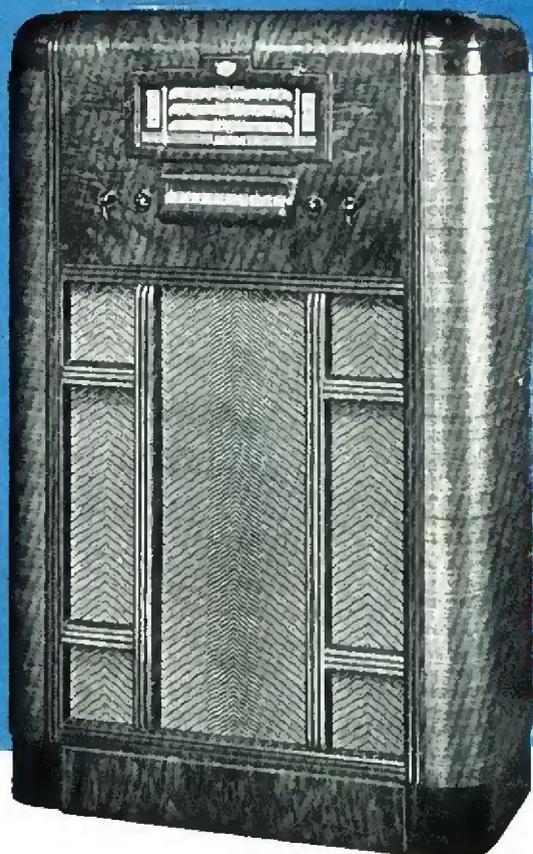
8 other console, table and auto models equally fast sellers and profit makers

★NOW, MORE THAN EVER...

You're there with a **CROSLEY**

THE CROSLEY RADIO CORP., CINCINNATI • POWEL CROSLEY, Jr., Pres. • Home of "the Nation's Station"—WLW—70 on your dial

NEW G-E BEAM-A-SCOPE RADIO PRICED TO BECOME THE YEAR'S BEST SELLER

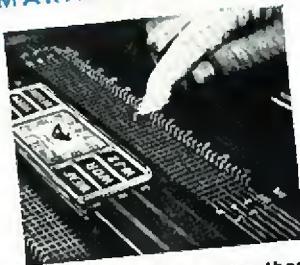


MORE GREAT SALES-MAKING FEATURES



KEYBOARD TOUCH TUNING — Another G-E Scoop

A sensational improvement that brings you fast, easy tuning. Station keys are conveniently located. Swift as lightning your station is tuned in at the mere touch of a key — and it stays tuned to hair-line precision.



TIME TUNING — Another Brand-new G-E Radio Thrill

The new G-E Model G-106 permits you to pre-set — with the G-E Automatic Program Pre-selector — all the programs you select on five different stations, for 24-hours ahead. No re-tuning! No re-dialing. Set your radio *once* — and it tunes in the programs you want.

NEW POPULAR-PRICED GENERAL ELECTRIC RADIO

Needs No Aerial — No Ground Wires

Here's news that spells greater profit opportunity for every G-E Radio Dealer. General Electric presents a new model G-99 equipped with the amazing Beam-a-scope — the scoop feature of the year, at the lowest price at which this deluxe feature has been offered.

The Beam-a-scope is a sales sensation. It makes the new G-E the one radio that does not need to be anchored in a fixed location. It operates in any spot — in any room. No aerial — no ground wires! Just plug it in like a floor lamp — anywhere.

Also the Beam-a-scope reduces local static interference — gives finer, quieter reception — especially in noisy areas.

It pays to line up with G-E Radio — this year more than ever.



RADIO

GENERAL  ELECTRIC