

# RADIO RETAILING

INCLUDING  
SERVICE  
AND  
INSTALLATION  
SECTION

HOME ENTERTAINMENT MERCHANDISING

McGraw-Hill Publishing Company, Inc.

25 Cents Per Copy

## MARCH TO SUCCESS IN 1935 WITH THE "MAGIC BRAIN"

**RADIO CITY  
MATINEE**

RICHARD  
CROOKS



ENRIC MADRIGUERA



EFREM ZIMBALIST



PAUL  
WHITEMAN



GIOVANNI  
MARTINELLI

This spectacular sales-drive assures Victory on all fronts

You're in the driver's seat this year! And RCA Victor has built a solid, sales-ramming offensive around you—the dealer! A sensational prospect-finding, customer-making campaign that leaves no loophole! And your cash register will bring you the proof every day! On to victory on all fronts! Here's the line-up!

**1** The most complete line of radio sets ever offered in the radio business...beautiful models and each an outstanding value!

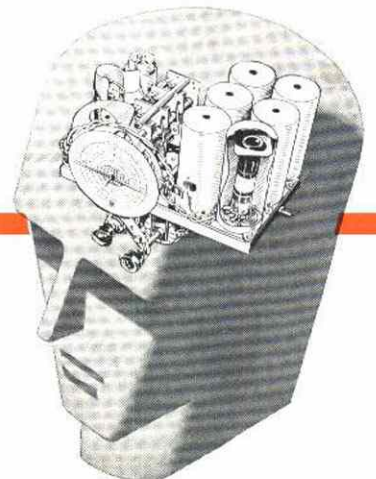
**2** A breath-taking radio broadcasting show...the "Radio City Matinee"...featuring outstanding Victor Recording stars such as Martinelli...Zimbalist...Madriguera Orchestra...Paul Whiteman...Richard Crooks and other equally great artists. Each program is designed to be a "demonstration hour" for you, the dealer. You tune in and it actually sells the "Magic Brain" in your store—it does your

sales work for you. Every Wednesday from 2.00 to 3.00 P.M. (E. S.T.) over the N. B. C. Blue network. The program is also available experimentally on W8XK—15,210 k.c. and W3XAL—17,780 k.c.

**3** National Advertising in the leading magazines!

**4** The "Magic Brain"—the most spectacular achievement in radio engineering! The greatest selling feature in radio today because it affords the customer higher fidelity tone...more stations...easier tuning...freedom from noise.

Profit by the sales-magic of the "Magic Brain" . . . cash in on RCA Victor's 1935 march to success . . . wire or 'phone your RCA Victor distributor today! RCA Victor, a Division of Radio Corporation of America, Camden, N. J., "Radio Headquarters".



# RCA VICTOR

VICTOR, ONE UNIT OF RADIO CORPORATION OF AMERICA . . . THE WORLD'S LARGEST RADIO ORGANIZATION. OTHER UNITS: NATIONAL BROADCASTING CO., INC. . . R. C. A. COMMUNICATIONS, INC. . . RCA RADIOTRON . . . RADIOMARINE CORPORATION OF AMERICA



# Entirely New 1935 Car Radios by Arvin

**Inspired by ARVIN'S AMBITION to make it a pleasure to sell, install and service car radio . . .**

● Inspired with an ambition to build car radios that are truly magnificent in the way they perform—a pleasure to sell, install and service—Arvin has combined the best thoughts of practical service men as well as automotive and radio engineers in the design and production of the new 1935 models. Many new and advanced ideas in car radio design have been built into the new Arvins, features such as . . .

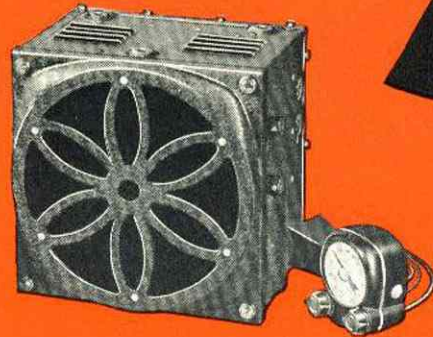
*Standardized and simplified mounting* that conforms to most car makers' specifications. *Chassis construction* integral with mounting case to simplify service and eliminate troubles caused by plug-in connections, poor grounds, etc. *All parts readily accessible* for inspection and normal service without removing sets from cars.

*Motor noise filter systems* to eliminate need for spark plug suppressors. *Sound processed* reproduction for high fidelity of all musical notes. *Sensitivity selection* and interference suppression for country and city driving.

*Velvet drive tuning system* with no gears in remote controls and full-floating tuning mechanism for greater selectivity than ever before in car radio. *Streamlined remote controls* with distinctive full-view airplane type dials for steering column and easily adapted for surface mounting on the instrument panel of any car. *Dependability and service simplicity* that make it a pleasure to sell the new Arvins.

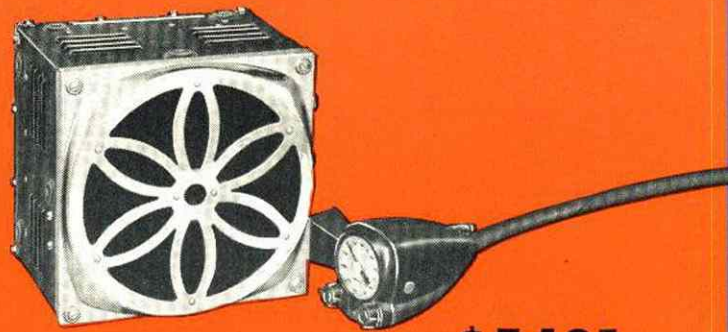
All those and many other outstanding features—plus the biggest consumer advertising campaign in Arvin history—and a consistent policy that assures progressive independent dealers the profits they deserve. See your jobber or write for full information today.

NOBLITT-SPARKS INDUSTRIES, Inc., Columbus, Indiana  
Also Makers of Arvin Hot Water Car Heaters



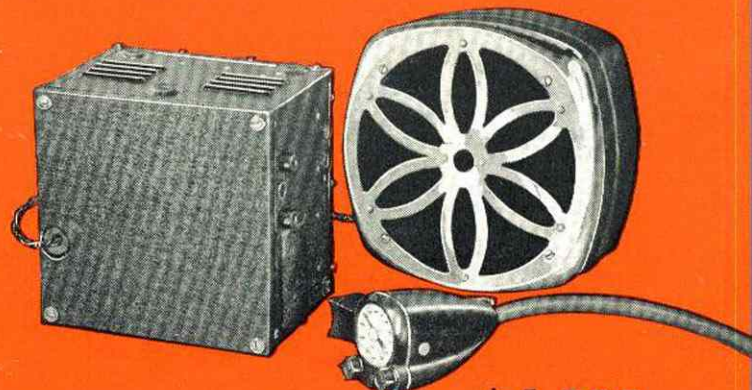
**NEW ARVIN MODEL 17** \$44<sup>95</sup>  
LIST

6 multi-duty tubes and 6-inch full-toned speaker all in one easy-to-install unit. Full-view airplane type remote control dial for steering column or instrument panel.



**NEW ARVIN MODEL 27** \$54<sup>95</sup>  
LIST

7 multi-duty tubes and 6-inch, heavy-duty, full-toned speaker all in one easy-to-install unit. Remote control with full-view airplane type dial and streamlined housing which confines all wiring in one cable. Dial is also easily mounted on any instrument panel.



**NEW ARVIN MODEL 37** \$64<sup>95</sup>  
LIST

A twin 8— with 8 multi-duty tubes and 8-inch high fidelity speaker. Radio and speaker units in separate cases. Streamlined remote control with full-view airplane type dial for steering column—also easily adapted for surface mounting on any instrument panel. Dual control knobs regulate tone and sensitivity of set for city and country driving conditions.

# ARVIN

THE MAGNIFICENT

# Car Radio



# YOUR NEW ZENITH Triple Filtering LINE IS READY!

Get Off to a Fresh Start With These Smart Modern Consoles in the "Bigger Sales" Class — Make More Profit in 1935!

How would you like to see a brilliant, sparkling display of *advance* radio styles on your sales floor?

You can have it—Zenith is ready with its *new* line for 1935! There are midgets, consoles, new designs, new features. All you need to sell *every* radio customer. A *complete* display.

This will give your sales force new radio sales stimulus. Your Zenith display is fresh, new and interesting.

Last year Zenith announced a policy of keeping its dealers up front in the public attention by a line that really offered the buyer most for his money. This year Triple Filtering is on *all* models, and all the bigger models have the large, easy to tune Zenith Airplane Dial with Split-Second Tuning.

There are many new models at prices that tempt the customers to pay a little more for Zenith perfection in reception. The trend is *up*—and that boosts your profits, too!

Are you ready? We're all set to send you *complete* details!

## Add These to Your Display, Too!

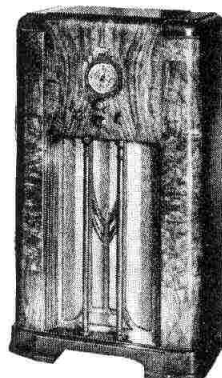
- |                                                                             |                                                                            |
|-----------------------------------------------------------------------------|----------------------------------------------------------------------------|
| CONSOLE ZENITH MODEL 990<br>—12-tube superheterodyne with Triple Filtering. | dyne with Triple Filtering.                                                |
| CONSOLE ZENITH MODEL 985<br>—12-tube superheterodyne with Triple Filtering. | CONSOLE ZENITH MODEL 950<br>—5-tube superheterodyne with Triple Filtering. |
| CONSOLE ZENITH MODEL 945<br>—5-tube superhetero-                            | Midget ZENITH MODEL 908<br>—6-tube superheterodyne with Triple Filtering.  |

ZENITH RADIO CORPORATION, 3620 Iron Street, Chicago, Ill.

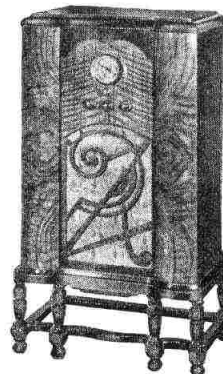


EXPORT DIVISION—CABLE ADDRESS: ZENITHRAD—ALL CODES

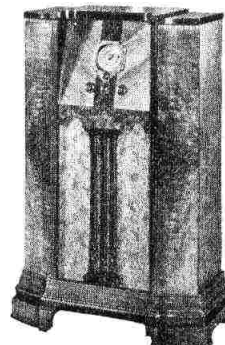
## ADVANCE NEWS of the new 1935 Zenith Line!



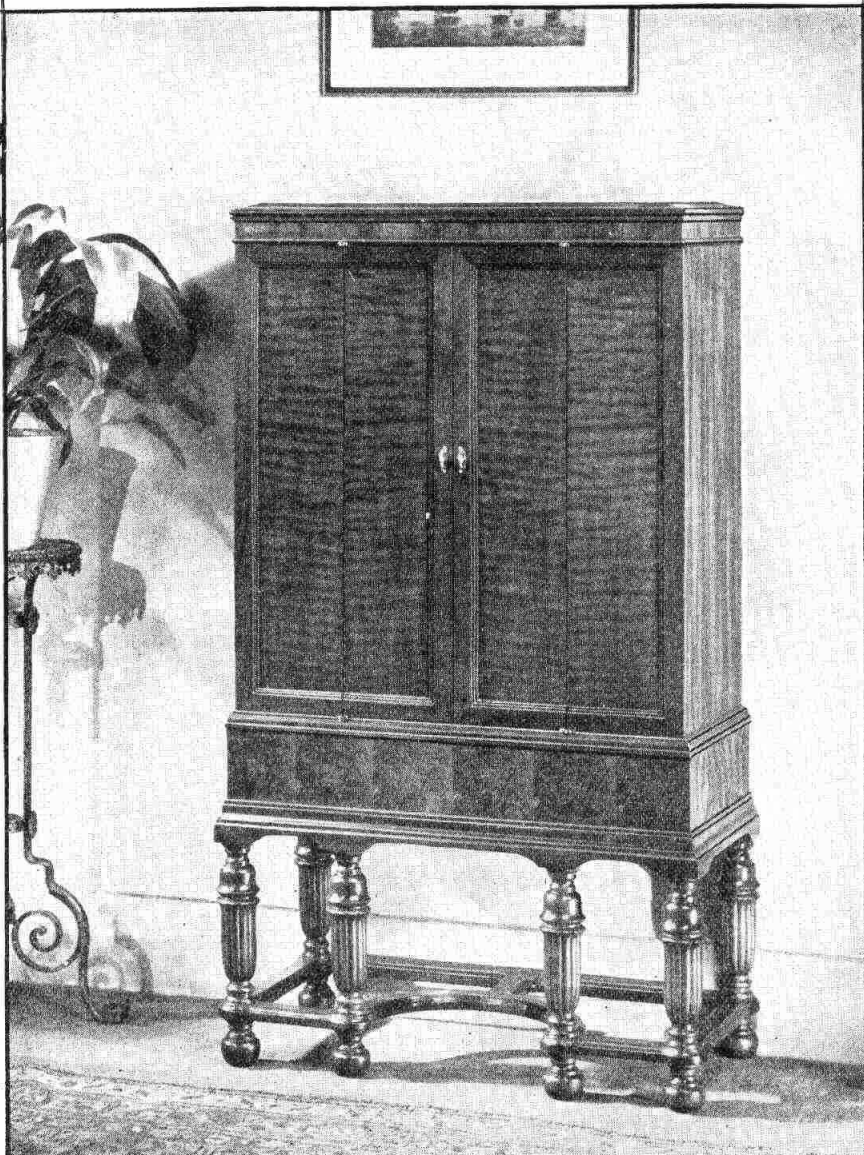
A Twelve-Tube Console *plus* Triple Filtering. Has 12-inch dynamic speaker, four gang condenser, Airplane Dial, Shadow-graph and Split-Second Tuning. ZENITH MODEL 980.  
(Tuning range of 5 bands)



A Six-Tube Superheterodyne *plus* Triple Filtering. Has 10-inch dynamic speaker, three gang condenser, Airplane Dial, Split-Second Tuning. ZENITH MODEL 960.  
(Tuning range of 3 bands)



A Six-Tube Superheterodyne *plus* Triple Filtering. Has 12-inch dynamic speaker, three gang condenser, Airplane Dial, Split-Second Tuning. ZENITH MODEL 961.  
(Tuning range of 3 bands)



*New*  
No. 68-R  
ALL-WAVE

No. 68-R. Height, 48½ in.; Width 27½ in.; Depth, 15 in. Unusually large, acoustically correct, baffle. 10 up-to-date tubes. Price, East of Rockies . . \$225.

## The Popular No. 68 In A Cabinet With Doors

In the new No. 68-R, Stromberg-Carlson offers a model that is sure to be a "best seller". It brings the famous No. 68 ALL-WAVE performance in a strikingly beautiful cabinet, with doors, that is full of eye-appeal.

Think of such operating features as Stromberg-Carlson's Natural Tone, Selectorlite Dial, Dual Ratio Tuning Knob, Push-Pull Class A Triode Amplification, Visual Tuning Meter, Low Tone Compensation, and 15 Watt Output. Add — the selling power of this magnificent six-legged cabinet, with its selected walnut veneers in varied grainings, quarter-striped walnut on front and sides, center-matched crotch walnut on skirt, highly figured American walnut on doors, and center-matched butt walnut on instrument panel.

That is the No. 68-R ALL-WAVE, the latest addition to the Stromberg-Carlson quality line.

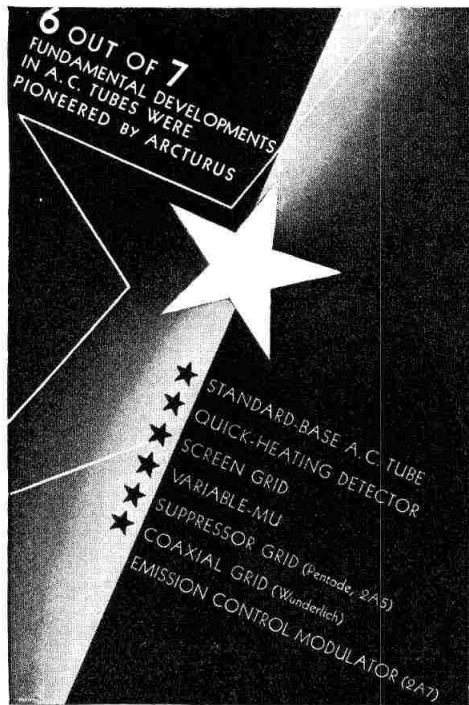
*"There is nothing finer than a Stromberg-Carlson"*

Other Stromberg-Carlsons range in price from \$69.50 to \$985.00 (East of Rockies)

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

# Stromberg-Carlson





# Keynote

To be first with the newest and the best—6 out of 7 times—is but one expression of the Arcturus keynote of leadership. The same dominating keynote sets higher, craftsmanlike standards of quality manufacture to which every Arcturus tube must conform.

Long-life records never equalled are a natural outcome of persistent loyalty to these principles. Another logical result is the unqualified endorsement of Arcturus by manufacturers and engineers.

Service technicians, too, consider Arcturus the quality tube of the industry. Millions of set-owners in this and 78 other countries agree. The tube with such a background of pioneering and quality... with such world-wide recognition and distribution... is the tube for you to push.

# ARCTURUS

## RADIO TUBES

**SEND COUPON & LIST TODAY** →



**Send Coupon:**  
**Jobber will show you  
 the book of Arcturus**

### DEALER HELPS

Please check your favorite sales aids below. Send list with coupon today. Our jobber will show you this big portfolio.

- Characteristic Chart
- Price Card
- Radio Log and Price List
- Service Policy Card
- Ad Reprints
- Tube Stickers
- Book Matches
- Post Cards
- Stationery
- Portable Tube Tester
- Counter Tube Tester
- Dayrad Oscillator
- Dayrad Set Tester
- Rider's Manuals (incl. Vol. 5)
- Supreme Tube Tester (Neon lamp)
- Supreme Analyzer
- Cuts and Mats
- Window Streamers
- Display Cartons and Tubes
- Window Display Units
- Electric Sign
- Deacomania

ARCTURUS RADIO TUBE Co., Newark, N. J.  
 I want to look over your big portfolio of  
 dealers' sales and service helps. (Dept. 135)

Name.....

Street.....

City, State.....

Jobber's Name.....

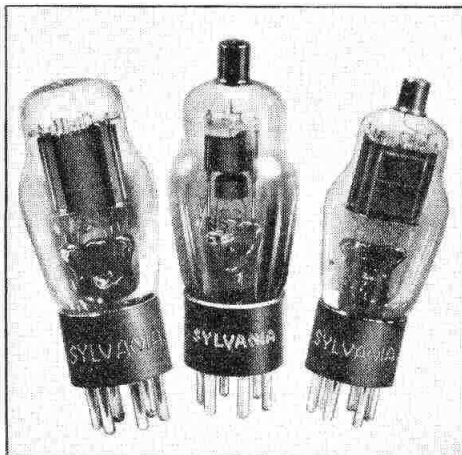
Jobber's Address, City.....



# When they sit down to *Listen*



*it's the TUBES that clinch the sale*



● It was the pioneering of the 6.3 volt group of tubes by Sylvania engineers that made possible the remarkable developments in the auto radio and ac-dc models.

**Is that the reason why so many sets today are equipped with Sylvania tubes? . . . .**

● Nobody needs to tell you that radio tubes made by Sylvania are famous for their faithful tone reproduction.

So why not sell, as others do,

Sylvania tubes for replacements. You know that, in workmanship and excellence of manufacture, Sylvania radio tubes are second to none.

And you will make more money by pushing Sylvania. Write for complete sales information today. Hygrade-Sylvania Corporation, Emporium, Penna.

# SYLVANIA

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THE SET-TESTED RADIO TUBE

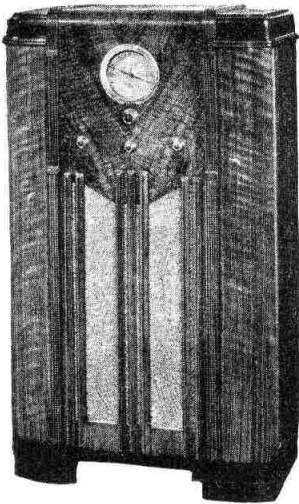


Meeting EVERY Radio Requirement  
in a Price Range of \$19.95 to \$99.50

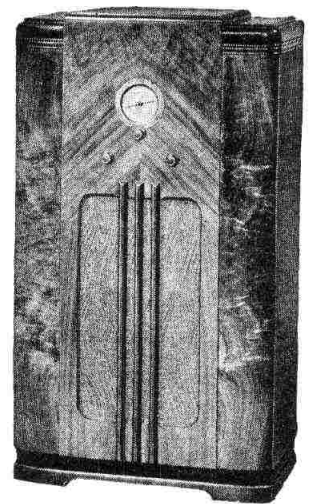
# Emerson Radio



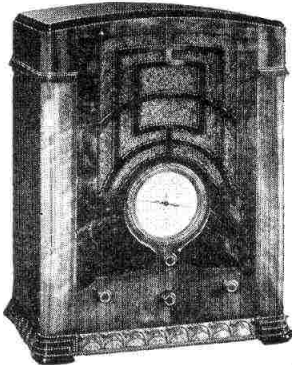
Presents Outstanding Merchandising  
Opportunities for 1935



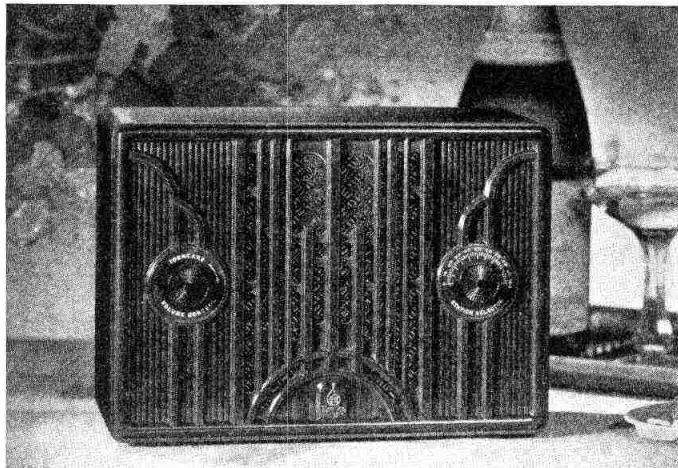
*Model 100. All-Wave seven-tube AC superheterodyne. 13 to 555 meters. 12-inch dynamic speaker, automatic volume control and tone control. Walnut console. List price, \$99.50.*



*Model 69. Round-the-World six-tube AC superheterodyne. 19 to 53 meters and 170 to 555 meters. Dynamic speaker, automatic volume control. Walnut console. List price, \$69.50.*



*Model 71. All-Wave seven-tube AC superheterodyne. 13 to 555 meters. Dynamic speaker, automatic volume control and tone control. Walnut upright table cabinet. List price, \$69.50.*



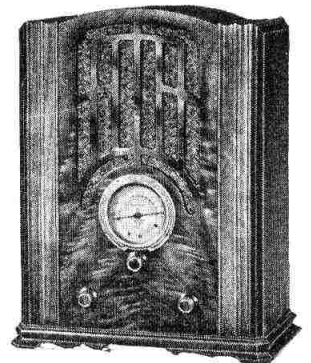
## Emerson AC-DC "Miracle 6"

Six-Tube Performance in a Compact

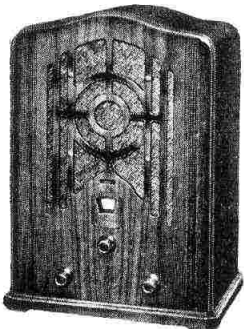
*Model 19*—the four-tube superheterodyne sensation of the industry. Specially designed circuit employs dual-purpose tubes, iron core i.f., automatic overload control, dynamic speaker and other big-set features. Neat Bakelite cabinet. List price,

**\$19.95**

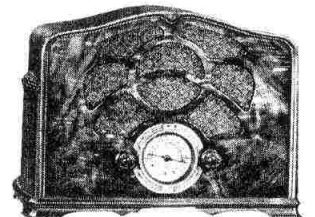
*Model 17*—Same as Model 19, in black cabinet with chrome trimming, \$25.00



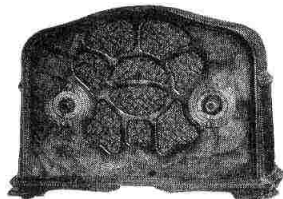
*Model 45. Round-the-World six-tube AC superheterodyne. 19 to 53 meters and 170 to 555 meters. Dynamic speaker, automatic volume control. Walnut upright table cabinet. List price, \$44.50.*



*Model 28. Police, amateur and regular broadcast. Five-tube AC superheterodyne. Dynamic speaker, automatic overload control. Walnut upright table cabinet. List price, \$31.95.*

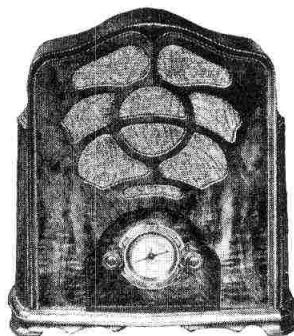


*Model 38. Round-the-World six-tube AC-DC superheterodyne. 19 to 53 meters and 170 to 555 meters. Dynamic speaker, automatic volume control. Walnut midget cabinet. List price, \$39.50.*



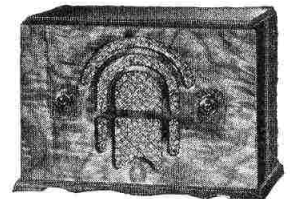
*Model 32. Long and Short Wave five-tube AC-DC superheterodyne. Dynamic speaker, automatic volume control. Walnut compact cabinet. List price, \$33.00.*

Get Emerson's 1935  
Proposition  
NOW



*Model 49*—Round-the-World six-tube AC-DC superheterodyne. 19 to 53 meters and 170 to 555 meters. Dynamic speaker. Automatic Volume Control. Walnut cabinet. List price, \$49.50

Ask about  
NEW Dis-  
tributor Plan



*Model 23. Regular broadcast and police calls. Four-tube AC superheterodyne. Dynamic speaker. Walnut cabinet. List price, \$22.50.*



# An Open Letter From

# FADA

Radio

# To Every Radio Dealer

**F**OR the past fifteen years, ever since radio began, FADA has watched the march of events in the radio industry. We have seen the development of radio from the weak crystal set to the powerful multi-tube receiver that now spans the entire globe . . . we have seen new names skyrocket to fame overnight only to crash into oblivion by the very weight of their mushroom growth . . . we have seen so-called "hot lines" fizzle and become as cold as a gold digger's heart . . . we have seen dealers stock up with new lines on the promise of greater profits only to discover greater losses because of dumping and liquidation . . . we have seen great names in radio disappear so completely that no trace of their former greatness remains.

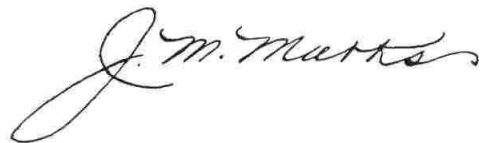
If the radio dealer would take into consideration the lessons learned in the past, much could be done to stabilize the radio industry. But the bitter and costly experience of yesterday are too easily forgotten with the rise of new claims and the hopes of tomorrow.

We believe that the time has come for the radio dealer to clean house . . . or else he may

find his very existence endangered. No longer can he select lines on the basis of imaginary discounts or unproven promises. The future will depend solely upon the sound judgment displayed now!

For fifteen years FADA has built upon the firm foundation of honesty . . . honesty in manufacture, honesty in claims, honesty in dealer associations. The record of FADA accomplishments is equalled by few, surpassed by none. Now after fifteen years the name of FADA shines more brilliantly than ever before. Time has not weakened our firm resolution to adhere to those policies which will continue to add prestige to the name of FADA.

The valuable FADA Franchise will be extended in 1935 to a limited group of dependable radio dealers in each shopping center. We invite you to get in touch with the FADA jobber in your territory, or if none has been appointed, write direct and the story behind the 1935 FADA Radio line will be forwarded promptly.



**FADA RADIO and ELECTRIC COMPANY**

Long Island City, New York

Cable Address "FADARADIO"

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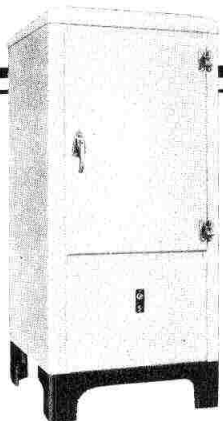
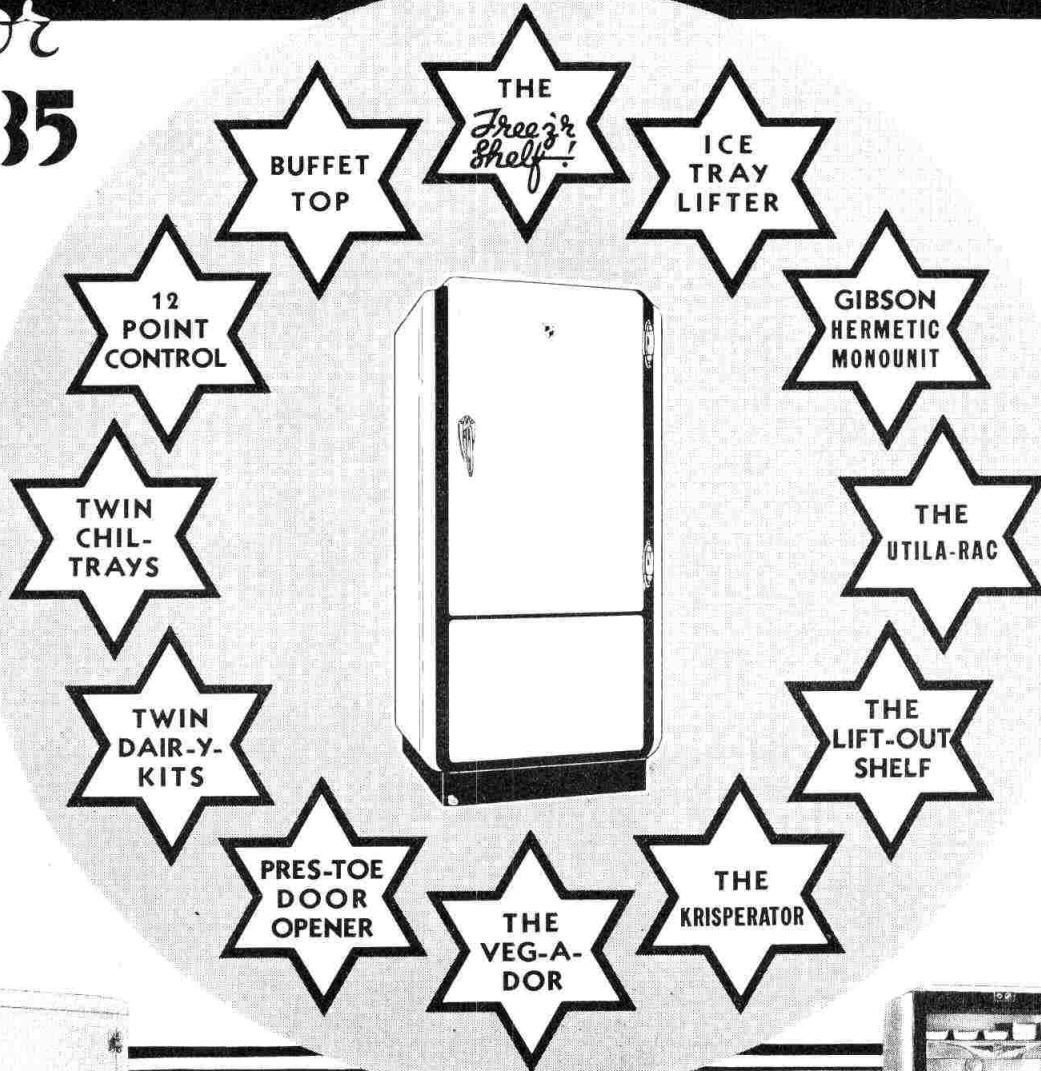
**1920 "Famous Since Broadcasting Began" 1935**

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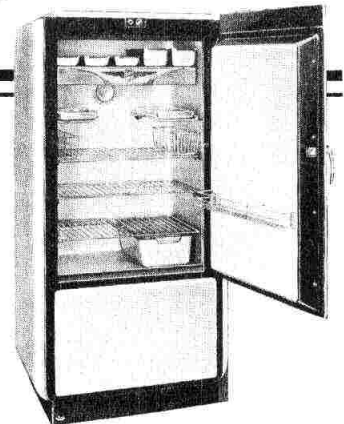
# GIBSON Presents an ALL STAR FEATURE PICTURE

A SUPER PRODUCTION

for  
1935



Model B-475



Model L-705

## GIBSON'S 1935 Models Have Real Sales Punch

Here are FOUR definite reasons why you should investigate the GIBSON Line of Electric Refrigerators for 1935:

**1** The GIBSON FREEZ'R SHELF: is an exclusive Gibson development that will make the GIBSON the most talked about refrigerator this year. It is so entirely new—it has such "sales value" that it will stop customers and make them ask a lot of questions. And... a good salesman can do a lot with a customer when he gets started asking questions.

**2** There is an important "sales feature" on every shelf of any of the GIBSON models for 1935. Open the door and from top to bottom you can find features that will hold consumer interest and make the closing of the sale an easier matter.

**3** In addition, intensive sales promotion and "point of sale" advertising will drive home the prestige of the GIBSON organization, backed by its 59 years of exclusive refrigerator manufacturing experience.

**4** Dealer and Distributor profit margins are adequate and are a definite part of the GIBSON Sales Policy. With the increased volume, which is bound to follow the startling yet practical innovations which GIBSON has originated for 1935, Distributor and Dealer profits will be more liberal than ever.

Look over the many exclusive features — learn about the extensive promotion plans — investigate the liberal profits which are possible with the new GIBSON Write GIBSON for information today.

**GIBSON ELECTRIC REFRIGERATOR CORP. Greenville, Michigan**

See the GIBSON display at the Home Furnishing Show, Chicago, January 7th to 12th, Room 553, Stevens Hotel.



# IMPACT!

... on the consumer  
creates **PROFIT** for F-M Dealers

● **Impact!** That something in a product which, on first sight, appeals so powerfully to the prospective customer that all preconceived ideas are swept away in a quick rush of acceptance and preference. Seldom is a product placed in a dealer's hands which truly has . . . *impact*.

But you can have it in your electric refrigerator line this year if you act *now!*

Your prospect expects differences in the various refrigerators he inspects before purchasing—and he finds *small* differences. Variation in appearance, shelf arrangement or hardware. Not until he comes to the Fairbanks-Morse Refrigerator does he find a *big* difference. And there he finds the **CONSERVADOR!** The sheer unexpectedness of it carries impact. And as you explain what the Conservador accomplishes in *economy*, convenience, space utility . . . how *logical* it all seems! No delicate weighing of slight features in the prospect's mind—but one *big, exclusive* feature that brings quick acceptance—and profits to the dealer.

The F-M franchise is the most valuable dealer arrangement to be offered for the 1935 season. Write, phone or wire for complete information and name of nearest distributor. Fairbanks-Morse Home Appliances, Inc., 430 S. Green St., Chicago.

Cable Address: FAIRMORSE, CHICAGO



## FAIRBANKS-MORSE

*Home Appliances, INC.*

104 Years of Quality Products

**REFRIGERATORS • RADIOS • WASHING MACHINES • IRONERS**

# MEET COMPETITION with BURGESS Quality AT THESE LOW PRICES!



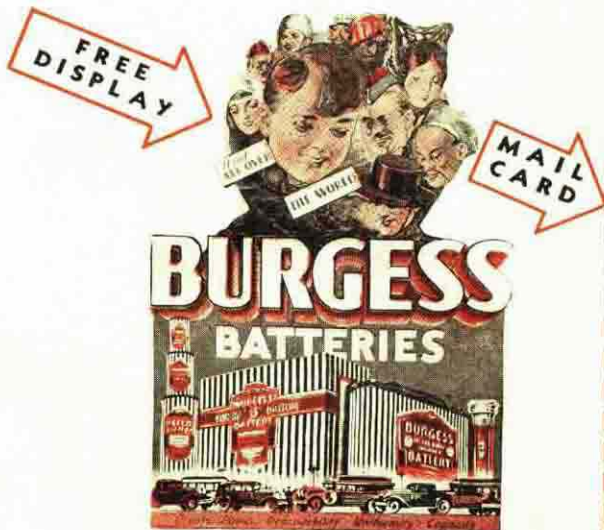
BOY! WHAT  
A VALUE!

**BURGESS BEN HUR HEAVY  
DUTY 'B' BATTERY. DEALERS  
COST (LOTS OF 6) ea. \$1.20.  
RETAIL PRICE \$1.70.**

## -Sell More "B" Batteries in January!

Holiday parties use up a lot of "B" Batteries. There is always a big increase in "B" Battery sales in January. Get more of this profitable business by featuring the BURGESS BEN HUR illustrated here. It is a full size, full weight, wax top BURGESS heavy duty Battery (No. 1081). Your cost of only \$1.20 (east of the Rockies) enables you to meet your price competition with BURGESS quality!

Use BURGESS BEN HUR Batteries to attract customers to your store. Many will buy the BEN HUR, but many others will want standard BURGESS "A", "B" and "C" Batteries. Be sure you have an adequate stock of all the fast selling numbers in the BURGESS complete line of high quality radio batteries. ORDER FROM YOUR JOBBER and mail postpaid coupon for FREE Display.



RR J35

BURGESS BATTERY COMPANY  
Freeport, Illinois

Gentlemen:

- Send us the FREE "B" Battery Display in colors.  
 We are also interested in FREE Flashlight displays. Send full information.

STORE \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_

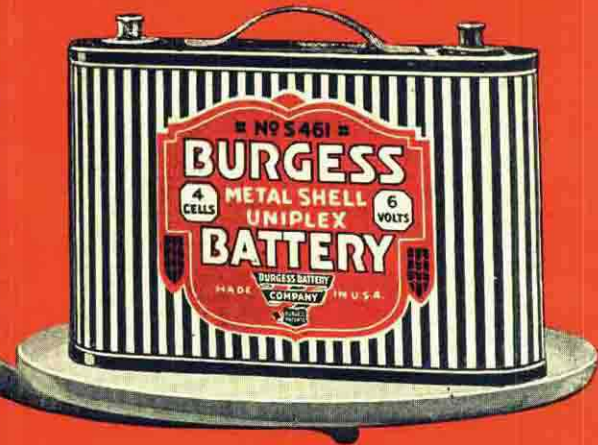
MY JOBBER IS \_\_\_\_\_



# NEW

# BURGESS LITTLE UNIPLX

- ★ 40% LIGHTER WEIGHT!
- ★ 30% SMALLER SIZE!
- ★ SAME CAPACITY!



YES, WE HAVE THE  
VERY LATEST BATTERIES  
-WE SELL BURGESS!

I'LL TAKE THAT  
NEW LITTLE  
UNIPLX

Pep up your battery sales with the "Little" UNIPLX, new BURGESS six volt, dry ignition battery. The "Little" UNIPLX has all the power and long life of the Standard UNIPLX, but it is 40% lighter and 30% smaller! It will be preferred by users of dry ignition batteries especially when portability, weight and space are important factors. ● Like the Standard UNIPLX, the "Little" UNIPLX is built into an all metal, weatherproof container and is identified by the famous BURGESS Black and White Stripes. It gives your customer more power per pound. It brings you more sales per customer, plus a saving in store space and a saving in freight! ORDER from your jobber; tear out and mail post-paid coupon for FREE DISPLAY.

First Class  
Permit No. 52  
Sec. 510 PL&R  
Freeport, Ill.

**BUSINESS REPLY CARD**

No Postage Stamp Necessary if Mailed in the United States

2c Postage Will Be Paid By  
**BURGESS BATTERY COMPANY**  
FREEPORT,  
ILLINOIS

I'LL BET A  
LOT OF FAST  
THINKING  
DEALERS MAIL  
THAT COUPON!



**FREE** WINDOW  
DISPLAY  
IN COLOR  
MAIL POSTPAID COUPON NOW



*The "Big Shots" are Whispering*  
**"WATCH GRUNOW"**

*The Distributors are Saying*  
**"WATCH GRUNOW"**

*The Smart Dealer is Going to*  
**"WATCH GRUNOW"**

*The BEST NEWS of the Season for You  
is the News Grunow is Making now on*

**MODELS · DISCOUNTS  
PRICES · MERCHANDISING**

**WATCH FOR ANNOUNCEMENTS—  
OR BETTER STILL, GET THE STORY  
NOW FROM GRUNOW DISTRIBUTORS**

*Grunow*  
**SUPER-SAFE REFRIGERATOR**

**THE NEWS OF 1933 · THE SENSATION OF 1934 · THE OPPORTUNITY OF 1935**





# NEW

*... a dual-wave  
airplane dial  
5-tube receiver*

by

# STEWART-WARNER

## EXCEPTIONAL RANGE—INCLUDES EVEN THE 17-METER BAND

● HERE'S the latest addition to the Stewart-Warner line... a "red hot" number with the eye appeal and the "reach out and get 'em" ability that will make it the fastest mover in any dealer's stock—a set with features that no one has even looked for in a radio anywhere near its price.

### A Real Round-the-World Performer

With its highly-developed superheterodyne chassis which includes the use of two double-purpose tubes, this remarkable set has amazing range and selectivity. The first band—530 to 1600 kilocycles—covers all standard American broadcasts and many police wavelengths. Its short-wave band covers all the prominent broadcasts on the popular 49, 39, 31, 24, 19 and 17 meter channels. Can you think of another set anywhere near this price that includes the 17 meter channel of GSG, DAVENTRY; PHI, HOLLAND; FYA, FRANCE; or XGN, CHINA?

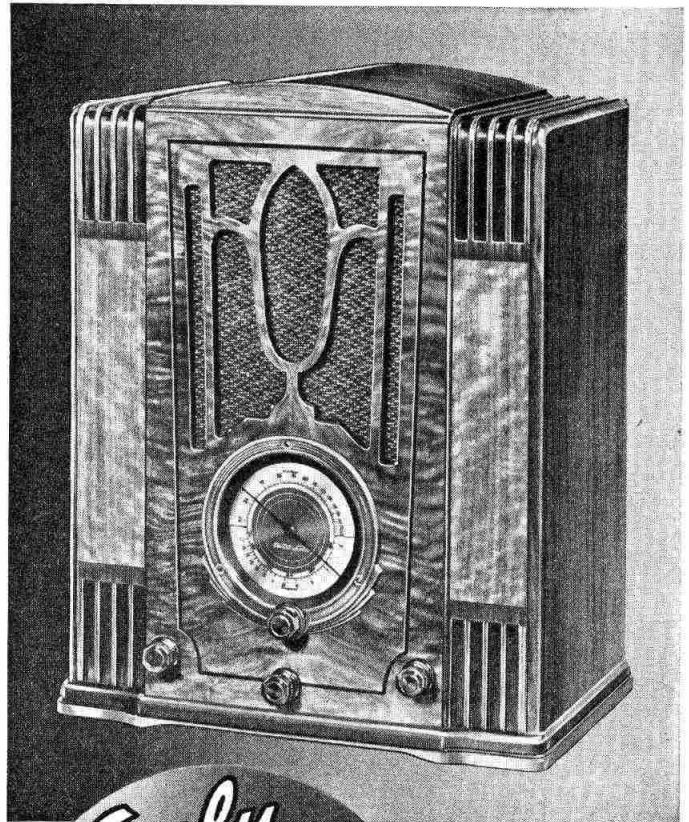
### Eye Appeal—Performance—Price

In a cabinet of new and ultra-smart design executed in matched walnut—in a chassis with every advanced feature, including accurately calibrated airplane dial, 26 to 1 tuning ratio, variable tone control, automatic volume control and a host of others—Stewart-Warner offers another example of why "It is easier to sell Stewart-Warner than to sell against it."

Don't wait another day. Get in touch with your Stewart-Warner distributor right away. Get this amazing profit-maker into your display room and show window as soon as possible. You'll be glad you did.

STEWART-WARNER CORPORATION  
1853 Diversey Parkway Chicago, Illinois

**ASK YOUR DISTRIBUTOR FOR  
FULL DETAILS ON THIS NOW!**



Only  
\$42<sup>50</sup>  
RETAIL



**MODEL  
1301**

(Slightly Higher West of Rockies)

Dual-Wave Airplane Dial—5-tube Superheterodyne with two double-purpose tubes. Tuning range—530 to 1600 kilocycles and 5.7 to 18.2 megacycles. 3½" airplane dial. 26 to 1 tuning ratio between knob and dial. Automatic volume control. Variable tone control. Walnut cabinet, 17" high, 13½" wide, 8½" deep.

**STEWART-WARNER ROUND-THE-WORLD RADIO**

# RADIO RETAILING

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*Washington*

VOL. 20      **JANUARY**      NO. 1  
1 9 3 5

## JUNGLE WARFARE

The past month has witnessed the customary "end of the year" releases from leaders in the industry covering the state of the nation and venturing mild predictions as to the outlook.

The following quotation from a statement by E. T. Cunningham, president of RCA Manufacturing Co. Inc., reflects the general sentiment:

"An industry is never any better than the men in that industry make it. It is my sincere hope that the upward trend of radio volume will act to remove the desperate pressure on the industry and that it will actively cooperate in seeking better and more constructive ways to promote consumer interest in radio's products and the orderly distribution of those products. Certainly we have seen a great deal of "jungle warfare" and we still have lots of it with us. The more the industry applies itself to that kind of internal warfare the less time it has to give to the broad promotion of the consumer market.

"Radio merchandising attained new heights of consumer appeal the past year through all-wave reception. The quality of performance and the values offered have never been excelled in the industry. It is only through this constant progress in the quality of our product that we create the desire for better radios. The industry must remember that it is selling its output largely on the basis of obsolescence of existing equipments. Cooperative promotion within the industry is essential to the fullest attainment of that result."

## THE JOBBER'S VIEWPOINT

The following letter from a prominent jobber expresses the viewpoint of a large majority of his fellow distributors.

"The outlook for radio business in this territory depends upon the control of the market in metropolitan centers. For example, a recent liquidation in New York and Boston, by a well known manufacturer of early 1934 models seriously retarded the sale of modern

receivers during the entire month of November. If the metropolitan situation can be cleaned up so that the public will regard radio as a legitimate business I look for a marked increase in dollar volume in 1935.

"Buying power is way ahead of this time last year. Dealers' inventories are low. The sale of low price sets is limited because most dealers have a large number of trade-ins and wish to move these first.

"The amount of early spring business available will be largely determined by the character of new lines announced by manufacturers in January. If these manufacturers fight for a lower sales unit they will disrupt public confidence. Consumers in this territory expect to pay more. The manufacturers, therefore, have an opportunity to maintain the present high-price level. Let us hope that they will do so."

## NEW VISTAS IN RADIO

The Radio Industry, already indebted to Leopold Stokowski for his many contributions to the advancement of the radio arts, should greet with loud acclaim the most recent effort of this master musician and creative genius. The January issue of *The Atlantic Monthly* runs, as its lead feature, an article by Mr. Stokowski under the same title as this editorial.

This article must be read in its entirety to be appreciated. It contains many statements of direct interest and usable value for radio dealers. Mr. Stokowski discusses, with the understanding of a competent radio engineer, such matters as frequency range, harmonics, transmission problems, intensity range, auditory perspective, electrical production of tone, and the character of radio music. We particularly call to the attention of our readers that section of his article which deals with the listener's responsibility—in other words, correct operation of the volume and tonal controls.

Read this article. *The Atlantic Monthly* may be purchased at any newsstand. Your appreciation of just what radio means to the nation—and *will* mean in the near future—will be greatly enlarged, and your background equipment for selling *radio* greatly strengthened.





# Our Next



# Big Job

## QUIETING MAN-MADE "STATIC" RIGHT AT THE SOURCE

A FEW members of the industry have agitated for elimination of man-made "static" right at the source for a number of years. Little progress has been made toward inducing appliance and automobile makers to quiet their equipment, however, due largely to lack of concerted effort.

While it is true that appliance manufacturers could unquestionably build up consumer goodwill by making their products noise-free they have been loath to do this because it adds a few pennies to production costs. They have felt, furthermore, that the problem was not yet sufficiently acute to warrant such expense.

With the increasing popularity of shortwaves, automobile radio and the imminence of television, reduction of electrical noise right at the source becomes something we *must* have rather than something we would just like to have. Shortwave sets are severely handicapped despite the efficacy of special aerials; automobile radios which do not pick up interference from the quieted car in which they are installed are adversely affected by every un-suppressed machine that goes by. And television, when it comes, will be hopelessly handicapped by noisy motors and switches because static raises more "hob" with a picture than with a merely audible sound.

### Special Conference on Noise Reduction

There are signs that the radio industry recognizes the importance of a noise-reducing crusade. At the recent Rochester meeting of the IRE, representatives of the FCC, power companies, electrical manufacturers, *Radio Retailing*, radio manufacturers, radio distributors and the SAE addressed a special conference on noise-reduction. Key men from all affected industrial groups were on deck and these groups can, if they will, solve the problem.

Radio noise reduction right at the source will unquestionably be a drawn-out process. It cannot be accomplished overnight. It is to the industry's advantage, however, to induce appliance and car makers to quiet their products from this moment on. If necessary, there should be legislation requiring noise-suppression in appliances and cars built after, say,

January, 1936. Furthermore, the radio trade itself should at once take up the job of equipping noisy devices with filters.

Noise-reduction does not necessarily hinge upon the appliance, car makers' and radio industry's philanthropy. Consumer goodwill is valuable and is steadily being injured by noisy appliances. We predict that it will shortly exert a noticeable influence on appliance sales. And filters for existing devices can be marketed at a profit, the best place to start being in the homes of people who have appliances which wreck their own shortwave reception.

A concerted and prolonged campaign for the reduction of man-made static right at the source is our next big job. Everybody can make a few pennies while putting it over, for the consumer will pay any reasonable increased cost for complete radio satisfaction. And, even if the consumer would *not* pay, we have to do it anyway for our own salvation.

---

## PROGRAM TRENDS

Perusal of program plans for 1935 reveals the following trends:

The great chains will shrink the world to a fraction of its present size in bringing to listeners many types of educational and entertaining programs from abroad. Familiar American scenes will share honors with fascinating novelties from Europe, Asia, Africa and South America.

We observe a trend towards sophistication, for example, that raconteur, Alexander Woolcott, who has attained wide popularity with all types of listeners.

The feminine element will be in the foreground this year. Two nationwide programs already are scheduled consisting almost entirely of women musicians and entertainers. In addition, three noted feminine celebrities, Kate Smith, Elsie Janis and Geraldine Farrar, will compile and direct offerings.

The lapel mike and portable transmitter will be used extensively. This means that extemporaneous and original comment from the man on the street and from extra-studio locations will be common occurrences.

Amateur talent will be encouraged. Many promising young stars have been "discovered" and will help the jaded listener to forget his boredom.



# "Pre-Heat 'em"

*The sale starts from a used set—Nine approaches that lead to the purchase of a modern model*

*When customers are shy, can't afford or don't want a new receiver, then the selling starts. These four dealers employ the "warming up" process. They first agree with the prospect, talk "used" set possibilities. But . . . see how clever sales guidance leads to an ultimate purchase in the higher price brackets:*

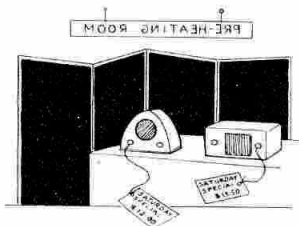
**SATURDAY SPECIALS**—"We never show used models the first five days of the week but on Saturday we feature them in newspaper ads and in our store displays. Unless a mid-week customer insists, we never disclose that we have any old models.

"The prices of used sets on days other than Saturday range from \$25 to \$38. On Saturday they may be purchased at prices from \$12 to \$15. Behind this is a psychological selling principle.

"Since the people in this community have become cognizant of our Saturday specials those who want bargains over-anticipate the excellence of the offerings. While the sets are more than worth the money, the anticipation of getting a \$38 used radio for \$15 builds up radio enthusiasm to a point that disappointment is produced when the set is heard. When the used set is compared with a new one the deficiencies of the old set are quite evident.

"We place five specials in the entranceway. If a prospect wishes to hear one we take it to the rear of the sales room into a section separated by a screen. We demonstrate it. Nearby is a late table model priced around \$40. We candidly explain that, whereas the used radio is a bargain, it will not do the work, nor produce the satisfaction that the new model will. We then compare the two. The prospect's desire for a used model decreases as his desire for a new model increases. If he possibly can he will buy a new set.

"Many a used set prospect can afford to purchase a



new model. They need 'pre-heating,' however. The rear section of the sales floor is called our 'pre-heating department.' When the prospect is adequately 'pre-heated' we take him to the main sales room where all the new models are on display.

"That there are moneyed people among the used radio prospects is shown in the numerous instances where those who came expecting to plunk down \$15 for a used radio conclude the visit by planking down more than \$100 in cash in full payment for a new model.

"This system enables us to clear out our used merchan-

dise and to draw to the store those who have money, are inclined to hold onto it but will spend it if they are convinced that they are getting their money's worth.

"We implant in every visitor's mind the desire to own a late model. On the receipts given with the purchase of the Saturday specials, we write in the fact that we will allow the full purchase price on a new set when the purchaser desires to trade it in."

CLINTON L. FANTON, *Riverside, Calif.*

**DISSATISFACTION SPECIALIST** — "Our strategy is that used by the automobile salesman. He picks out the man who owns an old car. He goes to him and talks knee action, stream lines and 70 miles an hour. He then gets the prospect behind the wheel. The car's



swift gliding motion is sure to captivate him. In comparison his old vehicle rides like a 'one-horse open shay.'

"Similarly we are going after the replacement market. We are telling used set owners the story of a radio which will bring in foreign stations at the flip of a dial, reproduce Metropolitan opera with absolute fidelity and eliminate much of the noise and static of the old models.

"Whereas in an automobile it is riding comfort that counts, in a radio it's tone. To prove our point we insist on a demonstration. If in the store, we show the customer how much more effectively a modern brings out the high notes as well as the low ones. If a home demonstration we ask the prospect to try out the new radio and the old alternately on the same program.

"We point out to customers that about \$25,000,000 worth of music and entertainment is now on the air and without a high fidelity set they are probably getting only about \$1,000,000 worth of it.

"The automobile salesman will not evaluate the customer's old car for trade-in purposes until after the new model has been demonstrated. In a like manner we require a try-out of our new radios before setting an allowance on the old set and for obvious reasons.

"Recently a woman came in ready to purchase a \$200 radio provided we would give her so much for her old set. We advised her that it wasn't fair to make such a trade since she knew the value of her old set but didn't yet appreciate the value of the new model. She agreed to take the new radio and after she had tried it out a few

days we made her an offer for her old set *several dollars* below the figure she had set. She accepted our offer because by that time she had thoroughly sold herself on the new machine. This policy is always best in handling the trade-in problem."

LOVEMAN, JOSEPH & LOEB, *Birmingham, Ala.*



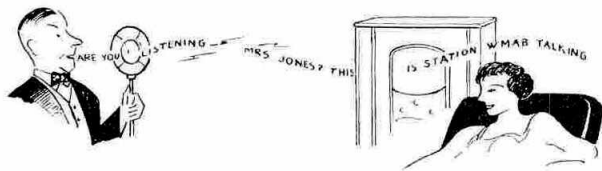
**"OLDEST" RADIO CONTEST**—"Many radio retailers overlook the owners of very old radio sets. We cashed in handsomely in Wichita and Sedgwick county with an 'Old Radio Contest.' Everyone in the county was invited to join, a new set being offered to the winner. One of the requirements was that 'to be eligible your old radio must be a factory built receiver.'"

GEORGE INNES CO., *Wichita, Kansas*

**FIRST SERVICES, THEN TALKS SHORT-WAVE**—"When I'm called to a home to service a radio set, I go ahead and service it. After I have finished I ask the customer if he has had any experience with an all-wave set or listened in on a shortwave receiver. If he hasn't then I put in a few words regarding programs that may be obtained from great distances.

"It is not wise, in my opinion, to start talking new radio sets before you have repaired the customer's old set; for he will assume that you are trying to sell him a new one and that you will put your repair charges on the old set so high that it will appear economy to trade it in on a new one.

"But after the job is done, I talk about shortwave reception. If the customer appears interested, I suggest that I bring one out and let him try it. I believe home



demonstrations of all-wave sets are essential because it takes a bit more skill to properly tune in a shortwave station than those of longer lengths.

"Having obtained permission to bring out a set, I demonstrate it to the prospect. Then I announce the fact that I have a shortwave sending station at home and that I talk with distant stations every late afternoon and evening. I show the customer about where my station will come in on his dial and suggest that he *tune me in* at a certain hour that evening whereupon I'll talk to him.

"I have never failed to get a prospect to tune me in and I always speak his name and offer a few little pleasantries. It makes a hit especially when he knows that the fellow I'm talking with—someone in Australia, for example—has heard me mention his name.

"Get a prospect's enthusiasm sufficiently aroused and he'll sell himself a new all-wave radio."

UNITED RADIO SALES AND SERVICE, *Pasadena, Calif.*

*Editor's Note: Brown owns an amateur shortwave station, 1,000 watts, 20 meter radio phone.*

## Ten Years Ago

We have just been thumbing thru the bound volume of the first issues of *Radio Retailing*. It is of more than passing interest to note the titles of the subjects which held the center of the stage during the winter of 1925. For example:

### Greetings to the Radio Industry from Herbert Hoover—Radio's Greatest Friend

*Mr. Hoover was then Secretary of Commerce.*

### Who Is Selling Radio—and How

*The merchandising methods of ten leading types of retail outlets were presented. The exclusive radio dealer headed the list. "The most popular set is priced at around \$100." . . . "The era of free installations has apparently passed."*

### Hold on to List Prices and Full Profits

*Then, as now, cut prices menaced the merchandiser.*

### The Gyp Must Go!

*It's taken ten years—and he's still on the job but to a lesser degree.*

### \$1,000,000 a Year Retailing Radio

*In which J. Modell, New York's radio department store man, told how he turned stock 20 times a year.*

### Selling the Music Lover

*"—and now my radio sales equal my phonograph business."*

### Why the Parts Trade Will Never Die Out

*Righto, today the parts business is doing nicely, thank you.*

### Console Is 1925 Vogue

*"The console craze is sweeping the East," we reported in those pre-midget days.*

### \$38,000 Worth of Sets Sold via Telephone

*Believe it or not, it was true.*

### Take the Sets into Their Homes

*Long Island dealer made 10 sales to every 12 sets left on approval.*

### You Can Sell Four or Five Loudspeakers for Each Radio Set

*Parlor, bedroom and bath.*

### Knowing How to Buy

*The secret of a San Francisco dealer who "turns over 1,000 headsets a month."*

### Selling Radio to the Farmer

*Where have we heard that one before? In 1925 there were 7,200,000 farms and 360,000 had radio.*

### And last, but not least—

### Ruining the Radio Industry

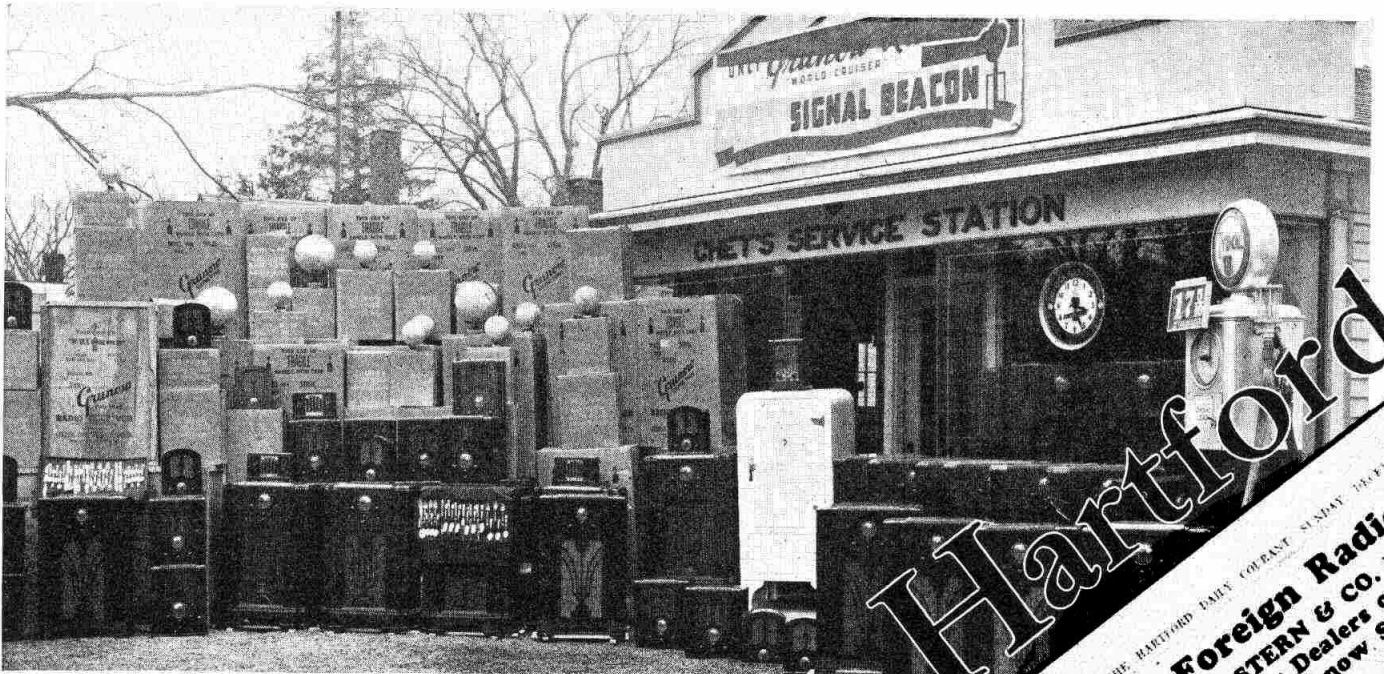
*"Dealers of Providence, R. I., Are in the Midst of a Price-Cutting War to See Who Can Sell the Lowest and Hold Out the Longest—Chaos is the Result."*

## January "White Sale"

"January White Sale" read silver letter cutouts hanging in the store and window of O'Dea's Radio Shop, Paterson, N. J. The window floorground and sidewalls were covered with white crepe paper. Radios stood on white platforms. Inside the store white decorations predominated.

The psychology behind this display was to capitalize the popular January White Sales run by department stores to stimulate business after the Christmas holidays. That it was good sales psychology was attested to by the fact that 32 radios were sold in January, last year.





### Gas, Oil—and Plenty of Radios

*Chel's Service Station featured this striking "set-up" in a full page newspaper advertisement. This picture shows only part of the total shipment, 90 receivers in all. The balance were displayed in three showrooms, in Manchester, Conn., specially rented for this purpose.*

*The ad's catch headline read: "A Grunow in EVERY Street in Manchester." Proprietor Brunner's five-point publicity plan moved this initial shipment so fast that he was obliged to re-order ten days later.*

**T**HIS full page ad tells its own story. Writes live-wire Francis Stern, well known Connecticut jobber:

"This shack is creating a marvelous amount of interest. The object in mind was not alone publicity but the value it could be to dealers. Demonstrations are constantly being made by dealers in homes. Sets are out in customers' hands many days before they are able to close a sale. By giving the dealers this shack where they can make demonstrations, they can convince their customers as to the performance of the set in question. This means that the dealer, instead of having one or two sets on his floor, because the rest are out on demonstration, can maintain a complete store display at all times.

"We welcome competitive merchandise. We suggest to dealers that if they have a customer who is interested in some other sets besides the one we carry, they have their salesman take the customer and the competitive piece of merchandise to our shack. There we have available a shortwave antenna as well as a conventional broadcast antenna. We will permit any dealer to make any competitive demonstration he chooses. If we lose, okeh.

"It might interest you to know that last Sunday we had over 500 people. This morning's newspaper carried an article mentioning it. We picked up ZH1 on 6012 kc., located in Singapore. We also picked up a station BK1 somewhere in Australia on 6048 kc. We have not been able to find out the exact location of this Australian station but it came in with such clarity and such volume, that there was no mistaking either the call or the country. Euro-

**UP Hartford**

THE HARTFORD EARLY CONTACT SUNDAY THE POWER OF

**Now You Can Hear Foreign Radio**

**Tuckel Radio COMPANY**

110 MAIN ST. TEL. 2-2000, ROOM 2, 1935

**Hartford's Pioneer Grunow Dealer**

Invites You to Visit

**THE SHORT WAVE RADIO LISTENING SHACK**

110 MAIN ST., 2ND FLOOR, HARTFORD, CONN.

And Hear Foreign Stations AT THEIR BEST

4 Cars At Your Disposal

WE WILL DELIVER THE CAR TO YOU AT ANY TIME

SALE PRICE THE BEST LISTENING SHACK

**GRUNOW RADIO SETS**

\$22.50 to \$149.50

SMALL DOWN PAYMENT EASY TERMS

LIBERAL REFUNDING FOR THE BUYER

**Sage-Allen Headquarters for Grunow Radios**

We carry the...  
...the...  
...the...  
...the...

*Here's an ad with a "point" to it. A distributor provides a real sales help for his dealers—and tells the public about it in a full-page announcement that bristles with "news value."*

pean and other foreign stations are daily occurrences.

"We hope that before the week is over the various schools will take advantage of this shack for there is a great deal of educational value for the young folks.

"Most people who have visited the shack to date are adults. There has been very little curiosity visiting. Our guests are genuinely interested in shortwaves. We believe that we have been instrumental in securing a good volume of sales for our local dealers."

# Way

**Reception At Its Best**  
**Results Count—**  
**Not Promises—**  
 A New GRUNOW All Wave Radio  
 Backed By Our Unconditional 30-Day  
 Free Guarantee Assures You Complete  
 Radio Enjoyment

**Hartford  
 All-Wave Radio  
 Shack**



Model 662  
**\$59.50**

**Delivers  
 Any Grunow  
 Conveient  
 Terms  
 Extra  
 Trade-in  
 Allowance**

237 Asylum St.  
 Phone 2-4500

R.G. SCELLI  
**RADIO SERVICE CO.**

**Wise Smith's**  
 I invites you to hear  
 Grunow All Wave  
 Radio at its Best  
 at the Short Wave  
 Radio Shack

Then, after listening to the manual  
 on reception, come and see our  
 complete line of 1935  
**Grunow Radio**  
**\$22.50 to \$**  
 WISE SMITH'S



**GRUNOW  
 PROMOTIONAL  
 STAKE  
 VISITING HERE**

**Cor. Main St. and Asylum Ave., West Hartford  
 Open Daily 9 A. M. to 1 A. M.**

Have a few minutes left of day for yourself? Then visit the  
 Hartford Radio Shack, where a fine selection of Grunow  
 radio sets is on hand. You will find a complete line of  
 Grunow sets, including the new Grunow All Wave Radio,  
 which is the most complete and versatile set ever made.  
 It will give you the best reception of any radio set  
 ever made. It will give you the most complete and  
 versatile set ever made. It will give you the most  
 complete and versatile set ever made. It will give you  
 the most complete and versatile set ever made.

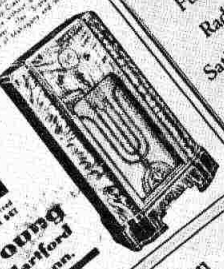
**Stern & Co., Inc.**  
 110 Chapel St. Tel. 2-2278

**ACT QUICKLY AND YOU WILL GET A  
 ROGERS SILVER SET**

**FREE**



**Hairy & Young  
 Hartford  
 Conn.**



**G. Fox & Co.**  
 For  
 Fullest  
 Radio  
 Satisfaction  
 and Fine  
 Service

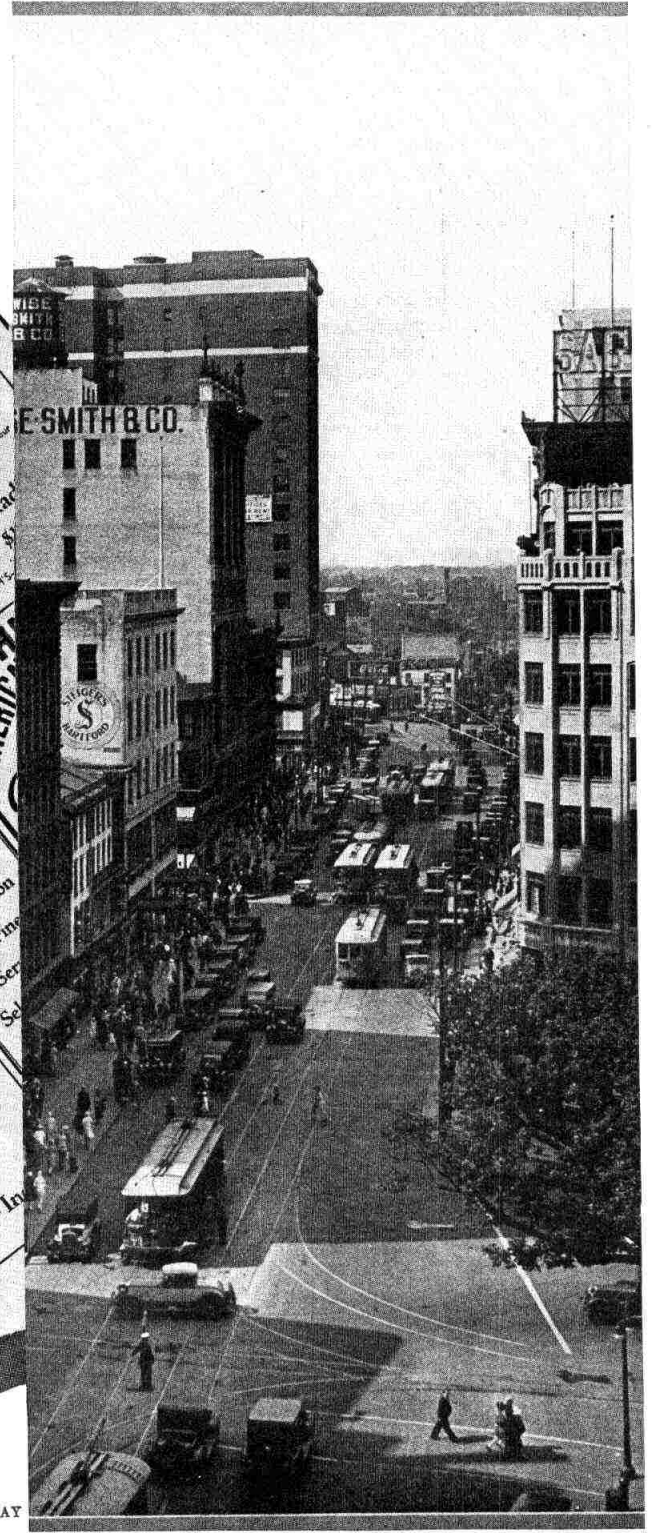
**I Specialize  
 in the Proper  
 Installation**  
 OF THE  
**Grunow  
 Radio**

Monthly Piped from \$22.50—\$125.50  
 Sold on Convenient Terms  
**Allowance for Your Old Set**  
 \$1 Will Refund Any Set

**SUGAR**

**A Christmas Suggestion**  
 THE GRUNOW All Wave Radio  
 and GRUNOW Carrene Refrigerator Here  
**Wm. Touhman & Sons, Inc.**  
 1807 1/2 MAPLE AVE.

Hartford, Conn.—A typical, high class, American city. Has served as a proving ground for many innovational radio sales campaigns.



GALLOWAY



# More COSTS

*from*

***In which 7 individual service expense reports for 1934 are compared with averages presented in December***

WE are grateful to C. J. Benedict of the *Institute of Radio Service Men* for his work in securing itemized 1934 cost statements of seven Cleveland servicing organizations. We wish also to express our gratitude to the seven unnamed contributors and to commend their co-operative spirit. Knowledge of costs is of utmost importance at this time and it is our fond hope that this article and the three which have gone before will aid servicemen in determining whether or not their costs are in line.

The possession of these figures permits us to double-check data presented in the December issue of *Radio Retailing* against actual individual statements. In order to simplify the comparison we have averaged each item of expense and placed the totals in the next to the last column at the right. Rider's figures are in the very last column so the two may be readily contrasted.

Our Cleveland collaborators do not furnish total sales data but it is obvious from a reading of their individual reports that there are some relatively small operators as well as others doing an appreciable volume of service work. The December figures were based on a \$5,000 annual volume.

THE average annual expenditure by the Cleveland operators for shop insurance is \$4.56, as compared with Rider's \$12. Two men do not have insurance of this sort at all, which is a risky business despite the fact that we know costs must be chiselled to the bone in many instances in order to make ends meet. Shop insurance is not the place to chisel. A quick check-up with your insurance man will show that instruments, fixtures and parts cannot begin to be protected for any such amount as this average, even if the shop is simply a room in a home already insured.

Car insurance averages \$4.31, as compared with \$60. Obviously this cannot possibly be more than fire and theft. The business is left unprotected against accidents. A collision could, therefore, completely wreck the operation. Adequate car insurance is, in our estimation, absolutely essential, more so than shop protection. It should be one of the "musts."

"Other insurance," the third item, is not explained in the Cleveland statements. Rider does not include it at all. Or, probably, includes all insurance under the first two classifications. If the first two are adequate miscellaneous insurance may conceivably be dispensed with.

Rentals average \$154, considerably less than the \$270 of the Rider figures. There is considerable variation in different parts of the country, however, and this may possibly account for the relatively low figure in the Cleveland average. We note that two operations pay rental very near \$270. One pays \$48 annually, which is probably an apportionment of home rent to a single room used in the service business. \$48 is unquestionably too little as \$4 per month would be low even for a garage. The quarters occupied could probably be rented for more money so that the operator is "kidding himself." Another operation lists \$24 as annual rent. This simply cannot be made to "jell" in our mind no matter how we consider it.

Light, heat and power total \$80.02, which is nearly double that of the Rider report. These figures are not estimates. They were taken directly from actual bills so we arrive at the conclusion that the Rider figure leaned over backward and represents a minimum rather than an average.

Garage fees average \$43.20, as against \$72. This may easily be possible as garage fees vary widely from one locality to another and they may be low in certain Cleveland

districts. In addition, we note that garages are included in the rent in two instances, which would naturally cut the expenditure somewhat.

DUES are somewhat lower than the December figure. There is only slight difference, however, and this is not a vital expense. Magazines hit the Rider figure quite closely and, if we may be pardoned for the personal propaganda, indicate the value placed upon trade publications by service organizations. The average indicates that several papers are subscribed to in each instance.

Circuit manuals are likewise subscribed to much as the December figures show. They are, unquestionably, another "must" item. "Other service data" probably means such things as technical books, indicative of the average serviceman's desire to improve his knowledge and so do his work more efficiently. This item was not considered in the Rider report, a pardonable oversight in view of the many more important items involved.

Depreciation on the car ranges from \$8 annually to \$125, the average being \$79. Obviously the low figure is out of line. Divide \$8 into the cost of a cheap, used car and it immediately becomes evident that the answer, in years, is much too optimistic. It is our feeling, furthermore, that even the Rider figure of \$126 is really too low an average but, as we have already pointed out, the December figures were minimum rather than maximum, the author striving to avoid any possibility of overestimate. We take this opportunity to point out, moreover, that where depreciation is whittled down to the bone the repair bills will probably climb far beyond the figures given and even things up.

Depreciation on tools is listed as \$7.96, as against \$18. It is our opinion that the \$18 is more nearly correct. This is not an item of major importance, however.

Depreciation on instruments checks, \$61 against \$60 and we therefore have no comment. Servicemen evidently have learned that this item, while relatively expensive, is yet absolutely essential to the business. Depreciation on tubes for test is not considered by the Cleveland men. Just what the figure should be is not known but it is obvious that there is some slight cost involved here. Depreciation on fixtures is listed as \$12.50 against \$24 in an earlier *Radio Retailing* report. The fact that it is considered at all is probably sufficient as fixtures are not expensive and are only infrequently replaced in the average shop.

# Cleveland

## THE CLEVELAND FIGURES

Rider's  
Figures

FIXED EXPENSES	DEALER'S NUMBER							Average	
	1	2	3	4	5	6	7		
Shop insurance	\$5.50	\$3.00		\$5.50	\$12.42		\$5.50	\$4.56	\$12
Car insurance		2.40	\$9.00	9.75			9.00	4.31	60§
Other insurance					18.75			2.68	
Rent	150.00	48.00	208.00	24.00	300.00	\$180.00	170.00	154.00	270
Light, power	40.80	48.00	26.00	84.00	42.77	36.00	49.00	46.65	48§
Heat	*	35.00	10.00	45.00	43.50	*	*	33.37	
Garage	48.00	48.00	*	48.00	*	24.00	48.00	43.20	72
Dues	7.50	7.50	7.50	10.50	12.00	7.50	7.50	8.57	12
Magazines	5.50	5.00	8.00	4.50	7.00	4.50	2.00	5.21	6
Manuals	7.50	7.50	7.50	7.50	15.00	7.50	7.50	8.57	9
Other service data	8.25	2.75	2.00	5.25	5.00	5.00	1.00	4.17	
Depreciation on car	8.00	75.00	125.00	66.00	75.00	150.00	55.00	79.00	126
Depreciation on tools	3.25	6.00	12.00	6.00	20.00	2.00	6.50	7.96	18§
Depreciation on instruments	48.00	54.00	100.00	70.00	50.00	50.00	55.00	61.00	60
Depreciation on tubes for test									12
Depreciation on fixtures	12.00	4.00		37.50	20.00	2.00	12.00	12.50	†
Salary (owner)	1200.00	1200.00	1300.00	1500.00	1500.00	1800.00	1200.00	1386.00	1500§
Salary (helpers)	500.00		1650.00	525.00	500.00		172.00	478.00	
Telephone (shop use)	33.00	36.00	120.00	60.00	63.00	69.00	66.00	64.00	36
Car license	7.25	7.25	7.25	7.25	7.25	10.25	7.25	7.68	12
Interest on investment	18.00	23.00	30.00	40.00	46.00	27.00	23.00	29.50	45§
	\$2102.55	\$1612.40	\$3622.25	\$2555.75	\$2737.69	\$2374.75	\$1896.25	\$2440.93	\$2322
<b>VARIABLE EXPENSES</b>									
Circulars	\$28.00	\$23.40		\$14.50	\$13.25			\$11.45	36
Stickers	1.00	1.50	\$1.50	4.25	6.00	\$1.00	\$1.00	2.32	
Advertising	16.00	4.60		16.48	80.00		21.00	19.72	60
Signs		12.00	10.00	4.60	14.00	5.00	10.00	7.94	18
Postage	14.70	3.00	31.80	13.00	30.00	6.00	6.00	14.93	48
Stationery	20.00	22.00	9.50	16.00	15.00	12.00	31.00	17.93	
Telephone (for sales)		42.00	‡	42.00		18.00	105.00	34.50	12
Repair on car	21.40	43.50	40.00	31.00	108.00	28.00	12.00	40.56	24
Repair of equipment									24
Tires	30.25	12.00	18.00	26.25	28.00	20.00	16.00	21.50	24
Gas and oil	78.00	90.00	144.00	131.00	104.00	135.00	47.00	104.00	192
General shop supplies	28.00	25.00	60.00	60.00	110.00	5.00	72.00	51.40	24
Credit losses									30
Miscellaneous office expenses	5.50	5.00	5.00		20.00	11.00		5.93	20§
<b>TOTAL (Fixed Plus Variable Exp.)</b>	<b>\$2345.40</b>	<b>\$1896.40</b>	<b>\$3942.05</b>	<b>\$2914.83</b>	<b>\$3265.94</b>	<b>\$2615.75</b>	<b>\$2217.25</b>	<b>\$2773.11</b>	<b>\$2830</b>

§These are somewhat higher than shown in "Radio Retailing's" December article "How to Figure Your Costs." New operating statements received since publication bring up the averages.

†Shown as \$24 in December issue but omitted from most recent Rider report. \*In rent. ‡In shop telephone.

Salary, the owner's and helper's being grouped for purposes of comparison, check fairly well with Rider. They are somewhat higher in some instances, lower in others. No yardstick is available in the absence of total sales figures. \$1,800, charged to salary in one instance, may be quite ok if the volume warrants it. We have no means of knowing if it does. Service organizations are cautioned against "dribbling" funds for personal expenses out of the bank balance without listing it under "salary." If the salary items shown are not sufficient, and they certainly are not lavish at best, then they should be increased and the business made to support them.

Telephone bills for strictly utilitarian shop use are higher than we showed last month. Evidently the new figures are closer to the mark than the old. This is a fixed expense which cannot be "ducked." Car license fees vary from state to state so we have no comment.

INTEREST on investment is shown as \$29.50, average, as against \$45 apportioned in our original figures. Check up on the depreciation figures covering tools, testing instruments and cars in several of the individual reports, number 3 for example, and it is fairly clear that not enough has been charged the business for interest on investment. Number three has a car worth at least \$700. The \$125 depreciation note shows this. And he charges off \$100 a year for depreciation on instruments, so that there must be nearly a thousand dollars tied up in these two items alone. \$30 obviously does not begin to cover interest on investment. It couldn't. This man has either overestimated depreciation or underestimated interest on investment.

The total expenditure for printed advertising, including circulars, stickers, newspapers, signs, postage and stationery, is considerably under the sum allowed by Rider. Presumably it is so because the seven operators considered can actually



see this money dribble through their fingers hence pare it down to the bone. Telephone bills for sales use exceed the Rider figure, which indicates that the wires are used more than John suspected to help bolster up the sag in printed advertising. But even with telephone selling worked in less is spent to obtain new business than supposed.

Comment on advertising is difficult because personal selling is an extremely effective method of obtaining new business and is probably the least expensive . . . if too much time is not diverted from repair work. All we can say is that as much effective advertising as the volume will stand is the minimum that should be done. This is cryptic, we'll admit. Suffice it to say that even at \$60 the service business expenditure for advertising is considerably less in proportion to sales volume than that of most other lines.

The charge for annual car repairs averages \$40.56, considerably in excess of the \$24 shown in the last column. It is probably best to err in the direction of the Cleveland figures when setting up a budget. Note the \$108 repair item in report number 5. This is a beautiful example of what *might* happen to upset a low repair budget. Cars have a nasty habit of going haywire just when one needs the mazuma.

Repair of equipment is omitted from the Cleveland report. Unless it is included elsewhere it should warrant a separate listing, even though not in itself a vital expense. Tire cost checks out closely and the figures given are probably ok for a fixed standard. Gas and oil is not too much below the \$192 shown in the last column. This item varies widely, of course, and the only way to make it up in a budget is to actually keep tabs on filling station expense for a couple of months.

General shop expenses are over the average. These include such things as wire, for which the consumer is not

directly charged, and donations of various sorts. Our original figure is evidently too low.

Credit losses are not mentioned by Cleveland. This omission should be remedied for every business has them. Like death and taxes, they are unavoidable and may quite possibly be an important factor. Miscellaneous office expenses are shown at \$5.93 as against \$20. Maybe some of these have already been included under shop supplies and, if so, well and good. If they have not been sandwiched in somewhere it is our guess that a lot of erasers, pencils and what-not have been purchased and forgotten about. This item is no cause for worry so we won't dwell upon it. Nor need the reader, unless he is a stickler for accuracy.

**E**XAMINING the two totals . . . for fixed expenses and for variable expenses . . . we find that the first is somewhat higher than the sum used in our December article. We are inclined to think that in leaning toward minimum cost figures we leaned too far. This is excusable as the business must, after all, be kept on a sane competitive basis. Frankly, we like the proportioning of various individual items in the Rider figures but think the total should be at least that shown by Cleveland.

The variable expenses of the Cleveland men are considerably lower than those shown in the last column. The difference is chiefly the cost of promotional effort. Of course, one can't spend money without having it. But promotion is essential to any business and sometimes its cost is justified. Whether or not more advertising is justified is best determined by the reader, who should know his limitations.

Send in your own itemized statements, identified or otherwise, and be sure to note how much business you do. We'll be glad to pass them along to others in the business for the common good. And criticism or comment will be welcomed.

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## Code Enforcement Swells Profit

**W**HEN the codes were first put into operation, the Union County Radio Dealer's Association (New Jersey) called a meeting and voted to give the local retail authority full cooperation. That an active association backed by such authority can obtain practical benefits has since been proven by the doubling of service profits and a substantial increase in the net accruing from set sales.

Before the code regulations were set up many dealers and servicemen were offering free inspection service. All dealers are now getting \$1 for such service, this sum including minor adjustments. Several get \$1.50. And it is interesting to note that even those concerns which were called on the carpet for the advertising of free inspection are now better satisfied with the new policy.

Before the regulations were put into effect dealers quite commonly advertised year-old receivers as new models, offering them at cut prices to the detriment of really up-to-date equipment. This has been eliminated. The advertising of obsolete models at cut prices by dealers outside the territory, in addition, has been curbed by contacting newspapers and broadcast stations formerly accepting such advertising.

### HOW IT WAS DONE

According to A. E. Uffert, local retail code authority, the procedure was as follows: The authority, with the backing of the local association, summoned code violators, made it clear that the local association was extending full cooperation and advised that further violations would be

reported to Washington. It was further pointed out that penalties were possible.

A certain amount of bluff, some persuasion and plenty of reasoning were applied to gain compliance. Violators who reformed quickly found that the new plan of things increased profit and soon became the most valuable boosters.

The Union County Radio Dealer's Association acts as the chief investigation staff, is aided by the retail authority's own men. Tips on violations are also secured from continued examination of newspaper and radio ads. Originally all radio dealers were called to the code authority's office and given copies of the code. Highlights were explained. Absentees were mailed copies by registered post, for which they had to sign receipts. The association held subsequent meetings to digest the full meaning of the code and thrash out points not fully understood.

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*Union County, N. J., dealers cooperate with local retail authority to eliminate unfair trade practices*

### RESULTS

1. Free inspection has been supplanted by a \$1 minimum service charge
  2. Flat-rate service pricing has been eliminated
  3. Service profits have doubled
  4. Cut-price advertising of old sets as new models has been curbed
-

# Cows, Chickens and BATTERY RADIO

## Keep Chris Nygaard Going



*The nearest prospects are miles away from his cross roads store*

LOOK at the prairie stretching away from Chris Nygaard's doorstep and you wonder where he ever found customers for 500 battery radio sets. There he lives, 6 miles out of tiny Zumbrota, Minnesota, running a gasoline station, operating a one-man garage, promoting Jacobs Wind Electric outfits and selling Sentinel battery radios.

It's only a wide place on the cement road, no other buildings are near, and yet for eleven years Chris has carried on, earning a comfortable living for his family of seven children.

"My expenses are taken care of by the gasoline and oil I sell. People rolling in to have tires changed add to the till. Battery charging brings a constant flow of farmers in, at 25c. per battery. I only go out after a radio sale when I have a pretty good tip, and the profit is nearly all clear."

Chris Nygaard keeps a flock of chickens and a cow. His existence is the simple life for a radio dealer. Yet he does business enough to warrant expanding into Zumbrota, and is opening a basement store in that hamlet of 1,200 this winter.

One can talk about hale fellowship, personality and the like till the cows come home, but it won't explain successful salesmanship. Back of any going setup is some economic advantage. Chris Nygaard has a battery argument that clinches sales for him.

"I point out that after the farmer buys a battery radio, he's got to keep it going. I have invented a little switch which taps the proper amount of electricity from a common 6-volt automobile battery. It costs the farmer only about 12c. a month to use this battery, and in case he should suddenly want it for his automobile, it makes a spare. That tickles him, and I sell him a wet battery for \$3.45 and my switch for \$3.50 when I close the deal."

Other dealers, Chris has discovered, inform their prospects that battery upkeep will run about \$1 a month. The

saving of 88c. a month is enough to turn the trick for the Nygaard shop.

Free battery chargings reward farmers who turn in salable tips. Other leads come from sub-agents about the county who display radios and get 10 per cent for telephoning the names of interested parties. Sales are all cash. The toughest job Chris has to face is the setting of trade-in values. The favorite price for a new set has been \$39.50. With government money coming in, however, the trade is beginning to lean to consoles.

Service is simple, most of the repair jobs being lifted over the tailboard of a wagon. In Zumbrota, where the basement shop is being opened, a charge of \$1 a call is made.

By spreading selling costs over some staple articles and services, Nygaard has come through the depression. And on Sundays the family has two chickens to its pot.



*Chris Nygaard has invented a switch that taps automobile batteries for power . . . for 12c. a month*

### Fitted Up a Display Truck

A RADIO-REFRIGERATOR dealer in Kansas demonstrates his refrigeration wares right at the back door. Painted his truck white, put linoleum on the floor and bolted an electric refrigerator to same. Hinged steps permit the housewife to climb right in, from her own back driveway, and electric lights make night inspection a pleasure. Frequently the deal is closed and the refrigerator unloaded then and there.



# It Takes IDEAS To



**Radio Dance**  
**Fireman's Hall**  
**CLAY CENTER, NEBR**  
**Saturday Night**  
**Admission 10c**

## 10 Cents a Dance

By Roger H. Hertel

ABOUT four months ago we assembled a small public address system, including phonograph, radio and microphone attachments. In a short time we were asked to use our P.A. system for a dance. The idea had been in our minds for some time and we set about at once to put on a Saturday night affair. Had some hand bills printed, rented a good dance hall and advertised the dance in general.

Clay Center, Nebraska, is a small town and had not been able to support a dance orchestra and hence dancing has been retarded. However, instead of the regular price of 75 cents per couple we made a charge of 10 cents for each person. This price of course had a big appeal and was a good drawing card.

The first night went off with a bang. There were about 110 people there. The following dances were attended well and we were sure of a paying proposition. We averaged a net profit of over \$4.50 for three hours use of our P.A. system.

At the dance hall we had a radio set display, put up some advertising folders and passed out hand bills to every one attending. This was a splendid form of advertising. As a matter of fact, we soon had the merchants of the town backing the dance and boosting for it because it brought people up town and into town. Grocery stores stayed open longer, restaurants had a big increase in business and remained open until after the dance, one cafe offered prizes each night for the first couple on the floor, etc. The prize was a big lunch after the dance.

For music we used phonograph records and whenever

it was possible to get a good dance orchestra on the radio we would put the same over the address system. This proved a splendid set demonstration. I well remember when we had a program from KOB in New Mexico coming in like a local and how the audience asked questions when they heard the announcer give the station call.

The radio dance gained in popularity. Several organizations rented the system for their own dances. Other towns asked us to put on a dance in their community. Several rentals of our P.A. system came directly as a result of the dance.

Every day there are new sources of revenue arising from our radio dance. Just one instance follows. We made some recordings using this system. By playing just one recording of some local talent we had recorded we secured five more recording jobs.

Summary of the radio dance advantages:

1. Paid us a day's wage for three hours' work at night.
2. Was a splendid source of advertising for the radio store and town.
3. Acted as a stimulant to local business the evenings we held the dance.
4. Produced good feeling between our shop and the local business men.
5. Opened up new avenues of income for the store.



## Radio Store At Your Door

Sells 300 Sets Annually

PROSPECTS for radios were not coming into the Florida Hardware Company, Florida, N. Y., in sufficient numbers to satisfy Louis Gordon. So he took his store to the customer. Built a cabin body of composition board on a 1½ ton truck chassis. The truck carries 100 feet of extension cord so that one end may be plugged into the house current while a demonstration is being given and the other to the outlets in the truck. The "Radio Store at Your Door" cost \$300, body only.

A salesman is employed to cruise around in this truck giving demonstrations, usually in the truck where the prospects can view an assortment of radios. If a prospect wishes a radio brought into the house the salesman gladly obliges, in fact this is the procedure he tries to

# Build A BUSINESS

encourage—inducing the prospect to come out to the "Radio Store" then to select the radio thought to be most desirable and have it brought inside the home to see how it looks with the other furnishings and how it sounds in the house.

The salesman gets a guaranteed salary of \$10 a week for "eats" plus eight per cent commission. The company pays truck expenses. The salesman averages \$35 weekly.

The "Radio Store at Your Door" sold 300 sets during the past 12 months, including sales shunted to the store. Sales averaged \$75 each. The truck operates within a radius of 25 miles, much of which is farm territory wired for electricity.

This truck lands a high percentage of "demos" to "cold turkey" calls.

Florida Hardware hasn't repossessed a single set sold from this store on wheels, no doubt because the salesman is on the ground and can tell by the home and surroundings whether the prospect is a good or bad credit risk. Commissions on accounts that are not paid in full are charged back to the salesman.

## The Broadcast Approach

### Makes Phone Canvass Pay

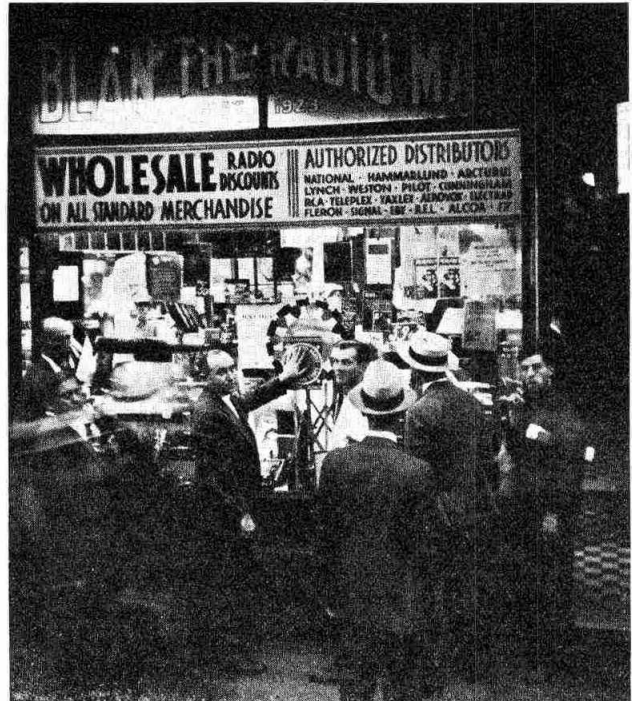
"HANSEN SALES is on the air with a one-minute program featuring a 7-tube all-wave radio set at a special price of \$64 for this week only. The tone is clear and natural. The cabinet is beautiful. If your present radio is an old one, if it gets only domestic stations, it will pay you to look over this all-wave set at Hansen Sales because it is real value for the money. May I put you down for an appointment to look at this set at the Hansen Sales Showroom, 370 Bloomfield Avenue, Montclair?"

This broadcasting type of approach is used by two female telephone canvassers at Hansen Sales, Inc., Montclair, N. J. Said Mr. J. Hansen, "We repeat the name 'Hansen Sales' three times to impress it upon the minds of listeners and we use the broadcast-type of approach because we find that its novelty holds attention better than any other opening speech. We limit this approach to 100 words or less and concentrate on one special model. We talk about the same model for a week then switch to another, giving its highlights in a few words. We have found that it is unwise to say too much to a telephone prospect until given the cue to talk more fully.

"After the short opening approach, the telephone canvasser awaits the reaction of the listener and guides her sales canvass accordingly, making no attempt to close sales, but trying to make an appointment for a showroom visit or a salesman's follow-up call. We try to get the listener's promise to come down at a definite time because, in most cases, these definite promises are kept. The telephone canvasser always hangs up with, 'We're signing off now. Your announcer is Miss——— of Hansen Sales, 370 Bloomfield Avenue, Montclair.'

"We use girl telephone contactors because we find that

they get attention better than the male. Four outside salesmen are kept busy following up the leads of the two telephone canvassers, who cover all towns in this vicinity with a systematized canvass using the phone book listings from A to Z. The phone canvassers have been working steadily for more than a year, during which time radio sales have tripled and 'cold canvassing' has been entirely eliminated."



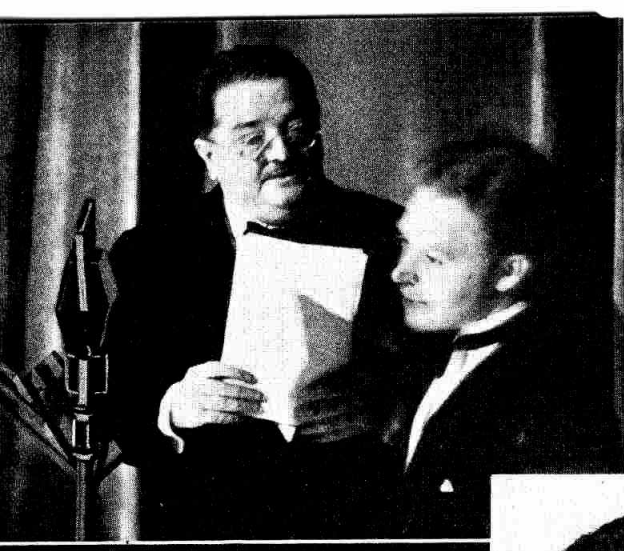
## Action in the Window

"Blan the Radio Man," one of New York's better-known parts dealers, claims that this "lucky-number" wheel increased store traffic 30 per cent. The wheel has numbers around its periphery and is mounted on an axle supported by a simple wooden structure. The numbers are rotated past an indicating pointer by a small electric motor. Motion may be started and stopped from outside the store by simply placing the hand against a sign which conceals a capacity plate actuating a sensitive relay.

## Trails the Ice Cake

"I USED to get all hot and bothered every time I would see an auto with a chunk of ice on the bumper or running board," writes an enterprising refrigerator salesman. "Now it's good news, because I jot down the license number of the car and call on Mr. and Mrs. Ice Toter that very night. These people are good prospects for electric refrigeration. If more leads are wanted, hang around the local ice plant on a Saturday afternoon or Sunday morning."





**YE TOWNE CRIER**  
*"Woollcott speaking,"*  
 brings his ready tongue  
 and rare wit to the so-  
 phisticated—every Sunday  
 night

**MAXINE** Will head  
 the first all-girl, 30 of 'em,  
 series ever presented.  
 Phil Spitalny director



# 1934 Programs Best Ever Portend Gala



**ONE MAN'S FAMILY** And every family's de-  
 light. Genuine, natural reflections of wholesome  
 American fireside scenes.  
 NBC every Wednesday. Don't let your customers  
 miss this one

**A**FTER all, it's programs your public is buying—not sets. And it's radio events the dealer should sell—with all the enthusiasm of a connoisseur.

With a 1934 record unparalleled for the quality and attention-arresting character of their air offerings, the big chains promise even greater thrills for 1935.

Did you listen, Christmas Day, to that "longest and biggest" gala offering of the Nash Automobile Company? And to Barrymore's incomparable rendition of Dickens' Christmas Carol? To Alexander Woollcott's premier as master of ceremonies? Were you there when England's King talked to his wide-flung colonies—and they replied? Did you dial in on Columbia's "American Scene"? Or the New Year's offerings? Noel Coward, for example? Or to any one of the hundred emotion lifters staged last year?

If you didn't, you're working at your profession with one hand tied behind your back.

And if any bright boy tells you, "There's nothing new, there's nothing good, on the air any more," and you can't unsell him in five minutes—well you both should be shot at sunrise.

1934 was a wonderful year for sterling programs. 1935 will be even better; new techniques, new ideas, new artists—and a parade of world-known celebrities who will cover every phase of human interest and play upon every heartstring of human emotions.

Keep posted. Tune in, systematically. If you do this one simple thing your genuine enthusiasm will automatically sell your merchandise for you.

Space does not permit even an outline sketch of what's ahead. Here are just a few pictorial hints of how the program cards will be dealt for 1935:

**FROM ROME** will come regular Monday programs on the Italian Government's "American Hour." Dr. Merlino listens to the first of these, on 49.30 meters, at the home of International's chief engineer, Robert Wuerful



**THE O'NEILLS** Will emote, with hearts and lungs, over Columbia's network. One of radio's most popular programs—Monday, Wednesday and Friday



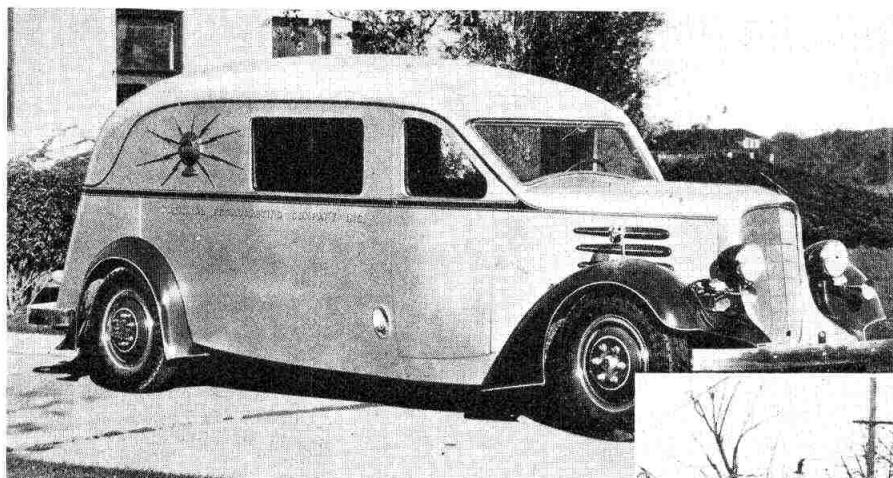
# Events for 1935



**KATE SMITH** She "doubles" this year as talent discoverer as well as star singer—on a new and ambitious program



**BOAKE CARTER** Popular news commentator, signs long-time contract for five weekly broadcasts over enlarged WABC chain



**THE LINDBERGH CASE** Now being broadcast. Other famous trials will be reported by modern mobile transmitters during 1935  
(Right) Type of equipment, now obsolete, used to report the Lindbergh kidnapping in 1932



**WOMAN "PROGRAM STEERER"** Elsie Janis, comedienne, joins NBC staff. Welcomed by Pat Kelly, Alois Havrilla and Milton Cross, veteran mike handlers



**BEATRICE LILLIE** Comes to the microphone for her first radio series. Will let fly her lampoons over WJZ network



**LIONEL BARRYMORE** In a Dickens' role. Will lend his masterly artistry to many air programs this year



# WHAT THE TRADE

## 1935 WILL SEE TWO GREAT BENEFITS AS RESULT OF RADIO TRADE CODE

A New Year's Message from the Chairman of the Radio Wholesaling Code Authority

By Benjamin Gross

After a year of very serious attempts by the wholesaling group to awaken all radio interests to the need of working together, it is gratifying to note the broad extent of "industry-mindedness" apparent in the year-end comments of the leaders of the industry. The bright spot for 1935 is this recognition of certain universal evils and an expressed determination to cure them. The problem is not merely that of wholesalers or of manufacturers or of retailers. The difficulty in adjusting the major troubles in the industry grows out of the looseness as well as the aloofness and the lack of coordination among the three elements that make up the industry.

The coming of industrial codes in the past year has opened up to the radio industry a remarkable opportunity for bringing about a common understanding and the application of joint efforts to actually establish a profitable basis for the future of the radio business. It isn't so much the things that are said in codes that count but rather the opportunity they afford business men to get together and work together in a manner that they have long wished could be done but which was prohibited by the interpretation of certain laws. Wherever this has been recognized, great good has come from the use of the codes.

### Proviso for Inter-Relations

Two great benefits are now available to the entire industry as an outgrowth of the Radio Wholesaling Trade Code. One, its proviso for a Trade Practice Committee officially designated by the Government to work with a similar committee appointed by the manufacturers and by the retailers, with a view of setting up inter-related and coordinated practices for the entire business. Considerable effort has been made to get some advantage from this opportunity but unfortunately accomplishments in that direction have been blocked by certain factors who now are beginning to realize that development of the industry as a whole will mean more for their private interests than otherwise. Therefore, progress in this direction is looked for in 1935.

The second opportunity is in great measure an answer to the key note which has been struck in the above quotations, namely: The doing of some really big thing by the industry whereby it will help itself retrieve the public interest and the public respect which, through its negligence and misconduct, it has undermined. The "Five Point Plan for Revitalization of the Radio Industry," which was presented by a special Radio Wholesalers Association Committee at a joint Convention of that Association and the Radio Manufacturers Association in Chicago last June, is an effective means for accomplishing that purpose. It received the unanimous approval of the boards of directors of both Associations. Unfortunately, time was too short to make it operative this season. The RMA, however, saw the possibilities and has announced they are putting into operation certain portions of their plan

as a beginning. The entire plan is well worthy of serious study and full application during 1935 and running into 1936.

All elements in the industry from the smallest to the largest retailer, from the incidental to the exclusive radio wholesaler and from the manufacturer with small production to the largest, should promptly set about interesting themselves in the "Plan" so that at the next joint convention of the Association all factors may be represented with their minds made up to go ahead with the immediate launching of a real program with a view of bringing back the radio industry to its rightful position in American industry. We belong up in the Billion Dollar class, as the greatest public utility of all times.

### Appliances, Inc., and Roskin Bros. Take on F-M Line

A new company, Appliances Inc., recently formed in Cincinnati, has been appointed exclusive distributor for the Fairbanks-Morse line of home appliances.

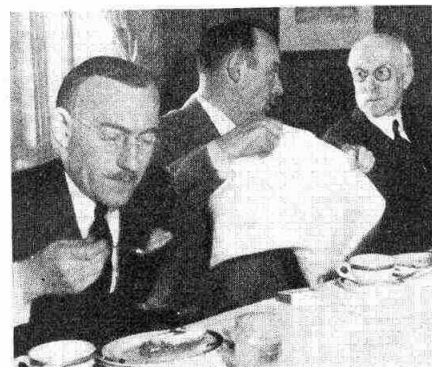
W. H. Burckhardt is president of the new company and Guy Flaig has been appointed sales manager.

Roskin Brothers, with distributing branches in Albany and Middletown, N. Y., and Worcester, Mass., and with main office in Boston, is now handling the Fairbanks-Morse line of washers, ironers and Conservador refrigerators.

### Grunow Announces New Models at Distributor Convention

Another highly successful distributor convention was held by the General Household Utilities Corp. in Chicago, Dec. 16-18. Eighty distributors and their staffs, over 200 in all, attended. Several new refrigerator models in the lower price brackets as well as many new sets were announced.

The highlight feature was the opening address by Harlow Wilcox, Columbia Broadcasting System, whose introduction of Mr. Grunow followed a dramatic presentation or "cavalcade" of products for whose inception and production William Grunow was directly responsible. This exhibit went back



### They Satisfy!

*Whispers Bill Grunow behind his napkin to George Ball on the right. Referring, of course, to General Household's new lines, not the Chesterfields—nor the pumpkin pie that sales-manager Bonfig is about to masticate*

to the early days of the gooseneck speaker.

General Household's publicity campaign for 1935 will include a national hook up over the Columbia chain featuring the Minneapolis Symphony Orchestra.

Thirty-seven Grunow representatives were assigned special headquarters in the Lake Shore Athletic Club where they were available to discuss trade matters.



John F. Ditzell

### John Ditzell Heads S-W Sales Activities—D'Olive Advanced

Effective Jan. 1, two important changes were made in the executive structure of the Stewart-Warner Corp. Charles D'Olive, who has been directing refrigerator sales and engineering, stepped up the ladder to assume the duties of assistant to Vice-President Frank A. Hiter. In this position he will continue his supervision of engineering and product planning, and will also have numerous duties in connection with sales in other divisions.

John Ditzell joins Stewart-Warner in charge of radio and refrigerator sales. This is a further step in the company's

# IS TALKING ABOUT

plan to consolidate the sales organizations on these two products which have been two separate groups under separate direction.

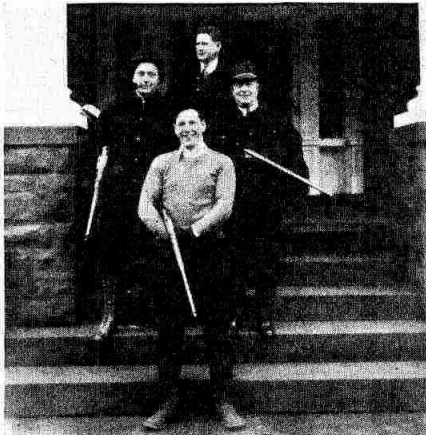
Mr. Ditzell is widely known throughout refrigeration and radio circles. He brings to S-W a broad practical knowledge of distributor and dealer problems and operations. This background includes sales direction out of Kansas City with the Victor Talking Machine Co., and, during 1931-33, as general sales manager of Majestic radios and refrigerators.

## Tube Agents to Meet in New York

Lafayette Electric Corp., New York City, will conduct a meeting of all the agents they serve on RCA tubes at the Pennsylvania Hotel, Jan. 16, at 8 p.m.

Arrangements for the meeting are being handled by Morris Tilman, general sales manager. W. H. Autenrieth, metropolitan representative of the RCA Radiotron Division of the RCA Mfg. Co., Inc., is working with him on the arrangements.

## Venison at Sylvania Club



*These Sylvania Foresters stole a march on visiting hunters by getting out on the first day of hunting season and bringing home a fine buck, which fell to the trusty gun of F. J. "Bob" Healy, manufacturing manager of Hygrade Sylvania's Salem plant. "Bob's" smile (left center) has become practically permanent, as this was his first deer-hunting expedition. The other grins belong to George Erskine (front), son of "B. G." and to R. W. Roloff (center right), general manufacturing manager. Suffering a preliminary spell of buck fever is M. J. Orr, of the Emporium plant (rear).*

## Aerovox Reduces Filter Prices

In keeping with the far-reaching purposes of the interference-prevention campaign launched by the Radio Manufacturers Association during the recent I.R.E. convention at Rochester, N. Y., a marked reduction in list prices of interference filters is announced by the Aerovox Corp., Brooklyn, N. Y.

## RCA RADIOTRON AND RCA VICTOR TO BE KNOWN AS RCA MANUFACTURING CO.

**Consolidation Will Entail No Changes in Sales or Management Policies—  
E. T. Cunningham to be President**

David Sarnoff, president of the Radio Corporation of America, recently made the following announcement:

"The RCA Victor Company and the RCA Radiotron Company, the two wholly owned manufacturing subsidiaries of the Radio Corporation of America, have been consolidated into a single organization to be known as 'RCA Manufacturing Company, Inc.' The new company began operations as of January 1. The consolidation is being made primarily for convenience of operation. The present officers and management of the two subsidiary companies will continue in their respective positions, and the factories located at Camden, N. J., and Harrison, N. J., will continue their operations as at present.

## C. I. T. Accepts Sparton Dealers' Paper

The 1935 business deck of cards contains a royal flush in a new deal for dealers in Sparton radios. Sparks-Withington completed, last month, a national agreement with the C.I.T. Corporation for the purchase of radio installment paper. C.I.T. also has substantially reduced carrying charges on refrigerators.

In the consummation of its agreement to purchase radio paper, C.I.T. announced that it will operate on the following basis:

Will advance 90 per cent of the unpaid balance; the maximum length of time on any contract is 12 months; minimum down payment to be \$10 or 10 per cent; dealers must meet with a minimum net quick worth requirement of \$2,500 to be eligible.

## Address Correction

The export department of the Kingston Radio Co. is now located at 330 South Wells Street, Chicago, instead of 320 as reported to *Radio Retailing*.

## Will Retain Present Trade-Marks

"The present trade-marks on the products manufactured by these companies will be continued through the establishment in the RCA Manufacturing Company, Inc., of two divisions, which will be known as the 'RCA Victor Division' and 'RCA Radiotron Division.'

"Mr. E. T. Cunningham is president and David Sarnoff the chairman of the board of directors of the RCA Manufacturing Company, Inc."

This consolidation entails no changes in any of the sales, advertising or management policies of either of the two former companies, nor any change whatever in the products or trade-marks heretofore used, according to Mr. Cunningham.

## Final Step in the Process of Centralization

"The formation of the new company is the final step in the process of centralization which has been going on for more than a year in the interests of greater operating economy and efficiency," Mr. Cunningham said. "As in the past, the RCA Victor Division and the RCA Radiotron Division will operate independently of each other as their different problems warrant. The same, separate sales organizations and advertising programs will be maintained. The RCA Victor, the RCA Radiotron, the RCA Photophone and other widely known RCA trade-marks which have through the years accumulated a vast amount of public goodwill and acceptance will continue to be featured in the new Company's advertising and labelling. RCA Victor products will continue to be developed and manufactured at Radio Headquarters, in Camden, New Jersey; and RCA Radio Tubes will continue to be developed and manufactured in the Harrison, New Jersey, plant."

The officers of the new company are as follows: David Sarnoff, chairman of the board; E. T. Cunningham, president; G. K. Throckmorton, executive vice president; W. R. G. Baker, vice president in charge of the RCA Victor Division; J. C. Warner, vice president in charge of the RCA Radiotron Division.

## Cinch for Peel



*Representing Cinch Manufacturing from Pittsburgh to Denver and from Canada to the Gulf holds no terrors for Edward R. (Ed. to you!) Peel. He knows his accounts from the old Eby and Benjamin days.*



## N. Y. Mail-Order House Show Successful

A television exhibit, sound motion-pictures and technical talks by leading lights of the service profession attracted a full complement of repairmen engaged in the New York metropolitan district as well as numerous suburban customers to Federated Purchaser's four day show, from December 12 to 15. According to president Sam Roth, attendance and interest in the exhibits fully justified the somewhat considerable expense of the venture, a repetition of a similar event last year.

Thirty-five booths were taken by manufacturers, local representatives and publications. A partial list of these follows: Jefferson Electric, Lang Radio, Flechtheim, Porcelain Products, Jackson Electric, Perry Saftler, Universal Microphone, F. E. Schmitt, *Radio Retailing*, John Rider, Radio City Products, Electrad, Insuline, John M. Forshay, Kester, Amertran, Aerovox, Cornish, Raytheon, Alpha Wire, Upco, American Radio Hardware, Supreme, Triplett, Readrite, Electronic Laboratories, RCA, Sylvania, Macy Engineering, D. R. Brittan, Amperite and Oxford.

## Failures Drop to New Low

The stronger financial position which all members of the radio industry now have achieved, as compared with their condition during the preceding three years, has brought bankruptcies almost to a complete stop. For the eleven months of 1934 only 6 manufacturers failed, with the involved liabilities \$526,630, as compared with 25 defaults entailing a loss of \$3,719,519 for the twelve months of 1933.

Among the wholesalers and retailers the reduction in the number of bankruptcies was even more decisive, the total dropping from 109 for the twelve months of 1933 to 33 for the eleven months of 1934.

The complete insolvency record of the radio industry since 1930, including January to November, inclusive, of 1934 as compiled by Dun & Bradstreet, Inc., shows:

### Manufacturers

Year	Number	Liabilities
1930.....	40	\$3,522,400
1931.....	15	4,088,445
1932.....	23	1,826,995
1933.....	25	3,719,519
1934*.....	6	526,630

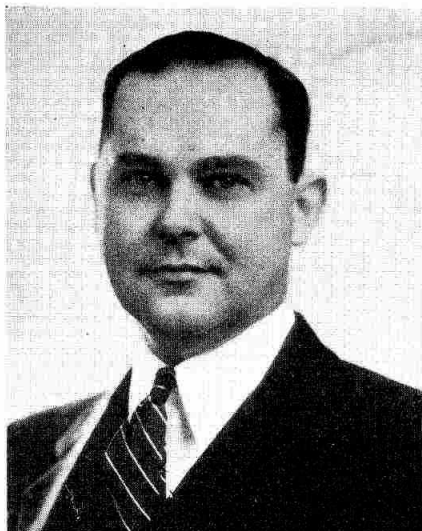
### Wholesalers and Retailers

Year	Number	Liabilities
1930.....	217	\$2,071,392
1931.....	160	4,979,359
1932.....	170	1,978,678
1933.....	109	1,813,980
1934*.....	33	1,621,283

(\* ) January to November, inclusive

## Radio City Products Moves

The Radio City Products Co. has moved to its new offices at 88 Park Place, New York. This concern, formerly located at 48 W. Broadway, manufactures tube testing apparatus and allied products.



## Howard Mateer Business Manager of "Radio Retailing"

Howard W. Mateer, formerly on the sales staff of *Radio Retailing*, assumed management of this publication, Dec. 17.

"Mat" is a graduate of the University of Illinois with a degree in electrical engineering. He has been associated with the McGraw-Hill Publishing Company for 13 years. He again joins our staff in charge of the business departments of *Radio Retailing*, *Electrical Merchandising* and *Electronics*, following a two year "vacation" during which time he was advertising manager for *Electric Refrigeration News*.

Mr. Mateer succeeds M. E. Herring, for eight years business manager of this electrical group of papers, who resigned last month.

*In addition to its free radio service shop equipment program, National Union Radio Corporation of New York, plans to help service dealers effectively sell their radio service work to set owners in 1935, according to sales manager H. A. Hutchins.*

## Two Ideas for Displaying Table Models



## CBS Plans New International Broadcasts

Dealers will be interested to know that the Columbia Broadcasting System plans to relay broadcasts from many foreign lands between the present date and spring. American listeners who follow these broadcasts, which may be picked up through local stations of the CBS chain, will virtually tour the world.

Tests are now in progress, for example, between shortwave stations in Northern Africa and New York. Morocco and Egypt will be heard. Spain will be represented and monthly programs from Rome will include broadcasts from the Milan opera as well as broadcasts from Venice, Florence and Naples. A first-hand description of excavations at Herculaneum, revealing results of the catastrophe overtaking the inhabitants when Vesuvius erupted centuries ago, will climax Italian offerings.

Broadcasts from enshrined homes and cottages of several of Britain's literary immortals are also planned. And as we write a broadcast from Luxembourg, smallest sovereign country of Europe, is taking place. There will also be programs from the USSR and Sweden, an Irish Sweepstakes relay directly from the Emerald Isle and a "sunrise" program from a Swiss mountain peak.

## Explorers Club Offers Free Globe

American Bosch's popular "Explorers Club," which holds its meetings each Sunday at 5:30 p.m. (EST) over the NBC network associated with WJZ, is becoming even more popular. The company offers a free 18-inch globe to registered club members who apply to the nearest American Bosch dealer for the gift. Non-members may sign up at these same stores and become eligible for the gift when their application for membership is approved by the main office of American Bosch.

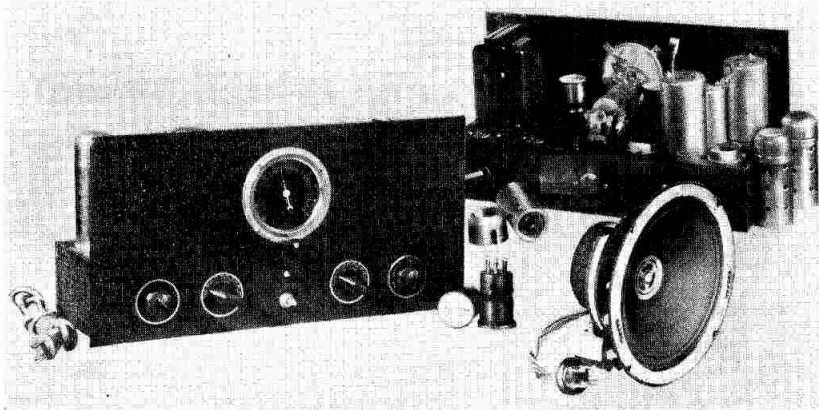


*Suitable either for window or store display is this suggestion (lower left) by Davega, New York.*

*Packing boxes have many sales possibilities. See, also in this issue, how a Manchester, Conn., dealer uses them to supplement his set display.*

# NEW MERCHANDISE

## All-star "Junior"



So gratifying was the response to the All Star Super-Six receiver featured last fall that a smaller set, the All-Star Junior, has been designed by the same sponsor manufacturers—Thordarson, Hammarlund, Cornell-Dubilier, Electrad, Ohmite, Crowe, Oxford Radio Corp., Oak Mfg. Co., Erie Can Co., Meissner and Belden.

The All Star Junior is a design—not a kit—a scientifically balanced circuit using standard components, available on any jobber's shelves.

To make construction extremely easy, Thordarson is supplying completely drilled and punched panels and sub-bases to which

these parts may be assembled without tooling. The foundation unit contains all the necessary instructions, diagrams and a list of parts.

Crowe has announced a special cabinet and deluxe panel.

It is a 5 tube (6A7, 6F7, 77, 42 80) all-wave, band spread superhet covering from 30 mc. to 540 kc. (10-550 meters). The method of tuning which proved highly successful in the Six is duplicated in the Junior. \$56.26 list. \$33.96 net to dealer.

Dealers interested should write to the Fensholt Co., 549 W. Washington St., Chicago.—*Radio Retailing*, January, 1935.

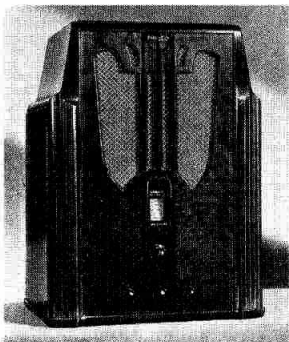
## Sparton "Embassy"

Sparton's newest product is a 10 tube all-wave superhet, the "Embassy," so named in honor of a group of foreign ambassadors whose drawing rooms in Washington contain a Sparton radio. Rich carving, inlays of vari-colored woods and well-balanced design distinguish the cabinet.

Two other models recently announced by this firm, the Sparks-Withington Co., Jackson, Mich., are Model 85AX, a radio phonograph combination with automatic record changer, and Model 86X, a table model listing at \$89.50.

Model 85AX has a wave band from 15-550 meters and uses 8 tubes. The phonograph mechanism is of all steel construction with heavy copper plating. It plays eight 10 in. records automatically and 12 in. records manually. 78 or 33 $\frac{1}{2}$  rpm.

Model 86X is an 8 tube all-wave set—four bands covering a range of from 540 kc. to 20 mc.—*Radio Retailing*, January, 1935.



Philco Model 16B

## 1935 Philco Line

At a New York showing at the Hotel McAlpin, Philco Radio and Television Corp., Philadelphia, Pa., displayed the following new console models for 1935:

Model 45F, a floor type console with two tuning bands (540-1720 kc. and 4.2-13 mc.). It has 6 tubes. \$59.95. Same cabinet with 28D chassis (6 tubes), known as Model 28F, is \$65.

Model 66L is a 5 tube lowboy (540-1720 kc. and 5.5-16.0 mc.) listing at \$49.95.

Model 28D is a 6 tube highboy with doors. A.c.-d.c. operation. 540-1720 kc. to 4.2-13 mc. \$99.50.

A chairside radio, Model 29CSX, with the inclined sounding board and the speaker opening set back so as to direct the sound to ear level, attracted considerable attention. This set fits closely to chair or davenport within easy reach for tuning. It is a 6 tube job with a tuning range of from 540-1720 kc. and 4.2-13 mc. \$75.

In table models the following were displayed:

Model 66S, 5 tubes, 540-1720 kc. and 5.5-16.0 mc., \$42.50.

Model 16B the big 11 tube Baby Grand in a new cabinet. It has 4 tuning bands covering from 540-23,000 kc. \$95.

Model 84B comes in an unusual cabinet of four contrasting tones—from ivory to black. Covers from 540-1720 kc. 4 tubes. \$20.

Model 118B is an 8 tube upright set in a smart cabinet. Brings in calls between 540-1720 kc. and 4.2-12 mc. \$69.50.

Model 144B takes 6 tubes and, in four tuning bands, brings in everything between 540 and 23,000 kc. \$69.50.

For those who want a battery set, Philco has two new ones with a tuning range of 540-1720 kc. and 5.5-16 mc. Model 39F is a floor type console, \$75, and Model 39B is an upright table set, \$49.50.

Other Philcos now enclosed in new cabinets are: 18B and 49B now housed in the new 118 B cabinet, 34B and 32B in the new 114B cabinet, and 118D and 49D in the new 28D cabinet.—*Radio Retailing*, January, 1935.



Philco Armchair Model 29CSX

## All-Wave Antenna Systems

The Consolidated Wire and Associated Corporations, Peoria and Harrison Sts., Chicago, Ill. are offering antenna systems of practically every description whether of the doublet, matched impedance or variable impedance types. They are designed to operate on all well-known sets.

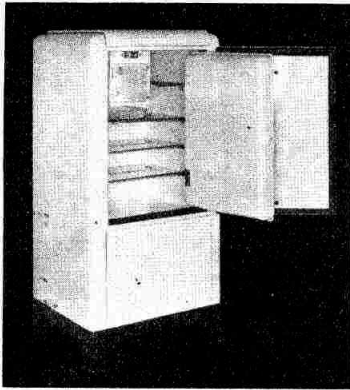
If a special type is required Consolidated will make it up to individual specifications. In quantities of 100 or more the name of the receiver for which it is designed to operate, your private brand, or both, will be included on the front and rear panels of the box.

The World-Wide Antenna System for the RCA set is \$5; an all-wave doublet antenna kit for Atwater Kent \$5.50; an all-wave doublet antenna kit for Crosley \$6.50; an all-wave Marconi system for Philco is \$5, and an all-wave antenna system for Grunow is \$4.50. Other types run accordingly. In addition, there is a universal all-wave system with balanced transmission line listing at \$4 and one with porcelain transposition blocks listing at \$5.50.—*Radio Retailing*, January, 1935.

## Ansley Crystal Phonograph Pick-Up

A new crystal phonograph pick-up is announced by the Ansley Radio Corp., 240 W. 23rd St., New York City, who are using it on their Radio-Dynaphone combinations. In addition to the light weight and high fidelity, the manufacturer claims other advantages. Built-in sponge rubber suspension insulates the pick-up from speaker and motor vibrations and a "vertical pivoting" arrangement reduces friction to a minimum. While it was developed primarily for use in Ansley's combinations, the pick-up will also be sold separately.—*Radio Retailing*, January, 1935.





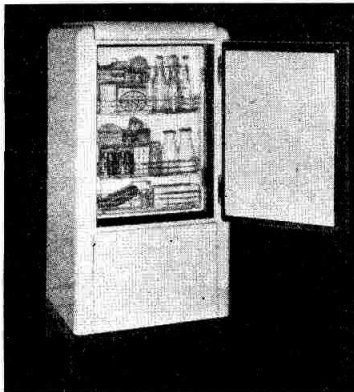
### Fairbanks-Morse "Conservador" Refrigerators

Presenting four new models, 4, 5, 6 and 8 cu.ft., each with the exclusive feature, the "Conservador," Fairbanks-Morse Home Appliances, Inc., 430 S. Green St., Chicago, Ill. announces its 1935 line of electric refrigerators.

The "Conservador" is entirely new, offering additional storage space for food without the necessity of opening the inner compartment of the refrigerator. This means a saving in electricity by preventing an inrush of warm air into the main compartment as frequently used things may be kept in this special section.

In the main, electrically lighted, food compartment a temperature control is provided with automatic regulation of each of the 11 positions. The bottom shelf is removable for the storage of large parcels. The cooling unit is centrally located providing storage on either side for tall bottles with one shelf hinged to permit additional space for taller articles.

The interior finish is of stainless, acid-

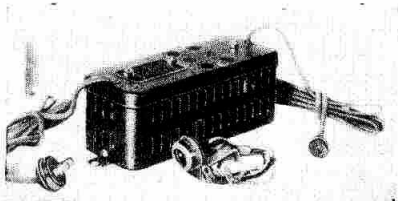


proof, porcelain, with rounded corners. The outer finish is of non-fading white Dulux with chromium and black door handles and hinges.

The 4 ft. box freezes 42 cubes, the 5 and 6 ft. boxes, 63 cubes, and the 8 ft. box 84 cubes. A fast-freezing tray is provided at the bottom of the evaporator in each model. —*Radio Retailing*, January, 1935.

### American Bosch Dashboard Socket Battery Charger

A new low price dashboard socket battery charger has been placed on the market by the United American Bosch Corp., Springfield, Mass. It is designated as type DCA-2 and has a tapering charging rate of 42 amp. List, \$8.—*Radio Retailing*, January, 1935.

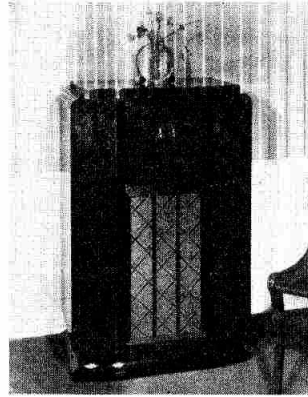


### GE "Bandmaster"

An extremely good looking floor-type console, neo-classic in style, is just making its appearance on the floor of General Electric dealers' show rooms. It is a 10 tube set with 5-band tuning range—140-410, 540-1,720, 1,720-5,400, 5,400-18,000 and 18,000-36,000 kc.

The tube line-up consists of 4-76, 2-42, 2-6D6, 6A7, 5Z3. The large, square airplane type dial shows important shortwave services and channels.

Two small doors may be closed over the tuning panel. The retail price is \$174.50. General Electric Co., Bridgeport, Conn.—*Radio Retailing*, January, 1935.



### Arvin Auto-Radios

An entirely new line of 1935 "Arvin" car radio sets is being announced to the trade by Noblitt-Sparks Industries, Inc., Columbus, Ind. The principal objective in the design of these radios has been to simplify installation and service as well as to improve performance.

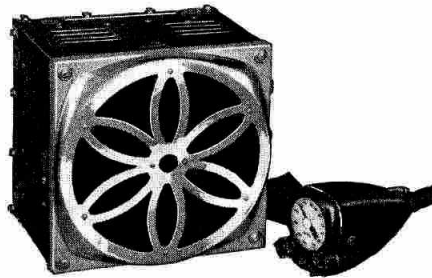
The chassis design has been standardized. They are all housed in a metal case of the same size (8½ in. square by 6½ in. deep). The two single unit models, 17 and 27, have speaker in the front panel of the radio housing. The speaker of Model 37 is in a separate unit. Standardized and simplified mounting conforms to specifications of most all car manufacturers—makes it possible to mount these sets in any of four positions. The three mounting studs are spaced the same as the holes which are laid out on the dash of many of the cars.

Integral chassis construction helps to eliminate the troubles caused by plug-in connections, etc., and motor noise filter systems eliminate the need of spark plug suppressors on most cars. Cross-draft ventilation is provided by louvers on the sides.

Model 17, 6 tube, single unit, 6 in. speaker, is \$44.95.

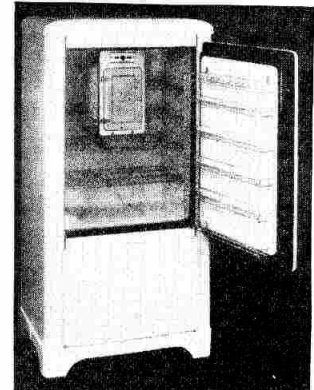
Model 27, 7 tubes, is \$54.95.

Model 37, the "twin-8" receiver, is built in two units. It has 8 tubes and 8 in. speaker. \$64.95.—*Radio Retailing*, January, 1935.



### Onan Electric Lighting Plant

Streamlined in design, a new line of electric lighting plants in the 300, 500, 1,000 and 2,000 watt sizes, has recently been released by D. W. Onan & Sons, 43 Royalston Ave., Minneapolis, Minn. Each is unit construction with generator mounted directly at the crankcase of the engine and provides absolutely flickerless alternating current, 110 volts, 60 cycle for radios and electrical appliances.—*Radio Retailing*, January, 1935.

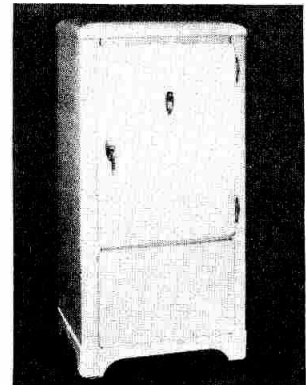


### Atwater Kent Refrigerators

Shipments are now going forward on the new line of refrigerators made by the Atwater Kent Mfg. Co., Philadelphia, Pa.

At the outset the line will consist of four models of the conventional 4, 5, 6 and 7 foot sizes. Cabinets are of distinctive design, with durable white lacquer finish, sturdily constructed and with extra thick, triple sealed insulation. The same compressor will be used in all models. The power unit is an electric capacitor type motor. The interior of the cabinet is a one-piece compartment with all-porcelain freezing unit located in the top center, affording food storage space on both sides. On all but the smallest model, the freezing unit has a self-sealing chromium plated door. There is automatic defrosting and a 12-point temperature control with a special light duty position for vacation times.

A special arrangement of the shelving on the inside of the door for the storage of



foods most frequently used is an additional feature.

Model R334 is a 4.319 cu.ft. model with 8.5 sq.ft. shelf area and one shallow and one deep tray, making 63 cubes. The overall size of the cabinet is 53 3/8 in. x 23 3/4 x 21 1/2.

Model R-615 is a 5.16 cu.ft. refrigerator, with 11.03 sq.ft. shelf area. It has one rubber tray and two shallow trays making 84 cubes. Overall dimensions 55 1/2 x 23 1/2 x 23 1/2 in.

Model R-256 is a 6.15 cubic foot chest, with 13.04 sq.ft. shelf area. It has three trays, one each of the rubber, shallow and deep types, and makes 112 cubes. Overall size 58 3/8 x 29 3/8 x 24 1/2.

Model R-547 is a 7.13 cu.ft. refrigerator with 14.31 sq.ft. shelf area and one each of the rubber, shallow and deep trays, making 112 cubes. Overall dimensions 59 1/4 x 32 x 34 1/2.

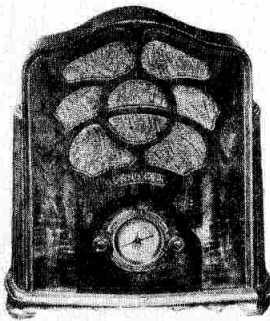
Factory prices have not yet been announced.—*Radio Retailing*, January, 1935.

### Rola High Fidelity Speakers

An entirely new high fidelity speaker with large power handling capacity and unusually wide range possibilities is announced by the Rola Co., 2530 Superior Ave., Cleveland, Ohio.

This is a full 12 in. speaker for both a.c. and d.c. excitation.

Rola engineers have been experimenting for months on the subject of high fidelity reproduction in sound, and this speaker is the latest development from the Rola laboratories.—*Radio Retailing*, January, 1935.



Emerson Model 49

## Emerson Models 49 and 69

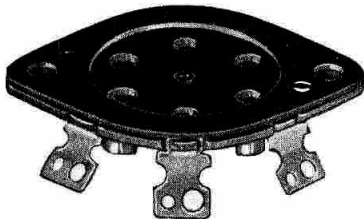
Model 49 Round the World table set of the Emerson Radio & Phonograph Corp., 111 Eighth Ave., New York City, is a 6-tube, a.c.-d.c. superheterodyne with the "signal filter," 8-in. speaker, and "Duo-lite" band switching circuit. It covers from 19 to 53 and from 170 to 555 meters and is housed in a cathedral-type walnut cabinet. \$49.50.

Model 69 is a 6-tube console covering the same wave lengths. This set has a 10-in. speaker and phonograph pick-up jack. \$69.50.—*Radio Retailing*, January, 1935.

## Franklin Flush Type Socket

The production of a flush type socket for all-wave and auto radios is announced by the A. W. Franklin Mfg. Corp., 137 Varick St., New York City. The design of the socket is intended to minimize the noise due to poor contact and to prevent microphonic vibrations and speaker howl. With this socket the base of the tube comes to rest flush with the top of the chassis.

Available for all types of standard prong arrangements and standard mounting centers as well as for special tube positions and mounting centers, according to specifications.—*Radio Retailing*, January, 1935.



## Ken-Rad Tubes

The Ken-Rad Corporation of Owensboro, Ky. is now in production on types 15, 6A6 and 25S tube.

Type 15 is a heater cathode type r.f. pentode designed for operation in 2-volt sets.

Type 6A6 is a heater type twin Class B tube designed for either output or driver stage of a.c. operated receivers. It is identical in characteristics with the type 53 except that it has a 6.3 volt .8 ampere heater.

The 25S is a duplex diode triode type of tube having a 2-volt, 60 milliamperes coated filament.—*Radio Retailing*, January, 1935.

## Shure Crystal Microphones

The first of a series of new advanced models of crystal microphone is being produced by the Shure Bros. Co., 215 W. Huron St., Chicago, Ill. This mike was perfected with the cooperation of the scientists of the Brush Development Co. (inventors of the "Bimorph" crystal unit).

Models 70H, 71AS and 71A are now ready for distribution. They are priced at \$22.50, \$26.50 and \$25.

These mikes use the "cantilever" mounting of the crystal element in which a "lever arm" effect is obtained, thus affording a better mechanical impedance match between diaphragm and crystal, it is said.—*Radio Retailing*, January, 1935.

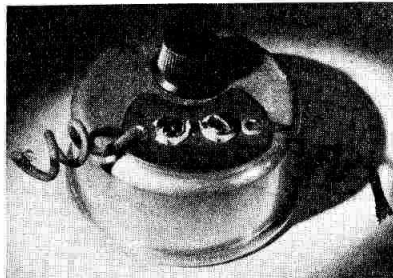
*Radio Retailing*, January, 1935

## Taco Noise Rejector

A further refinement in noiseless antenna systems for all-wave reception is offered in the variable impedance matching of download to receiver.

Known as the "Taco" noise rejector, this variable impedance matching unit is a development of Technical Appliance Corp., 27-26 Jackson Avenue, Long Island City, N. Y. Compact, neat, and handy, the unit is mounted alongside the antenna and ground binding posts of receiver by means of its base lugs. Two short leads connect with receiver. Two screw terminals take the twisted-pair download cable of the usual doublet antenna.

With the set in operation the noise rejector knob is adjusted for maximum transfer of signal energy from download to set, as well as for minimum background noise.—*Radio Retailing*, January, 1935.



## Adjustable Rheostat with Solid Molded Resistor

The Type J Bradleyometer is a new addition to the line of fixed and adjustable resistors developed by the Allen-Bradley Co., 1311 S. First St., Milwaukee, Wis.

This new Bradleyometer is a compact, continuously adjustable resistor for use as a rheostat or potentiometer in all volume control circuits and is also for tone control in all circuit arrangements involving the application of tone control on the output of audio radio receivers.

Practically any resistance-rotation curve shape can be provided, including straight logarithmic curves, modified logarithmic, or linear resistance-rotation curves. Total resistance values can be furnished to meet practically all specifications.—*Radio Retailing*, January, 1935.

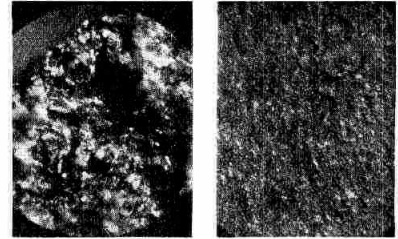
## Universal Combination Pick-Up and Recorder

The newest item in the production schedule of the Universal Microphone Co., Inglewood, Calif. is a combination pick-up and recorder impedance 400 ohms. By a special spring adjustment the pressure can be easily and quickly adjusted down to a featherweight on the needle groove. It matches the input of standard microphone transformers. As a recording cutting head, it matches all standard line-to-line mixers, tube-to-line and line-to-line transformers.

"Hi-Fidelity Silveroid Records" is the trade name for a new development in cellulose coated aluminum discs which Universal is making. They have a brilliant silvery finish and come in the 12 in. size.—*Radio Retailing*, January, 1935.

## Crolite Resistors

Definite departure from established resistor art now makes available an inexpensive extruded resistor capable of a performance heretofore identified with wire-wound units. Developed and offered by Henry L. Crowley & Co., West Orange, N. J., the novelty of this new resistor rests on the production of a solid, homogeneous, full cross-section conduction body comprising a background or bulk material of high resistance value, with a greater or less admixture of another resistive material of lower value to obtain desired ohmage in mass of fixed length and diameter. They have a smooth, rock-hard, black body, solid and uniform throughout, with a protective coating. Terminal caps cannot work loose.—*Radio Retailing*, January, 1935.



New Electrad resistance element (right) compared with commonly used material

## Lynch Improved Resistor

Condensers, volume controls and resistors are the most common causes of breakdown in modern sets. After more than five years of laboratory work and many months of proving in actual service in the field, the Lynch Mfg. Co., Inc., 405 Lexington Ave., New York City, announces a new type of resistor said to be rock-hard and moisture-repellent. Made of a special ceramic composition, extruded under tremendous pressures at what engineers call "dazzling yellow" heat, this new resistance element affords a compact, homogeneous substance that is uniformly conductive, without pores, voids, or other resultant point-contacts.—*Radio Retailing*, January, 1935.

## Bruno Velocity Microphones

Designed to meet the requirements of public address equipment builders and users, Models PA2 and PA3 velocity microphones of the Bruno Laboratories, 20 W. 22nd St., New York City, afford a high degree of fidelity due to the exceptionally wide range of their frequency response. They are not affected by humidity changes, which makes them ideal for outdoor use under all weather conditions.

The output impedance of these units is 50 or 200 ohms, but other ohmages can be supplied to order at a slight extra charge. Both models are fully encased in an attractive housing and are supplied with coupling transformer and 6 feet of shielded, rubber covered cable.

Model PA-2, threaded to accommodate  $\frac{1}{8}$  in. pipe thread, is \$25 and Model PA-3, equipped with a universal ball swivel joint that fits a standard  $\frac{1}{8}$  in. pipe thread is \$40.

A high degree of fidelity is also claimed for the new Model M. It is designed to meet the requirements of sound equipment companies and p.a. users. Ruggedly constructed and has a flat frequency response curve from 30-14,000 cps. A universal ball swivel joint enables the user to focus it in the most suitable direction.—*Radio Retailing*, January, 1935.



## Jefferson Air Cooled Transformer

Jefferson lighting transformers are now designed in complete enclosing case with a separate compartment for the primary and secondary leads. This design permits complete protection of the connections. Knock-out holes are provided for entrance of flexible or rigid conduit—or by using porcelain bushing, open wiring may be brought in.

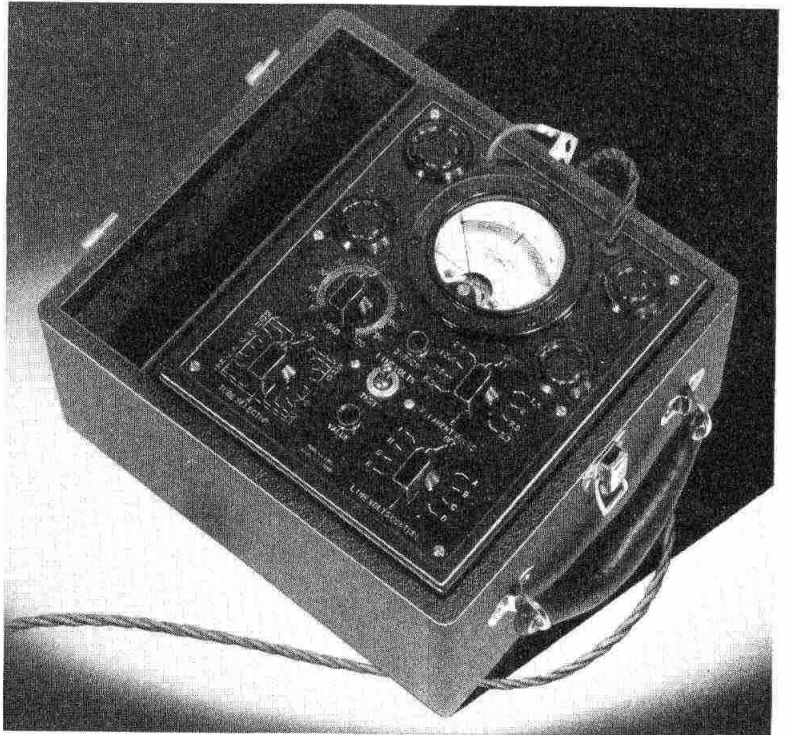
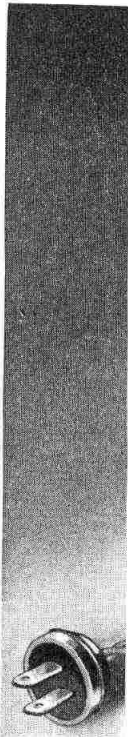
These transformers are used to supply 110-120 volt current to lamps and various small motor-driven tools and heating appliances. Their use puts this sort of load on the "lower rate" power circuits and in many cases saves expense in wiring installation. They are built in various ratings and capacities up to 20,000-volt amperes. Available from the Jefferson Electric Co., Bellwood, Ill.—*Radio Retailing*, January, 1935.



# The Final Answer to TUBE TEST VALUES ...

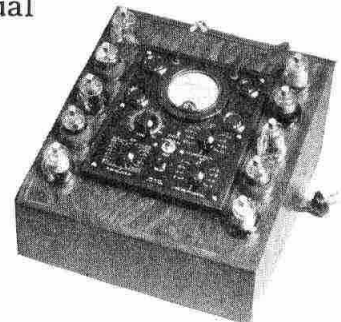
**H**ERE is the Triplett Tube Tester for which users of Triplett instruments have been waiting. It is a **MASTER TESTER** in every sense of the word. Nothing is left to be desired in either appearance or performance. Only four sockets used for every type of tube. One rotation of the switch instantly indicates interelement shorts and leakages up to 500,000 ohms.

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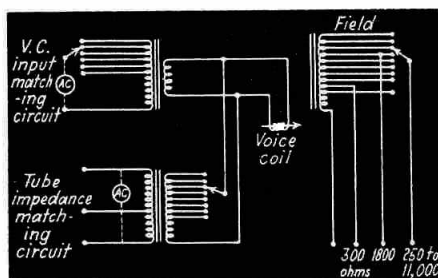
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## CIRCUITS of the MONTH

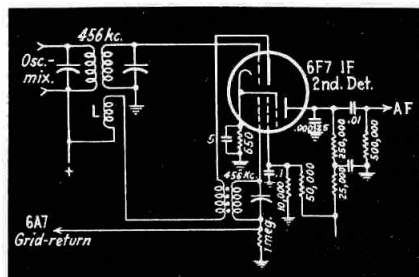


### Universal Shop Speaker

Here's the complete circuit of Radolek's "Dynatest" speaker, a universal voice-coil and field matching arrangement designed for use in the shop.

There are two voice-coil impedance matching transformers and an 11,000 ohm field with taps and switch for sets having odd field coil values or tapped fields.

Leads not in use may be readily used for output measurements. Meter connections can thus be made without disturbing set wiring.



### Triode I. F. Stage Uses Reversed Tickler

Oldtimers will remember that many years ago a Tuska circuit called the "Superdyne" used a reversed tickler in its i.f. stage to prevent oscillation. The same stunt is found in Emerson's new Model 19 compact but is here employed in connection with a triode i.f. circuit.

A 6F7 is used as a combined triode i.f. amplifier and pentode second detector. The i.f. triode achieves a voltage gain

of  $7\frac{1}{2}$ , due largely to the efficiency of its associated tuned-secondary, r.f. iron cored stepup transformer. Selectivity is secured in the first detector-mixer, the i.f. stage adding little sharpness.

Because of the high gain in the triode i.f. circuit some means of preventing oscillation must be employed. Enter L, the aforementioned reversed tickler coupled to the input coil, and the job is done.

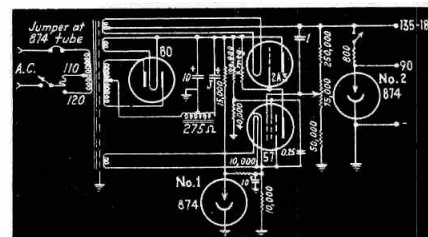
Another interesting trick is found in the receiver's audio overload control. The lead running to the 6A7's control grid return is connected to the low potential side of the second-detector control grid coil. When signals become strong enough to drive the pentode's control grid positive and current flows in this grid circuit the resulting voltage drop increases the 6A7's bias and cuts the gain of the oscillator-mixer.

### Regulated Power Unit

The TMV 118B, a new "regulated" power unit by RCA, is said to have better regulation than heavy-duty B's and virtually humless output. This is a large order, so let's see how the seeming miracle is accomplished.

Perhaps the best way to describe circuit action is to note the effect of increased load current or lowered a.c. supply voltage. Both are precisely the same. Suppose, for example, that a certain milliamperere drain is placed on the device. A definite voltage appears across the load. Now suppose that the drain increases or supply voltage falls off. Output voltage appearing across the bleeder network between ground and the movable arm of the potentiometer tends to decrease as IR drop through the power transformer, rectifier tube and choke climbs.

But the movable arm of the potentiometer is connected to the control grid of a 57. Hence when voltage between the arm and ground is lowered this grid becomes more negative. The plate current of the tube declines and, inasmuch as the drop across a resistor in its plate circuit is used to bias the 2A3, the grid of the latter tube becomes more positive.



The 2A3 is so connected that its cathode to plate resistance is in series with the power unit's positive output lead. When the triode's grid is made more positive the tube's internal resistance decreases and the output voltage of the device automatically rises to near its original value.

The purpose of the gaseous regulator tube No. 1 is yet to be explained. Because an 874's resistance is inversely proportional to the voltage across its terminals the nearly constant drop across the tube and two associated resistors provides a certain amount of fixed bias for the 57. Number 2 regulator is simply across the 90 volt to ground tap of the supply device and gives additional regulation when this tap is used.

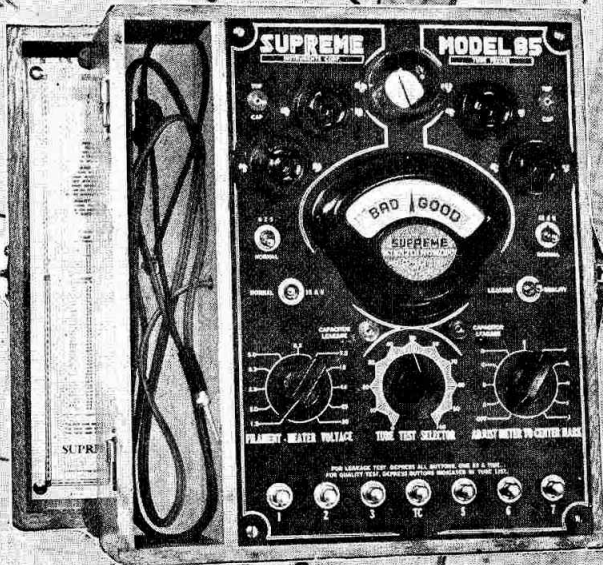
Now about hum-free operation. The filter is, of course, largely responsible. But there is an additional safeguard. Any hum voltage present in the output of the device is passed from the positive output leg by a 1 mike condenser to the grid of the 57, along with d.c. bleeder voltage changes already mentioned. Ripple voltage present in the output is therefore smoothed out to a certain extent by exactly the same automatic regulation action already described.

### High Gain 2B6 Connection

Original 2B6 circuits showed the input grid return connected to ground. In such arrangements a certain amount of degeneration occurs because the signal is applied across the cathode resistor. Thus approximately 27 volts input was required for rated output, sensitivity being midway between pentode and triode.



# Magic? No! Tests ---- Thousands of them!

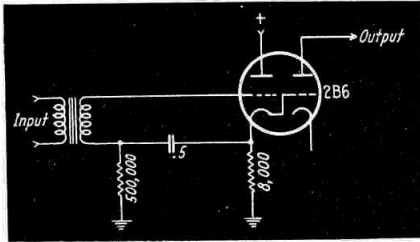


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Export Dept., Associated Exporters Co., 1457 Broadway, New York City

# SHOP SHORTCUTS



Triad engineers suggest the circuit illustrated for use where additional sensitivity is the chief requirement. Harmonic content is somewhat higher but only 11 volts are required to fully drive the tube.

The trick consists simply of impressing the input signal between grid and cathode, with a .5 isolating condenser in the return lead, rather than between grid and ground. The 500,000 ohm resistor provides a d.c. path for bias voltage.

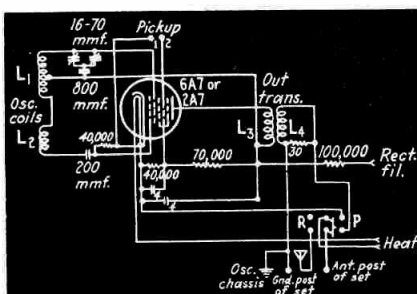
## Phonograph Oscillator

RCA has a new device called a phonograph oscillator. This title stopped us cold until our prying nature uncovered the fact that it is a modulated r.f. oscillator designed to permit the playing of records through turntable and pickup model R93 to any radio receiver, without monkeying with the works.

Known as the RK24, the device is simply a 6A7 or 2A7 pentagrid-converter (tube to suit your needs), the triode section of which works as an r.f. oscillator screwdriver-tuned somewhere between 1,400 and 1,700 kc. The pentode portion is grid-modulated so that, thanks to electron-coupling, the gimmick supplies sweet music in the form of a broadcast signal to the input of the set with which it is associated.

The circuit is modified Hartley (good old Hartley), plate voltage being obtained by tapping in on the receiver's rectifier filament and heater potential by sliding wafer-thin adapters under a pair of the set's heater prongs. The output impedance of the device is 30-ohms, which, coupled with the fact that the antenna is disconnected from the receiver's input when the oscillator is in use, damps out any extraneous r.f. pickup. Tracing through from the rectifier filament connection to cathode, the 100,000, 70,000 and 40,000 ohm resistors constitute a built-in voltage divider, from which plate and screen voltage are tapped.

The entire unit is, of course, completely shielded so that the innocent bystander does not have his set modulated.

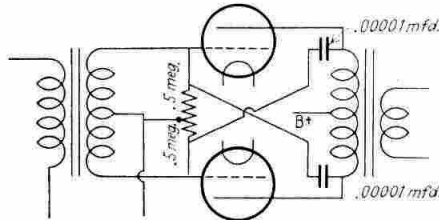


## High-Fidelity Push-Pull

By Ben South

Chicago servicemen are capitalizing on the high-fidelity movement by installing a.f. neutralizing condensers in push-pull audio circuits and so improving high frequency response.

Two .00001 condensers, a few inches of hookup wire and a hot soldering iron constitute the chief parts. Each condenser is connected from the grid of one tube to the plate of the other as illustrated. If the bass response of the receiver is not satisfactory two .5 megohm,  $\frac{1}{4}$  watt resistors are connected in series



across the grids of the power tubes and the junction of the two resistors connected to the center tap of the input transformer. This serves as a load of 1 megohm on the transformer and, in conjunction with the neutralizers greatly improves overall response.

The effect is the same with triodes or pentodes in any class A push-pull amplifier.

## Removing Panel Scratches

By George N. Musil

To remove scratches or engraving from hard rubber panels rub a wax crayon over the abrasion or marking to be removed. Turn the panel upside down and hold a lighted match or candle flame against the waxed portion, moving the flame slowly until the entire surface waxed is nearly dried. Now, with a clean, soft cloth wipe the panel dry and clean.

The depth of the engraving or scratch will be greatly reduced and in many instances will become undetectable.

## Locating Quiet Antenna Areas

By M. Chernow

All the serviceman's work when installing a so-called noiseless antenna system goes for naught if the flat-top itself is placed in a noisy location. Sometimes movement of the antenna just a few feet in one direction or another spells the difference between success and failure. But how to tell where the best spot is?

I use an old magnetic speaker as a microphone, placing it close to the speaker of the receiver and feeding a

pair of phones up on the roof from it through a 200 foot roll of transmission line. The transmission line of the antenna system is permanently installed and the flat-top temporarily connected in the most likely looking position. Then the set is tuned to a dead spot between stations and the volume turned up full.

Going up on the roof, I can hear the racket picked up by the set in the phones. One end of the antenna is loosened from its temporary support and moved over a wide arc until the best location is found. It is then permanently fastened.

EDITOR'S NOTE: Why not connect the phones right in the output circuit by means of adapters?

## Flexible Vise

By Ralph L. LeBrun

Thin, flat parts which either because of their shape or fragility cannot be held in an ordinary vise when repairing, can be caught between two small (ladies' size) rubber heels clamped in the shop vise.

## Wire Identification

By Curtis Cain

Where it is necessary to remove wires running between chassis and pack and these wires are not color-coded I file notches in two sets of paper clips, placing one clip on the upper end of the wire and the corresponding clip on the low, then cutting the wire.

Where there are twelve wires, for example, the upper set of clips would have filed notches from one to 12, corresponding with a similar set of clips at the pack.

## Tone Control for Ribbon Mike

By Herbert J. Mayer

When a ribbon type microphone is used with a high-class p.a. amplifier it is often found that the bass response is

(Please turn to page 43)

## Wanted: Appliance Data

Our "sister" paper, Electrical Merchandising, publishes, beginning this month, an appliance service section similar to our own.

Do you have any data on the adjustment or repair of household refrigerators, washers, cleaners, oil-burners or minor appliances?

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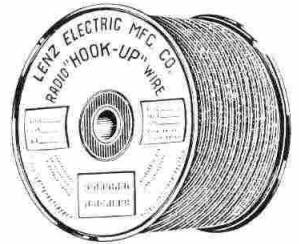
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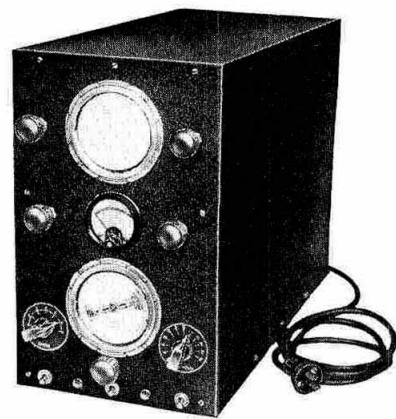
13902 Lorain Ave., Cleveland, Ohio  
Toronto, Canada

# THE CATHODE RAY VISUAL RESONANCE OSCILLOSCOPE

Principles of design\*. How to connect the instrument for alignment. How to adjust tuned circuits for maximum fidelity and selectivity

By SAMUEL BAGNO AND MARTIN POSNER

*Egert Engineering Corp.*



alter the true shape of the selectivity curve. The saturation curve of iron is shown as Fig. 2. By employing the portion of the saturation curve in which the permeability varied directly as the change in magnetizing force, it was possible to obtain a scale that was linear with respect to the saturating current; that is, a change in saturating current produced a proportional change in frequency. A 22-kc. band width was chosen and a calibrated scale fitted against the screen of the cathode ray tube.

**T**HE basic principle of the cathode ray visual selectivity curve indicator involves the plotting of frequency against output by an electron beam at a rate well within the persistence of vision so as to show a continuous curve on the screen of the tube. The present article will deal with the actual application of such an instrument to service work on modern receivers.

First we shall describe some theoretical requirements which governed the design of our own unit. This will make the description of its use easier to follow.

## Choosing the "Sweep" Frequency

There is an inherent difference between the dynamic selectivity curve as taken by an instrument of this type, where the frequency is periodically varied over a given range, and the static selectivity curve where each point in the frequency spectrum is plotted against the corresponding output of the selector system (which can be the radio-frequency portion of a radio set, a band-pass filter, an i.f. coil or any other tuning system). This difference, however, can be made negligible by proper choice of the "wobbling" frequency.

Every tuning system has inertia; that is, a charge of electrical energy built up in the system must be dissipated in the form of damped oscillations. This inertia fixes the

requirements for persistence of vision and is about 15 to 20 complete cycles per second for a flickerless picture, unless a retentive (phosphorescent) screen is used. It also depends on ability to take the signal out of the detector system and pass it, amplified and undistorted, into the cathode ray tube.

In order to find the most practical "scanning speed" at which to work, considerable experiment was required. Sixty cycles was found to be a good compromise, since at lower frequencies the phase distortion of the average amplifier makes the image of the r.f. selectivity curve almost unrecognizable, and at much higher frequencies a freak condition is encountered wherein the stored-up energy in the tuned circuit at its own natural frequency beats against the fluctuating frequency supplied by the visual resonance oscilloscope and produces a series of ripples that decrease in amplitude and wave length on one side of resonance. An extreme condition of this sort is found in a "stenode" or "single signal" receiver, when the fluctuating frequency is swept through the natural period of the crystal selector system. The resulting curve is shown in Fig. 1. The signal in the tuned circuit builds up suddenly; that is, there is a sudden absorption of energy, and decaying energy in the crystal beats against the new input energy.

## "Permeability Variation" Sweep Circuit

After investigating various means for changing the constants that determine the frequency of an oscillator, the Egert Engineering Corp. developed an electrical method using the variation of permeability with saturation of an iron core; a mechanical "wobbling" system having been ruled out, due to the fact that any defect which may develop in the bearings would tend to

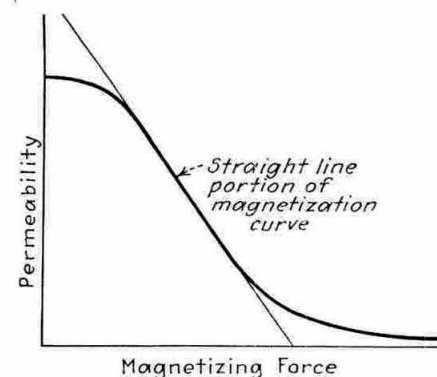


Fig. 2. Saturation curve of iron

As another feature of the design, additional band widths were provided which are integral multiples of the fundamental band width, so that the same scale could be used for a 10-kc. resonance curve or for a 600-kc. television band pass curve.

So much for design.

## Connections for Alignment

Now, coming to the process of aligning a receiver, the signal input from the VRO is connected to the set like any oscillator signal—that is, across the various i.f. stages, or to aerial and ground for an overall curve. The output from the receiver back to the VRO is taken from the output of the second detector, although there are cases where this may be undesirable, since at that point the radio frequency present may cause feedback and thereby alter the selectivity of the set.

The best way of connecting the output to the VRO depends on whether the receiver uses (1) diode, (2) biased, or (3) gridleak detection. The circuit connections are shown schematically in Figs. 3 and 3A.

From the output of the diode detector it was found satisfactory to take off the output voltage between the grid of the tube following the diode circuit and ground, as

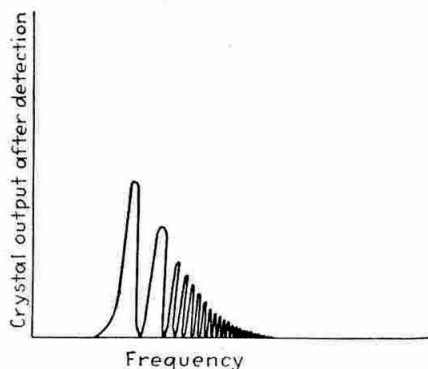


Fig. 1. Frequency varying at a rapid rate past a crystal selector system

upper limit of the rate at which the frequency can be swept through its entire range. The lower limit depends on the re-

\*Ed. Note: For further information on oscilloscope design see page 37 in the December 1934 issue of *Radio Retailing*.

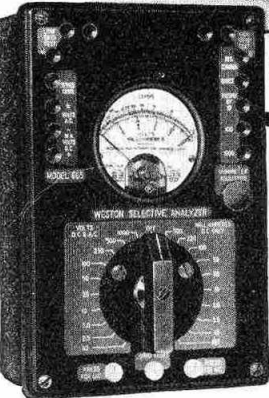


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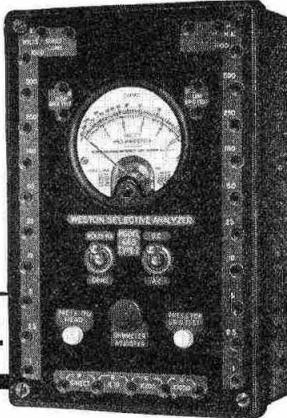
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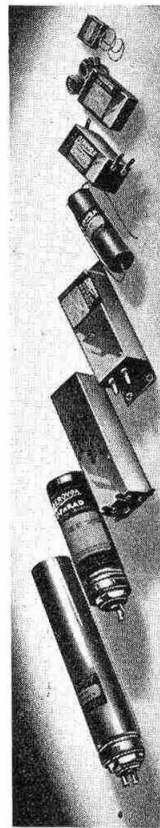


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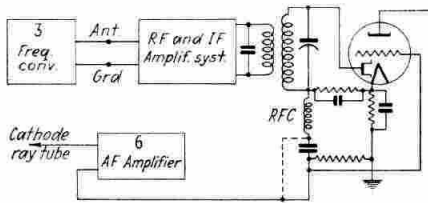


Fig. 3. Connection to diode detector

in Fig. 3. This output is fed to the internal amplifier in the cathode ray oscilloscope and the amplifier, in turn, feeds the vertical deflectors. The horizontal deflection (being made proportional to the saturating current of the iron-core oscillator coil) is proportional to the frequency and calibrated directly in frequency deviation from resonance.

In the case of bias detection, it was found best to take the signal directly from the plate of the detector and through a condenser-resistor combination, as shown in Fig. 3A, to one vertical deflector plate (the other plate of the pair being already

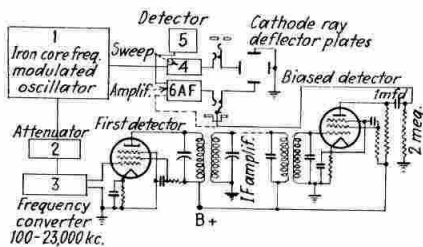


Fig. 3A. Connection to biased detector

grounded through the input ground lead); or to the input of the cathode ray amplifier. When it is impossible to connect one side of the input to ground, a 60-cycle gradient may be built up between the oscilloscope and the set itself which deforms the image on the cathode ray screen. This deformation can be eliminated by connecting the cathode of the detector to the ground side of the oscilloscope amplifier or to the grounded plate of the pair of vertical deflector plates.

In the case of gridleak detection, it is

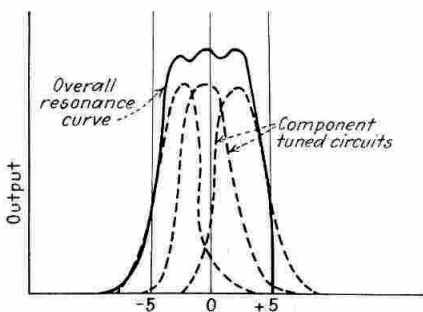


Fig. 4A. "Staggered" sharp stages

always best to connect the plate of the detector tube directly to the vertical deflector plate of the cathode ray tube. In this way, the resonance curve is placed in an upright position instead of dipping down as it would if fed into the cathode ray amplifier. Between the deflector plates themselves, and the cathode ray amplifier, there is a phase difference of 180 degrees. That is, all positive loops coming into the grid of the amplifier become negative loops in its plate circuit.

## Adjusting Tuned Circuits

The great value of this instrument arises from the fact that a broadcast station in transmitting its programs sends out not only its carrier frequency but also many other frequencies in a double train symmetrically disposed within a range of 5 kc. on either side of the carrier. Therefore in order to reproduce the transmissions with absolute fidelity, the tuned circuits in the receiver must be aligned to admit all these frequencies, and to pass them on to the detector at their original relative amplitudes and phase angles.

The selectivity curve as thrown on the screen of the VRO shows the extent to which this condition is fulfilled. If, for example, the tuning system cuts off too sharply, or its resonance curve is not shaped evenly severe distortion may be introduced and the distinctive quality of the transmission is lost.

There are several ways of approaching the theoretical ideal, a flat-topped curve ranging 5 kc. on either side of the carrier and dropping off abruptly beyond. One way is "staggering," which can be done within the same intermediate transformer by the use of over-coupling and three-chain networks or in adjacent amplifier sets. Very sharply tuned circuits may be used and staggered so as to give a flat top, as shown in Fig. 4A; or several single, broadly-tuned circuits may be used superimposed in cascade so as to give essentially a flat top curve (Fig. 4B); or a compromise between the two (Fig. 4C); or double-tuned circuits overcoupled, as in Fig. 4D. With less overcoupling than shown in Fig. 4D the peaks will be further apart, which will improve the high frequency audio response, but the valley will be deeper, which will drop the low frequencies. By centrally superimposing a single-peaked curve on the overcoupled one the valley can be filled in; in fact, a triple-peaked overall curve can be produced whereby the extreme low frequencies and the extreme highs are accentuated relative to the middle register.

A practical example would be a single-peaked r.f. circuit followed by an over-coupled i.f. circuit. With judicious choice of the methods described even outmoded superheterodynes can be realigned to obtain something resembling high fidelity. In several such sets that were used for experimental purposes at our laboratories, the tone quality was improved tremendously by staggering—correctly—the various i.f. stages, although of course there was a concomitant drop in overall sensitivity.

All this is a nearly hopeless task with the ordinary oscillator-output meter method, but quite rapid and easy with the VRO, since the actual effect on the shape of the resonance curve of every adjustment is instantly visible. Aside from the fact that the oscillator-output meter method would be too tedious, the actual shape and symmetry of the resonance curve so obtained would be unknown, and certain inaccuracies would be introduced which are responsible for some particularly unpleasant headaches in servicing. The only kind of curve practicable to take with this method is a single peak. But even in this case the method will quite often give the surprising result that a set which is apparently perfectly aligned to maximum output will be off frequency by several kc.; enough to make the difference between a set free from beats and whistles, and one full of them.

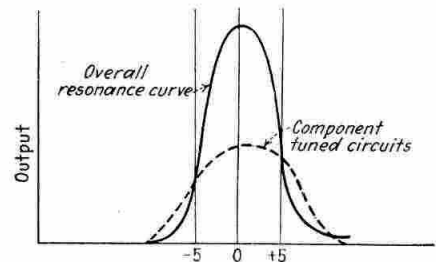


Fig. 4B. Superimposed broad stages

There are several reasons for this effect. Sometimes it is due to certain properties of a tuned coupled interstage transformer whereby slightly off-tune conditions on either side of resonance may produce a higher effective plate load, or a lower value of reflected resistance, resulting in an increase in the stage gain or in the energy transfer from primary to secondary; and sometimes to an increase in the percentage modulation brought about by tuning to the modulating side band. These effects are sometimes confused with an apparently similar effect which is due to detector overload.

## Other VRO Uses

Other uses of the VRO that come to mind are rapid checking of tracking and gain by tuning the receiver over its range

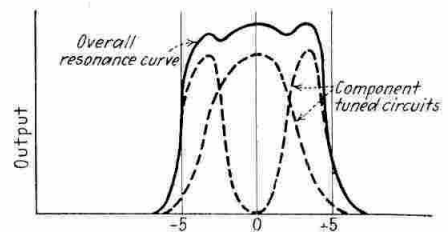


Fig. 4C. Staggered and superimposed compromise

while keeping the all-wave signal generator in step; reading true r.f., a.c., d.c. and a.v.c. voltages; measuring condenser leakage and very high resistances; checking the values of coils and condensers, and their losses; checking distortion, etc.

It seems likely that within a year the increasing complexity of the new receiver designs will make such instruments indispensable. In high fidelity receivers, for instance, not only must the tuned circuits be aligned to a carefully shaped resonance curve, but the rate of change of shape with variation of the selectivity control must be correct. As a matter of fact, some leading manufacturers are already specifying in the service notes on some of their models that for correct alignment of these receivers a visual resonance indicator must be used.

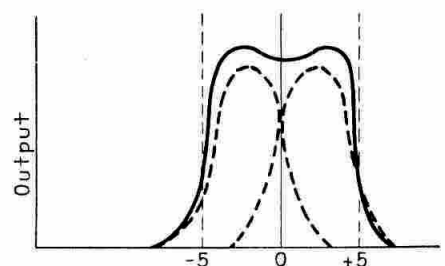


Fig. 4D. Overcoupled, double tuned stages



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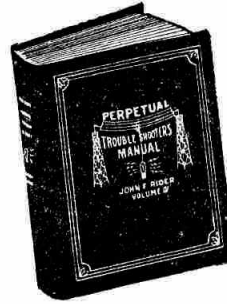
Cap.	Container Size	Mounting	Circuit	Code
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8-8	1 1/2 x 4 3/8	INVERTED	B	EB8801
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8-8	1 1/2 x 4 3/8	INVERTED	D	EB8803
8-8	1 1/2 x 4 3/8	INVERTED	E	EP8803

A	SEPARATE SECTIONS—4 LEADS
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(Continued from page 39)

too great, causing boominess on some jobs. Shunt a .002 mica condenser with a 500,000 ohm, 1 watt resistor and then connect this unit in series with the control grid lead of the first amplifier tube.

If variable control is desired use a 0 to 1 megohm resistor in place of the fixed resistor. If still greater bass suppression is required rig up a switch to cut in .006 and .01 condensers at will. Variable control seems particularly useful in clearing up speech.



### Tuning for the Blind

By Joe Long

People who are blind and hence cannot see the dial markings of a radio receiver may nevertheless tune to familiar positions quickly if their set is equipped with a drum dial having a large "window" which permits the fingers to contact the drum surface and if some enterprising radio man has provided "touch-type" markings.

This may be easily done by clipping most of the shank from ordinary straight pins and driving the shortened shank into the drum as shown so that the heads only protrude. The shank left with the head should be just thick enough to penetrate the drum celluloid.

Drive the pins as shown, one for each 10 dial markings on one edge and one for the fives, in between the tens. Cement them in place with nail polish or what have you that sticks to celluloid.

### Pigtail Resistor Holder

By L. A. Moore

A piece of balsa wood hung up on the shop wall makes an excellent holder for resistors having short, rigid wire terminals.

Shove the terminals into the balsa (it will be found quite soft enough to hold them and no holes need be drilled) and arrange the resistors one under the other on the strip. The terminals will be kept straight and the resistors will be highly visible for rapid selection.

### Fixing Warped Cone

By N. J. Audubon

Any paper or composition speaker cone that rattles or vibrates at some frequency because the cone has become warped, or because the tension of the cone surface is not uniform, can be restored to good condition quite easily.

Turn the set on and tune in a station loud enough to cause the rattle. Now, with a cloth soaked in lemon oil thoroughly dampen (not saturate) the entire front of the cone and, with a hot solder-

ing iron, smooth out all high spots. Do not leave the hot iron on one spot for any length of time, rather working it back and forth and keeping it in motion until the "hills" vanish.

As the vibration disappears turn up the volume more and more and keep working out imperfections in the cone surface until full volume has been reached. If the cone is too dry, or hard, soak the entire composition or paper part in Neat's Foot oil for one or two hours before using the iron. If this oil is used, lemon oil will be unnecessary.

### Hum In AC-DC Sets

By M. G. Goldberg

When midget ac-dc receivers work ok on d.c. but hum badly on a.c., check for shorted cathode to heater or leak from cathode to heater. If the set works on a.c. but not on d.c., or drops out entirely on d.c. after a minute or two of operation it is probably caused by an open cathode resistor in the detector circuit. On a.c., due to improper supply filtering, the resistance of the bias condenser remains of fairly low value. On d.c. the charging current decreases due to voltage build up in the condenser and this voltage causes the bias to increase to cut off because of high resistance in the cathode by-passing condenser.

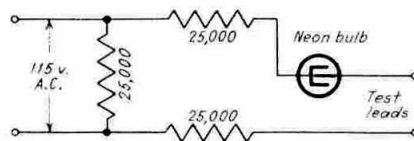
### General Purpose Neon Tester

By J. P. Kennedy

An excellent conductivity tester and leakage tester can be made with a quarter-watt neon pilot light and three 25,000 ohm resistors.

Arrange a circuit as shown. When used with a.c. supply the pilot acts as a conductivity tester or leakage detector. The resistors prevent a direct short from one side of the line to the grounded chassis of the set.

When not used with a.c. the neon bulb in series with the three resistors makes a satisfactory indicator of high voltages, the polarity of high voltages and condenser leakage.



### Locating A-R Tube Shorts

By Irving Seideman

When auto-radio users complain that something sounds "loose" in their set check the tubes for inter-electrode shorts. This is most effectively done by testing the tubes upside down, especially where they are used in this position in the set.

Use a speaker cable to extend the tube tester leads.

## TRICKS of the TRADE

**ACE AC-DC MIDGET.** Crackling and sputtering . . . One or possibly two of the a.c. wires running from the plug at the rear of the chassis touching under the choke. Remove choke and place wires around instead of under it.

**ALL-AMERICAN MOHAWK 70, 73, 75.** To reduce hum level . . . Change the location of the gridleak, which sometimes picks up hum from the a.c. filament leads.

**AMERICAN BOSCH 150.** Short-wave signals in center of dial . . . Check i.f. frequency and oscillator condenser, making sure that coil and tube shields are tight. (I.f. 175 kc.)

**CLARION 70.** Poor selectivity . . . Check for burned out antenna coil. Rewind with silk-covered wire if necessary. Also check volume control for short circuit.

**EDISON R1, R2, C2.** To pep up these receivers and reduce hum . . . Replace 27 detector and 25 first audio with 56's, using the 2.5 volt filament winding originally supplying the detector. Remove gridleak and grid condenser and bias the new 56 detector with a 40,000 ohm, 1 watt cathode resistor, by-passing with .1 mfd. This should feed the detector plate about 150 volts. Bias the first audio 56 with 2,700 ohms in the cathode circuit, by-passing it properly.

**FAIRBANKS-MORSE 238T32.** Noisy reception . . . Due to vibrator unit being tightly mounted to the chassis. The factory uses only one screw in mounting this unit although it is drilled and tapped for two. Insert 1/2 inch of sponge rubber washer between the metal washer under screw head and bottom of chassis. The marked improvement is well worth the trouble.

**GE C14.** Operates at low volume on long antenna and will not play at all on regular car type, volume control has no effect . . . Check for open .02 (C16 on diagram) mfd. condenser connecting diode section of 6B7 through variable arm of control to grid of triode section of same tube.

**GE K80X, K80, K85.** Failure to operate at high-frequency end of "C" and "D" bands, or even failure to operate over these bands at all . . . Try several new 2A7's in oscillator socket. Oscillation howl on strong signals . . . Enclose grid lead of 2B7 second detector inside cylindrical tube shield.



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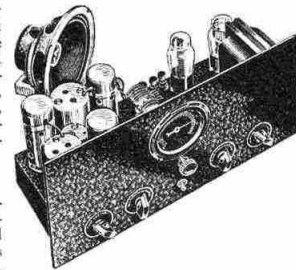
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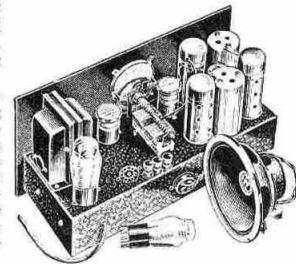
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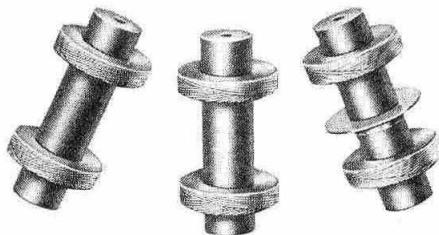
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D	3103-A	495 Kc.
D	3106	380 Kc.
D	3104	262 Kc.
E	3032	175 Kc.
E	3031	115 Kc.

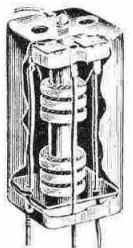
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TYPE D

**MOTOROLA 55.** Elkonode unit is short-lived . . . Connect 50,000 ohm resistor across output of replacement unit.

**PEERLESS 20.** Intermittent reception . . . Nearly always due to defective condenser connected from detector grid coil to ground.

**PHILCO 45.** Continual failure of type 80 . . . Replace filter No. 30-2028 with new part No. 30-2079.

**PHILCO 59.** Fading . . . Replace second detector 77. Also check i.f. transformers.

**PHILCO 70, 90.** Feedback not traceable to missing rubber cushions or floating condenser gang . . . Drop wad of paper into oscillator coil form, mounted on the chassis by means of a bracket, and, with set upside down, drop catacomb wax onto paper off soldering iron point. Feedback is due to vibration of oscillator coil itself.

**RCA 11.** Set stops playing at intervals after 27 a.v.c. tube has been replaced . . . Use an old type, straight-sided 27 in this position. Excessive heating is probably at the root of the trouble.

**RCA 80, R50, R55.** Static-like noise when volume control is in off position . . . Due to breakdown of interstage transformer and may only show up after set heats. Replace interstage output, housed in one assembly.

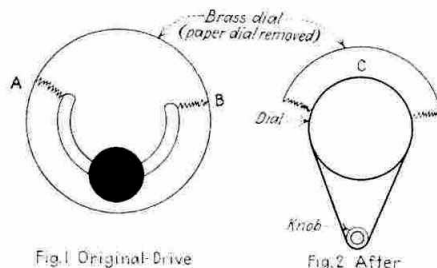
**SPARTON AIRPLANE DIALS.** Microphonic trouble . . . See that there is clearance between dial and cabinet. It may also be advisable to put a coat of clear lacquer on wires passing through oscillator coil so that these will not vibrate.

**SPARTON 65, 66.** Improving selectivity . . . Remove L5 (part A-11041) and install new L5 (part A-11535). Remove C3 (part A-10973) and install new C3 (part A-11474). Connect one condenser of C3 across primary and connect other condenser across secondary of L5. Remove resistor R-11 (part B-5243-34) and install part B-5458-1 2,200 ohm, .25 watt unit. Remove resistor R-15 (part B-5458-33) and install part B-5458-31 (30,000 ohm) .25 watt unit.

**SPARTON 65, 66.** Oscillation . . . See if metal braid shielding on control-grid lead of type 78 tubes, either one, has been pushed down accidentally when removing or installing tube packing, or changing tubes. If so, pull shields up to their full length.

**SPARTON AC7, 62, 63.** Replacing worn-out friction dial drives . . . Remove chassis from set. Remove spring tension arrangement from shaft and re-

place with brass rod or old variable condenser spacer tube, drilled to fit snugly over shaft. File brass rod down until it is spool shaped, similar to spools used on sewing machines. This may be done by putting the rod of spacer tube on a small bolt, rotating the bolt in an electric drill and holding a file against it. The spool should now be covered with tape and metallic-xed (a cement) in place. It should then be soldered to the knob shaft, easily removed by lifting the spring before the tape is ce-



mented to the shaft. Remove the paper dial from the set by taking out the round brass clip holding it in place. Cut the slotted brass disc at A & B, shown in diagram, wrap piece of dial cable around the drum portion of dial as shown in 2. Solder in place at spot marked C and wrap two turns around spool on shaft. Splice or solder ends at C, replace paper dial and the job is done.

**SPARTON 333.** Reception of code or police signals . . . Often caused by breaking of wire which runs from antenna equalizing condenser to r.f. section of the condenser gang. To correct, remove broken wires and solder in 6 inch length of flexible wire. Form a loop in this wire by winding a few turns around a lead pencil. This will allow slack and avoid further difficulty. In the event that the wire connecting the grid cap of the 6F7 first detector-oscillator to the antenna equalizer breaks replace with longer flexible wire run from the grid cap down under the gang condenser and thence to the equalizer.

**SPARTON 930, 931.** Reception only between 1500 and 850 kc., voltages, condensers, tubes ok. Check for cold soldered joint at 1st r.f. plate choke. While the set is open check value of 15,000 ohm bleeder resistor. They sometimes creep up as high as 67,000 ohms when heated and if found in this condition should be replaced.

**SPARTON 67, 68, 691.** Vibration . . . Remove small piece of rubber in middle of rear edge of chassis base plate and place small strips of one inch masking tape along edges of base plate, preventing plate from vibrating against chassis frame. Stick one end of tape to top side of plate and fold the other end around so that it sticks to the bottom. Masking tape is obtainable at most hardware or paint stores.

**SPARTON 80, 83, 84.** Burning out of 3,000 ohm resistor part B-6061-3 (5,000 ohm part B-6060-5 in later serial numbers) . . . Usually due to failure of .2 mfd., 200 volt condenser connected

from plate of a.v. controlled tubes to ground, shown as C8 in diagrams. Replace resistor and replace condenser with 600 volt unit.

**SPARTON 65, 67, 83, 104, etc.** Slipping of planetary drive . . . Pinch, very carefully, the lugs which hold the drive assembly together. Use small pliers and do not overdo the pinching or the drive will run too rough.

**SPARTON 40.** B-battery dead, or heavy current drain on eliminator . . . Replace shorted 1 mfd. condenser used to by-pass screen of 438 power tube.

**SPARTON 36.** Short-lived vibrators . . . Connect .01 mike, 1600 volt condenser across secondary winding of power transformer in the eliminator unit. Install the condenser in all sets serviced as precautionary measure, adding cost to bill.

**STEWART-WARNER R301, R301A, R301B, R301E.** Inoperative, especially on high frequency . . . Check voltage of 27 oscillator. If less than 100 converter is probably cutting out. If series resistor, usually 17,500 ohms, is used in series with red plate lead, remove this resistor entirely or substitute one of lower value to supply 100 volts to plate. While chassis is open resolder connections to coils and other high frequency connections. Slipping dial mechanism . . . Twist thin rubber band around each rubber pulley. Also check for leaky 2-mfd. plate, by-pass condenser, even though it functions ok. Leak of approximately 150,000 ohms indicates unit will soon break down. Condenser is cased and connected between 25,000-ohm, 1-watt plate supply resistors and ground.

**US BATTERY SUPER.** Persistent howling . . . Connect 2 mfd. condenser across B-batteries, mounting it in the chassis for convenience.

**VICTOR RE57.** Set dead . . . Remove panel mounting rivets carefully, turn panel over and check value of 2 watt resistor in detector circuit. It should be 1 or 1½ megohms.

**ZENITH 50 SERIES.** Pronounced hum not due to trouble in filter . . . Apparently due to pickup of hum inductively from the filter choke by the a.f. transformer between the first and final a.f. stages. It will be found that first a.f. stage plate is fed through .1 meg. resistor, a.f. passing from this plate through a blocking condenser to the audio transformer primary, the low end of which is connected to the cathode. Remove the blocking condenser and shunt the transformer primary with a .1 megohm resistor. Connect the low end of this resistor to ground through a 2 mike by-pass. Now feed plate voltage to the low end of the transformer primary, through an additional .1 megohm resistor. The connection from the B plus transformer terminal to cathode is, of course, removed.



# Look to the Future

**1934** has been a good year for Tung-Sol's retail partners. They have prospered in promoting the sales of tubes built to excel and not to undersell, to sell readily and serve faithfully, and stay sold

**1935** promises still greater reward to the radio dealers or service men who build their business on the firm foundation of quality merchandise and honest service.

If in 1934 your tube business did not produce the profit for you, and the satisfaction for your customers you had hoped for, it is the right time to get details of the Tung-Sol Time Tested Consignment Plan and the name of the wholesale agent nearest to you.



MADE BY THE MAKERS  
OF TUNG-SOL AUTOLAMP  
BUIBS

# TUNG-SOL

## Flow radio Tubes

Form T128

TUNG-SOL RADIO TUBES INC., NEWARK, N. J.

Atlanta Boston Charlotte Cleveland Chicago Dallas Detroit Kansas City Los Angeles New York

T3503

**ERLA** Sentinel News Flash **EXTRA**

**NEW TYPE 6 VOLT RADIO  
FOR FARM USE!  
REVOLUTIONIZES BATTERY RADIO PERFORMANCE!  
TUNES FOREIGN STATIONS. . NO "B" AND "C" BATTERIES REQUIRED**

A dynamotor power supply recognized as the most efficient trouble-free unit of its type provides a constant, uninterrupted source of "B" and "C" power.

The "B" and "C" battery expense and nuisance is abolished forever. Only a conventional six volt storage "A" battery is required to obtain the exceptional performance of which this model is capable

Delivers reception of local and distant domestic stations on the broadcast band with remarkable tone and extreme volume. Is amply sensitive to tune in foreign and American short wave stations.

Rural radio dealers will find a new opportunity for profitable sales and an active demand for this sensational new Sentinel model, which incorporates refinements heretofore found only in high priced AC models.

**ALSO AVAILABLE THE MOST COMPLETE LINE OF LOW PRICED BATTERY RADIO ON THE MARKET.** Write now for complete details.

**SENTINEL RADIO CORP.**



2222 DIVERSEY PARKWAY . . . CHICAGO, ILLINOIS



**Millions in Use**

- Two Year Guarantee
- Low Power Factor
- Long Life
- Self Healing
- Efficient & Compact
- Patented & Patents Pending.

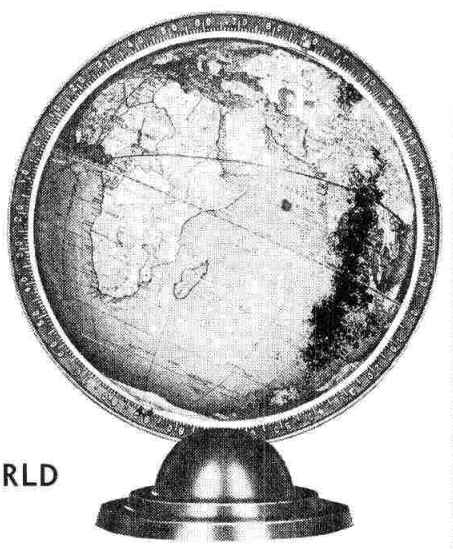
THE superior quality and performance of millions of Duco Condensers are recognized all over the world.

**NOW GUARANTEED FOR 2 YEARS**

Manufactured by **DUMONT ELECTRIC CO., Inc.**  
453-5 Broome St., New York, N. Y.

Write for free Catalogs, Sales and Jobber Territory

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**NEW..**  
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**RADIO**  
**GLOBES**



OF THE WORLD

Show Call Letters and Locations of Foreign Stations!

Send for new catalog showing all sizes and styles

**THE GEORGE F. CRAM COMPANY**  
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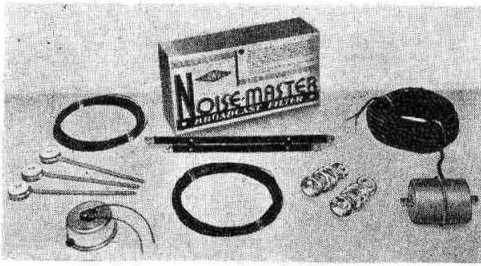


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**Radio Tubes**  
DEPENDABLE LONG LIFE

Ken-Rad Radio Tubes are made to give clear, dependable reception. They satisfy customers and build good will for dealers. Write for full information.

**THE KEN-RAD CORPORATION, Inc., Owensboro, Ky.**  
Division of The Ken-Rad Tube and Lamp Corporation  
Also Mfrs. of Ken-Rad Incandescent Electric Lamps





Cat. No. 14  
List Price **\$675**

**"NOISE-MASTER" ANTENNA**

*Insures Perfect Reception, Banishing "Man-Made" Noise over Both Shortwave and Broadcast Bands.*

HERE is traditional CORWICO engineering skill, in a kit that is the last word in antenna efficiency. Licensed under Amy, Aceves & King patents, the NOISE-MASTER makes it possible to operate more than one set from one aerial. Includes upper and lower transformer.

**AN IDEAL STORE DEMONSTRATION KIT**

The trade knows CORWICO for finest antenna and radio wire products. If you have an aerial problem, consult us

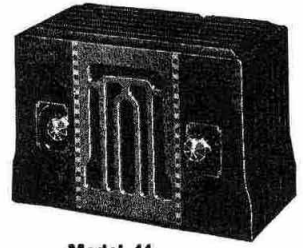
Also **"EXPLORER"**  
No. 11 list price **\$3.70**  
and **"CONQUEROR"**  
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Write for Latest Bulletins  
**CORNISH WIRE CO.**  
30 Church St., New York City

**PROFITABLE RADIO LINE**

Manufacturers of a complete line of AC-DC compacts and AC midgets. We are in a position to serve distributors, dealers, and special accounts both large and small.



Model 44

Send for literature describing our complete 1935 line. R.C.A. and Hazeltine licensed manufacturer.

**PACIFIC RADIO CORPORATION**  
844 W. ADAMS STREET, CHICAGO, ILL., U. S. A.  
Telephone: Monroe 0133 Cable Address: Pacradio Chicago

Meets the demand for a quality combination of Radio and Bar. \$99.50 up—complete with glassware, etc. A money-maker. Can be supplied without chassis.



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**RADIOBAR COMPANY OF AMERICA**  
7100 McKinley Ave., LOS ANGELES, CALIF.  
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**DIAMOND RADIO TUBES**

Guaranteed High Quality at low price

Order Diamond Tubes with confidence because they are sold on a money back guarantee. Purchase price refunded if you are not satisfied within 30 days.

Packed in sealed cartons. Guaranteed for six months. Licensed by RCA. All standard types in stock. Prices quoted are net. Ask for our special discounts on quantity orders. Jobbers' territories open. Write for Full List of Tubes and Prices.

Free Offer—Dependable Tube Tester. Write for Full Particulars on how to get one.

Partial Price List (Net Prices)			
01A	—\$.24	56	—\$.30
26	— .28	57	— .44
27	— .28	58	— .44
45	— .28	10	— .90
80	— .28	50	— .90
71A	— .28	81	— .90
24A	— .44	77	— .48
35	— .44	78	— .48
47	— .45	2A5	— .44
30	— .35	2A7	— .50
36	— .44	6A7	— .50
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38	— .44	6D8	— .44
39	— .48	12Z3	— .44
43	— .55	25Z5	— .60

**RADIO TUBE EXCHANGE OF AMERICA**

177 Washington St.  
New York City

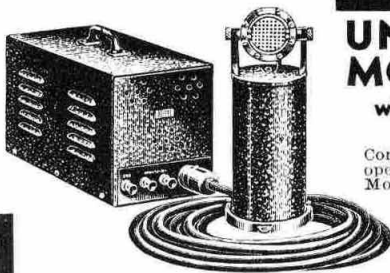
**Two Ways to Sell Your Product**

One way is to go to see personally every one of the merchants you feel should sell it.

The other and less expensive way is to pin up a notice where your prospects will see it.

In Radio Retailing you can describe your product to over 15,000 subscribers every month in a quarter-page space like this at 1/2c. apiece.

Address Radio Retailing  
330 West 42d St., New York



**UNIVERSAL MODEL "E"**

with A.C. Humless Power Supply

Completely assembled—A.C. operated — Ready-to-use Model "E" condenser microphone unit. Guaranteed as silent as batteries—yet without battery expense or annoyance — Two-stage amplifier with No. 230 tubes —

Model E microphone with 90° swivel head; barometric adjustment; solid cast grating diaphragm protection—Frequency response from 35 to 10,000 cycles—A quality unit offered at the lowest price consistent with Universal standards.

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*Positions Wanted* (full or part-time salaried employment only), 10 cents a word, minimum \$2.00 an insertion, payable in advance. (See ¶ on Box Numbers.)  
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*Proposals*, 40 cents a line an insertion.

**INFORMATION:**

*Box numbers in care of our New York, Chicago and San Francisco offices count 10 words additional in undisplayed ads. Replies forwarded without extra charge. Discount of 10% if one payment is made in advance for four consecutive insertions of undisplayed ads (not including proposals).*

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*Rates for larger spaces, or yearly rates, on request.*  
An advertising inch is measured vertically on one column, 3 columns—30 inches—to a page. Radio Retailing

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*Advertising in connection with legitimate offers of surplus stocks and discontinued models of radio merchandise is acceptable in this section of "Radio Retailing." Extreme care will be exercised by the publishers to prevent the use of advertising in the Searchlight Section to encourage price cutting on current models of merchandise or equipment. Nor will advertising which invites violation of the dealer's contract with the manufacturer be acceptable. All merchandise offered in the Searchlight Section must be accurately and fully described and must be available on order.*

**REPRESENTATIVES WANTED**

**Medium Priced Radio**  
Dealers wanted. Exclusive territories given, attractive proposition. For particulars write Bomers, 1051 Sherman St., Grand Rapids, Michigan.

**GENUINE GREBE PARTS**

Since operations ceased at the Grebe Factory two years ago, we, the former employees and Factory Manager, have successfully carried on the Service Department of A. H. Grebe & Co., Inc., which was purchased by us in its entirety, including test equipment. Use only genuine Grebe Parts in servicing these sets. Write for Parts Price List. C. I. VERMILYE, 137-28 Jamaica Ave., Jamaica, N.Y. Owner and former General Factory Manager of A. H. Grebe & Co., Inc.

**SERVICEMEN-DEALERS**

*"Send for our Handbook and Catalog"*  
Complete Stock of NEW Radio Replacement Parts  
Hard to Get Parts in Stock  
Power Packs and Speakers Repaired  
**GRANT RADIO LABORATORIES**  
6521-R South Halsted St., Chicago, Ill.

**WANTED**

## Sales Representative

Sales representative wanted with headquarters in either St. Louis or Kansas City, to handle a high quality line of radio replacement parts, consisting of volume controls, carbon and wire-wound resistors, electrolytic and paper condensers. Other desirable territories open. In reply state exact territory covered and lines now handling.

RW-194, Radio Retailing  
330 West 42nd Street, New York City

**FREE SERVICE GUIDE**

You need the new 1935 ALLIED Catalog! Over 100 pages devoted exclusively to Radio—listing the highest quality standard radio lines at significant savings—thousands of exact duplicate replacement parts—all leading makes of test instruments. **Service men and Dealers—before you buy, consult the new ALLIED Catalog—it will help you give better service at bigger profits. Send for this FREE Profit Guide.**

**WRITE NOW Dept. SE**

**Allied Radio CORPORATION**  
833 W. JACKSON BLVD., CHICAGO, ILL.

# What a Bargain it is!

What a bargain—*Radio Retailing* for a whole year for a single \$1. Here's the idea.

Every day, somewhere, you or another radio man thinks of something new that's an improvement. That something increases sales, saves time, or work, or money, or promotes efficiency, and rightly applied, is the means of getting more dollars into the cash register.

So, if you add the personal experience of others to your own, you have doubled, or tripled your own business ability. And the further you go the greater success you are sure to have. But the problem is—how to add the other fellow's experience to your own? You can't get around and gather the ideas that may originate in Seattle, in Houston, in Baltimore, or Boston. You're too busy, it's too far, and too ex-

pensive. But you can get the very best ones every month and get them cheaply.

*Hire Radio Retailing!* Every single issue of this monthly radio journal is packed with other men's experiences, all expanded in clear, understandable articles, that give you the facts you want to put these ideas to work making extra profits for you.

Think of all the help you'll get in a year. Think of this service coming to you month after month bringing you selling plans and service kinks—hundreds of them—and at a cost too little to consider. \$1 a year—less than nine cents a month—the price of a cigar every four weeks. Why hesitate? Mail the coupon below WITH \$1 TODAY. Use *Radio Retailing* as a guide to bigger profits in 1935.

**Radio Retailing—330 West 42nd Street, New York, N. Y.**

Righto! Here's \$1.00. Put me on the list to get *Radio Retailing* for one year (12 issues) at your special half-price rate. I understand the regular price is \$2.00.

Name ..... Title.....

Street .....

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

My main business is.....

**PAYMENT MUST ACCOMPANY THIS ORDER**

Price in Canada \$1.50 a year—all other countries \$3.00 a year





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## Dual Pre-Amplifier and Power Amplifier Combined All A. C. Operated

For every type of P. A. Service—For Audiences up to 10,000 persons or Areas up to 30,000 square feet!

RADOLEK engineers have accomplished the incredible feat of combining two high gain pre-amplifiers with a 36 watt power amplifier and a single power supply circuit—all in one A.C. operated chassis. Input from either pre-amplifier may be used alone or both may be mixed in any proportion before reaching the power stage. Individual mike tone controls govern each input. A master tone control adjusts the output to the acoustical conditions within range of the speakers. Individual microphone volume

controls mix either input in any proportion. A master volume control adjusts the output volume to suit the audience. Plug-in connections (also terminals) are provided for two crystal microphones and one phono or radio circuit. One, two, or three dynamic speakers may be plugged in sockets provided for them or connected to terminals provided. Amplifier supplies 40 watts field current. Output transformer is tapped for 3, 6, 9, 15, 250, 500, and 1,000 ohms, matching all standard speaker voice coils and line circuits.

## FREE

Crystal Amplifier Book! Tells how to make money with this sensational new P. A. Amplifier. Write for your copy.

### Restricted Sales Policy

RADOLEK caters to the legitimate radio dealers and radio servicemen. In the March issue of Radio Craft this new amplifier will be featured in a full page advertisement at LIST PRICE. You are protected. You can sell RADOLEK amplifiers and make a legitimate merchant's profit. Readers of Radio Craft are referred to their local radio dealers for further information on the new Crystal Amplifier. Send for your FREE Crystal Amplifier Book. Be ready to make Amplifier sales.

### PRICES

Complete outfit as illustrated, including 250 ft. of 4 wire cable, 100 ft. of 2 wire shielded cable, ten tested tubes, 2 Crystal Microphones with ring suspension, and three Oxford Concert type 12 1/2" Speakers, List \$250.00.

Amplifier with 10 Matched Tubes and dummy plugs for speaker sockets, but without Cable, Speakers or Microphones. Complete Instructions for installation and operation included. List \$150.00.

**YOUR PRICE \$147.00**

**YOUR PRICE \$88.20**

"THE FIRM THAT PROTECTS YOUR PROFITS"

# THE RADOLEK COMPANY

586 West Randolph Street  
CHICAGO, ILLINOIS

SEND FOR YOUR 1935 RADIO PROFIT GUIDE



Just imagine—there's where it comes from

Europe comes in like a local station

... and what **SALES VALUE** there is in these **QUALITY-AT-LOWEST-PRICE** Radio Receivers that represent the **LAST WORD** in *Round-the-World* reception!

**A model in this group for every purse—American-Foreign and All Wave Radio Receivers**

The public is now enthusiastic about radio receivers that will bring in foreign reception. This idea of having world-wide reception is going far to open wide the radio market. For no matter how fine a last year's radio may be—if it does not bring in the foreign stations, the owner is perhaps this moment considering a new radio that will. Certainly he has good

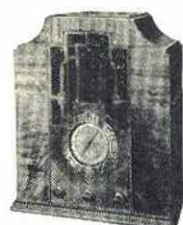
reason for listening when you talk to him about a second set for the home! The market is there . . . growing every day. Crosley has given you the models to fit every need and every purse. Crosley has given you the program, the goods, and the price. You are losing money if you delay getting in touch with your Crosley distributor.



**Sixty-One A. F.**  
Eight-tube effectiveness, airplane type dial, automatic volume control, 3-range tuning condenser, distinctive cabinet.  
**\$39.95**



**614EH 3-Band All Wave**  
Two double purpose tubes provide 8-tube effectiveness. Many distinctive features. Outstanding quality of tone and performance. Low in price.  
**\$49.95**



**Seventy-Two A.F.**  
Airplane type dial, automatic volume control, continuous tone control, 10-tube effectiveness.  
**\$59.95**  
**714GA 3-Band All Wave**  
Same cabinet as to left. 3-Band receiver for American-Foreign, police, amateur, aviation reception.  
**\$65.00**

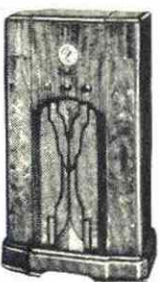


**814FA All Wave**  
Illuminated airplane type dial, dual ratio tuning control, automatic volume control, push-pull output, continuous tone control. Gorgeous cabinet.  
**\$79.50**

**Sixty-Four MD (Lowboy)**  
Uses same chassis as Sixty-One A.F. Covers standard broadcasts from 550 to 1700 Kc. and Foreign broadcasts 5,800 to 15,300 Kc. Many distinctive features.  
**\$54.50**



**614PG 3-Band All Wave (Lowboy)**  
Uses same chassis as 614 EH. Covers standard broadcasts from 540 to 1650 Kc., police, amateur, aviation 1650 to 5000 Kc., Foreign 5800 to 15,300 Kc.  
**\$65.00**



**Seventy-Two A.F. (Lowboy)**  
A 7-tube American-Foreign receiver. Uses same chassis as Seventy-Two A.F. Covers standard broadcasts from 540 to 1700 Kc. and Foreign broadcasts 5800 to 15,300 Kc. Exquisite cabinet.  
**\$79.50**

**714NA 3-Band All Wave (Lowboy)**  
An all wave, seven tube, 3-band receiver in the cabinet shown at right. Uses same chassis as 714 GA.  
**\$85.00**



**814QB All Wave (Lowboy)**  
An all wave receiver, 530 to 24,000 Kc. Houses same chassis as 814FA. A superbly beautiful cabinet. The ultimate in all wave reception. Attractive in price.  
**\$99.50**



All prices subject to change without notice.

Montana, Wyoming, Colorado, New Mexico and west, prices slightly higher.

**THE CROSLLEY RADIO CORPORATION**

Home of "the Nation's Station"—WLW—500,000 watts—most powerful in the world—70 on your dial.

POWELL CROSLLEY, Jr., President

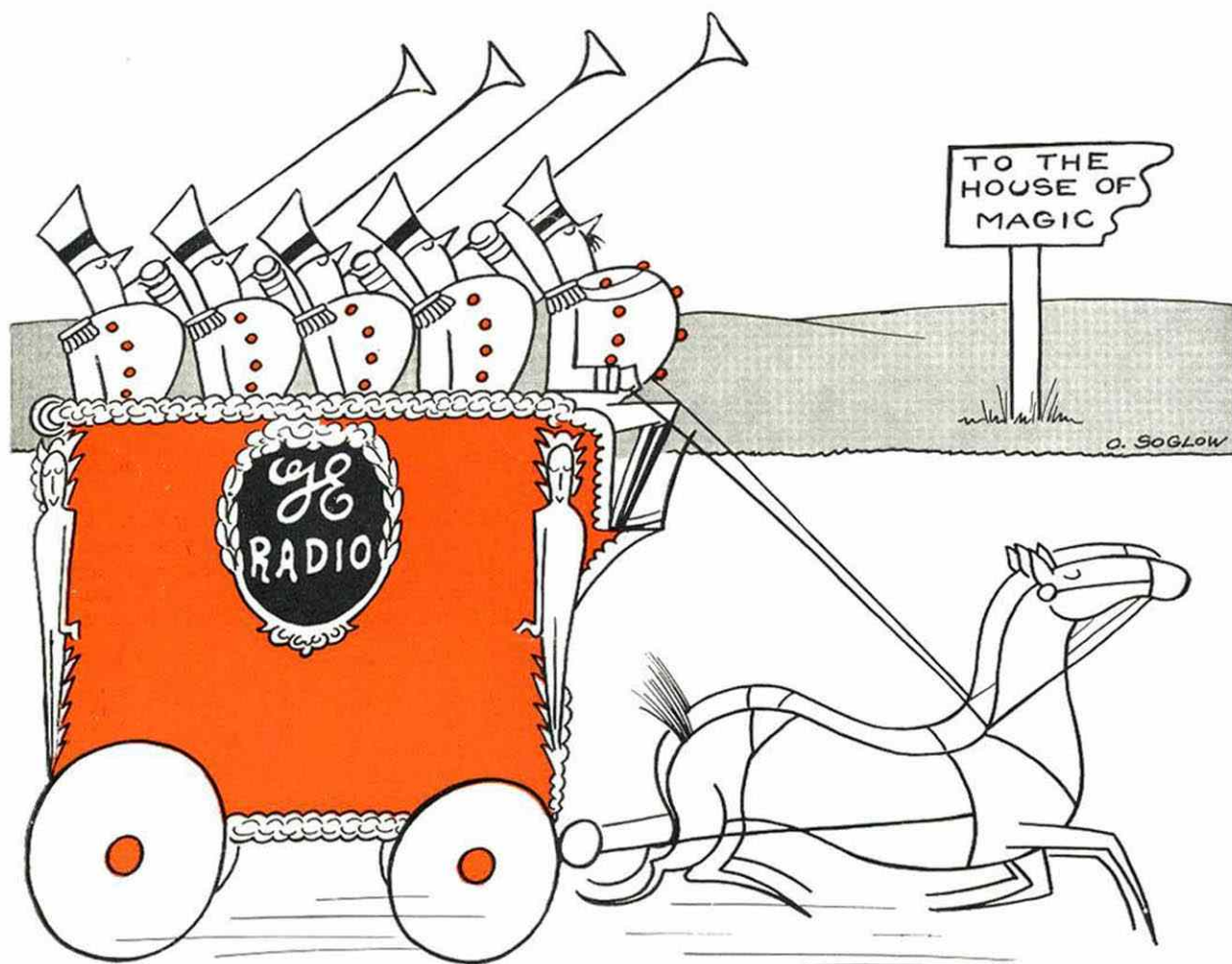
CINCINNATI

WHATEVER HAPPENS...YOU'RE THERE WITH A CROSLLEY

**CROSLLEY RADIO**



# WHAT! *Not on* THE GENERAL ELECTRIC RADIO BANDWAGON?



Neither is the smart little fellow at the right—but he evidently *wants* to be. Once you know about it, you too will appreciate that this is the greatest dealer opportunity in radio history! Return the coupon NOW!



GENERAL ELECTRIC COMPANY,  
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Attention: Sales Promotion Section, R-111.  
Please send me the facts about the General Electric  
Radio Bandwagon.

Firm Name.....

Street Address.....

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

Signed by .....

