

RADIO TODAY



U. S. Radio Leads World
Auto-Radio Here and Abroad

DECEMBER

Caldwell-Clements, Inc.

G-E RADIO WINDS UP ITS GREATEST YEAR

• Greatest in number of G-E Radios produced!
 Greatest in number of G-E Radios sold! Greatest
 in all-around achievement—in features, styling,
 tone and performance.
 General Electric was first with the features the
 public wants.

First with the Beam-a-scope
First with Keyboard Touch Tuning
First with Time Tuning

And this is only the beginning. Watch G-E Radio
 in 1939. G-E Radio is on the march.



G-E LEADS WITH THESE GREAT FEATURES:

- **THE 'G-E BEAM-A-SCOPE**
 No aerial! No ground wires! Reduces local static interference.
- **KEYBOARD TOUCH TUNING**
 Easy. Accurate. Lightning Fast! Your program at the touch of a key.
- **G-E TIME TUNING**
 Pick your programs on five different stations for 24 hours ahead—the G-E Automatic Program Pre-selector does the rest. No re-tuning! No re-dialing!



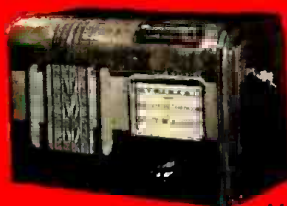
MODEL G-76



MODEL G-75



MODEL G-99



MODEL GD-51

**4 G-E
 SALES
 MAKERS**

GENERAL  ELECTRIC

The Most Popular Condensers in the Field

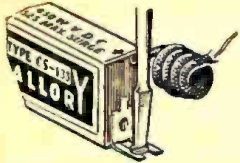
because of advanced design, quality construction and ease of use

Practical, easy mounting features
for both carton and round can types

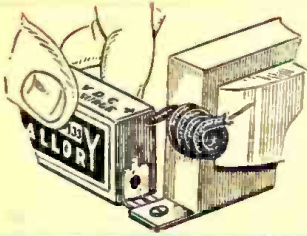
CS 133



Metal seal completely seals the unit, throwing the burden of stabilized humidity on the metal seal and not the carton alone as in ordinary condensers. Wax impregnation of carton affords double protection.



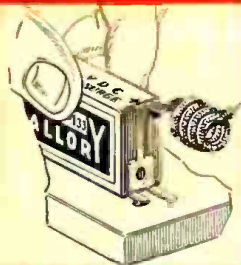
Unit may be mounted with nuts and bolts or self tapping screws.



End may be pushed under any chassis screw head.



Unit may be inserted into chassis or soldered to the chassis.



Flange may be bent down to fit in any convenient chassis hole.

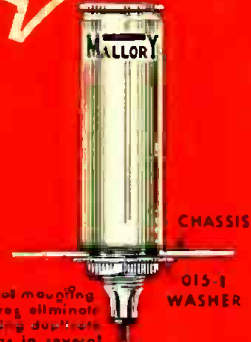
P. R. MALLORY & CO., Inc.
INDIANAPOLIS · INDIANA
Cable Address — PELMALLO

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

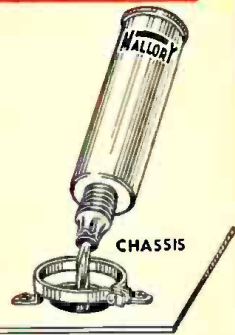
Use
YAXLEY
REPLACEMENT
VOLUME CONTROLS



RS 213



Special mounting features eliminate stacking drawbacks ratings in several mounting styles for replacement. Here is the first practical universal mounting feature for round can type condensers.



For clamp mountings the Mallory replacement 1 1/2" size is mounted the same way as the original.



For a 1" Mallory replacement use the special Mallory 1 3/8" washer.



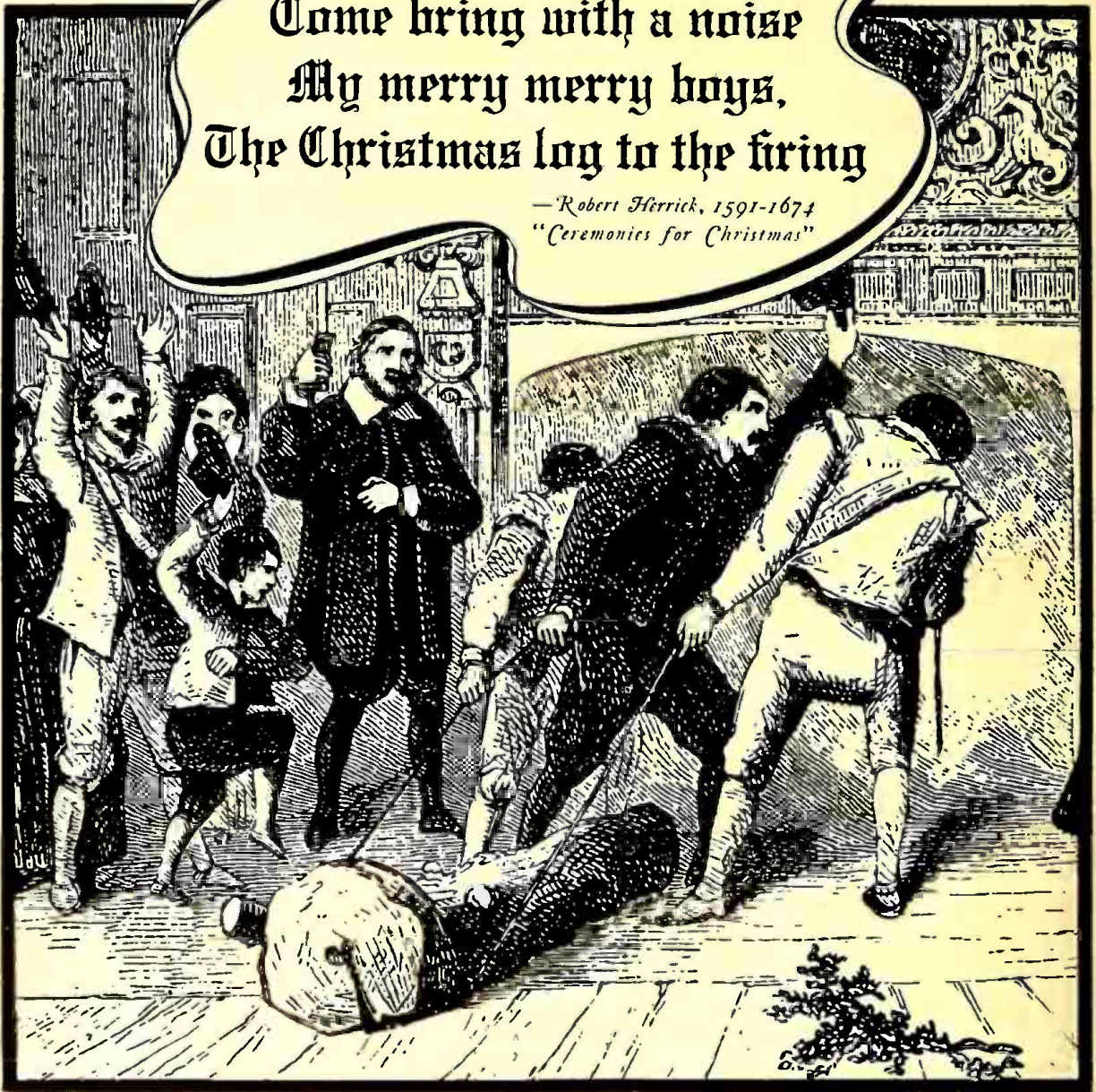
The Mallory Universal Mounting Bracket is for mounting threaded neck round can units on chassis originally provided with ring clamp or spade bolt mountings.

Just as sheer quality alone has made these two condensers the most popular in the field, so has sheer merit made the Second Edition of the **MALLORY-YAXLEY** Radio Service Encyclopedia

indispensable in your work. Even if you own a copy of the First Edition, you haven't seen anything until you see the Second Edition. 336 pages against 200. Be sure to get your copy today. You will pay for it with the time you save on one job.

Come bring with a noise
My merry merry boys,
The Christmas log to the firing

—Robert Herrick, 1591-1634
"Ceremonies for Christmas"



"Firing the Yule Log"—From a wood-cut by ELTER, illustrating the festive ceremony that in olden times officially opened the Christmastime season.

Holiday Greetings

FROM HYGRADE SYLVANIA CORPORATION



Here's How
**RCA VICTOR HAS
 HELPED TO MAKE YOUR
 CHRISTMAS MERRY!**

**VALUE
 MERCHANDISE**

Right Quality . . .
 Right Prices!

**"MUSIC
 YOU WANT"
 PROGRAMS**

1,000,000 listeners!

**MAGAZINE
 ADVERTISING**

in 23 powerful
 publications with
 92,130,794 read-
 ers per issue!

**OLDEST
 VICTROLA
 CONTEST**

designed to bring
 live prospects to
 you!

**NEWSPAPER
 ADVERTISING**

that sends pre-sold
 prospects to your
 store!

**MAGIC KEY
 PROGRAM**

9,000,000 listeners
 every Sunday!

**VICTOR
 RECORD SOCIETY**

47,831 members to
 date to visit RCA
 Victor dealers
 regularly!

**40th
 ANNIVERSARY
 CELEBRATION**

which was cele-
 brated in a big way
 — with sales!

• RCA Victor has done everything possi-
 ble to make 1938 a banner sales year for
 you. In this final month of the year,
 another mighty RCA Victor advertising
 barrage will send a new influx of pre-sold
 prospects to your store—intent on pur-
 chasing Christmas radios. So, push your
 RCA Victor instruments—and cash in.
 RCA Victor thanks you sincerely for
 your splendid support in 1938. It has
 played an important part in this year's suc-
 cess. We look to the future confident that
 our efforts combined with yours, will bring
 even greater success to us both in 1939.

Listen to the "Magic Key of RCA" every Sunday, 2 to 3
 P. M., E. S. T., on the NBC Blue Network
 For finer radio performance—RCA Victor Radio Tubes



RCA Victor

RCA Manufacturing Co., Inc., Camden, N. J.

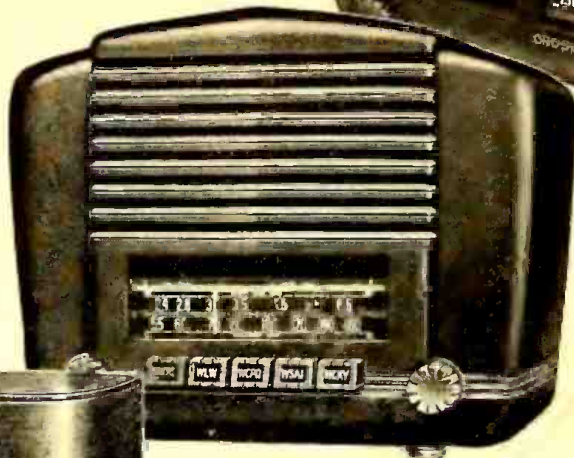
A Service of the Radio Corp. of America

CROSLEY

LATEST 1939

RADIOS

(Below) The "SIXER DELUXE" 6 tube superheterodyne, including short wave reception. 5 inch speaker, 5 push button and knob tuning. Sliced walnut cabinet. **\$22⁹⁵***



(Above) The "SIXER" an achievement in design and performance—6 tubes, superheterodyne including short wave reception, 5 push buttons, the Crosley simple mechanical Prestotune, and knob tuning. Slide rule dial—exquisite brown plastic case. In ivory or red finish at slight additional cost. **\$19⁹⁹***

BEST SELLERS EVERYWHERE

(At top) The Super Sextette, beauty prize winner for looks. 6 tubes (including ballast) with beam power output. Superheterodyne AC-DC with 6 tuned circuits. Brown and black mottled plastic cabinet—4 push buttons and knob tuning. In ivory or red finish at slight additional cost. **\$14⁹⁹***

CROSLEY

CONSOLE

efficiency reaches new heights in 1939 cabinet design. PUSH BUTTON RADIO-PHONOGRAPH COMBINATION—Six tube superheterodyne receiver, tuned with push buttons and knob—Beam power output for extra power and sensitivity. Self starting phonograph motor. Lovely stump walnut cabinet completes combination as matchless value. Satisfactory volume and tonal quality for all music lovers.

\$59⁹⁵*



THE CROSLEY CORPORATION
POWEL CROSLEY, Jr., Pres.
CINCINNATI, OHIO

*Prices West and South Slightly Higher.

PERFECTION

(Left) In 8 tube, 3 band superheterodyne—8 push button tune selected stations plus knob tuning. Edge lighted radio log dial. Massive cabinet of walnut. 10 inch speaker. **\$69⁹⁵***

(Left) 11 tube 3 band superheterodyne completely automatic electric push button tuning permits selection of 8 stations. Radio-log dial designates 103 station call letters including foreign stations. 12 inch speaker. Adaptable to remote control. **\$99⁵⁰***

\$99⁵⁰*

OUT HERE ON THE RANGE

TUBES MUST BE TOUGH!



*Mr. George Gillespie (right),
owner of El Rancho Grande,
Mesa, Arizona*

No comfortable living room for this radio to nestle in. Half the time it is bounced around on a pack horse over hills and trails. So, the tubes in it must be **TOUGH**—for the nearest place to replace a new tube may be 40 miles away—and unnecessary service call-backs are prohibitive.

Years ago the Cattle Country found that **RAYTHEONS** are the tubes that can *take it*. Today it's pretty hard to buy anything but a **RAYTHEON** in the Southwest.

For the same reasons, they are used by the U. S. Army, Navy and Air Corps. The majority of Set Engineers specify them—and you will find them in most auto sets and commercial planes.

Do not compromise on any other line of tubes. Protect your customers with the best—**RAYTHEONS**! You'll build good will, increase your service business, and enjoy greater permanent tube profits.

Remember, **RAYTHEONS** cost no more than the second-best tube. They are your assurance of the safest and most profitable tube investment.



RAYTHEON

NEWTON, MASS. • NEW YORK • CHICAGO • SAN FRANCISCO • ATLANTA

"WORLD'S LARGEST EXCLUSIVE RADIO TUBE MANUFACTURERS"



HARRY BOYD BROWN
National Merchandising
Manager of Philco

More Going After Customers Instead of Waiting For Customers

IT is pretty generally agreed that things look good for 1939. Business is certainly on the upgrade. Some economists definitely predict a boom. Employment figures, income figures, news of wage increases—all point to increased purchasing power for the coming year. With more money in their pockets, people are certainly in the mood to buy—and in the mood to spend more money for what they wish to buy.

So far as the radio dealer is concerned, he had better re-examine his policies and practices and be sure that they fit in with customer's psychology and buying power. Particularly those dealers who have sold themselves on the idea that the public wants nothing but low-priced merchandise.

When we sit around the luncheon table, most of us who are interested in retailing, readily agree that the idea of "selling-up" is pretty sound. We agree that its the only way to put the real profits into the radio business. In fact, when some of us get real worked up, we insist that it's the only salvation of the radio industry.

But when we go back to our stores and find that "selling-up" requires effort and initiative, all too many of us are ready to take the line of least resistance and accept the sales that come easy. Such sales require no salesmanship and build no very satisfying bank accounts.

Surely no one can blame the radio manufacturer for supplying the kind of merchandise that the dealer sells. But the dealer can well blame himself if he puts his main effort on price brackets that yield meager profits. And when it gets to the point where so many dealers are complaining that they make a lot of sales but make no money, the matter has become a major problem for the industry.

I have talked to many dealers in recent weeks who laughed when I told them that some dealers don't seem to be able to sell

higher-priced merchandise. They tell me that higher-priced sales are as ripe for the picking as ever. But the picking methods have changed. The sales are there and the profits are there as much as ever—but it takes resourceful advertising—more selling—more "going after" customers instead of "waiting for" customers.

To be specific the smart dealer today uses his windows and the floor of his store to display the better quality, the higher-priced radio merchandise. He emphasizes terms and trade-in allowances, and he uses the newspapers and direct mail with heart-to-heart, human interest, proposition copy that brings REPLIES—INQUIRIES—BONA FIDE PROSPECTS.

And, while those dealers who sell higher-priced, more profitable radio merchandise in real volume, also carry low-priced radio merchandise, *they use it intelligently*. They advertise their low-priced merchandise—the \$39.00 and \$49.00 and \$59.00 furniture models—only to pull traffic—to create prospects. And then is when they really go to work.

They see to it that their retail salesmen thoroughly know the quality radio merchandise in stock—every feature—every improvement—every reason why it is worth more money. They train their salesmen to Sell-Up, and they pay them accordingly. They teach them not to be in constant fear of "walk-outs" but instead to go after bigger, better sales and make money.

And finally, the wise radio dealer in 1939 will place PHILCO MYSTERY CONTROL RADIOS—just as many as possible—on FREE TRIAL in the homes of responsible people. Every day sees more and more Philco Mystery Control Radios sold by Free Trial in the home—because after a few days' use of Mystery Control in the home—with no more jumping up from the easy chair every 15 minutes to change programs—people are never again satisfied with the old-fashioned, troublesome method of radio tuning.

Harry Boyd Brown

PHILCO

DEC 18 1938

©CLB 101349

Staff—

DARRELL BARTEE
G. H. MAYORGA
N. McALLISTER
M. H. NEWTON
R. NEUBAUER
B. V. SPINETTA
VINTON K. ULRICH

M. E. HERRING
Sales Manager

R. Y. FITZPATRICK
201 N. Wells, Chicago, Ill.

RADIO TODAY

MEMBER AUDIT BUREAU OF CIRCULATIONS

ORESTES H. CALDWELL
Editor

M. CLEMENTS
Publisher

VOL. IV, No. 12
Copyright 1938

CALDWELL-CLEMENTS, INC.
Tel. PLAZA 3-1340
480 Lexington Ave.
New York, N. Y.

DOING PRETTY WELL, 'N SPIE OF EVERYTHING

Evidences of radio slackening to the contrary, all the general-business authorities declare we are now at the peak of business activity for 1938. Roger Babson, economist; New York Times, and Business Week all testify that business as a whole is ahead of last year. Babson sees at least two years to come of "good business."

Radio sales for the year 1938 are expected to reach six million sets, a drop of 25 per cent below the eight million radios in 1937. Automobile radios may reach 800,000.

Sales of phonograph records for the year will come close to 35,000,000, an increase of 16 per cent over 1937, when 30,000,000 records were sold. This return of records to popularity has been due to the increased use of "combinations" and to small portable phonograph units. Sales of records for 1938 will equal the peak year of 1914.

SMALL RADIOS FAVORED BY XMAS BUYERS

Small sets hold the spotlight this Christmas. Dealers blame this on the retarded recovery and on the buyer's fear that "television is just around the corner." While unit volume is about equal to last year, dollar volume is down, but many hope the last-minute rush of shopping will boost business and push that old sales curve upward.

Combinations, too, are the rage. And sales of records have skyrocketed. Wireless players, remote wireless control and other 1939 selling points seem to have failed to arouse the interest they should. There is a demand for them, but not too large.

Radio follows the general trend in this matter of Xmas buying. New York department stores report pre-Christmas interest in cheaper goods. Sales of four department stores on a typical Saturday were off 2, 2½, 3 and 10 per cent.

NEWSPAPER PRINTS EDITION ON RADIOS IN HOMES

Comes now the radio-printed newspaper. On shortwave station W9XZY, the St. Louis Post-Dispatch is broadcasting a facsimile edition each day at 2 P.M. First issue of the nine-page paper "went to press" on Dec. 7 after a month of experimentation.

RCA receivers are being used in homes of 15 staff members of the Post-Dispatch. By January, the manufacturer expects to put out such sets at \$260 each. Several of them will be demonstrated publicly on W9XZY's wavelength of 31,600 kilocycles.

Using the ultra-high frequencies, the Post-Dispatch can broadcast its radio paper in daytime. Former facsimiles used the broadcast band and were thus limited to "after hours" service. The St. Louis "radio newspaper" includes sports, cartoons, radio gossip, stock market quotations as well as regular news. A clock sets the receiver to pick up the broadcast, making it unnecessary to be on hand when the news is being transmitted.



S. N. Shure, re-elected president of Radio Parts Manufacturers National Trade Show to be held at Chicago, June 14 to 17.

TRADE SHOW JUNE 14-17. "JOBBER DAYS"

The 1939 National Radio Parts Trade Show will be held at the Stevens Hotel in Chicago. June 14 to 17, inclusive.

Unanimous approval was given the proposal to designate the first two days of the Show, June 14 and 15, as "Jobber Days," during which time only jobbers, manufacturers, manufacturers' agents, and manufacturers' engineers will be admitted to the Exhibition Hall.

On Friday, June 16, and continuing through Saturday, June 17, the Show is to be opened to all groups in the radio trade with especial emphasis among the exhibitors on manning their booths with technically trained attendants.

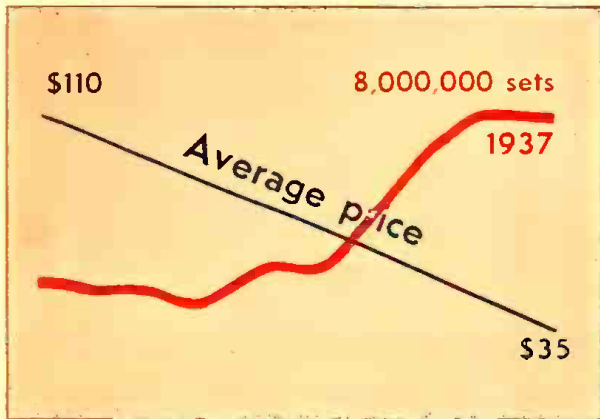
HE PUT MISS BATHTUB TO WORK

We're glad you liked the blonde-in-the-bathtub who looked out from the October cover. Among the many compliments we've heard about her, one of the nicest comes from John Pfusch, dealer at 1026 Lexington Avenue, New York City, who built a window display around RADIO TODAY's bathing beauty. Exhibiting the comely maiden-in-tub against a rich blue background, Mr. Pfusch made her the central theme in his display of some 20 new sets. She tied-up brightly with his "mystery control" model and did an A-1 job of arresting attention.

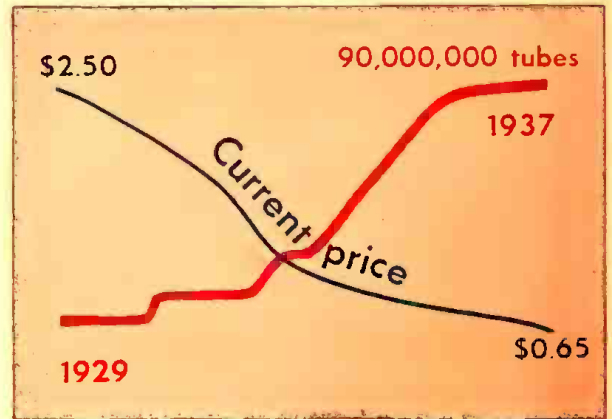
Mr. Pfusch tells us that she put in a full day's work and, for that matter, a full night's work too, since the display is lighted from above after the shop closes. Overcoming the handicaps of limited window space (8 x 3½ ft.), this New York dealer achieved an effect of depth by placing the smallest models in the foreground and stepping them up toward the background in a way that gives a pleasing impression of balance. He reports that our gal-in-tub brought to his window that extra element of interest which a display needs.

AMERICAN RADIO TODAY

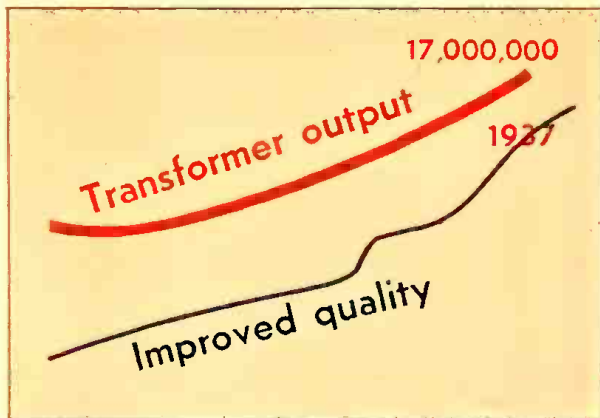
Because of the magnitude of American radio in its own domestic market and its leadership in the export field, giving foreign buyers the advantage of



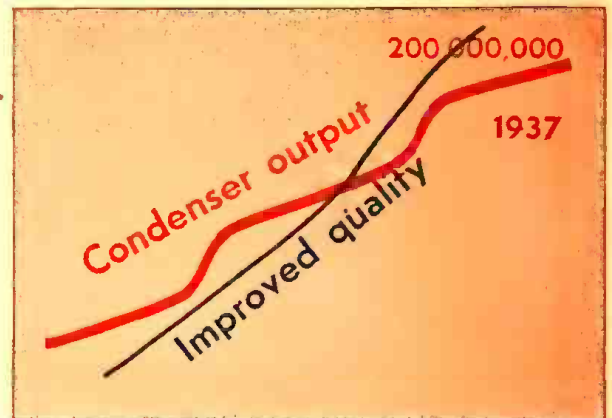
Largest production of sets



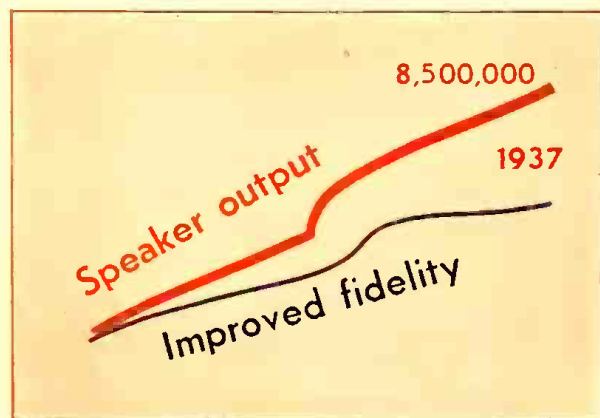
Largest production of tubes



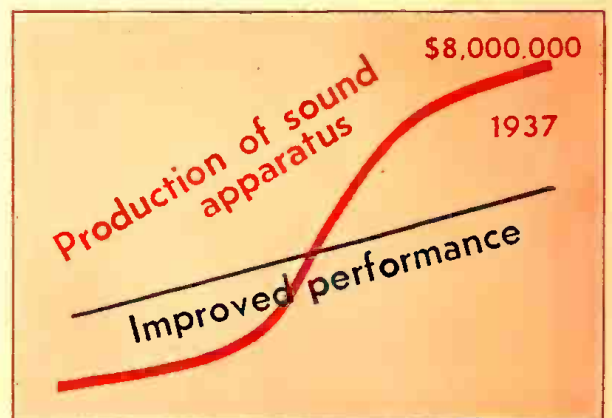
Largest output of transformers



Largest output of condensers



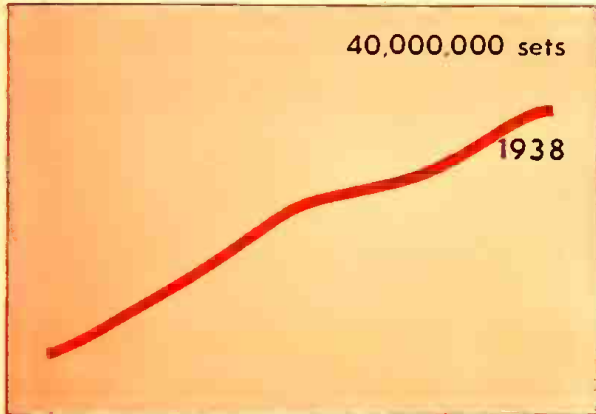
Largest output of speakers



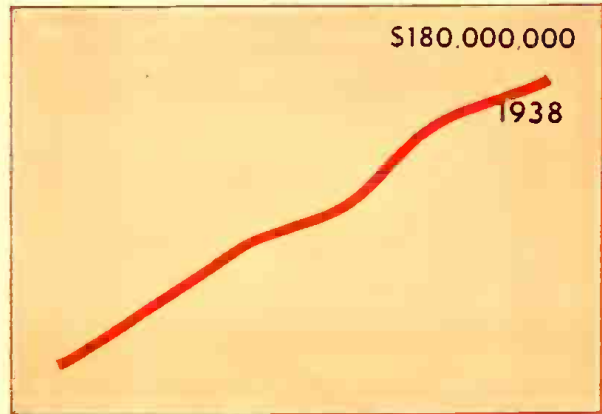
Largest output of sound equipment
Radio Today

DAY U. S. Radio Leads the World—in Output, Quality, Economy, and Acceptance.

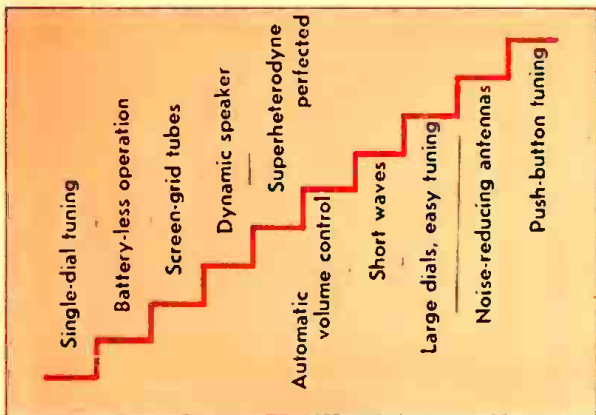
market, the U. S. radio industry has been able to take world of its vast mass production and capable engineering skill.



Number of radio sets in use



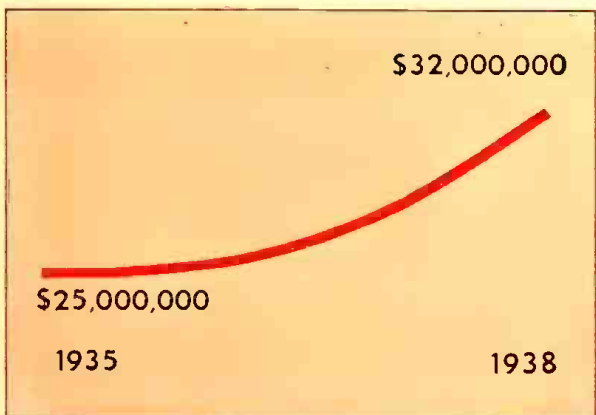
Annual expenditures for U. S. programs



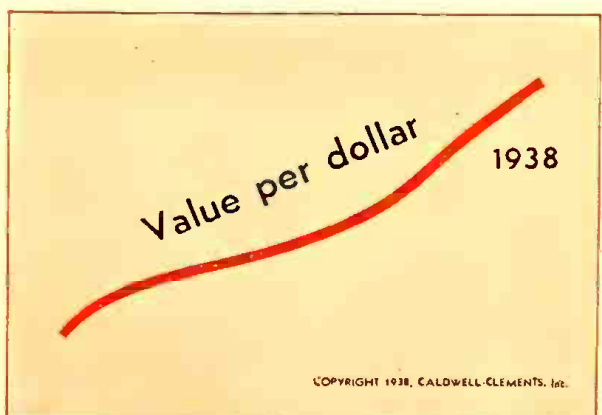
Milestones in improvement of performance



Best design and construction of sets



Total values of U. S. radio apparatus exported December, 1938



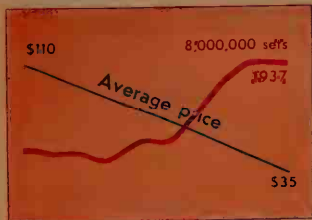
Greatest radio value per dollar invested

COPYRIGHT 1938, CALDWELL-CLEMENTS, INC.

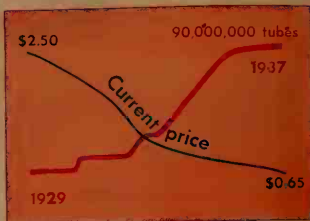
AMERICAN RADIO TODAY

U. S. Radio Leads the World—in Output, Quality, Economy, and Acceptance.

Because of the magnitude of American radio in its own domestic market, the U. S. radio industry has been able to take world leadership in the export field, giving foreign buyers the advantage of its vast mass production and capable engineering skill.



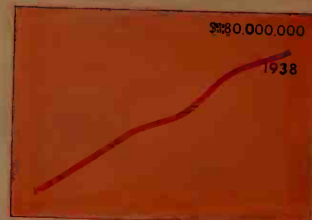
Largest production of sets



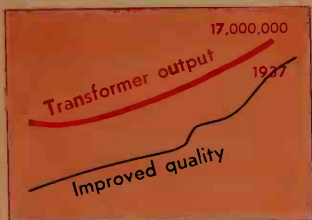
Largest production of tubes



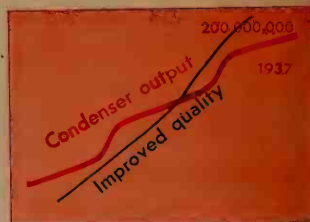
Number of radio sets in use



Annual expenditures for U. S. programs



Largest output of transformers



Largest output of condensers

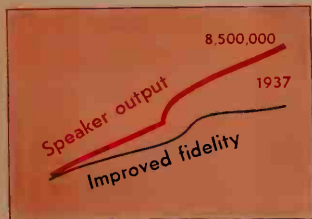


Milestones in improvement of performance

Improved construction, lightness, compactness and strength.

Streamlining

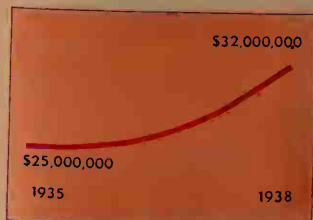
Best design and construction of sets



Largest output of speakers



Largest output of sound equipment
Radio Today



Total values of U. S. radio apparatus exported
December, 1938



Greatest radio value per dollar invested

METHODS THAT CLICKED



"Try it out" is still the best radio sales idea — especially if the prospect is as lovely as this Stromberg-Carlson gal!

New twists on basic selling principles used by U. S. radio dealers

American radio dealers undertook plenty in 1938.

Many decided to "Go Out—And Get The Business," others were content to set the sales traps in their stores.

Lest we forget how the picture looks as December rolls around, here is reviewed a coast-to-coast collection of radio selling methods. Fit for thought, all of them, as radio men now lay plans for 1939:

New Orleans, La.—A campaign to sell extra radios dramatically pointed out that the broadcast fare is so exciting and so varied that people can not afford to be "only living-room listeners." Advertisements in this drive asked, "Do Your Tastes Dictate What Everyone Must Listen To?", and listed 15 distinct types of radio broadcasts, of special interest to as many different types and ages of people.

Terre Haute, Ind.—Four consoles, set up in a row, were all covered up and played for blindfolded judges. Picking up the same type of broadcast, the stunt was presented as a dramatic test of tone, as the judges

were asked to vote on which gave the most satisfactory performance. All this was staged before an audience, and the unanimous decision of the judges was announced.

Passaic, N. J.—Automobile trailers, carrying a selection of radios, were used here successfully. Salesmen worked on a commission and covered a particular area by doing house-to-house work in staggered style—one salesman taking every other house. Prospects were invited into the trailer for demonstrations. The trailer method of selling was found to be faster, and more comfortable for the salesmen.

Rochester, N. Y.—A wall-size placard, composed of photos of radio celebrities, appeared in a dealer's window, with the question, "How Many Do You Recognize?" Radios were displayed at the sides. The artists were all being heard on the local station.

Lubbock, Tex.—In making house-to-house calls, radio salesmen here first mentioned the matter of radio interference. Their first words to the

housewives were concerned with matters of improved radio reception, and their position first appeared to be that of engineers who had organized a check-up on radio interference.

Washington, D. C.—The practice of sending out about 1,500 post cards every three weeks was tested and approved. The dealer first tried mailing the cards, but switched to Western Union. Sales messages on these pieces were kept down to a simplified form.

Springfield, Mo.—High fidelity of modern radios was demonstrated at the music department of the local college. Radio store managers got together with the officials of the school and staged both afternoon and evening shows. The public was invited to the latter.

Bloomfield, N. J.—A dealer hired women canvassers to cover his house-to-house area, in order to line up the best prospects for his higher-priced salesmen. The method was designed to get more real selling, and less missionary and clerical work, into the work of the crack salesmen.

San Jose, Calif.—For an extra place to display radio sets, a radio man here tied up with a local theater and featured the displays whenever the movie being shown had a special radio angle. His merchandise appeared in the lobby with good effect during the local run of "Big Broadcast of 1938," for instance.

Columbus, Wis.—Local business men, the neighbors of the radio dealer, were regularly called on here, and were found to be OK radio prospects. A good way to get them interested in buying a new set, according to the dealer report, was to start talking about favorite programs. These prospects are good pay, and are often interested in the higher priced receivers.

New York, N. Y.—Sales of portable sets were helped here when the dealer realized that the chief thing buyers needed to know was all about the power facilities at nearby vacation spots where the portables were to be used. Authentic and accurate advice on this subject, volunteered by the radio man, convinced the prospects that the dealer knew his business inside out.

Terre Haute, Ind.—For a town of this size (population 63,000) an appropriate house-to-house selling plan was worked out: seven outside salesmen were used, featuring 3-day home demonstrations. Appliance customers, as well as those buying musical merchandise, were regarded as radio prospects.

Seattle, Wash.—Attractive young lady demonstrators appeared in radio windows with microphones, speaking through public address system to those on the street. Plus features of new sets were taken up one by one as receivers were demonstrated.

Wewoka, Okla.—The "oldest radio in the community" contest idea was revamped and staged here. Entrants were simply required to come in the store and leave the dope on their "oldest" candidate. Stunt netted store traffic, and long lists of owners with outmoded models.

Englewood, N. J.—Store salesmen were awarded weekly prizes for digging up new customers. Manager

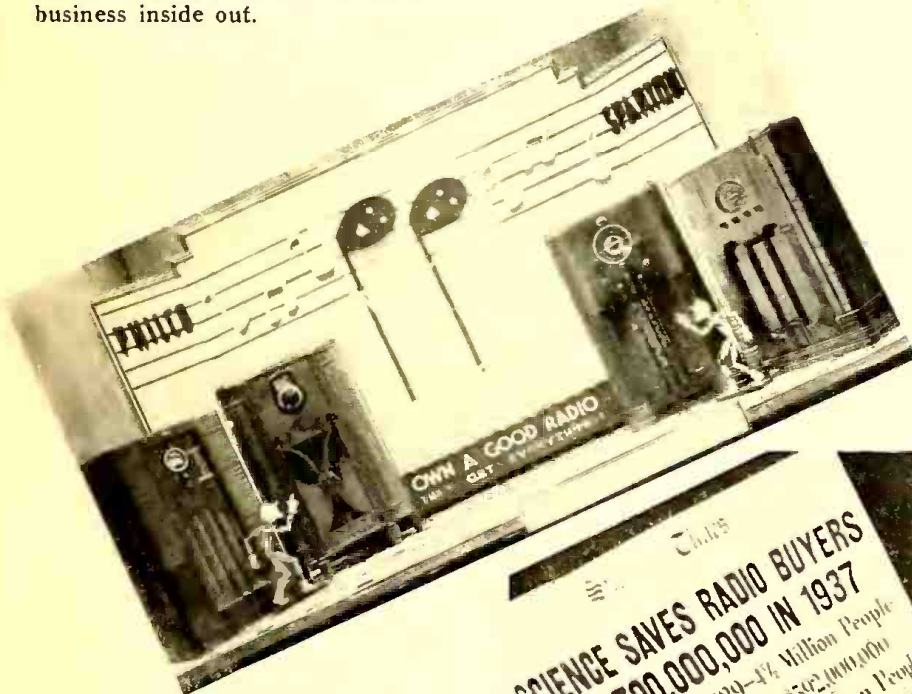
A CHECK LIST FOR 1939

Ten Cardinal Points of American Radio Selling

- Go out and get the business.
- Demonstrate in the home.
- Follow up former customers for new sales.
- Cooperate with manufacturers in newspaper advertising.
- Use the mail to send out circulars, booklets.
- Have an attractive, clean store; courteous staff.
- Keep attractive displays in your show windows.
- Offer installment payments on higher-priced sets.
- Use service calls as openings for receiver selling.
- Sell programs, tone quality, convenience—not technical details.

found that the idea of having many short contests instead of a few longer ones, kept everybody happier, passed the prizes around, and showed salesmen that the search for new customers was a daily affair.

New York, N. Y.—During periods when important news events were happening, postcards were printed up listing only the news broadcasts to be heard in the area. The dealer sent these to customers, to make it more convenient than picking the newscasts out of lists in the newspapers. The store was quietly advertised on the card, and prospects were advised to keep the list near the radio.



Stand-out window shows, like that above, preach a message, sell plenty of new radio receivers.

U. S. newspapers provide a basic advertising medium for radio dealers, whether space is large or small. (Headlines by GE.)



Cincinnati, Ohio — Gold - finished initials were used to "personalize" radios, so that prospects could be shown a set that was specially for them. The insignia were featured mainly on table models of the personal radio type.

San Francisco, Calif.—Electric Appliance Society of Northern California conducted a 20-day campaign on quality radios, with 16 radio stations and the utilities cooperating. Newspapers, direct mail, contests, special display cards, movie slides, etc., featured the phrase "You're There in Person With a High Fidelity Radio."



Home demonstrations do effective selling for fine combinations, like this RCA "grand".



Summer days are still in vogue—in Florida and South America! A good time for portable sets.

Baraboo, Wis.—For selling radio in rural areas, a dealer decided to take a farmer along, to introduce him to the rural folk he did not know. Besides the introduction to various radio prospects, the radio man got important information on the radio likes and dislikes of individual farmers.

Houston, Tex.—Radio retailers got together with their local jobber in a campaign during which some 10,000 special keys were given away to those who called at radio stores. A few of these keys were made to

fit into radios which were displayed as prizes in the lobbies of local theaters.

New York, N. Y.—Letters which recommend the store and its service were regularly shown in a window display. People stopped to look at the framed correspondence, and learned that the store had dealt successfully with radio troubles which were similar to their own.

Jefferson, Wis.—Farmers in this area found their radio dealer willing to be "farm headquarters" in cases where visitors from the country

needed a convenient place to relax during the shopping day. The dealer had discovered that farmers should not be high-pressured, and decided to let them take their time to see and hear his new farm receivers.

Miami, Fla.—Radio men arranged with the local broadcast station to stage their "spot" broadcast pickups on the sidewalk in front of radio stores. Interviews with the "man on the street" and similar audience participation broadcast stunts attracted large crowds to the radio displays in the store windows.

New York, N. Y.—For an exceptional window display, a radio man used a 2-page editorial feature from RADIO TODAY. The feature was blown up and displayed in the window, with ribbons running from the points made in the article to appropriate features of the sets displayed. The title at the top of the pages said "To Really Enjoy Radio Today—Every Home Must Have a Quality Radio" used by the dealer to sell higher-priced sets.

In store selling, the "American way" is to make the customer as comfortable as possible.

Style-conscious Sue smiles as she compares her initialed Stewart-Warner Varsity, with the monogram on her bag.



tioned the "salesman's" name. Varsity sets are being used in theatre lobby displays in some college towns. Several dealers have found that silk pennants as premiums are good sales stimulators.

At the instance of retailers, some campus groups have presented their football captains with Varsity sets between halves at a big game. A barrage of publicity has accompanied these presentations.

NOVEL SALES IDEAS SCORE TOUCHDOWN FOR "VARSITY"

Bright, new selling ideas as colorful as a college football game helped score a touchdown for the Varsity radio set, Stewart-Warner reports. Already students of 210 colleges and 150 high schools have bought sets in their alma mater's colors and insignia.

Dealers in college towns have evolved special selling methods for reaching this undergraduate trade. Some have loaned Varsity sets to fraternities and sororities for "rushing" season. The prestige of "big" campus men and women, such as class officers, athletic coaches, team captains and managers, fraternity and sorority leaders, has been used by others to stimulate sales. One set is given the selected campus leader, in return for which he permits his name to be used in direct-mail solicitations of other students.

Other campus promotions have included a dealer employing an outstandingly pretty and popular co-ed to act as hostess for highly-publicized afternoon showings of the Varsity sets at which one set is given away free. Another dealer has offered a

free school pennant to each of the first 100 students to view the Varsity set on a particular day.

Campus clothing shops, cleaning and pressing and laundry services, and others who have access to student residences, have, at some colleges, agreed to boost the Varsity sets on a 5 per cent commission to be paid on purchases when the buyer men-

In home calls too, the watchword is "Relax and sell." For a radio demonstration, there's no place like home.



AUTO-RADIO SALES BOOM

Independents have fine chance for 1939 profits

Auto buyers this year want radios in their cars and they don't care too much about cost. That's the news a check-up of agencies and installing stations has revealed. Even as car sales are promised to go up in 1939, so will auto radio boom in the year to come.

This year, finger-tip control is the thing. Sets are placed in the dash; the cowl and running-board antennae rule the roost. Gone are the roof aeriels of other years. And the speaker is not on the ceiling, not on the cowl, but on the instrument panel between the speedometer on one side and the clock or other gadgets on the other.

One auto radio manufacturer reports a 102 per cent attainment of his quota for the current year, and that's an indication of things to come. New-car buyers and also those who will "still push the old jalopy" are becoming more and more radio conscious. In the next several weeks, manufacturers will unveil their 1939 auto-radios for the trade. But, let's look at what the new cars have to offer in radio.

Car equipment

Ford has a \$49 Philco set with push-button control. Plymouth is offering a specially-built radio from the same manufacturer at \$52.50. Hudson is pushing two Stewart-Warner sets: one at \$39 and a five-button fingertip control set at \$55. This is the job that has a manual control, too. Nash-Lafayette is offering two RCA sets at \$42 and \$59. Studebaker has a Philco for \$42 and another at \$65; the latter a deluxe model. Pontiac has the General Motors Delco set at \$46, without push button tuning. The fingertip control is available in the GM family, but at a much higher cost.

Auto sets for the radio trade undoubtedly will string along with the above line-up. They will be simpler, a bit lower-priced than last year. Circuits won't be as fancy; installation will be easier, and will take from an hour to an hour and a half including interference work. There won't be so many types to clutter up a shop. Remote controls will be fewer.

Customers in the higher-income brackets don't hesitate to take a chance on the de luxe sets. Those who

purchase the Chryslers, Buicks, Cadillacs, Lincolns and other quality cars are all buying custom-built radios at good prices. So the dealers say. And even in the lower-priced field, the auto buyers are going for the more expensive sets, according to the salesmen. Several New York companies that install sets for major car dealers say that radio business is better than ever, and that price seems no object in the installation.

As a rule, the cost of auto radios is lower than in the 1938 models, but it is still higher than that charged by the radio dealer. And the "factory installation" gag doesn't fool anyone. With millions of motorists still driv-

ing radio-less, manufacturers are predicting that this branch will witness a loud boom for 1939. Soon it will have the universal acceptance of home radio.

Mark Fisher, sales manager of Philco's auto radio division, says that "the prospects of an active buying winter in the automotive industry should make possible for the auto radio industry one of the most successful selling periods in its history."

Big year predicted

And there's little reason to doubt that. As viewed in the 1939 crop of cars, the new auto-radio has buying appeal. It's compact, convenient and in keeping with the times. In years past, dials, drive shafts, etc., cluttered up the steering wheel. In 1939, the gear shift is on the wheel and the radio is on the dash—where it belongs. The rest of the front seat is clear for three passengers.

Most of the cars will be equipped with the telescope type of fish-pole antenna, but others will have a running-board wire. The roof aerial seems definitely passé.

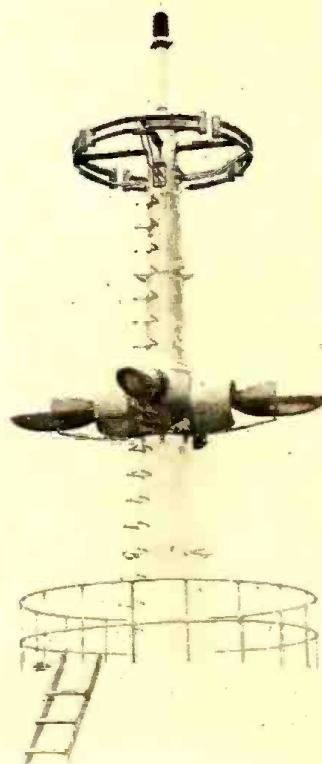
Prices down 10 per cent

The sets built on contract and sold, installed, by the car dealer, are consistently lower in price than the 1938 sets. The reduction averages about 10 per cent. A few car manufacturers have radio inventories left over from the 1938 model season. These sets have been converted and adapted to the new cars, and with their reduced prices, are good buys for the purchaser who does not demand push-button tuning.

Factory installation

The automobile industry started the 1939 season with much caution. Emphasis was placed on selling cars at minimum prices, which meant leaving off accessories. Consequently there was very little factory installation of sets scheduled. Independent radio dealers should benefit very considerably from this situation, for less than 5 per cent of the new cars delivered can be expected to have factory-installed radio, and car dealers are neglecting accessory sales in order to move automobiles. This condition is temporary, though, for the long-range trend according to Detroit gossip is toward more factory radio installation, and the independents should make hay while the sun shines.

TOPS IN TELEVISION



RCA's newest television antenna on Empire State tower, New York. Top radiators transmit sound channel; torpedo shapes comprise doublets for the picture transmission. All parts are accurately dimensioned, strongly reinforced to stand high winds, and electrically-heated to prevent ice forming and reshaping radiator characteristics.

TELEVISION—PRO & CON!

Radio leaders outline "video" merits and hurdles

Television receivers are ready, and plans for transmitters go right ahead. Yet the radio industry seems divided on the subject. Some think television is ready for the public; others believe it is premature, and still others say prospective buyers should be told of technical difficulties yet to be overcome. Since last month's announcement by RMA and RCA, "Television Next Spring," RADIO TODAY has received many opinions. We present three of them here in an effort to present all sides of the subject.

"Practical now!"

Says Frank D. Andrea, pioneer radio manufacturer, president of Andrea Radio Corp., "U. S. radio manufacturers have given the public the impression that television is still very much in the experimental stage, and that they cannot expect practical home television for some time."

England and the Continent are 2 to 5 years ahead of the United States in the broadcasting of scheduled television programs and in the production of television receivers for home use. Yet, according to Mr. Andrea, in technical knowledge we are far ahead of foreign countries, and practical television has been possible here for two years.

"While adverse statements are being published here," continues Mr. Andrea, "England is broadcasting television on regular programs and showing special news events every day. So great is the enthusiasm there for television reception that following the recent London radio show, English manufacturers found themselves several months behind in the delivery of television sets.

"It is true that television will be improved as new technical knowledge comes to light, but it is thoroughly practical at present. My own company is now undertaking the manufacture of combined sight and sound receivers.

"The prices will range from a construction kit, with a 5-in. tube, for experimenters and servicemen, priced at about \$125, and a similar table model sight and sound set under \$200, to a console with a 9-in. tube for television sight and sound broadcast program reception, and a de luxe set with a 12-in. tube which will provide television and broadcast reception and an automatic phonograph."

"In New York City, two television broadcasting stations will soon be available for transmitting programs, and stations can be erected very quickly in other population centers. Consequently, if the facts about television progress are made known, public demand will force the start of television broadcasting and the release of home receivers."

The case against the sale of home television sets at this time is stated

by P. V. Galvin, president of Motorola. Mr. Galvin fears publicity about television will hurt the sales of radio receivers and says:

Premature, incomplete

"There is every likelihood that further technical development will result in rapid obsolescence of television receivers. Only recently, the FCC asked the television committee of the Radio Manufacturers Association to set up a series of standards to guide them in allocating television frequencies and in governing other aspects of television. Even these standards have not yet been adopted.

"Leading companies in the development of television are working on a standard which requires a channel 6,000 kilocycles wide for the transmission and satisfactory control of a reasonably clear and detailed picture.

"But there are already 'on the market' receivers operating on different standards. And statements have appeared that other systems requiring a different range of frequencies are about to be announced.

"The first radio sets which were put on the market fifteen years ago can still receive today's programs because those programs are *still* broadcast on a 10 k.c. channel. But a television receiver designed to pick up a program on a channel 6,000 k.c. wide would very likely be useless on a channel 3,000 k.c. wide.

"At the present time, the most advanced equipment can only transmit a television broadcast over a range of

about 50 miles from the station and on the ultra short waves where the following channels have been assigned: from 44,000 to 50,000 k.c.; from 50,000 to 56,000 k.c., and so on up to 84,000 k.c.

"Such short waves will not 'bend around the horizon'—they are very much like light waves. Experiments have been carried on in broadcasting these short waves since 1931 and every effort to increase their range has been made. Yet today, after the best radio scientists in the world have worked on this problem for almost ten years, the range is no greater than it was at the start.

Transmitting costs high

"Since it doesn't seem possible to increase the range of these short waves, it will require a television transmitter every hundred miles in all directions to cover the United States. This means a total of some 2,000 transmitting stations."

Mr. Galvin also asserts that the network system would be impossible because existing transmission lines could not be used to hook up stations. A co-axial cable to cost \$5,000 per mile must be used, and the total cost would be hundreds of millions of dollars. Programs will be costly he finds and impossible to produce in sufficient quantities. The price of the receiver is another vital factor, he points out.

"According to the best estimates," says Mr. Galvin, "television receivers will cost from \$150. They employ tubes at a replacement cost of \$25 to \$50 each. It took eight or nine years to



"Only by public participation can the art of television be advanced." So says Dr. W. R. G. Baker of GE, pictured here with his company's 1939 video receiver.

reduce radio sets from around \$150 to \$70. The first so-called midget set at \$69.50 appeared in 1930. There is no reason to believe that television development will proceed any more rapidly."

Britain's 10,000 sets

The views of General Electric, which is constructing a large experimental plant at Schenectady as well as designing receivers and transmitters for an exhibit at the New York World's Fair, are stated by Dr. W. R. G. Baker, chairman of the company's radio management committee. Says Dr. Baker:

"Probably the primary problem (in television) is that of educating the public as to what they may expect at this stage. It is not easy. The average man is accustomed to present-day standards of radio and the motion picture. He has forgotten he once used earphones and that not so long ago motion pictures flickered badly. Too many people believe that television will immediately bring them the events of the world as they take place, in a picture three by four feet. Perhaps such a service will eventually be possible, but today the encouragement of such an idea is certain to react unfavorably on the development of the art.

"Two major technical limitations still act as a deterrent to television on a national basis. First, we do not yet know how economically to 'pipe' programs from city to city. Hence television networks are not yet practicable.

"Second, a fairly high power television transmitter is now limited to a radius of not more than 40 or 50 miles. Thus, many transmitters will be required to provide a national service, and, considering the probable cost of television transmitters, will at first be limited to areas where the population is dense.

"And there are problems of a strictly consumer nature. Television requires the fixed attention of the person viewing the programs, as close attention as is required in viewing a motion picture. In many instances the room lighting must be somewhat reduced, or at least not much direct light can be permitted to fall on the viewing surface.

"The experience of television in England, where it has been commercialized under very favorable conditions for two years, offers the best case history to study. The British Broadcasting Company operates a large television transmitter in London, and hence covers a densely populated area. As a result, British manufacturers have sold approximately 10,000 sets in about two years. These modest sales figures certainly give no reason to expect a sky-rocket market in the United States during the early period of television.

"Only by public participation can the art of television be advanced, and the system—technical and program—be brought nearer perfection. There can be no question of the ultimate service of television to mankind. It will unquestionably have a far greater influence than radio when it has been brought to an equal state of perfection, for in this new art we add sight to sound and thus appeal to the two most powerful senses."

FREE WINDOW CONCERT LURES SHOPPERS TO MUSIC MART



Like bees to honey these shoppers in Los Angeles' exclusive West 7th St. district swarm to the windows of Birkel-Richardson music shop. While they watch a Capehart player in action, soothing strains pour from an open panel in the top of the window.

OPERA GUESTS IN PAJAMAS

Soon after the society folk of New York City had made a big stir about the opening of the Metropolitan Opera season, The Gramophone Shop, a local record dealer, ran an exceptional ad on opera recordings in the New York Times. The ad appeared on the music page and was headed "To The Opera In Pajamas!"

"Many of our customers prefer the comfort of listening to recordings of the Opera in pajamas rather than attending the Met in a boiled shirt," the ad went on. "For the price of a couple of orchestra seats, you can have performances in your own home, with encores no end! We ship records of all the operas around the corner or around the world."

CONCEALED RADIO WIRING IS TREND IN NEW HOMES

The trend is towards concealed radio wiring. Just as they balked at unscrewing a light bulb to hook up the vacuum cleaner, housewives now want to banish unsightly antenna and ground connections and put them in the wall where they belong.

Architects are providing for this improvement in plans of new homes and radio men should know the rules. W. E. Sprackling, chairman of the executive committee of the National Adequate Wiring Bureau, quotes these excerpts from the bureau's handbook of interior wiring design:

"At least three outlets with radio antenna and ground connections,

preferably adjacent to a standard convenience outlet, in each 6-room or smaller home; proportionally more for larger houses. The rooms in which such outlets are most often installed are the living room, the kitchen, bedrooms and the recreation room.

"Unless another method at least equivalent is specified, a twisted pair of wires for the antenna leads shall be carried from each outlet to the attic."

Headquarters of the Bureau are at 155 E. 44th Street, New York City.

WAX WORTH WATCHING

TOMMY DORSEY and his orchestra playing *Own Home Rag and Room With a View*, with VR by Jack Leonard—Victor 26097.

FATS WALLER and his Rhythm playing *Swingin' Them Jingle Bells and A Porter's Love Song to a Chambermaid*, both with XR by Waller—Bluebird B10016.

BOSWELL SISTERS singing *St. Louis Blues and Trav'lin' All Alone*—Vocalion 4495.

DICK TOOO singing *When Paw Was Courtin' Maw and You're the Only Star* (Voculence)—Bluebird B10034.

BOB CROSBY and his Bob Cats playing *Five Point Blues*, featuring trumpeter Yank Lawson and Big Foot Jump, featuring pianist Bob Zurke—Decca 2108.

ELLA LOGAN and HOAGY CARMICHAEL with Perry Botkin and his orchestra singing *Two Sleepy People* from "Thanks for the Memory," and *New Orleans*—Brunswick 8250.

AL OONAHUE and his orchestra playing *When Paw Was Courtin' Maw*, with VC by Paula Kelly and Donahue, and *Button Button*, with VC by Miss Kelly—Vocalion 4476.

CAB CALLOWAY and his orchestra playing *F. O. R. Jones*, with VC by Calloway, and *Angels With Dirty Faces*, with VC by June Richmond—Vocalion 4498.

CHICK WEBB and his orchestra playing *F. O. R. Jones and I Love Each Move You Make*, both with VC by Ella Fitzgerald—Decca 2105.

SIDNEY "POPS" BECHET and Noble Sissle's Swingsters playing *Blackstick and When the Sun Sets Down South*—Decca 2129.

HERE'S WHAT YOU'RE LOOKING FOR

There ought to be more people like Harry Scott, of Milwaukee. Then it would be a fine, fine world for radio dealers to live in. Mr. Scott bought ten radios for his office, and has a receiver in every room in his house. He even has a nearby set turned on while he shaves, and has his guest rooms equipped with radios.

The lucky dealer who got hold of Scott in the first place must have made a killing; now he is probably

scribbling re-orders to his jobber. More than that, Scott owns enough radio equipment to represent a nice slice of future business for the radio serviceman. He's an advertising agency executive, and takes no chances about missing his shows on the air.

Maybe the dealer organizations of the country want to make an example out of the Milwaukee chap, and point out to all other admen that here is the happiest, brightest, most efficient guy in his profession. Why? Because he practically bought out a radio dealer.

ALL-GLASS RADIO TUBES

Loktal type tubes having no base
set new performance standards

Revolutionary new tubes, called Loktal tubes, which eliminate the ordinary tube-bases are being introduced by Philco for the first time in the new Transitone models, according to an announcement made by Sayre M. Ramsdell, Philco vice president.

Nothing like these Loktal tubes has been used in radio sets before. Much smaller in size than the ordinary tube, some of them measuring only $2\frac{7}{8}$ " in height, they are without a base and are the first tubes to be *all* tube.

The lower portion of the bulb is simply fitted with a metallic shell holding a small metal guide-pin which accomplishes the locking-in action in the socket.

The Loktal tubes made it possible

for the new Transitone models to be the first compact-type radios ever approved by the Underwriters Laboratories, Inc., as being safe from fire and shock. They consume only half the filament current of tubes customarily used in small size compacts, with a resulting tremendous reduction in the amount of heat generated by the set. Due to the use of the Loktal tube, it was possible to design circuits for the new Transitone radios whereby all resistance was built into the set itself, thus enabling them to avoid the practice of using the socket cord wire for resistance.

Before the development of these tubes, called Loktal tubes, fire underwriters have refused to approve as

safe any compact-type radio because the tubes used for their operation represented a fire menace due to the serious overheating of the radio.

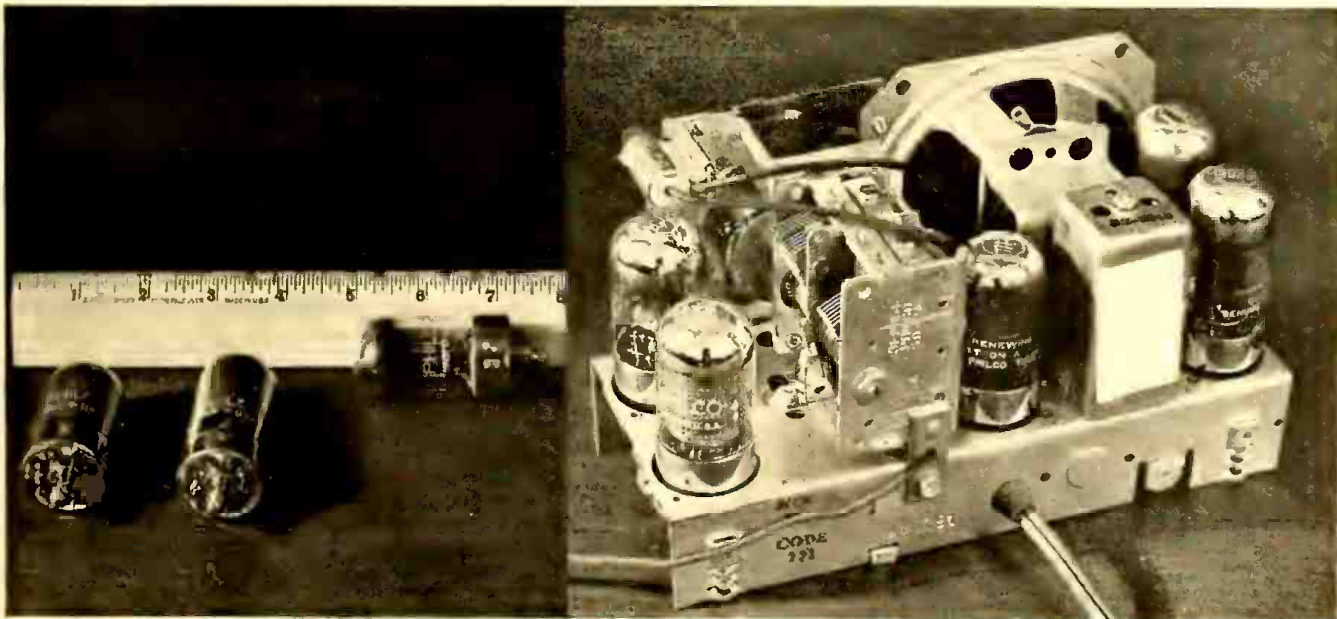
Additional novel features of the Loktal tubes include prongs different from those used in the conventional type of tube, thus calling for a new type of socket. Troublesome cap connections are eliminated through the use of much shorter grid leads, made possible by the fact that they connect to one of the pins at the bottom of the tube.

The small dimensions of these new tubes which are being made available to the entire industry makes possible the building of compact radios which offer the facilities and performance, as well as the safety, of radios many times their size.

U.S. PROGRAMS FOR LATIN AMERICA

A new short-wave antenna which will swing radio beams over South America from one language to another at the touch of a button and increase signal strength is being completed by NBC.

Heretofore either only one broad beam was used to cover all South America or two antenna systems with sharp beams were employed. In the latter case time was lost in switching from that broadcasting in Portuguese to the beam carrying Spanish programs. Under the new system a beam carrying Portuguese-language broadcast to Rio de Janeiro may be moved almost instantaneously to the west, where it will focus a Spanish program along a line extending from New York to Buenos Aires.



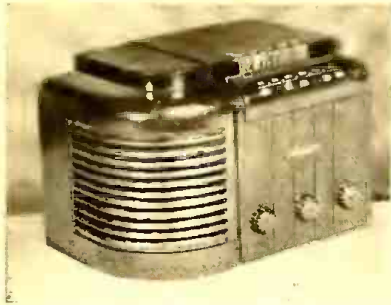
The new "lokta" or locking tubes—all-glass, and without bases—as developed by Corning Glass Co. and Hygrade-Sylvania, and used in new Philco Transitone chassis.

U. S. RADIO IS FIRST IN

Latest news of radio

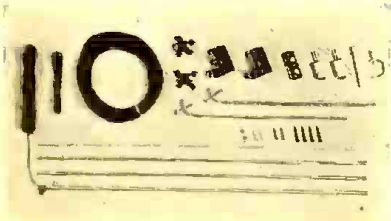
Crosley receivers

★ New additions to the Crosley line are: C598A Vanity model listing at \$9.99; 588A 5-tube superhet \$12.99; 718P console listing at \$49.95; 668M phonograph combination with 6 tubes—\$59.95. Crosley Radio Corp., 1329 Arlington St., Cincinnati, Ohio—RADIO TODAY.



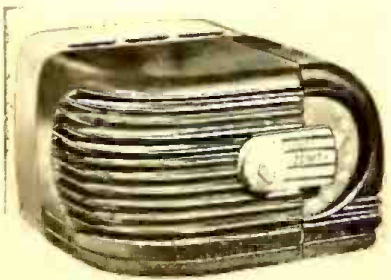
Ultra-modern compacts

★ AC-DC superhet receiver with five tubes and a plug-in resistor. Four choices of color—plastic cabinet. With or without push button tuning. Dual-band reception, including 16, 19, 25, 31, 49 meter bands. Model 96X-11 in walnut—list \$19.95. Without P.B. tuning—\$14.95. RCA Mfg. Co., Front & Cooper Sts., Camden, N. J.—RADIO TODAY.



Trim-Mast antenna

★ Vertical antenna for vent or wall mounting. Mast is of metal tubing in sections which fit together. Comes complete with all necessary wire, brackets, etc. Available in regular or noise-reducing types—latter licensed by A. A. & K. Charles Avnet Co., 156 Chambers St., New York, N. Y.—RADIO TODAY.

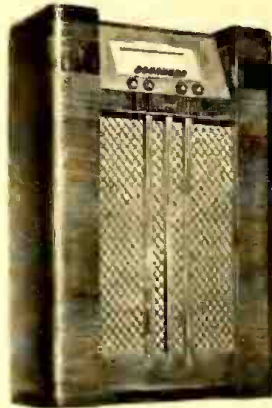


Hotel radio

★ AC-DC type superheterodyne radio set for hospitals, apartments, offices, etc. Requires no antenna or ground connections. Shielded against local electrical interference. 5-inch speaker unit, bakelite cabinet with carrying handle. 5-tubes plus ballast. Model 6D315—list \$19.95. Zenith Radio Corp., 6001 Dickens Ave., Chicago, Ill.—RADIO TODAY.

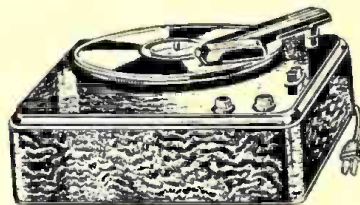
Ken-Rad single-ended tubes

★ Line of metal tubes with the control-grid lead brought out to the base instead of the top. Lower input and output capacitances. Tubes similar to older type—designated by the addition of an "s" in the type number. Types available are: 6SJ7, 6sK7, 6sQ7, 6sF5. Kend-Rad Tube and Lamp Corp., Owensboro, Ky.—RADIO TODAY.



Philco console

★ 6-tube receiver with push-button tuning for 8 stations. Inclined control panel, cathedral speaker. Covers standard and short-wave broadcasts. Model 31XF—list \$69.95. Philco Radio & Television Corp., Tioga & C Sts., Philadelphia, Pa.—RADIO TODAY.



Wireless record player

★ Record player requiring no connections to radio set. Radio set tuned to frequency of oscillator in record player. Device operates with any radio. Handles up to 12-inch records. Turntable speed of 78 r.p.m. Wrinkle-finish metal case. Radolek Co., 601 W. Randolph St., Chicago, Ill.—RADIO TODAY.

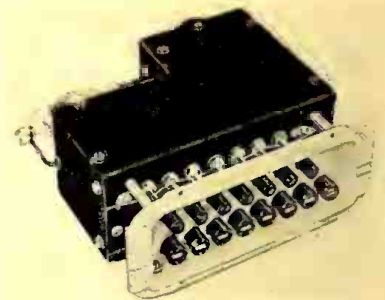
Dual diversity receiver

★ Communications type receiver for diversity reception from 2 antennas. Greatly reduces fading. Set has two R.F. and two I.F. channels which may be used separately or in combination. Receiver tunes from 540 Kc. to 46 megacycles, with push-button selection of the bands. Total of 25 tubes employed. Hallcrafters, Inc., 211 S. Indiana Ave., Chicago, Ill.—RADIO TODAY.



Film titler

★ Automatic film titler for use with 8 and 16 mm. movie cameras. Capable of setting up 3 rows of 12 characters each. Uses 36 small wheels, each operating a continuous ribbon with 42 characters, including numbers and punctuation marks. Letters photograph in a brilliant white against a black background. List \$3.95. Universal Camera Corp., 28 W. 23rd St., New York, N. Y.—RADIO TODAY.



Push-button converter

★ Push-button tuning unit for use in any receiver having a 455-465 KC I.F. Uses 2A7 or 6A7 converter tube. Tunes to 7 stations. Receiver R.F. circuits not used for push-button tuning. Power supply obtained from receiver. Iron-core type coils with single adjustment for each station. Type 9-1004. Meissner Mfg. Co., Mt. Carmel, Ill.—RADIO TODAY.



G-E superhet

★ Table type receiver with automatic tuning for 5 stations. Tunes 540-1750 KC on manual I.F. wave-trap. 5-inch dynamic speaker. 4 tubes plus ballast—2 watts output. Model GD-51—list \$19.95. Also available in AC model known as G-51. General Electric Co., 1285 Boston Ave., Bridgeport, Conn.—RADIO TODAY.

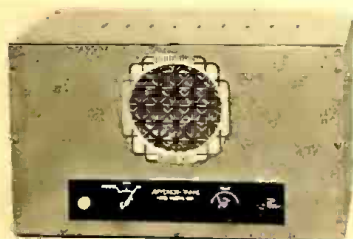
QUALITY AND ECONOMY

Products from manufacturers



Television receiver

★ 21-tube television receiver having black and white picture measuring a full 8 x 10 inches. Uses 14-inch cathode-ray tube. Built to handle television in accordance with present R.M.A. standards, either single or double side-band modulation. Single tuning control for sight and sound. Operates with dipole antenna. Table model—list \$395, console—\$445. Allen B. DuMont Labs., Passaic, N. J.—RADIO TODAY.



Marine radio

★ Radiotelephone transmitter for use on small yachts and boats. Receiver, transmitter, and power unit complete in metal cabinet. Easy to operate—no technical knowledge needed. Jefferson-Travis Radio Mfg. Co., 198 Milburn Ave., Baldwin, N. Y.—RADIO TODAY.



Low-cost Victrola

★ Phonograph combination with 6-tube chassis. Receiver has push-button tuning and horizontal dial. Self-starting phonograph motor, automatic stop, crystal pickup. Wrap-around walnut cabinet with band-

ings of stripe walnut veneer. Model U-115—list \$59.95. RCA Mfg. Co., Front & Cooper Sts., Camden, N. J.—RADIO TODAY.

Flower cart radio

★ A mirror-metal flower cart for fresh or artificial flowers is the unusual cabinet for a 5-tube superhet AC-DC radio. Beam power output tube, AVC, dynamic speaker. List \$24.50. Emron Radio Div., Creative Art Products Co., 1140 Broadway, New York, N. Y.—RADIO TODAY.



Mahogany corner console

★ All-wave receiver with push-button tuning for 8 stations. Cathode-ray indicator for manual tuning. Two-tone etched bronze dial. Labyrinth audio system with class A amplification. Model 340-Y—list \$132.50. Stromberg-Carlson Telephone Mfg. Co., Rochester, N. Y.—RADIO TODAY.



World-wide portable

★ Portable-type superheterodyne receiver for world-wide use. Covers standard broadcast, shortwave, and European long wave bands. Operates on AC-DC, 110, 160 and 220 volts. 8-tube circuit—dynamic speaker. Choice of portable type carrying cases. Model 25-A, cloth covered—list \$64.50. Cowhide—\$74.50. Portomatic Corp., 1013 Madison Ave., New York, N. Y.—RADIO TODAY.

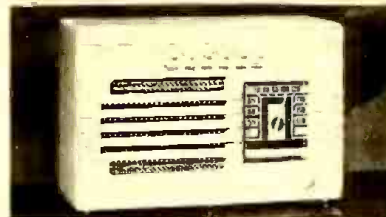
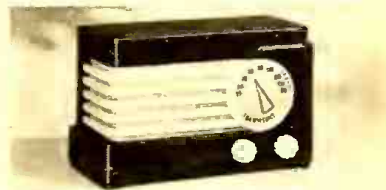
Heavy-duty Wincharger

★ 6-volt wind-driven battery charger for farms and remote locations. Unit delivers up to 25 amperes. Starts charging at a wind velocity of 6 miles per hour. Larger and more efficient generator. Wincharger Corp., Sioux City, Iowa—RADIO TODAY.



Recording machine

★ Wide-range instantaneous recording machine. Easy to operate—ruggedly constructed to high precision standards. High-fidelity playback. Overhead feed carries recording head. Allied Recording Products Co., 126 W. 46th St., New York, N. Y.—RADIO TODAY.



Transitone receivers

★ Line of streamlined compact receivers employing new Loktal tubes. Model TP-10, a 5-tube superhet is illustrated at top. Tunes 550-1700 kc. Below is the TP-5, a 5-tube receiver with push-button tuning for 5 stations. Available in white or brown plastic. Same chassis without push buttons available in a similar cabinet. Philco Radio & Television Corp., Tioga & C Sts., Philadelphia, Pa.—RADIO TODAY.

Photoelectric control

★ Inexpensive photo-cell control for regulating, measuring, sorting, counting, controlling, signaling, etc. Operates from 110 volts AC. Impulses required are 1/20 of a second between operations. Uses standard tubes. Supplied complete with light source and lens. Model 50. United Cinephone Corp., Electronic Control Div., 43-37 33rd St., Long Island City, L. I., N. Y.—RADIO TODAY.

Crasley receivers

* New additions to the Crasley line are: (558A) Vanity model fitting at \$39.95; 588A 5-tube superhet \$12.95; 7391 console fitting at \$49.95; 662M phonograph combination with 6 tubes—\$69.95. Crasley Radio Corp., 1329 Arlington St., Cincinnati, Ohio.—Radio Today.

U. S. RADIO IS FIRST IN QUALITY AND ECONOMY

Latest news of radio products from manufacturers

Ken-Rad single-ended tubes

* Line of metal tubes with the control-grid lead brought out to the base instead of the top. Lower input and output capacitance. Tubes similar to other type—designated by the addition of an "s" in the type number. Types available are: 6A7, 6AK7, 6AQ7, 6AR5. Ken-Rad Tube and Lamp Corp., Owensboro, Ky.—Radio Today.

Ultra-modern compacts

* AC-DC superior receiver with five tubes and a plug-in resistor. Four choices of color—plastic cabinet. With or without push button tuning. Distortionless reception, including 10, 15, 25, 33, 45 meter bands. Model 66X-11 in walnut—list \$19.95. Without P.B. fitting \$14.95. RCA Mfg. Co., Front & Cooper Sts., Camden, N. J.—Radio Today.

Philco console

* 6-tube receiver with push-button tuning for 8 stations. Inclined control panel, cathedral speaker. Covers standard and short-wave frequencies. Model 31XP—list \$59.95. Philco Radio & Television Corp., Ticon & C Sts., Philadelphia, Pa.—Radio Today.

Trim-Mast antenna

* Vertical antenna for vent or wall mounting. Most in of metal tubing in section which fit together. Comes complete with all necessary wire, brackets, etc. Available in regular or non-conducting types—list per item by A. & K. Charles Avon Co., 166 Chambers St., New York, N. Y.—Radio Today.



Wireless record player

* Record player requiring no connections to radio set. Radio set tuned to frequency of oscillator in record player. Device operates with any radio. Handles up to 12-inch records. Turntable speed of 78 r.p.m. Variable-tuning metal case. Radiolec. Co., 601 W. Randolph St., Chicago, Ill.—Radio Today.

Dual diversity receiver

* Communications type receiver for diversity reception from 2 antennas. Greatly reduces fading. Set has two R.F. and two I.F. channels which may be used separately or in combination. Receiver tunes from 540 kc to 18 megacycles, with push-button selection of the bands. Total of 26 tubes employed. Hallinger, Inc., 212 E. Indiana Ave., Chicago, Ill.—Radio Today.



Hotel radio

* AC-DC type superheterodyne radio set for hospitals, apartments, offices, etc. Requires an antenna or ground connections. Shielded against local electrical interference. 5-tube speaker unit, bakelite cabinet with carrying handle. Entire plus built-in. Model 6315—list \$19.95. Zenith Radio Corp., 6001 Dickens Ave., Chicago, Ill.—Radio Today.



Film titler

* Automatic film titler for use with 8 and 16 mm. movie camera. Capable of setting up 3 rows of 12 characters each. Uses 35 small wheels, each operating a continuous ribbon with 42 characters, including numbers and punctuation marks. Letters photograph in a brilliant white against a black background. List \$3.95. Universal Camera Corp., 28 W. 23rd St., New York, N. Y.—Radio Today.



Push-button converter

* Push-button tuning unit for use in any receiver having a 455-465 KC I.F. Uses 2A7 or 6A7 converter tube. Tunes to 7 stations. Receiver tube circuits not used for push-button tuning. Power supply obtained from receiver. Iron-core type coils with single adjustment for each station. Type 5104. Meissner Mfg. Co., Mt. Carmel, Ill.—Radio Today.

G-E superhet

* Table type receiver with automatic tuning for 5 stations. Tunes 540-1750 kc on manual. I.F. wave 5-tube plus ballast—2 watts output. 4 trap. 5-inch dynamic speaker. Model GD51—list \$19.95. Also available in AC model known as G-51. General Electric Co., 1235 Boston Ave., Bridgeport, Conn.—Radio Today.

Television receiver

* 21-tube television receiver having black and white picture measuring a full 8 x 10 inches. Uses 14-inch cathod-ray tube. Built to handle television in accordance with present R.M.A. standards, either single or double side-band modulation. Single tuning control for sight and sound. Operates with dipole antenna. Table model—list \$295, console—\$445. Allen B. DuMont Labs., Passaic, N. J.—Radio Today.

Marine radio

* Radiotelephone transmitter for use on small yachts and boats. Receiver, transmitter, and power unit complete in metal cabinet. Easy to operate—no technical knowledge needed. Jefferson-Travis Radio Mfg. Co., 198 Millburn Ave., Baldwin, N. Y.—Radio Today.

Low-cost Victrola

* Phonograph combination with 6-tube chassis. Receiver has push-button tuning and horizontal dial. Self-starting phonograph motor, automatic stop, crystal pickup. Wrap-around walnut cabinet with band-

Heavy-duty Wincharger

* 6-volt wind-driven battery charger for farms and remote locations. Unit delivers up to 25 amperes. Starts charging at a wind velocity of 8 miles per hour. Lower and more efficient generator. Wincharger Corp., Sioux City, Iowa.—Radio Today.

Flower cart radio

* A mirror-metal flower cart for fresh or artificial flowers in the unusual cabinet for a 5-tube superhet AC-DC radio. Beam power output tube, AVC, dynamic speaker. List \$24.50. Euron Radio Div., Creative Art Products Co., 1140 Broadway, New York, N. Y.—Radio Today.

Recording machine

* Wide-range instantaneous recording machine—easy to operate—ruggedly constructed to high precision standards. High-fidelity playback. Overland feed carries recording head. Allied Recording Products Co., 126 W. 46th St., New York, N. Y.—Radio Today.

Mohogany corner console

* All-wave receiver with push-button tuning for 8 stations. Cathedral speaker. Two-tone etched bronze dial. Labyrinth audio system with class A amplification. Model 340-Y—list \$132.50. Stromberg-Carlson Telephone Mfg. Co., Rochester, N. Y.—Radio Today.

Translone receivers

* Line of streamlined compact receivers employing new ink-like tubes. Model TP-10, a 5-tube superhet is illustrated at top. Tunes 550-1700 kc. Below is the TP-5, a 5-tube receiver with push-button tuning for 5 stations. Available in white or brown plastic. Same chassis without push button available in a similar cabinet. Philco Radio & Television Corp., Ticon & C Sts., Philadelphia, Pa.—Radio Today.

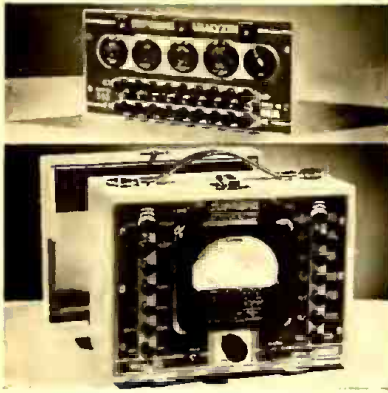
World-wide portable

* Portable type superheterodyne receiver for world-wide use. Covers standard broadcast, shortwave, and European long wave bands. Operates on AC-DC, 110, 160 and 220 volts. 6-tube circuit—dynamic speaker. Choice of portable type carrying cases. Model 25-A, cloth covered—list \$44.50. Cowhite—\$74.50. Portonatic Corp., 1013 Madison Ave., New York, N. Y.—Radio Today.

Photoelectric control

* Inexpensive photo-cell control for regulating, measuring, sorting, counting, controlling, signaling, etc. Operates from 110 volts AC. 50-milliamperes required are 1/20 of a second between operations. Uses standard tubes. Supplied complete with light source and lens. Model 60. United Cinephone Corp., Electronic Control Div., 4337 33rd St., Long Island City, L. I., N. Y.—Radio Today.

AMERICAN RADIO PRODUCTS



Multi-meter and analyzer

★ Push-button type multi-range meter having both 1,000 and 25,000 ohms-per-volt sensitivity. Current 0/.07/.7/7/35/140/350/1.4M/14M milliamperes. Voltage 0/3.5/7/35/140/350/700/1400. Resistance 0/500/5M/50M/500M/5meg/50meg ohms. Analyzer unit separate. Provides current and voltage measurements in all circuits. Models 592 and 593. Supreme Instruments Corp., Greenwood, Miss.—RADIO TODAY.



Sprague paper condensers

★ 600-volt condensers in aluminum cans for replacement work in receivers and amplifiers. Have appearance of standard electrolytics. Capacities of 4, 8m 4-4, 8-8 mfd. Negligible leakage and power factor—no polarity to observe. Type DR 8 mfd.—list \$1.35. Sprague Products Co., North Adams, Mass.—RADIO TODAY.

Sound projector

★ All-steel sound-projector for use with 6-inch speaker units. Designed especially for use with call and paging systems. 9½-inch flare with 10-inch bell. Baked art-metal finish. Fixture fits ½-inch pipe. Model J-6—list \$7.50. Kainer & Co., 761 W. Lexington St., Chicago, Ill.—RADIO TODAY.



Dumont filter condensers

★ Line of 700-volt electrolytic condensers for filter circuits in receivers and amplifiers. Long life combined with self-healing properties. Available in can and cardboard containers. Dumont Electric Corp., 514 Broadway, New York, N. Y.—RADIO TODAY.

Record cleaner

★ A companion to the Nash Record Lube. The record cleaner removes dust, dirt, and various gritty particles from the grooves of all makes of records and assures perfect reproduction. Improves tone of old records. Nash Radio Products Co., 5437 Lisette Ave., St. Louis, Mo.—RADIO TODAY.



Lafayette phonograph

★ Electric phonograph with 6-tube amplifier having automatic volume expansion. Automatic record changer plays eight 10-inch or 12-inch records. 12-inch high-fidelity speaker—13-watts output. Walnut console. Record storage compartments on both sides. Wholesale Radio Service Co., 100 Sixth Ave., New York, N. Y.—RADIO TODAY.

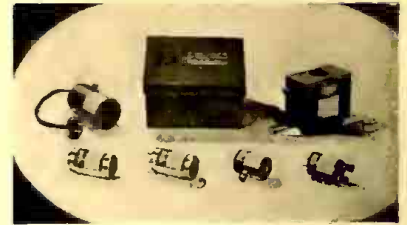


Portable sound system

★ Low-cost portable sound system having 12-watt output. Velocity type microphone, 2 P.M. type speakers each with 24 feet of cable. All units housed in a single case—weighs only 43 pounds. Model PG-112-B—List \$149. RCA Mfg. Co., Front St., Camden, N. J.—RADIO TODAY.

Elkay communicator

★ Low-cost wired type intercommunicating system. Provides two-way communication. AC-DC operation. Supplied with 50 feet of wire and tubes. Net \$6.50 per pair. Elkay Mfg. Corp., 200 Fifth Ave., New York, N. Y.—RADIO TODAY.



Quietone interference filters

★ Line of 7 types of filter units for eliminating radio noises transmitted via the power line. Both capacitive and capacitive-inductive units are available. Units should preferably be installed at the interfering electrical device. In this way noise radiation to the antenna is minimized. Technical data will be supplied on application. Cornell-Dubilier Corp., S. Plainfield, N. J.—RADIO TODAY.



18-watt amplifier

★ Sound amplifier with 18-watts undistorted power output. 4 microphone channels, automatic volume control and expansion. 2 phono inputs, tone compensation, speaker selector, volume level meter. Choice of accessories available. Allied Radio Corp., 833 W. Jackson Blvd., Chicago, Ill.—RADIO TODAY.



Enclosed relay rack

★ Modernistically-styled cabinet type rack for handling standard 19-inch wide relay-rack assemblies. Rounded corners. Top and bottom trimmed with chromium molding. Furnished in following sizes: 42, 66½, 82¼ inches high. Finished in gray or black ripple. Par-Metal Products Co., 35-25 41st St., Long Island City, L. I., N. Y.—RADIO TODAY.

LEAD ALL THE WORLD



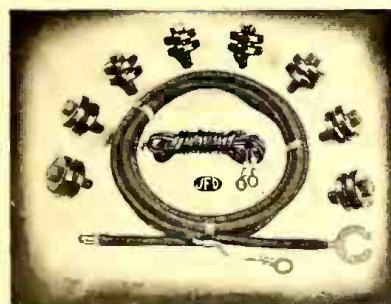
Bullet microphone

★ Chrome-plated microphone using moving-coil type unit. Available in high or low impedance. Supplied with 25-feet of shielded cable. Model MK-31. Tilton Electric Co., 15 E. 26th St., New York, N. Y.—RADIO TODAY.



Multi-range ohmmeter

★ High-sensitivity ohmmeter having ranges from .2 ohm to 300 megohms. Meter requires only 50 microamps for full-scale deflection. Has internal AC-operated power supply to supply 125 volts for the 300 megohm range. Will measure condenser leakage resistance. Model 763. Weston Electrical Instrument Corp., Newark, N. J.—RADIO TODAY.



1939 running board insulators

★ Insulators for running boards of 1939 Buicks and Oldsmobiles. Illustrated is a complete kit for Buicks using bakelite insulation, low-loss lead-in, and interconnecting leads. Complete kit for both Buick running boards—type 3011—list \$5.50. J. F. D. Mfg. Co., 4111 Ft. Hamilton Pky., Brooklyn, N. Y.—RADIO TODAY.

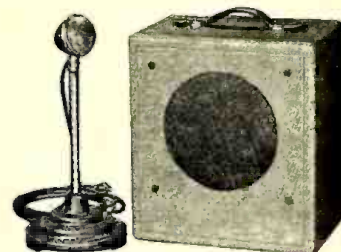
Crystal headphone

★ Communications type of headphones. Extremely light in weight. Aluminum case. Hermetically-sealed crystal element. Headphones enclosed in molded-rubber ear pieces which improve ear seal and low-frequency response. Supplied with 5-foot cord. Model BJ. Brush Development Co., 3322 Perkins Ave., Cleveland, Ohio—RADIO TODAY.



Relay covers

★ Bakelite covers for midget relays. Modernistically designed in molded bakelite. Held in place by "snap on" fit to base. Provide protection against dirt and possible damage to relay. Ward Leonard Electric Co., Mt. Vernon, N. Y.—RADIO TODAY.



5-watt sound system

★ Portable type sound system having 5-watt output. Crystal-type mike, 8-inch P.M. speaker, mike stand, cable. Sturdy carrying case. Net \$19.95. Radolek Co., 601 W. Randolph St., Chicago, Ill.—RADIO TODAY.

Speech amplifier

★ Foundation kit for the construction of a modern amateur speech amplifier. Push-pull 2A3 output stage. Automatic over-modulation control circuit. Supplied with 500 ohm, multi-match, or universal driver transformer. Complete details in bulletin SD-389. Thordarson Elec. Mfg. Co., 500 W. Huron St., Chicago, Ill.—RADIO TODAY.

Radio code course

★ Practical, inexpensive method of learning the radio code. Course consists of 3 doubled-sided 10-inch records together with instruction book. Records have a playing time more than double that of usual record. Records divided into parts with automatic feed lines and individual stop lines. Can be used on any 78 r.p.m. phonograph. Ralston Record Co., Philadelphia, Pa.—RADIO TODAY.



Stubby tele tube

★ Cathode-ray television tube that is considerably shorter than previous types. Permits use of more compact cabinets. Nine-inch tube only 16 inches long compared with old 23-inch tube. Image in black and white. Videotron manufactured by National Union Radio Corp., Newark, N. J.—RADIO TODAY.

Raytheon triode

★ High-mu triode transmitter tube for amateur transmitters. Maximum plate dissipation of 200 watts. A pair of these tubes will handle 1 kilowatt of power. For R.F. amplifiers and oscillators. Voltages up to 3,000 may be employed. Type RK-63. Raytheon Production Corp., 420 Lexington Ave., New York, N. Y.—RADIO TODAY.



NEW THINGS IN U.S. RADIO



Filterette selector

★ Interference analyzer to show the serviceman what filter unit to use. Unit has circuit components of 5 most popular noise filters which are selected by a rotary switch. Serviceman uses filter that is most effective in reducing noise. Quickly inserted in power line. Model F-8—net \$7.50. Tobe Deutschmann Corp., Canton, Mass.—RADIO TODAY.

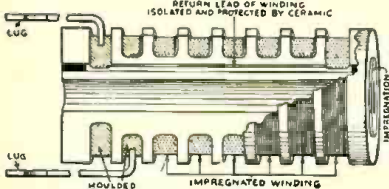


Carbon resistors

★ Line of carbon composition resistors in $\frac{1}{4}$, $\frac{1}{2}$, 1 and 2-watt ratings. Low voltage coefficient, moisture-proof, negligible noise level. Resistance within 10 per cent. For R.F. and A.F. circuits. Attractively packaged. Consolidated Wire and Assoc. Corps., 512 S. Peoria St., Chicago, Ill.—RADIO TODAY.

Tubular condensers

★ Low-cost electrolytic capacitors for filtering and by-pass circuits. Fabricated plate anode with surge-proof separator. Explosion-proof construction. Supplied with cathode insulating tube. Available in capacities from 4 to 40 mfd. and voltages from 25 to 450. Molanode type TM. Magnavox Co., Fort Wayne, Ind.—RADIO TODAY.



Precision resistors

★ Wire-wound resistors with both terminals at one end. Units wound on ceramic form—wire brought back internally through form, yet insulated and protected from winding and mounting bolts. Fully impregnated. Standard tolerance of 1 per cent. Available up to $\frac{1}{10}$ of 1 per

cent on order. International Resistance Corp., 401 N. Broad St., Philadelphia, Pa.—RADIO TODAY.



Velocity microphone

★ Compact mike having a frequency range of 40 to 10,000 cycles and an output level of -66 DB. Built-in on-off switch. 25-feet of cable with removable bayonet-locking plug. Mike can be tilted at any angle. Model 5MM. Universal Microphone Co., Inglewood, Calif.—RADIO TODAY.



Signal generator

★ 6-band signal generator tuning 100-15,000 KC. Stable oscillator circuit with modulated buffer amplifier. Variable modulation from 0 to 100 per cent. 400 cycles audio output voltage variable up to 25 volts. Built-in dummy antenna. Thorough shielding. Model E-100—net \$47.50. Precision Apparatus Corp., 821 E. New York Ave., Brooklyn, N. Y.—RADIO TODAY.

Synchronous vibrators

★ Push-pull type of synchronous vibrator. Push-pull coils improve operation of unit and increase life. Replacement chart listing all types available upon request. Pauley-James Corp., 4619 Ravenswood Ave., Chicago, Ill.—RADIO TODAY.

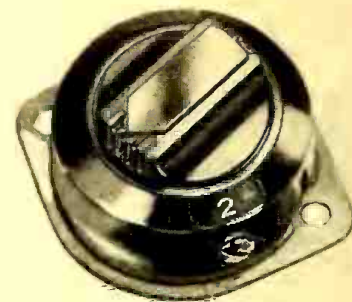
Power resistance decade

★ Decade resistance with range from 10 to 100,000 ohms in 10-ohm steps. 1 per cent accuracy. Minimum of 10 watts capacity at any resistance setting. For use in resistance measurements by substi-

tution method, as a dummy field coil, bridge circuits, etc. Model 55—net \$14.50. Electronic Apparatus Co., 814 N. Damen Ave., Chicago, Ill.—RADIO TODAY.

Hum-bucking transformer

★ Input transformer from multiple line to grid having hum-bucking construction. Shielded with 4 high-permeability alloy steel cases. Frequency response of 60 to 10,000 cycles within 2 db. Type P-202—list \$12. Kenyon Transformer Co., Inc., 840 Barry St., New York, N. Y.—RADIO TODAY.



Tap switch

★ 8-position, single-pole switch for all purposes. Molded bakelite base, brass contacts, phosphor-bronze switch arm. Shielded by metal snap-on cover. Contact indicator visible through window in bevel of cover. List—75 cents. American Phenolic Corp., 1250 Van Buren St., Chicago, Ill.—RADIO TODAY.



Supreme oscillator

★ All-wave signal generator tuning 65 to 20,500 KC in five bands. All bands on 2 basic scales. Allowable error of $\frac{1}{2}$ %. Hairline shadow indicator reduces parallax. Variable iron-core coils with air trimmers. Modulation levels of 30 and 75% show up detector distortion in set at high modulation percentages. Designed to fit Lab-rack. Housed in wooden case. Model 571. Supreme Instruments Corp., Greenwood, Miss.—RADIO TODAY.

AND SOUND EQUIPMENT

Bantam tubes

★ Line of miniature glass tubes with octal bases. Types available are: 6A8GT, 6K7GT, 6J7GT, 6R7GT, 25L6GT, 25Z6GT. These tubes correspond to the regular octal glass tubes, but are smaller in size. Triad Mfg. Co., Inc., Pawtucket, R. I.—**RADIO TODAY.**



Gain indicator

★ Constant-impedance attenuator network with steps of attenuation directly in decibels for measurement of amplifier gains. Meter used to indicate equal readings so that its frequency errors are cancelled out. Unit is accurate to within 1 db. over the entire audio spectrum. Model 44—net \$70. Monarch Mfg. Co., 3341 Belmont Ave., Chicago, Ill.—**RADIO TODAY.**

Television capacitors

★ Pyranol high-voltage condensers for television and radio transmitters. One type for use in kinescope deflecting circuits is of compact cylindrical design. Unit is 9 inches long and 2 inches in diameter. Heavy-duty ceramic insulator. Radio types, also in cylindrical cases, have ratings up to 2000 volts DC. General Electric Co., Schenectady, N. Y.—**RADIO TODAY.**



Concentric cable kit

★ Convenient kit of all necessary components for the construction of 1/2-inch diameter coaxial cable. All parts including instructions are included. Available in standard lengths of 10, 25, 50 feet. Net—24 cents per foot. Transducer Corp., 30 Rockefeller Plaza, New York, N. Y.—**RADIO TODAY.**



Shure Rocket mike

★ Semi-directional crystal microphone. Pressure-actuated diaphragm. Ultra-wide-range response. Triple-moisture-sealed crystal unit. Output level of minus 55 DB with 25-foot cable. Directional baffle available. Model 705A—list \$25. Shure Bros., 225 W. Huron St., Chicago, Ill.—**RADIO TODAY.**



Battery eliminator

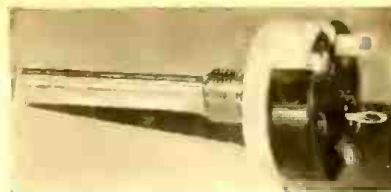
★ AC-operated battery eliminator for farm type receivers using 1 1/2 or 2-volt tubes. Supplies hum-free A and B power for any sized set. Same size as 2 B batteries. Filament voltage adjustable. Electro-Products Labs., 549 W. Randolph St., Chicago, Ill.—**RADIO TODAY.**

Radioscope

★ Combination service instrument having an all-wave signal generator, multi-range meter, and universal speaker. Designed for servicing all types of receivers. Vernier micrometer dial on oscillator that can be read to 1/10 of one division. Model 155. Bendix Radio Corp., General Motors Bldg., Detroit, Mich.—**RADIO TODAY.**

Perfex camera

★ Candid camera with focal-plane shutter, range-finder, optical view finder, built-in extinction-type exposure meter and F3.5 lens. Shutter speeds from 1/25 to 1/500 second. Uses 35 mm. film. List \$25. Eveready case \$4.50. Telephoto and faster lenses available. Candid Camera Corp. of America, 844 W. Adams St., Chicago, Ill.—**RADIO TODAY.**



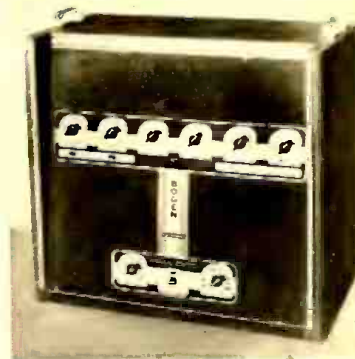
Rotary power switch

★ Inexpensive power switch in single and double circuits and single and double throws. Rated at 1 amp. 250 v., 3 amp. 125 v., 10 amp. 12 v. Operates on arc of 30°. Fully enclosed—1 3/32-inch diameter. Clarostat Mfg. Co., Inc., 285 N. 6th St., Brooklyn, N. Y.—**RADIO TODAY.**



Multi-tester

★ Universal multi-range meter. 2 per cent meter with 2,000 ohms per volt sensitivity. Voltages up to 1,000, current to 10 amps. Ohmmeter ranges 0/100/7,500/75M/7 1/2 meg./10 meg. Decibel calibrations —12 to plus 54. Model 409A—list \$17.95. Radio City Products Co., 88 Park Place, New York, N. Y.—**RADIO TODAY.**



Binaural amplifier

★ 70-watt binaural amplifier having twin 35-watt output channels. 4 mike and 2 phono inputs. Harmonic content of less than 4 per cent. Provision is made for use of remote control mixers. Dual circuit creates auditory perspective. Model DX70. David Bogen Co., 663 Broadway, New York, N. Y.—**RADIO TODAY.**

Radio beacon compass

★ Radio compass for use in aircraft. Gives pilot radio compass navigation in addition to radio beacon flying. Operates only on Dept. of Commerce and Marine beacon stations. Weighs only 13 pounds. Radio Frequency Labs., Boonton, N. J.—**RADIO TODAY.**

MONEY IN

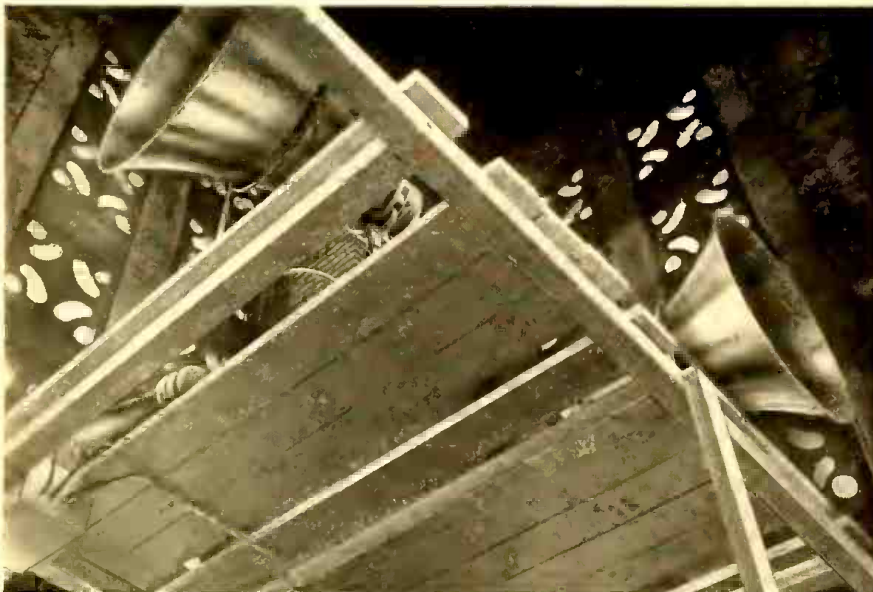
Selling Sound

PROFITS IN CHURCH BELFRIES

Further development of the "church market" for sound dealers is the result of a recent installation of amplified chimes in an eastern church. The finished job sounds like massive bells, throughout an area of ten square miles, but was not expensive to the clergy.

This system utilizes as its source a set of 21 standard tubular chimes such as those used by musicians. These are played from a small keyboard attached to the organ console and their sound is picked up by two microphones, placed for properly proportioned pick-up. These are standard crystal microphones and are fed into the mixing panel of a 250-watt amplifier specially developed for this service by Transformer Corporation of America. The heavy-duty, horn-type loudspeakers, four of which are mounted in the bell tower, are fed through a low-impedance line and are capable of handling up to 160 watts output.

Centrally located in a city which has an area of average size, it has never been found necessary to operate the system at full capacity. In fact both the amplifier and the loudspeakers provide more than ample reserve to take care of the surges which are characteristic of the initial "hammer thump" of the chimes, a feature which received the special attention of the T.C.A. engineers in the design of the amplifier.



Light-weight, efficient speakers replace bells in church towers, eliminating costly reinforced structures. Sound systems provide results at a fraction of usual cost.

RECORDED SOUND TO FIGHT NEXT WAR FOR FRANCE

Another Biblical story has come to ultra-modernistic life in the newest French application of sound equipment, taken very seriously in Paris and said to have been adopted by the French Government, according to Dr. E. E. Free, consulting acoustical engineer, New York. This is a method of fighting battles by loudspeakers and phonographs.

The seventh chapter of the Second Book of Kings tells how the siege of Samaria was lifted when the besiegers thought they heard a great noise of horses and chariots, imagined a vast host surrounding them and promptly ran away—an episode from which the Prophet Elisha acquired considerable credit. Just what the besiegers really heard is not disclosed. Perhaps Elisha or his friends sent out some secret noise-making expedition.

This is just what is proposed by the French inventor, M. Maxime Baze. He suggests that armies be equipped with powerful loudspeakers and phonograph records. Some dark night the sounds of an attack will be turned toward the enemy's trenches. Phantom tanks will clank and rumble. Imaginary shells will whiz overhead and explode. Sounds of marching infantry, even the half-muffled curses of the marchers, will be shot against the enemy. Holders of the trenches are expected either to run

away or to be kept exhaustingly alert. For defense purposes, a sound barrage of stuttering machine guns and singing bullets might re-inforce a few real guns to deter attacks. For night air raids a drifting balloon with loudspeakers fed by radio from phonographs miles away, would keep everybody awake and terrified.

PA IN FACTORIES IS OK

Further evidence that sound systems in factories are beneficial has been revealed by psychologist John F. Hume of Ohio State University. His investigation indicates that when music is played among factory workmen, there are less errors and "from the point of view of factory morale, music is highly beneficial and desirable." All this adds weight to the sales arguments of PA salesmen who have factory managers on their prospect lists.

Professor Hume made his tests at the Hygrade Sylvania tube plant at Emporium, Pa., where the hands and fingers of the employes have to be nimble. This plant has a 48-speaker system which carries recorded music to all production departments.

The conclusions were that music has a pleasant effect on workers, and that to satisfy the average musical preferences, the playing of two records every half hour is a satisfactory plan. Slow swing and sweet music are favored.

DOORLESS PHONE BOOTH IS QUIET

★ Doorless telephone booths have recently been rendered quiet. The new booth, resembling the conventional booth in shape, but lacking the usual door, is lined with special acoustical tiles that are pierced with hundreds of small holes, $\frac{3}{16}$ in. in diameter.

These holes are the secret of the treatment's effectiveness, for they "soak up" the sound waves striking them and successfully establish a quiet environment that permits conversation undisturbed by outside noise. In addition, they also absorb the sound waves of the speaker's own voice, thereby providing more privacy and reducing the possibility of his being overheard by others.

The tiles can be applied to any booth. Twelve inches square, $1\frac{1}{4}$ in. thick, they are cemented directly over any new or old wall. Once installed, they are effective for the life of the booth, stated Wallace Waterfall, technical engineer with the Celotex Corp.

Radio Brings *ALL* Music To *ALL* People



Radio Lets the Nation Enjoy
U. S. Army, Navy, and
Marine Bands



CAPT. THOMAS F. DARCY, JR.
Leader U. S. Army Band



LIEUT. CHARLES BENTER
Leader U. S. Navy Band



CAPT. TAYLOR BRANSON
Leader U. S. Marine Band

Every village has its band, but Uncle Sam's Army, Navy, and Marine Bands rank with those great concert bands which have glorified brass music.

NBC Symphony Orchestra, under direction of Arturo Toscanini rehearses long hours to achieve perfection on the air. (Above, the woodwinds rehearse)

WHILE RADIO has made outstanding contributions to American culture through scores of instructive programs . . . radio's supreme contribution is music.

Consider the musical contributions of NBC, one member of the family of RCA! It is generally conceded that the most brilliant musical accomplishment of radio is the NBC Symphony Orchestra, under the leadership of the great Maestro Arturo Toscanini.

Another member of the family of RCA, RCA Victor, manufactures outstanding radios. And, through Victor and Bluebird Records, RCA Victrolas, and inexpensive RCA Victrola Attachments, RCA Victor offers to all the opportunity to repeat the music they want when they want it.

By helping make all America music conscious, the Radio Corporation of America has created a market of unlimited possibilities for the retailers and wholesalers who go "RCA All the Way" and reap the benefits of the public acceptance of all things made by the only organization that makes and does everything in radio and sound.

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



Radio Corporation of America

RADIO CITY, NEW YORK, U. S. A.

National Broadcasting Company • RCA Institutes, Inc.
RCA Manufacturing Co., Inc. • R.C.A. Communications, Inc.
Radiomarine Corporation of America

DYNAMIC ALIGNMENT OF RADIO SETS

Adjustment of trimmers in receivers should be done with gain or AVC at level ordinarily used when listening to stations

By VINTON K. ULRICH, Service Editor

The alignment procedure for receivers as generally advocated is not dynamic in every sense of the word. Today's alignment usually takes place at maximum sensitivity of the receiver (before the AVC takes hold), a condition under which few, if any of the sets are ever operated by the customer. As defined by RADIO TODAY many months ago, for true dynamic testing, all tests or adjustments should be made under conditions similar to those under which the receiver operates.

Tests have shown that a receiver aligned properly at maximum sensitivity is not always properly aligned when tuned to a radio signal which develops an AVC bias (reduced receiver sensitivity).

The reason for this change in the alignment conditions, is that changing the bias on an amplifier tube, such as is used in an I.F. stage, changes the interelectrode capacitances. The capacity undergoing the greatest change is the control grid to cathode or input capacitance of the tube. Since this input capacitance is in parallel with the tuned grid circuit of the stage, it is only natural that its resonant frequency will change with variations in the tube capacity.

Circuit detuning

R. E. Freeman of Hazeltine has shown* that the change in capacity is about $2\frac{1}{2}$ micromicrofarads. Curves taken from an experimental set-up using typical circuit components show changes of six or more kilocycles in the resonant frequency of the grid circuit when the bias is changed. Fig.

*Proceedings of the Institute of Radio Engineers, Nov. 1938, pages 1360 to 1366. Figs. 1, 5, 6 courtesy of the I.R.E.

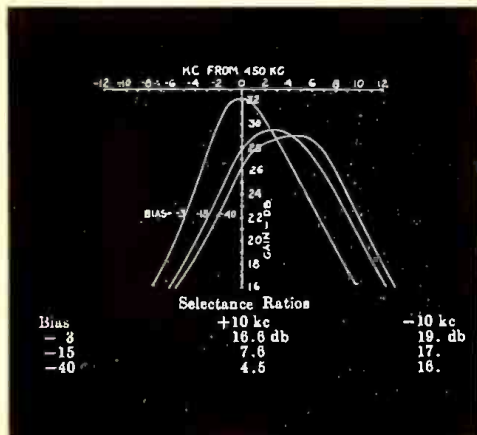


Fig. 5—Overall I.F. response as measured by Freeman for various values of grid bias. Note that the selectivity is less when the stage becomes detuned.

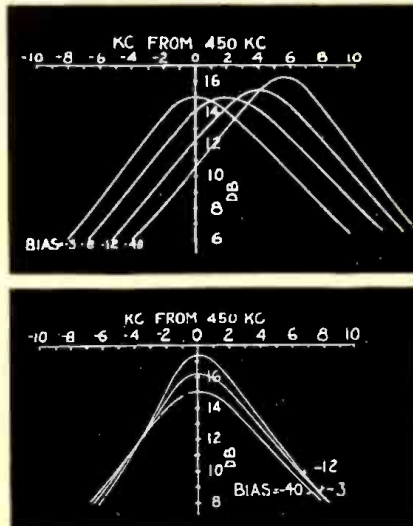


Fig. 1A—Top curves show detuning caused by varying grid bias.

Fig. 1B—Detuning is practically eliminated when inverse feedback is used.

1-A shows the amount of detuning in the grid circuit caused by changes in the bias of the amplifier tube. Fig. 1-B, which will be discussed later, shows how inverse feed-back reduces the detuning to a negligible amount.

In order to determine what effect the grid bias had on a properly aligned receiver of commercial manufacture, the I.F. channel of a typical all-wave receiver was aligned according to the accepted procedure—namely, A V C shorted out and the signal fed into the converter tube. In order to provide visual proof, a frequency-modulated oscillator and oscilloscope were employed as recommended by the manufacturer.

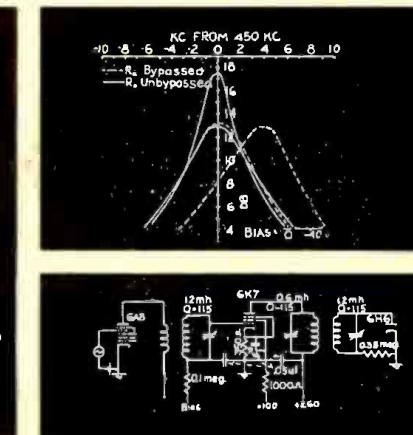


Fig. 6—At the top the effect of degeneration in reducing the detuning is shown by the solid lines. Bottom shows circuit used for making tests.

The I.F. response is shown in Fig. 2-A, and it is the best obtainable for that receiver. Next the grid (AVC) bias was manually adjusted to a value equal to that developed by the AVC for a popular New York station. In Fig. 2-B is shown the new pattern on the screen of the oscilloscope. Only changes in the set-up were the bias on the receiver's I.F. and the gain on the vertical amplifier of the oscilloscope. The change in the pattern was due merely to the change in the bias as predicted by Freeman.

Since it appears that the I.F. of the set is at the wrong frequency, the oscillator frequency was varied slightly in an effort to bring the two traces back together. It was impossible to bring the traces back together so that they would coincide. Inspection of Fig. 2-B shows definitely that the two traces are not identical, which means that the I.F. response characteristic is no longer symmetrical. To obtain a coincidence of the curves, it was necessary to readjust the I.F. trimmers in the receiver.

Asymmetrical I.F. curves

Mr. Freeman in reference to his curves states, "Inasmuch as higher impedance transformers, and tubes having greater values of C_{gp} are often used, the case is not an exaggerated one. When automatic volume control bias is used on such an amplifier, the detuning causes considerable asymmetry as well as loss of adjacent-channel selectance (selectivity). With very strong signals, the selectance ratio is relatively unimportant but audio-frequency distortion may then occur due to unequal transmission of the side bands and the carrier. In the case of overcoupled (high fidelity) transformers, an asymmetrical response curve results with large automatic volume control bias, and the over-all fidelity suffers."

Fig. 3 shows pictorially the relationship between the signal (carrier and side bands) and the response characteristic of the I.F. channel. When the set is aligned at maximum sensitivity, the carrier coincides with the I.F. peak of the set. But when the sensitivity is reduced by increasing the bias, the carrier and the I.F. peak no longer coincide—the signal is detuned.

If the resonant circuits in the set are to change so much, from no bias to a bias equal to that ordinarily encountered in normal set operation, it is apparent that our present advocated methods of alignment need revision. Fig. 5 shows how the over-all I.F. response characteristic varies with bias changes.

While so far the discussion has been in reference to the I.F., the same conditions are true for the high-frequency circuits in the receiver. Naturally the effects will be most noticeable at the

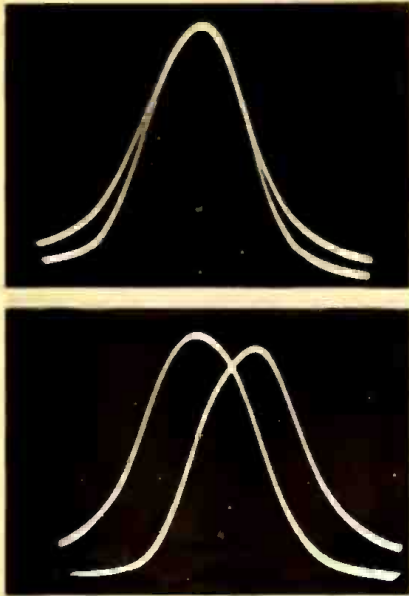


Fig. 2A—Resonance curve for a properly aligned superhet shown at top. Fig. 2B—When the sensitivity is changed, the I.F. becomes detuned.

high-frequency end of the band, since a $2\frac{1}{2}$ micromicrofarad change is a greater percentage of the circuit capacity when the condensers are nearly unmeshed. In television receivers it is extremely important to nullify the capacity change—a method of doing so will be discussed. However, in most broadcast receivers, the R.F. circuits are quite broad and a slight detuning is not serious; but since a dynamic alignment procedure should be used in the I.F. it is no additional trouble to use it in the R.F. as well.

Before getting into the dynamic alignment procedure, it is desirable to consider Mr. Freeman's method of overcoming the detuning effects of the tube, particularly since it will be used in many of the future receivers.

Although inverse feedback has been synonymous with audio circuits, now it is being advocated for use in the high-frequency circuits. One method

of introducing feedback into the circuit is by changing the low side of the trimmer condenser from the coil to the cathode of the tube which is connected to an unby-passed 15 ohm resistor. Fig. 2-B shows the reduction in the detuning when such a change is made. However, because of mechanical difficulties, the serviceman is cautioned not to attempt this change.

A second method of introducing inverse feedback is accomplished by removing the cathode by-pass condenser in those sets having a cathode resistor of about 300 ohms. It happens that the 300-ohm resistor commonly used in sets provides about the right amount of feedback. The reduction of the detuning when the cathode condenser is removed is shown in Fig. 6, as well as the circuit employed for the tests.

The gain of the receiver will be decreased when degeneration is introduced. But since most sets have more than ample gain, nothing is lost. It is a good idea for the serviceman to be extremely careful about making any circuit changes in the receiver—for instance if the customer is one of those few DX or short-wave enthusiasts, nothing should be done that will reduce the gain of the set.

Dynamic alignment

While changes are sometimes possible in the customer's set, many times it is inadvisable to attempt circuit rearrangements. When it is not practical to overcome the detuning effects, the true dynamic procedure must be used—either with resonance indicators or the cathode-ray oscilloscope.

Generally speaking, nearby powerful stations generate AVC biases of about 15 volts. Actually it varies with the signal strength, receiver model, and number of AVC controlled stages. A simple way of determining the amount of AVC voltage developed is through the use of a milliammeter in the cathode circuit of an AVC controlled tube. By tuning in the stations that the customer normally listens to, the serviceman can figure the average bias in terms of the cathode current. Or if a tuning meter is employed, its aver-

age deflection or shadow variation can be noted.

Because the cathode current is dependent upon the bias, it is possible to apply a bias to the tube equal to that developed by the AVC and use the cathode current as an indicator of the proper amount of bias. Fig. 4 shows how the fixed bias should be introduced to the AVC circuit. The battery bias is varied by the setting of the potentiometer. The AVC line is broken either at point A or B and the battery bias connected to the AVC line and ground. In many cases it will be possible to merely connect the bias between ground and point A without opening the AVC circuit.

Adjusting external bias

The battery voltage is then adjusted until the cathode current is equal to average current that flowed when tuned to the various stations. In the case of tuning indicators, the bias is adjusted until the indication is equal to the average produced by the stations.

(Since all these adjustments are based on signal strengths, the serviceman should take into account, if present, any great differences in signal strengths between the shop and the customer's home.)

After the AVC voltage has been properly adjusted, the set is aligned in the usual manner.

Should the customer want extreme sensitivity, it is essential that alignment take place at or just before the AVC takes hold. Only by alignment under these conditions can full advantage be taken of all the gain in the set.

While these measurements or adjustments may seem rather involved, they are quite simple. When a tuning indicator is used in the set, and if the serviceman desires to use it as an indicator for alignment, it is not at all necessary to disturb the AVC line of the set. The action of the tuning meter is observed for the various stations and the average noted. Then the output level of the signal generator is adjusted so that it causes a
(Continued on page 30)

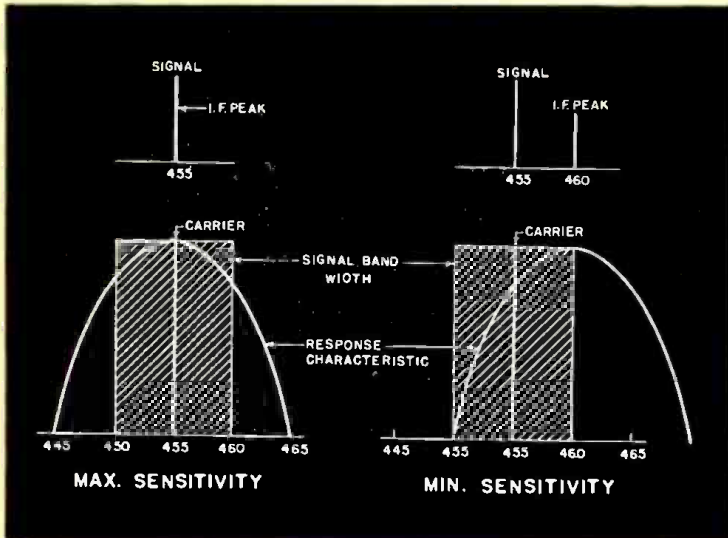


Fig. 3—When a receiver is aligned at maximum sensitivity, the I.F. peak and signal coincide. Reducing set sensitivity causes a shift in the I.F. peak and as a result the side bands of the signal are discriminated against, causing distortion.

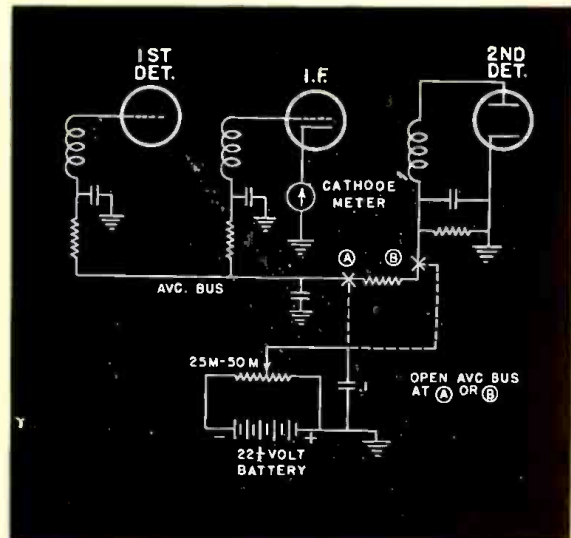


Fig. 4—Circuit employed for biasing the AVC system to such a value as exists for normal operation of the receiver. A variable battery voltage is substituted for the AVC bias.

ELECTRICAL FLASHES

Crosley unveils 1939 Shelvador; Philco enters field

★ The current period, from mid-December to mid-January, will reveal most of the year's new refrigerators. Crosley, Gibson, Kelvinator, Westinghouse and others introduced new merchandise early this month. Stewart-Warner plans a big national convention at the Edgewater Beach Hotel, Chicago, Jan. 5-7. Norge will hold its convention Jan. 9-11 in Detroit.

New numbers in major appliances will also be seen at three shows in Chicago during the week of Jan. 8. Two of them are home furnishings events, to be held at the Stevens Hotel and at the Palmer House. The third will be staged by permanent exhibitors at the Merchandise Mart.

General Electric plans a feature series of traveling shows. It is said that Leonard will invite jobbers to special meetings Jan. 6-14, at Detroit.

CROSLY ANNOUNCES 1939 STREAMLINED SHELVDOR

★ Three new electric refrigerator models are now being shown to dealers over the country by Crosley distributors and district managers. Active in the field also are Crosley Corp.'s Thomas W. Berger, general sales manager, and Neil Bauer, assistant sales manager.

Cabinets have been redesigned in new streamlines, with one-piece construction, electrically welded into one complete unit. Rock wool insulation is sealed in, and the cabinet finished in durable white dulux. Hardware is chrome finished and of massive



Streamlined to please the eye, the new, improved Crosley Shelvador makes its bow.

streamline design. The porcelain food compartment has an acid-resisting stainless bottom, and each model is provided with an automatic interior light.

All include new and improved design in the built-in shelves-in-the-door, and the electro-saver hermetically sealed mechanism. A new evaporator is set off by an attractive radio-type temperature control of blue tennite and provides 18 different temperature adjustments.

Other new features include two-position sliding shelf, ovenproof pottery set, consisting of three colored bowls and lids, with a modernistic pitcher completing the set. Clear glass jars with close-fitting lids are also included for storing leftovers in the shelves-in-the-door. The quick release cube tray has been newly designed and improved. A fast-freeze compartment is conveniently placed in the evaporator and the smooth surfaces inside and out make cleaning easy. Aluminum trays and grids speed the freezing of ice cubes and desserts. The two larger-sized models have self-sealing double vegetable crispers. A non-refrigerated storage bin is provided in the lower part of the cabinets of all models for extra supplies of bottled and canned goods. If desired, a radio may be installed in lieu of the storage bin.

There are three models in the deluxe line, with capacities of 4½, 5½ and 6½ cubic feet.

PHILCO ADDS ELECTRIC REFRIGERATORS

"Starting with 1939 a subsidiary of the Philadelphia Storage Battery Company will manufacture, and Philco Radio & Television Corporation will sell a new line of Conservador refrigerators," announces Larry E. Gubb, Philco's president, who adds:

"Philco's program for the refrigerator business will be first to build a solid foundation. We believe there is a place for us in the industry with a quality product backed by sound merchandising.

"Contracts for distribution of Conservador refrigerators will be separate and distinct from contracts for distribution of Philco radios. In some cases the distributors and their terri-

REFRIGERATOR FOR FARM KITCHENS



An oil-burning refrigerator, for dealers to sell "beyond electric lines." It has an automatic flame, burns kerosene, and is said to operate at a cost of \$10 a year. A "Superfex" by Perfection Stove Co., Cleveland.

tories may be the same. In most cases they will probably be different. The policy will be to give equal consideration to applications for distributorships from former Conservador distributors, Philco radio distributors, and in some cases, from distributors who have not sold either in the past. We will be glad to receive applications for 1939 distributorships immediately."

VACUUM CLEANER MEN HAVE SILVER JUBILEE

★ With good prospects for a 1,250,000-unit year, the Vacuum Cleaners Mfrs. Association recently celebrated its Silver Jubilee, meeting at Hot Springs, Va.

Four founding members were honored at the anniversary celebration. They are Fred Wardell, Eureka Vacuum Cleaner Co.; Fred Bissell, National Super Service Co.; H. W. Hoover, the Hoover Co.; and Adam A. Breuer, Breuer Electrical Mfg. Co.

Officers and executive board were re-elected, these comprising: president, R. J. Simmons, Birtman Electric Co., Chicago; vice-president, P. A. Geier, P. A. Geier Co., Cleveland; secretary-treasurer, C. G. Frantz, Apex Electrical Mfg. Co., Cleveland; executive board, Messrs. Simmons, Geier, Frantz, Wardell and Hoover, Charles G. Groff, Electrolux Corp., New York, and Julius Tuteur, Electric Vacuum Cleaner Co., Inc., Cleveland.

CROSLEY DEALERS ARE ALREADY AWAY TO A SUCCESSFUL 1939

IMPROVED HERMETIC SEALED UNIT
SHELVADOR CONVENIENCE HALF FOOT OVERSIZE
NEW ECONOMY



REGULAR
4.5 cu. ft.
\$127.50*

REGULAR
5.5 cu. ft.
\$147.50*

REGULAR
6.5 cu. ft.
\$167.50*

*DELIVERED AND INSTALLED... 5 YEAR PROTECTION PLAN \$5.00 ADDITIONAL... PRICES SLIGHTLY HIGHER IN SOUTH AND WEST

REFRIGERATION'S NO. 1 SALES APPEAL • THE CONVENIENT SHELVADOR PLUS

CROSLEY LOW PRICES

GIVE DEALERS A RUNNING START IN GETTING PROSPECTS • CLOSING SALES



-and Now..

3 DELUXE MODELS
1.5 cubic feet 5.5 cubic feet
6.5 cubic feet

with all features of the Regular Line, plus deluxe features as:

- Quick release ice trays
- Sliding and adjustable shelves
- Ovenproof pottery set
- Glass left-over jars
- Vegetable bins
- De Luxe trimmings

Crosley's De Luxe line for '39 is announced, stocked, displayed; already earning profits for dealers.

Crosley is in step with the new march of business, with handsome new refrigerators, advanced in design, and in construction, satisfying every human expectancy in performance, and priced for sales ACTION, which progressive dealers are getting.

You can be sure with Crosley! Sure you are selling the best value on the market, sure you have the easiest refrigerator to sell and sure you'll get your share of 1939 business and maybe more.

THE CROSLEY CORPORATION
POWEL CROSLEY, Jr., Pres.
CINCINNATI, OHIO

THE SMARTLY CONCEIVED AND SMARTLY PRICED "DELUXE LINE" OF NEW 1939

CROSLEY SHELVADORS

ATTRACT CUSTOMERS NOW • ARE HIGHLY SALABLE • AND MOST PROFITABLE



Signal's THE THING

THE RIDER CHANALYST



PROVIDES THE MOST *Fundamental* METHOD OF TROUBLE-SHOOTING

The Rider Chanalyst is universal in application—it is fool proof—it is fast. It provides the logical method of trouble-shooting because it operates on the most fundamental thing in any radio receiver—THE SIGNAL. Regardless of who made it—regardless of where it was made—regardless of circuit design—you can localize the trouble in a faulty receiver quicker with the Rider Chanalyst. You go through the set as fast as you can move the probes

and thus determine exactly where the signal dies—fades—becomes distorted or takes on hum. This method is not only faster—it eliminates guesswork. Testimonials by competent servicemen attest to these facts! But—don't take their word for it—don't take our word for it—get a demonstration from your jobber today—see for yourself! Plan now to save hundreds of hours in the coming year with a Rider Chanalyst!



Professor Probe Says:
"THE OPERATING VOLTAGES ARE NORMAL, BUT—There's No Signal!"

"The operating voltages of a radio receiver may measure absolutely normal and yet that set can be completely inoperative or the signal weak because of any one of the following common faults:

"Open coupling or blocking condensers. Incorrect alignment. Poor tuning. r-f or i-f grounds. Shorted r-f or i-f transformer turns. Open high pass condenser. Low-Q tuned circuits. Incorrect oscillator frequency. Defective oscillator padding condenser. Poor tube-prong socket contacts. Faulty control action in AVC or AFC circuits.

"These defects influence the signal but not the operating voltages, therefore, operating voltage tests are not all-embracing fundamental tests. The Rider Chanalyst is the ONLY single instru-

ment which, by tracing the signal (the most fundamental all-embracing test) through r-f, i-f and a-f circuits, most rapidly localizes these and all other defects.—AND, the Chanalyst also provides means for making secondary tests, such as determining operating and control voltages.

"Next month I shall give other examples to demonstrate that in radio trouble-shooting — 'The Signal's the Thing.'"

In the meantime, remember
"There's Only ONE Rider Chanalyst. Compare it with ANY other instrument."

GET A DEMONSTRATION

JOHN F. RIDER



The RIDER Chanalyst

SERVICE INSTRUMENTS, INC., 404 FOURTH AVE., NEW YORK CITY

DYNAMIC TESTING

(Continued from page 27)

deflection equal to the average of that caused by the stations. Then the receiver is aligned for maximum indication on the tuning indicator.

This method can also be used with a vacuum tube voltmeter connected across the AVC line, employing it in a manner similar to the tuning indicator. This tuning indicator method of alignment is particularly advantageous, since the serviceman can get an idea of the average indicator deflection while the set is in the customer's home and connected to his antenna. Of course, if the cathode-ray alignment is desired, the use of the tuning indicator is not possible.

Manual gain control

Though no mention has been made of sets having manual gain controls, the same procedure and theory applies to those receivers as does to the AVC sets. It is not necessary, however, to use an external bias, since adjustment of the manual gain control automatically accomplishes the desired voltage changes.

Some may feel that this procedure is unnecessary in view of the fact that there has been no apparent difficulty noticeable to date in alignment methods. However, if extremely careful and accurate alignment is necessary, then this true dynamic alignment method is essential; for the changes caused by the varying bias are much greater than the imperfections in alignment caused by usual routine alignment methods.

Occasionally one hears servicemen comment that the set sounds no better and sometimes worse after alignment—it is conceivable that this lack of improvement in the performance is because alignment takes place at maximum sensitivity instead of at the sensitivity normally used.

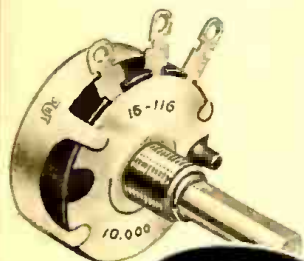
GOLENPAUL ANSWERS SERVICEMEN'S QUESTIONS

Rubbing shoulders with radio servicemen from coast to coast . . . frequently addressing gatherings here and there . . . always ready to listen to the problems of servicemen and to advise them—Charley Golenpaul of Aerovox Corporation picks up a lot of questions in the course of a month. Realizing that one man's problem may be that of a thousand other servicemen scattered throughout the country, Charley Golenpaul has made available to our readers typical questions and answers that came up at a recent meeting in New Jersey:

Q. Why do radio parts manufacturers have list prices?

A. Because list prices serve to protect the trade discount structure for everyone concerned. In other words, some servicemen are foolish enough to tell the set-owner what parts are required for a given repair job. The set-owner has often been known to

3 Great Engineering Features



Make **IRC**

CONTROLS Permanently QUIET

All pioneered and perfected by IRC . . . All three available only in IRC Type CS Volume Controls . . . and at ordinary control prices.



NO SLIDE . . . NO FRICTION

Metal-to-metal, sliding contact between rotor arm and end terminal is "out." Noise hasn't a chance. The IRC Silent Spiral (positive contact) Connector sees to that.



THE GLIDING ELEMENT RIDER

Instead of a single "rough-riding" contact to element, five separate spring-like contacts give a cushioned "knee-action" effect. Contact acts independently; each tracks smoothly in perfect unison; each is plated, rounded, smoothed to avoid abrasion and wear.



SMOOTH AS GLASS . . .

The ideal surface for noise-free contact is supplied by the famous IRC Metallized type resistance element permanently bonded to a moisture-proof bakelite base. You can actually feel the difference as the 5-Finger Knee Action Contactor is rotated across this element.

INTERNATIONAL RESISTANCE COMPANY
401 N. BROAD ST., PHILADELPHIA

go to the jobber's store and to ask for such parts. A serviceman also is frequently guilty of showing the actual manufacturer's literature or catalog to the set-owner, pointing out just what parts are needed. Now if the catalog is in terms of list prices, there is no particular harm so far as prices are concerned. These list prices which provide a profit margin for the serviceman by way of his trade discount, justify a certain charge for parts as well as labor. If the printed prices were net, or serviceman's cost, then the set owner would immediately feel he should get them at that price.

Of course the whole idea of discussing with the set-owner the specific parts required is absolutely wrong. The serviceman should not discuss details—no more so than a doctor or surgeon will tell just how the cure is to be effected. The serviceman is the doctor or surgeon: the customer should have full confidence in the serviceman's experience, skill, honesty. How the job is to be done, and what parts are to be used, is strictly the serviceman's own business. The serviceman must assume the dignity of a specialist. He must collect for his experience, knowledge, skill.

Q. Should the serviceman show the set owner what parts require replacement?

A. Certainly not. It's very poor business to show the customer precisely what has to be replaced, and the required new parts, especially by type and values and price. To do so is simply to encourage the set-owner to try to buy the parts himself, and do his own servicing. Remember, three quarters of a servicing job comprises the correct diagnosis. After the trouble has been ascertained, the rest is relatively simple. You can talk in general terms about a condenser having to be replaced, or burnt-out resistor, a transformer that is shot; but, don't come down to specific details!

Q. Should defective parts be turned over to the set-owner?

A. You can return the defective parts to the set-owner after the set has been serviced and bill rendered. This is only by way of supporting the charges covered by the bill, especially so if the material costs run unusually high. Of course if the set-owner asks to have the defective parts turned over to him, it is frankly an indication of lack of confidence in your work and charges. Consequently, the serviceman should do everything in his power to build up a greater confidence in his customers.

Q. What are we going to do about the set manufacturer who sells auto-radio sets directly to consumers at no higher prices than the serviceman pays?

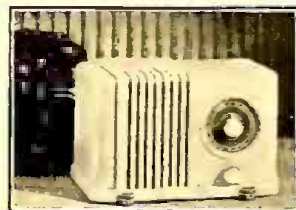
A. This situation, while seemingly troublesome at first, is really quite simple and eventually solves itself. The set manufacturer in such case evidently has no acceptance in the jobbing and retailing trade, and therefore uses price as the sole incentive to get buyers. The serviceman's best comeback is to ignore the

DEWALD

stresses

VERSATILITY • BEAUTY PERFORMANCE

SINCE 1921 this fine name has stood at the forefront . . . and our 1939 line is more varied than ever before! You can't go wrong when you merchandise the time-tested De Wald way!

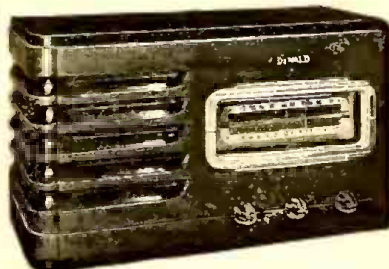


SENSATION! Bantam in Colors!

Truly a handful of radio that's a miracle of tone and performance! Elegant styling, choice of colors in plastic cabinetry. High selectivity and sensitivity. New beam power output, illuminated duo-colored dial — protective speaker guard grille, 4 tubes, general broadcast and state police bands, 166-555 meters. MODEL 406.



MODEL 648—Sensational, sensitive all-wave superhet with new drift-proof automatic mechanical push button tuning. 7-tube AC-DC—2 bands, 16-51 and 175-555 meters or (Model 650) 3 bands, 12½ to 555 meters. Latest cabinet styling with new organ grille. New type duo-colored slide dial, indirect flood lighted. 6½ inch Dynamic speaker. Beam power output.



MODEL 645—Popular priced 6-tube AC-DC. Hi-gain superheterodyne. Duo-colored, easy-vision slide dial. High ratio vernier tuning. Multi-purpose tubes with extra tube efficiency. Beam power output. Large dynamic speaker. Automatic volume control.

Above models and our complete line, from 4 to 11-tube sets, available in export models in all voltages and frequencies.

Write for complete literature

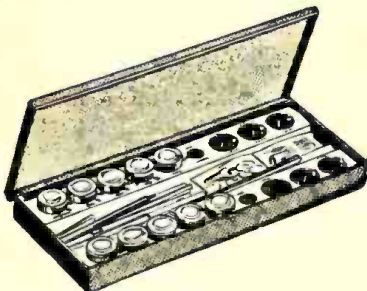
PIERCE-AIRO, Inc.
440 Lafayette St., New York, U.S.A.

Licensed by R.C.A., Hazeltine, etc.
Cable Address: DAWALD NEW YORK



• Do yourself a good turn . . . and let that good old scout, "Old Man Centralab," help you with his ADASHAFT kit . . . housed in a swell metal box, hinged, contains ten Midget Radiohoms, five types of attachable shafts, etc.

This kit will enable you to do some mighty fine "deeds" for more than 400 different makes of receivers . . . actually thousands of different models. See your jobber.



Included in the ADASHAFT KIT

are the following: 10 Adashaft controls, 5 Midget Switch covers, 6 4-inch Adashafts, 1 10-inch Adashaft, 2 3-inch Auto type Adashafts, 1 6-inch Auto type Adashaft, 2 slotted Insacups, 2 square hole Insacups, 1 300 ohm Bias Resistor, 5 Ground Straps, 10 "C" Washers, 5 Switch Insulators, . . . 1 Instruction form 648.

Centralab

Milwaukee, Wis.

Division of Globe Union, Inc.

BRITISH CENTRALAB, LTD.
Canterbury Rd., Kilburn
London N.W. 6, England

FRENCH CENTRALAB CO.
118 Avenue Ledru-Rollin Paris XI, France

SERVICE NOTES

line or brand of set completely. He should concentrate on accepted brands or lines, so as to get around the low price situation created by the direct-selling manufacturer. The same thing applied to parts sold by their manufacturers direct to consumers at lowest prices.

CONNECTIONS TO UNUSED TUBE SOCKET TERMINALS

An important point to remember when tracing wiring is that frequently wiring or parts are connected to tube socket terminals which ordinarily would be unused since no tube prong connects to these terminals. For example, a 6K7 tube has only 7 prongs, thus there is one unused socket terminal. In some sets such unused terminals are employed to anchor small parts such as resistors and condensers, also as a junction point for two or more wires.

G-E REMOTE CONTROL

In the current line of more expensive General Electric receivers, remote tuning with remote volume control is featured. This control is accomplished by extending the push-button tuning circuits by means of a cable to the remote control box.

Changes in the volume level are affected through the use of a motor on the volume control shaft as shown in the accompanying diagram. A reversible motor is employed and controlled by two switches on the remote box.

For station selection, the usual type of electric motor mechanism with a split stator is employed. Because of the split stator, the device is homing (goes directly to the selected station).

For push-button tuning on the receiver, 13 buttons are employed for selection of 13 stations. A 14th button turns the set off. Since a latching type of push buttons is used, depressing any station key automatically turns on the power for the set.

The remote control keys are non-latching in order to avoid any interference with the buttons on the receivers. Only 6 of the stations have been extended for the remote control which is plugged into a socket on the rear of the set. To avoid the possibility of keeping the tuning motor running by pressing two buttons simultaneously, single-pole double-throw switches are employed at both the receiver and the remote position.

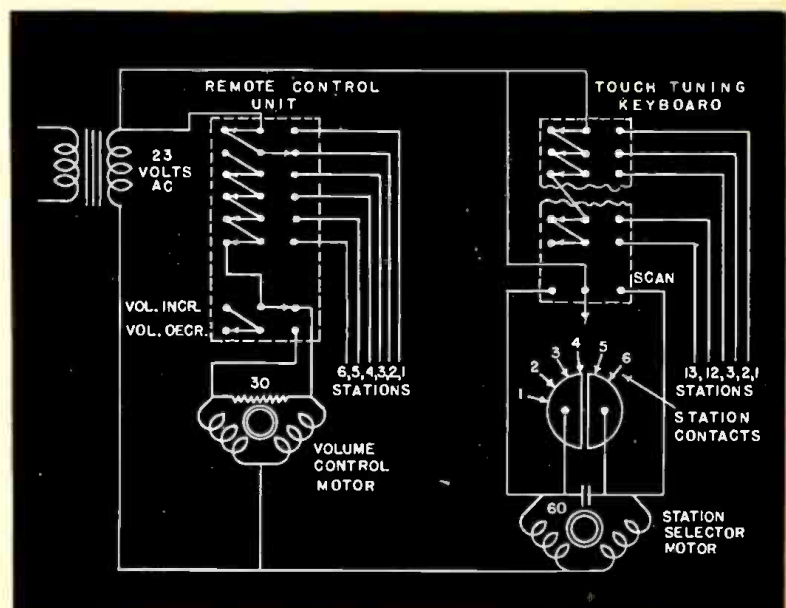
The volume control motor electricity is derived from the same transformer as the tuning motor. It is possible to change the volume of the set only after the station button on the remote control has been released because of the interlocking circuit.

A scan switch for rapid manual tuning from one of the bands to another is provided on the receiver. It is a double-throw switch, normally open, which permits operating the motor in either direction.

SERVICEMEN 75 PER CENT INDEPENDENT

A complete survey of the 22,000 members of Radio Manufacturers Service, made by Robert F. Herr, manager of the Philco parts and service division, reveals that 75.6 per cent of these servicemen are independent, with 24.4 per cent working as dealers' servicemen. All of the servicemen who are independent do and have done work for dealers, with approximately 50 per cent of them doing work for dealers on a regular basis.

More than 60 per cent of the grand



Schematic of the wired push-button remote control used by G-E. Note use of separate motor to control volume and double-pole station push buttons.

COILS ARE NOT JUST WIRE

—when they're Meissner Coils!

REMEMBER this—most replacement coils are built to a plus or minus 25% tolerance. Consequently, certain radio sets which have a preponderance of parts of +25% by accident are extremely hot—and dangerously near the point of oscillation. These wide tolerances create a serious problem because the addition of a +25% coil to a set already too hot would produce an inoperative condition of oscillation.

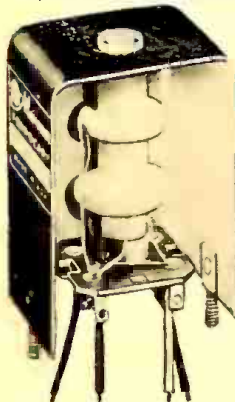
Meissner Coils—built of high quality materials to the most exacting engineering requirements—are held to a plus or minus 5% tolerance and therefore are perfect replacement parts for any radio.

DOUBLE-TUNED I. F. TRANSFORMERS

This is the ideal replacement transformer for Servicemen and Experimenters who demand the utmost in I. F. transformer performance at low cost. Unusually high gain—extremely wide frequency range—and double-tuned with Meissner Low-Loss Ceramic Bass Mica Di-electric Trimmer guarantees you a superior, more efficient transformer.

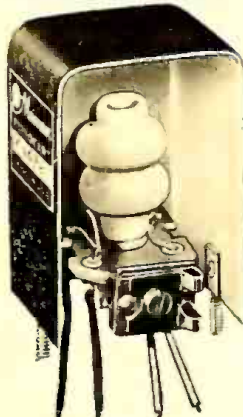


"UNIVERSAL-ADJUSTABLE" ANTENNA - R. F. - OSCILLATOR COILS



It is no longer necessary to order hard-to-get exact duplicates when an Antenna, R. F. or Oscillator coil needs replacing. These new adjustable-inductance Ferrocart (Iron Core) coils will replace the Broadcast Band coils in practically any receiver! The Oscillator coil is also designed to provide complete adjustment for receivers having intermediate frequencies from 175 to 520 kc. and may be used in either cut-plate tuning condenser or padding condenser circuits!

FERROCART ANTENNA AND R. F. COILS



Constructed with Iron Core material which adds substantial gain, and increases the selectivity of radio frequency transformers by improving the "Q" of the windings.

These (Iron Core) coils are designed to cover the broadcast band (540 to 1600 kc) with a 365 mmf condenser. Will work with any of the standard types of tubes, including metal and the battery-operated 2-volt series.

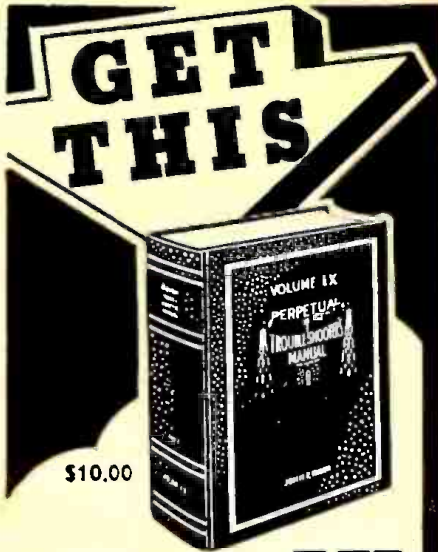
SEE YOUR PARTS JOBBER
OR WRITE DEPT. T-12
MT. CARMEL, ILL.



Meissner

MT. CARMEL, ILLINOIS

"A FAMOUS NAME FOR TWO DECADES"



VOLUME IX RIDER MANUAL

JUST OFF PRESS

ANOTHER great Rider Manual—Volume IX, covering 1938-39 American-mode radio sets. Here is one of the most important volumes of them all. Every serviceman—*bor 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 index. Put this great volume to work for you right away, — place your order with your jobber without delay.

- Vol. IX — \$10.00—Covering 1938-39
- Vol. VIII — \$10.00—Covering 1937-38
- Vol. VII — 10.00—Covering 1936-37
- Vol. VI — 7.50—Covering 1935-36
- Vol. V — 7.50—Covering 1934-35
- Vol. IV — 57.50—Covering 1933-34
- Vol. III — 7.50—Covering 1932-33
- Vol. II — 7.50—Covering 1931-32
- Vol. I — 7.50—Covering 1930-31

OTHER RIDER BOOKS

AFC SYSTEMS—144 pp. Hard Covers \$1.00
CATHODE RAY TUBE—366 pp. 450 illus. . . . \$2.50

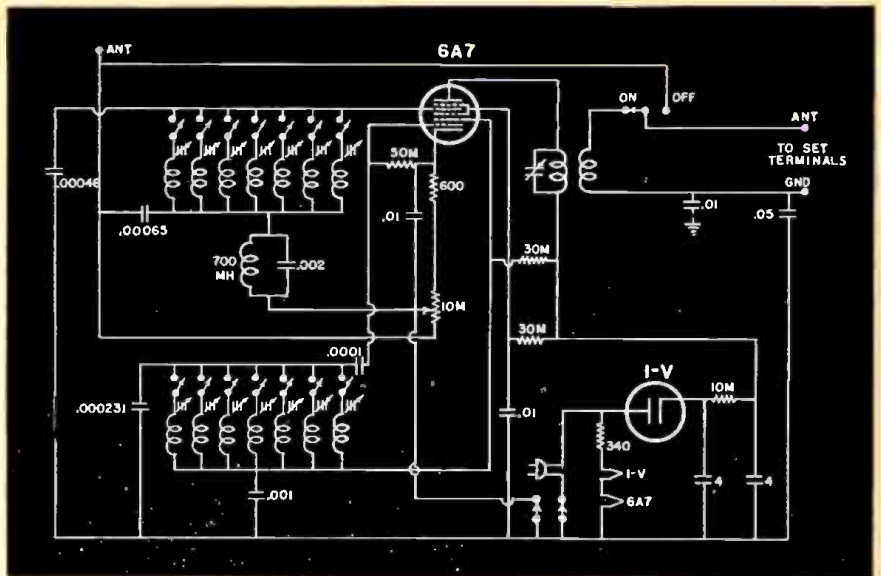
Other Rider Books: Servicing Superheterodynes; Aligning Philco Receivers—\$1.00 each. "Hour a Day with Rider" books on AVC Control; on Resonance & Alignment; on A-C Distribution in Radio Receivers; on D-C Distribution—60c for each book.

JOHN F. RIDER, Publisher
404 Fourth Ave.,
New York City

DID YOU SAY 9?

YOU NEED ALL 9 Rider MANUALS

YES, I SAID 9!



The Meissner remote control adapter works on the converter principle.

total of servicemen surveyed are engaged in the selling of new radios. In addition, 80 per cent of the remainder signified their desire and ability to sell new radio sets if they could obtain a proper and equitable remuneration arrangement with the dealer.

WIFE SOLVES PROBLEM OF ONE-MAN SHOP

Ruperto Cruz has solved the one-man radio shop problem by teaching his wife, Emilia, the mysteries of servicing and testing. While he calls on 200 or more customers in New York's Greenwich Village, Mrs. Cruz tends their store at 326 West 4th Street, does housework and still finds time to check tubes, condensers, resistors and do minor repairs.

New customers often are amused to find a woman pulling a set apart to find what ails it. But they soon discover Mrs. Cruz knows her stuff.

Besides "knowing radio" Mrs. Cruz has some definite ideas on selling and servicing. Her bright smile and honest opinions have helped bring many customers in the ten years the Cruzes have been in the same store, and she is a firm believer in the "square deal." She thinks manufacturers should style their radios more with an eye to the woman buyer. And she believes the table-size combination set is to be the big seller in 1939 for apartment districts like the Village.

The Cruzes have found direct-mail advertising gives the best results. Each October (the time when everyone in New York moves) they distribute business cards and handbills, using an old-time Greenwich Village resident to do the job. He "talks up" their shop with the folks he knows and at the same time drops a reminder to new residents. The Cruzes also send out reminders twice a year, advising a check-up of sets and stressing the free tube-testing angle of their service.

MEISSNER REMOTE CONTROL

The remote control unit offered by Meissner can be used on any type of radio set, since it operates on the converter principle.

The remote control unit is connected to the antenna wire at the set and the output of the unit connected across the antenna and ground posts by means of a cable. Power is obtained from the nearest electrical outlet and may be AC or DC. The circuit is shown here-with.

Inductance-type tuning is employed in both the antenna and oscillator circuits. To simplify station set up, the two circuits are ganged together, thus requiring only one adjustment per station.

The usual type of station selecting switch having a latch bar is employed. The off position turns off the power to the control and transfers the antenna from the converter input to the output circuit which goes to the receiver.

Volume control is incorporated in the device which permits changing the gain of the converter tube. This control is connected to the antenna and cathode circuits.

In operation it works just like the converter in any superhet receiver. The radio set, which is connected to this remote control, is tuned to an unused channel in the broadcast band at the low-frequency end. When operated with a super receiver, the combination becomes a double superheterodyne receiver. If used with a T.R.F. set, the combination is a superheterodyne.

Because it operates as a converter and is connected to the antenna circuit, it may be employed with any receiver without changes in the set.

SERVICING IS SELLING

★ The radio service man must regard himself as a man in the retail business if he is to succeed to any appreciable extent, declared Robert F. Herr, manager of the parts and service division of Philco. He ampli-

**LOW
PRICE**

...is only one reason why
**YOU'LL SELL LOTS OF
THESE RCA MIKES!**

RCA JUNIOR VELOCITY MICROPHONE



Recommend this mike to those who want the best at low cost. It's the finest popular priced microphone RCA has ever created. Provides peak performance, is attractive, and offers the rugged construction and long life of RCA Velocity Microphones. Alnico magnets are used to provide exceptionally high signal-to-noise ratio. Is adaptable to most input circuits because of three output impedances. And it costs only \$43 50 list, less stand.

RCA AERODYNAMIC MICROPHONE



Here's a P. A. winner! It costs only \$26 50 list, less stand. Is so small it can be easily carried in the palm of your hand. Yet has quality features including excellent frequency response, fine tone and high sensitivity. Is used to good advantage for close talking. Has new Alnico permanent metal magnet. Requires no external excitation of power.

See your nearest RCA Commercial Sound Distributor for the new RCA Sound Catalog, or write direct to the address below.

ANY SOUND SYSTEM SOUNDS BETTER EQUIPPED WITH RCA RADIO TUBES

Listen to the "Magic Key" every Sunday,
2 to 3 p.m., E.S.T., on NBC Blue Network



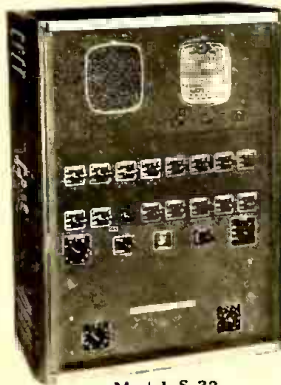
Commercial Sound

RCA MANUFACTURING CO., INC., CAMDEN, N. J.
A Service of the Radio Corporation of America

Centralized
**SOUND
FOR SCHOOLS**

• Here is a golden opportunity for Dealers and Servicemen. The Bogen Junior is expressly designed to enable schools, hotels, institutions, Department Stores, etc., to have the combined facilities of an intercommunication system and allwave radio tuner plus provision for a phonograph input all in one deluxe unit. Here are some of its desirable features.

- Provision for Remote Control
- Visual Volume Indicator
- Talk-Back Operation
- Selective or group calling
- Master emergency switch
- Frequency equalizer for tone
- Expansion Capacity up to 32 rooms



Model S-32

These units are furnished with a steel door and fool-proof lock not shown in illustration. Speakers housed in beautiful walnut baffles designed for tilt-angle wall mounting to assure correct acoustics. Bogen school systems have the approval of leading educational institutions throughout the country. See your Jobber at once or write direct for Descriptive Literature to Dept. RT.

DAVID BOGEN CO. 663 BROADWAY
INC. NEW YORK, N. Y.

maybe
YOU'RE
the man



The man we're looking for has a successful radio service business. His location is free from interference with already established Tung-Sol agents. He has the technical knowledge and equipment to sell radio tubes. He turns his tube stock over every three or four months. He has a clean, attractive establishment in which to use display material. He maintains standard prices. He will systematically make monthly reports of consigned stock with remittance for tubes already sold. He has the foresight and judgment to appreciate an unusual proposition which multiplies his tube profits without tying up capital. **Maybe You're the Man.** If you think you are, write for details.



TUNG-SOL LAMP WORKS, Inc.
Dept. C
Radio Tube Division
Sales Offices: Atlanta • Chicago • Dallas
Denver • Detroit • Kansas City • Los Angeles
New York • General Offices: Newark, N.J.

THE ONE Complete LINE



AEROVOX, through your local jobber, offers you every type of essential condenser.

ELECTROLYTICS

Largest variety of metal-can dry electrolytics produced by pioneers in this field.

Wet electrolytics in popular voltage ratings and capacities. Ingenious venting. No leakage.



CARDBOARD-CASE

Cardboard-case dry electrolytics. Large and small sizes. Handy universal mounting lugs.

PAPER

Licensed, metal-case, bakelite-case units. Rubber-molded units. Paper tubulars.



TRANSMITTING

Transmitting condensers in oil-filled and wax-filled types. Round and rectangular cases.

MICA

Thirteen different types of molded mica, metal-case, and porcelain-case mica capacitors.



PADDING

Padding mica condensers for accurate capacity settings.



AUTO RADIO

Also auto-radio condensers, noise eliminators, etc., etc.

CATALOG: Ask local jobber or write us for latest edition. Covers largest line of condensers and essential resistors.

Overseas inquiries invited. Cable address: RADIWAC.

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

SERVICING SETS

fied his statement by explaining that the serviceman is really selling merchandise, whether it be service, repair or parts, and that the use of modern merchandising methods would insure success.

"The serviceman, these days," said Herr, "is becoming more promotion-minded if he intends making more than just a mere existence. He must take every advantage of sales possibilities to supplement his income from what is strictly service repair work. He must be on the alert for new customers to take the place of those he has lost through changes of residence or other reasons.

"To expand his business the service man should formulate some definite plan of action and follow it. For example, he could prepare monthly lists of his customers who should have new tubes in their sets or who might stand in need of a new aerial. There are those who could be canvassed for extension speaker installations, talk-back sound systems or public address equipment. Once such lists are made it is imperative the service man go out and sell them.

"The serviceman should advertise the fact that he is qualified for complete radio service and guarantees satisfactory results. He should avail himself of all the advertising and sales helps placed at his disposal by the various radio companies.

"To prosper," Herr concluded, "the serviceman must be wise enough to apply to himself the same principles

any successful business man must follow—advertise, promote, sell and profit."

LOUD SPEAKER RATTLES

Distortion and rattles in sets may be traced to sources, such as

- (1) Foreign particles in speaker
- (2) Damaged or defective speaker cone
- (3) Loose voice coil
- (4) Voice coil off-center
- (5) Loose grille cloth

AUTOMATIC TUNING BEST ON LOCAL STATIONS

Generally speaking automatic tuning radio sets should be set up only for nearby stations or ones that provide a strong signal at all times.

In the case of sets using AFC it is imperative that stations that fade or with low signal strength be tuned in manually. When automatic tuning is used for station tuning, it is necessary that the station have sufficient strength to operate the AFC and correct the inaccuracies in tuning. Also the station should not be subject to fading for a stronger station on an adjacent frequency may intercept the automatic frequency control during fading of the desired station—this means that the set would change stations of itself.

Users of automatic tuning sets should be informed that it is preferable to tune the weak or fading stations manually and reserve the push buttons for stations with reliable reception.

CHRONOLOGY OF A BIG IDEA

- February 1938 Dynamic Testing principles outlined and recommended by RADIO TODAY
- March 1938 Vinton K. Ulrich, Technical Editor of *Radio Today*, talks before local service groups on dynamic servicing
- July 1938 Prominent service instrument manufacturer sponsors dynamic testing
- August 1938 Second service instrument manufacturer incorporates basic principles of dynatesting in instruction manual
- September 1938 Another trade magazine features article on "Dynamic and/or Static testing," admitting need for dynatesting procedure
- September 1938 Instrument manufacturer presents talks to servicemen's organizations on complete dynamic testing
- October 1938 Third instrument manufacturer advertises versatile instrument for dynamic testing
- October 1938 Chicago servicemen's group advocates adoption of final test procedure using dynamic servicing principles
- November 1938 RADIO TODAY publishes 10th article on dynamic testing

*When you buy
these radio tubes*

**WE HELP YOU
Sell THEM!**



**GUARANTEED
BY
RCA
(WRITTEN GUARANTEE INSIDE)**

RADIO TUBE

**SEALED and TESTED
at the factory for
YOUR PROTECTION**

RCA feels that every radio service dealer is not only entitled to constructive merchandising assistance but should expect 100% cooperation from the maker of his tubes. In 1938 RCA gave this cooperation and will continue to do so during 1939. *You* do not have to use extra selling effort "to get the goods across" because the public acceptance for RCA Radio Tubes, backed up by sound promotional programs, will do it for you. So stock these tubes and we'll help you sell them.

Over 325 million RCA Radio Tubes have been purchased by radio users . . . in tubes, as in radio sets, it pays to go RCA All the Way.

*Listen to the Magic Key every Sunday, 2 to 3 P. M., E. S. T.,
on the NBC Blue Network*

New Sales Aid Catalog

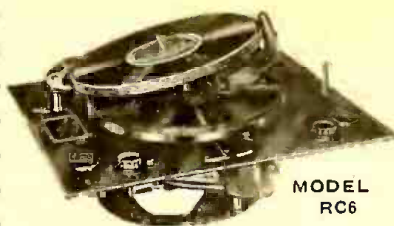
Ask your RCA Radio Tube distributor for a copy of the new 1939 Sales Aid Catalog. Contains many interesting pages of sales help for your use.



Radiotrons

RCA Manufacturing Co., Inc., Camden, N. J.

A Service of the Radio Corporation of America



MODEL
RC6

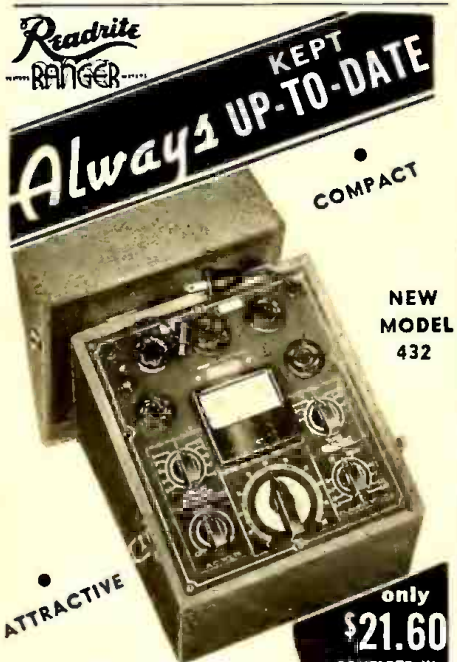
PICTURE OF SOARING SALES

"Garrard" Automatic Record Changers and phonographic equipment mean more sales for YOU. Ask for "Garrard" units in the phono-radios you carry (leading manufacturers use them on request) or feature "Garrard" for custom assemblies and modernization jobs. Cash in on the demand for quality record playing equipment. Push "Garrard" for an "all-time high" sales chart. Write for free catalog No. 53M.

GARRARD SALES CORP. 17 WARREN ST., NEW YORK, N.Y.

GARRARD

Automatic Record Changers



Readrite
RANGER

Always UP-TO-DATE
KEPT
COMPACT

NEW
MODEL
432

ATTRACTIVE

only
\$21.60
COMPLETE IN
QUARTERED-OAK
CASE

TUBE TESTER

Checks All Types Radio Receiving Tubes

- Separate Plate Tests on Diodes and Rectifiers
- Neon Short and Leakage Tests
- Ballast Tube Continuity Test
- Uses Attractive Triplet Direct Reading Instrument 3" Size. (GOOD-BAD) Scale.
- Line Voltage Adjustment
- New Improved Low Loss Switch

Suitable for counter or portable use. Sloping etched panel of silver and black.

Model 431 \$15.90

Checks all receiving tubes. (No ballast test.) Tester uses dependable Readrite Meter. Quartered-Oak case same as for Model 432. Write for Catalog—Section 1219 College Ave.

READRITE METER WORKS Bluffton, Ohio

SERVICING

"MAKE PHONE CALLS AND VISITS," SAYS NIGRO

A business built upon a careful and thorough "follow-up" system accounts for the success of the Radio Sound Engineering Corporation, of Madison, New Jersey, in a town where direct selling methods have failed, according to John Nigro, proprietor. His service-selling program is built mainly upon a checking system which includes periodical telephone calls and visits to homes.

The major part of the business of Radio Sound Engineering is secured in this manner. In a suburban town where residents prefer to buy rather than to be sold, Mr. Nigro has found the answer—a service program which proves to be, in this instance, a valuable set-selling program as well.

STANDARDIZED FINAL TEST PROCEDURE

The adoption of a universal standard of final test procedure for radio service shops affiliated with the Radio Servicemen of America is advocated by Lewis P. Evans, Chairman of the Shop Standards and Practice Committee of the Chicago Chapter.

A thoroughly standardized and complete final test of repaired receivers would lift RSA shops immediately a considerable notch above the general service level in public estimation, holds Evans, and assure not only complete customer satisfaction through guaranteed "good as new" performance, but give needed protection to shops against come-backs and dissatisfaction as well. Further, contends Evans, such final testing could readily be sold to the public as an increase to the average service check.

In sponsoring this idea, Evans is paralleling the recommendation recently offered the service fraternity by Kendall Clough, president and chief engineer of the Clough-Brengle Co., in his new book on "Complete Dynamic Testing, Step-by-Step, with Cathode Ray."

This advocated standardization of test procedure should be of interest to readers of RADIO TODAY who have been following the monthly Dynamic Testing articles which started with the February 1938 issue.

Silvertone 1640

Hiss

★ Some amount of trouble may be caused by the type 83 rectifier tube used in this set. Insert a choke coil in the red plate lead of the 83 tube circuit. A 5 or 10 millihenry value will suffice. It may be necessary to use a choke in the other plate lead as well. Usually one is enough, but two will always cure the trouble.

WHAT ENGINEERS LIKE ABOUT CINAUDAGRAPH SPEAKERS

What engineers like about Cinaudagraph Speakers is the even, high quality of tone and dependability of construction. Furthermore Cinaudagraph offers this fine quality in a complete line of permanent magnet and electro-dynamic speakers from 5" to 18". Investigate the new profit possibilities of comparatively priced Cinaudagraph speakers used so extensively by the country's foremost manufacturers of radio and Public Address equipment.

Write to Cinaudagraph Corp., Stamford, Conn., for new descriptive catalog today.



CINAUDAGRAPH CORPORATION
STAMFORD, CONNECTICUT

BRIDGEPORT JOINS RSA

RSA reports the affiliation of the Greater Bridgeport Radio Service Men's Association of Bridgeport, Conn., under the direction of L. F. Gravlin, chairman; A. H. Stendahl, secretary; and Herbert C. Eisenman, treasurer.

Other groups that have signified their intention of joining the RSA are Fort Wayne, Ind.; Springfield, Jacksonville, and DeKalb, all of Illinois.

Chapter news

Buffalo, N. Y.—Officers were nominated for the election to be held in December. Clarence Redstone, instructor at Buffalo Technical Institute, spoke again on "Radio Service and Theory." Norman Schmeltz walked home with the membership prize money.

Pontiac, Mich.—Members report great success in their campaign to fix up charity sets.

Green Bay, Wis.—A large group attended the first annual banquet at White Lave on Nov. 29.

Danville, Ill.—A weenie roast and picnic was held for members and their families. Russ Lund of Clough Brengle spoke on "Dynamic Testing." Nine new members were accepted.

Peoria, Ill.—The chapter is using a cooperative newspaper ad, news stories and pictures to tell of the work and stability of RSA members.

Washington, D. C.—Nine new members were voted into the chapter; a board of directors with Joseph B. Austin, Jr., president, was organized.

New Bedford, Mass.—Election of officers will be held following an engineering lecture at the December meeting.

Chicago—Classification of membership is going ahead under the direction of Harold Cunningham.

New York City—Officers were nominated for election on Dec. 28. George Conner, of Hygrade Sylvania Corp., illustrated methods of improving tone quality of radios by minor output circuit changes at the Nov. 28 meeting.

Flint, Mich.—The chapter has almost a 100 per cent membership among local servicemen and is using cooperative advertising to boost RSA members.

Duluth, Minn.—The popular round table discussions continue.

Abilene, Tex.—At the next meeting members are to submit a suggested list of prices to compile a standard minimum price for all types of radio work.

Boston—Glen Browning spoke on servicing with the scope and vacuum tube voltmeter. On Nov. 21 a gadget meeting was held when members exchanged ideas on service instruments and tricks. On Dec. 4 George Conners of Sylvania spoke.

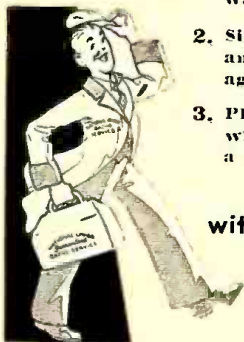
**YOU FELLOWS
WHO USE NATIONAL UNION
RADIO TUBES and CONDENSERS
KEEP ME BUSY GIVING YOU SHOP
EQUIPMENT ALL YEAR 'ROUND**



**Do you know how
easy it is to keep
your shop up
to the minute
with latest high
efficiency test
equipment . . . the
NATIONAL UNION WAY?**

HERE'S WHAT YOU DO:

1. Select the equipment you want.
2. Sign a National Union tube and/or condenser purchasing agreement.
3. Place a small deposit which will be refunded to you as a merchandise credit when your purchasing agreement is completed.
4. Order a small quantity of National Union tubes and/or condensers at the time you sign the agreement.
5. Apply your regular monthly purchases of tubes and condensers against the requirements of the contract.

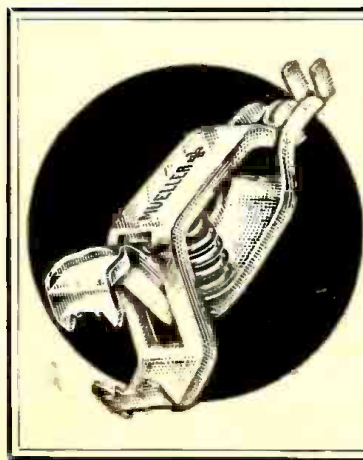


**Come On! Build Customer Confidence
with NATIONAL UNION TUBES and CONDENSERS!**

**FOR NAME OF NEAREST DISTRIBUTOR WRITE
NATIONAL UNION RADIO CORPORATION**

NEWARK, N. J.

RT-1238



MUELLER The Original and Only
Complete Line of

• CLIPS •

- Alligator Clips
- Wee-Pee-Wee Clips
- Copper Clips
- 300 Ampere Clips
- Insulated Clips
- Insulated Grid Clips

KNOWN FOR 30 YEARS AS THE BEST MADE!

Send for Free Samples and Catalog 980

Mueller Electric Co.

1573 E. 31st Street

Cleveland, Ohio

EVERYTHING IN RADIO!

A COMPLETE SOURCE FOR YOUR RADIO NEEDS!

Our immense stock of radio sets, parts and supplies enables you to purchase your entire needs on one order. The Big BA catalog is an encyclopedia of the Radio Industry. You will find all your Nationally Known Favorites shown in this Book and it's FREE for the asking. BA service is better than ever—practically every order is shipped the same day it is received.

Write for Big New Wholesale Catalog

BURSTEIN-APPLEBEE CO. 1012-14 MCGEE STREET
KANSAS CITY, MISSOURI



SALES HELPS

DRAKE DISPLAY

To increase jobber sales of dial and jewel light assemblies, the Drake Mfg. Co., 1713 W. Hubbard, Chicago, has released a dramatic counter display card which seizes attention and also simplifies ordering. By showing all sizes and mountings available, the card helps the customer decide on appropriate supplies. The Drake trademark is featured, in a cunning figure of a duck.

HANG UP A NEW NAMEPLATE

From Hygrade Sylvania Corp. now comes a newly designed outdoor sign, so that dealers may say "Complete Radio Service" and "Set-tested tubes" to passersby. Flange style, it is green and white, and takes a nameplate hooked at the bottom for the dealer's imprint. Overall sign height, with hanger is 16".

Sylvania has also supplied its jobbers with a Christmas streamer, free to dealers, a 30" x 12" splash of color suggesting that "for a merrier holiday season, install new radio tubes." This gives merchants a chance to get Santa Claus promptly into store display and to link him with tube sales.

"MAGIC DISPLAY" BOOSTS SALE OF VICTROLAS



RCA has a "magic" display unit for dealers that promises to cause plenty of consumer interest.

A customer steps up to inspect a Victrola and the device automatically starts the instrument. Outside the store, passersby pause to look at Nipper, the Victor dog. "Touch me and I'll talk to you," reads a card fastened to his collar. Someone tries it—and Nipper invites him inside to inspect the latest models.

Other stunts can be worked on the display, RCA says. The unit is electrostatically operated and consists of a series of relays. Display layout, plus "magic" demonstration unit, cards and sales talk costs \$8. The giant size model of Nipper is priced at \$15.

The flexibility of Triplett's push-button design makes it easy to handle new tubes such as those with the local base—another proof of the non-obsolete features of these models. A spare socket and the push-button testing capabilities make it a simple matter to obtain the proper connections between elements. Testers purchased prior to the introduction of the local tubes can be brought up-to-date replacing the spare socket and making a few simple connections, for which complete instructions are supplied.



ONLY \$39.00

in carrying case

Push Button TUBE TESTER



MODEL 1610

★ Beautiful metal case, black velvet electro finish with chrome fittings. A tester you will be proud to operate and proud to show.

- Tests All Receiving Tubes, including the new 1.5 Volt and 50 Volt Series; the small local base tubes and the 0Z4 and other gaseous rectifiers.
- Ballast Tube Continuity Test
- Separate Plate Tests on Diodes and Rectifiers
- Uses Approved Emission Circuit Constructed to RMA Load Requirements
- Neon Short Test
- Illuminated Dial and BAD-GOOD Scale

MODEL 1611

Combines push-button Volt-Ohm-Milliammeter with Tube Tester of Model 1610, in same type case. Uses plug-in type copper oxide rectifier.
Dealer Net Price..... \$49.50

This new push-button tester catches the eyes of everyone. Compact in size, light in weight and sturdily built with all wiring in orderly cable form, it can be handled easily and safely. The new black velvet finish case with chrome fittings and the attractive colored buttons create an atmosphere of distinction and ultra modernness whether the tester is used on the counter, in the shop or on call in the home.

Dealer Net Price..... \$39.00

SEE THEM AT YOUR JOBBER or WRITE!

THE TRIPLETT ELECTRICAL INSTRUMENT CO.

1912 Harman Ave., Bluffton, Ohio

Please send me more information on

Model 1610 Model 1611

Name

Address

City..... State.....



MIKE GETS A BREAK

STOP UNWANTED SOUNDS!

Solve
Feedback,
Background
Noise,
Reverberation
Problems

SENSITIVE AT FRONT
DEAD AT REAR

Only \$29.50 LIST

NEW SHURE 'UNIPLEX'
UNI-DIRECTIONAL CRYSTAL MICROPHONE

Ask for a Demonstration!

A boost for the "Uniplex" uni-directional crystal microphone appears in a new two-color display card released by Shure Bros., 225 W. Huron St., Chicago. This is a snappy item for jobbers' counters, dramatizing the pickup discrimination of the Uniplex.

Freed Transformer Co. is now packaging its products in attractive three-color container. Merchandise in each box is plainly marked and package adds to looks of jobbers' and dealers' shelves.

TRADE TREATY CUTS TARIFF ON RADIOS

The new trade pacts with Great Britain and Canada will affect the radio industry very little, the Department of Commerce asserts in analyzing the treating for RMA. They become effective Jan. 1, 1939, for three years.

A British tariff of 33 $\frac{1}{3}$ per cent on American amplifiers, loud speakers and radio-combination sets is cut to 25 per cent. The U. S., in return, slices its tariff from 35 to 25 per cent on British-made radios and from 22 per cent to 17 on their gramophones. Canadian rates remain as is. The British treaty does not affect Australia, New Zealand, Africa, Ireland and other possessions.

CORNELL-DUBILIER TIES UP WITH FOREIGN FIRMS

Announcement has been made by *Octave Blake, Jr.*, president of Cornell-Dubilier Electric Corporation, and H. M. Pease, vice-president of International Standard Electric Corporation, 67 Broad Street, New York, of an agreement reached between their respective companies. Under the terms of the contract, the assistance of the engineering, manufacturing and commercial divisions of Cornell-Dubilier for the production and sale of electric capacitors becomes available to the International Standard Electric through its following affiliated manufacturing companies abroad: Le Materiel Telephonique, 46 Quai de Boulogne, Boulogne-Billancourt (Seine), France; Bell Telephone Manufacturing Company, Bubenbergplatz 10, Berne, Switzerland; Standard Telephone und Radio A. G., Seestrasse 395, Zurich, Switzerland; Bell Telephone Manufacturing Company, 4 Rue Boudewyns, Antwerp, Belgium.

Engineers, representing the above-mentioned companies, are in America visiting at the Cornell-Dubilier plant in South Plainfield, N. J. Cornell-Dubilier engineers will visit at the Standard factories in Europe in an advisory capacity in the near future.

Sales Manager *Hal Pauley* of *Pauley-James Corp.*, Chicago, visited New York and Philadelphia for a few days recently and reported a large backlog of orders for their new line of push-pull vibrators.

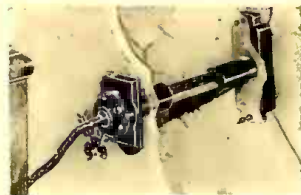


ONE thing about Radio has always struck me funny. In spite of its tremendous advances and improvements, nothing was ever done about its Aerial-Receiver connecting system, which, until the introduction of our "COR-NEX" idea, has remained simply a messy wire and a window strip in millions of homes.

The fellow who thought of "COR-NEX" laid an egg in the BEST sense of that expression. He gave to Radio something Radio has been waiting for since it was knee-high to a toadstool!

He made a hit with the army of women who, with homes that are modern in all other respects, have been putting up with ancient Aerial-Receiver connections . . . and NOT liking it!

He gave to Service Men (naturally, because he is one of 'em) a new profit possibility . . . it requires little more than a couple of minutes to install "COR-NEX," and there's a nice "take" on each job. Better than anything else, he HELPED Radio forward!



"COR-NEX" is aces with me, though I did NOT think of it myself. It's a really basic idea for the good of the order . . . And I've yet to meet up with my first cold water douche after several months of "missionary work" in the tank towns and the swank towns up and down these old United States.

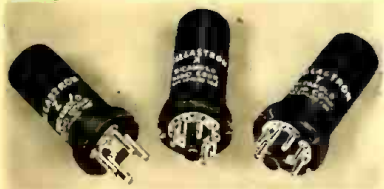
Not wishing to plagiarize or pun or anything—"A word to the WIVES is sufficient!"

(signed) *Cornish Pete*

CORNISH WIRE CO., Inc.

30 Church Street, NEW YORK CITY

A NEW SERIES OF 3 BALLASTRONS



Micamold has solved the problem of ballast tube replacements. These new BALLASTRONS, known as types X, Y, Z, will serve as perfect replacements for 98% of all four prong and octal base types in use today.

Ask your jobber. . . . Get the MICAMOLD catalog. . . . Specify MICAMOLD BALLASTRONS. Tubulitics. Molded Paper Condensers, etc. . . .

There's more money in radio servicing with MICAMOLD products!

MICAMOLD RADIO CORP.
Flushing & Porter Aves., Brooklyn, N. Y.

A GOOD NAME GOES A LONG WAY

Ken-Rad Tubes have earned their good name through the use of honest materials, skilful precision workmanship and advanced technical knowledge.

KEN-RAD TUBE & LAMP CORP.
OWENSBORO, KY.
Export Dept., 116 Broad St., New York
Cable Address: Minthorne, N. Y.

KEN-RAD
DEPENDABLE RADIO TUBES

Now! BALLAST REPLACEMENT

made
**AMAZINGLY
SIMPLE**

- Servicemen, with only 4 standard types of Amperite AC-DC Regulators you can replace 90% (over 100 types) of AC-DC Ballast Tubes now in use! Consult your jobber.
- Amperite Regulators are equipped with a patented Automatic Starting Resistor to prevent untimely burnouts and save pilot lights.
- New Low Price on Amperite AC-DC Regulators: \$1.00 LIST

Amperite Replacements
for 2V Battery Set ballasts
\$1.25 list

AMPERITE
Company
561 BROADWAY
NEW YORK



WRITE
FOR
CHART
AR

AMPERITE
AUTOMATIC REGULATORS



Seven stalwarts of the Windy City—left to right, Haskell Blair, Jim Ritter of the David Bogen Co.; A. Poncher, Ted Piecko, Harry Harrison, Sam Poncher and John Burke, Newark Electric Co., Chicago.

NEW BOOKLETS

Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa.—general catalog dated 1939-40 listing some 100,000 styles and sizes of Westinghouse products. Limited distribution.

Wholesale Radio Service Co., 100 Sixth Ave., New York City—gift catalog, 64 pages of rotogravure, for Christmas, weddings, birthdays, graduations, etc. Includes cameras, radios, construction sets, chemistry sets, etc.

Speed Nut Division, Tinnerman

Stove & Range Co., 2058 Fulton Road, Cleveland, Ohio—literature showing how "Speed Nuts" may take the place of lock washers and threaded nuts, in assembly of radio cabinets, automatic selector brackets, and coil cans.

Institute of Radio Engineers, Inc., 330 W. 42nd St., New York City—"Standards on Transmitters and Antennas, 1938." Marked 50c. postpaid.

Tobe Deutschmann Corp., Canton, Mass.—A Tobe Filterette catalog, showing new products for radio noise elimination. Includes units to use with razors, oil burners, etc., and presents the Filterette selector.

Quality PLUS Economy

DUMONT ELECTRIC CO.
514 BROADWAY, NEW YORK

YOU
Take the Premiums
I'LL
Take the
PROFITS

THAT just about sums up the attitude of hundreds of Servicemen and Dealers who have come to learn that Fancy Deals, Inside Propositions can never be a substitute for a quality product with real not fancied profits. TRIAD TUBES have a "cut and dried", "open and shut" proposition: Honestly built, quality tubes at a price that gives you a LONG, LONG, PROFIT. Get our new proposition and judge for yourself!

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

Nash Radio Products Co., 5437 Lisette Ave., St. Louis, Mo.—bulletin listing Nash products sometimes hard to find: record-cleaner, recording lubricant, cable preservative, radio polish, aluminum paint, switch cleaner, service cement, etc.

Radio Supply Co., 408 Monticello Ave., Norfolk, Va.—Buying Guide, 1939, with 225 pages of transmitting equipment, testers, parts, for servicemen, hams and dealers.

Operadio Mfg. Co., St. Charles, Ill.—bulletin on school sound distribution systems.

Universal Microphone Co., Inglewood, Calif.—three catalog sheets on (1) a new microphone bayonet plug, (2) manufacturer's type mike, and (3) microphone circuit for the new microphone circuit.

RCA Mfg. Co., Camden, N. J.—Christmas catalog of 200 Victor and Bluebird records for children. Music ranges from "Snow White" excerpts to semi-classical disks by symphony orchestras.

Kenyon Transformer Co., 840 Barry St., New York City—revised edition of catalog R3 on replacement transformers. Lists unit specifications in table form. Copies from jobbers or direct.

Meissner Mfg. Co., Mt. Carmel, Ill. "How to Build Radio Receivers—Complete Instructions on 20 Meissner Kits." Manual has 120 pages 8½" x 11", includes discussion on radio principles and construction hints. Marked 50 cents.

Hygrade Sylvania Corp., Emporium, Pa.—completely revised tube characteristic sheets, concise and now adaptable to 3-ring binder use.

Hammarlund Mfg. Co., Inc., 424 W. 33rd St., New York City—"39" catalog with 15 pages and illustrations on midjet condensers, transmitting condensers, transmitting duals, micro condensers, plug-in coils, coil forms and sockets, star condensers, R.F. chokes, I.F. transformers, trimmers, padders and receiver equipment.

Atlas Sound Corp., 1447-51 Thirtiyninth St., Brooklyn, N. Y.—public address catalog No. W-38. Baffles, speakers, trumpets, parabolic baffles, microphone stands, carrying cases and enclosures, and the new Atlas WX type marine horns for cone speakers, are all described. Atlas will send copies direct.

General Radio Co., Cambridge, Mass.—catalog K, with 216 pages, including many new instruments. "Largest and most comprehensive we have ever published," says General, who is offering the catalog to broadcasters, manufacturers and engineers.

Weston Electrical Instrument Corp., Newark, N. J.—second issue of "Weston Pointer," featuring stage-by-stage receiver analysis, also an article on resistance range limits for practical servicing. This illustrated journal also includes service hints, "idea" box, etc.

RADIO TODAY'S LEADERSHIP proved AGAIN!

Advertising pages bring results for
Rider Chanalyst at the lowest cost
per inquiry from dealers and servicemen

Once more, RADIO TODAY has shown the selling power of its pages—the responsiveness of its dealer-readers.

Witness this letter from Mr. Lansford F. King, Advertising Agency for the *Rider Chanalyst* and the *Rider Manuals*.

Need anything more be said?—except this:

No unselected circulation, however great, can match the buying power of RADIO TODAY'S 22,000 *handpicked* readers!

There is business FOR YOU—through the pages of

**RADIO
TODAY**

Member Audit Bureau of Circulations

Caldwell-Clements, Inc., 480 Lexington Avenue, New York

LANSFORD F. KING
ADVERTISING

1528 WALNUT STREET · KINGSLEY 2378
PHILADELPHIA, PENNA

November 29, 1938

Mr. M. Clements
RADIO TODAY
480 Lexington Avenue
New York City

Dear Mr. Clements:

When we began advertising the *Rider Chanalyst* in the radio magazines we expected that the sheer novelty of this radio servicing instrument, and its obvious time-saving advantages, would bring our client a good many inquiries for literature. In spite of our previous experience in handling other accounts selling to radio dealers and to radio servicemen, we were surprised by the flood of inquiries resulting from this advertising, which far exceeded either our client's or our most optimistic expectations.

I am sure it will interest you to know that the same ads appeared in the various radio magazines at the same time, and that the results of the first three months showed that RADIO TODAY produced inquiries about the *Rider Chanalyst* at the lowest cost per inquiry of any magazine in which we advertised.

Naturally, we are planning to carry on with RADIO TODAY during the coming year.

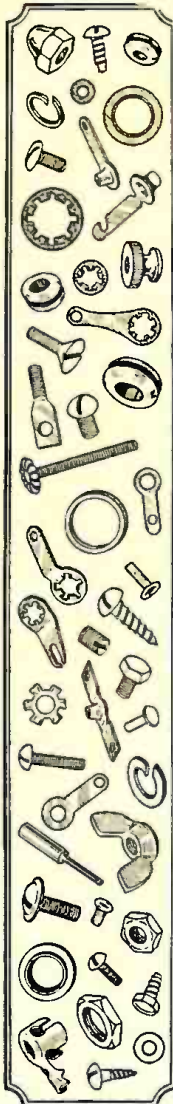
Sincerely,

L. F. King/BB

Lansford F. King

Radio Hardware

FOR MANUFACTURERS—PARTS
JOBBER
A DEPENDABLE SOURCE FOR
YOUR HARDWARE and
ACCESSORY NEEDS



Carrying in Stock Standard and Many Special Items of Radio Hardware Essential in the Manufacture and Servicing of Radio-Sound Equipment & Allied Products. Many Items Difficult to Find Are Stock Items With Us

Check This List of Items Stocked for Immediate Delivery

- MACHINE SCREWS
- NUTS—BOLTS
- WOOD SCREWS
- METAL TAPPING SCREWS
- TUBULAR RIVETS
- EYELETS
- SPADE BOLTS
- METAL SPACERS
- THREADED RODS
- SET SCREWS
- ORNAMENTAL HEAD SCREWS
- ESCUTCHEON SCREWS
- STEEL WASHERS
- BRASS WASHERS
- FIBRE WASHERS
- LOCK WASHERS
- GRID CAPS
- CLAMPS—BRACKETS
- RUBBER GROMMETS
- RUBBER BUMPERS
- INSULATION SOCKETS—SWITCHES
- BATTERY CLIPS
- FUSE MOUNTINGS
- ANTENNA COUPLERS
- TERMINAL STRIPS
- PILOT LIGHT SOCKETS
- SOLDERING TERMINALS
- SOLDER—PASTE
- WIRE—TAPE
- SPINTITE
- WRENCHES
- TIP JACKS—PLUGS
- ETC.—ETC.
- AND UNIT PACKAGES OF HARDWARE FOR THE JOBBER

Catalog Available to Manufacturers and Parts Jobbers—Write for Catalog 51

FEDERAL SALES CO.

24-26 SO. JEFFERSON STREET
CHICAGO, ILL., U.S.A.



How to "smoke out" a prospective buyer as demonstrated by Harry Clipinger, vice-president and sales manager of Continental Radio and Television Corp.

TRADE FLASHES

Joe Gerl, president of Sonora Radio & Television Corporation, Chicago, announces the appointment of James G. Oldfield as production superintendent of Sonora's new plant. Mr. Oldfield brings long radio experience to his new post. He has been associated for many years with such firms as Detrola, General Household Utilities, Crosley, Majestic and others. The new Sonora plant with an estimated daily capacity of 2,000 receivers, has been organized under the direction of Mr. Oldfield and is working at top speed to fill current demands.

Paul H. Tartak, president of Oxford-Tartak Radio Corp., recently acquired the stock originally held by Harold Ebenholtz in the Ariston Mfg. Corp. and the Ariston Lab, Inc., and was elected president of the Ariston organizations. Walter Bauman was named vice-president in charge of sales. No change in the policy of any of the companies involved will be made now. Mr. Ebenholtz withdrew from Ariston because of ill health.

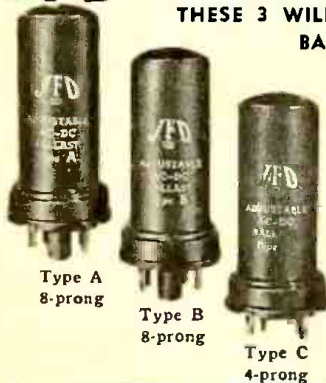
For jobbers who need various types of mikes to build into public address systems, Universal Microphone Co., Inglewood, Calif., now makes available "manufacturer's models" of the firm's whole line. These "undressed" mikes, according to Universal president James R. Fouch, will be marked with the letters MT and will be minus the extra fittings.

President Hal P. Shearer of Halson Radio & Television, Inc., of Meriden, Conn., has announced the appointment of Martin Openshaw as export manager. Mr. Openshaw, who has a background of many years in the radio export field, will make his headquarters in Meriden.

Virgil M. Graham, who is Hygrade Sylvania Corp.'s tube application chief, has been re-elected to serve a second term on the Board of Directors of the Institute of Radio Engineers.

Sales manager "Walt" Marsh of Meissner Mfg. Co., has finished a trip through Canada, New York, Pennsylvania and West Virginia. Mr. Marsh reports improved business conditions in the area, and says also that he noticed considerable interest in television matters among engineers.

JFD ADJUSTABLE BALLASTS ... JFD BALLAST TESTER



THESE 3 WILL REPLACE 99% OF ALL AC-DC BALLASTS NOW IN USE

Once adjusted, these ballasts deliver exact voltage of ballasts replaced. Remain accurate. Lower investment, smaller stock, no obsolete merchandise. Adjust without tools or experience. Chart with each tube shows over 800 AC-DC ballasts and the right type of JFD adjustable to use. List price \$1.00 each. Dealer and servicemen's kit No. 770 contains five ballasts—2 "A," 2 "B," 1 "C," with chart and instructions. List \$5.00.

J. F. D. MANUFACTURING CO., 4111 Ft. Hamilton Pkwy., Brooklyn, N. Y.
Export Dept., 116 Broad St., New York, N. Y., U.S.A., Cable ICARAD NY

THIS INSTRUMENT WILL TEST ALL 4 AND 8-PRONG BALLASTS

Panel has direct reading instructions for all settings. So simple and easy that experience is unnecessary. Nothing to look up. No charts needed in testing 90 per cent of all ballasts. Shows red light for "Good," irrespective of openness of all ballasts. Shows red light for "Bad" tube; green light indispensable and profitable addition to your test equipment. Crackle finish; silver and black panel. Operates on AC or DC, 110 volts, 25 to 60 cycles. List, \$10.00.





Radio veterans Nat Bolet (right) and M. B. Sleeper pause in front of New York's Heins & Bolet radio shop to talk over old times—and the new Andrea receiver.

Milton Start has been named Missouri and Kansas representative of the Freed Transformer Co. and will make his headquarters at 400 Kinloch Bldg., St. Louis.

John G. Brooks will head the new sales contest and premium division of Tracy-Wells Co., Columbus, Ohio, effective Jan. 1, General Manager R. C. Hager has announced. Mr. Brooks, formerly with Zenith and Commonwealth Edison, will direct new contest and catalog ideas and will enlarge the sales force.

Harry Boyd Brown, Philco's national merchandising manager, was concluding speaker December 13th, in the course on "The Art of Salesmanship," conducted under the auspices of the Massachusetts State Department of Education at Harvard Hall, Harvard University. Mr. Brown, who spoke on "Adventures in Selling," was the last of a series of eight speakers prominent in academic and business fields.

Newcomer to the staff of William K. Opdyke & Staff, Boston, Mass., is Elliott W. Robbins, who was formerly New England publicity chief for N. W. Ayer & Son, Inc., and one-time a top publicity director for NRA. The Opdyke organization specializes in industrial editorial relations.

President Max Hass of Bud Radio, Inc., 5205 Cedar Ave., Cleveland, is now in the Texas-Kansas-Ohio areas showing a feature film on "Bud's Radio Wonderland." The movie, which is a novel series of scenes having to do with radio production and development, has already been shown in many other sections of the U. S., under the sponsorship of local jobbers, radio clubs, conventions, trade schools, etc.

The name of the Crosley Radio Corp. has been changed to Crosley Corp., according to news from president Powel Crosley, Jr. The change was made because Crosley officials do not want the public to feel that the firm's activity is limited to radio. However, the radio manufacturing set-up will continue as usual.

Executive vice-president Lewis M. Crosley reports that the company now enjoys peak-season production on radios, and has re-employed several hundred workers. Also, the plants are now producing the 1939 line of refrigerators and appliances.

Jobber salesmen throughout the U. S. are energetically trying for places on the All-American team of Star Microphone Salesmen, in a contest sponsored by Shure Bros., 225 W. Huron St., Chicago. Eleven cash prizes go with the positions, according to Coach Jack Albert. The contest closes in December.

Janette Rotary Converters



FOR CONVERTING D.C. TO A.C.

● Built especially 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 throughout the world ●

WHY EXPERIMENT — INSIST ON A JANETTE

ASK FOR BULLETIN 13-1

Janette Manufacturing Company

556-558 West Monroe Street Chicago, Ill. U. S. A.

MODERNIZE YOUR SHOP FOR GREATER PROFITS . . . at almost no cost to you! . . .



with the ARCTURUS EQUIPMENT DEAL

You profit three ways with the Arcturus Equipment Deal. You get needed shop equipment of standard make—immediately—at almost no cost. You get Radio's finest, best engineered tubes. This means real customer satisfaction on every sale. Last but not least, you get these tubes at standard prices, less standard discounts. Not one cent has been added to allow for the shop or test equipment you get. Arcturus brings it to you practically FREE!

EXPORT REPRESENTATIVES

Arcturus Franchises are still available to a few alert distributors in certain countries. Sell a line that has set high standards of tube performance throughout the world . . . "Cash in" on the huge natural replacement market created by the use of millions of Arcturus Tubes as original equipment.

Write for details.

You Can't Lose!

If you need new radio test equipment, typewriters, etc. . . .

If you want to make yours the best equipped shop in town . . .

Then get the facts today. Join with the countless servicemen and dealers who are already profiting from Radio's finest, fairest and easiest deal!

MAIL THE COUPON!

ARCTURUS

ARCTURUS RADIO TUBE CO., Newark, N. J. T-14
Without cost or obligation on my part, send details of your new equipment deal.

Name

Street

City..... State.....

I am a dealer I am a serviceman

My jobber is.....

For your convenience this coupon can be pasted on a penny postcard

**It's
VERTICAL**

**A
New Steel
ANTENNA**

The Original

Strong! Husky! Dependable! It rode out the New England hurricane! A telescoping steel tubing antenna in 6' units, extending to 24'. Easily mounted on ground or roof. Adaptable to RCA Magic Wave Coupling System. For real satisfaction, sell the Premax Vertical. Write for bulletins and prices today.

Premax Products

Div. Chisholm-Ryder Co.,
Inc.
3915 Highland Ave.
NIAGARA FALLS, N. Y.

SOUND MEN!

ARE YOU OVERLOOKING C.I.S.E.?



See what FREE membership in the Clarion Institute of Sound Engineers does for those who qualify! Gives you

- 1 Factory purchasing power!
- 2 Exclusive selling territory!
- 3 Free engineering and consulting service!
- 4 Competition-smashing prices!
- 5 Protected profits on the fastest-selling, most complete line of P.A. equipment in the world!

Several choice territories still open. Send today for complete information!

CLARION INSTITUTE OF SOUND ENGINEERS
69 WOOSTER STREET, NEW YORK CITY

**J. H. CORNELL NAMED
SOLAR CHIEF ENGINEER**



J. H. Cornell has been named chief engineer of Solar Mfg. Corp. of New York City and Bayonne, N. J., to succeed N. Scholl, resigned. Mr. Cornell came to Solar early this year from Magnavox Company, where he was chief engineer and a director. Before that he was with RCA and General Electric.

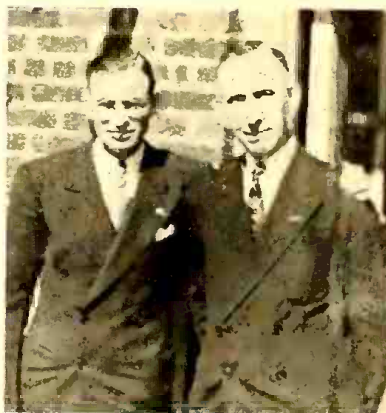
A graduate of Worcester Polytechnic Institute, Mr. Cornell is a member of I.R.E. and chairman of the R.M.A. committee on electrolytic capacitors. He is a frequent contributor to engineering publications.

JOBBER AND REPS.

PENNSYLVANIA—Meyer M. Cohen now heads up the retail dealer promotion on appliances at the Crosley distributors, Anchor Lite Appliance Co., Pittsburgh. Harold W. Goldstein is general manager.

Victor Goldberg is a new field representative in Eastern Pennsylvania for Smith Benny Co., 11 W. 42nd St., New York City, who are the eastern sales representatives for Steem Electric Corp.

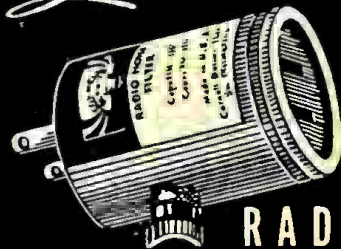
IOWA—Union Supply Co., 4th and Washington Sts., Burlington, have been named jobbers for Stromberg-Carlson in a section of southeastern Iowa. Company will handle complete line, plus parts. C. E. Anderson heads the firm.



When fishing calls, Raymond Beem of Little Rock, Ark., leaves Pa Stone in charge of his radio shop. Here's Pa with the inimitable Charley Golenpaul of Aerovox Corp.

C-D PRESENTS

Quietone



**RADIO
INTERFERENCE FILTERS**

grand new money-makers!

Every service call you make is a chance to increase your profit-making opportunities by selling a C-D "Quietone" radio interference filter. Here's an item every set owner can use. And squarely behind this filter . . . is C-D's pledge of performance . . . a guarantee that dates back 29 years. Investigate the *profit possibilities* of "Quietone" today! The effectiveness of eliminating radio interference, caused by household appliances of all types, with C-D "Quietone," available at your local jobber. Or write direct for Catalog No. 166A.

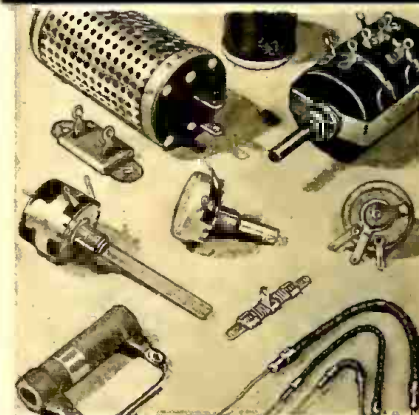
*Reg. U.S. Pat. Off.



**CORNELL-DUBILIER
ELECTRIC CORPORATION**

1022 Hamilton Blvd., So. Plainfield, N. J.
Cable Address: "CORDU"

Let **CLAROSTAT**
Solve
YOUR RESISTANCE PROBLEM



● CLAROSTAT—"The House of Resistors"—offers every type of essential resistor and control ● The next time, try a CLAROSTAT ● Meanwhile, write for catalog. If you handle servicing ask for 208-page service manual. (5c. per copy).

CLAROSTAT



MANUFACTURING CO.
Incorporated

285 North Sixth St.
Brooklyn, N. Y.

INDEX TO ADVERTISEMENTS

| RADIO RECEIVERS | Page |
|--|----------|
| CROSLLEY RADIO CORP. | 4 |
| DOMONT LABS., ALLEN B. (Television) | IV |
| GENERAL ELECTRIC CO. | Cover 11 |
| PHILCO RADIO & TELEV. CO. | 6 |
| PIERCE-AIRO, INC. | 31 |
| PORT-O-MATIC CORP. | 47 |
| RCA MFG. CO., INC. | 3 |
| RADIO TUBES | |
| ARCTURUS RADIO TUBE CO. | 45 |
| HYGRADE SYLVANIA CORP. | 2 |
| KEN-RAD TUBE & LAMP CORP., INC. | 41 |
| NATIONAL UNION RADIO CORP. | 39 |
| PHILCO RADIO & TELEVISION CORP. | III |
| RAYTHEON PRODUCTION CORP. | 5 |
| RCA MFG. CO., INC. | 37 |
| TRIAO MFG. CO., INC. | 42 |
| TUNG-SOL LAMP WORKS, INC. | 35 |
| RADIO PARTS | |
| AEROVOX CORP. | 36 |
| AMPERITE CO. | 42 |
| CENTRALAB | 32 |
| CLAROSTAT MFG. CO., INC. | 46 |
| CORNELL-DOBILIER ELEC. CORP. | 46 |
| DUMONT ELEC. CO. | 42 |
| INTERNATIONAL RESISTANCE CO. | 31 |
| JANETTE MFG. CO. | 45 |
| JFO MFG. CO. | 44 |
| MALLORY & CO., INC., P. R. | 1 |
| MEISSNER MFG. CO. | 33 |
| MICAMOLO RADIO CORP. | 41 |
| NATIONAL UNION RADIO CORP. | 39 |
| SOUND EQUIPMENT | |
| AMPERITE CO. | 48 |
| BOGEN CO., INC., DAVID | 35 |
| CINAUDAGRAPH CORP. | 38 |
| CLARION INST. (TRANSFORMER CORP. OF AMER.) | 46 |
| RAOOLEK CO. | 47 |
| RCA MFG. CO., INC. | 35 |
| WHOLESALE RADIO SERVICE CO., INC. | 48 |
| TEST EQUIPMENT | |
| REAORITE METER WORKS | 38 |
| SERVICE INSTRUMENTS, INC. | 30 |
| TRIPLETT ELEC. INSTRUMENT CO. | 40 |
| MISCELLANEOUS | |
| BURSTEIN-APPLEBEE CO. | 40 |
| CORNISH WIRE CO., INC. | 41 |
| CROSLLEY CORP. | 29 |
| FEDERAL SALES CO. | 44 |
| GARRARO SALES CORP. | 38 |
| GENERAL INDUSTRIES CO. | 48 |
| MFRS. SCREW & SUPPLY HOUSE | 48 |
| MUELLER ELEC. CO. | 39 |
| PREMAX PRODUCTS (CHISHOLM-RYDER) | 46 |
| RADIO CORPORATION OF AMERICA | 25 |
| RAOOLEK CO. | 47 |
| RIOER, JOHN F. | 34 |
| WHOLESALE RADIO SERVICE CO., INC. | 48 |

While every precaution is taken to insure accuracy, we cannot guarantee against the possibility of an occasional change or omission in the preparation of this index.

NEW YORK—Baldwin Piano Co., 20 E. 54th St., New York City, is now the agency for Ansley Radio Corp.'s "Dynatone," the combined radio, phonograph and electronic piano. Harold Morse is manager.

Smith Benny Co., the eastern representatives for Steem Electric Corp., have named a new field representative for New York State—Phil Tepper.

Terminal Radio Corp., New York City, has opened a new midtown store branch at 68 W. 45th St. The company's downtown headquarters are at 80 Cortlandt St.

Meetings of "The Representatives" of radio parts manufacturers have been announced for the rest of the 1938-39 season by president D. R. Bittan, 53 Park Place, New York City. To be held at the Fifth Avenue Tavern, 4 W. 40th St., the meetings will occur on Dec. 13, Jan. 10, Feb. 14, March 14, April 11, May 9, June 13.

OHIO—New jobber for Tung Sol tubes is Supplies, Inc., 1013 Jefferson Ave., Toledo. Executives are Clarence Kamm, president; Russell F. Kehr, treasurer; and Russell F. Teall, vice-president.

WEST VIRGINIA—Sound Systems, Inc., Huntington, who are distributors for Tung Sol tubes, have opened a new branch at 407 Broad St., Charleston.

NEW HAMPSHIRE—Radio Service Laboratory of New Hampshire has a new co-owner and partner, Fred J. Wessner, who has recently joined Arthur Levesque at Radio Service headquarters at Manchester. Mr. Wessner was formerly general sales manager for National Union, and until the recent change was sales promotion manager for Webster, Chicago. Radio Service operates branches at 34 Free St., Portland, Me., 188 S. Main St., Barre, Vt., and 61 Main St., Bangor, Me.

MISSOURI—Baldwin Piano Co., St. Louis, are now agents in that area for Ansley Radio Corp.'s new "Dynatone." Lloyd S. Reynolds is manager.



Philco will branch out to sell electric refrigerators through a subsidiary, President Larry Gubb, above, announces.



SEND FOR NEW
CATALOG DESCRIBING
AMERICA'S GREATEST
PORTABLE PHONO-RADIO

THE
PORTOMATIC
U.S. PAT. OFF.

and complete line of portables
from \$54.50 to \$199.50

A live, fast-moving line for
Christmas and all-year trade

Write Now

THE PORT-O-MATIC CORP.
1013 MADISON AVE. N. Y. C.
Cable Address: PORTOMATIC, New York

The New
1939
RAOOLEK

Get Your Free Copy NOW!

EVERYTHING YOU NEED IN RADIO. It's all in this new RAOOLEK RADIO PROFIT GUIDE. Every repair part for every receiver. Newest radio sets. New P.A. Equipment. Test instruments. Books. Includes 3,000 new items over previous edition. Every item guaranteed. It must be right or we make it right.

★ Radolek's immense stock plus Radolek's efficient organization insures you the fastest service. 25,000 Servicemen and dealers now depend on this service. Radolek Prices are lowest. You get Better Quality, bigger selection and Faster Service at Radolek.

The **RAOOLEK Co.**

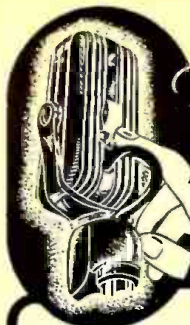
601 W. Randolph, Chicago, Dept. D-26

Send me the 1938 Radolek Radio Profit Guide Free.

Name

Address

Serviceman? Dealer? Experimenter?



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 -68db. Chrome or Gunmetal \$32.00 LIST

NEW LOW PRICE CONTACT "MIKE"
Model SKH (hi-imp); SKL (200 ohms) \$12.00 LIST

MODELS RAH-RAL, excellent for speech and music. Reduce feedback. \$22.00 LIST

Write for Complete Illustrated Bulletins and Valuable Sales Helps.

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

AMPERITE *Velocity* **MICROPHONE**

President J. J. Hahn of Standard Transformer Corp., 1500 North Halsted St. Chicago, announces the appointment of Vicente Casillas as manager of



Vicente Casillas

their enlarged foreign sales division. Mr. Casillas, a veteran of the radio and electrical export field, invites distributors in foreign markets to contact him.

"RADIOS AS XMAS GIFTS"

Editor RADIO TODAY:

I caught your very interesting broadcast of Dec. 2 over WEF and the NBC Red Network, on "Selecting a Radio as a Christmas Gift." Needless to say I enjoyed it immensely.

It was a fine presentation of Radio's new developments and should go a long way in making the public more radio-conscious this Christmas. I admire the way you gave practically every manufacturer a little "plug."

In short, I think the industry owes you a vote of thanks for this cooperation—it proves conclusively that you have their interests at heart and are doing all in your power to help them all.

H. W. GREGG

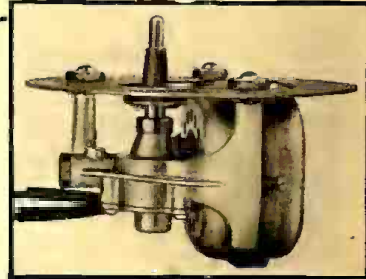
H. P. Bridge Co., Philadelphia, Pa.

U. S. TUBES IN MEXICO



Recently into picturesque Mexico went Hygrade Sylvania's export manager, Walter A. Coogan. He's shown here with Sylvania rep B. Jiminez, along with local dealers R. Silva and J. Suarez.

NEW
CONSTANT SPEED
MODEL CX MOTOR
for PORTABLES



Model CX. An 8", 9", 10" or 12" turntable is supplied.



YOU'LL sell more portable and table-model phonographs with this new-design, lightweight constant speed General Industries motor.

Self-starting induction type. Quickly develops full required speed. Fan cooled. Silent, helical-cut gears and bearings in sealed oil chamber. Patented drive gives turntable (not shown) positive insulation between the turntable and motor.

Order a sample of Model CX for testing. Be sure to state frequency of current you use, and size of turntable required.

The GENERAL INDUSTRIES CO.
3838 Taylor Street, Elyria, Ohio

specialists in
RUNNING
THE GAMUT

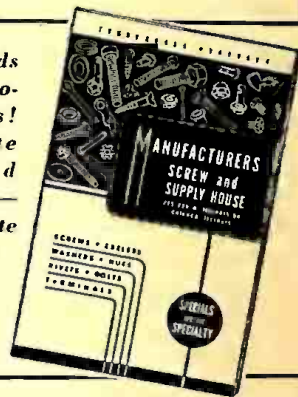


Imagine a spot where you can order an advanced radio part, kit or an obsolete radio part. Does that give you some idea of the vastness and completeness of our stock-in-trade? We carry over 50,000 items—modern streamlined receivers, replacement parts, a full selection of transmitting and receiving tubes. Economy prices that shatter all precedent. Catalog on request.

WHOLESALE RADIO SERVICE CO. INC.
100 SIXTH AVE., NEW YORK, N. Y.
CHICAGO, ILL. • ATLANTA, GA. • BOSTON, MASS.
BRONX, N. Y. • NEWARK, N. J. • JAMAICA, L. I.

NEW CATALOG
OF "STRONGHOLD" HARDWARE
SAVES TIME & MONEY

Thousands of Hard-to-Get Items! Complete Plated Stocks—Immediate Shipment!



All your hardware from one source: Screws, Bolts, Nuts, Rivets, Washers, Terminals, Spacers—everything in fastening devices! * Write for your free copy NOW—Send us Samples to Match—Specials are our Specialty.

MANUFACTURERS
SCREW & SUPPLY HOUSE
215-A West Illinois St., Chicago, U.S.A.

PHILCO TUBES

are your
**Entering
Wedge**
to

Bigger Sales

Because they bear the best-known, most-asked-for name in radio, Philco Tubes bring *more* radio owners into your store . . . give you *more contacts*. And each contact means another opportunity to show and sell *Philco Radios*. Thus Philco Tubes serve as your entering wedge to bigger sales and substantial profits.

The Easiest Tubes in the World to Sell

TELEVISION

by

FIRST
ON THE

MARKET...Why?



WE KNOW the Du Mont Television Receiver is ready...the "bugs" are out of it...it's a practical, quality set that's readily saleable. Du Mont's complete experience in the development and building of cathode ray tubes, sweep circuits, amplifiers and high voltage power supplies.. gained through eight years of designing and manufacturing world famous quality oscillographs... makes Du Mont logical leaders in the television field where these same units are essential parts.

WE KNOW that very soon scheduled telecasts will be offered in New York and other large centers of population.

WE KNOW that you, the Progressive Dealer, want to be on hand... ready too...when the gun is fired.

WE KNOW that now is none too soon to start your sales program.

Be A Famous First—

Display and Sell DU MONT

GCT 2-1939

ALLEN B. DU MONT LABORATORIES, INC., 2 Main Ave., Passaic, N. J.