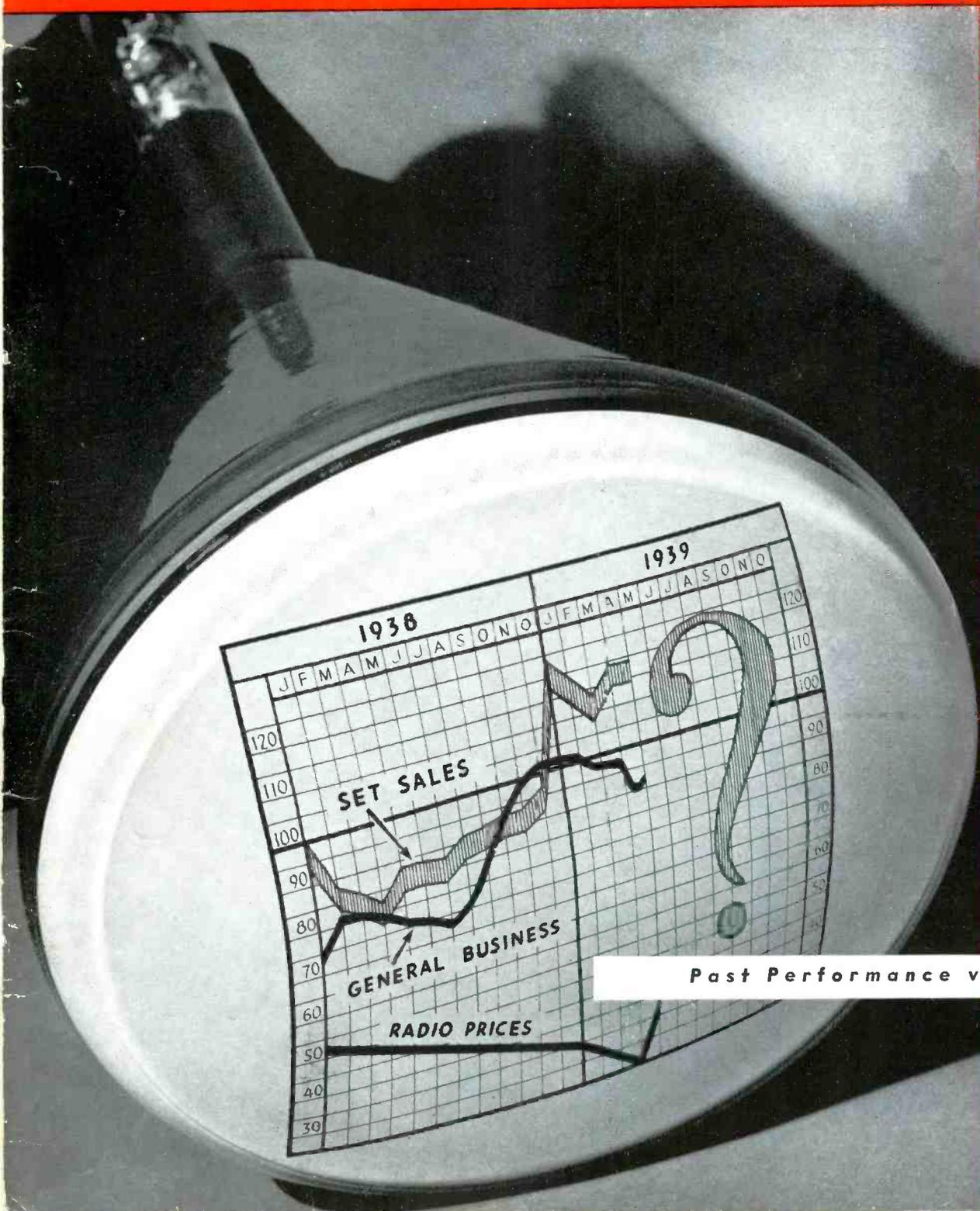


# RADIO

*and  
Television*

# RETAILING

JUNE • 1939



WHAT'S AHEAD IN 1940

THE SEASON'S NEW SETS

WHY THE PUBLIC LISTENS

TRADE-IN CONTROL

SERVICE SOUND  
SHOW SECTION

Circuits of Tomorrow

Business End of Servicing

What to Charge for Sound

Tricks with Testers

Today's Television Problems

Recording Shortcuts

and other features

*Past Performance vs. Future Profits*

A

McGRAW-HILL Publication

Price 25c



**BUILD**

*with*

**P.R. MALLORY & CO., Inc.**  
**MALLORY**

The set manufacturers who use Mallory parts as original equipment are the "who's who" of the radio industry . . . and in the replacement field, Mallory parts enjoy the same leadership.

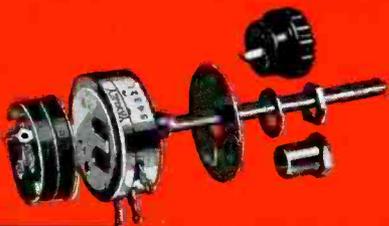
Mallory Replacement Vibrators, Condensers, Volume Controls and other replacement parts enjoy a long standing reputation for trouble-free operation and long life. The millions in use

testify that you can depend on them for the kind of customer satisfaction that translates itself into increased profits.

In the development of these replacement parts Mallory engineering has made possible many advances in standardiza-

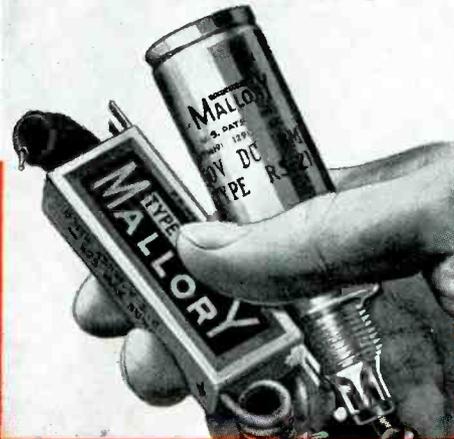
tion and ease of application. These lead directly to lower inventory investment with faster turnover . . . and to faster, more profitable service work.

**VOLUME CONTROLS**



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

**CONDENSERS**



**P. R. MALLORY & CO., Inc.**  
INDIANAPOLIS INDIANA

Cable Address—PELMALLO

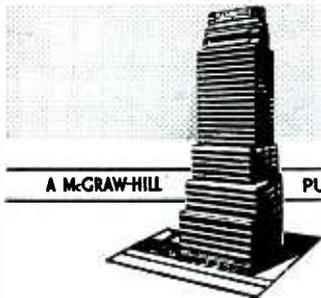
**VIBRATORS**



Get this complete and up-to-date Vibrator Guide from your distributor now. Covers all makes of auto and battery operated receivers. Nothing else like it. It's yours, absolutely FREE.

Use  
**YAXLEY**  
REPLACEMENT  
VOLUME CONTROLS

# RADIO and Television RETAILING



A McGRAW-HILL

PUBLICATION

JUNE 1939

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SALES STATIC . . . I know it was a one year guarantee but I've only had it 23 months!



# YOURS - FOR "GO



No. 47C-PF

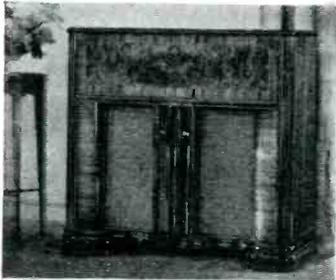
## RADIO-PHONOGRAPHS



No. 411-PT



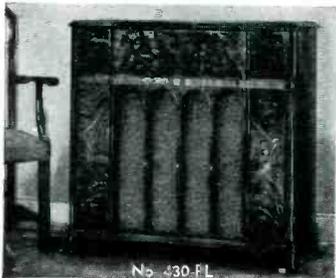
No. 411-PF



No. 420-PL



No. 420-PR



No. 430-FL



No. 430-PF

FINE RADIOS THAT WILL SELL  
*Today* ... AS THE SOUND  
REPRODUCERS FOR A *Future*  
TELEVISION PURCHASE!

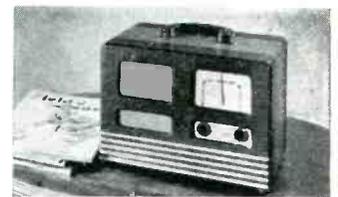
When Stromberg-Carlson announces a Labyrinth Radio for only \$99.95\* (No. 430-M), and an automatic Radio-Phonograph for as little as \$139.50\* (No. 420-PL), it's a certainty that the radio business is going to be GOOD . . . that is if you are handling a good line like Stromberg-Carlson.

And just look at the rest of the line: You will find new Radio-Phonographs, including a Table Model

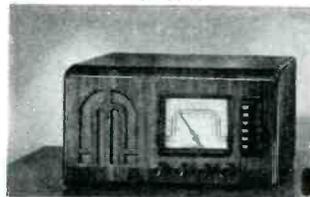
## TABLE MODELS



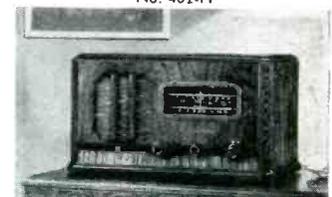
No. 400-H



No. 402-H



No. 405-H



No. 410-H



No. 410-J



No. 420-H



No. 430-H

*There Is  
Nothing Finer  
than a*

# OD" RADIO SALES

3 TIMES THE INDUSTRY AVERAGE  
IN BIG-PROFIT SALES IN 1938 . . .  
THIS NEW LINE WILL *Increase*  
THAT LEAD IN 1939 !

and an Authentic Period Design Occasional Table (No. 411-PF). There are new Table Models...three of them Authentic Designs, one in maple. There is a portable Battery Radio, and a superb new line of Consoles in a wide variety of woods and styles to delight any prospective purchaser. With such a new line, you don't have to be a prophet to predict that Stromberg-Carlson...which showed three times the industry average in big-profit sales last year...will increase that lead in 1939. Be "in the money" this year by selling Stromberg-Carlson radios. They are yours for "good" radio sales.

\*All prices f. o. b. factory

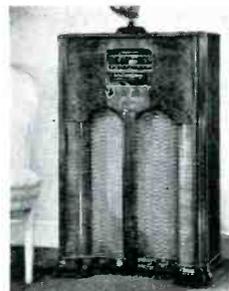
STROMBERG-CARLSON TELEPHONE MANUFACTURING CO.  
ROCHESTER, N. Y.



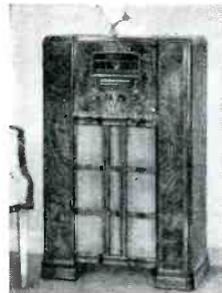
## CONSOLES



No. 450-L



No. 430-L



No. 430-M



No. 440-M



No. 450-M

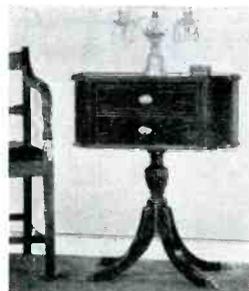
## OCCASIONAL TABLES



No. 400-N



No. 400-S



No. 410-T



No. 480-M



No. 3-Q-Y

CORNER  
CABINET

# Stromberg-Carlson

Stromberg-Carlson Telephone Mfg. Co.  
231 Carlson Road, Rochester, N. Y.  
I am interested in the Stromberg-Carlson line.  
Name.....  
Address.....

*“. . . So it goes, one thing after another, year after year for 10 straight years of LEADERSHIP! Philco has been the one driving force for progress in radio design and engineering, setting the pace for the whole industry to follow . . .”*

# **“IN 1940, PHILCO LEADS AGAIN!**

## ***New Inventions Bring a Revolutionary Change in the Use and Enjoyment of Radio”***

The foregoing words are part of the story that Philco distributors heard at the Philco radio convention just ended at French Lick, Indiana. Your distributor is on the way home now, bursting with the greatest news, the most exciting *profit message* in his entire radio career!

Within a few days, you'll get the announcement of his dealer meeting. Of course, you'll go—because his story is the *cornerstone* of your 1940 radio profits. And he'll show you a parade of home radios, radio-phonographs, compacts, portable radios,

farm radios . . . a complete line that breaks all records for sales appeal, beauty and value!

*New Inventions that give, at every price, finer tone, performance and convenience than ever before. New Cabinets in a wide variety of styles to suit every taste and preference.*

**The Big News will reach  
you soon. Get ready to GO!**

### **PHILCO RADIO & TELEVISION CORPORATION**

---

# The RADIO MONTH

JUNE

1939

**New Season** We have seen a few of the new lines, were told about special features and prices of others still to be presented. It is clear that engineers and designers have been on their toes, gone to extremes to produce extraordinary values in attractive packages. Nineteen-forty models have enough new, smart, compelling eye appeal and performance to command attention and create desire.

From here on it becomes a selling job for distributors, dealers and salesmen.

If the new season's offerings are used intelligently, business volume and profit margins should increase materially. Already the last two seasons have given us enough new features to promote the obsolescence of older models. New 1940 models further emphasize that obsolescence—in perhaps 20 million sets that are now in use.

Therefore replacement sales should become the first line of attack. The argument that old sets have lost most of their value, due to recent improvements, has never been as valid as it is now, and this will justify trimming down trade-in allowances all along the line.

**One Month** At the end of one month of regular broadcasts by the National Broadcasting Company, we have made a check-up of television set sales in the New York area. Approximately 750 complete sets have been delivered to dealers. Half that number, or at best 400 sets were sold at retail and installed in consumer's homes. A considerable number of kits have been sold.

Not less than 350 dealers within

television range are demonstrating or getting ready to demonstrate sets. Some have made no sales, others have moved one set, smart dealers in unusually good locations have sold 6, 8, 11, up to 21 sets. One large department store made enough sales to justify tripling its demonstrating facilities.

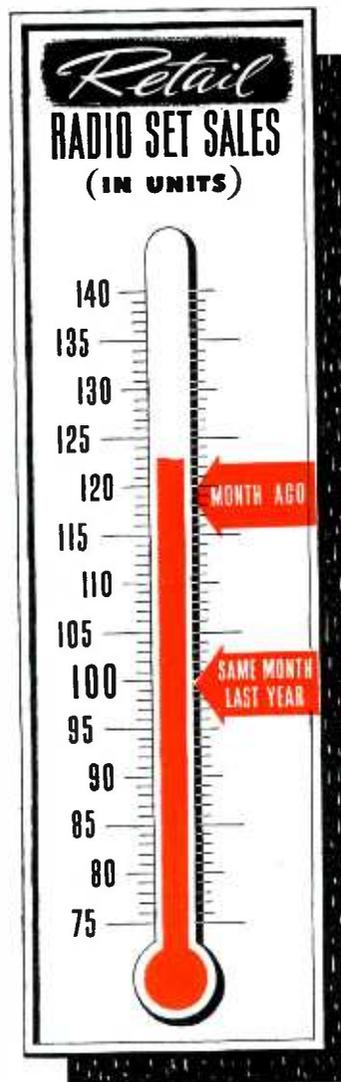
Sets with 9 in. cathode ray tubes, in the \$300 to \$400 price range are at present most popular, mirror equipped models slightly outselling the direct-vision type. Table models, 5 in. tube, video only, equipped for plug-in to radio sets are selling comparatively well.

Distributors and dealers agree that brevity of program periods and quality of the show are handicaps, best programs coming on at night when dealers have little or no chance to make sales. Dealers also grumble at 25% discount, want more profit because it takes more time and effort to make sale. Manufacturers remind that one television sale is equal to profit on a whole flock of small radio sets.

Substantial improvement in sales is expected when Columbia goes on the air with its Chrysler Building station.



EDITOR



## MAY SALES Radio Barometer

**W**ITH a climb to 123 our barometer registers for May the highest point reached since early 1937, excepting only December, 1938 when it touched 125.

The gain of 4 points over the previous month, April, appears to be chiefly due to more than seasonal sales of small and especially the battery-operated portables. The latter, not on the market a year ago, have taken hold in a big way and are helping to pull up unit and average dollar values of sales particularly in urban territories.

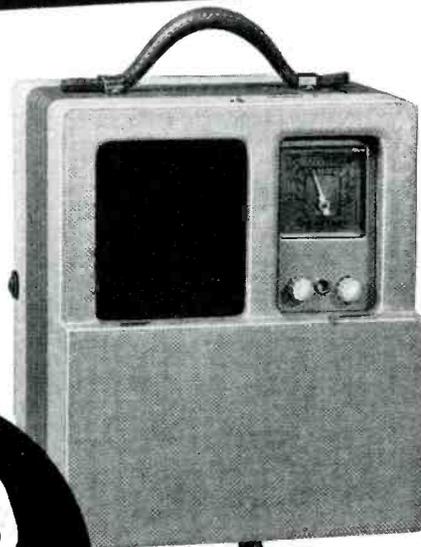
Regionally the South Eastern and Far Western states are continuing to make the best showing with some dealers reporting remarkably steady unit sales at levels from 20 to 35% above last year. Sales in Michigan and certain sections of Ohio and Indiana reflect this spring's substantially increased payrolls in automobile, parts and accessories plants, but strikes now in progress or threatened may change this drastically in the next month.

Industrial centers in Pennsylvania, New York, New Jersey and some of the New England states are reporting good gains in unit sales, but for the area as a whole comparisons with last year reflect rather spotty conditions.

In bituminous coal mining regions, the strike has left a trail of bad sales reports, business with some radio dealers reaching a stand-still.

# SMASHING THE LIMITATIONS OF POWER, DISTANCE *and* ISOLATION

## Sensationally New **SPARTON** BATTERY OR 110-VOLT AC-DC OPERATED *Portable Radio*



**\$21.95**  
WITHOUT BATTERIES

The newest playtime Playmate—a radio that captures the imagination with its versatile “anywhere you go, I’ll play” appeal. Uses line power in home or office—battery power when you go—no matter where you go—ashore or afloat. Garbed in smart airplane luggage case, this light portable radio is

### PRICED TO BREAK THE BOUNDS OF BUDGET LIMITATIONS

Dramatize the Sparton portable as the “lead” in the “Vacation Frolics of 1939”—for a long summer-through-fall run on every Broadway, bi-way and highway. Sell it to campers, collegiate-ers, cottage-ers, picnic-ers and swingsters—to all who love the deep-toned cadence and musical quality of “Radio’s Richest Voice”. A value without precedent—a profit maker—and the best possible prescription to ward off the summer radio slump.

- ★ 5-tube superheterodyne, battery or AC-DC operated.
- ★ 5-inch permanent magnet dynamic speaker.
- ★ Large directional loop antenna built in on back cover which is hinged.
- ★ Uses new type low drain tubes with 8 functions—extremely low battery consumption.
- ★ Powered with longest life batteries available for portable set.
- ★ Full-vision dial and controls are recessed in the front.
- ★ For 110 Volt operation—removal of cord and plug automatically converts the set to an AC-DC receiver. The replacing of cord and plug automatically returns the set to portable battery operation.

Home



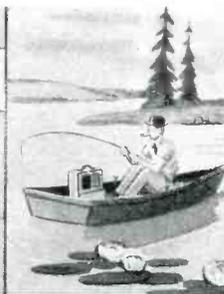
Camp



Office



Fishing



Dancing



Hotel Rooms



**THE SPARKS-WITHINGTON CO., JACKSON, MICHIGAN**

YOU HAVE A COUPLE OF DATES WITH US!

*Majestic*

PREVIEW

AT OUR FACTORY  
JUNE 10th to 24th

*Take a Yellow—  
charge Majestic*

FORMAL  
DISTRIBUTORS'  
CONVENTION  
DRAKE HOTEL

JUNE 28th • JULY 3rd



*It's so much easier  
to sell Majestic!*

SEE MAJESTIC  
ADVERTISEMENT  
ON PAGE 25



MIGHTY  
MONARCH  
OF THE  
AIR!

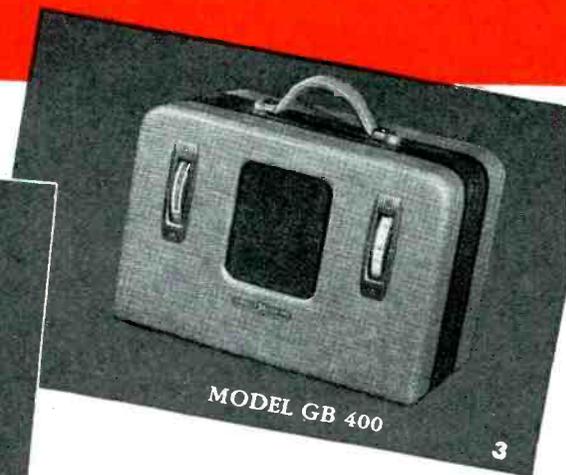
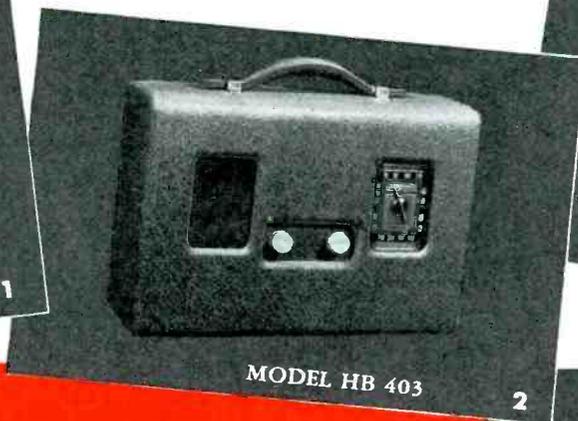
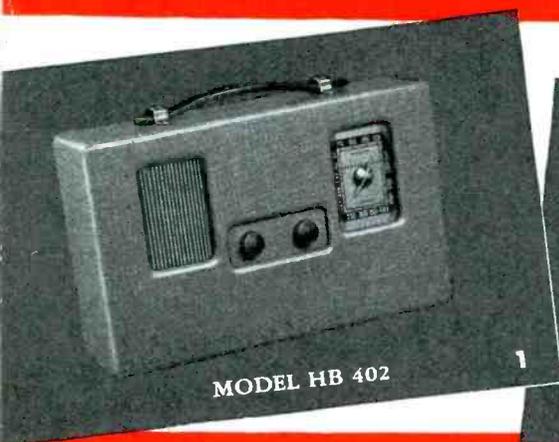
*Majestic*

RADIO & TELEVISION CORPORATION

2600 W. 50th STREET • CHICAGO, ILL.

Cable Address: "Majestic-Chicago"

# HERE COMES THE GREATEST LINE OF *Portables* IN THE BUSINESS



**STYLED UP! PRICED WAY DOWN!**

*You need them!  
You can sell them!  
You can profit by them!*

PORTABLE sets are sweeping the country. They are in for a long sales ride. Why? Because they provide a new service that every customer wants. When it comes to portables the public will buy the line which leads in smartness, compactness, light weight, outstanding performance, most value for the money. This is what it takes. And the new complete G-E CARRYABOUT line has it—more than any other.

You need all four of the new G-E CARRYABOUT models. All are smartly styled in the Country Club manner. All are priced down where the sales are thickest.

*Phone, Wire, or Write your order — NOW!*

**G-E LEADS THE PORTABLE PARADE**



**GENERAL  ELECTRIC**

1. MODEL HB 402—In weather-proof airplane luggage cloth, with leather carrying handle. Handbag size—8 1/4 in. high—13 1/4 in. wide—4 1/4 in. deep. Weighs only 9 1/2 lbs. with batteries.

2. MODEL HB 403—In pigskin Fabrikoid. Custom-styled and ultra-smart. 9 1/4 in. high—13 1/4 in. wide—4 1/4 in. deep. Weighs only 10 lbs. with batteries.

3. MODEL GB 400—In weather-proof airplane luggage cloth with leather handle. 9 1/4 in. high—13 in. wide—7 1/2 in. deep. Weighs 16 lbs. with batteries.

4. MODEL HB 408—Portable Radio-Phonograph Combination. Plays 10- or 12-inch records electrically through radio's loud-speaker—anywhere, any time. In washable leather finish Fabrikoid case with leather carrying handle. 9 1/4 in. high—14 1/4 in. wide—13 1/4 in. deep. Weighs 19 1/2 lbs.

**ALL 4 MODELS HAVE**

- Self-contained Long-life Battery Power Supply.
- Permanent-Magnet Dynamic Speaker. ● Standard Broadcast Reception. ● Automatic Volume Control. ● Superheterodyne Circuit.

# EVEN THE FEDERAL COMMUNICATIONS COMMISSION ITSELF USES RAYTHEON TUBES

In a recent purchase by the Federal Communications Commission of a quantity of receivers, RAYTHEON radio tubes met the rigid F. C. C. specifications and requirements—just as they have been found, by radio set engineers, to operate perfectly in more diversified circuits than any other tube!

Hundreds of thousands of dollars have been spent on RAYTHEON research and quality control—just to insure constructional superiority and to *keep* RAYTHEON ahead technically.

Servicemen, who are in business to stay, are rapidly turning to RAYTHEON replacement tubes as one of the best ways of protecting their profits, turnover and the good will they have built up in their communities.

RAYTHEONS *cost no more* than the second-best tube.

## RAYTHEON

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



**"WORLD'S LARGEST EXCLUSIVE RADIO TUBE MANUFACTURERS"**

THE MOST IMPORTANT NEW FRANCHISE SINCE 1930

# A Message of Importance to Every Radio Dealer



**E. A. NICHOLAS**  
President, Farnsworth Television & Radio Corporation

Farnsworth Television & Radio Corporation—Manufacturers of Radios, Radio-Phonograph Combinations, Television Receivers, Television Transmitters and Special Apparatus — 3700 Pontiac Street, Fort Wayne, Indiana.

"Farnsworth Television & Radio Corporation plans to introduce a complete line of radio receivers and radio - phonograph combinations. This line will cover every important price market, ranging from an outstanding price leader in the \$10.00 bracket up to deluxe automatic combinations equipped with a special new record-changer designed and manufactured by the Capehart Division of the company.

"Initial shipments of this new line will be made within the next 60 days and I strongly urge that every dealer plan to consider the volume and profit opportunity in Farnsworth before concluding arrangements for the Fall season. Details of the line and the promotional program will soon be announced through a national distributing organization that is rapidly being completed."

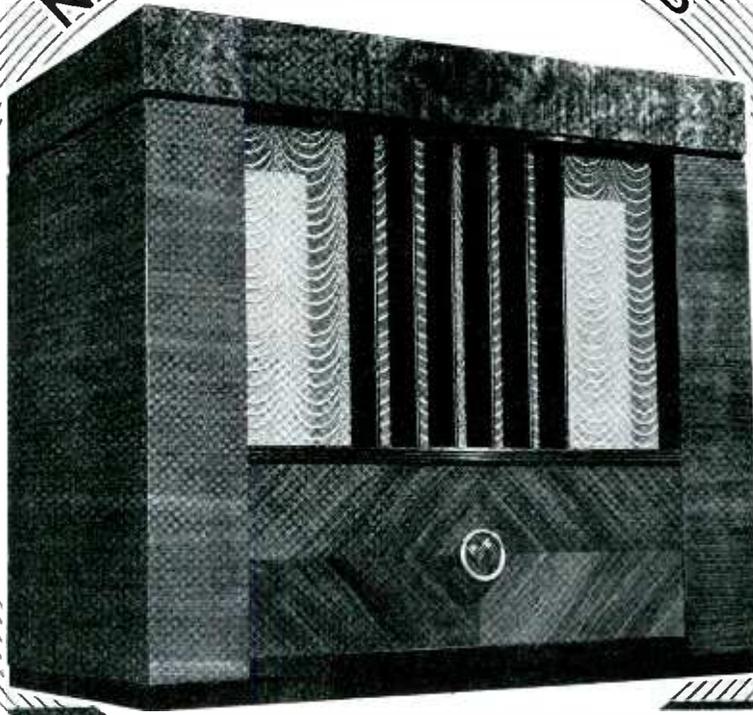
*E. A. Nicholas*

# Farnsworth RADIO

RADIO-PHONOGRAPH COMBINATIONS — TELEVISION

THE HISTORY OF TELEVISION IS THE HISTORY OF FARNSWORTH

NEW BUSINESS



MODEL A-70  
\$129.95

... **AGAIN!**

WILCOX-GAY offers radio distributors and dealers their **BIGGEST OPPORTUNITY** for PROFITS by introducing the new

## WILCOX-GAY RECORDIO

A BIG 3 IN ONE COMBINATION OF:

- 1. HOME RECORDER - - MAKE YOUR OWN RECORDS
- 2. ELECTRIC PHONOGRAPH - - PLAYS ALL RECORDS
- 3. FULL SIZED RADIO - - 9 TUBE SUPERHETERODYNE

The greatest sensation in radio since Wilcox-Gay pioneered the Wireless Record Player. Using Wilcox-Gay blank records costing only a few cents each the RECORDIO is ideal for:

- Favorite Air Programs
- Home Movies
- Baby's First Words
- Parties—Entertainments
- Personal Letters
- Home Orchestras
- Children's Recitations
- Club Meetings, etc.

This is your opportunity for profit in 1939. A new product with a prospective customer in every home. The Wilcox-Gay franchise will be valuable. Send in the coupon today for complete information.

Export Dept. 100 Varick St., New York City, U. S. A.

**WILCOX-GAY CORPORATION**  
CHARLOTTE, MICH.



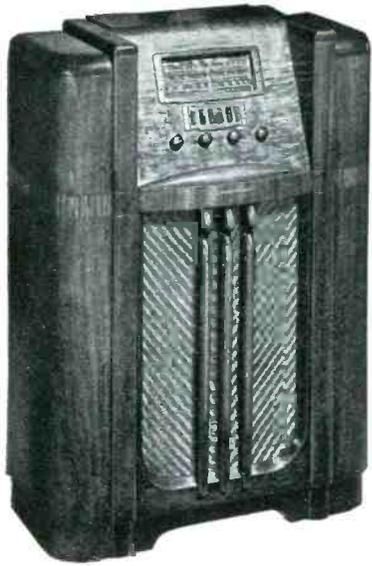
MODEL A-71 \$67.50

The portable model RECORDIO has the same simplicity of operation as the larger model. No radio is included, recording being done exclusively through the microphone. Size 7½" x 15" x 15½".

### MAIL THIS COUPON

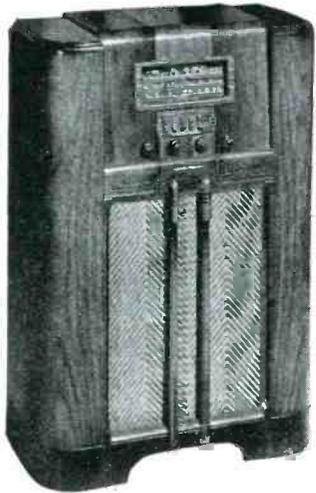
Wilcox-Gay Corporation  
600 W. Seminary Street, Charlotte, Michigan  
Please send complete information concerning the new Wilcox-Gay RECORDIO.

NAME .....  
STREET .....  
CITY ..... STATE .....



**MODEL 01-6A7**

A big, rich-looking radio that sets a new high in value. 8-tube performance — genuine superhet with 11 tuned circuits, Magic Keyboard automatic tuning, A.V.C., automatic bass compensation, 3-way tone control, built-in line antenna, full 10" speaker, television sound channel, record player connection. Covers 540-1725 kc., 2200-7000 kc., and 6.5-23 mc. Price — at a profit to you!

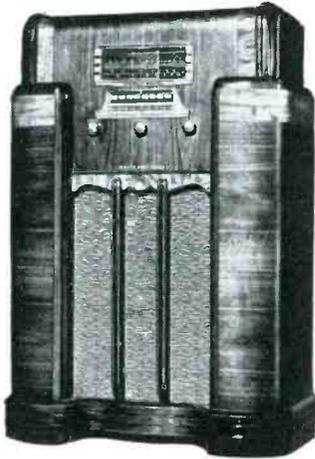


**MODEL 01-5H7**

An extra-quality radio that's sensational in price, yet profitable to sell. Superhet with 7-tube performance, Magic Keyboard automatic tuning, 3 wave bands, big 10" concert speaker, television sound channel, built-in line antenna, 3-way tone control, A.V.C. and automatic bass compensation, connection and switch for record player, in wrap-around figured walnut cabinet. Price . . . at a profit for you!

**MODEL 01-817**

Massive 42-inch console in wrap-around walnut and aspen, with powerful 11-tube performance 2-band superhet chassis. Magic Keyboard automatic tuning and 4-way tone control. Full console dynamic speaker, built-in antenna, automatic bass compensation, A.V.C., television sound channel, phonograph connection. Price . . . at a profit to you!



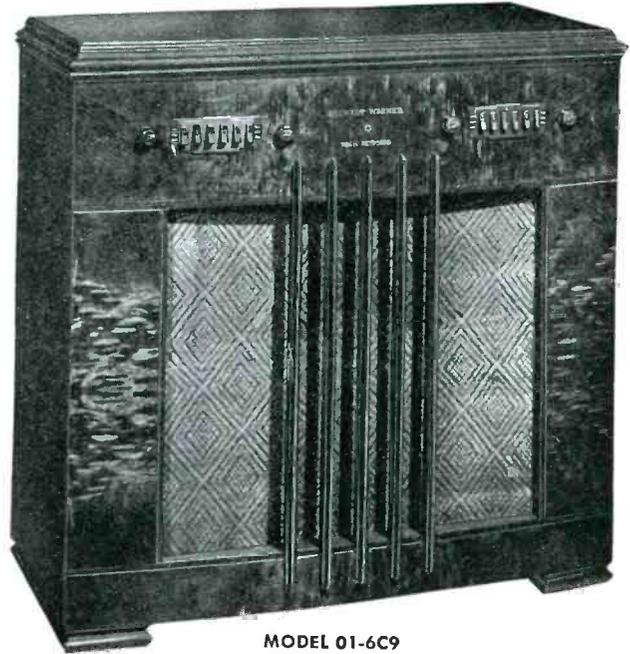
**MODEL 01-6B9**

A smartly styled radio-phonograph in rich stump, rotary and sliced walnut, with large built-in record well, self-starting motor and offset crystal pick-up. Radio is 3-band superhet with 8-tube performance, built-in antenna, Magic Keyboard automatic tuning, full 12-inch speaker, television sound channel. Price—at a profit for you!



# Really Different ... Because

## There's a Profit in Them for You



**MODEL 01-6C9**

Automatic record-changer combination. Sharp-tuning 3-band, 8-tube performance superhet, with Magic Keyboard automatic tuning, tone-control cabinet with 16 possible variations, and on-and-off switch outside of cabinet — manual tuning Magic dial inside. Automatic record changer handles both 10 and 12 inch records. Full 12" speaker. Television sound channel. Price . . . at a profit for you!



**MODEL 03-5K3**

### NEW! THE "MAGICIAN"!

A 4-way miracle worker that will amaze prospects. A splendid, portable 7-tube performance superhet — or — plug in a record player and it's a phonograph — or — flip a switch and it's a wireless remote tuner for your console radio — or — with the record player plugged in it's a wireless record player working through your big radio! Has television sound channel. Price — at a profit for you!

**T**HE BIGGEST NEWS in radio this year is written on the Stewart-Warner discount sheet!

Of course the models are hot. Of course they have the novelty to catch a prospect's eye—the quality and value to clinch the sale. They're radio's biggest dollar's worth for 1940—and yet that's the least of the story.

Because from top to bottom of the line, Stewart-Warner has included a hidden feature others have left out. And that's a worthwhile gross for you!

So why let anyone take the difference out of your pocket to get their prices down—when you can sell even the lowest-priced Stewart-Warner and pocket an honest profit for doing it?



**MODEL 07-516**  
The "Fireside" — A handsome, handy armchair model with magazine shelf, available in walnut or maple. AC-DC superhet with 7-tube performance, A.V.C., built-in antenna. Price . . . at a profit for you!



**For Music On The Move!**  
**COMPANION MODEL 02-411**

Keeps the radio world at your finger-tips anywhere! Self-powered superhet with low-drain tubes, A.V.C., built-in loop antenna, dust-proof P.M. dynamic speaker. Controls are fully recessed for protection. Luggage-type waterproof covering on case. Price . . . at a profit for you!



**MODEL 03-5C1**  
Wrap-around type cabinet in sliced walnut with grill and ends of base shaded. AC-DC superhet with 7-tube performance, A.V.C., built-in antenna. Covers both police bands. Price . . . at a profit for you!



**MODEL 07-514**  
Wrap-around cabinet in rich striped and stump walnut and maple inlay. Powerful AC-DC superhet with 7-tube performance, A.V.C., beam power audio system. Price . . . at a profit for you!



**MODEL 01-5D9**  
Radio-phonograph with 7-tube performance, genuine superhet with built-in antenna, beam power audio, television sound channel, A.V.C., tone control, 2 police bands. Offset crystal pick-up. Price . . . at a profit for you!

## AGAIN STEWART-WARNER SETS THE PACE IN PLASTICS

You've seen one scoop after another come from Stewart-Warner designers. Here are some of the new models that combine utterly new sales appeal with an honest profit for the dealer.



**New! A Plastic With The Rich Beauty Of Costliest Woods**

**MODEL 03-5E1**  
Styled in the modern manner, molded in plastic—then enriched with an exact reproduction of costly burl and sliced walnut! AC-DC superhet with 7-tube performance, Magic Keyboard Automatic Tuning, A.V.C., built-in antenna, phonograph connection, television sound channel. Price . . . at a profit for you!



**Exclusive With Stewart-Warner! Dionne Quints Radios!\***

**MODEL 07-5B3Q**

Winsome, official pictures of the Dionne Quintuplets on top and end of molded cabinet make a sure hit of this 7-tube performance AC-DC superhet with 4-station keyboard tuning, A.V.C., and built-in antenna. Price . . . at a profit for you!

**MODEL 07-513Q**

The Quints in official pose also decorate the top of this beautifully styled plastic with its AC-DC superhet, 7-tube performance, built-in antenna, lighted pointer dial and beam power audio system. Price . . . at a profit for you!

The Air Pal is also available as a Quints model  
\*Stewart-Warner Corporation exclusive licensee on radio



**AIR PAL — The Mighty Mite Of Radio!**

Actually smaller than a phone! Goes from room to room in the palm of your hand — or tucks into a corner of your traveling bag. Operates on AC or DC with no hot cord — gives 6-tube performance — has built-in antenna, genuine superhet circuit with 2-condenser gang, A.V.C., and genuine ivory with recessed coral controls. Also available in Walnut. Price . . . at a profit for you!

# STEWART WARNER

STEWART-WARNER CORPORATION, CHICAGO, ILLINOIS

**Magic Keyboard Radios—Sav-A-Step Electric Refrigerators and Ranges**



**Ready For Your Market—When Television Is!**

**MODEL T-1210**

A 26-tube sound-and-television receiver with 12-inch video tube, and viewing mirror inside cabinet top. High-fidelity audio receiver. Magic Keyboard automatic tuning of both television and regular broadcasts. An outstanding receiver — ready for your market when television comes. Price . . . at a profit for you!

CELEBRATING TWO DECADES OF RADIO ACHIEVEMENT

Investigate

**FADA**  
Radio

"The Profitable  
Line for 1940"

**THE RADIO OF TOMORROW—Today!**



**FADA OFFERS**

● **QUALITY**

With a record of twenty years achievement in the Radio Industry, FADA'S 1940 line makes its bow with radio sets that are unexcelled in TONE, PERFORMANCE and STYLING.

● **ACCEPTANCE**

Several Million Satisfied Customers can't be wrong . . . FADA owners have been FADA enthusiasts for Twenty Years. •

In proof of this, ask any Dealer—Service man, or FADA set owner.

● **ADVERTISING and DISPLAYS**

FADA presents a series of DISPLAYS that are attractive and practical. Every display was designed with its principal motive in mind, that of SELLING MERCHANDISE and BUILDING CONFIDENCE.

FADA has displays for Window and Interior use. They include a NEON SIGN—beautifully lithographed 3 dimensional Window Display, Price Cards and Counter Cards and a Silent Salesman Display Rack holding 12 to 15 Table Models.

FADA NEWSPAPER ADVERTISING will be continued as always to pave the way for Greater Sales.

FADA ADVERTISING will help you sell more radios and reap greater profits. Twenty years continuous advertising of the FADA name and quality have gathered sufficient momentum to make every bit of Advertising Material produce the maximum results.



**FADA RADIO AND ELECTRIC CO.**

30-20 Thomson Avenue  
LONG ISLAND CITY, NEW YORK

**1940**

**FADA FEATURES**

**PLAY ANYWHERE  
PORTABLES**

FADA's complete line of self-powered Portables includes Standard and De Luxe Models in broadcast, shortwave and with optional models playing alternately on AC or DC Current.

**FADA PIONEERS  
COLOR  
COMBINATIONS**

Bakelite and Plastics in two color combinations pioneered by FADA, styled to delight the eye. NEW GENUINE CATALIN Color Combinations symbolizing the quintessence of latest vogues in color and styling.

**PHONOGRAPH  
CONSOLE  
COMBINATIONS**

from \$49.95 and up.

Priced less than standard consoles.

—and a host of other features. But most important, COMPETITIVE LIST PRICES with liberal discounts to enable JOBBERS AND DEALERS to make a PROFIT.

Write for sales brochure



# RADIO *and Television* RETAILING

JUNE, 1939



## Lafayette Would Have Liked It

**O**NCE a year the slumbering town of Natchez, Mississippi, puts on its hoop skirts, throws open its homes for an annual pilgrimage to "befo' de wah" mansions.

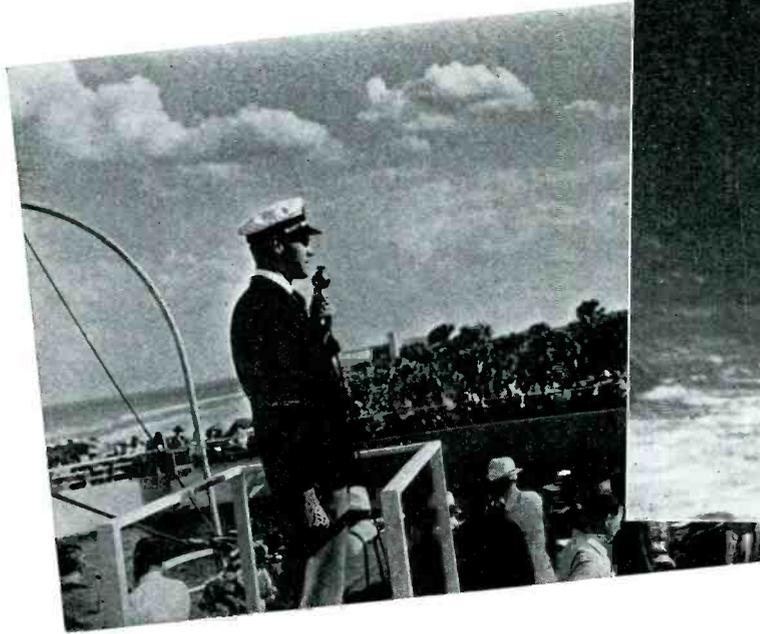
Here at "Hawthorn" you see 12-year old Betty McGehee in her hundred-year-

old costume, showing the room in which Lafayette is said to have slumbered during his visit in 1825. Note Betty's ancient doll-crib at the lower left.

The radio? . . . Well, it can't even be dispensed with for a few hours to give authentic atmosphere!

## FISH FOOD, FLORIDA STYLE

Watching a diver feed fish to a porpoise is one thrill attracting tourists to the submerged potholes of St. Augustine's "oceanarium." His helmet has a built-in mike and 'phones so that he can talk to the surface crowds and also be warned when sharks approach. RCA sound installation, by Southern Hardware and Bicycle



## TAILOR-MADE PLAN

Vet refrigeratorman for Mobile's Quigley Specialty, W. H. Yost profitably takes business most salesmen duck by closely checking the credit rating of good prospects temporarily burdened by debts, tailor-making special easy-payment terms which rise sharply as other obligations are cleaned up



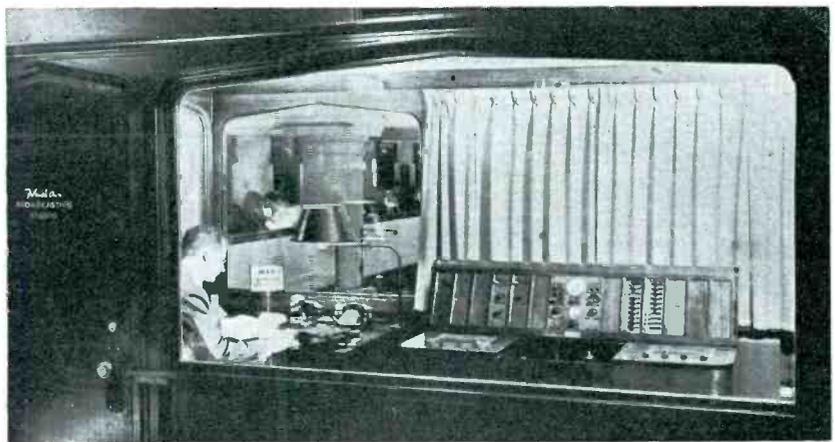
## SET-UP FOR SELL-UP

Soundproof but not sightproof are new demonstration rooms at May's, Los Angeles. Each brand has a "section" of its own, table models separated from consoles by a glass partition above low wainscoting. Consoles outside every door put each prospect in the proper buy-up frame of mind



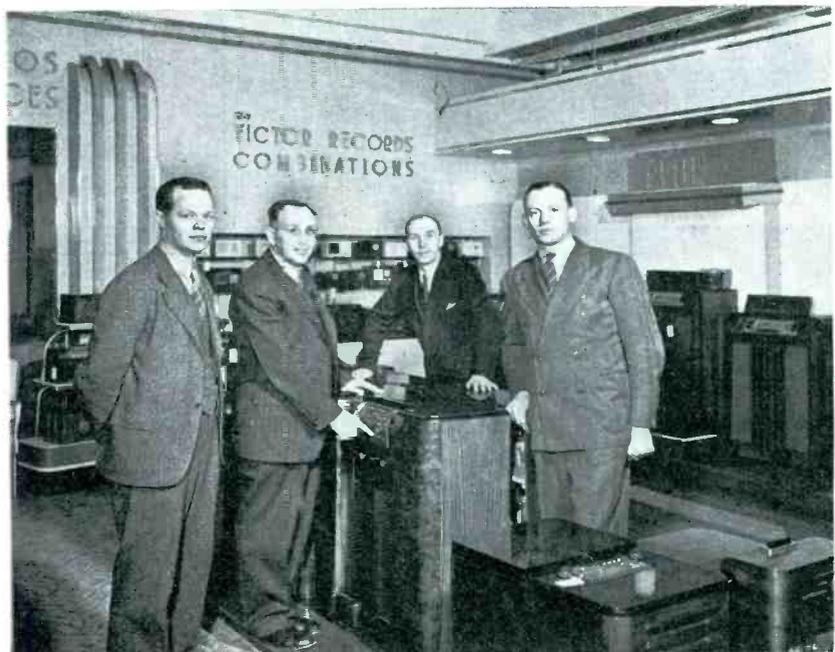
## WHEN THESE BIRDS BUY IT'S RIGHT

Into Filene's, typically efficient but hard-boiled department store at Boston, went a sound amplification and distribution system. Over the wires went style shows, special events, sales recorded musical programs, emergency calls for lost persons, management talks, time signals. Result: Increased sales, speeded up store routine



## MORE TRUTH THAN POETRY

Sage advice seen in a sign at Modern Radio's, Milwaukee, reads: "A Good Used Radio is Better Than a Cheap New One." Says Paul Rohrback: "We have found that this is one effective way to handle the trade-in problem with benefit to both the customer and the store"



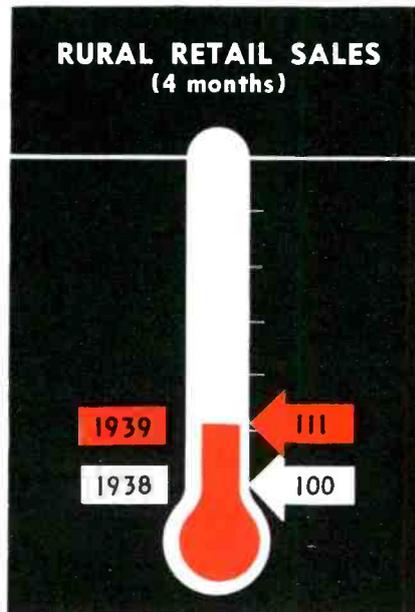
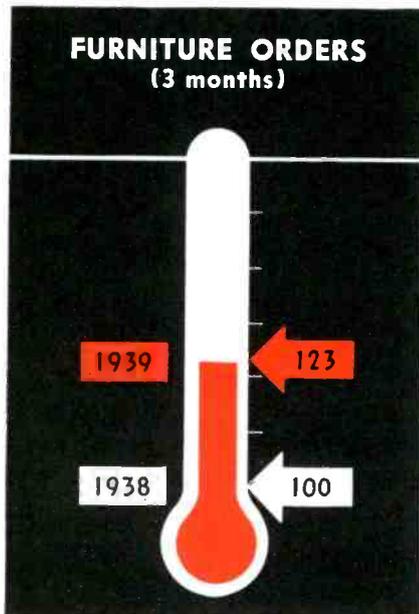
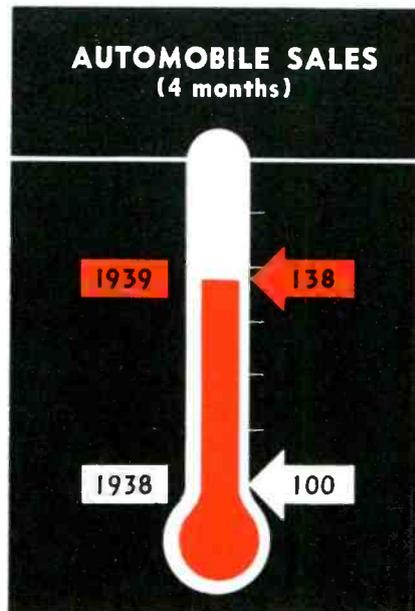
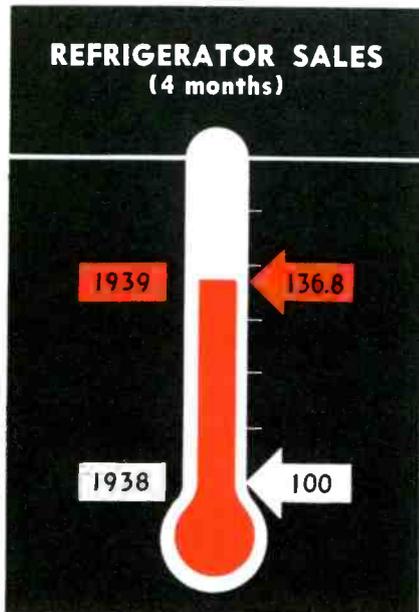
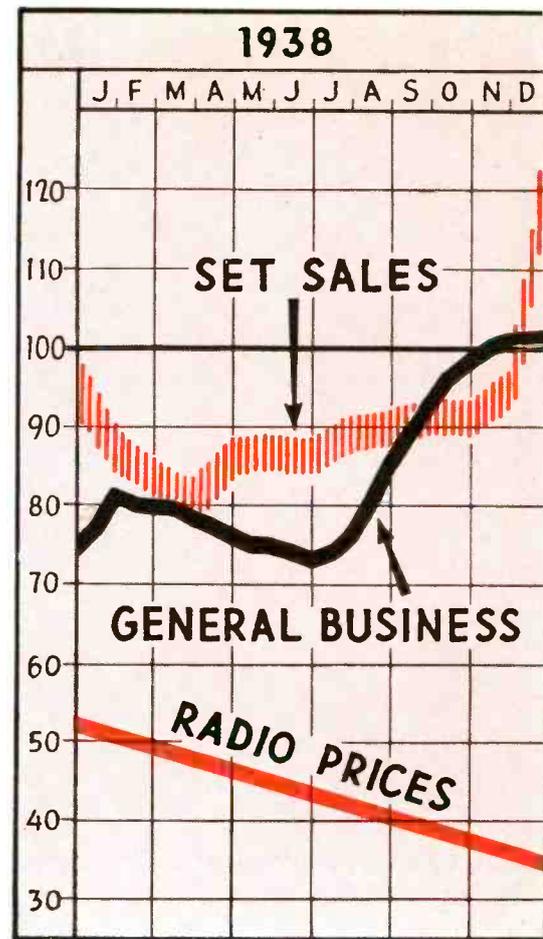
## THREE DAYS, 250 SETS

Swamping Salt Lake delivery agencies with work, Auerbach's electrical department last month moved 250 radios in three days. Planning the advertising barrage and other details were (left to right) Hugh Kimball, manager L. E. Baldwin, Dewey Hansen, Earl Jensen. Fall campaign will emphasize combinations, records

# What's Ahead In 1940

Study of trends in other lines, comparison with figures on radio's past performance, seen as logical guide in determining probable future

By O. FRED. ROST  
Editor



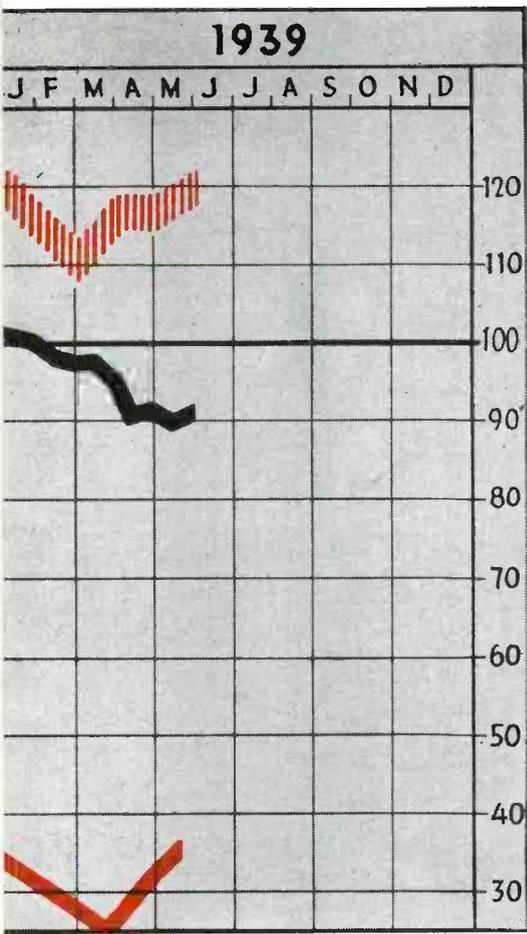
**R**ADIO sales will increase. Retail set prices will climb higher steadily. Portable battery sets will lead the procession until fall when combinations should capture the spotlight. Consoles will stage an important comeback, as present limitations of television magic become understood or television plug-in provisions serve to reassure hold-out buyers.

That, in a nutshell, is what we see ahead for radio's 1940 selling season and these predictions are not the result of so-called wishful thinking. Instead they are based upon continuous study of business trends and careful analysis of various factors that directly or indirectly exert an influence on the radio business.

**F**INDING itself threatened with a television invasion, the radio industry has decided that attack is the best defense.

The 1940 lines of radio sets we think, "have what it takes," to make the public buy. Intensified promotions, plus better and more intelligent selling should help to produce decidedly better sales records—in both sets and dollars.

Also, paradoxical as it may seem, the publicity given to prices of tele-



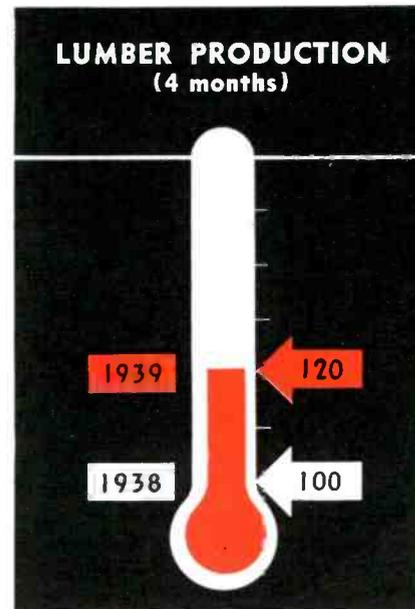
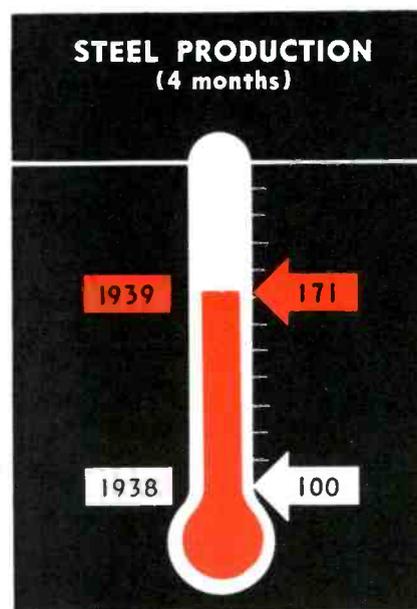
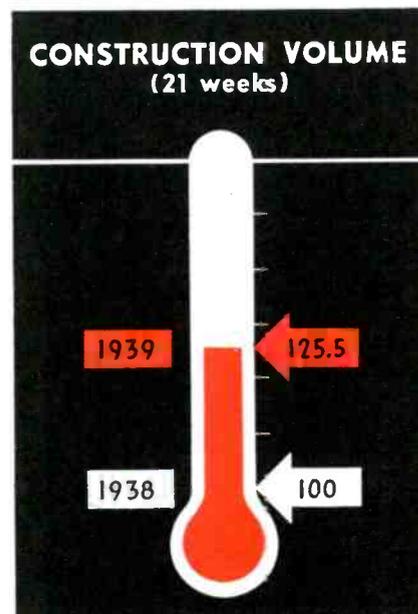
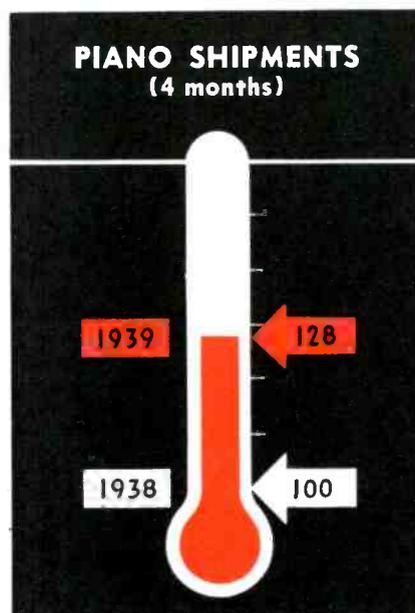
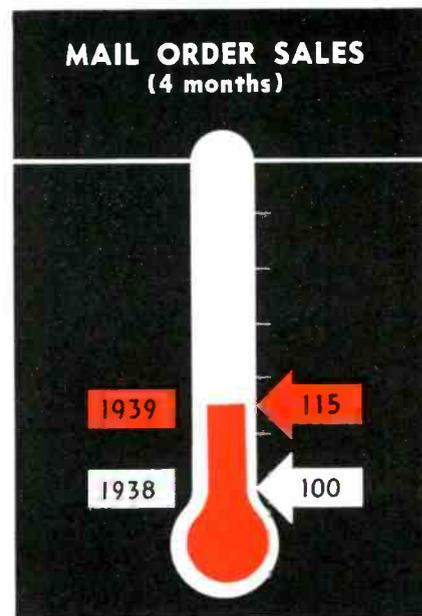
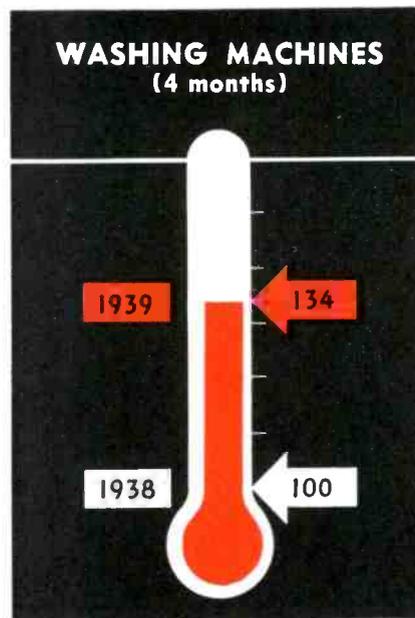
vision sets (running into hundreds of dollars) has lifted the price-minded public into higher *radio* price levels because the radio set, useful for 18 to 24 hours every day of the year, has gained tremendously in stature and public appreciation.

**OUTSIDE** of the radio industry the sales records produced by other comparable types of consumer merchandise (see accompanying charts) serve as assurance that radio sales will not lag.

Automobile, refrigerator, washing machine sales, with the best selling season falling in the first half of the year, have run well ahead of radio sales as shown by *RADIO and Television* RETAILING'S Sales Barometer. Radio sales should catch up and surpass those records when its real selling season arrives.

As basic influences on radio sales, the accompanying charts on construction, lumber and steel production tell their own and a decidedly optimistic story.

Two reminders in conclusion. Last year our predictions for the 1939 season—more casually presented—seem to have been correct. This year we produce some of the evidence for your own perusal.



# The Season's NEW SETS

**J**UST over, in progress or about to begin are many conventions whose primary purpose is to provide an effective springboard for new, 1940 radio models.

While the following text perhaps does not cover the entire roster of manufacturers planning early new model releases nor necessarily even every individual number eventually to be offered by any one maker . . . due to the obvious difficulty of obtaining and then handling such a flood of material during the height of the industry's most active line revision period . . . it does constitute a sufficiently broad "prevue" to indicate design trends likely to be headlined during the next 12 months.

Much of this material, we believe, will be the average dealer's first birdseye picture of what's ahead in major merchandise. For in addition to incorporating product de-

scriptions readily obtainable from firms unveiling new sets late in May, many at present in the throes of distributor showings and others convening after our deadline cooperated by supplying specifications even before their own regional sales organizations had seen the sets.

**ADMIRAL** — Known to be included in the Continental Radio and Television line even at this early date are the following featured models: An onyx plaskon 5-tube ac-dc superhet with pushbutton tuning, supplied also in walnut and ivory. Has tone control, new low current tubes, Aeroscope. A walnut bakelite ac-dc 5-tube superhet with pushbuttons, new low current drain tubes, Aeroscope. Available in ivory plaskon. An 11-tube ac superhet, 2 band console, with new piano pushbutton tuning, 12-inch electrodynamic speaker, deluxe Aeroscope, electrostatic shield. An 11-tube ac superhet, 2 band console of the same design as that described above but with automatic record-changer.

To be featured in initially planned promotion is a new 1½ volt, 4-tube battery portable.

**AIR-KING** — Announcing two "Portola" types, designed to work on either batteries or ac-dc lines. Five 1.4 volt tubes, superheterodyne

circuit, self-contained loop antennas, oversized p.m. dynamic speakers, on-off flash indicators. One with detachable panel-covering lid.

Also has a portable "Tun-A-Scope" model 3923 Carryround radio housed in a miniature, walnut-finished cabinet with carrying handle and built-in loop antenna. For ac or dc. And a "tuck-in" Tune-A-Scope model 3922 of similar design but housed in a miniature Neo-Classic cabinet. Latter has new full-vision sliding pointer dial.

**ARVIN**—Highlighted in the new Noblitt-Sparks line is to be the the Arvinet deluxe model 502 at \$9.95. Comes in choice of ivory or

General Electric



## TYPICAL 1940 CONSOLES



Admiral



Stewart-Warner

Here's a hot-off-the-griddle preview  
of what radio makers are planning  
to headline, the major merchandise  
around which to build your business  
during the next twelve months.

By W. W. MacDONALD  
Managing Editor

walnut finish, includes 30-ft. attached aerial, has five tubes working on either ac or dc, and electrodynamic speaker, illuminated airplane dial.

Compact in size, the set covers 540 to 1750 kc., turns out 2 watts of audio.

**AUTOMATIC**—In addition to a novel model P-61 on which details are not available as this editorial

preview goes to press this firm has added to its line a model 905 five tube superhet with dynamic speaker, full vision illuminated dial, built-in antenna, automatic volume control. Modern cabinet of table type, designed for ac-dc operation.

There is also an M-66 single unit, 6-tube superhet auto-radio with pushbutton tuning, slide dial, dynamic speaker, automatic volume control.

**BRUNSWICK**—Unveiled at the New York furniture markets this month by Mersman Bros. Corporation's radio division will be fourteen

new models (equipped for amplification of television audio) consisting of two table type chassis completely concealed (including speakers) in Chippendale claw-and-ball and early American maple commodes, 18th Century revolving book drums in mahogany and also in antique white with leather top, Chinese Chippendale bamboo commodes, Adam commodes, Hepplewhite and Georgian commodes.

Lists start at \$29.75.

New series also includes five Panatrop automatic record changers. Five, six, seven and nine-tube chassis are in production for inclusion in these combinations. All but the five-tubers will have push-buttons. All will have built-in aerials.

**CROSLEY** — More than sixty models comprise this firm's present line, with a top list of \$69.95 for consoles and three radio-phonograph combinations ranging in price from \$49.95 to an automatic at \$114.50. All models from \$12.99 up have pushbutton tuning.

Technical highspot of the line, seen in newly designed consoles, combinations and certain other models, is an "acoustical tone director". Speakers are mounted face down on a panel at the top of the sounding-board shaped like the bell of a horn. Sound is diffused, made less directional, and so creates a feeling of higher fidelity in reproduction. Dispensing with grille cloths, the system also makes efficient use of available power output.

The "Magnetune" electric tuning system just adopted in the larger sets and applied to some table models and auto-radios (mechanical push-button tuning continues in most low-priced models) utilizes a system of solenoid magnets operated by push-buttons functioning at the slightest pressure. Tuning knob and indicator pointer move when buttons are pressed.

**DETROLA** — Seen in this firm's line, just announced, are three triple-purpose portables, all of which operate on either batteries or ac-dc power lines Airplane luggage design, \$24.95; Tan cowhide detrokoid,



Philco



Stromberg-Carlson

# PORTABLES



RCA-Victor



Stromberg-Carlson



General Electric



Detrola



Sparton



Fada



Motorola

\$29.95; White cowhide detrokoid, \$29.95.

Also just added to an extensive list of models is an ac portable combination phono-radio at \$29.95, equipped with carrying handle, Detroscope built-in loop, self-starting motor, crystal pickup.

Another item likely to attract attention is a "swing" style radio-phonograph table model at \$24.95, also equipped with built-in loop, self-starting ac motor and crystal pickup.

**FADA**—Headlined by this company making a particularly extensive line of models are newly introduced Fadalette's further sweetening the L-56 series. These will be available in 8 translucent Catalin cabinet colors or walnut at \$19.95 and soon in Bakelite cases as well.

Expecting big things from three new P-40 series battery portables

just added, two in airplane cloth at \$19.95 and a third at \$24.95 in genuine cowhide. Additional P-58 series designed to work on either batteries or ac or dc lines expected shortly at \$29.95 and \$34.95.

Also emphasizing three table type phono-radio combinations with lids which may be kept closed in operation at \$29.95 and \$39.95 for ac, \$49.95 for ac-dc. Console phono-combinations offered include a new ac-dc type with universal motor at \$119.95 or \$99.95 for ac only, an ac-dc combination at \$99.95 with ac companion model at \$79.95.

In addition to these to-be-featured models seen also are many sets in the popular L-96 Fa-da-scope series, three de luxe-sized table models.

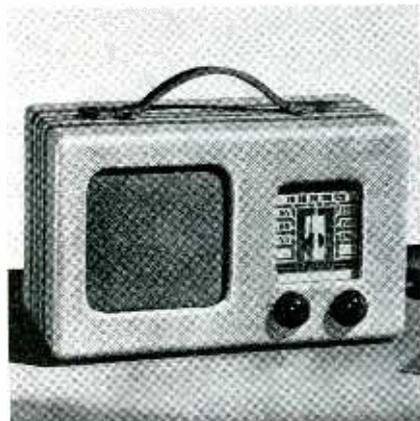
**GAROD**—Has just brought out a battery and electric combination portable in an airplane luggage case. Fluted speaker grille, carrying

handle, airplane dial, three controls. Featuring the slogan "Three radios in one."

**GENERAL ELECTRIC** — 1940 line includes 12 table models, 4 consoles, 3 radio-phonograph combinations (two consoles and one table model), a new wired record player unit, new wireless record player, 4 portable battery type "carryabout" sets, a battery type table model and an auto-radio receiver.

A "super beamscope" metal-screen shielded and built-in antenna (further refinement of 1939 feature) is included in many of the new models. Important technical features include television audio or phonograph "keys", larger, super-powered chassis, "feathertouch tuning" for a majority of models, a three-dimensional "visualux" dial with rotor dial control and an improved tone monitor circuit and

# WITH A PUNCH



Philco



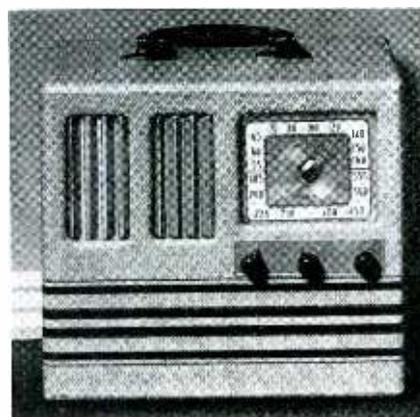
Troy



Pilot



Remler



Garod



Mission-Bell



Air King

tone selector system of new design.

All receivers of the new line are to have "Dynapower" speakers employing the magnetic alloy "Alnico", will have new drift-proof station setting and i.f. transformer adjustments. A majority of sets cover the standard American broadcast band, foreign bands, domestic shortwave,

police, amateur, aviation and television audio bands and many provide electrical reproduction facilities for recording.

**GILFILLAN**—Ready for the market are 11 table models, three of the extremely small plastic variety, two with carrying handles, four somewhat larger in size with refinements such as pushbutton tuning, short-wave band coverage.

Three consoles, using 7, 10 and 13 tubes, pushbutton tuning, are also in the line, as are two phonoradio combinations, one a table type and the other an automatic record-changer.

There is also to be a portable battery radio with built-in loop antenna, carrying handle, luggage type case.

**HOWARD**—New models, using local type tubes and perfected mechanical pushbutton tuning systems,

include: A five-tube super, one-band table model at \$19.95. A five-tube, two-band super at \$29.95. A seven-tube, allwave table model at \$44.95. A deluxe nine-tube table type at \$59.95.

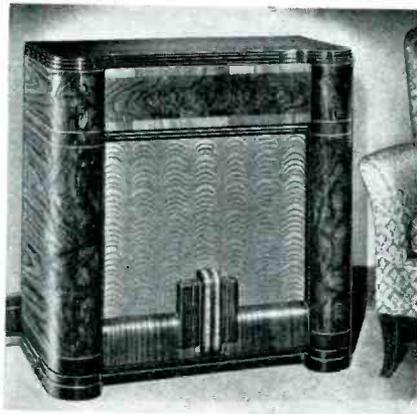
Consoles planned at this writing include a five-tube job 39-inches high at \$39.95. A seven-tube, allwave job at \$69.95. A twelve-tube deluxe model at \$109.95. Combinations also likely to be announced shortly include: a five-tube, one-band set with automatic record-changer at \$79.95. A seven-tube allwave set and automatic changer at \$99.95. And a deluxe, twelve-tube combination with record-changer at \$225.

**MISSION BELL** — Announced since the popular model 500 deluxe battery portable described last month have been the following sets: Model 501, another deluxe battery port-

# — COMBINATIONS TO SELL-UP —



General Electric



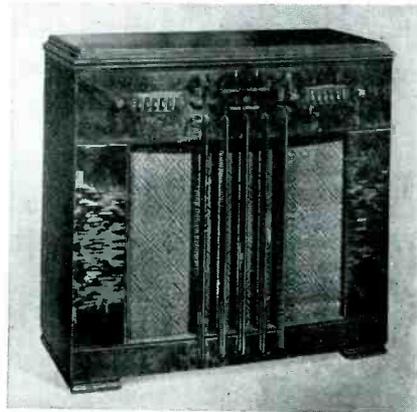
Admiral



Crosley



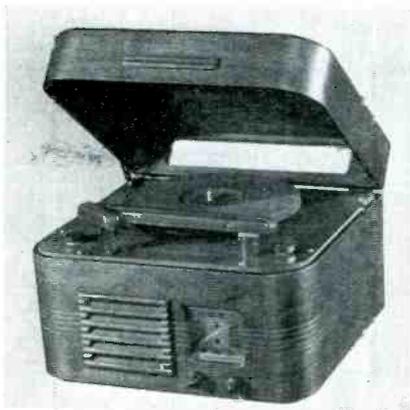
Detrola



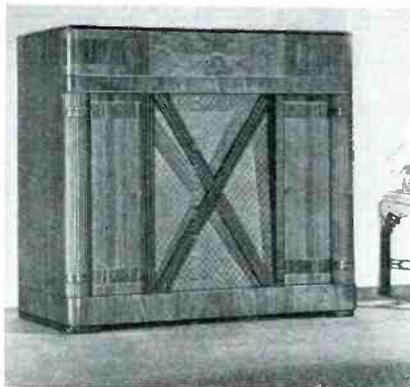
Stewart-Warner



Stromberg-Carlson



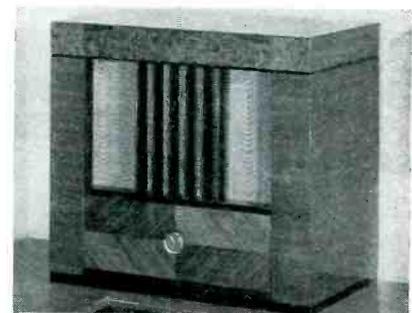
Fada



Philco



Brunswick



Wilcox-Gay

able, with 270 milliwatts of audio output, built in loop plus provision for capacity-coupling an efficient external antenna. Model 407, a 5 tube superhet of the ac-dc type using octal tubes, mechanical push-button tuning, dynamic speaker and listing at \$16.95 in a mahogany and \$17.95 in an ivory cabinet. Model 410, a deluxe ac-dc table model,

available in either walnut or a bleached finish at \$24.95.

In the new line, also, is model 499 wireless record player listing at \$24.95.

**MOTOROLA** — Reported near ready as we write and to be announced to the trade by the second week of June are 28 Galvin Manu-

# LITTLE "PEAKS" at the 1940 *Majestic* LINE!

(THE TOPS IN PORTABLES)



MODEL 130

## THE WORLD'S SMALLEST PORTABLE RADIO!

**NO PLUG IN—NO AERIAL  
NO WIRES!**

A Majestic achievement—the first real portable radio! Operates on dry cell batteries. So small it fits into a pocketbook . . . approximately 7 inches by 5 inches by 3½ inches . . . approximate weight 3½ pounds complete, including batteries and built-in antenna . . . Superheterodyne circuit . . . volume control . . . high selectivity.



1 BR 50

## THE NEWEST IDEA IN RADIO!

**A. C. and 6 Volt Dry Battery Operated**

5 Tubes on A. C. operation . . . 4 tubes on battery operation . . . equivalent to 7 tube performance . . . Superheterodyne . . . 6 Tuned circuits. Built-in Hi-Q loop antenna. 5 in. Permanent magnetic speaker. Automatic volume control. Tuning range 540 to 1750 kilocycles. Standard and police broadcasts.



MODEL 130 U

## NO PLUG IN— NO AERIAL— NO WIRES!

**250 BATTERY HOURS**

A swanky looking cabinet attractively covered in aeroplane luggage cloth. 1½ Volt battery operated. Built-in Hi-Q loop antenna . . . Superheterodyne . . . 5 Tuned circuits. 4 in. Permanent magnetic speaker. Automatic volume control. Super-sensitive selectivity. Standard and police broadcasts. Tuning range 540 to 1750 kilocycles. Approximate size—7½ x 10 x 4½.

**MIGHTY MONARCH OF THE AIR!**



SEE MAJESTIC'S ADVERTISEMENT ON PAGE 7



*Majestic* RADIO & TELEVISION CORP.  
2600 W. 50th STREET • CHICAGO, ILL.

Cable: "Majestico—Chicago"

**IT'S SO MUCH EASIER TO SELL MAJESTIC!**

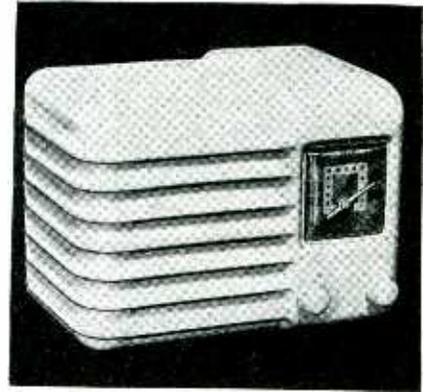
# TABLE TYPES



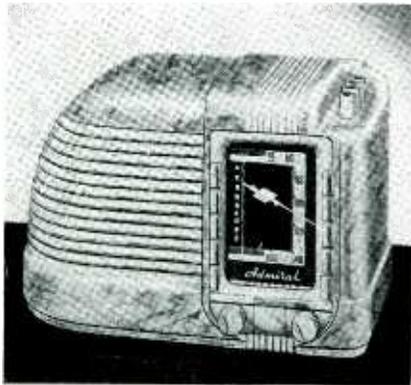
Radio Lamp



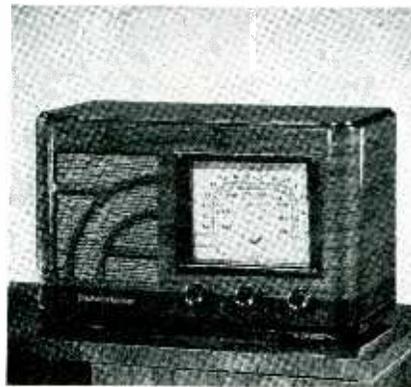
Stewart-Warner



Arvin



Admiral



Stromberg-Carlson



RCA-Victor

facturing Company home radio models. Said to include 15 light-line operated table models in mottled brown plastic, ivory finish plastic, walnut finish and onyx-effect cabinets, ranging in price from \$9.95 to \$29.95. Most of these employ a new self-contained "Aero-Vane" static-shielded loop aerial.

Also understood to include three consoles priced from \$49.95 to \$99.95 for the "Self-Tuning" Motorola. One has built-in loop. In addition, there is a table model phono-radio, a wireless record-player at \$9.95, and five battery-operated farm sets in both plastic and walnut finish cabinets.

Very newest item is the "Sporter" model 41S, a compact "camera-case" portable that plays anywhere. A 4-tube superhet with 4-inch "Permanic" speaker and shoulder strap loop aerial, weighing less than five pounds. Size: 5½ by 8¼ by 4⅝ inches. Line includes three addi-

tional portables, too, one of which operates on either battery or ac-dc house lines.

**PHILCO**—Holding its distributor convention as our presses start to roll, this company has nevertheless taken "time out" to provide the editors with highlights of the line going on display at French Lick. In telegraphic style, here is the lowdown:

Built-in Super-Aerial systems are adapted to virtually the entire line. Such systems comprise self-contained loops, efficient television-type tube r.f. stages, Loktal tubes elsewhere in the circuit. "Twin loops" are used in all shortwave and broadcast band sets.

All models for 1940 may be used in conjunction with television "video" receivers, providing television audio without the need for wire-connecting television and associated receiver. The trick is accom-

plished by an adaptation of wireless remote control. Wireless remote control, such as was introduced last year in the shape of a small control box and associated receiver, is continued with design refinements.

"Cascade" type cabinetry has been applied to both new radios and new televisors.

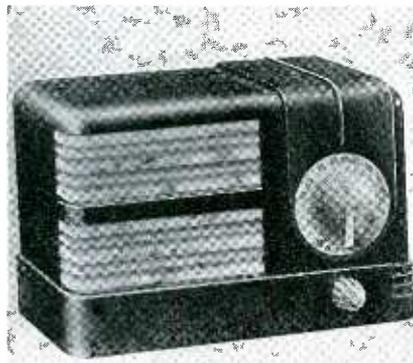
A total of 43 models are included in the new line, including nine consoles, 11 table and compact type sets (including 5 ac-dc sets), nine farm radio receivers, 10 radio-phono combinations, three portables and one portable combination.

Innovation seen in combinations is the firm's Inter-Mix record changer which will automatically play both 10 and 12 inch discs even though they are indiscriminately mixed Plays for full hour. Application of wireless remote control to record players is also new, permitting the user to not only tune and volume-control radio programs but

# TO FEATURE



Philco



Spartan



Fada



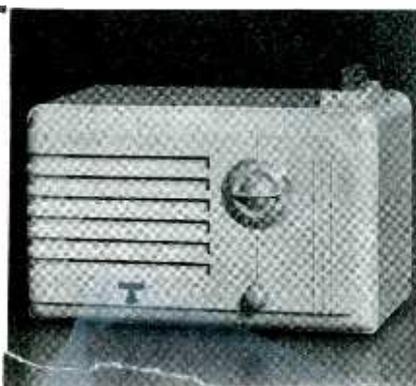
Troy



Automatic



General Electric



Mission Bell



Air King

also to start and stop records, reject, perform other required functions without the need for control wires. Two new popular portables, one a radio-phono combination, are also ready.

**PILOT**—Hot off the production lines is a new "twin-set" portable that works on either batteries or on

house current. Interesting feature is the fact that when used on house current the set plays the instant turned on, without waiting for tubes to warm up. Changeover from batteries to lines is, furthermore, completely automatic, with no switches to throw.

Top pulls down over panel and fastens, protecting and concealing

dials. Retail price \$36.50. With shortwave band added, \$39.50.

**RADIO LAMP**—Has just introduced several new versions of its novel set-within-a-lamp idea. Speakers are placed within the reflectors inside the lampshade, receiver chassis' in the lampbase.

Sets are 5-tube superhets of the ac-dc type, cover 540 to 1750 kc. All table types.

**RCA VICTOR**—Has a particularly extensive line this season, the highspots of which appear to be the following at this prevue writing:

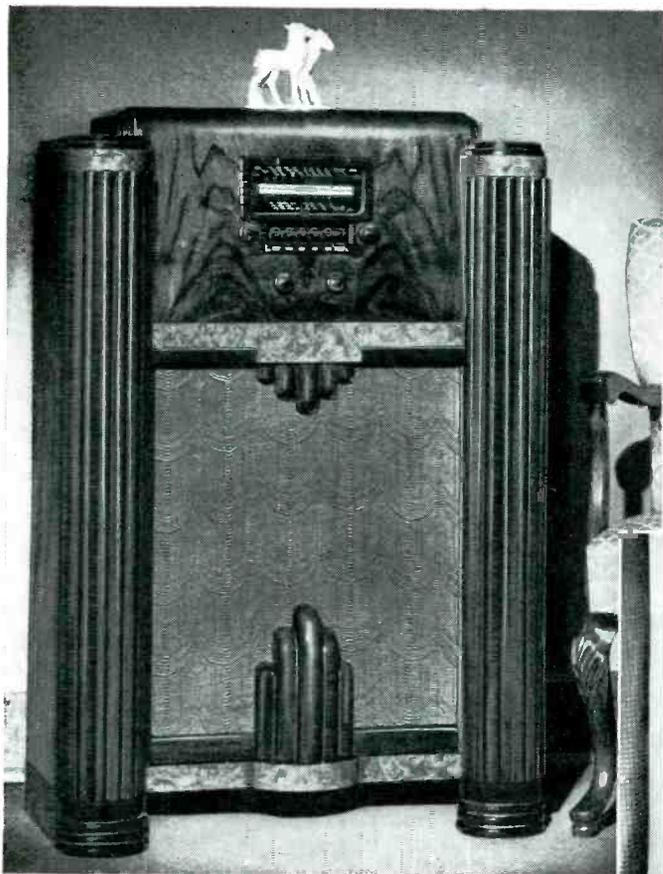
A unique and extremely small multi-purpose radio which is not only complete in itself but also serves as a remote control unit for any other distant set. Connected with a record-player, recorded music may also be reproduced through the set itself or may be fed to any receiver

*(Please turn to page 108)*



# FULL SPEED AHEAD

## 7 & 11 TUBE AC CONSOLES



382-7H

### ADMIRAL 7 & 11 TUBE AC CONSOLES

*With Aeroscope and Automatic Tuning*

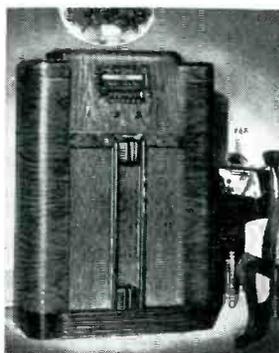
**Model 380-7H**—7 tube AC Super. 2 bands (540 to 1550 KC and 5.65 to 18.1 MC)—automatic volume control—tone control—automatic tuning—8" dynamic speaker—television connection—figured walnut cabinet with tilted front panel.

**Model 381-7H** (See above)—7 tube AC Super with 12" dynamic speaker. Otherwise same as 380-7H.

**Model 394-11B**—11 tube AC Super with 12" dynamic speaker. Otherwise same as 380-7H.



394-11B



380-7H

### ADMIRAL RADIOS FOR 1940

Will Be On Display at the Blackstone Hotel  
See them when in Chicago June 14, 15,  
16, 17 for the National Radio Parts Show



Another first and another feather in Admiral's cap. Introduced this spring on the lower priced table models the Aeroscope (no aerial—no ground) was the sensation of the industry. This fall, the Aeroscope plus automatic tuning will be a greater sensation.

Most models also have a special INTERFERENCE Shield which reduces static and other noise to a minimum. Just try an Admiral in a location that's usually "tough" for an ordinary radio.

382-7H

## No Aerial—No Ground Aeroscope

### ADMIRAL 5 TUBE AC-DC SUPERHETERODYNE

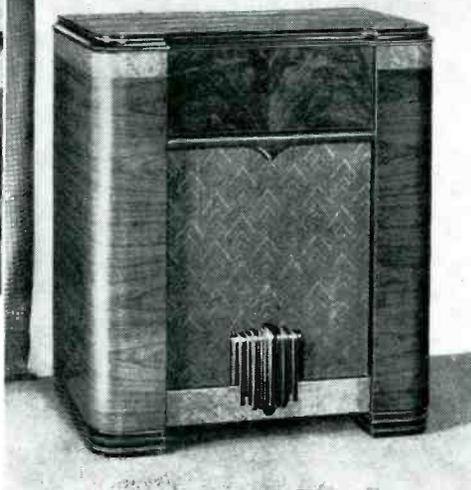
*With Aeroscope and Automatic Tuning*

Here's the price leader that will bring 'em in! AC-DC Super with 5 full working tubes in special heat reducing circuit. No ballast! No cabinet discoloration. Tuning range 540 to 1730 KC—automatic volume control—automatic tuning—5" P.M. speaker—Aeroscope—television connections—smartly styled plastic cabinets.

Model 362-5Q Ivory



383-7H



### ADMIRAL RADIO-PHONOGRAPHS

*With Aeroscope and Automatic Tuning*

**Model 382-7H**—7 tube AC superhet radio with 2 bands (540 to 1550 KC and 5.65 to 18.1 MC)—automatic volume control—tone control—push pull output—automatic tuning (6 push-buttons)—slide rule dial—dial lights—12" dynamic speaker—Aeroscope (no aerial or ground required)—television connection. Phonograph has new light-weight crystal pick-up with quiet self-starting electric motor. Plays 10" and 12" records.



**Model 383-7H**—Radio same as 380-7H. Phonograph has new lightweight crystal pick-up with quiet self-starting electric motor. Automatic record changer plays both 10" and 12" records in mixed sequence.

**Model 395-11B**—11 tube AC superhet radio with 12" dynamic speaker (otherwise same as 380-7H). Phonograph same as 383-7H above.

### ADMIRAL PORTABLE RADIO-PHONOGRAPHS

159-5L



**Model 153-5L**—Admiral "Gypsy" in modern airplane luggage case with pocket for records.

153-5L



**Model 159-5L**—in straight grain walnut cabinet. Has AC radio with 5 full working tubes—electro dynamic speaker—and Aeroscope. Tunes complete broadcast band (535 to 1730 KC). Phonograph has new light-weight crystal pick-up with self-starting electric motor. Plays 10" and 12" records.

**Model 311-4D**—Portable battery operated 4-tube radio-phonograph in case similar to above.

# SO THEY WON'T TALK!

*Some slick ways  
to get the walk-in's  
name and address*

**F**ROM my article *First Aid For The Floor Man* (November, 1938) I quote one of the closing paragraphs regarding "walk-ins":

"So there he is. You wait on him. You've got to either sell him a set without pressure and without committing yourself, arrange for a demonstration, or get his name and address."

Some of you, upon reading that, may have sighed and said, "Yes, yes, we must get his name and address . . . he says that just as if it's easy to do!"

No, I don't think it is easy. In some cases it requires a great deal of persuasion and in some cases it is impossible. I hope you did say that, because if you did it proves that you realize the value of a walk-in. If you don't even *try* to get the name and address—and the number of inside salesmen who don't is appalling—you are passing up one of the best sources of business that there is.

There are, of course, a great many combinations of circumstances to be considered. There are different types of prospect, different types of store, different locations of store, different types of floor man. Floor man type 3 might do such and such with prospect type 7 if he is working in store type 4 that has a type 2 location.

There are, however, certain proven and therefore indisputably *advantageous* circumstances connected with inside selling (which any dealer may enjoy); and if we agree on these first, we will understand each other better when we look at the ways and means by which we try to get a name and address from someone who doesn't want to give it to us.

### **Salesmen Must Try**

Does your store have the *facilities* for outside follow-up work? If it doesn't have, it should have. When we consider the fact that a canvasser often works several full

blocks to locate one good prospect, we have to admit that a walk-in is a very valuable creature. He's going to buy something, and you found him without any work at all. And inasmuch as he may have a very good reason for not buying just at the *time* he comes into your store, he is certainly worth a follow-up.

As far as I am concerned, there is no argument on this point. No matter how large or how small your store is, you should have follow-up facilities. There can be time on the outside for the floor man. There can be an outside sales force. There can be just one outside man. And in the last case, if your store is very small, he doesn't even have to work for you alone. He can be a free lance.

But regardless of what the follow-up facilities may be, you should have them. Naturally, a floor man doesn't try to get names and addresses if nobody is going to follow them up.

Next, does your floor man have an *incentive* for getting the name and address? He may have, if you have the aforementioned facilities, but he also may not have. If he has time on the outside for follow-up work himself, he has a good incentive. But if he's expected to furnish leads for an outside force or an outside man, he will furnish very few *unless* he is compensated for it. And the only *kind* of compensation that will make him go after these names and addresses in a big way is some sort of *commission* on such business.

Just what sort of arrangement you might give your floor man is up to you. Frankly, I don't know of a single case where a floor man receives, officially, any commission on a sale to a floor lead sold outside—unless he follows up the prospect himself. There are plenty of cases, however, where the floor man with no time on the outside receives something unofficially—he cooper-

ates with an outside man, working for the same store of course, and the result is that he tries his best to get the name and address of every prospect, good prospect, that he fails to sell in the store.

Unofficial incentive has produced a lot of business for many a dealer that would not have been produced otherwise. It could just as easily be official.

We naturally don't want to follow up *everybody* who walks into the store. Some walk-ins aren't worth a follow-up, and the floor man can pick them out easily enough. But the others . . . the fellow we just *know* is going to buy, and yet can't be sold on the particular day he walks into the store.

It is positively *criminal* if we don't get his name and address. And yet, sometimes we can't get it!

Perhaps he says he will be back. Perhaps he *will* be back. But perhaps, also, he won't. And if he doesn't come back, we want to *see* him. We can't see him if we don't know where he lives.

What to do about that fellow? Sometimes about the only thing you can do is follow him home. (Which I have done!)

# WITH *Admiral* FOR 1940!

## STREAMLINED TABLE MODELS — A COMPLETE LINE OF BATTERY RADIOS

### AMERICA'S SMARTEST STREAMLINED PORTABLE RADIOS

Operate on 110 Volt AC or DC or Self-Contained Batteries

**Model 335-4Z**—4 tube super operates on self contained batteries that last 250 to 300 hours because of new low-drain 1½ volt tubes. Complete with Aeroscope . . . automatic volume control . . . 5" P.M. speaker

. . . modern gray tweed-effect luggage case measuring 13¼" x 9¼" x 7½". Tuning range 535 to 1610 K.C.

**Model 336-5N**—5 tube super operates on AC-DC or on self contained batteries that last 250-300 hours because of new low-drain 1½ volt tubes. Tuning range 535 to 1610 K.C. Has 5" P.M. speaker with volume control. No aerial—no ground—Aeroscope. Modern aeroplane luggage case (medium gray with contrasting stripes) measures 13¼" x 9¼" x 7½".

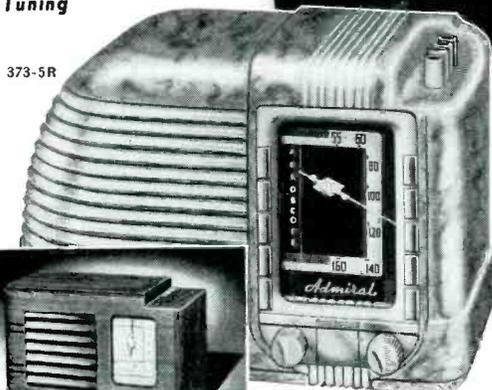


### AC-DC SUPER WITH 5 FULL-WORKING TUBES

*Aeroscope and Automatic Tuning*

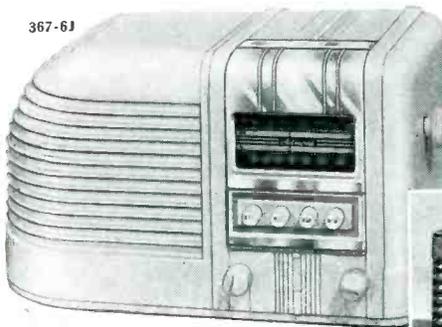
Special heat-reducing circuit—tuning range 540 to 1730 K.C.—automatic volume control—single ended beam output—tone control—illuminated airplane dial with rotating pointer—5" permanent magnet speaker—Aeroscope (no aerial, no ground)—automatic tuning with 4 push buttons—television connections—streamlined plastic cabinets.

- |        |               |        |
|--------|---------------|--------|
| 371-5R | 372-5R        | 373-5R |
| Walnut | Ivory         | Onyx   |
| 352-5R | Walnut (Wood) |        |



### 4 TUBE CONSOLE & TABLE MODELS

1½ Volt Battery Operated Superheterodynes



**Aeroscope! Automatic Tuning!**  
Streamlined Plastic Cabinets

### ADMIRAL 6 TUBE AC-DC SUPERHETERODYNE

Six full working tubes in special heat reducing circuit. No ballast! No discoloration. Tuning range 535—1630 KC—automatic volume control—tone control—automatic tuning with 4 push-buttons—5" electro dynamic speaker—Aeroscope with static shield—television connections—streamlined cabinets.

- |              |        |              |               |
|--------------|--------|--------------|---------------|
| Model 366-6J | Walnut | Model 367-6J | Ivory         |
| Model 368-6J | Onyx   | Model 369-6J | Walnut (Wood) |



**Model 351-4A** (Left) — Here is a smartly styled console. Operates economically because of new type 1½ volt low drain tubes. Single "AB" battery pack lasts almost a year. Tuning range 535 to 1730 KC. Has full automatic volume control—heavy duty 8" P.M. speaker—slide rule dial.

**Model 104-4A** (Below) — Table model with chassis same as Model 351-4A except for 6" P.M. speaker.

← 351-4A



**DISTRIBUTORS:** A few desirable territories still open. Write or wire for details.

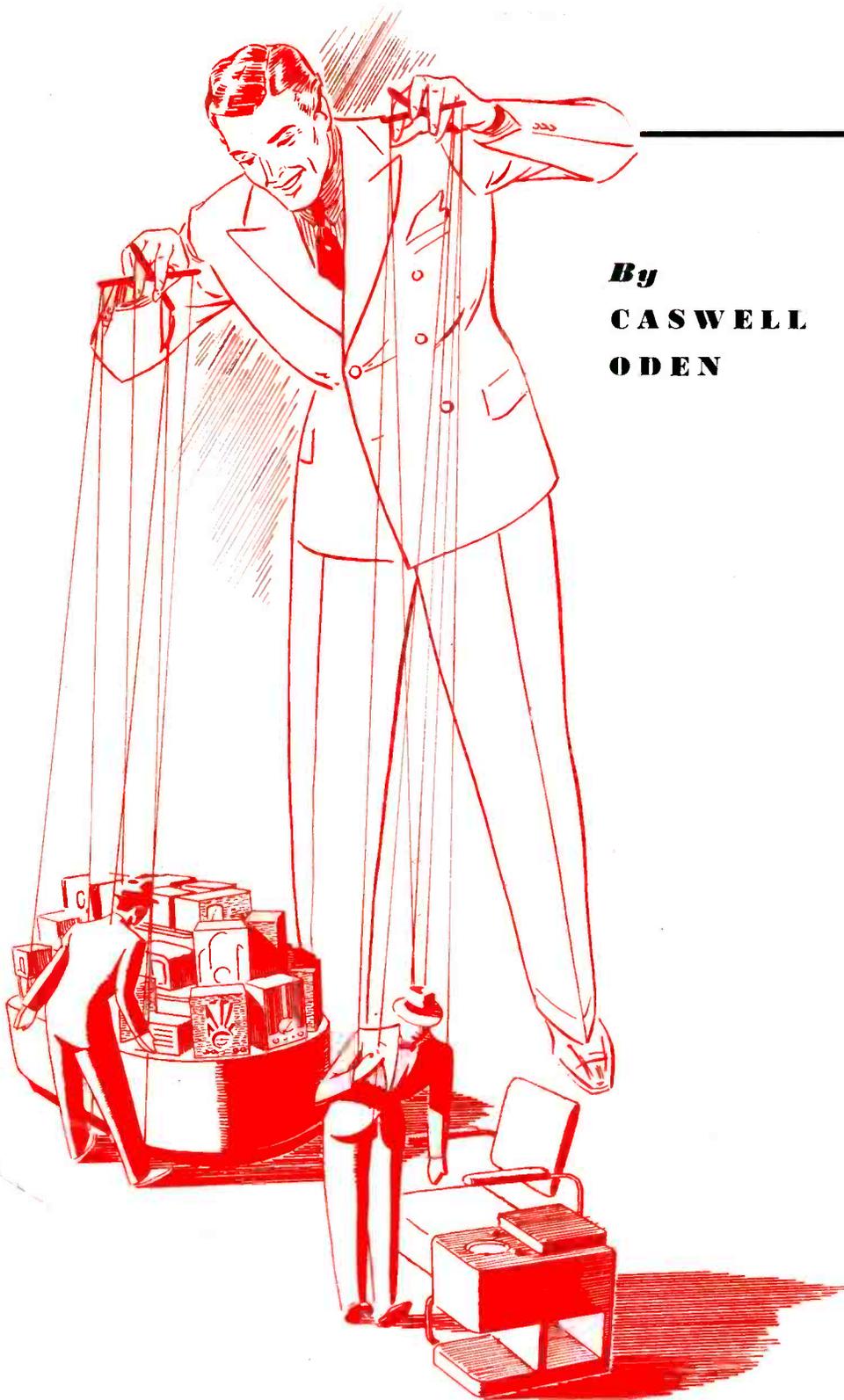
## CONTINENTAL RADIO & TELEVISION CORP.

3800 West Cortland Street

Chicago, Ill.

Export Office: 116 Broad St., New York, N. Y.

Cable Address: CONRESQUE



**By  
CASWELL  
ODEN**

and perhaps being told by the prospect that he doesn't wish to be bothered at home, or by (d) not getting it at all. But the floor man doesn't *know* how he's going to wind up. So, during the conversation, he tries to wheedle out this information in an unostentatious way.

There are numerous ways he tries, and being good at it is something of an art. The experienced floor man (with an incentive) knows most of these ways, but I'll touch briefly upon a few of them.

#### **Two Good Methods**

I know a salesman who approaches the walk-in and says, "How do you do—my name is Wilcox. And yours?" This catches the average prospect off guard, and he gives his name. But Wilcox still doesn't know the address. True, he is able to address the prospect by name while talking to him, but he doesn't know where the gentleman lives. Of course, Wilcox works in a neighborhood store, and sometimes he can trace the prospect by name, but just as often he can't—unless he gets additional data. And such an approach is naturally of less value in a store which is located in the downtown district.

There is also the other approach which doesn't *want* the name right away . . . and *with a purpose*. During the conversation, and at some psychologically proper moment, the floor man suddenly says, "You're Mr. Green over on Brown Street, aren't you?" And the prospect, liking this *friendly* guy, says, no, he's White over on Yellow Street.

Then we have the name and *street*. All we may need then is a telephone book or a directory or, in the case of a small store, a list of the voters in the neighborhood. (This isn't for everybody, you understand; this is for the man who's

*(Continued on page 110)*

Now the experienced floor man (who *wants* the n & a) realizes the prospect may refuse to divulge it, in the event he is not sold in the store. Consequently, he *anticipates* this possible refusal. *All through the solicitation*, the floor man is looking for an opening, an oppor-

tunity, an excuse, whereby he can get the information in an *incidental* or *indirect* way.

Of course, the floor man may wind up by (a) making the sale, (b) by not selling but finding the n & a easy to get, (c) by getting it, but only after a lot of persuasion,



**"See the RCA  
and You'll see**

**"You'll see a New RCA TELEVISION  
Oscillograph!"**

This RCA Television Oscillograph is designed for viewing synchronizing impulses, blanking impulses, horizontal saw-tooth wave, vertical saw-tooth wave, and grid and plate voltages on horizontal and vertical oscillators. Uses 5-inch cathode ray tube.

**Specifications**

- Deflection Sens. at Vert. Amp. Input (gain max.) . . . . . 0.034 Volts RMS per inch (less cable)
- Deflection Sens. at Vert. Amp. with cable . . . . . 28 Volts RMS per inch
- Deflection Sens. Horiz. Amp. . . . . 56 V. RMS per in.
- Input Res. at Vert. Amp. Input . . . . . 1 megohm and 22 mmf
- Input Impedance at Cable Point . . . . . 8 mmf 1.1 megohms
- Input Resistance Horiz. Amp. . . . . 500,000 ohms
- Freq. characteristic Vert. Amp. . . . . 5 cycles to 500 KC 50% at 1000 KC (essentially flat)
- Freq. characteristic Horiz. Amp. . . . . Essentially flat 5 cycles to 100 KC
- Max. signal input to Vert. Amp. . . . . 500 Volts RMS
- Max. signal input to Horiz. Amp. . . . . 500 Volts RMS
- Sweep Freq. Range . . . . . 4 to 22,000 cycles

**This instrument is Stock No. 158.**

RCA also offers a new general purpose 5" oscillograph similar to Stock No. 158 but with lower frequency range amplifier. Makes an excellent unit for engine pressure measurements, etc. It is Stock No. 160.



**New RCA  
TELEVISION  
Test Equipment on Display!**

RCA is readying a complete line of television test equipment for your use. All of these instruments will be on display at the Parts Show. Be sure to see them—for they have been built by the same men who made television an actual fact . . . are instruments which, like RCA Radio Test Equipment, offer you the **REQUIRED QUALITY\*** that assures dependable, accurate performance.

**"You'll see a New RCA  
TELEVISION  
Alignment Oscillator!"**

This new instrument enables you to visually align the R-F and I-F circuits in television receivers when it is used with the No. 158 Cathode Ray Oscillograph. Its output frequency sweeps through the following bands at a rate of 60 times per second:

- R-F Channels—43 to 51 megacycles
- 49 to 57 " "
- 65 to 73 " "
- 77 to 85 " "
- 83 to 91 " "

- I-F Channels—7.5 to 15 megacycles Picture I-F Channel
- 7.75 to 8.75 megacycles Sound I-F Channel

Output Signals for alignment of rejection circuits at 8.25 mc and 14.25 mc are also provided.

This oscillator offers two values of output voltage for each signal—approx. 0.3 volts and 0.03 volts.

**Stock No. 159**



**"You'll See a New RCA  
TELEVISION  
Piezo Electric Calibrator!"**

A small crystal oscillator unit with fundamental frequencies of 250 kcs. and 2,000 kcs. Control of either frequency is obtained by means of a 2-way switch. Harmonics of these frequencies provide exact calibrating frequencies for use in television service work. This RCA calibrator has an output jack . . . offers accuracy of plus or minus .05%. **Stock No. 157.**



\***REQUIRED QUALITY** is your assurance of better test equipment. It means that RCA test instruments are built to meet rigid standards of quality required for use in our own laboratories and factory.

**RCA TELEVISION Test Equipment**

RCA MANUFACTURING CO., INC., CAMDEN, N. J. • A SERVICE OF THE RADIO CORP. OF AMERICA

# Display at the Parts Show... how to Better Your Business!"

"You'll see how  
**RCA TELEVISION**  
will help you make more money  
with RCA Victor Radio Tubes!"

The advent of television will help radio tube dealers and service men make more money on RCA Victor Radio Tubes. It's going to do this in two ways:

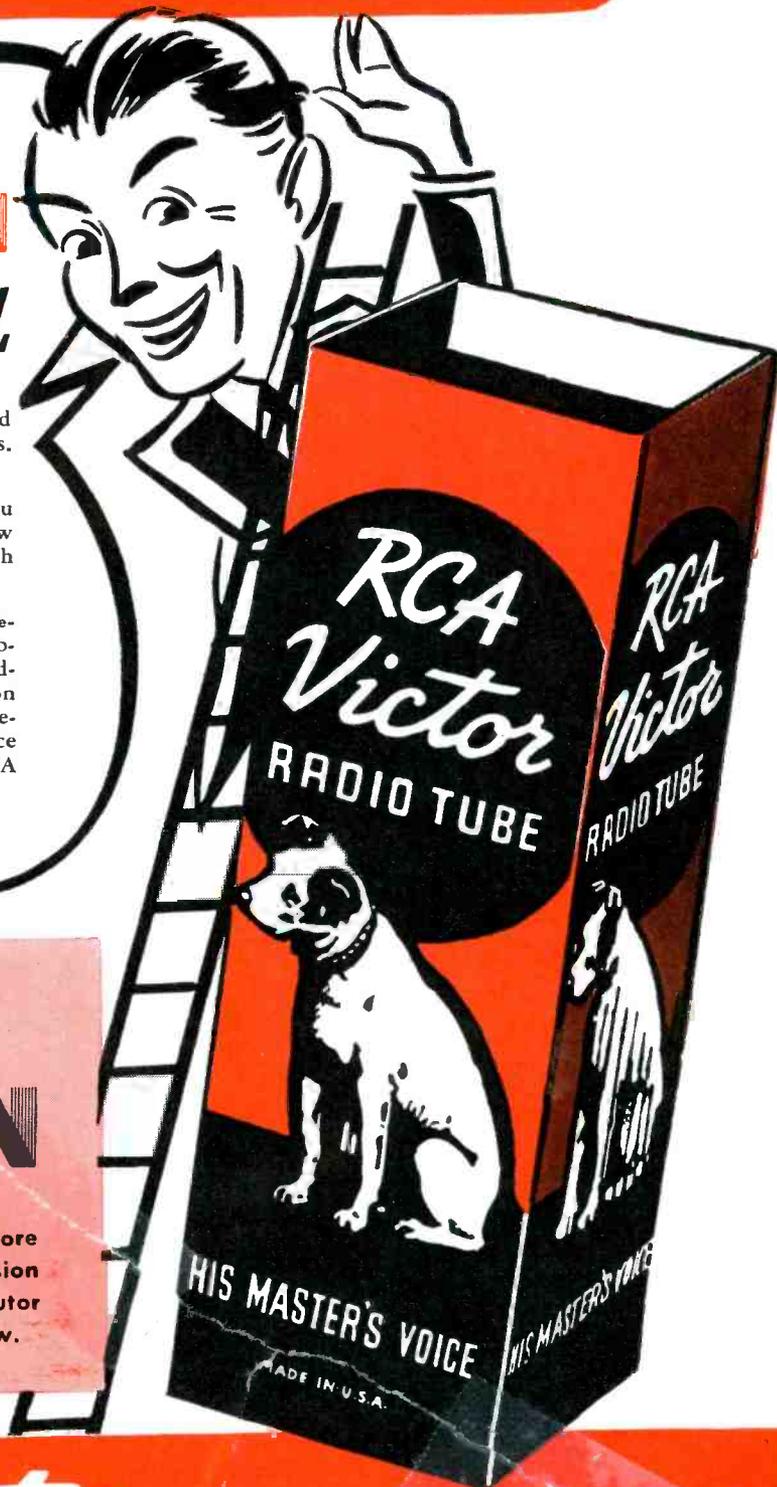
1. By eventually increasing the renewal tube market. When you see the RCA Victor television chassis at the Radio Parts Show note the large number of tubes that must be used, all of which will require renewal.
2. By selling RCA Victor Radio Tubes you can capitalize on the tremendous publicity being given to RCA Victor Television. This publicity will increase the public acceptance for all RCA products because all are built with the same skill and precision that have been responsible for RCA Victor Television. Remember—television is a *sales feature*—one that will convince your customers—and will bring you more money with RCA Victor Radio Tubes.

*For finer radio performance—RCA Victor Radio Tubes*  
Trademark "RCA Victor" Reg. U. S. Pat. Off. by RCA Mfg. Co., Inc.

You are invited to witness a demonstration of  
RCA High Definition Electronic

## TELEVISION

at the RCA Victor Showrooms, 441 North Lake Shore Drive, Chicago, Ill. June 14-17. Tickets of admission may be obtained upon request from your distributor or at the RCA Mfg. Co. booth at the Parts Show.

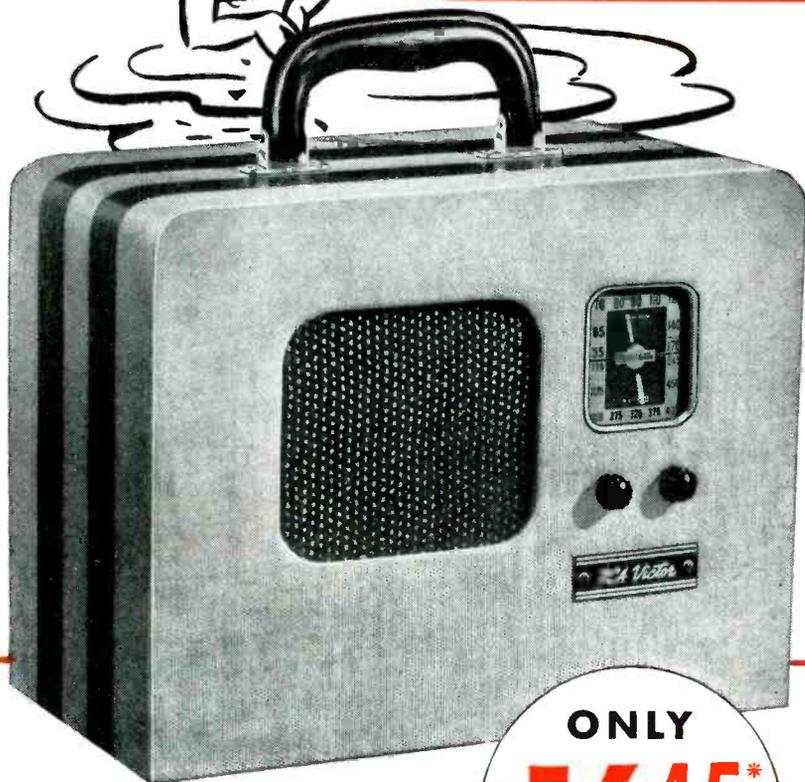


# RCA Victor RADIO TUBES

RCA MANUFACTURING CO., INC., CAMDEN, N. J. • A SERVICE OF THE RADIO CORP. OF AMERICA



# RCA VICTOR Helps You to Summer



HERE are two new RCA Victor radios that will give your summer sales an extra lift! They're "naturals" to sell to heat dodgers—and they're sets you'll like selling. Because one look will convince you of their smart styling, quality construction. One "listen" will make you a booster of their splendid tone, excellent, all-around performance. In short, they're sets you will sell with confidence.

Trademarks "RCA Victor," "Victrola" and "Victor" Reg. U. S. Pat. Off. by RCA Mfg. Co., Inc.



Your customers can take their favorite programs with them with this

## New RCA Victor Pick-Me-Up Radio...

ONLY  
**\$16<sup>45</sup>\***  
 (less batteries)

Illustrated is Model 94BP1. Not only is this instrument amazingly low in price—but look at all the sales features it offers!

1—Plays indoors or out. 2—No house current needed. 3—No external wires. 4—Nothing to connect. 5—Long-life Batteries. 6—RCA Victor Tubes. 7—Powerful super-heterodyne circuit. 8—Completely self-powered. 9—Low operating cost. 10—Covering of newest type airplane luggage cloth, available in attractive colors.

Also available at slightly higher prices in black and brown embossed genuine cowhide with cover to protect front while carrying. Cover is easily removable and snaps on rear while radio is playing.

## This new RCA Victor Table Model will be a Business-Getter for You!



Why? Because in addition to domestic and police reception of high calibre it is just about the finest short-wave table model RCA Victor has ever made at anywhere near its price. And with it your customers will be able to keep in "on the spot" touch with European affairs no matter where they go this summer! Besides its amazing short-wave ability, this radio offers many other excellent sales features including Edge-Lighted, Angle-Vision, Straight-line Dial. It's an instrument that can't miss. Model 5Q55, it comes in rich brown plastic cabinet of simple sweeping modern lines. Only . . . **\$29<sup>95</sup>\***

For finer radio performance—RCA Victor Radio Tubes. Trademark "RCA Victor" Reg. U. S. Pat. Off. by RCA Mfg. Co., Inc. \*All prices f.o.b. Camden, N. J., subject to change without notice.



# RCA Victor

RCA Mfg. Co., Inc., Camden, N. J. • A Service of Radio Corp. of America

# Profits with Merchandise for Summer Selling!



# LOOK!

A Portable RCA Victrola  
for only **\$9.95\***



Model O-10 offers good musical reproduction. Compact, light, convenient, with space for carrying records. Black, moisture-resistant cover.

**W**HEN people discover how much fun it is to have Tommy Dorsey playing by the side of the swimmin' hole . . . to have Benny Goodman's music along on that picnic underneath the pines . . . to drink something cooling to the strains of Hal Kemp after a game of golf . . . they will all want a portable RCA Victrola. And now you can offer them one at an all-time low price—only \$9.95\*! Here's another great opportunity to cut yourself in for a big share of summer vacation profits! And remember—every RCA Victrola sale means extra Victor and Bluebird Record sales in the future!

FOR FINER RADIO PERFORMANCE—RCA VICTOR RADIO TUBES



# RCA Victrola

CA Mfg. Co., Inc., Camden, N. J. • A Service of Radio Corp. of America

Here's Another Summer Super-Seller!  
RCA Victrola R-98



Here's an instrument designed for the critical judge of music. It has an 8" speaker, 12 watts output. Offers your customers the convenience of compact styling and, in addition to providing the type of musical reproduction that will appeal to lovers of fine music, it is also ideal for your own record demonstration booths and for sale to schools. See your RCA Victor distributor for details about a special plan in connection with this instrument. **\$79.95\***

\*All prices f.o.b. Camden, N. J., subject to change without notice.

# When, Why and How



**A**T this season of the year when the big fish are beginning to splash in quiet pools underneath the willows, guides are in demand who can lead you to where the best sport may be found. You hire guides because, even if they miss a lot of the time, their guess as to where the fish are lurking is better than yours.

If in some way fish could be persuaded to telegraph first hand say-so as to where they are staying and what they are eating, it would be front page sport news.

Facts recently prepared by the Princeton University Radio Project are as revealing to radio dealers as the foregoing would be to sportsmen. Up to now the radio user has rarely gone on record as to how he thinks and feels. That has at last been put down in a study made by dozens of apple-cheeked boys and girls. The Rockefeller Foundation put up \$67,000 for a two year study, which, while not yet completed, has already yielded much valuable information. Findings published in a recent issue of the Journal of Applied Psychology, when translated into sales language, will be useful in charting solicitation and presentations. For example:

A sampling of 2,403 Book of the Month Club members was broken down into three types of radio owners:

1. *Responsive listeners*—who hear 4 or more weekly programs and who would miss radio a good deal if theirs were taken out.
2. *Intermediate*—who hear 4 or more weekly programs or who say they would miss their radio a good deal—but not both.
3. *Detached*—hear less than 4 programs and would miss radio little or not at all.

When these people are tired, this is what they say they like to do best:

Preferred activity	Group I Responsive	Group II Intermediate	Group III Detached
Reading . . . .	39.3%	52.7%	67.5%
Radio listening	37.5%	25.3%	10.7%
Something else . . . . .	23.2%	23%	21.8%

A second question propounds itself—“Where do you like to hear news?” This was the answer:

Preferred source	Group I	Group II	Group III
From reading	45.4%	55.1%	82%
From the radio	40%	29.5%	10%
Reading and Radio . . . .	12.6%	10.4%	3.7%
Other sources	2%	2%	3.7%

Now then, we begin to see that certain groups apparently do not go for radio as heavily as others. Who are they?

	Male	Female
Group responsive to radio . . .	27%	38.2%
Intermediate group . . . . .	36%	34.4%
Detached or less interested group . . . . .	36.5%	27.4%

What is the relationship between “radio-mindedness” and the age of the customer?

	27 or younger	Age 28-42	Age 43 or older
Responsive group . . . . .	41.2%	34.2%	27.9%
Intermediate group . . . . .	33.2%	36.9%	33.4%
Detached group . . . . .	25.6%	28.9%	38.7%

Thus it is easy to see that the easiest person to sell a radio is women of 27 or younger. Older people are far tougher to sell simply because they do not have the listening habit. Appeals to specialized interests are needed to reach men and older customers. There is a definite tie-up between people who do not listen to radio, and who have little interest in them.

**E**VER since its start, automobile radio has been subject to attacks as causing diversion of the driver's attention, and hence a threat to safety.

Now Princeton's-Edward A. Suchman has tied the final can to the tail of auto radio menace by his

study of the effects on New York taxicab driving, comparing accidents suffered by fleets with and without car radio. He shows that radio has no adverse effect on the safety of cab operation. In fact, his sunning up of car radio virtues reads like this:

1. Induces slower driving.
2. Keeps motorist alert, especially at night, by breaking monotony and drowsiness.
3. Reduces disturbing conversation, arguments, and back seat driving.
4. Reduces impatience and annoyance with traffic, and cuts down light-jumping.

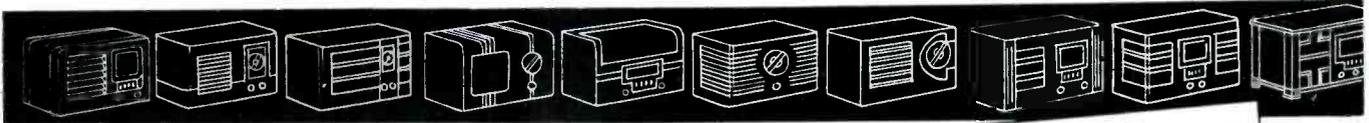
In the taxicab-equipped radio, it turned out that the greatest amount of listening was done between 8 p.m. and 4 a.m. Women listen more than men. As the number of passengers increases so does the amount of listening. The least attention is paid to radio by couples, men and women. Three out of four want music. One-half the people entering a cab change the program.

The passenger reaction to radios in taxicabs was something like this; twice as many turned it on as off.

- Experiment A:* Radio on at beginning of ride
1. Left it on, 81.9%
  2. Turned it off, 18.1%
- Experiment B:* Radio off at beginning of ride
1. Left it off, 69.9%
  2. Turned it on, 30.1%

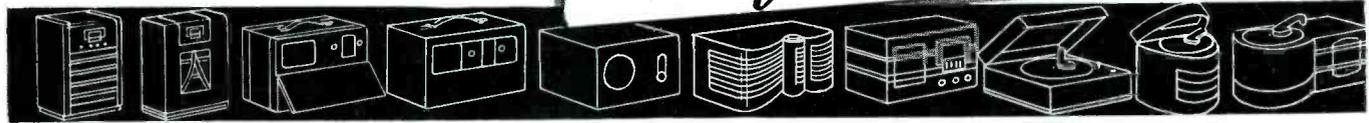
A study made by Frances Holton on radio among the unemployed showed these habits, all of which contain the germ of sales appeals:

1. Children go next door when the family does not have radio.
2. Radio is the chief diversion; goes all day.
3. Radio is essential for social life among the poor; couples dance to it; learn songs from it; it is a social tool.
4. Radio is one of the means of parental control. Mothers turn it off as punishment when the kids behave badly; use it to maneuver youngsters off the street for bedtime.



**Sonora**  
Presents

the "Clear as a Bell Line"  
... for 1940!



...A COMPLETE LINE...41 MODELS..."TEENY-WEENYS"...COMPACTS...MANTEL TYPES...



**MODEL TV-48.** A magnificently styled new AC-DC Superhet in one of the smartest plastic-molded cabinets ever created. Tunes 1720 to 535 K.C. Features include: new 150 mil tubes—no ballast, no heater cord; P.M. Dynamic Speaker; 1½-Watt Output; A.V.C.; large molded Full-Vision Dial; attached 20-foot antenna hank. Size: 8¾" x 4¾" x 3¾". Available in Ivory or Walnut. A sensational Style and Value Leader!



**MODEL TM-49.** America's lowest-priced Automatic Tuning Radiol A brilliant AC-DC plastic-molded Superhet. Tunes 1720 to 535 K.C. Built-in "Sonorascope"—no aerial, no ground required; no ballast tube or heater cord; 5" P.M. Speaker; 1½-Watt Output; A.V.C.; effortless ¾" stroke 4-Button Automatic Tuning; Full-Vision Drum Dial; size: 11½" x 6½" x 5¾". In Ivory or Walnut.



**MODEL TK-44.** A value leader using the new 150 mil tubes. No ballast tube, no heater cord. Tunes 1720 to 535 K.C. 1½-Watt Output; P.M. Dynamic Speaker; 20-foot built-in attached antenna hank; beautiful Gem-laid dial. New cabinet creation is of Walnut with Gold band overlay. Size: 7¾" x 5¼" x 4¾"



**MODEL TN-45.** Another 1940 AC-DC Superhet of outstanding beauty and appeal. 1720 to 535 K.C. range; built-in "Sonorascope"—no aerial or ground needed; new 150 mil tubes—no ballast or heater cord; 1½-Watt Output; A.V.C.; 4" P.M. Dynamic; Gem-laid Dial. In a new style sensation wa'nut cabinet, 8¾" x 5¾" x 5¼"

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A GREAT  
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**MODEL TT-52,** A 1940 SONORA Smash Hit! An A.C. Superhet with "Umph!" Tunes 1720 to 535 K.C. Presented in an entirely new type of walnut table model cabinet of rare and appealing artistry. Features: built-in "Sonorascope"—no aerial, no ground required; 5" Electro-dynamic Speaker; effortless ¾" stroke 4-Button Automatic Tuning; 2-Watt Output; new 1-piece Tenite-molded escutcheon and dial crystal, 5¼" x 4¾"; Gem-laid dial face. Size: 13" x 11" x 7½". A 1940 SONORA Sensation!

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A GREAT NAME SINCE 1914

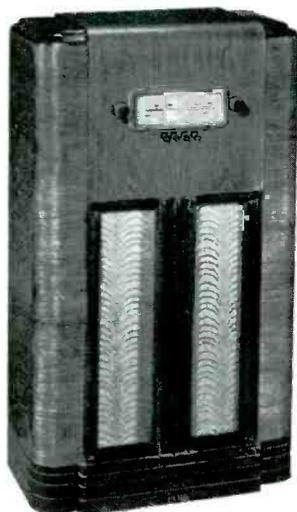


## Sensational New Receivers By Howard!

### *The Symphonia*

Finest Automatic Record Changing Phono-Radio Combination at

**\$89.95**



**Model 444**  
List \$39.95

America's oldest radio manufacturer brings to a select group of distributors and dealers the wealth of these many years of experience, in 1940 radio designs. Designs keyed to the fast tempo of today's value seeking market, built with traditional Howard quality and performance, carrying real profit margins—Howard warrants your attention.

Choice territories are still open for outstanding household set distributors. Cooperative local advertising, point of sale window display helps, distinctive sales literature and national acceptance of the name Howard assures quick profitable turnover of stock. All models wired for television audio channel! Space limitations permit only three models which are representative Howard values to be illustrated. **Wire or write immediately** for complete information!



**Model 305**  
List \$29.95

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# RECORDS

*reach*

# The GRAVY

By TOM BLACKBURN



**T**AKE it from Johnnie P. Rush, who knows his groceries, that it takes everything from pork chops up to ice cream and cake to really hit all the facets of an average man's appetite when he sits down to dinner. So, in offering records to the public, Rush feels that he has something else to tickle the public appetite—like salted pecans.

Down in Alexandria, Louisiana, a town of 23,025, and in an out of the way location at that, he has proved his premise. His is a spot a full mile out of the downtown district. He has a setup that sells gasoline, tires, shotguns, BB's for air-rifles, minnows for fishing, groceries, gifts, radios and electrical appliances.

Shrewdly Rush has capitalized on the fact that the carriage trade does not like to waste a lot of time looking for a place to park. His isolated location permits one to drive up, shop, and get out quickly.

"A year ago," he told us, "we saw that the radio fan was swinging toward records. We hadn't the ghost of an idea of how many people would buy records in a town the size of Alexandria. But we did see that records were another sure means of attracting traffic into a major appliance store, something that is always an asset. So we hired Bonnie Middleton, who used to sell records in the old days of phonographs, to come in and start the record department. If we got traf-



**EXPERIENCED HELP NECESSARY**—Store manager Jack E. Pierce knew that records wouldn't sell themselves, hired Bonnie Middleton, who knew the subject, to put them over

fic it was O.K. If we broke even, that was better because we knew we were looking into the future."

So Bonnie Middleton opened up her little booth. In a year's time the department has done this for the store:

(1) Attracted the carriage trade. Fully 80 per cent of the record buyers are owners of combinations, which automatically places them in the upper strata of income brackets.

(2) Ten per cent of the customers

who come in and buy records actually are still playing old phonographs and are meat for the sales department.

(3) Ten per cent of the record buyers have table sets.

Rush operates on the theory that if you feed a man a square meal he will take some dessert. He sells a lot of staples, and the major appliances he moves gives him some apple pie business.

Last year he did a business of  
*(Continued on page 110)*

**BETTER THAN CAN-VASSING**—Says Johnnie P. Rush: "80 per cent of all platter buyers here own combinations, are the town's top notchers for major appliances. Ten per cent are still playing old phonographs and the remainder have table type radios"

# Trade-In Allowance Control

By FRED MERISH

COMMISSIONED by the Editors to (a) investigate radio trade-in practices at present in vogue and (b) to report methods limiting losses on such transactions, the author and his staff have just completed several months of intensive study in New England and the middle Atlantic states.

Stripped of non-essential details for the busy reader who wants facts, here are our findings (a) in brief:

1. At this writing seventy per cent of all dealers contacted have no fixed policy relative to trade-ins, handling each transaction individually on a horse-trading basis.

2. Forty per cent of the dealers interviewed attempt to limit allowances to 10 per cent of the new set's sale price, but are readily induced to exceed this figure where used radios offered are relatively new or where the new radio is in the upper price brackets.

3. Allowance percentages generally increase by questionable leaps with the price of the new set, models selling for more than \$150 carrying with them nearly double the percentage allowed against models going for \$50 or less.

4. Rigidity of allowance policy seems to bear little relation to what competition is doing, depending largely upon the determination of the individual dealer to reduce losses from this source regardless of location.

5. By far the majority of radio receivers taken in trade are still junked.

6. There is a rapidly growing tendency to refuse trade-in allowances of any kind when new radios in the extremely low price-brackets are purchased. This last mentioned point is, perhaps, the only major departure in trade-in practice noted by comparison with those reported in these pages in recent years.

The importance of minimizing

losses from this source is, however, more widely recognized by dealers who realize that an operation can easily become unprofitable because of such losses, despite good management in every other respect. Methods of correction vary widely, but the following suggestions gleaned from dealers apparently suffering least are considered good answers to the Editors' second requirement (b) and should help the reader's thinking on this subject:

**P**ROFIT and loss statements of those dealers most rigidly adhering to reasonably fixed trade-in allowance policies definitely indicate that, despite obvious additional sales resistance, net earnings at the end of the year are higher. The trend should certainly be in this direction.

It was particularly noted during field work that large outlets, in business for many years and employing control systems set up by merchandising experts, frequently required salesmen to secure the ok of the department manager before quoting allowances beyond a certain fixed maximum percentage. Clearly, it would be distasteful for the salesmen to request special consideration too often and so a measure of control is exerted.

A number of dealers were found who, in tight spots, frequently tell the prospect requesting an exorbitant allowance right out that, as most used sets cannot be re-sold, such allowances merely constitute a discount and that the organization's merchandise does not have a sufficient margin to permit this and still render adequate service guarantees. Such frankness, we were told, works surprisingly well in many instances.

Few of the larger dealers and department managers permit salesmen to decide upon allowance figures unless at the same time the store's system provides an incentive to keep

it low. Fifty-fifty splits with the men on savings against privately agreed upon maximums are common. Some dealers offer a bonus to the salesman with the lowest weekly ratio of allowances to sales. Still others establish an allowance "ceiling" and then split any effected saving with the entire sales staff.

One of the extremely interesting things noted during field work was the relative ease with which certain dealers either lowered allowance percentages or eliminated them entirely when in a position to offer extremely liberal time-payment terms on the new set. Credit extension is, clearly, a powerful weapon against price-cutting of any kind, but each individual dealer must, naturally, determine how far he can go in this direction without jumping from the allowance frying-pan into the financing fire.

Bane of most dealers' existence is probably the walk-in who first asks for an allowance quotation. Suggestion of several is to refuse to commit yourself in the store but to offer to quote after examining the set, it is the consensus of opinion of all instances in which this was tried by one operator, permission to call was extended. And on 43 per cent of the calls sales resulted without excessive allowances.

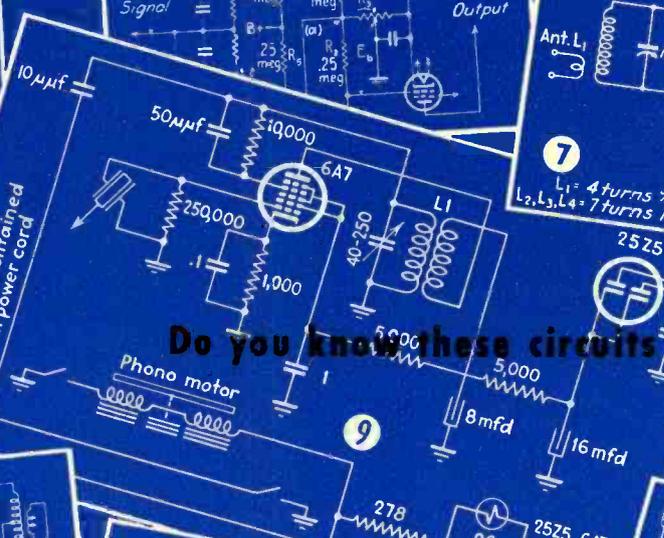
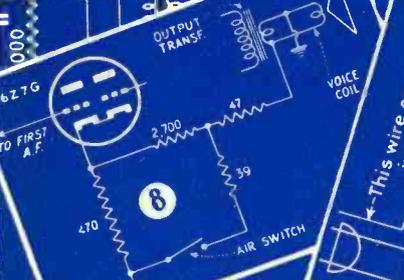
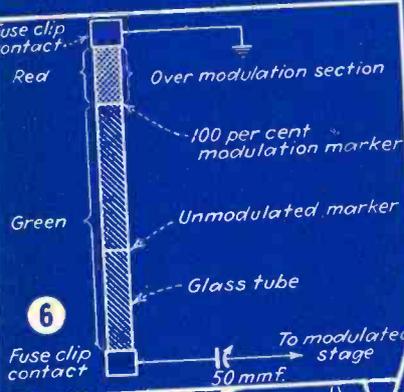
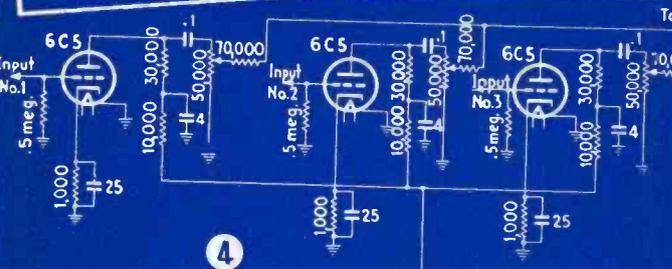
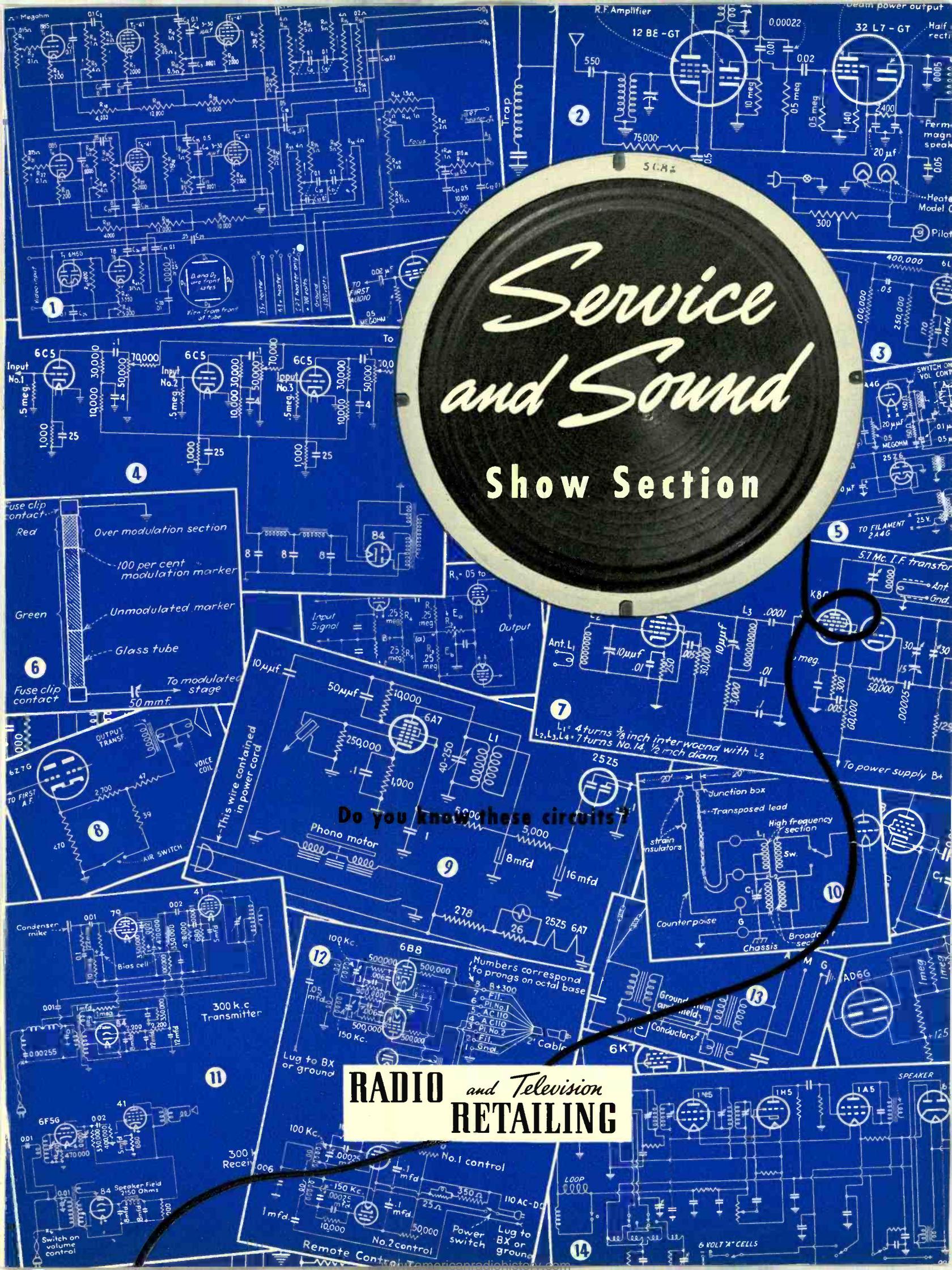
A number of retailers are putting practical teeth in an old idea by listing philanthropic organizations that need radios, showing such lists immediately to prospects with whom they anticipate trade-in trouble. Many of these dealers place themselves in a favorable light by offering to recondition such sets free of charge.

Little worked idea that seems particularly practical to this writer is to point out to prospects the value of their old set as a second set, its potentialities in a summer camp, the way it brightens up cellar recreation rooms. It is surprising, several dealers report, how many people never think of such

*(Continued on page 110)*

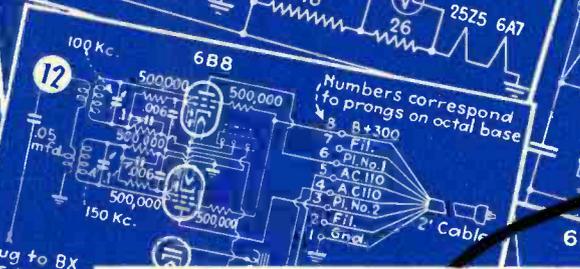
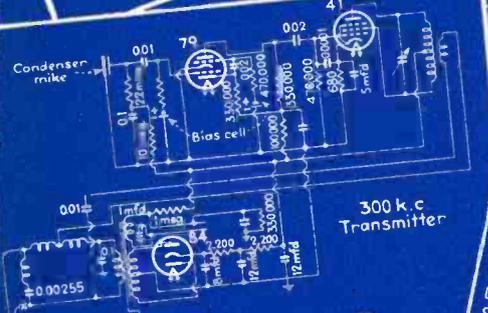
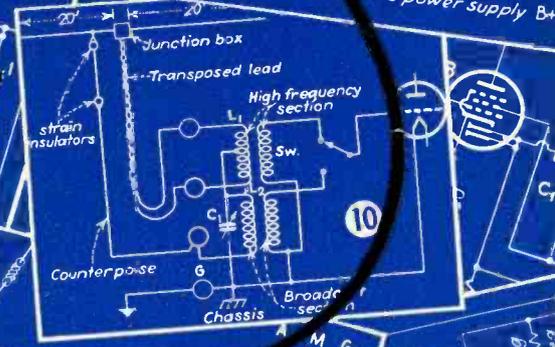
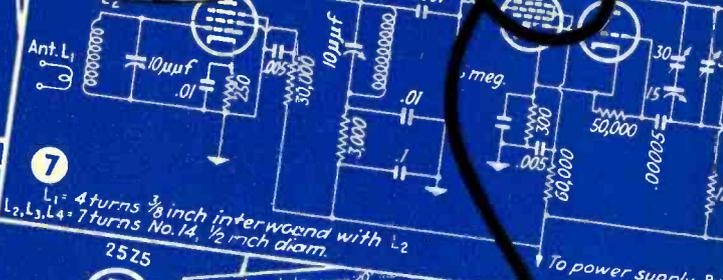


# Service and Sound Show Section

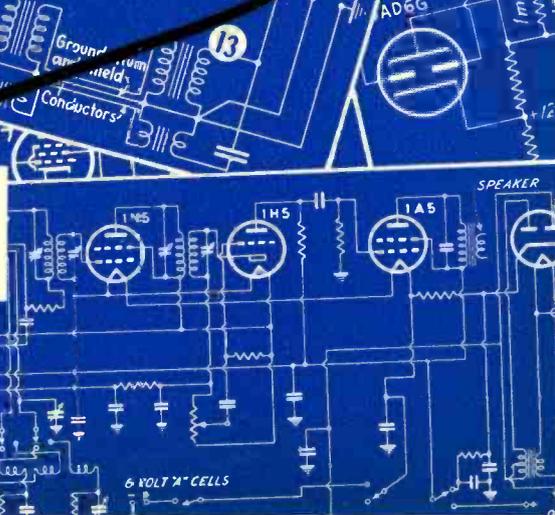
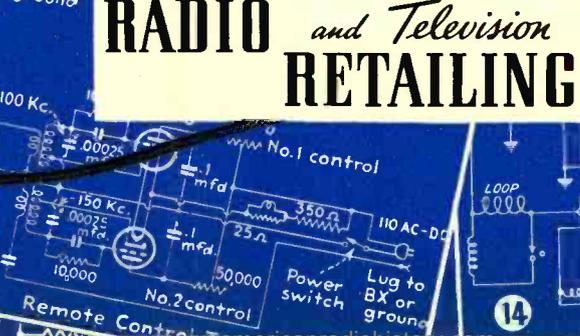
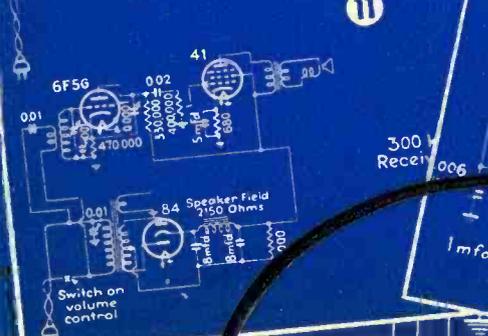


This wire contained in power cord

Do you know these circuits?



## RADIO and Television RETAILING



# Circuits You'll See Tomorrow

Preview of new developments under discussion in radio, sound, test instrument and television laboratories likely to influence installation, adjustment and repair procedure

By DONALD G. FINK

THE spring and early summer months are traditional for behind-the-scenes activity in radio engineering. New ideas are being tested, discarded or accepted. A quick check into the laboratories has revealed much more activity than appears on the surface.

### Further Plans For Loops

Take loop antennas for example. The modern era in loop antennas started with the use of a shielded loop in a console receiver. Then the loop was adapted to a midget ac-dc set with startling results. From there it was but a short step to the battery-operated portables which have proven in many ways to be the bright spot in radio retailing since the beginning of the year.

Now it appears that by fall the cycle will have completed itself. Loops will be used in nearly all types of sets up to and including the larger table models. In smaller sets the shielding will be dispensed with, in most cases, because shielding decreases sensitivity in nearly the same proportion that it improves the signal-to-noise figure. But in the larger sets, where plenty of sensitivity is available, the loop will probably revert to its shielded form. Many of the larger console sets will be loop-equipped as well (some say that at least one console model in every line will be loop-equipped). Some sets will have provision for rotating the loop, others will depend on high sensitivity to bring in the stations without changing the loop position.

Thus far no one knows how to make a loop perform efficiently on the shortwave bands. Auxiliary antenna-ground posts will, however, be universally provided. Antenna installations will be tailored directly for shortwave reception, in these cases.

There is a very good possibility that the better grade sets (and many

of the intermediate price-range sets as well) will make use of r-f stages of simplified design. The cue for this development has already come in the auto set field, where r-f stages have been coupled to the converter tube either in an untuned transformer, or in straight resistance coupling. This system avoids an extra section of the gang condenser (which is expensive and which, unlike the extra tube involved, is not appreciated by the buying public).

When the untuned transformer is used, a slight improvement in image ratio results, especially on the high

frequency end of the broadcast band. In the resistance case, the advantage is simply increased gain (most of the stages are restricted to a gain of between 2 and 5 times, by the use of a low value of plate load resistor) which in turn provides a better ratio of signal to tube and circuit noise. At a time when manufacturers are looking for excuses to put tubes into sets without adding too much incidental expense, this arrangement has much to recommend it, since it offers a real improvement for the cost of the tube, socket, two resistors and paper tubulars. Accordingly, we may expect to find untuned coupling arrangements between r-f and converter tubes in sets outside the auto field.

### P. M. Costs To Drop

A decrease in the price of magnet material for p-m speakers has brought the five-inch p-m speaker into a competitive price level with the field-excited type. The result is that increasing numbers of midget receivers will be found with p-m speakers. The reason is that a p-m speaker sounds better than an electro-dynamic which is underexcited (and the one half-watt of power supplied to most midget speakers constitutes gross underexcitation). Better quality sound from midget sets is the net result.

Filter systems are being redesigned to do without the field coil as the filter choke. The plate of the output tube is usually connected directly to the rectifier, and a resistance-capacity type filter used for the low plate current requirements of the other tubes in the set.

### Multi-Purpose Tubes

It is difficult to say just how much use will be made of new multi-purpose tubes. Two-tube midget sets using a dual pentode triode, and a beam-output-rectifier combination

### TITLE PAGE DIAGRAMS

(Page 41)

1. Television Transducer  
(Details p. 47, Feb. '38 issue)
2. Two Tube Receiver  
(p. 53, March '39)
3. Degenerative Amplifier  
(p. 57, July '38)
4. Electronic Mixer  
(p. 45, Aug. '38)
5. Diversity Coupler  
(p. 66, Feb. '39)
6. Modulation Indicator  
(p. 73, Oct. '38)
7. Ultra-High Converter  
(p. 74, April '39)
8. Auto Air Switch  
(p. 74, Apr. '39)
9. Wireless Record Player  
(p. 70, Oct. '38)
10. Noise Reducing Antenna  
(p. 58, July '38)
11. Wireless Communicator  
(p. 49, Dec. '38)
12. Wireless Gain Control  
(p. 67, Nov. '38)
13. Two Channel Antenna  
(p. 44, Aug. '38)
14. Dry Cell-AC Portable  
(p. 54, March '39)

have been available for some time. The latest tube in this line is the first triple-purpose tube on record, a diode-triode-pentode 25D8GT, designed for use as a combined i-f amplifier, detector and a-f amplifier. This tube, combined with the beam-output-rectifier tube can make a very respectable superhet in two tubes, or an "advanced" superhet with three tubes. But in view of the public's apparent insistence on judging a set by the number of tubes it contains, it remains doubtful how much use will be made of multipurpose tubes except for the lowest price ranges.

#### Record-Changer Developments

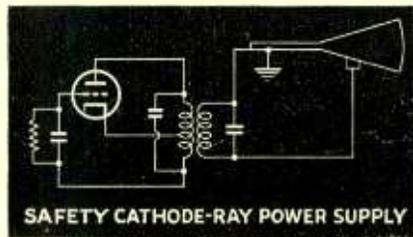
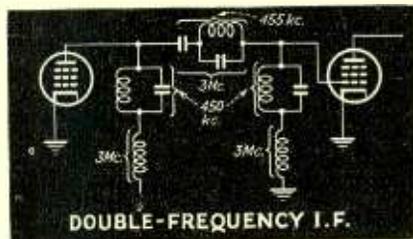
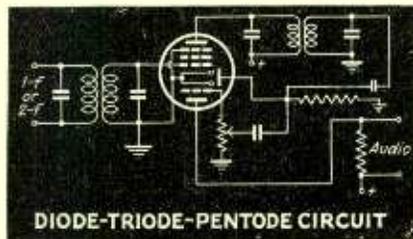
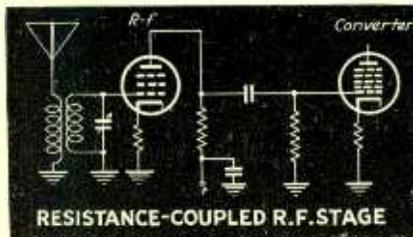
At the opposite end of the price scale, up to now, has been the automatic-record-changing phono-radio combination, which has usually been the most expensive model in each line. This fall, or possibly sooner, two or more simplified record changing mechanisms will make their appearance. The cost of these changers will be roughly one half that of current designs, and the performance substantially the same.

The predictions are that the phono combination business will be given a further stimulant by the appearance of 6 or 7-tube combinations with record changer to list at slightly less than \$100.00. This figure is way under the present list prices for equivalent mechanical equipment, and should act as a correspondingly great incentive to build up the growing disc-dial market.

#### Novel U. H. F. Schemes

The advent of television as a factor in the selling of sound radio receivers has forced manufacturers to produce receivers which can readily be used with television attachments, since this type of merchandise is easy to sell in the face of sales resistance based on "televencialities".

Present television attachments include the sound channel up to the output of the second detector, hence only an output tube and speaker need be made available for use with the attachment. Some manufacturers are considering the use of a television switch on the sound radio which cuts out the tubes not in use, and thus saves a portion of the power bill. Others have taken the bull by the horns and provided a good ultra-high-frequency band in the sound receiver for all around use: television, facsimile, or sound broadcasting.



One very interesting arrangement has been proposed for this u-h-f band, and the odds are in favor of its working out. For the broadcast band and the two conventional short-wave bands, a 455-kc i-f system is employed. When the oscillator and antenna circuits are switched to the u-h-f band, however, an intermediate frequency of approximately 3,000 kc is generated. The advantage of this high intermediate frequency lies in the fact that the pass-band can be made broad, with steep sides, this providing room in which the oscillator frequency may drift without material sacrifice of selectivity beyond those limits.

Push-button tuning on the u-h-f band is thus made a practical possibility. The disadvantage is that two sets of i-f transformers may be required, and must be switched, and further that high gain tubes (like the 6AC7/1852 or the 6AB7/1853, used in television i-f and video circuits) might be required. But here a clever idea enters. It is possible to design a single i-f transformer that will display adequate amplification

and selectivity at *two* different i-f frequencies, provided that the two i-f's are far enough apart. It is quite possible to construct units which act both at 455 kc and 3000 kc. Thus no switching of the i-f units is necessary, and comparatively simple antenna trap circuits may be used to restrict spurious signals on the i-f pass-band not in use. This system has much to recommend it for use in complete television plus all-wave receivers, as a means of reducing the total tube complement and associated components.

#### Pushbuttons Plus Permeability

Push-buttons will continue to be of the mechanical type in the cheaper sets where only the broadcast band is provided. This type of tuning is less suitable when it must be applied to the tuning gang through a step-down ratio for the shortwave bands, since the action is then apt to be stiff.

An interesting variation of the mechanical type of push-button tuning, whose pros and cons are now being studied in the laboratory, is the use of a mechanical system of moving an iron core inside the oscillator and antenna coils. This system eliminates the variable condenser altogether. The cost is about the same as the gang condenser, the space occupied is much smaller, and accuracy of resetting on calibration is superior, provided that the iron cores are held within suitable tolerances. It is not beyond the realm of possibility that we may see this fall some small sets with no variable condensers.

So far as can be determined, the decision on this development is still up in the air, pending the completion of cost and performance analyses.

#### Unique "Safety" Power Supplies

In the field of television, nearly everything is new, but among the newest things is a high voltage (7000-volt) power supply which is perfectly safe, even when touched with the juice on. The source of high-voltage a-c is an r-f oscillator feeding a suitable step-up transformer. There is no reason why this r-f voltage should not be rectified conventionally, but if it is high enough in frequency, it may be applied directly to the cathode-ray tube without rectification. In this case it

(Continued on page 88)



**"MONORAIL" OHMMETER** — Joseph Scotti; rides his volt-ohmmeter monorail style on two pulleys running on a tight wire across the bench, substitutes his signal generator for the oscillators in superhets with unknown i.f.'s



**ALIGNMENT BY REMOTE CONTROL** — Harry Dodge trims up receivers in police cars at his curb by hooking an antenna to his signal generator inside the shop



**BRUTE FORCE PLUS BRAINS**—W. C. Siegrist tags intermittents by boosting line voltage with an auto-transformer, watching for part failures on the screen of his oscillograph

## Tricks With Testers

While conventional uses for modern instruments are fairly well understood, few technicians know the fine points herein described that give them even greater flexibility and usefulness around the shop

**A** SIGNAL generator is primarily what its name implies and is usually employed with a direct connection to a radio set under test.

Harry Dodge, of Dodge's Radio Service, mounted such a generator permanently in his test bench and then found that he was faced with the problem of setting push-button tuners on police-owned cars as they pulled up in front of his shop. A wire from the r.f. output of the generator served as an aerial and with the generator set for the Chicago police frequency, a signal was easily radiated to the car at the curb in front of the shop.

A few turns off the oscillator coil of the high frequency push-button tuner permitted alignment on the oscillator section with the *remote* signal generator.

Utilizing a signal generator for another purpose, Joseph Scotti, of A Complete Radio Service, plugs the output of the unmodulated r.f. into the plate prong of the oscillator tube socket in old time super-heterodynes

By E. F. STAUNTON

to check the frequency with which he must beat an incoming signal to get a response through the i.f. channel and to quickly test if the set's oscillator is doing business.

Scotti has provided himself with an everready volt-ohmmeter by suspending it from two pulleys on a wire stretched across his service bench.

Pumping up the line voltage with a special tapped auto-transformer and using his oscillograph as an instantaneous distortion indicator, W. C. Siegrist, of American Radio Laboratories, has found a method of spotting "faders" in a hurry. The high line voltage breaks down leaky condensers in quick order and brings on the troublesome fading condition, saving hours of time waiting for the set to fade of its own accord.

If he does have to wait, the scope

makes a silent substitute for the speaker.

The accuracy with which modern broadcast stations are required to maintain their transmitted frequencies provides a means of checking or recalibrating the high frequency ranges of a signal generator. For example, tune in WHO, on 1000 k.c. and set the signal generator to zero beat with it; then a harmonic of the signal generator can be tuned in on a short wave receiver at intervals of 1000 k.c. up to 10 or 15 megacycles.

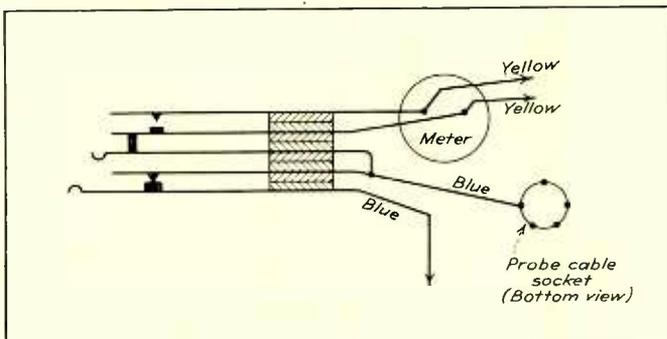
Assume that the 10 megacycle harmonic can be located, then shifting the signal generator until its fundamental comes in at 10 megacycles permits a check on the calibration of the generator and of the set. The 10 megacycle signal will produce harmonics at 10 megacycle intervals which permits further check of the generator's high frequency calibration and the accuracy of the receiver's dial calibration.

Servicemen handling a number of the same make of receivers are find-

Power Level DB	Power .006 Watt at 0 DB Watts	Volts—Based on .006 Watt at 0 DB in 500 ohms
10	0.0006000	0.5477
9	0.0007553	0.6145
8	0.0009509	0.6895
7	0.0011972	0.7737
6	0.0015071	0.8681
5	0.0018975	0.9740
4	0.0023886	1.0928
3	0.0030071	1.2262
2	0.0037857	1.3758
1	0.0047660	1.5437
0	0.0060000	1.7321
+ 1	0.0075535	1.9434
+ 2	0.0095093	2.1805
+ 3	0.0119716	2.4466
+ 4	0.0150713	2.7451
+ 5	0.0189747	3.0801
+ 6	0.0238865	3.4559
+ 7	0.030071	3.8776
+ 8	0.037857	4.3507
+ 9	0.047660	4.8816
10	0.060000	5.4772
11	0.075535	6.1455
12	0.095093	6.8954
13	0.119716	7.7368
14	0.150713	8.6808
15	0.189747	9.7400
16	0.238865	10.9285
17	0.30071	12.2620
18	0.37857	13.7582
19	0.47660	15.4369
20	0.60000	17.3205
21	0.75535	19.434
22	0.95093	21.805
23	1.19716	24.466
24	1.50713	27.451
25	1.89747	30.801
26	2.38865	34.559
27	3.0071	38.776
28	3.7857	43.507
29	4.7660	48.816
30	6.0000	54.772
31	7.5535	61.455
32	9.5093	68.954
33	11.9716	77.368
34	15.0713	86.808
35	18.9747	97.400
36	23.8865	109.285
37	30.071	122.620
38	37.857	137.582
39	47.660	154.369
40	60.000	173.205
41	75.535	194.34
42	95.093	218.05
43	119.716	244.66
44	150.713	274.51
45	189.747	308.01
46	238.865	345.59
47	300.71	387.76
48	378.57	435.07
49	476.60	488.16
50	600.00	547.72

**HANDY POWER CHART**—You can still check db. level in 500-ohm sound system transmission lines even though your multi-range meter is not calibrated for such work. Charts like this one, figured out by Weston engineers, turn the trick

**VTVM NOISE JACK**—Here's the way you adapt a noise jack described in the text to one typical VTVM, C-B's 88-A. Top contacts make before bottom pair breaks. Wires ending in arrow are not disturbed, only blue plate lead to 6F5 input tube being broken for insertion of bottom pair of jack springs. To use: Plug in headphones. Connect instrument in normal manner to grid or plate of r.f. or i.f. stage to be checked. Set center panel control to RMS volts



ing the channel method of testing a real time saver by setting up a duplicate chassis with leads to the various sections: Thus a receiver under test may be checked using the r.f. circuit of the test chassis and its own a.f. or the a.f. end of the test chassis and its own r.f. circuit.

The defective section is located by actual substitution of the similar section from the test chassis.

While many multi-range meters have a calibrated decibel level scale, countless meters are without this calibration.

In multi-speaker P. A. systems, a check on the power level of the 500 ohm transmission line is a handy means of trouble shooting. The accompanying chart shows the power and voltage for all decibel levels from -10 to 50 d.b. While the average rectifier type a.c. meter has too low a resistance to accurately measure levels below the 0 d.b. level of 6 milliwatts, it is reasonably accurate for a pure sine wave signal on the higher d.b. levels.

Here's a trick which will save many a headache. A phone jack is suggested for probe type vacuum tube voltmeters by which headphones may be plugged into the plate circuit of the, say, 6F5 tube to provide listening tests for noise in any part of a radio. The jack must have an auxiliary set of contacts which are used to shunt the microammeter while the phones are in use.

For those luxurious shops which also have an oscillograph, the same tests can be made using a 2000 ohm load resistor to maintain the continuity of the 6F5 plate circuit. In this service the VTVM acts as a demodulator.

An oscillograph may also be used as a tachometer for determination of the no-load speed of low powered motors. A brass extension on the shaft of the motor with a small iron rivet arranged transversely forms

the armature of a miniature generator. A bar magnet with two legs of soft iron wire, on one of which there is wound a coil of fine wire, serves as the field. As the motor rotates it generates two cycles of a.c. per revolution in the field coil. This a.c. is fed to the vertical plates of the scope and an audio oscillator connected to the horizontal input produces a simple elliptical pattern on the scope when the frequency of both the unknown a.c. and the audio oscillator are synchronized.

Multiplying the audio frequency by 30 gives the speed of the motor in revolutions per minute.

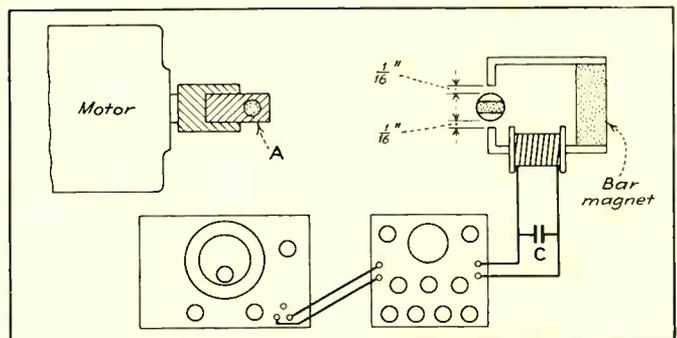
Here are a few tricks with tube testers. First, how about using short checking circuits for testing continuity in ballast tubes? Second, you can calibrate the line voltage regulator of a tube tester in terms of line voltage, thus giving the operator a check on the condition of the a.c. supply while testing tubes.

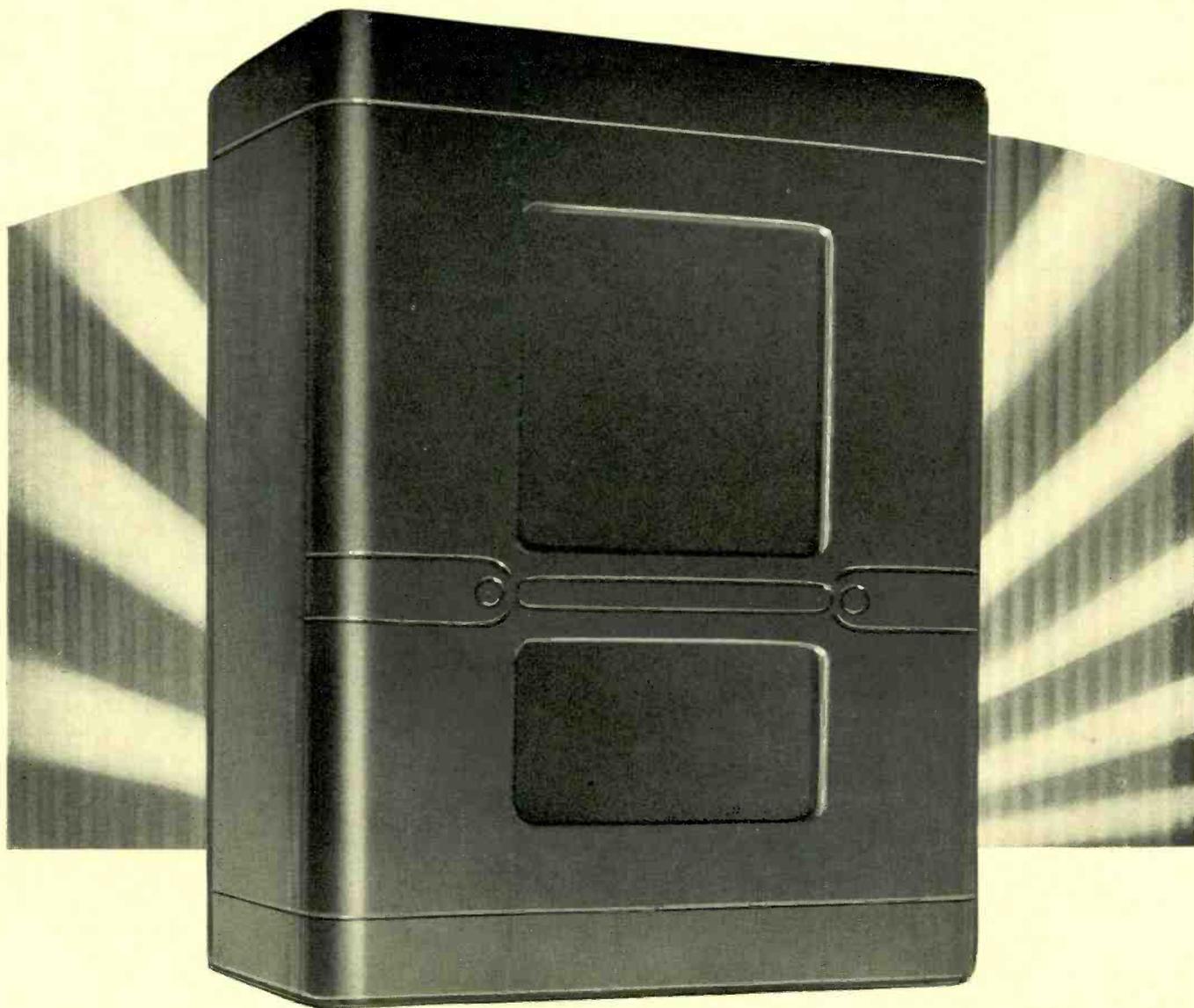
Jack Morris, of High Frequency Laboratory in Oak Park, Illinois, finds washing machine and refrigerator service profitable using conventional radio instruments.

His oscillograph bridged across a series resistor of one ohm in the a.c. line supply gives him a quick check on the condition of the brushes and commutator of an enclosed motor. The ohmmeter serves to locate field shorts and leakage.

The prize story, believe it or not, is that of the service man who was too busy to fix his own radio and rigged up his channel type tester to listen in on a 19 inning Brooklyn-Chicago ball game!

**TRICKY TACHOMETER** — Skeleton schematic of oscillograph and audio oscillator set up to check rotation speed of small electric motor, showing general principle of test operation





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# Today's Television Problems



FIG. 1—This is what happens to a standard television test pattern when an ordinary single wire antenna is used for reception. Severe image distortion is the result of multiple signals arriving at the antenna from different directions and longer paths than the direct signal, causing many ghosts



FIG. 2—An improved image with several smaller ghosts. Note particularly the double and triple images on the letters RCA and to the right of the bottom vertical wedge. No tuning adjustments were made in the receiver between this pattern and that of Fig. 1 or 3. A doublet receiving antenna was used



FIG. 3—Only a single ghost appears in the above pattern. The ghost signal in this case was probably a reflection from the Chrysler building. The intensity of the ghost is sufficiently lower than the direct image so as not to be troublesome when viewing pictures in motion. The reduction in images was achieved by rotating the antenna so the broadside faced the Empire State Building

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Killing "ghost" images. Directional "beam" antennas. Noise. Instructing the user

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By C. A. NUEBLING

*Technical Editor*

**T**HERE are many who refuse to believe in ghosts, but you can't prove it by a television serviceman. For the past month, those who have installed television receivers have, in some cases, been thoroughly haunted by ghosts, more commonly known as double images, reflections, echoes, and less flattering names.

### Reflections

The presence of a ghost or double image, as shown in Figs. 2 and 3, can be the result of either or both of two conditions. Usually it is caused by reflected signals arriving at the antenna later than the direct signal. It can also result from a mismatch in the feeder connecting the antenna to the receiver. The first condition is more common, especially within a few miles of the transmitter and in the vicinity of tall buildings.

If located within direct line of vision of the transmitter, naturally the strongest signal will be received over the shortest path, or through a line drawn through the transmitting and receiving antennas. If any large buildings or obstructions lie either side of this path, signals will be reflected from these obstructions. These will usually be weaker and will arrive later than the direct signal because of the longer path of travel. If reflected signals travel 1,000 feet or more further than the direct signal, a distinct ghost image will appear. Also, since the phase relation of the signals is seldom the same, the signals may add or cancel so that a dark line may appear as a white line, or vice-versa.

Naturally, when we speak of television antennas we refer to a special

system designed for the purpose. This may be a single or double doublet with or without reflectors and directors. Feeder systems commonly employed are twisted pair.

Just as a point of illustration Fig. 1 shows what happens when a long wire is used to receive television signals. Directional qualities of such an antenna are poor, so that direct and reflected signals from all directions arrive in approximately equal magnitude but through different paths.

In order to check the presence of reflected signals the television doublet antenna should be mounted on a long pole. With the transmitter scanning a still pattern (test image), rotate the antenna while checking a single black vertical or diagonal line on the screen for a minimum of blurring or double images, as illustrated in Fig. 3. If the antenna is to be mounted on top of a building, try different positions of the roof. Knowing the path of the direct signal, rotate the antenna until the double image is greatest. The direction from which the reflected signal is arriving is then at right angles to the antenna. Least antenna pickup results off the ends of the antenna. If either end can be pointed to the reflected signal area or areas, and at the same time have the broadside toward the direct signal, the best results are usually obtained. However, this is an ideal condition and is not always the case.

If the reflected signal or signals arrive at only a small angular difference to the direct signal the problem becomes more difficult. The addition of another antenna rod about 2 feet in back of the antenna to serve as a

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110, making ample provision for future tubes with these additional filament voltages available. Has noise test jack and separate line voltage control meter.

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reflector will sometimes help in reducing reflections arriving opposite to the direct signal.

Likewise, a director may be added in front of the antenna. No connection between the antenna director or reflector should be made. For best results the reflector should be a few inches longer, and the director a few inches shorter than the antenna.

Reflections in the feeders rarely arise in twisted-pair types because of the high attenuation at television r.f. frequencies. Low-loss open wire and concentric line would be more susceptible to this trouble but will not be discussed here since they are not in general use.

#### Noise

Certain sections having a high noise to signal level will be found. In such cases it will be necessary to track down the interference source and filter it right at this point, the same as is done for broadcast reception.

Diathermy machines have their own type of interference. The frequency of these machines seldom stays constant. If one should drift across the sound channel it may be identified by its wobbly 60 cycle hash characteristics. On the video channel, it causes a lacy veil to appear on the picture.

Although difficult, diathermy machines can sometimes be tracked down. When found they should be equipped with power line r.f. chokes to remove, or at least reduce the possibility of radiating energy into the power line.

#### Instructing the User

Although instruction pamphlets tell the television listeners what to do and what not to do, it is well to restate a few important points which have been disregarded in various homes and stores which have been visited recently.

Foremost in this respect is brilliance. Up to this time the more light we put on a subject, the better we could see it. However, such is not the case with a cathode-ray tube.

If the brilliance control on the receiver is advanced too far, the picture will lose contrast. In other words, the lighted areas of the picture become brighter, but likewise do the dark areas. Although the light intensity on the screen has increased, the ratio between the light and dark areas, which in reality

make the picture, has decreased. Also, if the screen is operated brightly for long periods, the life of the tube will be shortened.

Always view the picture with the least light possible for comfort. This will result in the greatest detail.

Since television receivers are now

a household instrument, they will be subject to the normal amount of household wear and tear. Caution the owner against sudden jars which might affect tuned circuits, and, in the case of electrostatic cathode-ray tubes, shift in alignment of the deflecting plates.

## TUBES for Television

### CATHODE RAY TUBES

Type Number	Screen Color	Length (inches)	Diameter Screen (inches)	Heater		Base	Type of Deflection	Max. Second Anode Volts	Manufacturer
				Volts	Amps.				
1800	Yellow	21	9 $\frac{1}{8}$	2.5	2.1	Medium 6	Mag.	7000	NU, RCA
1801	Yellow	15 $\frac{3}{4}$	5 $\frac{1}{16}$	2.5	2.1	Medium 5	Mag.	3000	HS, NU, RCA
1802-P1	Green	16 $\frac{3}{4}$	5 $\frac{5}{16}$	6.3	0.6	Magnal 11	Electro	2000	HS, NU, RCA
1802-P3	Yellow	16 $\frac{3}{4}$	5 $\frac{5}{16}$	6.3	0.6	Magnal 11	Electro	2000	HS
1802-P4	White	16 $\frac{3}{4}$	5 $\frac{5}{16}$	6.3	0.6	Magnal 11	Electro	2000	HS, NU, RCA
1803-P4	White	25	12 $\frac{3}{16}$	2.5	2.1	Medium 6	Mag.	7000	NU, KR, RCA
1804-P4	White	21	9 $\frac{1}{8}$	2.5	2.1	Medium 6	Mag.	7000	NU, RCA
1805-P1	Green	12	5 $\frac{1}{16}$	6.3	0.6	Magnal 11	Electro	2000	HS, NU
1805-P4	White	12	5 $\frac{1}{16}$	6.3	0.6	Magnal 11	Electro	2000	HS, NU
906-P1	Green	11 $\frac{7}{8}$	3 $\frac{1}{16}$	2.5	2.1	Medium 7	Electro	1500	HS, NU, RCA
906-P4	White	11 $\frac{7}{8}$	3 $\frac{1}{16}$	2.5	2.1	Medium 7	Electro	1500	HS, NU, RCA
2002	Green	7 $\frac{7}{16}$	2	6.3	0.6	Octal	Electro	600	NU
2005	Green	16 $\frac{3}{4}$	5 $\frac{1}{16}$	2.5	2.1	.....	Electro	2000	NU
7AP4	White	.....	7	.....	.....	.....	.....	.....	KR
12AP4	White	.....	12	.....	.....	.....	.....	.....	KR
34-7-T	White	11 $\frac{3}{8}$	3	2.5	2.1	.....	Electro	1500	DM
54-11-T	White	16 $\frac{3}{4}$	5 $\frac{3}{16}$	6.3	0.6	Magnal 11	Electro	2000	DM
94-11-T	White	21	9	6.3	0.6	Magnal 11	Electro	5000	DM
144-11-T	White	21 $\frac{1}{4}$	13 $\frac{1}{2}$	2.5	2.1	Special 12	Electro	6000	DM

### SPECIAL PURPOSE TUBES

Type	Purpose	Mutual Conductance	Input Capacity	Output Capacity	Grid-Plate Capacity	Amplification Factor	Base	Manufacturer
6R6G	Sweep Amplifier	1450	4.5	11	.007	1160	Octal	AR
6AD5G	Sweep Oscillator	1500	4.1	3.9	3.3	100	Octal	AR
6AG7	Video Output	.....	.....	.....	.....	.....	.....	KR

### RECTIFIERS

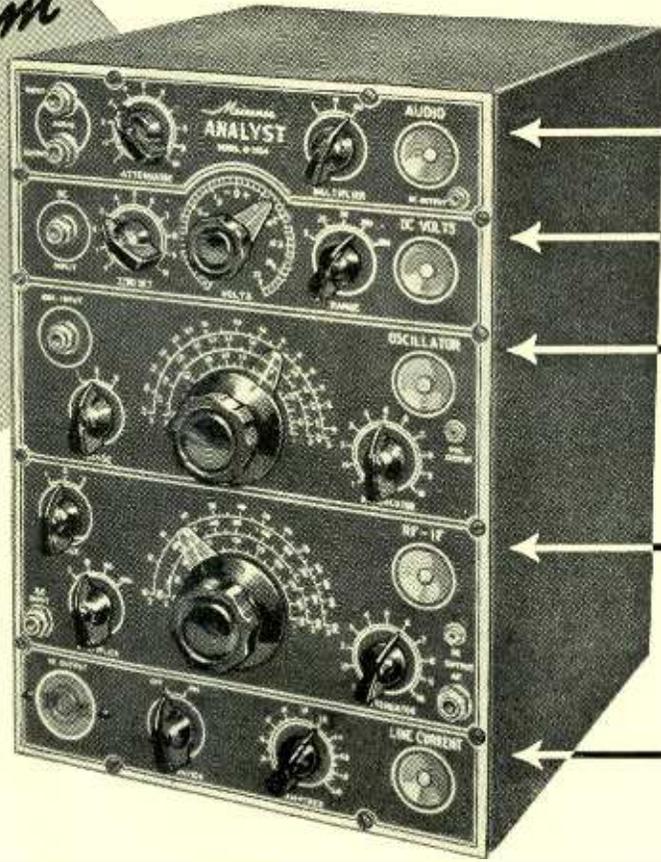
Type	Filament		Plate Milliamperes	Plate Volts	Peak Inverse Volts	Base	Manu-
	Volts	Amps.					
878.....	2.5	5	5	7100	20000	4 prong	HS, NU, RCA
879.....	2.5	1.75	7.5	2650	7500	4 prong	HS, NU, RCA
2V3G.....	2.5	5	2	5500	16500	6 prong	NU, RCA
2Y2.....	2.5	1.75	5	4400	12000	4 prong	AR
5X3.....	5	2	30	1275	3600	4 prong	AR

DM = Dumont HS = Hygrade Sylvania KR = Ken-Rad  
 NU = National Union RCA = Radio Corp. of Amer. AR = Arcturus

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By I. R. HOXIE

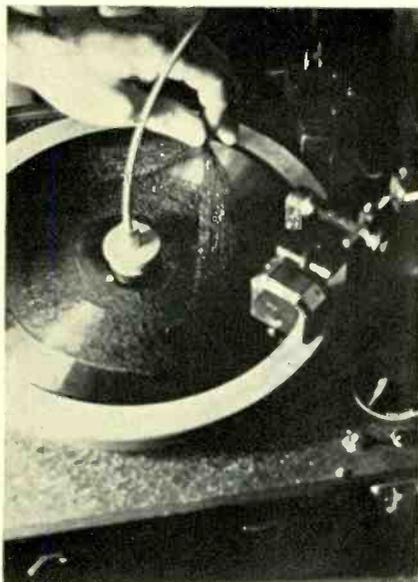


**ADJUST CUTTING HEAD ANGLE**—To avoid “chatter”, “tear”, cuts either too deep or too shallow, the stylus should be at the correct angle with respect to the blank. Two degrees is generally right for acetate



**CHECK TURNTABLE SPEED**—True tone cannot be obtained unless recording and playback are exactly synchronized. Simplest accurate check is by means of stroboscope disc and neon lamp

**WATCH AUDIO LEVEL**—Too much gain causes the stylus to cut into the “land” areas of the blank. Too low a level is generally characterized by abnormally high noise level in the finished disc



**DON'T PLAY WITH MATCHES**—The “thread” resulting from the cut is highly inflammable with most acetate records. Best not to smoke in and around the machine, especially when work is in progress

**HOW HUM SHOWS UP**—Presence of hum in the system is indicated by the peculiar radial pattern on this record. It will show up in this form regardless of what else is recorded



**MEASURE THREAD THICKNESS**—One way to be sure cuts are correct is to measure the diameter of the resulting “thread” with a micrometer. Standard for most acetate materials is .015 in.

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vision test equipment.

Name \_\_\_\_\_  
Address \_\_\_\_\_ State \_\_\_\_\_  
City \_\_\_\_\_

# What to Charge for Sound

By ROBERT S. NASH

**S**INCE the inception of this series on sound equipment in the March 1938 issue of *Radio Retailing* many letters have been received suggesting an article about rental charges.

By using the scale of prices given in the following paragraphs as a guide the soundman will be assured of a reasonable profit at all times. Judgement must be used when employing the scale, of course. For hardly ever are two installations exactly alike. And minor concessions from the basic scale may also at times be good business.

The following are *minimum* prices established and used in several cities. They are designed to be "rock-bottom" quotations covering essential labor operations necessary in the installation, operation and removal of equipment:

## INSTALLATION AND REMOVAL:

One-half hour..... \$1.00  
Each hour..... \$2.00

This charge is over and above operating time charges which follow.

## OPERATING TIME:

First hour..... \$3.00  
Each additional hour..... \$1.00

Figured mainly as labor in operation of the equipment, this scale covers actual time consumed during the performance or program.

Where the performance or program is handled on an afternoon and evening basis and it is necessary for an operator to remain, full scale should be charged. When continuous presence of an operator is not necessary a compromise can be reached by subtracting 75 per cent of the hourly charge during intermission, the remaining 25 per cent covering the extra expense of

returning for an evening session.

## REHEARSALS:

Per hour..... \$2.00

Anyone who has attended a rehearsal of a program where sound is being used will appreciate the difficulties that arise and which make necessary the additional charge as listed above.

## EXTRA SPEAKERS:

One..... \$1.50  
Two..... \$2.75  
Three..... \$3.50

Extra speakers over the two ordinarily furnished are covered by the foregoing, which includes labor in installation. For long wire installations between halls, floors or near-by buildings, an additional charge of \$1.00 per 100 feet is not out of line.

## EXTRA MICROPHONES:

One..... \$1.50  
Two..... \$2.75  
Three..... \$3.50

This is designed primarily for microphones placed in one position or location, as on a stage, along the speaker's platform, etc. Where necessary to run lines to different buildings, other floors, etc., an additional charge of \$1.00 per 100 feet is added.

## TURNTABLE RENTAL:

For non-entertainment and theme purposes..... \$2.00  
Entertainment Purposes..... \$4.00

Non-entertainment or theme purposes is construed to mean use of client's recordings of advertising, etc., or to furnish fanfares, etc.

Entertainment purposes cover any use of band, recorded dance, sound effect records, etc. The charge covers the maintenance cost of a record library and sound effects.

## AMPLIFYING RADIO PROGRAMS:

Additional charge..... \$2.00

This covers the cost of relaying radio programs through a radio tuner to the amplifier and is designed to provide for the extra expense of the equipment and the transportation of same.

## SOUND TRUCKS:

Per Day..... \$5.00  
Mileage..... .07 per mile  
Labor per Hour..... 2.00

Although sound trucks are barred in several cities and in many downtown sections, the above schedule should prove helpful to sound dealers who engage in sound car advertising.

## RENTALS WITHOUT OPERATOR:

8-12 watt amplifier, two speakers, one microphone.. \$5.00  
Extra microphone..... 1.50  
Extra speaker..... 1.50

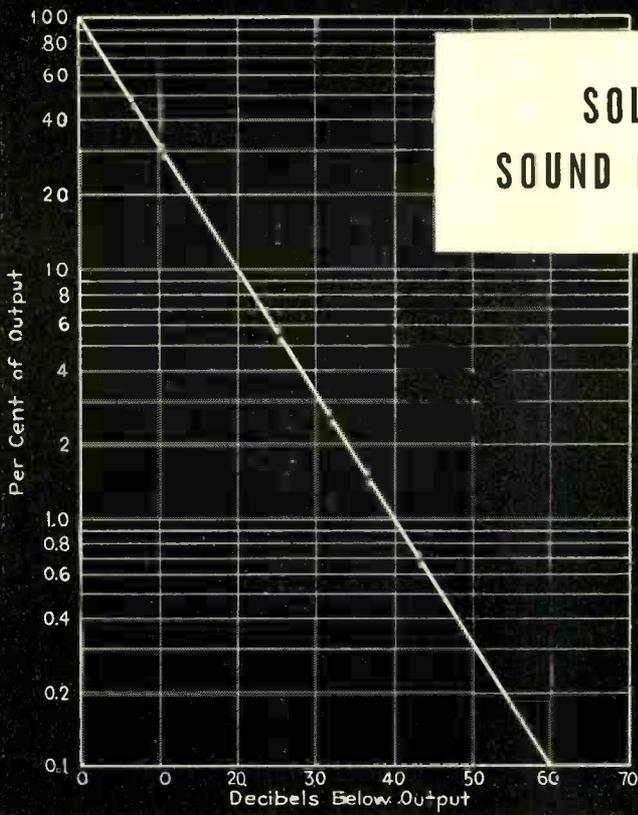
More and more each day it is becoming customary to rent equipment without operators to small groups and permit them to operate it themselves. Small halls and gatherings that could not pay the cost of an operator will often rent equipment alone at a nominal price.

The soundman does not need any labor as it is a "cash-and-carry" proposition and the smaller amplifiers can be operated satisfactorily by anyone after a few simple instructions.

In several cities unions have stepped into the sound rental field to the extent that members are required on all rental installations. By adding 50% to the foregoing scale, soundmen may take care of the \$1.50 per hour labor charge. Unions generally state a minimum of four hours.

To establish a minimum rental price on sound equipment is becoming more and more each month the practice of operators with foresight into the future.

# SOLVING SOUND PROBLEMS



## HUM AND HARMONIC CONTENT CHART

To Find Hum Level or Harmonic Content of An Amplifier In db Below Maximum Output—Measure maximum output voltage at output terminals of amplifier with a vacuum tube voltmeter or output meter, making sure the output is terminated in the proper impedance. (A current measurement may be made instead by inserting a thermocouple ammeter in series with the output). Measure hum voltage across the output in a similar manner.

EXAMPLE: If the maximum signal output is 10 volts and hum voltage .1 volts, this is equivalent to 1 per cent or 40 db below maximum output.

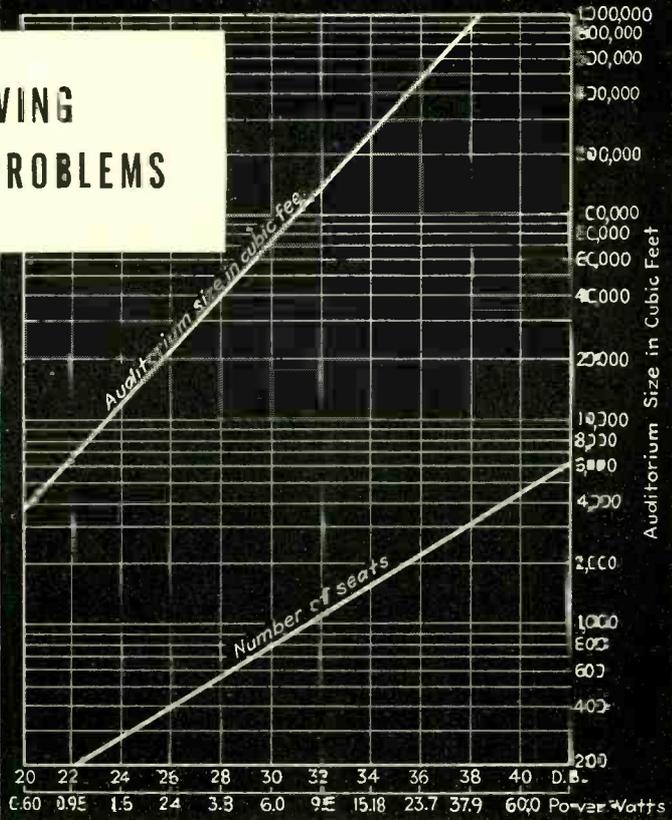
If the harmonic content of an amplifier is 2 per cent, the db value below output would be 34 db.

If computations are made using voltage or current values, read direct from chart. If wattage values are used, divide db values by 2.

## EFFICIENCY—LOSS

To Find Loss In db Of A Line Coupling Speakers To An Amplifier—Measure voltage at the amplifier output with vacuum tube voltmeter or output meter, or current with thermocouple ammeter. Make a similar measurement at the speaker end of the line.

EXAMPLE: If 10 volts are measured at the amplifier and 5 volts at the speakers, the efficiency is 50 per cent. Reading this on the chart gives 3 db. Since computations on this chart if made with voltage or current ratios should be multiplied by 2, the true loss is 6 db. If computations are made in watts read answer in db direct from chart.



## AMPLIFIER OUTPUT—NUMBER OF SEATS—ROOM SIZE

To Find Amplifier Power Required for Given Number of Seats—Choose figure at side of chart corresponding to number of seats. Trace a line horizontally to a point where this intersects "Number of Seats" line. Following this point vertically to the bottom will give power required in watts and db.

EXAMPLE: 3000 sets require 37.9 watts.

To Find Power Required For a Given Room—Multiply length by width by height of room to find cubic content. Choose figure at side of chart corresponding to this figure, and trace a line horizontally from this point to where it intersects the "Auditorium Size" line. Following this point vertically to the bottom will give power in watts and db.

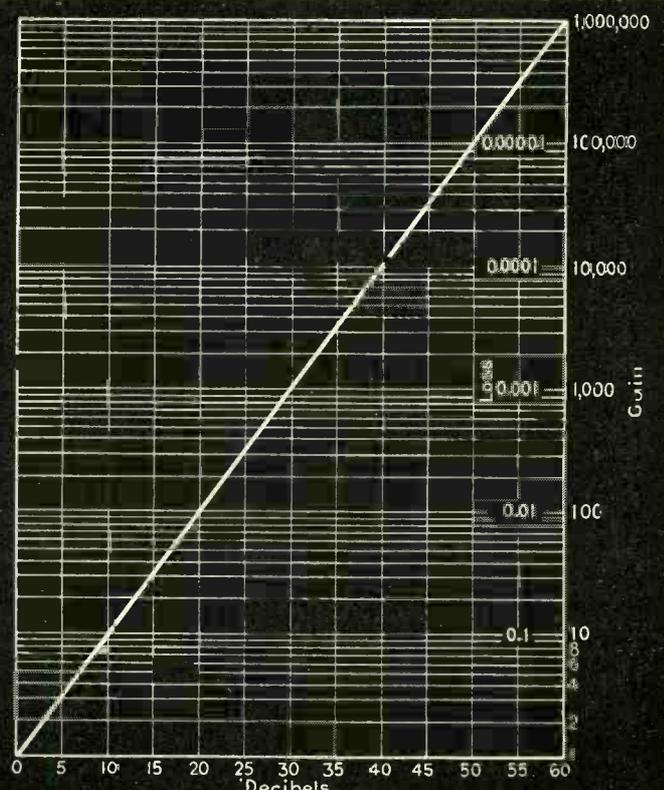
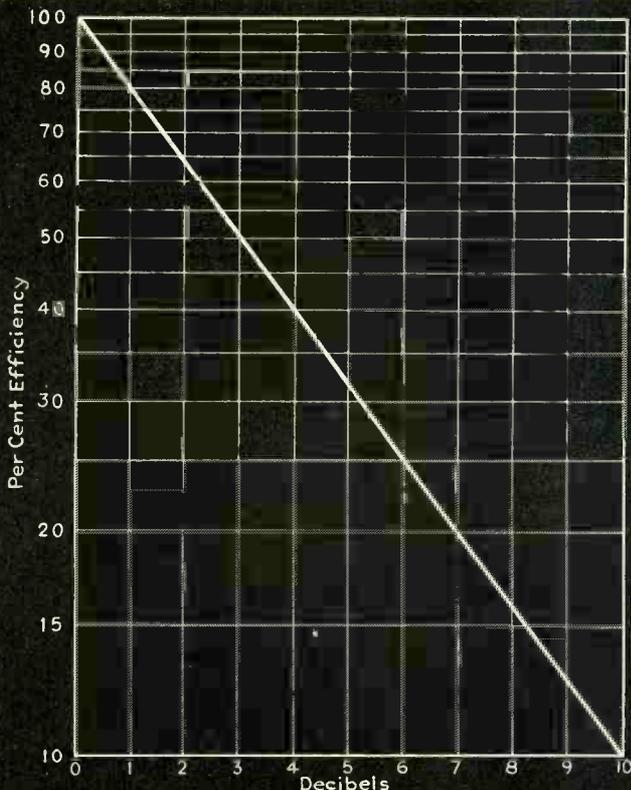
EXAMPLE: 250,000 cu.ft. require 15.18 watts.

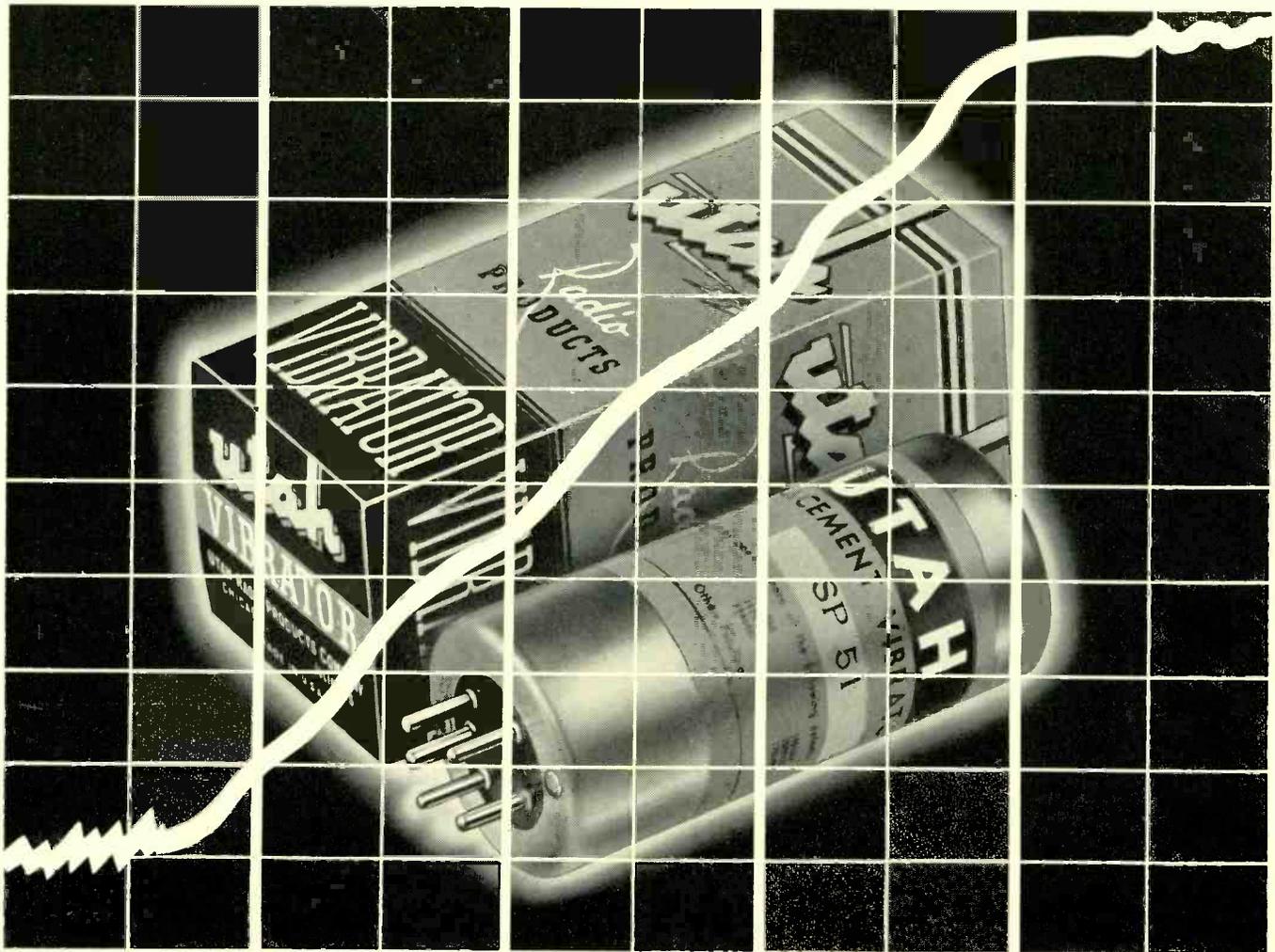
## CONVERTING GAIN OR LOSS INTO DECIBELS

To Find db Gain Of An Amplifier—Choose voltage gain figure of amplifier and read this value in db.

EXAMPLE: If a three stage resistance-coupled preamplifier uses tubes with an amplification factor of 40 each; what is the db gain of the amplifier.

Since the average gain of a stage is approximately half the amplification factor, or in this case 20, multiply 20x20x20 which equals 8000. This is equivalent on the chart to 37 db. Since voltage and current computations on this chart should be multiplied by 2, the actual gain of the amplifier is 74 db. If computations are made in watts the db answer would be read direct.





## HOW UTAH VIBRATORS CONTRIBUTED TO THE 900% INCREASE IN AUTO RADIO VOLUME

The immediate acceptance of the numerous vibrator developments which were originated in the Utah laboratory, contributed largely to the spectacular increase in auto radio volume of 900% in four short years. And those same improvements *plus* the performance and advanced engineering of Utah products have won a continued preference from all branches of the industry.

Because Utah designs and produces *both* vibrators and transformers, Utah engineers have a decided advantage in "matching" the characteristics of the two and in developing maximum performance features. The complete fabrication of vibrators and transformers *in the Utah factory* enables absolute control of correlated characteristics of both—thus assuring dependability, uniformity and satisfactory performance.

Utah service, too, has been important in the development of the industry—Utah engineers have from the first co-operated with receiver manufacturers, by directing the use of vibrators best suited for each individual requirement.

For original equipment or replacement requirements there is a Utah Vibrator to meet every need.

**WRITE FOR FREE CATALOG.** In addition to complete information about vibrators the new Utah catalog contains important facts about **Speakers, Transformers and Utah-Carter Parts.** Write for your free copy today—no obligation.



**SPEAKERS • TRANSFORMERS • UTAH-CARTER PARTS**

**UTAH RADIO PRODUCTS CO.**

CHICAGO, ILLINOIS

CABLE ADDRESS: UTARADIO—CHICAGO

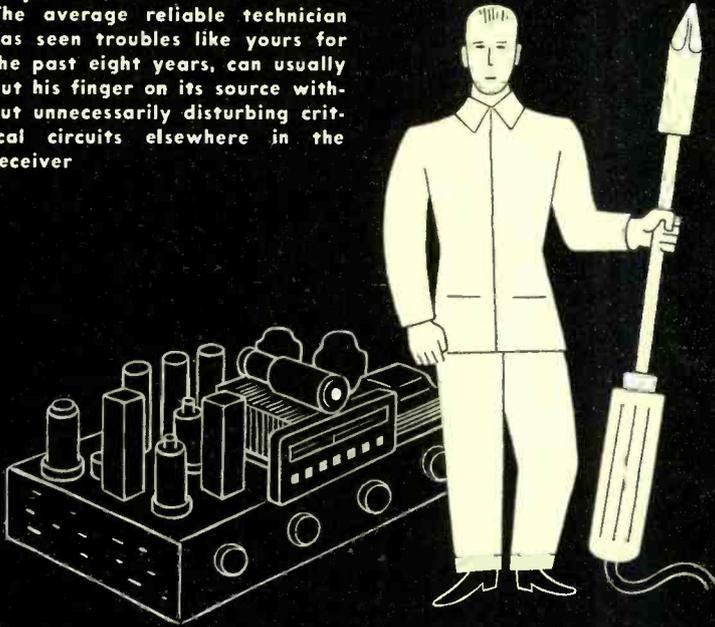
# Why

# Cheap SERVICE Does NOT Pay

A good radio repairman, servicing the most complicated household appliance must be . . .

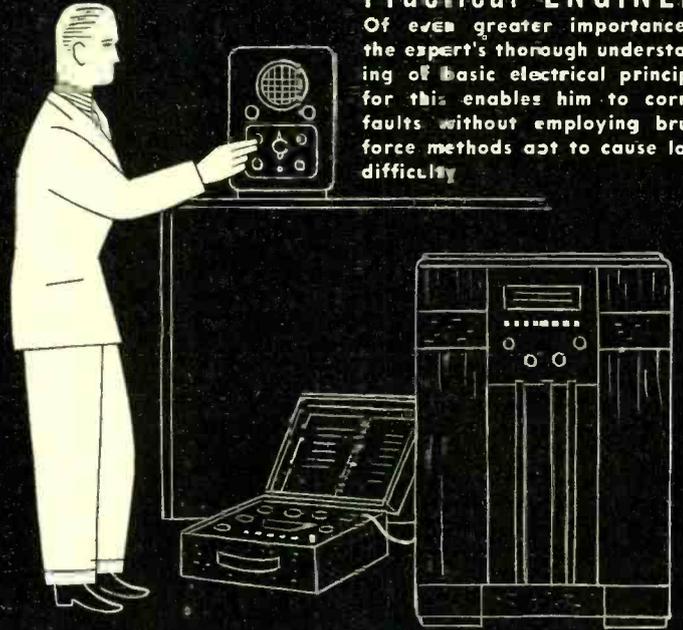
## Experienced MECHANIC

The average reliable technician has seen troubles like yours for the past eight years, can usually put his finger on its source without unnecessarily disturbing critical circuits elsewhere in the receiver



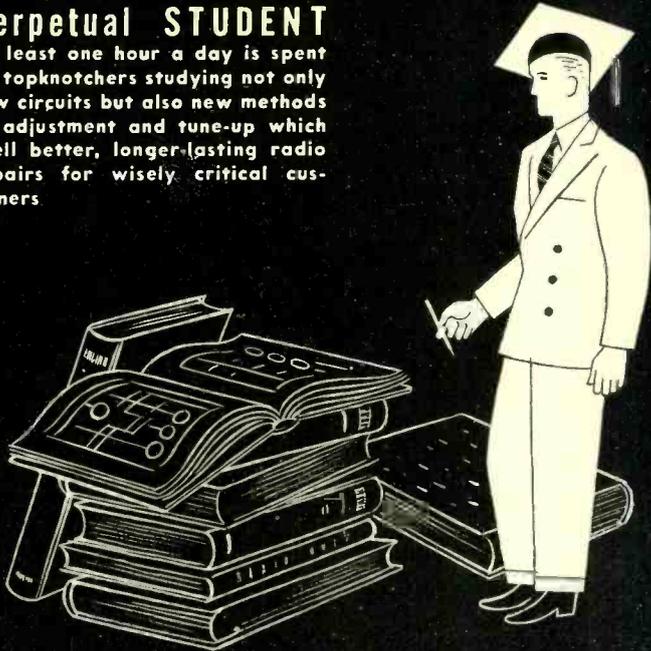
## Practical ENGINEER

Of even greater importance is the expert's thorough understanding of basic electrical principles for this enables him to correct faults without employing brute-force methods apt to cause later difficulty



## Perpetual STUDENT

At least one hour a day is spent by topnotchers studying not only new circuits but also new methods of adjustment and tune-up which spell better, longer-lasting radio repairs for wisely critical customers



## Efficient STOREKEEPER

Overhead is necessarily high when a man maintains test equipment comparable to a doctor's X-Ray costing \$200 or more and often replaced, manuals containing 10,000 or more circuits and a stock of standard parts



"Screwdriver" handymen with headquarters "in their hat" naturally ask less because their tinkering is worth less.

Your delicately adjusted radio deserves the care that only a thoroughly experienced, well-equipped specialist who commands a reasonable fee can give it.

**RADIO** and Television  
**RETAILING**

# The Business End of Servicing

How to keep simple operating records. Handling credit transactions. Making out statements. Suitable job data forms. Writing effective reminder cards. Following up old customers for new business

By HARRY D. HOOTON

**S**TRANGE though it may seem, statistics prove that very often the best radio servicemen are the poorest business managers. Frequently the only "records" that tell them whether or not the business is being carried on at a profit are a bunch of meaningless notes scribbled on the back of an old envelope or a piece of wrapping paper. Is it any wonder that the tax collectors have been known to have nervous breakdowns after a visit to a radio service shop?

What is the reason why so few servicemen keep accurate records?

One common theory is that a technically-minded person cannot easily cope with the average bookkeeping system. Our own private guess is that servicemen have been frightened by the truly complicated bookkeeping systems set up by professional accountants which, even in their simplest forms, do take quite a bit of time to keep in order. However, it is possible for the serviceman to work out a simplified system which will give him most of the necessary information about his business.

### Facts You Need to Know

In order to successfully carry on a service business it is necessary to

have at all times a knowledge of the following three essentials:

1. How much money does the business take in daily, weekly and even monthly?
2. How much money is spent to keep the business running?
3. A record of each and every service job, including the date, the name, address and telephone number of the customer, the work done, the cost of the material and the price charged for the job.

A single ledger, as shown in Fig. 1, may be used for recording cash received and cash paid out. If facing pages are used for the two entries, daily, weekly or monthly totals can be compared and balanced.

Always enter a complete record of all transactions every day, no matter how trivial the amount. The best time to enter each item is immediately after the completion of the transaction. Never depend on your memory or notes on scraps of paper. Keep at it until it becomes a habit and you will find that keeping books is really simple after all.

In writing up the "paid out" side of the ledger, the procedure would be considerably simplified and less

confusing if separate columns were used for parts, tubes, materials, transportation and other items for which frequent expenditures are made. All expenditures strictly chargeable to carrying on the business, such as rent, electricity, telephone, new equipment, etc., must be entered.

Be sure to list each and every small expenditure, even though it may be only ten cents for lead pencils or stamps; such small items can count up to a surprisingly large amount in the course of a year. Last, but by no means least, to the total cash expenditures at the end of each month add the total of all unpaid bills.

### Statements That Get Results

If you carry your customer's accounts on a credit basis, it will be necessary to keep a separate record.

Actual practice in keeping charge accounts varies greatly. Some servicemen prefer a simple (Fig. 2) book record; others use a card filing system with success. In either case the account is entered immediately, showing the customer's name, address and telephone number, the date and the amount to be charged. When a payment is made on the account, enter the amount immediately, give the proper credit and state the new balance.

Always give the customer a receipt when the payment is made in cash. When payment is made by check, the cancelled check is usually considered sufficient proof of payment.

Always present your bills promptly after the work is done. If the customer comes to the shop, or the work is delivered to the home, present the bill with a slightly expectant

FIG. 1—A ledger, with facing pages suitable for recording the data shown above, is essential

CASH RECEIVED				CASH PAID OUT					
DATE	DEBITED NAME	AMOUNT	DAILY TOTAL	PERIOD TOTAL	DATE	ITEM	AMOUNT	DAILY TOTAL	MONTHLY TOTAL
1935					1/25	Joe Miller	\$5.00		
1/27	John Smith	10.00			1/25	Joe Miller	5.00		
	John Smith	10.00			1/27	John Smith	10.00	10.00	
	John Smith	10.00	20.00		1/28	John Smith	10.00	20.00	
1/28	John Smith	10.00			1/28	John Smith	10.00	30.00	
	John Smith	10.00			1/29	John Smith	10.00	40.00	
	John Smith	10.00	30.00		1/30	John Smith	10.00	50.00	
1/31	John Smith	10.00			1/31	John Smith	10.00	60.00	60.00
	John Smith	10.00	40.00						
	John Smith	10.00	50.00						
	John Smith	10.00	60.00						

Sheet No. \_\_\_\_\_ Account No. \_\_\_\_\_

Terms \_\_\_\_\_ NAME \_\_\_\_\_  
 Rating \_\_\_\_\_ ADDRESS \_\_\_\_\_  
 Credit Limit \_\_\_\_\_

DATE	DEBIT	PAID	DATE	CREDIT
July 12		✓	2.75	2.75
Aug 6		✓	3.00	
" 13		✓	5.00	6.80
" 1		✓	1.80	11.82
" 23		✓	1.20	12.73
" 19		✓	7.40	9.25
Sept 1		✓	3.00	1.70
" 20		✓	2.50	
" 12		✓	3.25	
" 21 J. Brewster		✓	4.00	
Oct 17		✓	7.00	
" 28		✓	7.00	
Nov 14		✓	1.00	
" 25		✓	4.25	
Dec 13		✓	1.90	
" 12		✓	2.00	
Jan 6-39		✓	14.00	15.00
" 21		✓	36.50	
" 28		✓	1.50	

FIG. 2—An account book or cards upon which information relative to credit accounts may be written, is recommended

FIG. 3—The businesslike appearance of a statement can do much to speed up collections

STATEMENT

**SIGMON RADIO SUPPLY**  
 Wholesale Dealers in  
 RADIOS, REFRIGERATORS & SUPPLIES  
 100 E. WASHINGTON STREET  
 CHARLESTON, W. VA.

Mr. Roy E. Spencer  
 118 Lee Street,  
 City

TERMS: CASH, 30 DAYS; 2% DISCOUNT FOR PAYMENT WITHIN 10 DAYS

DATE	AMOUNT	CHECK	CASH	BALANCE
May 1 '38				
5th Service	34.10			34.10
Parts	3.71			37.81
Tubes	8.60			46.41
Tax	.32			46.73
Total	46.73			46.73

Please attach your check for the above balance to this slip and return to us at once, thanks.

AMOUNT PAID DUE

look. In the majority of cases payment will be made on the spot as you are placing him in a position where it will be embarrassing to ask for credit.

If the account is to be charged, send out your first statement (Fig. 3) after a reasonable period of time has elapsed. If payment is not made immediately, send out follow-up statements at regular intervals. If you become familiar with the times when your customers are paid, you can increase the efficiency of your collecting system immensely.

Incidentally, you can sometimes collect your accounts easier at the middle of the month. When a large number of bills arrive at the same time, which is the usual thing around the first of the month, there is a tendency for the customer to pay only the most pressing ones, neglecting the others. Here is something else: *Never add your accounts receivable to your "cash receipts" column.* The old saw about the "bird in the hand being worth two in the bush" may be only an old saying handed down by our grandmothers but any serviceman knows, that it certainly holds true in the radio business.

#### Insuring New Business

So much for the financial records. The system that we have just outlined would perhaps be ridiculed by the professional accountant, and

any good bookkeeper can pick it to pieces. However, it is extremely simple and accurate enough as a starter for the average busy serviceman. The next step is to discuss a method of building up your service business through a simple system of job records.

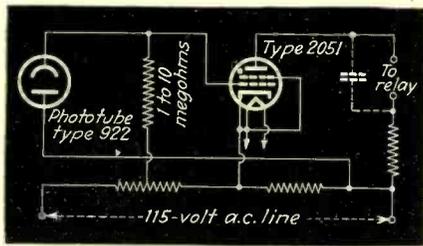
In any business or profession at least fifty per cent of all new business will come from your old customers. An accurate record of each and every service job, as outlined in paragraph three above, is useful in keeping up with your customers. There are several commercial filing systems on the market which are particularly well adapted to the radio service business and the following method of operation is typical.

In setting up the system, a two-section job record card is filled out immediately upon the completion of each job. The upper half, containing the serviceman's name, address and telephone number, the service guarantee and an itemized list of the work done, together with the charges, is detached and given to the customer. If the job is paid for at once, stamp the card "paid" and it will serve as a receipt.

The remainder of the card is for your files, and if it is properly filled out will show the customer's name, street address and telephone number, the make and model of the set, the complaint, an itemized list of the material used and the charges.

File this card in alphabetical order under the customer's initial and at the same time write his name and address on another card and file it according to date. At regular intervals, beginning about a month after the receiver is serviced, send out postal card follow-up reminders. These should be arranged to follow each other in a proper sequence and the first one, mailed thirty days after the original job, can be only a pleasantly worded "thank you" for the patronage. The next in order might be a simple reminder that the best time to repair a radio is immediately after the trouble starts. The fifth consecutive card should point out that for the lowest upkeep cost and best possible reception, the radio should be checked by a competent service man and all weak or defective tubes and parts replaced *at least twice a year.*

# CIRCUITS



## Light Operated Relay

Using one of the small grid-controlled rectifiers, the light operated relay circuit by RCA shown simplifies photo relay devices.

The action of the circuit is such that when light hits the 922 phototube the resistance of this tube changes. Since this is connected to a high potential with respect to the grid-cathode of the 2051 this causes a positive potential to be applied to the grid of the 2051 tube and plate current flows, closing a relay or similar device in the plate circuit.

The 2050 and 2051 operate by virtue of the fact that, for any specific shield-grid potential and positive

anode potential, there is critical value of control-grid voltage. If the control grid is kept more negative than this critical value and the tube is not conducting, the anode current will remain zero. If the control grid is made less negative, the tube becomes conducting and the anode current assumes a value determined by the applied anode potential and the impedance in the anode circuit. In the conducting condition, the tube voltage drop is quite low and is substantially independent of the value of both anode current and control-grid bias. To extinguish the discharge and to allow grid No. 1 again to assume control, the anode potential should be reduced to zero or made negative.

Because the control-grid current is extremely low, a grid resistor having a value as high as 10 megohms can be used; thus, the 2050 and 2051 can be operated directly by a vacuum-type phototube. When a large grid-resistor value is employed, care should be taken to keep the tube base clean and dry, in order to make leakage currents between pins as low as possible so as to avoid erratic operation.

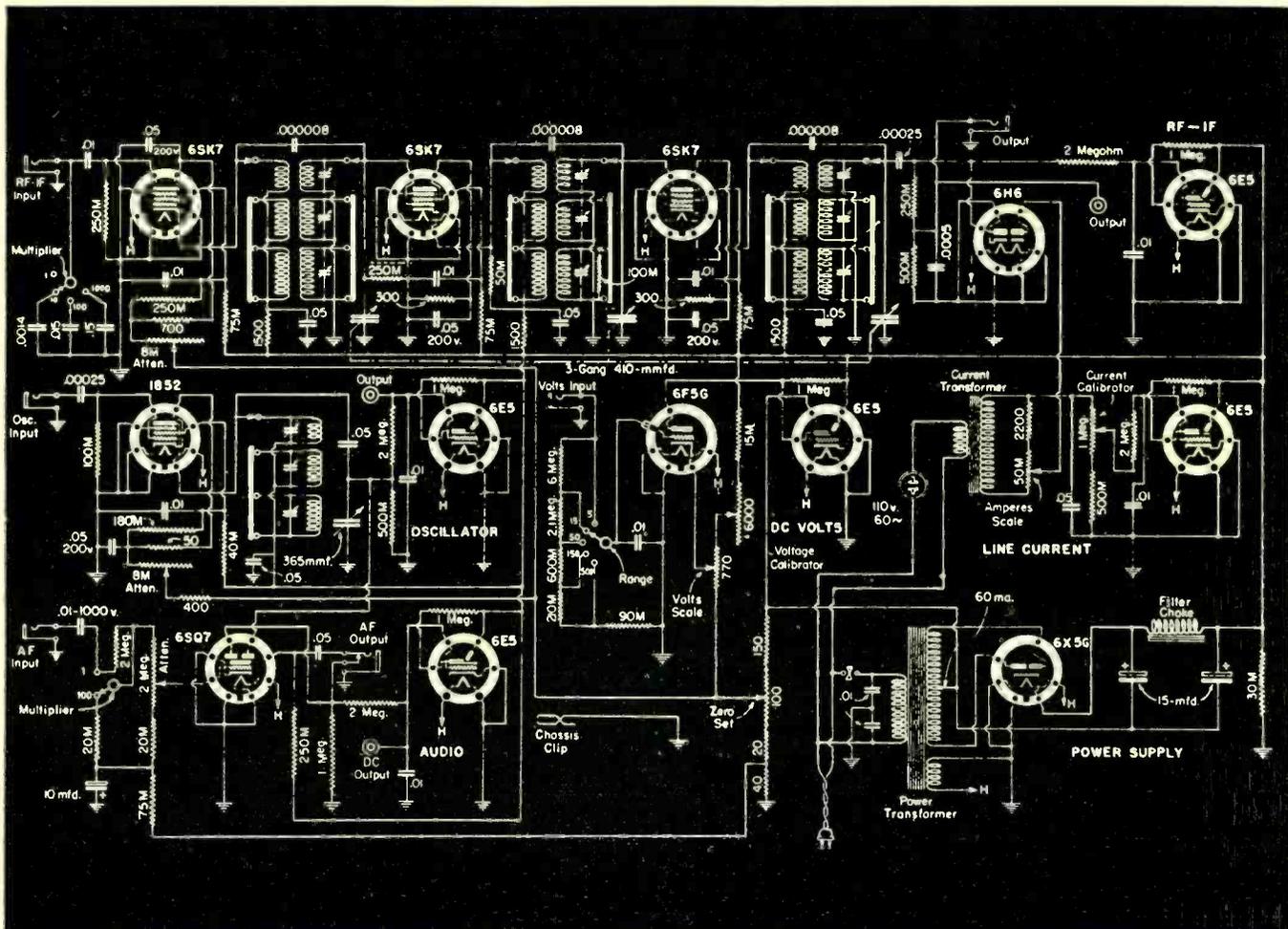
## Signal Tracer

Available in kit form, the schematic of a complete signal-tracing test instrument by Meissner is shown herewith.

The heart of the unit is based around a three stage r.f.-i.f. amplifier using 3-6SK7's shown at the upper left. This tunes to frequencies (95 to 1700 kc) commonly used in servicing and contains a three position multiplier at the input to accommodate various signal levels without overloading.

Following the r.f.-i.f. amplifier is a 6H6 diode detector and a 6E5. The diode rectifies voltages fed from the r.f.-i.f. amplifier and this is then applied to the 6E5 to indicate relative values of the voltages measured. The second diode element of the same 6H6 rectifies voltage developed across a current transformer whose function is to determine the current drawn by a set under test. The voltage thus rectified is applied to the second 6E5 directly below the first mentioned. Current range is from .3 to 3 amperes.

Directly below the r.f.-i.f. amplifier



# Now!

## WORLD'S OLDEST, LARGEST CAPACITOR MANUFACTURER

### Announces **NEW CAPACITOR** Analyzer and Bridge



#### CAPACITOR ANALYZER

Cornell-Dubilier's new Capacitor Analyzer. Measures quickly, accurately all important characteristics of paper, mica, oil and wet and dry electrolytics, including A.C. motor starting types. It is the only instrument which provides a complete and thorough capacitor test.

Some of the advanced features of the new C-D analyzer model BF-50 are:

- Capacity measurements, .00001 to 240 mfd.
- Power-factor measurements 0 to 50%.
- Insulation resistance measurements to 1,500 megohms.
- Push button switch control.
- High sensitivity control provides sharp or broad balances for quick and accurate readings.
- Checks leaky, shorted, open, high and low capacity.
- Requires no outside standards, headphones, meters or other accessories.
- It's complete in itself! It's portable. It's outstanding!

The Analyzer is supplied in attractive walnut cabinet with removable hinged cover. Model BF50 list, less tubes . . . \$41.50.

DEALER NET . . . . . **\$24<sup>90</sup>**

#### CAPACITOR BRIDGE

NEW C-D CAPACITOR BRIDGE for quick and accurate measurement of all type capacitors between .00001 and 50 mfd.

- Indicates power-factor of electrolytic capacitors.
- Checks, opens, shorts, high and low capacity.
- Dual type "visual eye" detector indicates bridge balance.

The most compact and useful instrument of its type ever offered to the radio service field!

The Capacitor Bridge is complete, requires no head-phones or other accessories, is supplied in attractive bakelite case 3 $\frac{3}{8}$ " x 5" x 3", with detachable leads and instruction booklet. Model BN Capacitor Bridge, complete, less tubes . . . List \$16.50

DEALER NET . . . . . **\$9<sup>90</sup>**



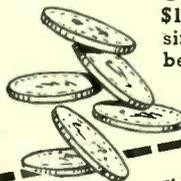
#### C-D CAPACITOR DECADES



Ideally suited for test circuits, filter design, bridge measurements, and many other service and experimental applications. Capacity range between .0001 and 10 mfd. is available in three decade units. They can be used continuously in circuits where voltages do not exceed 220 V. A. C. or 600 V. D. C. Encased in compact, attractive bakelite cases, 3 $\frac{3}{8}$ " x 5" x 3". Individual chart furnished with each Capacitor Decade.

#### TAKE ADVANTAGE OF THE LONGEST CAPACITOR EXPERIENCE IN THE INDUSTRY . . . . .

Equip now for greater profits with Cornell-Dubilier advanced, guaranteed test equipment. For limited time only! This offer expires Aug. 1, 1939. The Coupon below is worth \$1.00! Present it to your local C-D jobber and he will allow you \$1.00 toward the purchase price of any single instrument. See your C-D Jobber today! Bring the coupon with you.



CORNELL-DUBILIER ELECTRIC CORPORATION,  
SOUTH PLAINFIELD, NEW JERSEY

Please rush to me the following catalog material.

- Catalog No. 167A on Capacitor Instruments.
- Catalog No. 165A on industrial and transmitting capacitors.
- Catalog No. 166A on Quietone Interference Filters.
- Place me on your mailing list for Free C-D House Organ.

Name . . . . .  
Address . . . . . State . . . . .  
City . . . . .

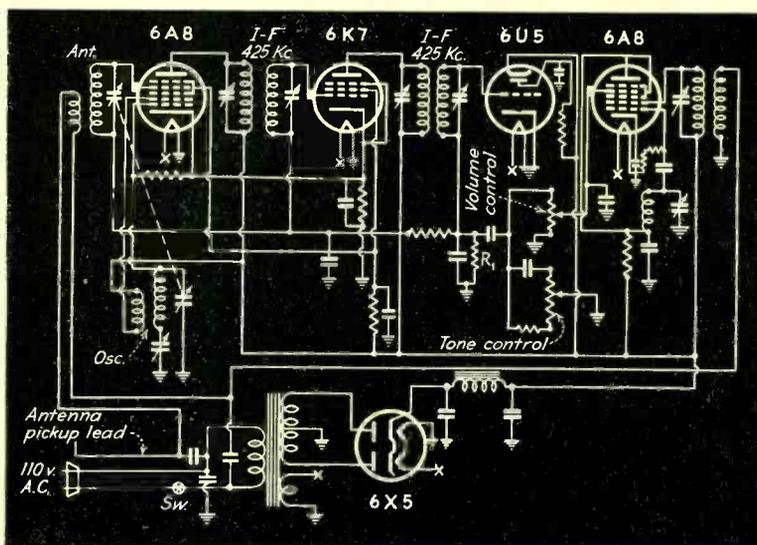
## CORNELL-DUBILIER ELECTRIC CORPORATION

1019 Hamilton Boulevard, South Plainfield, New Jersey  
Cable Address: "CORDU"

is the oscillator test section with which it is possible to analyze any and all difficulties associated with oscillator circuits in superhets. A high gain amplifier, using an 1852 builds up oscillator voltages to a sufficient value that they may be rectified by one diode plate of the 6SQ7 (lower left) and applied to the 6E5 in the oscillator section. The grid of this amplifier is resistance-coupled for ease of coupling to external circuits whereas the plate circuit is tuned to provide a satisfactory plate load and consequently high gain.

The triode section of the 6SQ7 and the remaining diode plate of this tube make up the audio test section. It permits analysis of audio stages including gain measurements and hum location. The output is registered on the 6E5 to the right of the 6SQ7.

An electronic voltmeter is also incorporated. This may be seen in the center of the diagram and comprises 6F5G and a 6E5. Measurements which can be made are plus or minus of any of the following ranges: 0-5, 0-15, 0-50, 0-150, 0-500 volts. A constant input impedance of 10 megohms is had on all ranges and a sensitivity of 2 megohms per volt is realized on the 5 volt range. Thus measurements may be made on sensitive circuits of a receiver.



### Wireless Remote Tuner

Unusual convenience is offered to the radio listener by the Beverly Phantom Tunette. Consisting of five tubes, it permits selection of stations and control of volume and tone.

Referring to the circuit, the 6A8 at the left serves as mixer-oscillator. Antenna input to this tube takes the form of a wire in the line cord. After converting the original signal to 425 kc. i.f., it is further amplified at this

frequency by a 6K7 i.f. stage. From here it feeds to the 6U5 tuning eye detector. The function of this tube is to rectify the incoming i.f. signal, which voltage is developed across  $R_1$ . This may be likened to the action of a diode detector. The rectified signal voltage is used for a v.c. and its audio component feeds the 6A8 as will be explained later.

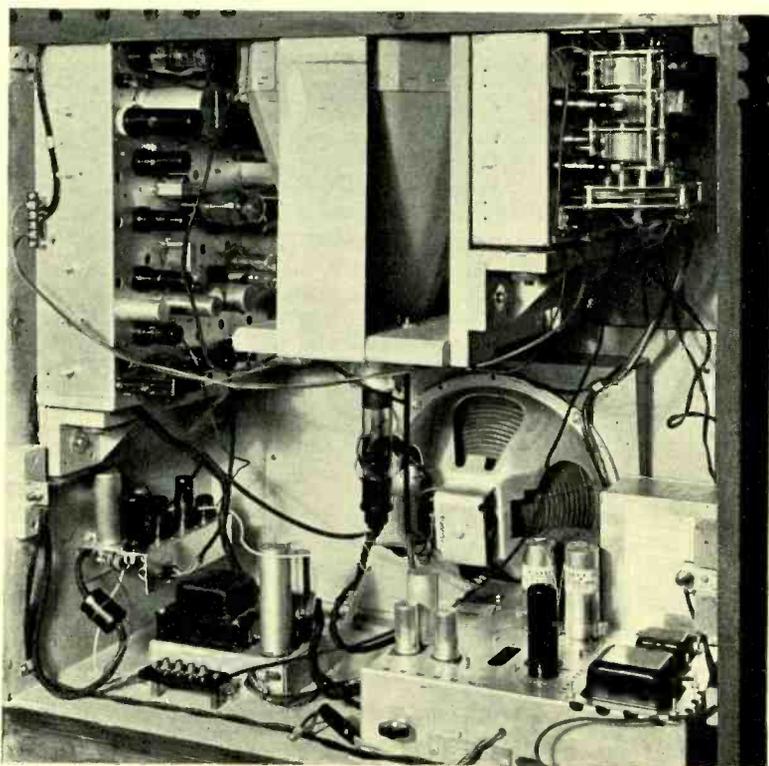
It is interesting to note that the 6U5 detector also serves as a tuning indicator simultaneously. This is possible since the rectified signal voltage is impressed on the grid and increases with the signal. Thus the eye action is maintained even though the tube functions as a detector.

The 6A8 at the right operates as an oscillator in the vicinity of 550 kc. Audio from  $R_1$  feeds into the control grid of this tube, modulating the generated signal in accordance with the received signal. The action of this tube is similar to some of the wireless record players on the market.

Control of volume and tone is built-in. This is a desirable feature and makes for complete control at a remote point. The output from the 6A8 oscillator is inductive and capacity coupled to the power line. Energy is radiated by the power line to various rooms of the home.

With this remote control all that is necessary is to tune in the signal generated by the control on any standard receiver. Adjust volume of the receiver to the desired level. All tuning, volume or tone changes are then made at the control.

The advantage of this circuit over previous systems is that the background hiss or noise level of the receiver under control does not change with various volume settings of the remote control. This is because the modulating level of the 6A8 oscillator changes and not the r.f. output of the oscillator.



**WIRED FOR VIDEO**—The "works" in one of RCA's television receivers. The chassis at top right is a complete all-wave receiver. The left chassis is the video-audio receiver. At the bottom are the high and low voltage power supplies. Notice the high voltage warning on the shield can at the right. Also the interlock switches on each side of the cabinet. These open power circuits when the protecting cover, which is not shown, is removed.

# YOUR PROFITS ASSURED

with these  
**NEW**

*Readrite*  
TESTERS **RANGER** METERS  
**TESTERS**

Model  
432-A  
**\$17.85**

## TODAY'S TESTER.. TESTS TOMORROW'S TUBES.. MODEL 432-A

● Today's outstanding tube tester value—a guaranteed quality tester at a price you can afford to pay. The needs of tomorrow have been anticipated by the advanced design of Model 432-A, along with complete provision for today's testing.

Greater filament switching ranges . . . 20 steps from 1 to 110 volts . . . Anticipates future filament voltages. Broader Testing Facilities . . . Checks Loctals, Single Ends, Bantam Jr., Gaseous Rectifier, Ballast, the New High Voltage Series and all other present types. Direct-Reading GOOD-BAD scale . . . 3" Triplet precision indicating instrument (Grade "A" only). Approved RMA circuit. Neon shorts test—Separate plate tests on diodes and rectifiers.

Professional appearing black leatherette case has handle and removable cover. Modernistic etched panel—black and polished nickel . . . as good as it looks.

Model 432-A . . . U.S.A. Dealer Price . . . \$17.85

Model 432-A—742 is a combination Tube-Tester and Volt-Ohm-Milliammeter in a similar case, but slightly larger. Volt-Ohm-Milliammeter panel is a separate section. Ranges: AC-DC Volts 0-10-50-250-500-2500 (DC at 1000 ohms per volt); DC Milliampères 0-1-10-100; Resistance .5 to 500 with 25 ohms center scale; 0-100,000 and 1½ Megohms.

Model 432-A—742 U.S.A. Dealer Price . . . \$26.85

When you buy Readrite testers you get the best at a price you can afford to pay. Your profit is assured with Readrite quality and low cost investment. Readrite has made tube testers since radio tubes first were used for broadcasting and receiving. Buy a lasting product from a reputable manufacturer and you buy right. Honest repair service is a Readrite feature that goes with every tester—our lasting reputation has stood the test of this service we feel we owe to every user. Made by a tester manufacturer with a modern plant, modern equipment and manned by thoroughly trained workmen. **BUY READRITE AND YOU BUY RIGHT!**

### MODEL 738

D.C. Pocket Volt-Ohm-Milliammeter with precision Triplet instrument having two genuine sapphire jewel bearings. Has selector switch, molded case. Ranges: D.C. Volts 0-15-150-750-1500 at 1000 ohms per volt; D.C. Milliampères 0-1½-15-150; 0-500 low ohms, backup circuit; 0-500,000 ohms. Complete with accessories. U. S. A. Dealer Price . . . \$7.50



### MODEL 739

AC-DC Pocket Volt-Ohm-Milliammeter with precision Triplet instrument having two genuine sapphire jewel bearings. Has selector switch, molded case. Ranges: AC-DC Volts 0-15-150-750-1500 (DC 1000 ohms per volt); D.C. Milliampères 0-1½-15-150; 0-500 low ohms; 0-500,000 ohms. Complete with accessories. U. S. A. Dealer Price . . . \$9.50



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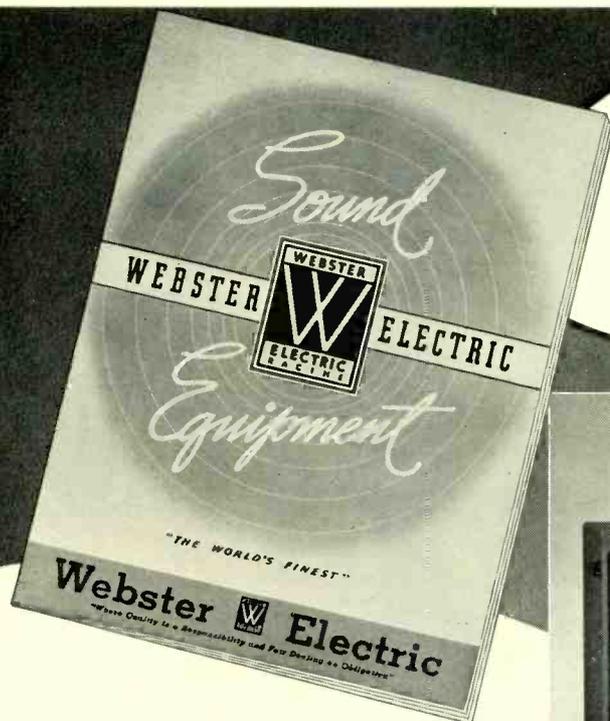
Please send me more information on  Model 432-A;  
 432-A—742;  Model 738; Model  739.

Name .....

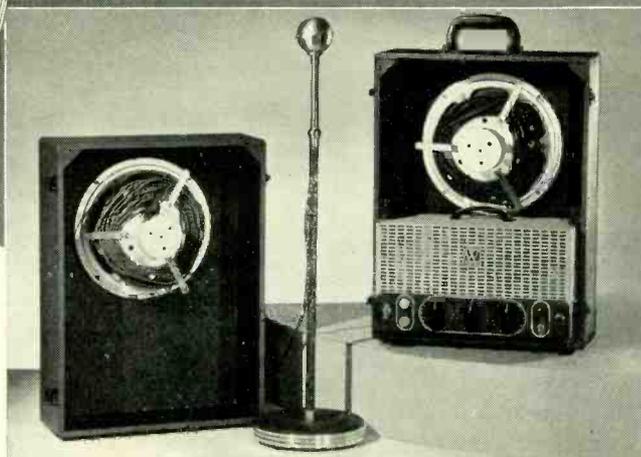
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**A request on your letterhead will bring you this new, fully illustrated catalog with all specifications of the entire line of Webster Electric Sound Equipment.**



## HERE IS A 12 WATT JOB THAT IS FLEXIBLE . . . . .

*Read about it in this New Webster Electric Catalog*

● This sound system is extremely versatile in that the amplifier may be slid out of the case and used with other, or permanently located, speakers; or the two permanent magnetic speakers may be used temporarily to expand the coverage of another system. There is no need to carry the added weight of the amplifier to a job where the speakers only are needed, nor to handle the bulk of the entire case and speakers where only the amplifier is wanted. The amplifier may be easily carried by one hand by means of the convenient handle attached to the hood.

The high quality amplifier has four stages; power output of 12-13 watts at 5% distortion; automatic volume control; dual tone control; power gain of 129 DB for microphone, 79 DB for phono; frequency characteristics within 3 DB from 45 to 10,000 cycles; hum level of 54



DB below full output for mike, 65 DB for phono. It measures only 13 $\frac{3}{4}$ " long, 7" wide, by 8" high.

The catalog illustrated above will give you still more facts about this amplifier; its application to both fixed and portable systems, as well as similar information regarding all the units in the Webster Electric line. Write for it today.

*"Licensed by Electrical Research Products, Inc., under U. S. Patents of American Telephone and Telegraph Company and Western Electric Company, Incorporated."*

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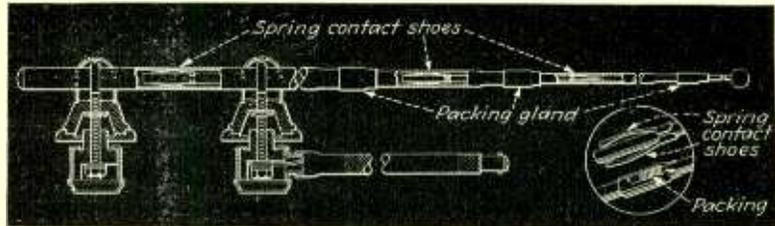
# Webster Electric

*"Where Quality is a Responsibility and Fair Dealing an Obligation"*

## Chandelier Baffle

In sound installations where 360 degree coverage is desired it is usually necessary to employ several speakers to completely fill such an area. Since the majority of speakers and baffles are directional to a certain extent, the result is "hot spots" and "cold spots" (points of objectional high or low sound intensity).

The chandelier baffle by Atlas shown here removes the difficulty and uniform 360 degree coverage is obtained. Depending on the size of the area to cover, one or more baffles may be used.



In the baffle, the sound output is displaced from its principal axis (directly in front of the cone) by a conical sound-deflecting plug at the speaker mouth. Energy is then radiated, more or less at right angles to the original axis, equally in all directions in this plane.

An increase in efficiency is claimed to be as high as 30 per cent over flat baffles of similar dimensions. This increase is due in part to the exponential cavity created at the speaker unit mouth, inasmuch as this increases the acoustic impedance, together with additional increased overloading on the diaphragm, thus accentuating the two extreme ends of the audio spectrum.

# VEDOLYZER

SUPREME'S CONCEPTION  
OF A NEW, AMAZINGLY  
FAST AND COMPLETE  
METHOD OF RADIO SERVICE



Can you check R. F. filtering in detector and A. V. C. circuits visually . . . see and locate the noise created by faulty parts . . . attach test oscillator to dead receiver and go from stage to stage and locate dead portion without turning any knobs or tuning any circuits . . . check receiver oscillator performance without tuning any test instrument circuits . . . measure FREQUENCY AND AMPLITUDE of the signals in all stages of a receiver . . . measure 6,000 D. C. VOLTS with a 150 MEGOHM INPUT . . . measure from ONE BILLION OHMS down to ONE HALF OHM . . . make NO-CURRENT VOLTAGE measurements without disturbing receiver's operation . . . SEE the actual Broadcast, I. F. and A. F. SIGNAL any place and every place in any receiver . . . measure radio signal throughout set in MICROVOLTS and VOLTS . . . SEE where DISTORTION occurs . . . SEE THE SIGNAL during broadcast and television receiver servicing?

Every up-to-date serviceman, radio and television engineer should have the complete story on the VEDOLYZER.

Don't buy any instrument until you have the complete and interesting story on this new SUPREME equipment. Write today for literature, soon available, and nearest place and date of demonstration in your locality.

The Supreme 561 Combination Signal Generator includes (1) a sinusoidal A. F. wave output

from 15 to 15,000 cycles (2) an unmodulated R. F. wave output from 65 K. C. to 20.5 M. C. on fundamentals and above 60 M. C. on harmonics, (3) a variable audio modulated R. F. signal using the internal 15-15,000 cycle audio oscillator, (4) a metered variable percentage of modulation control on this R. F. signal from 0 to 75%, (5) a frequency modulated oscillator having a 30 K. C. wide band pass which may be used, (6) to frequency modulate the internal R. F. oscillator for visual alignment and also for A. F. C. adjustments, (7) availability of externally modulating the R. F. signal with suitable equipment.

A. F. oscillator has power output of 150 milliwatts and open circuit voltage of 35 volts. Continuously variable on 6" illuminated dial; 4 output impedances (center tapped) for correct matching.

R. F. oscillator uses iron core coils and air dielectric trimmer condensers. 1/2 of 1% accuracy assured. Ladder type attenuator. 2 speed tuning control. Shadow type, razor edge, tuning indicator and illuminated dial. Frequency modulator uses famous SUPREME LOCK-CENTER-SYNCHRONIZE circuit which completely eliminates image wandering.



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EXPORT DEPT., Associated Exporters Co., 145 W. 45th Street, New York  
Cable Address: LOPREH, N. Y.

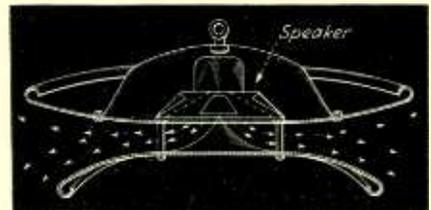
## Anti-Rattle Antenna

Rattles between telescopic antenna sections of auto antennas has been a breach of peace to auto owners. An antenna by Ward removes this difficulty by several novel methods.

The telescopic sections as shown are constructed in somewhat normal fashion. However, at the bottom end of each inner rod a dual spring contact shoe prevents the rod from making direct contact with the outer tube; at the same time good electrical contact is maintained. The shoes are welded to the inner rod and arranged so as to provide a dual wiping contact.

As a further precaution against rattles, the entire three sections are filled, when in the closed position, with a liquid of high viscosity, such as glycerine or oil.

To prevent this liquid from being lost and, at the same time keep out rain moisture and dirt which might affect contact between sections, a packing gland, as shown in the insert to the right, is used. The liquid, packing gland and contact shoes make for positive locking action.



## Diode Triode Pentode

Designed for small ac-dc receivers where space is limited, the 25D8GT, a heater type diode-triode-pentode by Arcturus is shown here.

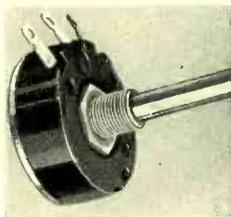
Perhaps the first triple function type



Old man Centralab is willing to be neutral as to your choice of Volume Control as long as you select one of his famous products . . . with the wall type resistor strip that hugs the inner circumference of the bakelite housing. Choose one of the Centralab family—STANDARD . . . MIDGET . . . or ADASHAFT . . . and be assured of:

- Maximum resistor length for case diameter
- Close uniformity between resistors
  - Accurate tapers
    - Lower specific resistance and attendant low noise level
    - Better power dissipation
    - Longer life

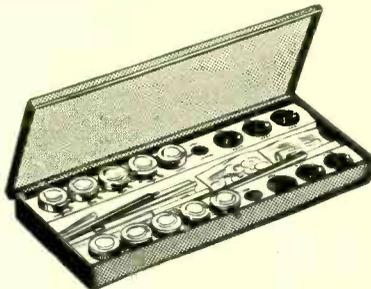
### STANDARD RADIOHM



The old reliable "Standard" that is 1 1/8" in diameter . . . used wherever sufficient space for this control is available.

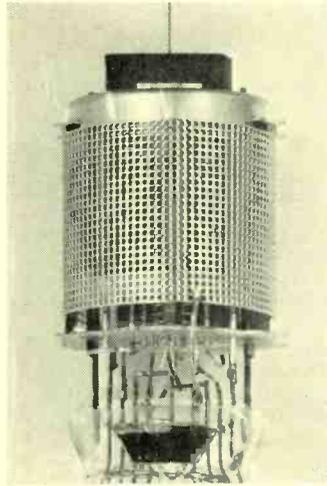
### ADASHAFT KIT

Housed in a metal box, hinged, contains ten Midget Radiohms, five types of attachable shafts, etc. . . . for more than 400 makes of receivers . . . actually thousands of different models.



# Centralab

Div. of Globe-Union, Inc., Milwaukee, Wis.



since it may be the second step in a trend to create more and more functions in one envelope. The outcome of such a trend could result in practical single tube sets. This would not be such a far cry since the 25D8GT could, in itself, become a satisfactory one tube a.c. receiver for earphone use.

The construction and design of the tube is such that the pentode may be used as a conventional r.f. or i.f. amplifier and the diode as detector and a.f. amplifier. All connections are brought out at the base except the grid of the pentode section.

### New Tubes

**1624**—A beam power r.f. or a.f. amplifier or oscillator by RCA with a fast heating 2.5 volt coated filament to permit quick off-on operation; especially in mobile equipment. Designed for high power sensitivity, maximum plate dissipation 25 watts.

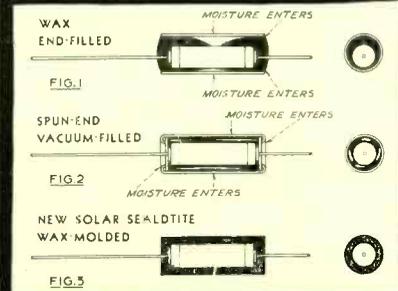
**117Z6G**—Heater type, high vacuum full-wave rectifier by Sylvania, designed for operation directly across a 117 volt line. The heater is center-tapped, with this connection brought out to Number 1 pin. With parallel connection, the heaters may be operated on 58.5 volts.

Heater Voltage	117	117 volts
Heater Current	.075	.075 amp.
A. C. Voltage (per plate)	117	235 volts
D. C. Output	60	60 ma.
Min. Plate Supply Impedance	0	100 ohms

**7A5G**—Beam power amplifier by Sylvania similar to the 35A5, octal base construction.

Heater Voltage	7	volts
Heater Current	0.175	amp.
Plate Voltage	125	volts
Screen Voltage	125	volts
Grid Voltage	-9	volts
Plate Current	37.5	ma.
Plate Current (max. signal)	40	ma.
Screen Current	3.2	ma.
Screen Current (max. signal)	9	ma.
Transconductance	6100	umhos
Plate Resistance	17000	ohms
Load Resistance	2700	ohms
Power Output	1.9	watts
Total Harmonic Distortion	11	per cent

# NEW SOLAR Wax-molded "SEALDTITE" TUBULAR PAPER CAPACITORS



Of standard size and price, but **TOTALLY sealed against moisture.** An engineer's dream come true!

**2 to 5 times** average life expectancy

**the only major advance in tubulars in the last decade**

The new SEALDTITE assembly is not stuck into tubes—previous standard practice, with doubtful results as shown in Figures 1 and 2. It is centered in molds; an exclusive SEALDTITE wax compound is molded around it. Astounding test results! SEALDTITE for safety! Leading jobbers feature SEALDTITE in factory-sealed cartons of 10.

**SOLAR MFG. CORP.**  
Bayonne, New Jersey



# T R I C K S

## AIR CASTLE

Dead on part of dial . . . Replaces 6D8G converter with 6A8G.

## APEX 27, 27P

Part subject to breakdown . . . long Candohm resistor at inside rear of chassis. Ohmage of sections beginning with that fed from filter choke: 4,700, 8,400 and 10,700 ohms.

## ARVIN 17

No reception on low frequency end of dial . . . Replace 40,000 ohm resistor in series with oscillator screen.

## BOSCH 58

Noise, sudden volume changes . . . both on-and-off and local-distance switches cause this trouble. Check.

Note . . . the three leads from the local-distance switch are often improperly connected to chassis binding posts. The correct connections are: yellow to antenna, black to unmarked post and red to ground.

## BRUNSWICK 15, 22, 32, 42

Sudden volume changes . . . often due to loose rivet holding antenna post on insulating strip. With local-distance switch in distance position, apply ohmmeter between post and chassis. If meter needle wavers, replace post. Oscillation . . . bond speaker frame to receiver chassis and make sure set has good outside ground.

## BELMONT 101

Distortion, two spot tuning . . . Check leakage .05 condenser in avc lead of r.f. stage. Also .05 cathode to ground condenser on same tube.

## Model 303 **DACO** **TUBE TESTER** **VOLT OHMMETER**

# 117 VOLT

**DACO AND DAYRAD COMBINED EXPERIENCE DELIVERS KNOCKOUT BLOW TO OBSOLESCENCE WITH THIS NEW DACO CIRCUIT AT THE LOW PRICE OF \$29.90**

*Beautiful and It Has Remarkable Performance—Up-to-the-Minute and Into the Future.*

- Tests all Tubes 1.4 to 117 Volts Single End—9—Gt—M—M4—Octals—Loctals—Gaseous Rectifiers—Magic Eye—Ballast—Dial Light Battery and Xmas Tree Bulbs

- Provides Combined or Separate Tests on Each Element—Individual Tests on Each Section of All Multi-Purpose Tubes and Full Wave Rectifiers



- Practical Voltages and Resistance Ranges for General Testing
- Index Roller Chart With Obsolescence Protection and Four Spare Sockets
- Beautiful Streamlined Metal Case Finished in Black Morocco Blended in Silver and Red
- Simplicity—Light—Size 16" Long, 13" Wide, 3" Height Front, 5 $\frac{1}{4}$ " Back
- Portable Model Black Leatherette Case At Same Price

### DACO EASY PAYMENT TERMS

Model 303. Tester Price, \$29.90. \$10.00 Down, 10 Months Balance.

Model 421. Zero Leakage Signal Generator. Price, \$29.90. \$10.00 Down, 10 Months Balance.

Model 521. AC Operated Volt Ohmmeter. Price, \$35.90. \$12.00 Down, 10 Months Balance.

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Let DAYRAD and DACO Combined Experience Modernize Your DAYRAD Instruments

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Please ship model \_\_\_\_\_ at once—check enclosed.

Please send information on all new models.

Please send information and forms for Easy Payment Plan.

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## CROSLLEY 515, 5515, FIVER

Dead . . . suspect short in 0.006 mfd. condenser, connected between plate 2 and ground of 6B5. Unit is in same tubular container with 0.02 mfd. tone control condenser. Center terminal (going to plate 2 of 6B5) is common to both sections; therefore, to eliminate 0.006 mfd. section, clip chassis connection from unit as close as possible to container and install single unit 0.006 mfd. condenser from plate of 6B5 to chassis.

Intermittent . . . check for break in voice coil of speaker.

Defective tuning mechanism . . . when station indicator does not follow rotations of panel control, trouble often due to loose rivet protruding through rear copper disc on end of control shaft. By soldering rivet to disc, trouble is corrected. Caution: remove celluloid disc from between copper discs before soldering operation.

## EDISON R4, R5, C4

Distortion at low level on locals . . . check antenna shunt section of volume control. Also measure second r.f. cathode resistance to ground. If more than 5000 ohms connect additional resistance across circuit to reduce to this value. Usually 20,000 ohms does the trick.

## EMERSON JS

Weak or dead . . . 0.06 mfd. condenser, connected between 7 plate and arm of tone control, likely shorted. Also check tone control for damage occasioned by condenser breakdown.

Notes . . . manual schematics of this model show resistor R243 connected to high voltage center tap of power transformer. There should be no connection, however, and the short line joining them should be deleted. For aligning instructions, refer to International Radio Corp., model JS.

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for the

Get your share of the profits from the higher priced intercommunication installations. The market is wide open for hotels, department stores, hospitals, offices, at the low prices we ask for this excellent 2-way system.

Demonstrate our Model 143 to these prospects. 4 speakers on each substation and up to 10 substations adaptable. No other system can offer these features. More profits for you! \$10.00 with 50 ft. of wire.



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• **"New-Matic" AUTOMATIC AUTO AERIAL.** Fully automatic 2 section. Operates independent of ignition or vacuum system. Easy, quick installation.

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• **"TOWER" Aerial.** 4-section, telescopic side-cowl aerial. Extends 100" for long distance pick-up. Ceramic insulators. Rattle-proof. Rust-proof.

• **"Tela-Vision" Rear-Vew Mirror.** Adjustable to any make aerial. Adds to signal strength. Can be sold to cars already equipped with aerials or with new aerials.

See **WARD'S Display** At The Chicago Show

P. S. If you don't get to the show, write for free catalog.

**The WARD PRODUCTS Corp.**  
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Whatever the job to be done, there is an IRC Control for it—controls that serve as accurate replacements in every electrical and mechanical characteristic—controls backed with the quietness and dependability that only the exclusive IRC design and construction can give them. Ask your jobber for the new IRC Volume Control Replacement Guide, Edition 2. It's free! Use IRC's on every job from now on. It pays real dividends to use the best.



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These midgets include every feature heretofore available only in standard CS types. Smaller size—full IRC quality.

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**EXCLUSIVE DESIGN FEATURES**



**SILENT SPIRAL CONNECTOR**

Positive contact between rotor arm and center terminal. Noise cannot originate.



**FIVE-FINGER, KNEE-ACTION CONTACT**

Five separate spring-like contacts give a cushioned "knee-action" effect. You can actually feel the greater smoothness.



**METALLIZED TYPE ELEMENT**

The ideal surface for noiseless contact is provided by the Metallized type resistance element permanently bonded to a moisture-proof phenolic base.



**COIL SPRING**

Used as thrust washer on shaft. Assures smooth rotation, prevents end play in shaft.



**SPECIAL STANDARD**

Similar to Standard "CS" Controls, but made to accommodate IRC Plug-in Shafts.



**SPECIAL PLUG-IN SHAFTS**

For easy installation even in midget receivers. Position of flat on shaft can be fixed as desired.



**AUTO RADIO**

Midget controls with friction clutch drive-arm and universal slotted or tongue type shaft.

**WIRE WOUNDS**

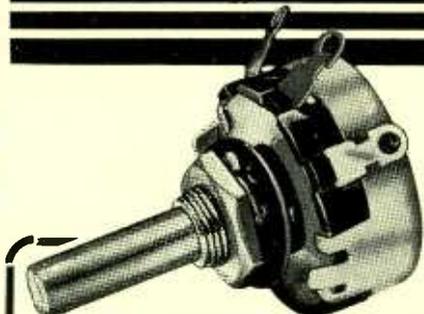
The only wire wound with clock spring connector and coil spring thrust washer on shaft. Resistance wire spot welded to terminals. Same size as CS controls. Rated at 2 watts.



**INTERNATIONAL RESISTANCE CO.**

401 N. BROAD STREET, PHILADELPHIA, PENNA.

# The easiest way to spell Profits



• CLAROSTAT volume controls mean just this: Always the correct replacement based on most extensive and accurate listings available today, with the absolute assurance that the correct CLAROSTAT replacement will provide a stay-put, profitable, good-will job.



Likewise with CLAROSTAT power resistors. These cement-coated wire-wound units, finished in characteristic green, provide the necessary safety factor to take any wallop. Install them—for get them.



And when it comes to plug-in resistors or replacement voltage-dropping power cords, again CLAROSTAT provides that better grade material which guarantees your servicing.

## New MANUAL!

Just issued. Ask your jobber for a copy. Or write us direct. And if you get to the Parts Show, look us up at Booth 620-22 Hertz Ave.



### EMERSON 409, 410, 411 (CHASSIS A-4)

Weak, distorted . . . defective 500,000 ohm resistor, connected to 6F7 pentode plate, often responsible. Try new unit.

### EMERSON MAC-7

Dead . . . look for open 2000 ohm ½-watt cathode resistor on 58.

### FAIRBANKS MORSE 44

Loud howl that disappears when tone control is set to bass . . . Replace bias cell in grid circuit of output tube. Before replacing, clean all contacts thoroughly.

### G.E. G97

Pushbuttons stick at either end of dial . . . Loosen tension spring fastened to latch bar at the end of the switch.

### KOLSTER 110

Hum at high setting of volume control . . . dress high voltage center-tap on power transformer away from volume control leads and close to chassis. Noise without i.f. tube in sockets . . . replace choke under 56 socket with 35,000 ohm resistor.

### KOLSTER K23, K28

Noisy . . . check voltage divider. If vitreous enamel is blistered, replace.

### MAJESTIC 50

Motorboats . . . check .001 mfd grid condenser and 100,000 ohm grid resistor on 27 oscillator for change in value.

### MAJESTIC 130, 130-A, 131, 132

No reception . . . test for short in 0.3 mfd. condenser, bypassing plate supply of first and second r.f. stages. Also check 4,875 ohm resistor in same circuit for decrease in value. Recommended ratings of replacement units: condenser, 400 volts; resistor, 10 watts.

### MOTOROLA 64, 94

When installing new dial pointer lights, turn base of socket so that pointer light forms sharp line on dial, otherwise light will be wide and ragged.

### MOTOROLA 345

When installing this set in a 1939 Plymouth using a hinge antenna it often is necessary to shield the lead-in right up to the hinge and bond shield to door trim to completely eliminate motor noise.

# FLEXIBILITY Plus DEPENDABILITY



## IN THIS ALL PURPOSE CARRIER DYNAMIC MICROPHONE

This new Model 105-D microphone is a noteworthy contribution in the public address, broadcasting, recording, and amateur fields. Its brilliant, distinct, life-like reproduction of both voice and music has won for it spontaneous applause. Because of its semi-directional characteristic it is especially recommended where acoustical conditions are poor or uncontrollable.

### FEATURES INCLUDE

- Full-frequency response—reasonably flat 40 to 8,000 cycles at 65 db.
- Acoustically streamlined styling.
- Zamak die-cast case.
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- Tilttable mounting.

PRICE, including floating contact cable, connector and 20 ft. rubber, shielded cable, Model 105-D, 30 ohms List **\$27.50**

200 or 500 ohms on Hi-Impedance, List **\$32.50**  
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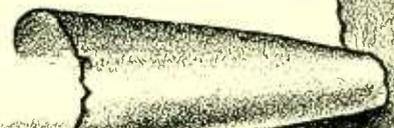
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**JUNE 14 and 17**

to greet members and friends

This is the opportunity to get the inside story of the greatest merchandising plan in "P. A."



#### PHILCO 700

The large tubular condenser under the chassis (part number 304146) frequently breaks the leads under its own weight. Always check this and support more rigidly.

#### PHILCO 1936 FORDS

Intermittent fading. . . . Look for poorly soldered connection on one of the lugs of oscillator coil.

#### PHILCO 817-827

Intermittent hum, loss of volume . . . replace 4 section bypass block housed in can.

#### RADIOLA 60

Weak . . . usually 20,000 ohm bleeder resistor, connected between plate supply and cathodes of 27s in r.f. and i.f. stages, is at fault due to large decrease in resistance. After replacing this component, however, volume is often not up to expectations, and voltages and continuity tests will fail to disclose additional defects. This receiver has no first audio stage, uses a 27 in gridleak detection coupled to a 71A output tube.

#### RCA 7U2

Dead, no plate voltage. . . . Usually caused by C32, a .25 mfd condenser bypassing high voltage filters. Replace with 600 volt unit.

#### RCA 9U

Distortion. . . . Check 20 mfd cathode bypass on 6L6 output tube, for leakage or short.

#### RCA VICTOR 34

Vibrator noise over entire tuning range after new vibrator is installed. . . . Unsolder secondary leads to vibrator points and twist together before resoldering.

#### RCA 85T

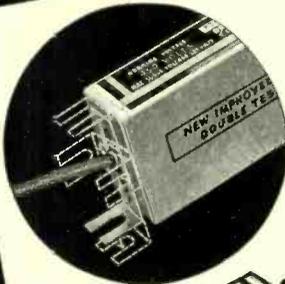
Weak, plate voltage low. . . . Check 330 ohm and 33 ohm bias resistors connected in series with rectifier negative and ground.

#### SILVER MARSHALL 30

Weak or no reception . . . check 400-ohm resistors in cathode circuits of 24s in rf stages for opens.

Intermittent . . . v-shaped springs on socket prongs corrode and work loose or break causing shorts with adjacent prongs. Springs are designed to keep prongs from spreading, but really are not needed; remove them all from set when the trouble develops.

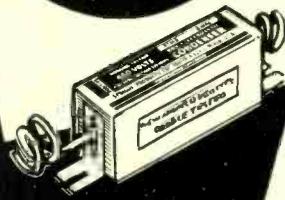
# 4 SPRAGUE CONDENSER LEADERS



**SWING 'EM—BEND 'EM—OR ADJUST 'EM**

Your job made easier! Always a leader in quality, Sprague Type PTM 450 V. small cardboard dries are now equipped with a Universal Mounting Tab which makes them doubly useful, doubly easy to install. Mount 'em in any position. Put 'em any old place or in any old chassis holes. And don't forget! PTM's are conservatively rated at 525 volts but will stand surges as high as 560 to 580 volts—and come back for more. They're tops for any radio need!

*"The Quality Condensers for Those Careful Jobs"*



**MONEY-SAVERS FOR UNIVERSAL REPLACEMENT USE**

Sprague ATOMS (midget dries) are the fastest selling condensers on the market today—and for one reason only! The more you test them, the more you use them, the better you like them. Atoms are smaller. They are made in both single and dual combinations in all voltages for every replacement need. They've got lower power factor, lower leakage. They're unconditionally guaranteed against "blow-ups". They're first choice of smart buyers for all replacement jobs where the call is for big league performance at a rock-bottom price.

**TYPICAL ATOM VALUES**

TA-10, 10 mfd., 25 volts, 5/8" x 1 3/8", Net 24c	UT-8, 8 mfd., 450 volts, 13/16" x 1 3/8", Net 36c	UT-8B, 8-8 mfd., 450 volts, 1" x 2 3/8", Net 60c
--	---	--

Other values and sizes in proportion

### HIGH VOLTAGE PROTECTION FOR AMATEURS

No chance to electrocute yourself here! Sprague Transmitting Condensers with the new Lifeguard Terminal Protective Caps are designed to protect every amateur who recognizes the danger of the high voltages now used in most rigs. Caps fit snugly over condenser terminals—give absolute protection against danger of accidental contact. Lifeguards supplied free with all Sprague Transmitting units, or you can buy them for old condensers at 25¢ list per pair.

WRITE for complete Sprague Catalog of all types of Condensers, Interference Materials, Test Units, etc.



### HERE'S REAL BY-PASS RELIABILITY!

Servicemen who started using Sprague TC Tubulars more than ten years ago, still insist on them today. There is no better evidence of the dependability that has made TC's the most widely used condensers ever produced! Test voltage 1,200 volts; working voltage 600 volts. Made in all ranges from .0001 mfd. to 1.0 mfd. Sold singly or in handy kits that save you time and money.

*"Not a Failure in a Million"*

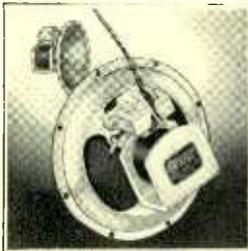
# SPRAGUE

**THE NAME THAT HAS STOOD FOR BETTER CONDENSERS SINCE THE BEGINNING OF RADIO**

SPRAGUE PRODUCTS COMPANY

North Adams, Massachusetts

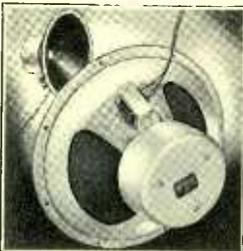
# The Perfect REPLACEMENT SPEAKERS QUAM



## DYNAMIC

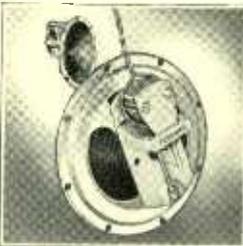
High quality speakers especially designed for replacement purposes with all the outstanding features that have made the Quam speaker one of the most widely used as original equipment, plus features like the interchangeable transformers that make them ideal for replacement service. You can get exactly the size speaker you need with a transformer that *exactly* matches the output of the set—and you can get it QUICKLY! Rigid, one-piece welded assembly, without screws or bolts to loosen

and get out of adjustment. Use Quam Dynamics to back up your service guarantees.



## QUAM P.M. DYNAMIC

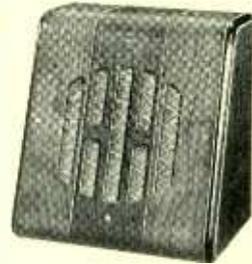
The finest speaker you can get for all replacement purposes when a high quality self-exciting, dynamic speaker is required. Needs no field current—so it makes the perfect replacement speaker for auto sets, portable battery sets, inter-communication systems. Fully dustproof, and weather-proof, with arc welded magnets. No adjustment is required after speaker is assembled.



## PERMANIC

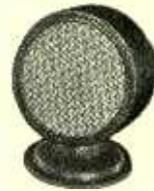
An exclusive development of Quam-Nichols. A speaker with the performance of a Dynamic at substantially less than Dynamic cost. Offers better sensitivity, lighter weight and more compact design. It's perfect as a replacement speaker for moderately priced receivers.

## QUAM Cabinet Speakers



A Quam Dynamic P. M. Speaker with its brilliant sensitivity and lifelike tone fidelity mounted in a handsome walnut finished cabinet for wall or table use. Novel, wedge shaped cabinet provides maximum acoustical efficiency and non-directional effect. Ideal for use as an extra speaker.

## QUAM Permanic Microphone



A substantial, practical microphone of radically different construction that offers performance equal to that of mikes selling at 4 to 5 times its modest price. Perfect for use where a sturdy mike is required that can take hard usage. Humidity and temperature do not affect it. Write for complete details and prices.



VISIT QUAM-NICHOLS

BOOTH No. 728

CHICAGO RADIO PARTS SHOW

Hotel Stevens, June 14-17

QUAM-NICHOLS CO.

Cottage Grove at 33rd Pl., Chicago

New York • Los Angeles • San Francisco • Seattle

## AEROVOX

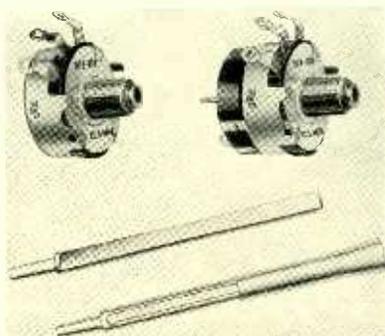
Aerovox Corp.  
New Bedford, Mass.



CONDENSERS—PWC series of paper-wound replacements for electrolytics matches in size and shape the dry electrolytic metal-can condensers, is available in three types replacing the 4-600, 8-600 and 8-8-600 electrolytics, with actual capacities of 2.0, 2.75 and 1.75-1.75 mfd., respectively. The PWP series matches the cardboard-case dry electrolytics of 4-600, 8-600 and 8-8-600 with actual capacities of 2.0, 3.0 and 2.75-2.75 mfd. Have low power factor and leakage. No polarity need be observed. *Radio and Television Retailing, June, 1939.*

## I R C

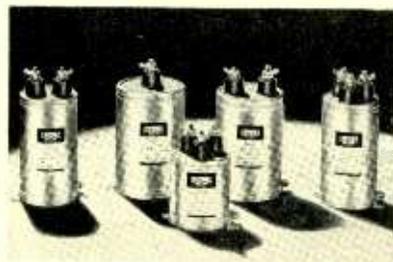
International Resistance Co.  
Philadelphia, Pa.



MIDGET CONTROLS—Type D has metallized type resistance element and construction features usually available in larger standard controls; designed to accommodate two types of plug-in shafts. Special features include spiral spring connector, 5 finger "knee action" silent element contactor, special steel coil spring on the shaft. Comes in 17 popular ranges and tap-type units from 5,000 ohms to 2.0 megohms. *Radio and Television Retailing, June, 1939.*

## CORNELL-DUBILIER

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

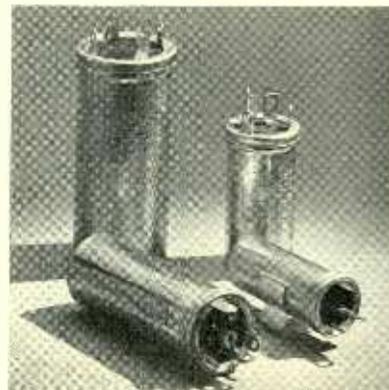


CAPACITORS—Type PC, impregnated and filled with Dykanol which, since Dykanol is non-flammable and non-explosive is suited for high voltage circuits in television equipment. Hermetically sealed in cylindrical containers, units are produced with Bakelite double cone type insulators. Mounted in an inverted position with terminals clearing the chassis. Available in single, dual and multiple capacities at voltages between 2,000 and 10,000 volts, d.c. *Radio and Television Retailing, June, 1939.*

## MALLORY-YAXLEY

P. R. Mallory and Co., Inc.  
Indianapolis, Ind.

CONDENSERS—Type FP are being released to radio servicemen, amateurs and experimenters. Provide small size, low r.f. impedance permitting in many instances the elimination of extra paper by-pass units, unusual life. Chemical purity plus the absence of internal riveted connections insures freedom from corrosion, surge proof construction, improved power factor for better filtering efficiency, permanent identification, low leakage. *Radio and Television Retailing, June, 1939.*



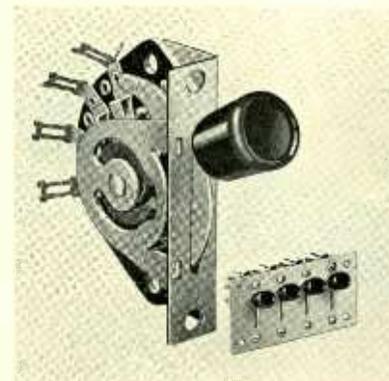
POTENTIOMETER—Center-tapped wire-wound potentiometer is designed to accomplish centering of the image in the magnetic deflection type of television cathode ray tubes. These units are available in resistances from .5 to 50,000 ohms.



## CENTRALAB

Centralab  
900 E. Keefe Ave., Milwaukee, Wis.

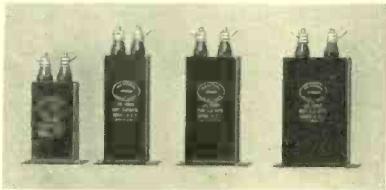
LEVER SWITCH—Has up to 12 contact clips and 2 or 3 positions. Positive index or spring return to center. Supplied with or without a black crackle finish mounting plate. *Radio and Television Retailing, June, 1939.*



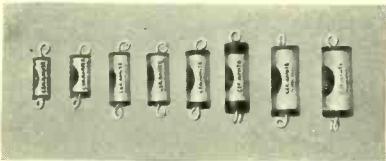
# PRODUCT EXHIBIT

## NATIONAL UNION

National Union Radio Corp.  
Newark, N. J.



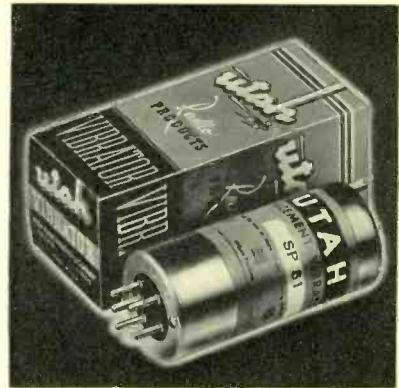
**HIGH VOLTAGE**—Metal cased high voltage condensers with mounting feet and insulated standoff connections. Oil filled, lug terminals provided, available in 1 or 2 mfd. at 1000 or 2000 volts, list price \$3.00 to \$6.00. *Radio and Television Retailing, June, 1939.*



**CERAMITE**—Midget electrolytic condensers encased in ceramic insulation. Special etching process avoids shorts and explosions. Available in 25, 150, 250, 350 and 450 volt units in capacities from 4 to 40 mfd. Priced from \$.40 to \$.90 list. *Radio and Television Retailing, June, 1939.*

## UTAH

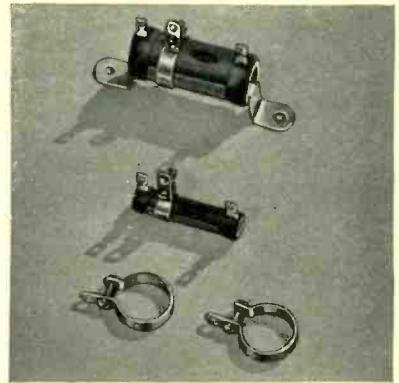
Utah Radio Products Co.  
812 Orleans St., Chicago, Ill.



**VIBRATOR**—New line comprising 23 types suitable for auto radio and other services. Latest improvements including vibrator reed with reduced cross section, armature swinging across pole-pieces and double parallel side member frame. *Radio and Television Retailing, June, 1939.*

## CONSOLIDATED

Consolidated Wire and Associated Corps.  
514 S. Peoria St., Chicago, Ill.



**RESISTORS**—Wire wound resistors are announced in four sizes of adjustable design—10 watt, 25 watt, 50 watt and 75 watt, of which the 10 and 25 watt sizes are shown with extra adjustable bands. Four sizes of wire wound fixed resistors are offered—5 watt, 10 watt, 20 watt, and 50 watt, to fill most requirements for receivers, transmitter, amplifier and industrial applications. *Radio and Television Retailing, June, 1939.*

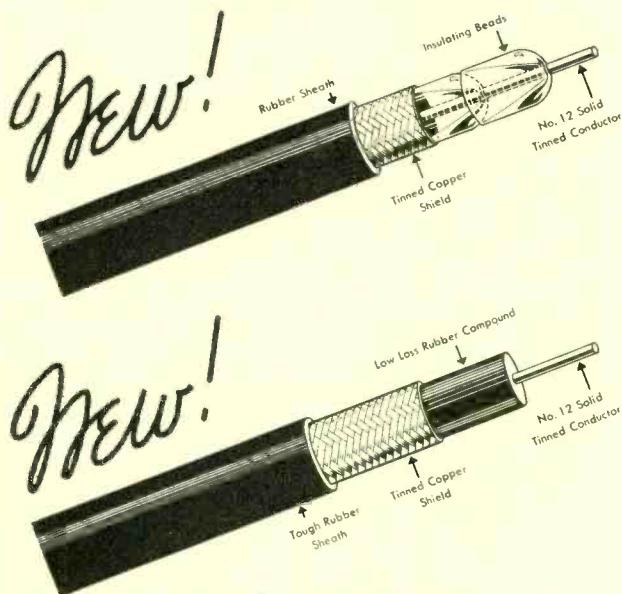
# Radio or Television—

—and it pays you to sell . . .

To Radio Servicemen and Dealers:

You know very well that "any old wire" won't do for satisfactory service work. You as radio specialists understand how important it is that the characteristics of the replacements meet the requirements of the particular job. Bad wire is never a good alibi when your job goes Haywire.

That's the reason Belden has maintained a strong engineering staff since the very inception of Radio—a staff that has worked hand in hand with the industry perfecting *specialized* wire for the most exacting radio requirements. That's the reason, too, that the important wire characteristics you need to know are



### Co-Axial Cables by Belden

8217 (Above) With unique low loss insulating beads and weather-proof vulcanized rubber sheath.

8216 (Below) With Belden low loss rubber compound.

# DON'T GO "HAYWIRE"—

## PRODUCT EXHIBIT

### SPRAGUE

Sprague Products Co.  
North Adams, Mass.



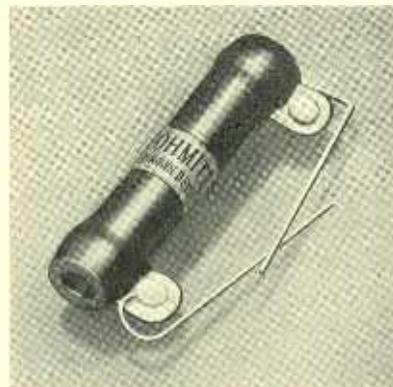
**CAPACITORS** — Type DR paper condensers are supplied in metal containers; are made in capacities of 4, 8, 4-4 and 8-8 mfd. Appearance similar to that of standard electrolytics with capacity of 1/3 to 1/2 that of electrolytics. Leakage and power factor characteristics are negligible, no polarity to observe, 600 volt rating. Units designed for inverted screw mounting. An 8 mfd. condenser lists at \$1.35. *Radio and Television Retailing, June, 1939.*



**CONDENSERS** — "Neutrol" rectangular transmitting condenser with flanges for mounting in any position combine oil-filled, oil-impregnated construction with rectangular sizes. Labeled with information concerning capacity, maximum d.c. working voltage and maximum surge voltage. Oil has a flash-point of 500 degrees F. *Radio and Television Retailing, June,*

### OHMITE

Ohmite Manufacturing Co.  
4835 W. Flournoy St., Chicago, Ill.



**RESISTORS** — "Brown Devils" wire-wound, all-porcelain replacement resistors have been built to resist shock, vibration, heat and humidity. Available in popular 10 watt and 20 watt sizes, resistances from 1 to 100,000 ohms. Center-tapped type are also available. *Radio and Television Retailing, June, 1939.*

### MUELLER

Mueller Electric Co.  
1583 E. 31st St., Cleveland, Ohio

**TIP CLIPS** — "Alligator" clips, 60 series represents an assortment of all of the most popular types of alligator clips of both un-insulated and insulated types, plus a new copper r.f. clip No. 60-CS with phosphor bronze spring and brass screw connection. Will not heat up in h.f. circuits. Two in. long. No. 85 clip in the Alligator line is now called Crocodile clip. Includes the new No. 85-T tip-clip with standard phone tip on one jaw. *Radio and Television Retailing, June, 1939.*



# it's still done with WIRES

## the Nationally Advertised Wiring Line

shown with each number in the Belden catalog. Their consistent quality helps you eliminate "Haywiring."

Belden is using national advertising to warn set owners against the Haywire repair work that only hurts your legitimate business—and gives a black eye to the radio industry.

Why not use Antenna Systems—Hook-up Wire—Transmission and Microphone Cable that's worthy of your effort—wire you know will do its part to give service and satisfaction. Don't go HAYWIRE—Specify Belden.

Belden Manufacturing Co., 4697 W. Van Buren St., Chicago, Ill.



### Remember National Antenna Check-up Week?

Remember the posters, the buttons, and the big national advertising program to sell set owners on all kinds of radio service—by radio servicemen?

It was sponsored by Belden, of course. Belden's National Advertising continues with a regular schedule during 1939. It will help you sell better wiring and profitable antenna installations.

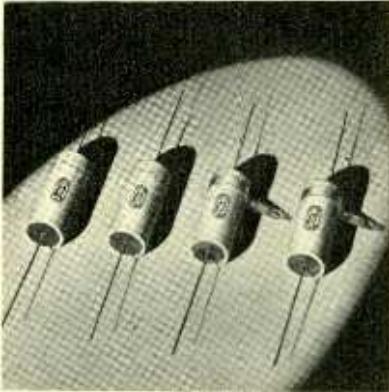


# Go Belden THE RADIO WIRING LINE

# PRODUCT EXHIBIT

## SOLAR

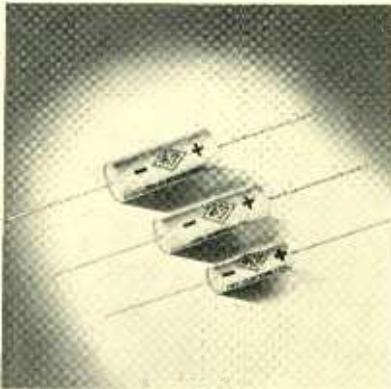
Solar Mfg. Corp.  
Bayonne, N. J.



**CAPACITOR** — Tubular paper capacitor molded in a new wax that seals it permanently against immersion. Has increased the probable life of paper tubulars from 2 to 5 times at no increase in cost. *Radio and Television Retailing, June, 1939.*

## AMCON

American Condenser Corporation  
Chicago, Ill.



**CONDENSERS** — "Little Americans" midget electrolytic condenser line feature extremely compact construction are available in 25 volt d.c., 5, 10, 25 mfd.; 50 volt d.c., 5, 10, 25, 5-5, 10-10 mfd.; 150 volt d.c., 4, 8, 12, 16, 20, 30, 40, 12-12, 16-16 mfd.; 250 volt d.c., 4, 8, 12, 16, 20, 40 mfd.; 350 volt d.c., 4, 8, 12, 16 mfd.; 450 volt d.c., 4, 8, 12, 16, 8-8 mfd. *Radio and Television Retailing, June, 1939.*

## WESTON

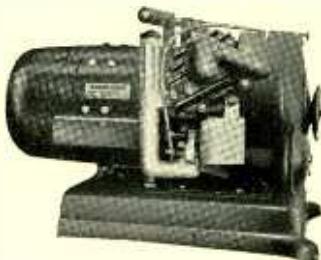
Weston Electrical Instrument Corp.  
Newark, N. J.



**OSCILLATOR** — Portable oscillator makes it possible to check high frequency signals without removing receiver from radio patrol cars. Can be used for zero-beat frequency check on transmitter. Jack provided on oscillator panel for insertion of earphones. Can generate fundamental signals ranging from 22 to 150 mc. at an accuracy of 1 per cent, is adaptable to use in television, aviation, and other fields employing ultra high frequencies. *Radio and Television Retailing, June, 1939.*

## KATO

Kato Engineering Co.  
Mankato, Minn.



**POWER PLANT** — Model 19A "Quietlight" 300 watts a.c. or 200 watts d.c. power plant. Runs at 1800 r.p.m., has  $\frac{1}{2}$  h.p. engine driving a four pole, laminated pole generator bolted on to engine crankcase. Has four heavy d.c. brushes, both d.c. and a.c. brushes are on outer end easily accessible. Push button starter, ammeter, cutout, charge control. Completely shielded and filtered. Will run 10 hours on a gallon of gasoline. *Radio and Television Retailing, June, 1939.*

## TRIPLETT

Triplett Electrical Instrument Co.  
Bluffton, Ohio



**TESTER**—Model 666-H a.c.-d.c. pocket volt-ohm-milliammeter will handle voltages to 5000 volts without external multipliers. Checks high voltages and circuits of transmitters and receivers. Selector switches for all readings. A.c.-d.c. voltage at 1000 ohms per volt—0-10-50-250-1000-5000; d.c. milliamperes—0-10-100-500; resistance 0-300 ohms; 0-250,000 ohms, with provision for higher measurements by using external batteries. List \$21.75. *Radio and Television Retailing, June, 1939.*

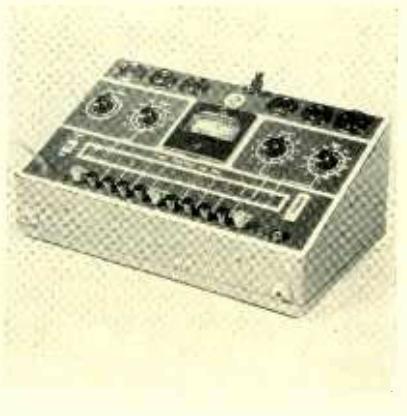
## RCA

RCA Manufacturing Company  
Camden, N. J.



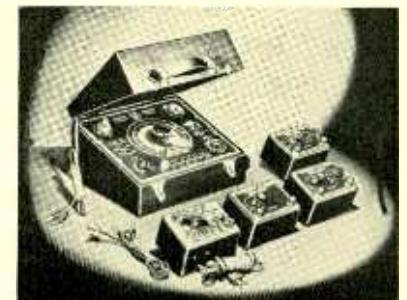
**TESTER**—A new portable measuring instrument for surveying the service range of television and other stations operating in the ultra high frequency spectrum of from 20 to 125 mc., provides accurate indications of the strength of very short wavelength signals, enables records to be made automatically with suitable attachments, provides data on the amount of noise which might interfere with television pictures. *Radio and Television Retailing, June, 1939.*

**TESTER**—Radio tube tester No. 156-A, counter type and 156, portable, in which the keynote of design is simplicity of operation. Tests every standard type of receiving tube, including ballast tubes. Tests Magic Eye Tubes for brilliance and opening and closing of eye, tests four-prong and octal-base ballast tubes for noisy welds and opens, tests voltage drops on gas tubes. Spare switch section and socket minimizes obsolescence. Easily read figures on roll chart, large type with guide lines indicate proper buttons to press. Counter type lists at \$37.95, portable at \$39.95. *Radio and Television Retailing, June, 1939.*



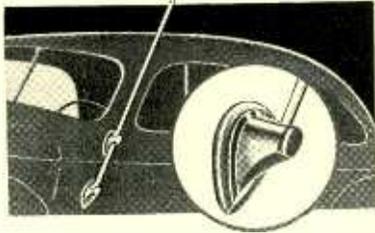
## CORNELL-DUBILIER

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



**TESTERS** — Capacitor Test Equipment Line includes Capacitor Analyzer, Capacitor Bridge, complete line of Capacitor Decade Boxes. Model BF 50 capacitor analyzer measures all important characteristics of paper, mica, oil, wet and dry electrolytic and motor starting capacitors. C-D midget capacitor bridge measures all types of capacitors between .00001 and 50 mfd. Decade boxes are supplied in three units with range of .0001 mfd. to 11.1 mfd. *Radio and Television Retailing, June, 1939.*

## BRACH COWL AERIAL



### Radio's Smartest—

Made of Admiralty Brass, gleaming chrome plated. Handsome streamline design; smooth, noiseless action; permanently lubricated. Exclusive anti-rattle construction makes it vibrationless.

Approved and recommended by leading car manufacturers.

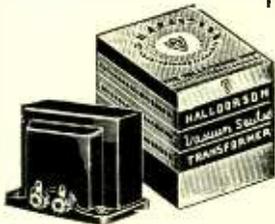
## L. S. BRACH

MANUFACTURING CORPORATION

World's Largest Makers of Antenna Systems

55-67 DICKERSON STREET  
NEWARK, N. J.

TRANSFORMERS  
AVAILABLE  
FOR  
TELEVISION!



**JUST 8 MODELS for  
90% of ALL RADIO  
SERVICE CALLS . . .**

Including  
**Both Power and Audio  
Transformers**

• For \$18.23 a service dealer can stock 8 models of Halldorson Transformers that will answer 90% of all radio service calls covering both power and audio requirements.

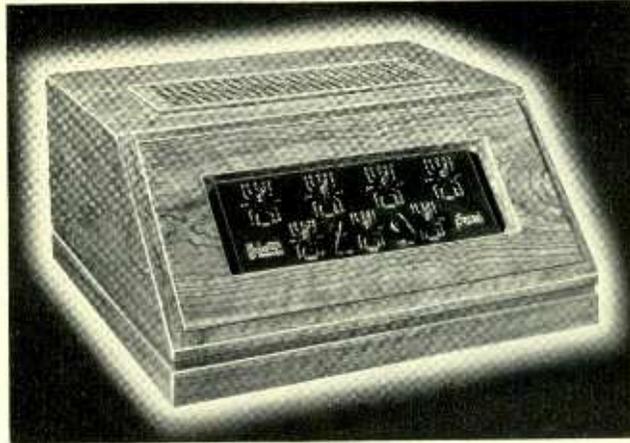
And remember, the design of each transformer covers the requirements of all the makes of sets for which it is intended. When the investment is so low, why not be prepared to give prompt transformer service with the outstanding Vacuum Sealed Transformer line. Write for details!

# Halldorson

Vacuum Sealed Transformers

THE HALLDORSON COMPANY  
4500 Ravenswood Ave. Chicago, Ill.

# The Sound of Tomorrow



## by WEBSTER-CHICAGO

### FEATURES

- FOUR LOW-IMPEDANCE MIXING CIRCUITS (250 ohms)—removing all obstacles to the use of long microphone cables
- REMOTE MIXING of all four input circuits: operator can control output levels from any vantage point in audience
- TASTEFULLY DESIGNED CABINET IN WALNUT FINISH — control panel recessed and edge-glow illuminated
- High-speed expander
- Volume compression
- Dual tone compensation
- Multi-stage inverse feedback
- Output for various line impedances: 500, 250, 125, 100 ohms
- Visual volume indication
- Locking-type input plugs
- Standard construction allows removal from case for rack-panel mounting
- Power output: 30 or 70 watts

These *Super-Fidelity* amplifiers are offered (in addition to our regular line) in two sizes, Nos. W-4030 and W-4070, with power output of 30 and 70 watts respectively (R.M.A. standard ratings).

Designed for use with low-impedance microphones, they are ideal units either for handling those larger rental jobs, or for permanent installation in parks, stadiums, and similar large outdoor locations, where long microphone lines and greatest possible flexibility of operation are paramount requirements.

They are highly flexible. The mixer-pre-amplifier and the power stage are separate units, removable from the cabinet for separate mounting in standard 19" racks, with possibility of adding more power stages and, if necessary, a second mixer—to accommodate up to 8 microphones and deliver as high as 280 watts.

THE WEBSTER COMPANY, 5622 Bloomingdale Ave., Chicago

At the Show:  
**Booth No. 1008**

Mail the coupon . . .  
get the full story of  
*Super-Fidelity* Sound

WEBSTER COMPANY  
Section JN-8, 5622 Bloomingdale Ave., Chicago  
Please send me more information on  
 *Super-Fidelity* Sound Systems  
 Complete Catalog

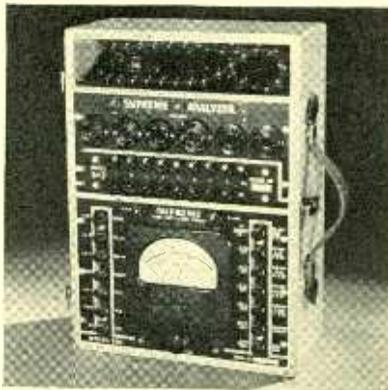
Name .....

Address .....

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

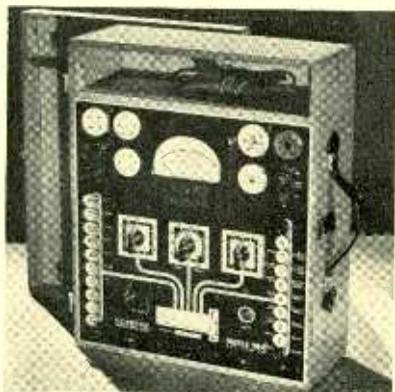
## PRODUCT EXHIBIT

### SUPREME



Supreme Instruments Corp.  
Greenwood, Miss.

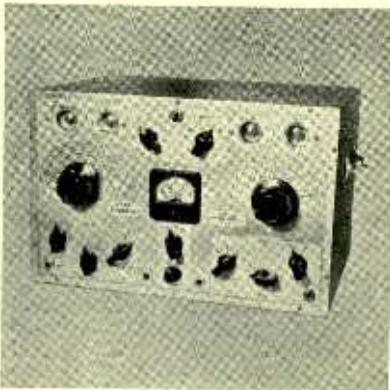
**TESTER**—Model 592-593 Multimeter and Analyzer offers 47 of the most usable multimeter functions and ranges plus an analyzer unit which includes local tube socket testing. Push button operated from only two push buttons for any point-to-point measurement. Eight d.c. ranges from 70 microamps to 14 amps.; 7 d.c. volt ranges (at 1000 ohms per volt) to 1400; 6 ohm and megohm ranges from 1/4 ohm to 50 megohms (all on internal battery); 7 a.c. volt ranges to 1400; 7 output voltage ranges to 1400 and 5 d.c. (decibel) ranges from minus 10 to plus 46 d.c. *Radio and Television Retailing, June, 1939.*



**TESTER**—Model 504 tube and set tester includes "Double Floating" filament return selector to take care of "Roaming Tube Base Connections" and filament "Vari-volt" selector which supplies 23 filament voltages from 1.5 to 110 volts. Checks tubes for opens, 2000 ohm cathode leakage test, 2 megohm anode leakage test, short, filament continuity, overall quality test, sectional and separate plate quality tests. Also offers 31 additional set tester functions and ranges. *Radio and Television Retailing, June, 1939.*

### RIDER

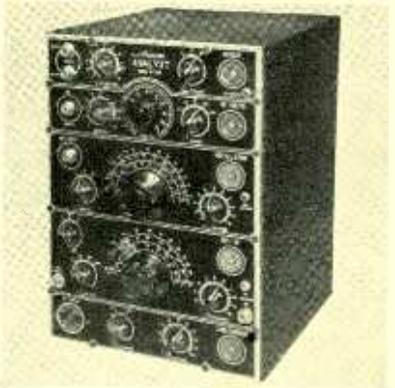
Service Instruments, Inc.  
404 Fourth Ave., New York, N. Y.



**CHANALYST**—A test instrument which diagnoses receiver troubles with the set in operation. Traces a signal from the antenna through to loudspeaker by picking it out at any point, amplifying and detecting it. Indicates wattage drawn by set, also oscillator operating conditions; incorporates electronic voltmeter. *Radio and Television Retailing, June, 1939.*

### MEISSNER

Meissner Mfg. Co.  
Mt. Carmel, N. Y.



**TESTER KIT**—For locating faults in radio receivers by "signal tracing". Includes audio channel, a single stage audio amplifier which permits analysis of audio system; electronic voltmeter with five useful voltage ranges; oscillator channel for analysis of troubles in oscillator circuit; r.f.-i.f. channel, covering frequency range of 95 to 1700 kc.; and line current indicator. Testing of "intermittent" faults is an outstanding accomplishment of the Analyst. *Radio and Television Retailing, June, 1939.*

### RADIO CITY

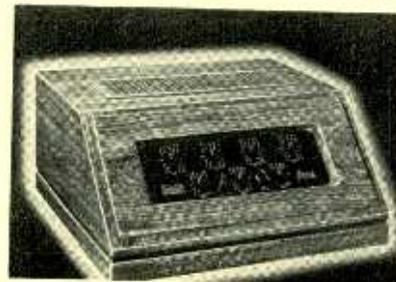
Radio City Products Corp.  
New York, N. Y.



**TESTER**—Model 308 Dynoptimum Tube Tester will test all 35-45-50-70 volt tubes and provides for various other new tubes soon to be announced. Contains provision for noise-level test in addition to regular RMA test under specified plate voltages and loads. Check tubes including local, cold cathode rectifiers, metal and glass tubes, ballast resistors and pilot lights. Hot inter-element short and leakage test. Line voltage indicator on meter. Counter model list \$16.95, combination portable and counter model list \$18.95. *Radio and Television Retailing, June, 1939.*

### WEBSTER-CHICAGO

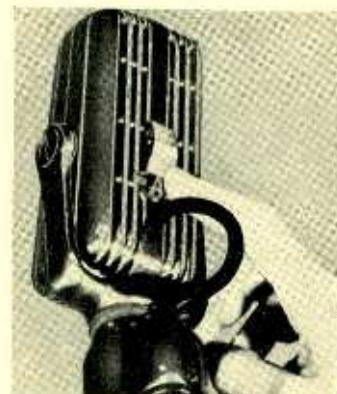
The Webster Company  
5622 Bloomingdale Ave., Chicago, Ill.



**AMPLIFIER**—"Super-Fidelity" sound amplifiers are offered in two sizes with 30 and 70 watt RMA ratings. Extreme fidelity in reproduction, four low-impedance (250 ohms) mixing circuits, all with remote mixing walnut-finished cabinet with slanting panel recessed and edge-glow illumination. Pre-amplifier and power stages are sectionalized and designed for rack and panel mounting when desired. A second mixer and extra power stages can then be added as required up to a total output of 250 watts.

### AMPERITE

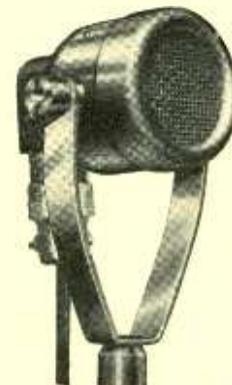
Amperite Company  
561 Broadway, New York, N. Y.



**MICROPHONE**—Velocity microphone with acoustic compensator has a standard bi-directional pickup with acoustic compensator down. Pushing compensator up changes the velocity to a dynamic without peaks and with uni-directional characteristics. The pitch of the mike is also raised when compensator is pushed up, and lowered when down. *Radio and Television Retailing, June, 1939.*

### CARRIER

Carrier Microphone Co.  
Inglewood, Calif.



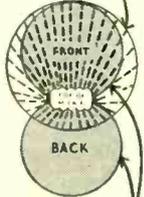
**MICROPHONE**—Model 702-D dynamic Microphone. An exclusive feature, the "Acoustic Equalizer" makes possible a response curve whose linearity is claimed to be superior to that of other types. Available in 3 models: 30 ohms, 200 ohms, and 500 ohms, the two latter incorporating a wide range impedance matching transformer built as an integral part of the unit. *Radio and Television Retailing, June, 1939.*

**Now..**  
**5 VITAL FEATURES**  
**COMBINED IN**  
**AMPERITE VELOCITY**  
**WITH ACOUSTIC COMPENSATOR**



- it's a VELOCITY
- it's a DYNAMIC
- UNI-DIRECTIONAL
- NON-DIRECTIONAL
- HIGH OR LOW PITCH

UNI-DIRECTIONAL PICKUP FIELD COMPENSATOR UP



PICK-UP FIELD COMPENSATOR DOWN

By moving up the Acoustic Compensator, you change the Amperite Velocity Microphone to dynamic operation — without peaks. At the same time you reduce the back pickup, making the microphone practically UNI-DIRECTIONAL.

With the Acoustic Compensator down, the microphone is BI-DIRECTIONAL . . . 120 degrees front and back without frequency discrimination. Rotating the microphone until it parallels the ceiling makes the microphone NON-DIRECTIONAL.

**THE ACOUSTIC COMPENSATOR** is a regular feature of these models: RBHk (hi-imp); RBMk (200 ohms) LIST \$42.00. RSHk (hi-imp); RBSk (200 ohms) LIST \$32.00

Write for Complete Illustrated Bulletins and Valuable Sales Helps.

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

**AMPERITE** *Velocity* **MICROPHONES**

**New! Atlas 8" Power Projector**



**If you are Selling Sound . . .**

You can't afford to overlook the new Atlas "Super-Power" cone projector . . . for all applications where power and controlled sound distribution are required. An all-purpose P. A. projector for indoor, outdoor, and mobile application. The G-8 can take it . . . it's made of non-resonant heavy aluminum finished in battleship gray. Three feet in length, bell 24." Model G-8 for 8" Speakers. . . . List \$22.00 Model ST-9 Bracket and Base. . . . List \$4.00

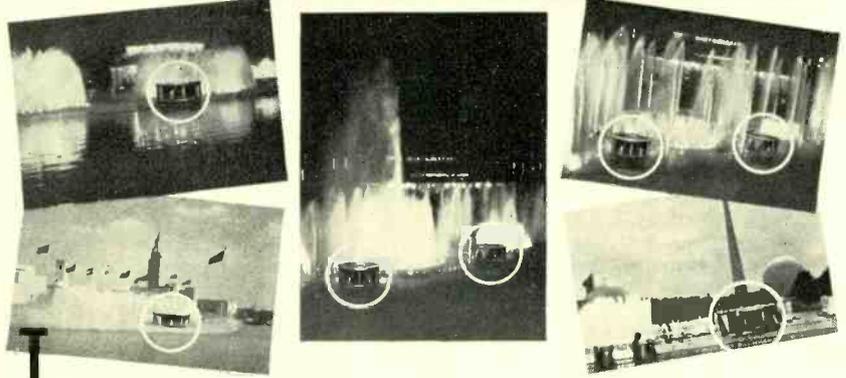
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**Write for New Sound Catalog!**

New 1939 Atlas Sound Summer Catalog F-39 brings you the newest P. A. developments. Baffles, Enclosures, Mike Stands, P. M. Units and other accessories. Send for this helpful catalog now.

**ATLAS SOUND CORP.**  
 1454 - 39th Street Brooklyn, N. Y.

**MORE THAN**  
**600 HOURS IN A SALT BATH**  
**- AND STILL GOING STRONG!**



**I**F you're looking for evidence of speaker stamina, engineering genius and amazing dependability, take a trip to the World's Fair. See in the Lagoon of Nations, where nightly magic fountains are set to music, the world's largest speakers. Built to specifications by Cinaudagraph engineers, these units must withstand tons of salt spray night after night. For more than 600 hours they've "taken it". And still going strong!

In the Utilities and General Motors exhibits, you'll find other Cinaudagraph speakers just as faithfully on the job. World's Fair engineers chose these speakers for the mighty Public Address system networking the entire grounds. Seventy-six installations—1800 speaker units! That's Cinaudagraph's contribution to the World of Tomorrow. And proof enough, we think, that Cinaudagraph can build to any specifications—and build well.

For performance, protection and bigger profits in your business, look to Cinaudagraph for speakers. You, too, will agree with enthusiastic Fair engineers, "it pays to insist on the finest". For the speaker line designed for the World of Tomorrow is more than capable of today's demands.

Description of the Cinaudagraph 27" electro-dynamic speaker installation at the New York World's Fair available on request. Also catalog describing the entire Cinaudagraph line of speakers. We cordially invite you to visit our display of Cinaudagraph Products at the National Radio Trade Show. Our booth number is 927 Faraday Avenue. Additional equipment will be exhibited in rooms 4A-5A-7A.



**CINAUDAGRAPH CORPORATION**  
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- Polarity Changers
- "A" Battery Eliminators
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American Television & Radio Co. has consistently devoted its efforts and energies to the perfection and production of vibrators and associated equipment and today, after nine years of pains-taking, persistent, and diligent work resulting in steady development and progress, is considered the World's Leader in its field.

ATR Vibrators, the heart of vibrator-operated power supplies, are proven units of the highest quality, engineered to perfection. They are backed by more than nine years of vibrator design and research, development and manufacturing—ATR—pioneered in the vibrator field.

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Be Sure to Specify and Insist on ATR  
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Your ATR Distributor will be Happy to Serve You.

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## AMERICAN TELEVISION & RADIO CO.

St. Paul, Minnesota, U.S.A. Cable Address: "Likex," New York.

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• Remember — if it's in the Ohmite Stock Catalog 17, Ohmite has it in stock—ready to ship the same day orders are received. This is a service only Ohmite can render so completely. Here you have on call the largest, most complete stock of wire-wound Resistors and Rheostats in the country—hundreds of thousands of units in a range of types and sizes unmatched anywhere—readily available at all times. See Your Jobber Today or Write for Catalog 17.



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Radio Parts  
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OHMITE MANUFACTURING COMPANY  
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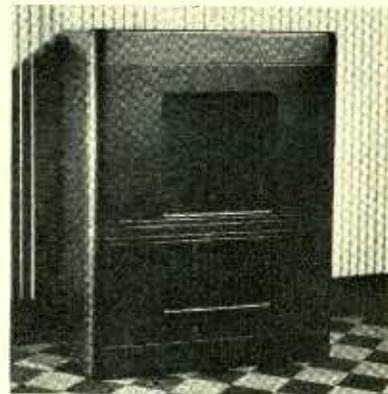
Be Right with **OHMITE**  
RHEOSTATS • RESISTORS • TAP SWITCHES

## PRODUCT EXHIBIT

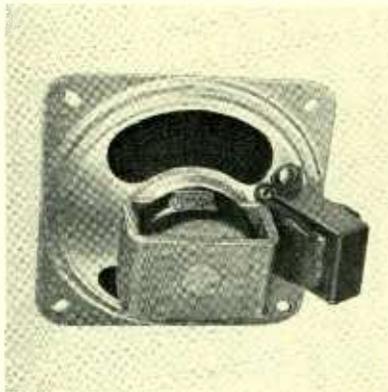
### JENSEN

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

REPRODUCERS — Peri-dynamic reproducers with bass reflex. As a climax to two years of work employing the bass reflex and peri-dynamic acoustic principles the company announces a complete new line of cabinets incorporating these exclusive features. The new line emphasizes improved style and appearance, being suited for home, studio and similar applications. Models available for 8, 10, 12, 15 and 18 in. speakers. *Radio and Television Retailing, June, 1939.*



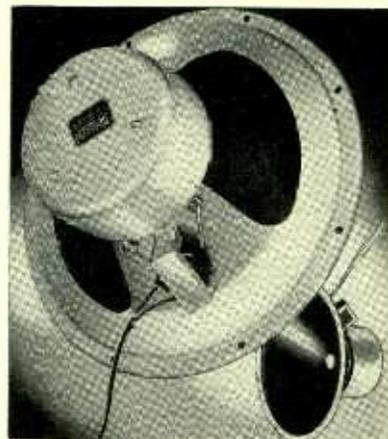
SPEAKERS—Four in. speakers are available in both permanent magnet and field coil designs. Performance ability and reliability combined with low price has been emphasized in producing these speakers. *Radio and Television Retailing, June, 1939.*



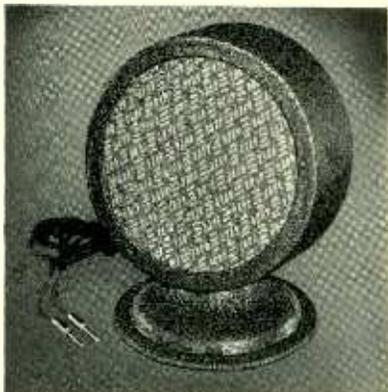
### QUAM-NICHOLS

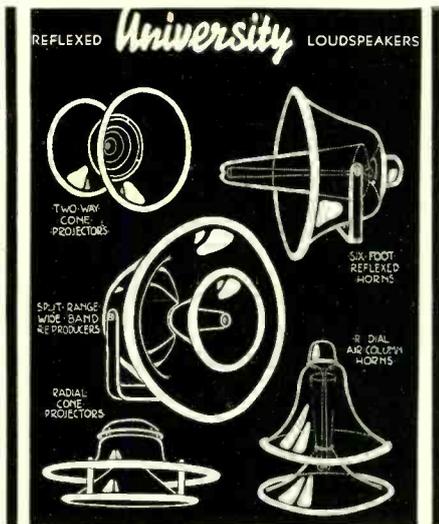
Quam-Nichols Company  
33rd Place and Cottage Grove Ave., Chicago, Ill.

SPEAKER — Model 120 is the twelve inch model of a complete line of P.M. dynamics especially designed for replacement purposes. Fully dust-proofed and weather proofed, with arc welded magnets. This 12 in. model with a 30 watt maximum capacity is suited for public address equipment or other purposes requiring great power. *Radio and Television Retailing, June, 1939.*



MICROPHONE—Permanic mike is in the lower price brackets. Is of radically different construction, requires no batteries or transformers, and will stand up under rough usage. For applications where sturdy, reasonably priced microphone is indicated. *Radio and Television Retailing, June, 1939.*





### University's Latest Sensation

You can't afford to do without the rubber-tired, rubber-damped rim.

The latest in University's long list of basic pioneering developments in the art of acoustic reproduction—Eliminates all "ring" or "resonance" from spun metal horns—Incorporated as standard equipment at a price which is attractive to all purchasers of sound equipment. University Rubber Damped Rim may be obtained in the models illustrated and those listed below:

University-split range wide band reproducers range 60-10,000 cycles, high efficiency type—25 watts capacity (2 models).

Two way projectors for 6", 8", 10" and 12" cones (four models).

University-Radial projectors for 6", 8", 10" and 12" cones (three models).

University-Reflexed horns, from 6' down to 20" (five models).

University-Radial horn 4 1/2' acoustic length (one model).

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You Need  
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**OUT AUGUST 19th**

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**LAFAYETTE**  
p. a. sales division

NEW YORK ATLANTA CHICAGO

**T**HOUSANDS of copies of Rider Manual Volume X are on their way to the servicemen of America. The publication date this year has been advanced to August 19th in order to make available to you the tremendous amount of servicing material awaiting publication.

The great number of receiver models being produced by the manufacturers—the new television receivers—facsimile receivers—wireless record players—all have combined to create such a need—such a demand for servicing data that Volume X will be made available 4 months ahead of the usual date.

#### NEW SERVICE DATA

Complete servicing data you need on the receivers now in your shop . . . The data you would ordinarily get in November, ready for you four months ahead of time. The information you have asked us for—in the form you asked for it—all in Rider's Volume X.

#### LATEST DEVELOPMENTS

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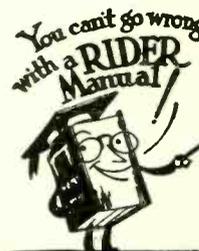
new developments for the servicemen will be found complete in Volume X. You must have the manufacturer's instructions when you install or service any of these new sets.

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Volume X index covers all 10 Rider Manuals.

*Place Your Order Now*



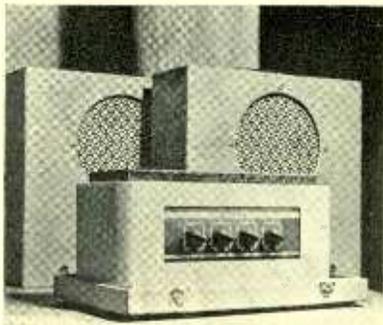
**YOU  
NEED  
ALL  
10**

**JOHN F. RIDER, Publisher, 404 FOURTH AVE., NEW YORK CITY**

# PRODUCT PARADE

## BELL

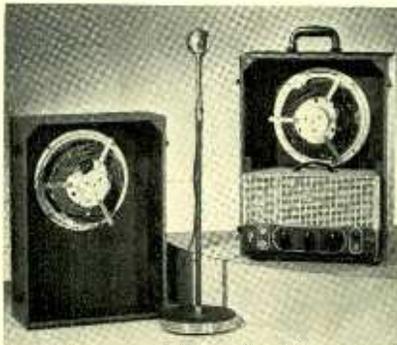
Bell Sound Systems, Inc.  
1181 Essex Ave., Columbus, Ohio



**PUBLIC ADDRESS SYSTEM**  
—Fifteen watt system, inverse feed-back; improved tone compensator; three input channels with separate volume controls; beam power output tubes; tap switch for selecting impedances; illuminated plastic control panel; two 10 in. permanent magnet loud speakers mounted in halves of gray Keratol covered carrying case. Choice of dynamic, velocity, or crystal microphone. *Radio and Television Retailing, June, 1939.*

## WEBSTER ELECTRIC

The Webster Electric Company  
Racine, Wisconsin



**PORTABLE SOUND SYSTEM**—Model 12TN 12 watt portable sound system is complete with Model 41-12 amplifier, crystal microphone with 20 ft. shielded cord and plug, banquet microphone stand, two 10 in. P.M. dynamic speakers with 50 ft. cords and plugs and split type portable carrying case. Model 41-12 amplifier provides mixing controls for 1 high impedance microphone and phonograph pickup, dual type tone control, avc. *Radio and Television Retailing, June, 1939.*

## CLARION

Transformer Corp. of America  
69 Wooster St., New York, N. Y.



**SOUND SYSTEM**—Model C-439, 24 to 36 watt, four channel, two microphone amplifier and sound system. Dual microphone input, simultaneous operation of two microphones and phonograph, optional remote control of two microphone channels, 7 tubes including 2 beam power tubes, inverse feed-back, field supply for 2 heavy duty speakers, tone control and multiple impedance output transformer. Model A-40-R amplifier lists at \$42.00, complete sound system lists at \$128.73. *Radio and Television Retailing, June.*

## MEISSNER

Meissner Manufacturing Co.  
Mt. Carmel, Ill.



**PUBLIC ADDRESS TUNER**—Model 10-1151 dual-band public address tuner for general broadcast and shortwave coverage in connection with P.A. systems. Superhet circuit, frequency coverage of 530 to 1660 kc. and 5.85 to 18.8 mc. Fully calibrated slide-rule dial with 7/4 in. scale length, multiple impedance output connections, and monitor phone jack operating through separate output channel. Volume and tone controls provided. Kit of parts less tubes list \$39.50. *Radio and Television Retailing, June, 1939.*

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*Presents*  
**A Complete Line of RECORDING EQUIPMENT**



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**PIONEERS IN SOUND EQUIPMENT ENGINEERING**

## INTRODUCING LIFETIME'S NEW



### DYNAMIC MICROPHONE!

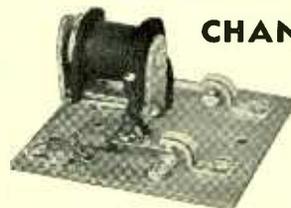
MODEL D 42—HI-Impedance Dynamic the finest unit for orchestras and all Public Address Work—comes complete with 25' of cable and detachable plug—List Price \$27.50. SO ALL JOBBERS may acquaint themselves with the remarkable features of this new microphone we offer ONE sample for only \$11.00—cash with order—IF ACCOMPANIED BY THIS AD.

Send for literature describing America's outstanding values in Microphones and Sound equipment.

**THE LIFETIME CORPORATION**  
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- 4 Ampere Contacts
- Ball-Bearing Pivot
- Shorter R.F. Path
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- Floating Armature

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Type AMD, MYCALEX Insulation, 6v. DC }

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**STANDARD ELECTRICAL PRODUCTS COMPANY**  
318 Sibley Street, St. Paul, Minnesota

## NOISE REDUCING AUTO RADIO AERIALS

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**INCREASED  
EFFICIENCY**  
with this  
**NEW TYPE  
BOOSTER COIL  
ANTENNA**  
•



Here is the aerial every serviceman has been wanting. It combines increased efficiency and noise-reduction with the best in design. These tri-bar aerials fold down to very short lengths (as shown in the illustration) or open out to reach well above the car to pick up broadcast signals. An ingenious slide arrangement allows these aerials to be used at any length between the two extremes to give a variable capacity effect. They are furnished for either cowl mounting or hinge mounting. A trial will convince you of their performance.

**GUARANTEED RATTLE FREE**  
See Them at Your Jobber's Today!

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**CORPORATIONS**

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## TELEVISION ADVANCED TRAINING

FOR MEN NOW EMPLOYED IN  
THE RADIO INDUSTRY

To those now employed in radio, we offer thorough, modern advanced training in television, endorsed by men in the radio industry, created by experienced engineers, backed by costly equipment conforming to RMA standards.

### FOUR PLANS

Four plans, carefully designed to fit the individual needs of the majority of men now engaged in radio, are available. The tuition rate is low, yet outstanding quality is apparent.

### TELEVISION HAS ARRIVED

Regardless of the position you hold or the kind of radio work you are doing, television will probably affect you. Then too, you should not overlook the new opportunities that television can place within your reach.

### Write For Details

We invite you to write for complete information at once. Your inquiry will receive the personal attention of Mr. G. L. Taylor, President.

**MIDLAND TELEVISION, INC.**

Power and Light Bldg.,  
Kansas City, Mo.

AFFILIATED WITH KMBC



**Every AEROVOX  
CONDENSER is**

*Individually*  
**TESTED**

● Costly transmitting condenser or low-priced electrolytic—both are individually tested as a matter of inflexible routine in AEROVOX production.

It would be easier and faster to make percentage or spot tests. But every condenser then could not be vouched for as meeting AEROVOX quality standards. So each condenser is backed by its individual test and guarantee, insuring and delivering satisfactory performance, *always*.

You take no chances when you insist on AEROVOX—the individually-tested condensers—which come in the familiar yellow-and-black cartons.

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● Look us up at 208 Coulomb Street if you visit the Radio Parts Show. And if you get out New Bedford way, be sure to visit our giant new plant. Otherwise, write for new catalog just coming off the press.



**AEROVOX CORPORATION**

*New Bedford, Mass.*



Sales Offices in All Principal Cities

# ANOTHER REASON BELL SOUND SYSTEMS ARE SWEEPING THE COUNTRY!

- Self-contained 15 watt Phono-P. A. System
- 10" P.M. loud-speakers
- Undistorted output
- Improved treble compensator
- Inverse feed-back stabilizer
- Illuminated control panel
- Beam power output tubes
- Portable, modern in design



Hit the bull's-eye in profits with this striking, new, multiple-featured BELL phono-P.A. system! It has precedent-smashing eye appeal . . . it is priced *right* . . . its performance tops the field . . . it is *the* system for fairs, carnivals, amusement parks—wherever 110 volt A. C. current is available. It is complete, compact, easily portable, and dependable! Write today for details on this and other Bell Sound Systems—the most complete line on the market!

**BELL SOUND SYSTEMS, Inc.**  
1185 Essex Ave. Columbus, Ohio  
Export Dept. 5716 Euclid Ave., Cleveland, Ohio

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Gasoline Engine Power Plants  
**2 NEW WINNERS!**

"GOLD CROWN"—HEAVY DUTY Power Plant. Available as follows: 32 or 110 volts D. C., also 110 and 220 volts A. C., 600, 1000, 1500 watts and up. Electric starting; air or water cooled.

"BLUE DIAMOND"—COMBINATION A. C. & D. C. Power Plant. All new "2-in-1" electric plant supplying 300 watts, 110 volts A. C., 60 cycles; also 200 watts, 6 volts D. C.; 250 watts, 12 volts D. C. or 325 watts, 32 volts D. C. Electric starting.

VISIT BOOTH NO. 210 AT THE CHICAGO TRADE SHOW

**PIONEER GEN-E-MOTOR CORPORATION**  
Dept. R-1F, 466 W. Superior Street, Chicago, Ill.

Please send me literature, price sheets and other information about the New "PINCOR" GOLD CROWN and BLUE DIAMOND Power Plants.

Name .....

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

## PRODUCT PARADE

### LIFETIME

The Lifetime Corp.  
1825 Adams St., Toledo, O.

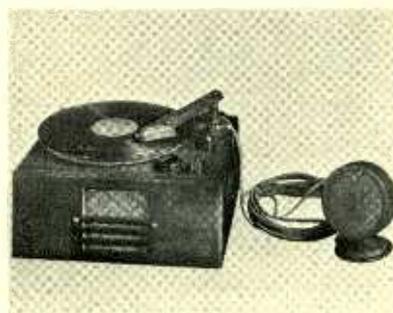
**MICROPHONE**—Model D-42 true pressure operated dynamic type mike features wide range performance, ruggedness, magnetic shielding, sealed construction, attractive durable finish. Semi-directional characteristics; suited for P.A. work, orchestras, broadcast stations. Model D-42 high impedance unit, list \$27.50, Models D-43 and D-44 200 and 500 ohm lines respectively, list \$30.00. *Radio and Television Retailing, June, 1939.*



### REGAL

Regal Amplifier Mfg. Corp.  
14 W. 17th St., New York, N. Y.

**PLAYER UNIT**—Combines record player for wireless reproduction through remote radio set, high fidelity amplifier and speaker for self-playing and play-back purposes, dynamic microphone and input circuit for low-powered p.a., or home entertainment and 2-station intercommunicating system. List \$39.50. *Radio and Television Retailing, June, 1939.*



### BOGEN

David Bogen Company, Inc.  
663 Broadway, New York, N. Y.

**RECORDING BLANK**—A new type blank is durable, flexible and non-inflammable. Does not develop hard or dry spots, will not dehydrate, uniform in thickness, not affected by temperature, and manufactured by lamination process. No dipping or spraying. *Radio and Television Retailing, June, 1939.*



### LAFAYETTE

Wholesale Radio Service Co., Inc.  
100 Sixth Ave., New York, N. Y.

**AMPLIFIER**—Model 412-A. The 10 watt output is sufficient for all applications short of large auditoriums and large outdoor applications. Input channels provided for low level mike and phonograph with provision for blending the two. Tone control for matching room acoustics, output transformer matching one or more loud speakers. Available alone or as part of a complete sound system. *Radio and Television Retailing, June, 1939.*



## PRODUCT PARADE

### OPERADIO



Operadio Manufacturing Co.  
St. Charles, Ill.

**PUBLIC ADDRESS SYSTEM**—Six watt portable public address unit, Model 405 is small, light weight, and compact. For concessionaires and small orchestras, store front installations, window displays and counter demonstrations. One part of the two-piece leatherette covered carrying case acts as amplifier base; the other as speaker housing for 10 in. heavy duty electro dynamic speaker. The unit incorporates 2 inputs—one for mike one for phono reproduction. *Radio and Television Retailing, June, 1939.*



**AMPLIFIER**—Uses beam power tubes, four channel input, electronically mixes three microphones simultaneously with phono input, provision for Remote Controller, volume expansion, volume compression, electronic visual overload and output level, indicators nonresonant equalizer used as tone balancer for high and low frequencies, master gain control, six stages, thirteen tubes, 55 watts output at 5 per cent distortion. *Radio and Television Retailing, June, 1939.*

### ATLAS

Atlas Sound Corporation  
1447 Thirty-Ninth St., Brooklyn, N. Y.



**CONE PROJECTOR**—"Super-Power" projector for 8 in. speakers includes true exponential design which results in an adequate loading of the cone diaphragm for added efficiency and power handling ability. Suitable for use for all out-door P.A. applications, and industrial uses. Bell diameter 24 in., total length 36 in. Finish is battleship gray weatherproof lacquer. Model G-8, List \$22.00. *Radio and Television Retailing, June, 1939.*

### LANSING

Lansing Mfg. Co.  
6900 McKinley Ave., Los Angeles, Calif.



**P. M. SPEAKER**—Permanent magnet and electrodynamic type speakers for new set and replacement use. Sizes from 5 in. to 15 in. Furnished complete with transformers. Illustration shows 8 in. permanent magnet model. *Radio and Television Retailing, June, 1939.*

# NEW LINE

## NEW CATALOG



and this

### NEW LOW PRICE Mobile P.A. SYSTEM



FOR SMALL SOUND CARS  
OR TRUCKS  
PRICE ONLY \$160<sup>00</sup>

### NEW P. A. CATALOG FREE

Catalog 16, showing the new Operadioline, is just off the press. Every dealer and serviceman should have a copy. Free for the asking. Fill in and mail coupon today.

● MODEL 164 identifies the newest, low priced MOBILE Public Address System the market affords. Built to exacting Operadio standards, it is the answer to a demand for an efficient, low priced unit for small sound cars or trucks. An A. C. and D. C. combination, Model 164 features the Operadio "Economizer Control" which conserves battery supply, increasing useful length of charge from 25% to 50%.

Fill in and mail coupon for New General Catalog No. 16 describing Model 164, our new line, and

The Little but Lusty Model 405 6-Watt Portable P. A. Unit

# OPERADIO

MANUFACTURING COMPANY  
Dept. RR6 ST. CHARLES, ILLINOIS

Export Division: 145 W. 45th St., New York



All Operadio Systems are Licensed by Electrical Research Products, Inc., under U. S. patents of American Telephone and Telegraph Company and Western Electric Company, Incorporated.

OPERADIO MANUFACTURING COMPANY  
Dept. RR6, St. Charles, Illinois.

Please send me complete facts about your Model 164 Mobile P. A. System—also a copy of your new P. A. Catalog No. 16.

Name .....

Address .....

Business .....

POWERFUL PROMOTION MAKES

# RCA VICTOR RECORDERS

TALK *Big Money!*



Portable RCA Victor Recorder, MI-12701 comes in attractive gray carrying case with handle. Turntable speed 78 r.p.m. Will handle discs up to 12". Volume indicator meter. Tone control. Completely self-contained. All necessary elements for recording and reproducing, including RCA Aerodynamic Microphone. Employs outside-in recording method. \$179\*

RCA Victor de luxe Recorder Console Model MI-12700—also available at \$475\*

### Profitable New Business for You Backed by Hard Selling Displays, Ads, and Mailing Pieces

A profitable new business offered to you on a platter! Backed by a money-making plan of action, RCA Victor Recorders have a great sales potential in your town. You'll be amazed at the results the RCA Victor 4-way Profits Plan will produce. Demonstrate...use your window...advertise...and put the mailing pieces to work.

You'll find that any one and everyone is a hot prospect. Schools, Music Teachers, Home Movie Fans, Parents, and many others. Go out after this new business. Make more money right now.

\*Prices f.o.b. Camden, N. J., subject to change without notice. For finer radio performance—RCA Victor Radio Tubes.

<h4>4-Way Profits Plan</h4> <ol style="list-style-type: none"> <li>1. Demonstrate!</li> <li>2. Use Your Window</li> <li>3. Advertise</li> <li>4. Use The Mails</li> </ol> <p>RCA Victor supplies everything you need to make this plan click.</p>	<h4>How You Profit!</h4> <ol style="list-style-type: none"> <li>1. On recordings made in your store.</li> <li>2. On recordings made outside your store.</li> <li>3. On the sale of RCA Victor Recorders to your customers.</li> <li>4. On the sale of RCA recording discs.</li> <li>5. By the great increase in your store traffic.</li> <li>6. By making sales of RCA Victor Radios, RCA Victrolas and many other musical instruments for which this product will create new interest.</li> </ol>
---	--

Commercial Sound Section, Department RR-6  
 RCA Manufacturing Company, Inc., Camden, N. J.  
 Please send me without obligation full details on RCA Victor Recorders.

Name .....

Street ..... City ..... State .....

PUT IT ON A RECORD

# RCA Victor

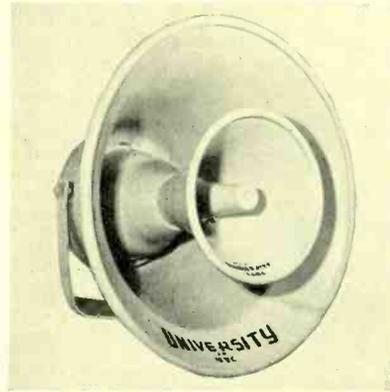
## RECORDERS

COMMERCIAL SOUND SECTION  
 RCA Mfg. Co., Inc., Camden, N. J. • A Service of Radio Corp. of America

## PRODUCT PARADE

### UNIVERSITY

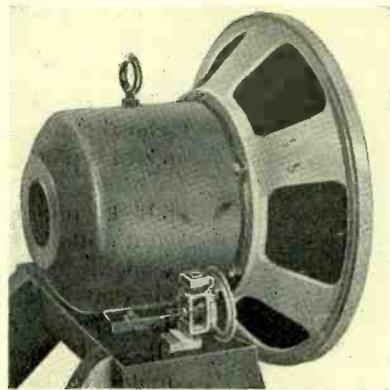
University Labs.  
 195 Chrystie St., New York, N. Y.



REPRODUCER — Waterproof, split-range, wide-frequency-band reproducer. Has flat frequency response from 60 to 10,000 cycles, power handling capacity 25 watts; uses anti-resonant rubber-damped rim. Bell measures 32 inches, maximum length 22 inches.

### CINAUDAGRAPH

Cinaudagraph Corp.  
 Stamford, Conn.



MODEL WPE-27 is a 27 in. electro dynamic speaker designed for music reproduction in large buildings and outdoor areas at high amplitudes. Power capacity, 85 watts, frequency range from 30 to 10,000 cycles.

### UTAH

Utah Radio Products Co.  
 812 Orleans St., Chicago, Ill.

SERVICE-PAK — Contains an assortment of 79 basic replacement parts essential to operation of any normal radio servicing organization. Parts are included in all-steel cabinet. Ample room has been provided for addition of parts other than those manufactured by the company. Cabinet is virtually a miniature store room, provides a convenient safe place to keep basic stock of replacement parts. Dealer price is \$29.95. *Radio and Television Retailing, June, 1939.*



### CLAROSTAT

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

RESISTORS — Ceramic jacketed, fully-sealed, precision, non-inductive, wire-wound resistors in resistance values up to 3 megohms and in 1/2, 1, 1 1/2 and 2 watt ratings comprise a ceramic spool with plurality of sections so that winding can be in reverse direction "pies" for adjacent sections. Enamelled resistance wire is protected by ceramic sleeve that slips over the spool. *Radio and Television Retailing, June, 1939.*



# PRODUCT EXHIBIT

## PINCOR

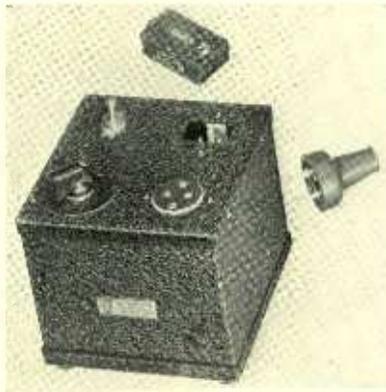
Pioneer Gen-E-Motor Corp.  
466 W. Superior St., Chicago, Ill.



**ROTARY CONVERTERS**—  
Type "AK" 100 to 200  
watts, type "BK" 300 to  
500 watts, type "CK" 750  
to 1000 watts and units of  
greater capacities. All  
cast iron frames, built-in  
ventilators on 4 sides. En-  
gineered for dependable,  
smooth-running silent ser-  
vice. Available with filters  
for radio operation, also  
for constant speed phono  
work, etc. *Radio and Tele-  
vision Retailing, June,  
1939.*

## HALLDORSON

The Halldorson Co.  
4500 Ravenswood Ave., Chicago, Ill.



**LINE TO MULTI-SPEAKER  
TRANSFORMER**—A practi-  
cal and efficient device  
for use in changing the  
impedance from a 250 or  
500 ohm line to match im-  
pedance of any number of  
500 ohm speaker trans-  
former primaries up to six.  
Two multi-speaker trans-  
formers will take care of  
12 speakers, etc. *Radio  
and Television Retailing,  
June, 1939.*

## ATR

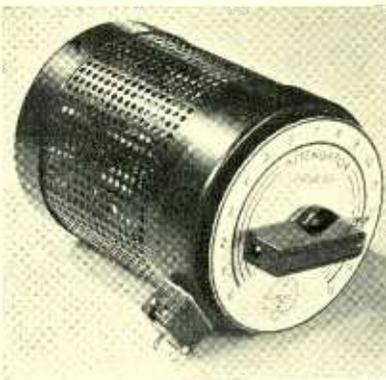
American Television and Radio Co.  
300 E. Fourth St., St. Paul, Minn.



**VIBRATOR PACKS**—A line  
of heavy duty vibrator  
packs for inverting low  
voltage d.c. to high vol-  
tage d.c. for operation of  
portable receivers and  
transmitters, public ad-  
dress systems, etc. Five  
types are available for  
operation on d.c. input  
voltages, ranging from 60  
to 220 volts, all of which  
have maximum d.c. output  
of 325 volts at 125 milli-  
amps, adjustable in four  
steps as low as 250 volts  
d.c. at 50 milliamps. With  
or without audio filter.  
List prices from \$19.50 to  
\$32.50. *Radio and Tele-  
vision Retailing, June, 1939.*

## CLAROSTAT

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



**OUTPUT ATTENUATORS**—  
Series CIA constant im-  
pedance output attenua-  
tor handles up to 25 watts  
of power continuously.  
Units make it possible to  
control volume of indi-  
vidual loud-speakers to  
compensate for location,  
size of audience, distances,  
prevailing wind condi-  
tions, etc. without disturb-  
ing characteristics of the  
load or line. Volume may  
be changed to suit the  
speech or music being  
handled.  
*Radio and Television Re-  
tailing, June, 1939.*

**VIBRATORS • GUARANTEED 1 YEAR**

**R.V.M**  
(RADIART VIBRATOR MANUAL)  
Most Complete  
AUTO RADIO SERVICE GUIDE  
Full of illustrations  
and diagrams

**25c**

**RADIART**

**AERIALS • STANDARD OF COMPARISON**

**R.V.M**  
(RADIART VIBRATOR MANUAL)  
at RADIART JOBBERS

**25c**

**RADIART**

# Further Proof

## The RIDER Chanalyst Saves Time

"I am so pleased with the Chanalyst I am enclosing a case record of a masterpiece of time saving with the signal tracing method."



Says **STANLEY S. STEVENS**  
of Bloomsburg, Pa.

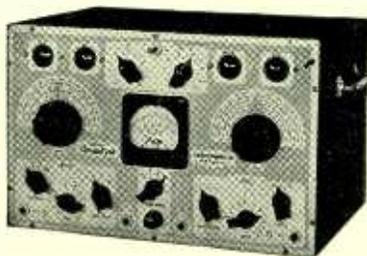
"The Set—A 1939 Buick Car Radio.

"The Complaint—Very Weak and Distorted Reception.

"A preliminary test showed all plate and screen voltages normal. The Chanalyst was applied at antenna circuit on a 700 KC signal and R.F.-I.F. test showed normal gain up to secondary circuit of 2nd I.F. transformer. With a normal signal at the plate of the I.F. tube the probe was moved to the diode plate lead of 6R7G second det. At this point the signal virtually disappeared, indicating trouble in the I.F. transformer. At first this indication was confusing because during the signal tracing check the presence of AVC on all tubes so controlled was noted, also an ohmmeter check showed continuity of the diode secondary winding. Upon close inspection of the wiring it was noted that signal voltage for AVC operation was taken off at primary winding of the I.F. coil through a condenser and rectified by separate diode plate of 6R7G. The transformer was replaced and set operated O.K. This case is positive proof that the Chanalyst can be relied on where all other tests fail. A complete check was made and defective coil spotted in less than 15 minutes. Other methods would probably have required hours with the confusing indications encountered."

The Signal Tracing System of Servicing as employed by The Chanalyst is applicable to both **TELEVISION and Radio**

NET PRICE  
**\$10750**



**SERVICE INSTRUMENTS, INC.**

404 Fourth Avenue, New York City

Foreign Division—147 W. 45th Street, N. Y.

Cables—"Servicin"

## CIRCUITS OF TOMORROW

(Continued from page 43)

is possible to connect the oscillator so that any person coming into contact with it detunes the r-f oscillator and thus drops the voltage output to safe limits.

Other safety-first designs employ filters of low capacitance with high resistance in series, to limit the output current to a value sufficient for the cathode-ray tube but not enough to give a severe shock.

A new line of fuses which protect at currents from 1.5 milliamperes and up may also be used for safety purposes.

### Test Equipment Ideas

Test equipment to be announced in future months includes tube testers equipped to take the new lines of tubes, bantams and single-ended metal types. Push-button selection of test circuits is becoming more and more general. General purpose meters of the high sensitivity type (10,000 ohms per volt and up) are being incorporated in analyzers, and are being protected by the new low-current fuses. More improved signal generators for the highest frequency bands, as well as sweep-oscillator generators of use in aligning various wide-band circuits are to be announced.

### Latest Sound Stunts

In sound, p-m speakers of larger power handling capacity are on the way. High quality mikes at lower prices are promised, also. Among the gadgets which may be soon available commercially is a combination, pressure-velocity two-element microphone whose pick-up pattern may be

varied electrically from unidirectional to non-directional, simply by changing the mixer settings.

Really high fidelity p-a amplifiers with adequate inverse feed-back, low distortion and flat response beyond 10,000 cycles seem to have found favor on the drafting boards, and may soon see the commercial light of day. Tone controls of the inductive filter type are also under consideration. These are true equalizer controls that boost highs or lows in localized regions, rather than tapering off the highs or lows by simple resistance-condenser action. Finally the value of two dimensions in automatic volume range regulation has been discovered, and it seems likely that several p-a amplifiers will be soon available which can compress as well as expand the volume range.

## Audio Frequency

OFF-CENTER SPEAKERS on which there is no adjustment, and the cone is glued to the frame, may be repaired by packing shims around the voice coil and wetting the cone. When completely dry remove the shims, voice coil will be satisfactorily centered.

PLATE BYPASSES connected from plate of output tubes to ground often cause considerable damage when they fail.

This danger can be eliminated by connecting the end normally at ground to B plus.

IF DIAL LITE COLORING is needed, and not available, get a bottle of the proper colored finger nail polish from a 5 and 10. Chemically similar, it does a perfect job.

# ASTATIC



### NEW CRYSTAL PICKUP

Spring-Axial Cushioning, Bakelite Cartridge Assembly, Latest Torque Crystal Element, Ebonite waterproof Crystal Coating, Massive Die-Cast Arm and other improved features.

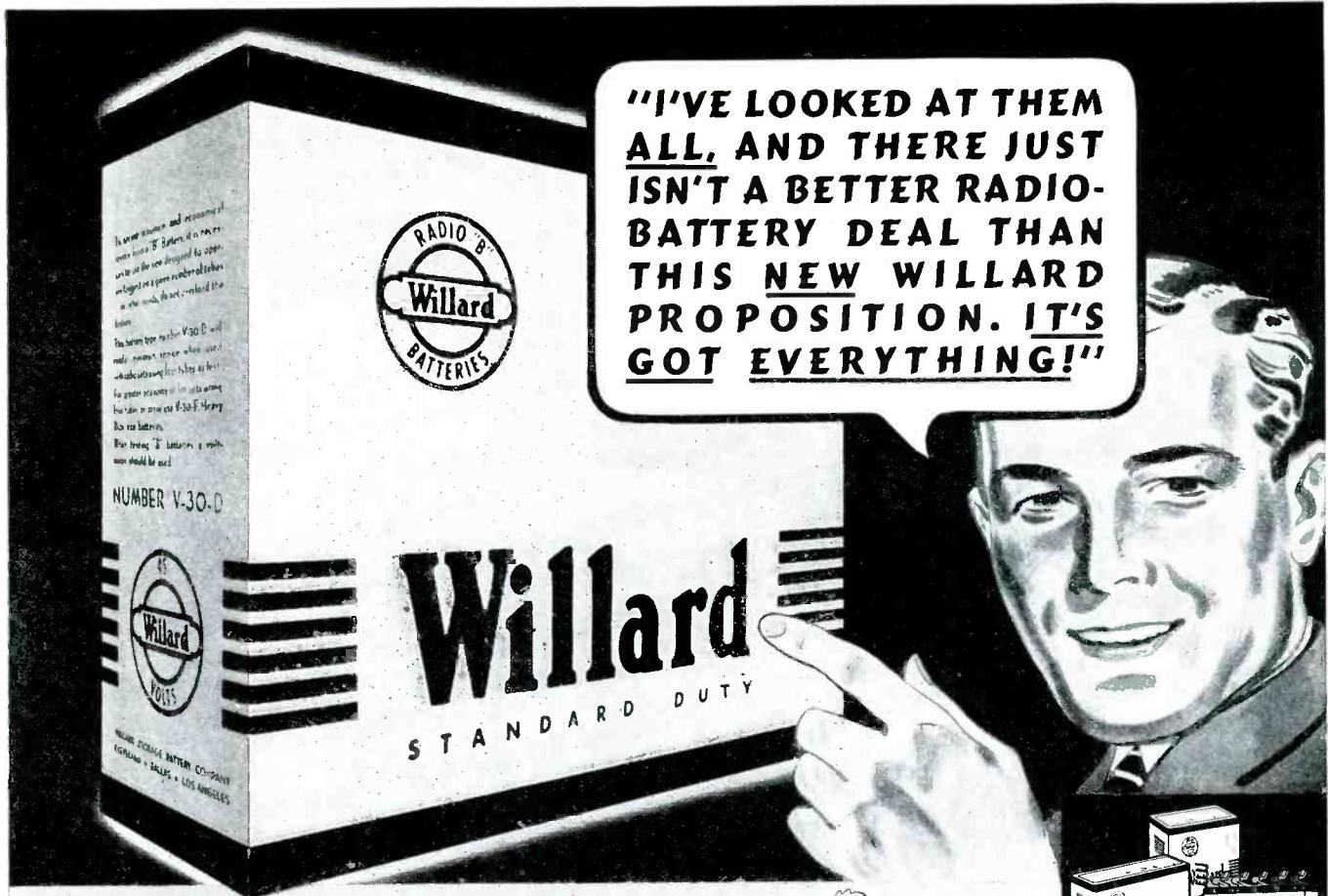
MODEL AB-8 offers more advanced design features than ever before combined in a single pickup unit at a similarly low price. Truest tone reproducing qualities. Ultra modern in design and finishes. LIST PRICE \$10.00.

**ASTATIC MICROPHONE LABORATORY, INC.**

Pioneer Manufacturers  
of Quality Crystal Devices

**YOUNGSTOWN, OHIO**

Licensed Under Brush  
Development Co. Patents



A famous name that makes 'em easy to sell!



— on a complete line of batteries



— built for top performance



— they last longer and cost LESS to own!



An attractively designed line of "A", "B" and "C" Dry Batteries

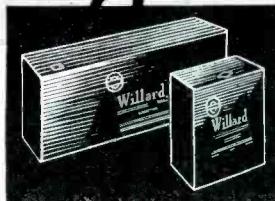
## Why not take a look YOURSELF?

● These batteries SELL fast because your customers are quick to accept a product bearing the Willard name. Willard's are the best-known batteries in America!

"Complete" is the word for the new, smartly-designed line of Willard Batteries. It includes every type of dry battery, power pack or radio storage battery you need.

Your customers get their money's worth when they buy a Willard. Made of pure, active materials, with construction features that prolong its life, every battery is rigidly tested before leaving the factory. *And all Willard Dry Batteries equal or exceed U. S. Bureau of Standards specifications!*

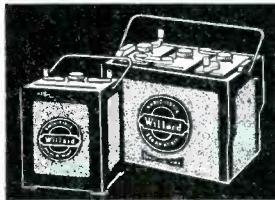
If you want EVERY ADVANTAGE—sell Willards! Write for full details TODAY!



Power Packs finished in a shade to harmonize with the radio cabinet



New 1 1/2 volt "A" Dry Batteries for portable sets using 1.4 volt tubes



2 and 6 volt "A" Storage Batteries for greater capacity



Dry cells for ignition, door bells, flashlights, all general purposes

WILLARD STORAGE BATTERY COMPANY  
Cleveland, Ohio

I'd like to take a look at your proposition for radio dealers. Send me the complete story.

NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_

**There's MONEY Here—Mail This Coupon Today!**

# In New York Rises Radio City—Lofty Symbol of RCA World-wide Service!

The home of  
Radio Corporation of America  
—the headquarters of the only  
organization engaged in  
every phase of radio

SET IN THE HEART OF NEW YORK is a city within a city. It is Radio City. Its "city hall" is the seventy-two-story RCA Building. From here are directed all of the manifold services of RCA.

Basis of all is RCA Laboratories. In them vital research is carried on in radio and television. Great universities are usually thought of as the homes of research. The fact is that in RCA Laboratories there is now a group of research men who probably exceed in number and can certainly match in ability, those engaged in any one phase of research, in any university in the world.

### *RCA Services In Every Field of Radio*

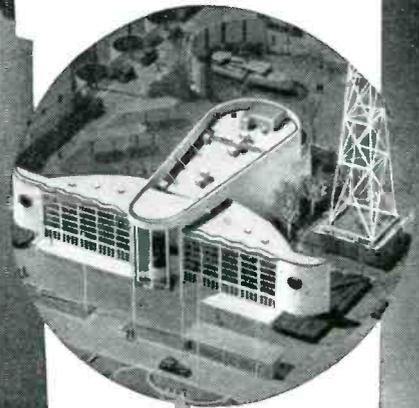
RCA serves the listening public through the Red and Blue Networks of the National Broadcasting Company. In the home, RCA Victor Radios, RCA Victrolas, and Victor and Bluebird Records afford the finest in radio and records. Now RCA Victor Television Receivers are bringing the thrills of television to families in the New York Metropolitan Area. And, added to these services for the home are those rendered in manufacturing a complete variety of radio equipment, sound equipment, and motion picture equipment such as RCA Photophone, the Magic Voice of the Screen.

Through R. C. A. Communications, world-wide communication service is provided to and from 43 foreign countries, and among leading cities in the United States.

Radiomarine, another of the RCA family, offers communication service to ships at sea. It also builds radio devices for safeguarding lives and property on ships.

Because of this background of experience in every field of radio, RCA keeps ahead, offering dealers an ever better and ever increasing opportunity to make more money by going "RCA All the Way."

See Radio's World of  
Tomorrow at New York  
World's Fair



Great crowds of visitors are enjoying the exhibits at the RCA Building at the New York World's Fair. And, across the country, many thousands are being thrilled by similar RCA exhibits at the San Francisco Exposition. Chief attraction is the demonstration of television which offers many visitors their first opportunity to see how television pictures appear on the screen of a television receiving instrument.

As you look at the complete exhibit of everything RCA does . . . you will understand more clearly why RCA offers you the greatest opportunity for profits.

*Trademarks "RCA Victor,"  
"Victrola" and "Victor"  
Reg. U. S. Pat. Off. by  
RCA Mfg. Co., Inc.*



## Radio Corporation of America

RADIO CITY, N. Y.

RCA Manufacturing Company, Inc.  
RCA Laboratories

National Broadcasting Company  
R. C. A. Communications, Inc.

Radiomarine Corporation of America  
RCA Institutes, Inc.

## SONORA

Sonora Electric Phonograph Co.  
2626 W. Washington Blvd., Chicago, Ill.

**MODEL TE-38**—The "Duet" a small electric phonograph. Rim drive silent phono motor, 78 r.p.m. performance, tangent head high fidelity crystal pickup, 6 in. p.m. dynamic speaker, built-in amplifier of special circuit design provides high power output for full coverage and good tone. Plays both 10 and 12 in. records. Walnut cabinet. *Radio and Television Retailing, June, 1939.*



**MODEL TE-41**—"Sonomonic", the De luxe model of the company's electric phonograph line. Latest phonograph amplifier with high power output, designed to provide high fidelity from all types of records, latest type 6 in. p.m. dynamic speaker, dependable new rim drive, tangent head high fidelity crystal pickup, automatic record stop, phono needle-cup. Plays 10 and 12 in. records. *Radio and Television Retailing, June, 1939.*

## WILCOX-GAY

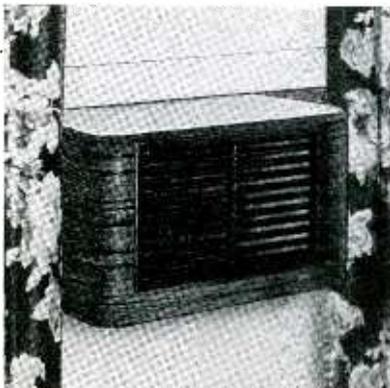
Wilcox-Gay Corp.  
Charlotte, Mich.

**PHONOGRAPH** — Model A-63 combination electric phonograph. When radio is in use, or when records are being changed, instantly convertible to a remote record player. Self-starting constant speed motor, crystal pickup, needle cups, pilot light, volume control. List \$24.95. *Radio and Television Retailing, June, 1939.*



## AIRTEMP

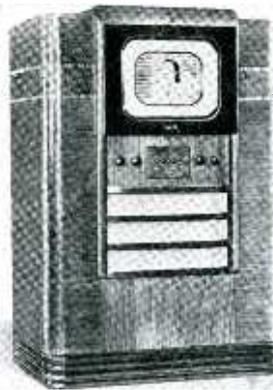
Chrysler Corp.  
Airtemp Division, Dayton, Ohio



**AIR CONDITIONER**—One third h.p. radial compressor is aimed at providing air conditioning through small window units 12 in. high and 24 in. long for average sized rooms or offices. Requires no connections—installation calls only for window sill mounting and electric plug-in. Window unit is quieter than ordinary electric fan. *Radio and Television Retailing, June, 1939.*

## PHILCO

Philco Radio and Television Corp.  
Philadelphia, Pa.



**TELEVISION RECEIVER** — Model 10TK is a console television receiver with both picture and sound reception. This receiver produces a 10 in. television picture. *Radio and Television Retailing, June, 1939.*

**CONVERTER**—Model 6TC, table model converter, can be used with any radio set in the 1940 Philco line, without any connecting wires. Produces a 6 in. television picture. *Radio and Television Retailing, June, 1939.*



## WEBSTER-CHICAGO

The Wester Co.  
Chicago, Ill.

**RECORD CHANGER**—Automatic record changer available in a portable carrying case. Features simplicity of construction and trouble-proof operation. Not subject to "jamming", plays ten 12 in. or twelve 10 in. records, embodies reject-button and easy change to manual operation. *Radio and Television Retailing, June, 1939.*



## GARRARD

Garrard Sales Corp.  
296 Broadway, New York, N. Y.

**RECORD CHANGER**—Model RC-10 has non-slip spindle which eliminates record slippage, is smaller in size than previous models, has complete spring mounting hardware thus "floating" free from the cabinet. Available with Type B crystal cartridge or high impedance, high output magnetic head. Needle pressure on pickup is only slightly more than 2 ounces. RC-10 a.c. model operates on either 110 or 220 volts, RC-11 operates on 110 volts and 220 volts 25/60 cycles, a.c. or d.c. *Radio and Television Retailing, June, 1939.*



## MOTOROLA

**AUTO RADIO AERIAL—**"Rocket" Aerial requires no drilling of holes in finished body surface of the car, does away with the necessity of removing kick plates for installation. Aerial is mounted inside hood of car, makes a clean installation, is completely assembled at the factory. "Booster" Uni is built into tear-drop design base. Opens to 22 in. high guaranteed rust-proof. List at \$2.95. *Radio and Television Retailing, June, 1939.*

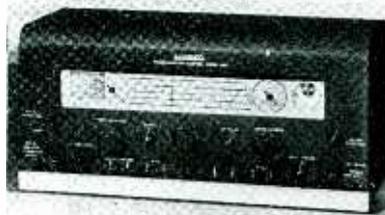


Galvin Mfg. Corp.  
4545 Augusta Blvd., Chicago, Ill.

## HOWARD

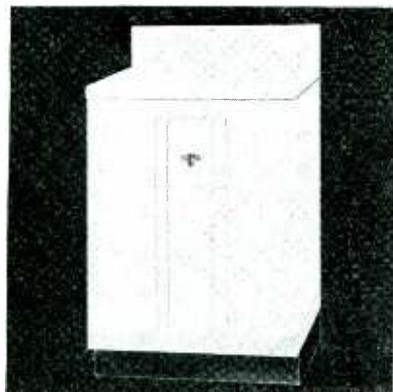
Howard Radio Co.  
1731 Belmont Ave., Chicago, Ill.

**COMMUNICATION RECEIVER—**Distinguished by a built-in frequency monitor by which amateur frequencies can be spotted by comparison with harmonics of an oscillator calibrated against broadcast stations. Set also employs noise limiter, an "R" meter, one stage of r.f. and two stages i.f. with beat frequency oscillator and optional crystal filter circuit. Ten tubes, output 4½ watts. *Radio and Television Retailing, June, 1939.*



## STEWART-WARNER

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

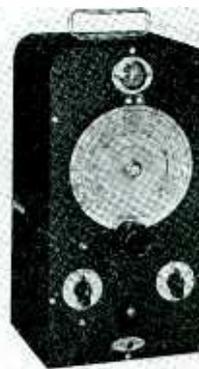


**HOT WATER HEATER—**Added to the Sav-A-Step line of appliances are two new model heaters of 15 gallon and 30 gallon capacity. Other heaters in the line range from 30 to 66 gallons. Super insulated and electrically welded tanks special heat trap, cold water inlet and special curved baffle, tested and approved wiring. *Radio and Television Retailing, June, 1939.*

## BROWNING

Browning Laboratories, Inc.  
750 Main St., Winchester, Mass.

**TESTER—**Amateur Visual Frequency Monitor and deviation meter is so designed that amateur bands are spread over approximately 240 degrees on a 5½ in. nickel silvered laboratory type dial calibrated in megacycles. Circuit makes it possible to check various points in each amateur band against WWV's frequency. Electric eye is used as zero beat indicator. Can be set to precision of at least 2 parts in 70,000. *Radio and Television Retailing, June, 1939.*



## THORDARSON

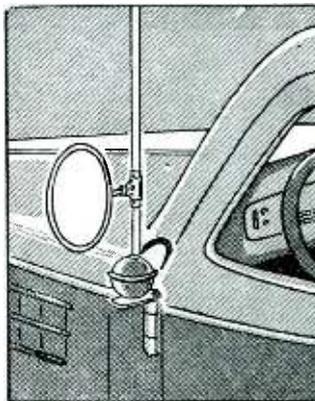
Thordarson Elec. Mfg. Co.  
500 W. Huron St., Chicago, Ill.

**AMPLIFIER—**Six volt d.c., 115 volt a.c. mobile amplifier delivers 28 watts of power. Phono motor is carefully mounted to withstand jolts and strain of sound truck installations. Three input circuits with separate gain controls accommodate two high impedance microphones and phono pick-up. Standby switch for turning off vibrator plate supply conserves power when battery operated and eliminates the "warming up" period.



## WARD PRODUCTS

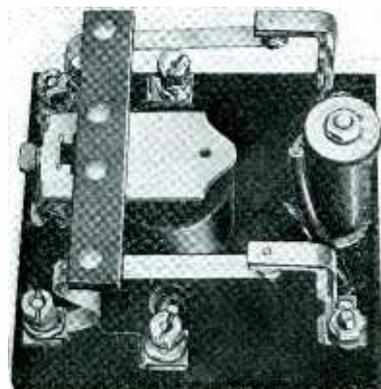
Ward Products Corp.  
Cleveland, Ohio



**REAR VIEW MIRROR—**"Tela-vision" rear view mirror for automobiles is introduced by Ward Products Corp., Cleveland, Ohio. Can be mounted on any make side cowl or hinge type aerial. Has adjustable ball joint for setting in any position desired to eliminate blind spots in rear of car. *Radio and Television Retailing, June, 1939.*

## WARD-LEONARD

Ward Leonard Electric Co.  
Mount Vernon, N. Y.



**SAFETY RELAY—**For discharging filter condensers in amateur transmitters. Coil is connected across 115 volt primary of high voltage plate transformer and contacts across the output of the filter circuit. When primary transformer circuit is closed, relay contacts are open. When power is shut off, contacts close, discharging filter condensers through discharge resistors. *Radio and Television Retailing, June, 1939.*

**WESTERN ELECTRIC—**Powerful loudspeaker known as the "baby-bull", or officially as 6030B horn is made by Western Electric Co., 195 Broadway, New York, N. Y. Has electro-acoustic characteristics and weather resistant construction which suits it especially for outside work where large masses of listeners are scattered over a broad area. Speaker consists of single, metallic horn of exponential type driven by two dynamic receivers enclosed in moisture-proof aluminum housing. Has directional characteristics which permit reproduction throughout an angle of approximately 30 degrees. *Radio and Television Retailing, June, 1939.*

**UNIVERSAL—**"Uni-cord" small size, low cost, complete recorder will cut up to 12 in. either on acetate coated or aluminum discs with 5½ min. playing time. Made by Universal Microphone Co., Inglewood, Calif., machine operates at standard phono speed of 78 r.p.m. Lightweight, in portable brown leatherette case. Assembly can be used as recorder, playback and small p.a. system. *Radio and Television Retailing, June, 1939.*

**PHILCO—**Auto radio aerial for picking up distant stations has been announced by Philco Radio and Television Corp., Philadelphia, Pa. Super cowl aerial has overall length of 93 in. and is in 3 sections. Shielded lead-ins included. List \$3.95. *Radio and Television Retailing, June, 1939.*

# They're Both Important:

COMPANY DEPENDABILITY-

PRODUCT DEPENDABILITY



*But*

EVEN MORE IMPORTANT IS: **PROFIT DEPENDABILITY**



**I**F YOU WERE ASKED—"What factor is most important to a retailer buying radio tubes?" . . . what would your answer be?

We think both company and product dependability are vitally necessary to a retailer's success. But even *more* important, you'll agree, is *profit dependability*.

Before you invest more money in other tube lines, compare them with Sylvania on all three points—company, product, and most important, **PROFIT DEPENDABILITY**. We sincerely believe that such a comparison—made honestly and without bias—will lead to only one conclusion . . . a *shift to Sylvania*.

*Hygrade Sylvania Corp., Emporium, Pa. • Also makers of Hygrade Lamp Bulbs.*

## SELL SYLVANIA

**SET-TESTED RADIO TUBES**

*Meet us at Booth Nos. 18 & 20, Chicago Radio Show, June 14-17*

• D E P E N D A B L E A L L W A Y S •

## HALLICRAFTERS

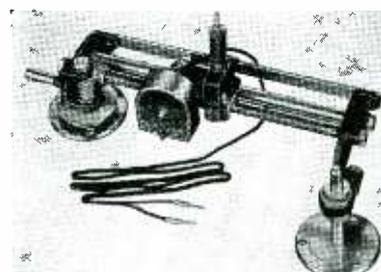
COMMUNICATIONS RECEIVER—"Skyrider 23" is an 11 tube receiver providing continuous tuning coverage from 540 kc. to 34 mc., and includes crystal filter, stabilized tuning with drift compensation, automatic noise limiter, amplified a.v.c., wide band spread, "S" meter calibrated in both "S" units and decibels, variable selectivity, separate speaker in matching cabinet. Simplified control system. *Radio and Television Retailing, June, 1939.*



Hallicrafters  
2611 Indiana Ave., Chicago, Ill.

## REK-O-KUT

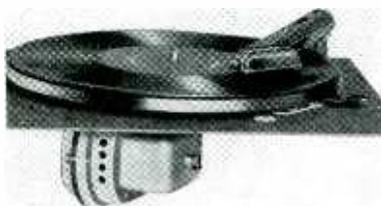
Rek-O-Kut Corp.  
254 Canal St., New York, N. Y.



RECORDING ASSEMBLY—For recording on acetate. Consists of a spindle and worm gear, driver at center of the turntable, feed screw, cutting head mounting and cutting head. Entire mechanism can be simply aligned with turntable. Operates with as little as 2 watts driving power from amplifier. Cutter impedance of 8 ohms matches secondary of output transformer. List \$49.25. *Radio and Television Retailing, June, 1939.*

## GENERAL INDUSTRIES

General Industries Co.  
Elyria, Ohio

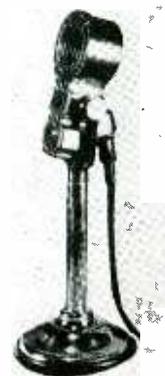


PHONO MOTORS—Model KX, CX and RX, self-starting, induction type motors. Model KX and CX are fully enclosed, ventilated and fan cooled, have silent helical-cut gears, gears and bearings run in oil. Patented combination metal and rubber drive. Model KX3 is geared for 33 1/3 r.p.m. as is model CX3. Model RX is rim-drive, insulated from mounting plate, as is CX and KX. *Radio and Television Retailing, June, 1939.*

## UNIVERSAL

Universal Microphone Co.  
Inglewood, Calif.

MICROPHONE — Golden finished super-dynamic mike, for use where instrument is in the public eye, incorporates features of design which are said to make it fool proof, eliminate hiss, require no polarizing voltage or button current, and eliminate hum. Twin transformers are used in humbucking assembly, both being on square cores with secondaries in series a procedure which doubles impedance for more perfect matching. Special gold finished mounts available. *Radio and Television Retailing, June, 1939.*



## RECOTON

Recoton Corp.  
178 Prince St., New York, N. Y.

RECORD RENEWER — Liquid record renewer is designed to protect and preserve while it cleanses and lubricates the disc. Is being distributed in a 15c trial size in addition to 2-ounce unit. *Radio and Television Retailing, June, 1939.*



## UNIVEX

Universal Camera Corp.  
28 West 23rd St., New York, N. Y.



CAMERA ACCESSORIES—Mercury Rapid Winder, illustrated, allowing for fast sequence shooting. Permits the shutter to be set and film transported without removing camera from the eye. Can be easily attached or detached. Priced at \$2.50. Also announced by the company is an f/3.5 telephoto lens in micrometer focusing mount at \$10.95. *Radio and Television Retailing, June, 1939.*

## EAGLE

Eagle Electric Mfg. Co., Inc.  
Brooklyn, N. Y.

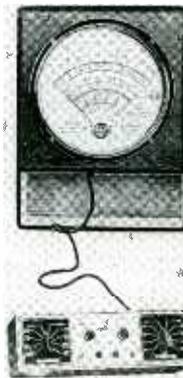


CORD CONNECTOR — Rubber cord connector with or without cap. Suitable for any device that requires a durable connector. Half inch cord hole permits heavy cable, two screw fastening for rigid assembly, brass washers inserted into body screw holes for reinforcement. Made of high grade live rubber. *Radio and Television Retailing, June, 1939.*

## APPROVED

Approved Technical Apparatus Co.  
57 1/2 Dey St., New York, N. Y.

ANALYZER — Model 740A a.c. and d.c. laboratory analyzer. Range for a.c. and d.c. volts 0-15-170-750; d.c. ma. 0-1-15-150-750; a.c. ma. 0-15-150-750; capacity .0005-1 mfd., .05-200 mfd.; ohms 0-500, 500-5 megohms; output ranges 0-15-150-750; inductance 1-700 henries; watts, based on 6 M.W. at 0 db. in 500 ohms, .006 to 600 watts. Zero adjustment for ohm ranges, completely self-contained for all ranges. \$19.95. *Radio and Television Retailing, June, 1939.*



**"HERE'S HOW I  
PROFIT TWICE  
on Every Tube  
I Sell!"**

**SELL GUARANTEED  
QUALITY!**

When you sell Arcturus Tubes you can really talk **QUALITY**. Made by the Company which pioneered 8 of the 10 major tube improvements, Arcturus Tubes have always meant top performance—long life—dependable, trouble-free service.

Now, Arcturus leads again in the development of tube types for present-day receivers. Here is one of Radio's most complete lines—regular Glass, Coronets, "G," Midget, Battery, Majestic, Spanton, and the popular Ballast tubes—more types for more applications than ever.

Cash-in on this wide variety—be prepared to supply any needed replacement with a high-quality Arcturus Tube. It means better service, satisfied customers, more profit for you!



**MODERN SHOP EQUIPMENT  
AT ALMOST NO COST . . .  
with Purchases of Radio's Finest Tubes!**

"Take it from me, brother, signing up for an Arcturus Equipment Deal was the smartest thing I've ever done! It's the sweetest tube proposition on the market today! Now I handle real quality tubes—tubes that are easy to sell, and stay sold—tubes that bring me new customers . . . help me keep the old ones.

"And you should see my shop! . . . Arcturus practically gave me a brand-new one! The most modern equipment that money can buy—the kind of service and store equipment I've always wanted, but could never afford—practically dropped right into my lap just because I buy Arcturus Tubes! I figure that's all 'gravy'—an honest-to-gosh **EXTRA PROFIT** from every Arcturus Tube."

**GET STARTED NOW!**

**YOU** can be just as fortunate as this typical Arcturus dealer—the **ARCTURUS EQUIPMENT DEAL** is available to responsible dealers and servicemen anywhere in the United States. Get the facts! See how Standard Tube Prices, Low Down Payments, Small Tube Requirements, Quick Delivery of the units you select, make the Arcturus Plan the finest, fairest and easiest Equipment Deal ever offered.

**MAIL THE COUPON!**

Arcturus  
Radio Tube  
Co., Newark,  
New Jersey.

Gentlemen:  
Send complete details  
of the Arcturus Equipment  
Deal and my copy of the  
Arcturus Dealer Helps Folder

- I am a Dealer
- I am a Serviceman

Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_

My Jobber is \_\_\_\_\_ R-20

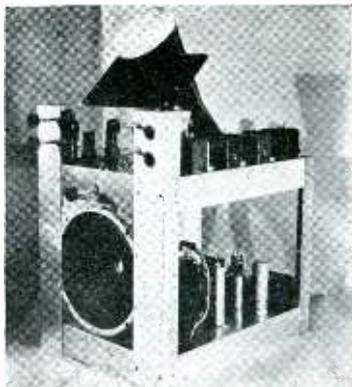
(Offer Good in U. S. A. Only)

**ARCTURUS**

**INDEPENDENT TUBES FOR DEALERS WHO  
DO THEIR OWN INDEPENDENT THINKING**

## OBSERVOX

**TELEVISION KIT** — Provision of positive control over synchronizing impulse separator is designed to insure steadiness of the picture. Adequate room is provided on the double deck chassis to eliminate crowding of parts, thus simplifying home construction problems. Three vision i.f. stages, each with one adjustment to simplify alignment. Five or seven in. black and white cathode ray tube. Tubes are interchangeable with no circuit changes. Eighteen other tubes, 10 in. speaker. *Radio and Television Retailing, June, 1939.*



Fulton Radio Corp.  
100 Sixth Ave., New York, N. Y.

## ELECTRO PRODUCTS LABS

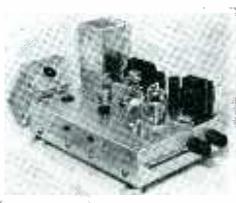
Electro Products Laboratories  
549 W. Randolph St., Chicago, Ill.



**A AND B POWER SUPPLY SYSTEMS**—Model E, 1.4-3 volt AB eliminator is cased in a streamlined cabinet which is compact, easy to handle and has all wiring and terminals at rear—out of the way once connections are made, eliminating danger of accidental shock. *Radio and Television Retailing, June, 1939.*

## TRANSCEIVER

Radio Transceiver Laboratories  
8627 115 St., Richmond Hill, N. Y.



**AMATEUR TRANSMITTER** —Type 510 amateur transmitter is patterned after a police car transmitter, crystal controlled, 12 watts, portable-mobile, with 28 and 56 mc. band switching. In lower price brackets. *Radio and Television Retailing, June, 1939.*

## LANSING PM SPEAKERS

Deliver full volume of natural tone over wide tone range. Clear crisp speech reproduction. Heavy, rugged mechanical construction. Plenty of power-handling capacity. Attractively priced. Write for bulletin giving sizes, characteristics and new, low prices on P M and Replacement Speakers.



**Lansing** MANUFACTURING CO.  
6900 McKinley Ave. Los Angeles, Calif.

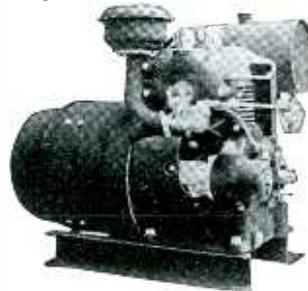
**OHIO CARBON**—"Ohiohm" porcelain-insulated fixed carbon resistor made by the Ohio Carbon Co., 12508 Berea Road, Cleveland, Ohio is standardized in 1/4 watt, 1/2 watt and 1 watt capacities. All ratings are claimed to have low voltage coefficient, low heat coefficient under load, and reasonable overload capacity. Resistor is protected from shock, vibration and moisture by ceramic tube of uniform wall-thickness. Perfect contact between wire lead, cap and resistor is assured by welding the wire to the cap and forcing the latter over a cushion of sprayed copper on the ends of the resistor. *Radio and Television Retailing, June, 1939.*

**PHILCO**—Parts kit by Philco Radio and Television Corp., Philadelphia, Pa. includes the fastest moving replacement parts for all of the special as well as standard auto radios. Complete auto radio Warranty Service Station package catalogued as part no. 45-1409 lists at \$110.08. *Radio and Television Retailing, June, 1939.*

**CROSLY**—The Crosley Press, Jr. camera has universal focus, with a usable depth of focus from three ft. to infinity; built-in flash bulb synchronizer and battery supply, automatic film transport makes it impossible to make two pictures on one exposure; counting mechanism gives visual count of pictures taken; 35 m.m. panchromatic film in cartridge of eight exposures is used. List \$7.95 with reflector and steadying handle. *Radio and Television Retailing, June, 1939.*

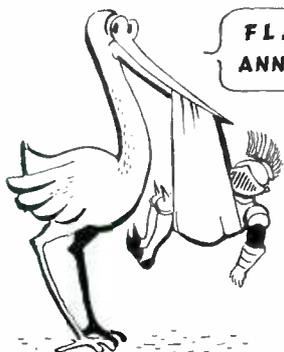
## 110 VOLTS AC ANYWHERE!

With KATOLIGHT. Furnish standard 60-cycle AC for operating sound truck equipment, AC radios, transmitters, flood lights, motors, moving picture projectors, etc.



A complete line of light and power plants ranging up to 10,000 watts capacity. Also 6, 12 and 32 volt battery charging plants, Diesel plants, rotary converters, and frequency changers.

List prices \$50.00 and up.  
**Kato Engineering Company**  
MANKATO, MINN., U.S.A.



**FLASH-FLASH-SENTINEL WILL SOON MAKE A SENSATIONAL ANNOUNCEMENT! EXPECT SOMETHING STARTLING! IT'S REVOLUTIONARY!**

# Sentinel

QUALITY RADIO SINCE 1920

AC  
MODELS  
FARM  
MODELS

A  
COMPLETE  
LINE  
SENSIBLY  
PRICED

**Sentinel Radio Corporation • Dept. RR • 2222 Diversey Pkwy., Chicago**

# YOU NOW CAN SELL AIR CONDITIONING

# COOL BREEZE

**Opens Big Markets — Makes Quick Profits**

- Only \$15.00 down (plus a small installation charge)
- Package Merchandise
- A Window-type unit to cool an average-size room



...n Cooler in a handsome, oriental walnut-finished...ly 12" from window—is only 12" high and 21" wide.

## RADIO and Television RETAILING

330 WEST 42nd STREET, NEW YORK, N. Y.

Kindly send *Radio and Television Retailing* for three years (36 issues)—beginning with the July number. The "Cash-with order" price of \$2 is attached.

Check here and attach \$1 if you prefer only 1 year.

Name \_\_\_\_\_ Position \_\_\_\_\_  
 Street and No. \_\_\_\_\_  
 City \_\_\_\_\_ State \_\_\_\_\_  
 Company Name \_\_\_\_\_  
 Kind of Business \_\_\_\_\_

*Above rates apply in U. S., Canada, Central and South America only.*

**FOREIGN RATES:**  
1 year \$2; 3 years \$5

NEW  
SUB

## SCRIPTION ORDER CARD



2. A real air conditioner at a price almost anyone can afford
3. Smart modern styling
4. Fits any window over 21 inches wide
5. May be started and stopped at the touch of a finger

### FEATURES

6. Removes humidity from air as it cools
7. As quiet as a whisper
8. Easily located and adjusted for greatest comfort
9. Shuts out practically no window light
10. At touch of a finger, room may be ventilated

**A LOW PRICE — A FINE PRODUCT — AND A GREAT NAME BACK OF IT**

# AIRTEMP

DAYTON, OHIO  
 DIVISION OF CHRYSLER CORPORATION

RR-6

Airtemp Division—Chrysler Corp., Dayton, Ohio

Gentlemen:—We are interested in an Airtemp franchise for the Cool Breeze Air Conditioning Unit.

Name \_\_\_\_\_

Address \_\_\_\_\_



You are cordially invited  
to visit  
**Ken-Rad Headquarters**  
at the Blackstone Hotel  
during the  
**Radio Manufacturers Association Convention**  
and the  
**National Radio Parts Trade Show**  
June 13 - 17  
Hotel Stevens                      Chicago

*Ken-Rad Tube and Lamp Corporation*  
Manufacturers of Ken-Rad Radio Tubes  
Owensboro, Kentucky

# On the Newsfront

## Jackson Et. Al. Buy Kadette

Former g.s.m. and associates take over International's radio division, plan new line for jobber-dealer distribution

ANN ARBOR—W. Keene Jackson, former sales manager, stockholder and a director of the International Radio Corporation, announced June 2 that he and a group of associates had purchased the entire Kadette Radio Division of that company and would immediately enter into production of a complete line including compacts, portables, table models, phono-combinations and television equipment for jobber-dealer distribution.

Officers of the firm serving with Jackson, who has been made president with headquarters at a new office here in the First National Building, include: John B. Hawkins, vice president in charge of manufacturing . . . formerly an executive of such firms as Nathaniel Baldwin, Inc., Newcombe-Hawley, Emerson, RCA, William C. Walz, treasurer . . . one of the original directors of the Federal Home Loan Bank of Indianapolis and at present secretary and treasurer of the Ann Arbor Federal Savings and Loan Association. Mrs. E. Kay Graves, secretary and assistant treasurer . . . associated with Mr. Jackson for the past twelve years, formerly with King Manufacturing. Richard T. Bliton, vice president and sales promotion manager.

The firm will have an exhibit of its products in the Blackstone Hotel at Chicago June 14, 15, 16 and 17. To be known as the Kadette Radio Corporation, it is at present designing a new plant to be devoted exclusively to Kadette receiver production.

Many former Kadette sales representatives will, according to Jackson, be associated with the new firm.

## More New Farnsworth Execs

Martin, McAllister join firm. Capehart Division district managers meet

FORT WAYNE—Edwin M. Martin, who has in the past been associated with the Hazeltine Service Corporation, has been appointed patent counsel for the Farnsworth Television & Radio Corporation of this city. W. R. McAllister, in the past with Federal Radio, Brunswick Radio and Philco, has joined Farnsworth as district manager in the southeastern territory from Philadelphia to New Orleans.

Capehart district managers assembled here on May 31 for a three-day meeting conducted by sales manager I. C. Hunter, the first since Capehart, Inc. became the Capehart Division of Farnsworth Television & Radio Corporation. Plans were developed and policies formulated for the introduction, in sixty days, of a new line of instruments in price brackets somewhat below current models. The new instruments are to be known as the "Panamuse" series, will include an entirely new record-changer. First showing will be at the convention of the Nat'l. Ass'n. of Music Merchants at the Hotel New Yorker in New York August 1-3.

In attendance at the meeting were C. M. Emley, R. C. Vaughan, J. E. Yeager, P. W. Palmgren, Howard Cushing, F. K. Gigax and C. R. Ward. Informal discussions were held with E. A. Nicholas, president, and E. H. Vogel, vice president of the parent firm.

Executives stressed the importance to Capehart representatives and dealers of the new opportunities resulting from associating the great strength of Farnsworth Television with the excellent acceptance of Capehart instruments. It was pointed out that larger research and design engi-



TO WEBSTER-CHICAGO — From Thordarson to Webster-Chicago goes Charlie Cushway, just appointed sales manager

neering facilities would make for yet greater perfection of products and that the new assets, now available, would permit inauguration of extensive activities long desirable but heretofore impossible.

## Jobbers-Dealers See S-C Sets

Western New York trade also witnesses television and frequency modulation transmission demonstrations

ROCHESTER—Four-hundred dealers and distributors from the Western New York area assembled here in the Hotel Sagamore May 12, saw television receivers and a staticless radio transmitting system demonstrated for the first time. Interesting as these developments were, discussion still centered around the new 1940 line of Stromberg-Carlson radios presented by Lee McCanne.

From Stanley Manson, sales representative and chairman of the meeting, later came word that larger orders had been placed for the new sets than at any previous convention.

Ray H. Manson, vice president and chief engineer, conducted the demonstrations of television and frequency modula-



STROMBERG-CARLSON OFFICIALS AND DISTRIBUTORS—They topped off their annual eastern sales convention with a banquet atop the Hotel Sagamore roof. Chief item of conversation was the company's 1940 line which had been presented during the course of the day's meetings.

tion transmissions. L. A. Casler presented a variety of new sales aids for merchandising the new line and outlined 1940 promotional plans. Editor O. Fred Rost of *RADIO and Television RETAILING* made a speech outlining conditions in the radio industry.

After visits to the Stromberg-Carlson plant, guests banquetted on the Starlight Roof of the convention hotel, treasurer Edwin C. Roworth officiating as toastmaster.

## Stancor Swats Promiscuous Discounts

**Jerry Kahn deplores rating of "minor tradesmen" as jobbers, outlines new "limited distribution" plan**

CHICAGO—Commercial hara-kiri is being committed today by manufacturers throughout the radio parts industry, in the opinion of Jerome J. Kahn, president of the Standard Transformer Corporation of American.

Said Kahn in a press statement issued

May 16: "In an attempt to defeat one vicious practice which has crept into the distribution of radio parts, many manufacturers have swung to another extreme. Both practices are doing irreparable injury to jobber and manufacturer alike. . . ."

Asked to outline the precise nature of the condemned practices, Kahn said that "a vicious racket is being foisted on manufacturers by increasing numbers of minor tradesmen seeking to establish themselves as 'jobbers'. Once any fairly representative manufacturer has recognized such an outlet that recognition is used to influence other manufacturers to grant similar recognition. The result brings great harm to established radio jobbers and is a subversive measure injurious to the industry as a whole."

Alternate and equally depressing measure, according to Kahn, is an attempt by some manufacturers to meet the above outlined evil with another extreme. He explained: "Some manufacturers are trying exclusive distribution in the larger marketing areas. Certain jobbers have, as a result, seen fit to sign up for lines on an exclusive basis, place nominal orders, bury the merchandise



**BACK WITH NATIONAL UNION—**  
In 1930 *Henry Hutchins* guided National Union's tube-selling policies. Now he's on leave of absence from four-year vice-presidency of Western Advertising Agency's Chicago office, will once again direct N-U's selling program

on their shelves and so prevent the line from going to competitors in a position to do a job."

Questioned concerning a possible cure for such practices, Kahn outlined a new "Limited Distribution" plan. Under this policy Stancor would analyze each territory, apprise the jobber seeking the line of the number of outlets in it, study that jobber's ability to serve such outlets. Following close cooperative study of the territory by both jobber and manufacturer, Standard would surround the selected jobber with such things as 'protected inventories', 'one jobber discount', 'a complete line', 'highest precision standards', 'timely merchandising' and other elements designed to provide genuine protection.

## Millen Leaves National

MALDEN—James Millen has severed his connection with the National Company, forms a new firm to be known as the James Millen Manufacturing Company, Inc., primarily to design and manufacture radio communication products including component parts, receivers and transmitters at 6 Pleasant Street.

## Precision Apparatus Expands

BROOKLYN, N. Y.—The Precision Apparatus Corporation has moved to new and larger quarters at 647 Kent Avenue, locating both executive offices and factory here.

## Admiral At Blackstone

CHICAGO—Continental Radio and Television is exhibiting its new line of radio receivers here in the Blackstone Hotel, June 14, 15 and 16.



**FOR ELECTRIC LIVING WEEK—**Here's a good shot of the Majestic radio display forming part of the Commonwealth Edison Company's annual exposition at Chicago



**TELEVISION ATTRACTS 1,200 SERVICEMEN—**Here's the crowd of metropolitan New York servicemen who attended a May 8 RSA meeting held at the Capitol Hotel, featuring installation and servicing talks by representatives of the RCA Institutes, Weston Electrical Instrument Corporation, DuMont Laboratories.

## FCC Straddles Fence

Neither approves nor disapproves television standards proposed by RMA

WASHINGTON—That the technical television standards proposed by the RMA be neither approved nor disapproved by the FCC was the recommendation of a Commission committee rendering a report late last month.

Recommendations made in the report included the following:

1. "That the Federal Communications Commission neither approve nor disapprove the standards proposed by the Radio Manufacturers Association. This recommendation is made first because the Commission by law is required to grant licenses to applicants for television stations who prove that the granting of such applications would be in the public interest, and, second, because it appears undesirable to take any action which discourages private enterprise or which decreases the incentive for undertaking research to effect further improvements.

"The Committee suggests that in taking this action the public be informed that in failing to approve the standards the Commission does not believe the proposed standards to be objectionable as a phase of a rapidly developing service. The public should also be informed that the Commission desires to be free to prescribe better performance for the transmitters it may license in the future when and if such improvements are proved to be in the interest of the public.

"Also, in making this recommendation the Committee suggests that it be made clear that the proposed standards do not at this time appear to be suitable for the 12 undeveloped higher frequency channels reserved for television.

2. "That the Commission require future applicants for television station licenses proposing external transmitter performance differing from those previously in general use, to prove that such proposed performance not only equals the established quality but also will be in the public interest in view of the changed situation thus created."

## Majestic Showing Sets

CHICAGO—Majestic Radio & Television Corporation is presenting its new line for the first time during the period between June 10 and June 25, in the new factory display room.

Distributors will convene from June 28 to July 3 at the Drake Hotel, according to general sales manager W. B. E. Norins. A wide variety of models whose cabinets were designed by internationally famous Normal Bel Geddes will be seen.

## Stewart-Warner Appoints Palmgreen

CHICAGO—B. E. Palmgreen, previously engaged in the appliance business on the west coast, has been appointed northwest-central district sales manager for the Stewart-Warner radio division, replacing Dean Lewis, resigned.

## Turney Joins Kenyon

NEW YORK—E. T. Turney, an old hand in radio with an extensive following in the trade and among amateurs, has been made sales and advertising manager of the Kenyon Transformer Company, Inc.



● Schools, Dance Bands, Radio Talent, Clubs, Amateur Recording Studios, Home Movie Fans—There's an unlimited field for this easy to operate, moderate priced Equipment!



As a modern, scientific aid to learning, the Federal Recorder is in big demand in schools of music, language, public speaking, and in all departments of public school work. Wide use in recording studios for private recording.

● It's sweeping the country,—a new sensation,—a new thrill,—recording on the Federal, so superior, so complete, so easy to operate, so moderately priced. A perfect recorder; an electric phonograph; a licensed radio; a public address system, all in one super-efficient unit, priced within the easy reach of every school, professional outfit, and thousands of homes.

By the simplest process, the Federal records with amazing fidelity anything spoken, sung, or played into the microphone. The record is instantly playable, without lifting from the turntable.

No technical nor radio knowledge is necessary in selling or operating Federal Recorders. Ten minutes with the simple directions, and you can make a perfect demonstration. Sound-proof room or recording laboratory not required. An exclusive Federal feature of self-equalization gives perfect recordings anywhere under any working conditions. Worm gear drive cutting arm; standard 78 RPM, universal speed. [For professional studio work, 2 speed machine supplied.] Records playable on any electric phonograph. Anyone can operate this remarkable machine. The simplified control desk makes it as easy as running a phonograph or tuning a radio.

### BIG SUPPLY BUSINESS

Almost unlimited are the sources of Federal Recorder sales,—and profits. Remember, too, that every Federal Recorder installation means continued repeat business in disks and supplies.

Recorders are not new. The enormous recorder market is known and established. But the Federal Recorder is new, and its efficiency, high fidelity, simplicity, and moderate price release a new and greater market, the enormous wealth of which has scarcely been touched. Get in at the very beginning of this modern trend that is sweeping the country. Write today for your free book on Federal Recorders. Get the whole story first hand. Get yourself set now with Federal for a sweeping business with enormous profit. Write today, sure.

**FEDERAL RECORDER CO., INC.**  
Dept. 6753 630 S. Wabash Ave., Chicago, Ill.



Dance and radio bands, singers, dramatists, use the simple-to-operate, faithful Federal Recorder "their severest critic". Above, Jack Teagarden at rehearsal.

This unique Federal cabinet converts the portable model into a handsome console of modern design, walnut finish, for home and studio use.



### Big Profits in Perma Disk Business

Perma Disks have licked the greatest annoyance in amateur recording, chip fouling of cutting stylus. Little or no brushing required. Big demand in radio stations, advertising agencies, homes, schools, by professional and amateur musicians. Heavy exclusive-formula coating prevents warping, slipping. Unwavering uniformity. Makes perfect pressings. Non-deteriorating. Made in 6, 8, 10, 12 and 16-inch sizes, also special larger sizes, at prices substantially below the average level. A demonstration of this amazing new Perma Disk will convince any prospect. Write direct for full information and samples. One test will convince you of its extraordinary preference. Write today.



**HEADS MAJESTIC**—Ross A. Lasley, New York management consultant, who has just been elected president and a director of the Majestic Radio & Television Corporation. He will make his headquarters in the firm's general offices at Chicago.

## Philco Distributors Convene

See radio innovations, televisions ready for market. Hear air-conditioning, refrigeration plans

**FRENCH LICK**—In progress here as this issue goes to press is the Philco Radio & Television Corporation's national distributor convention.

From president Larry E. Gubb came advance information that his firm would introduce sensational new advances and innovations in radio, show a line of television receivers ready for the market, outline merchandising and advertising plans proposed for the radio and television lines, air-conditioning and refrigeration.

Pointed out was to be Philco's ten years of continuous experimentation with television prior to release of merchandise for consumer sale. For 900 distributors president Gubb phrased a statement emphasizing the fact that television will supplement rather than supplant radio, that he expects 90 per cent of 1940's sales volume to be in radio receivers.

Planned in conjunction with the meeting were separate get-togethers for distributors' service managers.

## DeForest Fair Day Proposed

**NEW YORK**—Friends of Dr. Lee de Forest are sponsoring a movement to hold a de Forest Day at the New York World's Fair 1939 September 21 or 23, during the week in which the IRE convenes here. Preceding the proposed de Forest Day there would also be a celebration of Dr. de Forest's birthday on August 28.

Frank E. Butler of 2912 Rockwood Place, Toledo, Ohio, de Forest's assistant in experiments from 1904 on, is serving as a clearing house for suggestions concerning the arrangements.

## 52 Philco Meetings Under Way

Factory execs leave on extended tour of country following national convention

**PHILADELPHIA**—Immediately following the annual convention held by Philco at French Lick, Ind., June 5, 6, 7, company executives organized in groups began a swing around the country which will take them to distributor meetings in 52 cities.

June meetings were scheduled as follows: June 12; Cincinnati, Richmond, Denver, Detroit. 13; Columbus, Greenville, Milwaukee. 14; Cleveland, Jacksonville, Salt Lake, St. Louis. 15; Buffalo, Tampa, Reno, Kansas City. 16; Boston, Miami, Sacramento, Chicago. 19; Hartford, Minneapolis, Chattanooga, Memphis, Fresno. 20; Providence, Des Moines, Nashville, Little Rock, San Francisco. 21; Albany, Omaha, Knoxville, Dallas. 22; Baltimore, Wichita, Charlotte, Ft. Worth, Los Angeles. 23; Washington, Oklahoma City, Winston-Salem, San Antonio, San Diego. 24; Houston, Phoenix. 25; Houston, 26; Peoria, Houston, Santa Barbara. 27; South Bend, New Orleans. 28; Portland (Ore.). 29; Seattle. 30; Spokane.

## Stancor Boosts Hixson

**CHICAGO**—Clement W. Hixson, with the Standard Transformer Corporation for the past year in an engineering capacity, has just been made chief engineer of this firm's jobbing division.

## Spector New Andrea GSM

**LONG ISLAND CITY**—David S. Spector, former general manager for Kolster Radio and in the radio and elec-

**SEEN IN SAN FRANCISCO**—Ricksha boy at the Fairgrounds drums up trade by offering passengers radio while they ride. (Below) Gentleman entering famous educational exhibit apparently took along his "Sentinel" radio to insure against boredom

trical business for the past 20 years, has been appointed general sales manager of the Andrea Radio Corporation, will take complete charge of the firm's radio and television set marketing in both domestic and export fields.

## Three Stewart-Warner Changes

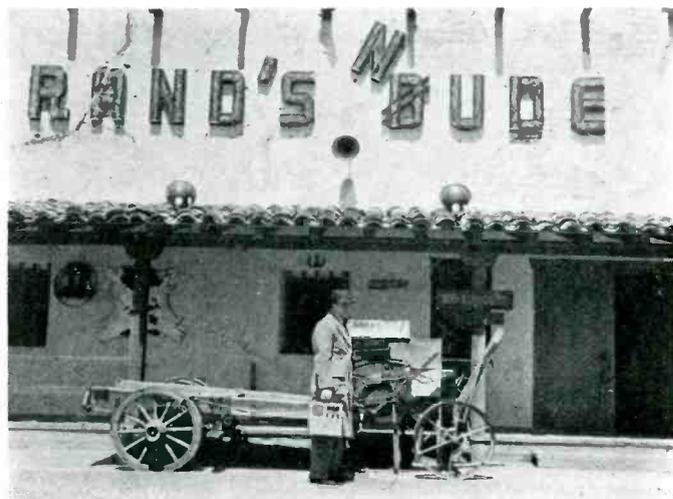
**CHICAGO**—Joseph C. Elliff, until recently western manager of the Saturday Evening Post, has joined Stewart-Warner, will work out of the office of the vice-president and general sales manager in an executive capacity.

J. R. Brandenburg has been appointed northeastern district manager for the radio division. And H. P. Dunkley has been transferred to the metropolitan New York area.

## Cinaudagraph Treats Press

**NEW YORK**—To the New York World's Fair late in May as guests of the Cinaudagraph Corporation's D. P. O'Brien went editors of the radio press.

Cinaudagraph has over 1800 speakers in operation at 76 different spots around the grounds. Units run all the way from 6-in. p.m.'s to new 27-inch electro dynamics used in the spectacular fountain of light and sound demonstration that draws huge crowds every evening at nine.



## New G-E Department

Radio, television and related activities consolidated

BRIDGEPORT—A new department of the General Electric Company, which will consolidate for the first time all radio, television and related activities, has been established with headquarters here.

Dr. W. R. G. Baker, former chairman of the firm's radio management committee, has been named manager of the new unit, to be known as the radio and television department, with full responsibility for radio and television tubes, transmitting and relaying equipment, carrier-current equipment and other associated product lines.

Perry F. Hadlock, recently named manager of General Electric's then radio division, will continue in charge of radio and television receiver sales.

## G-E Showing New Line

Distributor meetings follow Memorial Day exhibit for district managers, reps. Virtually entire executive staff on road

BRIDGEPORT — Described elsewhere in this issue, General Electric's new line of radio receivers was presented Memorial Day at the Hotel Barnum to this firm's district sales managers and radio representatives.

Chairman for the first day of the meeting was Henry A. Crossland, who discussed the international and domestic aspects of the television industry. Dr. W. R. G. Baker outlined G-E contributions to the art and discussed frequency-modulation transmission. Messrs. Barhydt, Shaw, Kaar, Brandt and May presented technical, promotional and distributional phases of the television program.

Speakers on the second day included R. J. Cordiner, C. M. Snyder, Hadlock, Brandt, Ray and Baker. The third day was devoted to more detailed radio problems. Despite the fact that the first session had been scheduled primarily for television discussion Dr. Baker and other speakers repeatedly emphasized the importance of new radio receiver developments, pointing out that the main business of most dealers would long continue to be in that field.

Immediately after the convention four headquarters groups left Bridgeport to present the G. E. story to distributors. Hadlock and Barhydt are to begin at Los Angeles and then proceed to San Francisco, Portland, Seattle, Salt Lake, Denver, Omaha, Davenport, St. Paul and Fargo. Ray and Wandres listed meetings starting in Louisville and going on to Nashville, St. Louis, Indianapolis, Fort Wayne, Cincinnati, Charleston, Columbus, Pittsburgh, Lancaster, Allentown and Williamsport. Dr. Baker, L. L. Ellis and E. N. Sampson had a schedule including Milwaukee, Chicago, Detroit, Cleveland, Syracuse, Buffalo, New York, Albany, Boston and Hart-

## "AUTOMATIC" Scoops the Industry!



NEW 1940 JUNIOR

### 3 in 1 PORTABLE RADIO

with BUILT-IN AUTOMATIC BATTERY REJUVENATOR\*

Adds extra hours to the batteries

- Operates on Batteries
- Operates on AC Current
- Operates on DC Current

\*The new and sensational AUTOMATIC BATTERY REJUVENATOR increases the life of the batteries and is an exclusive feature to be found ONLY in the AUTOMATIC Portable.

Write, Wire or Phone for Attractive Discounts

**AUTOMATIC RADIO MFG. CO., INC.**  
122 Brookline Ave. Boston, Mass.

\$ **19<sup>95</sup>**

Complete with Batteries  
**LIST**  
(Model P-61)

**Operates Anywhere  
Sells Everywhere**

- 5 Tubes
- Superheterodyne
- P.M. Speaker
- Automatscope Aerial
- Slide Dial
- Powerful — Selective — Sensitive
- Aeroplane Luggage Material Case

Mail this coupon for special bulletin giving full details of all AUTOMATICS

**AUTOMATIC RADIO MFG. CO., INC.**  
122 Brookline Ave. Boston, Mass.

Name .....

Street Address .....

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

world wide recognition  
certainly merits yours...

See the new **GARRARD**  
Automatic Record Changers

SEND FOR new CATALOG 6TF

**GARRARD SALES CORP. • 296 BROADWAY • NEW YORK**



**CRC EXEC** — C. H. Maraniss, now with the Columbia Recording Corp.

ford. Messrs. Brandt and Bell were to begin in Kansas City and then cover Oklahoma City, Dallas, New Orleans, Birmingham, Atlanta, Jacksonville, Columbia, Raleigh, Washington, Baltimore and Philadelphia.

### Television Technicians Formed

NEW YORK—Television Technicians, Inc., is the name of a new installation and maintenance organization at 401 Broadway. George F. Duvall, president, advises that it has installed upward of 200 televisions for dealers located as far from the metropolitan area as Asbury Park, N. J., White Plains, N. Y., and Huntington, L. I., since April 30. He says an average home installation, less antenna kit and maintenance, will in future cost about \$20.

### Radiotechnic Labs Expand

EVANSTON—Radiotechnic Laboratories, builder of tube testers, is about to enter new and allied fields. The expansion program is being directed by Charles P. Peirce, general manager, assisted by H. P. Manly, founder of the business, who will continue in charge of engineering, sales and development of new products.

Two or more new instruments are expected on the market by July.



**SLICKS UP STORE**—Parts jobber Dean Orem, Sr., of Saginaw, behind the counter of his newly slicked up salesroom at 710 East Genessee.

### ARC Changes Name

BRIDGEPORT—American Record Corporation, maker of Columbia, Brunswick and Vocalion records, will hereafter be known as the Columbia Recording Corporation. The change is one of name alone, identifies the organization more closely with its parent company, the Columbia Broadcasting System.

Executive, sales and advertising officers of the firm were moved May 19 from New York to enlarged quarters at the factory here.

### Maraniss Joins CRC

BRIDGEPORT—C. H. Maraniss has joined the executive staff of the Columbia Recording Corporation in the capacity of assistant to president Ed. Wallerstein.

Maraniss comes from the RCA Manufacturing Company, Inc., where his activities included problems of distribution, merchandising, advertising and sales promotion. He has worked in the record business from coast to coast for many years and has wide acquaintance with distributors, dealers, coin operators and sales people throughout the country. A graduate of Harvard, he was a captain in the army and has been connected with the record business since the war.

### Stewart-Warner Meeting Dates Set

CHICAGO—Changes in the dates of four sectional Stewart-Warner radio distributors' conventions have been announced by L. L. Kelsey, radio sales manager of the Corporation. Originally scheduled for the first two weeks of June, the meetings will now be held in the following sequence:

Chicago (Edgewater Beach Hotel) June 19; New York (Park Central Hotel) June 22; Dallas (Adolphus Hotel) June 26 and San Francisco (St. Francis Hotel) June 28.

### New License for Universal

LOS ANGELES—From the Universal Microphone Company of this city comes word that all microphones manufactured



**TOUGH ON TARPON**—Twosome snapped in Florida: Ross Siragusa (top), president of Continental Radio & Television, with vice president J. H. Clippinger



are now licensed by Western Electric, ERPI and A.T. and T. The new contractual agreement is retroactive, covering the firm's microphone activities since its establishment 11 years ago.

### G-E Ups Sanger

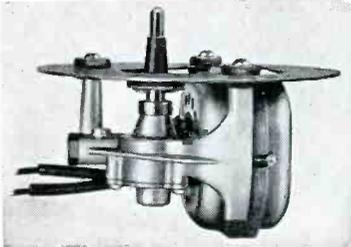
CLEVELAND—Alfred C. Sanger, for the past six years appliance district manager for General Electric in the Philadelphia area, has been appointed sales manager for the G-E household refrigeration section, with headquarters here.

### Ken-Rad Ups O'Brien

OWENSBORO—The Ken-Rad Tube & Lamp Corporation advises that L. R. O'Brien, formerly equipment sales supervisor in Chicago, has been appointed manager of the company's equipment sales.

# PICK THE LIGHT CX MOTOR FOR SELLING PERFORMANCE

In Your Portables  
And Table Models



HERE is the new fully enclosed ventilated, fan-cooled, constant-speed Flyer CX Phonograph Motor that puts new selling push behind popular portable and table model phonographs. Millions of Flyer Motors in use throughout the world indicate its quality. Self-starting. Quickly reaches running speed. Has ample oil reserve in sealed chamber. Noiseless helical-cut bakelite gears, with large bearings. Patented-drive turntable (not shown), gives positive insulation from motor.

## Order a Test CX Motor Today

Specify frequency and voltage of current and size of turntable. Write now for Flyer CX catalog sheet and prices.



The GENERAL INDUSTRIES CO.

3937 Taylor Street

Elyria, Ohio



**NEW MODEL AC-DC DUAL VOLTAGE**  
**350 to 50000 WATT PRECISION WORKMANSHIP**  
**STURDY COMPACT LIGHT WEIGHT MORE THAN 40 TYPES IN STOCK**

## COMPLETE ELECTRIC PLANTS

ONAN A.C. ELECTRIC PLANTS supply electricity to operate A.C. RADIO, SHORT WAVE TRANSMITTERS AND RECEIVERS, PUBLIC ADDRESS SYSTEMS, MOVING PICTURE PROJECTORS, SOUND TRUCK APPARATUS, ELECTRIC TOOLS, LIGHTS and ALL APPLIANCES.

### THOUSANDS IN USE IN ALL PARTS OF THE WORLD

Used as STANDBY EQUIPMENT in Schools, Hospitals, Theatres and Public Buildings, for Emergencies caused by Power Line Failure due to Storms, Floods, and other Catastrophes, Save Property and Lives. Other Models for Farms, Camps, Homes.

Available in 110 or 220 Volt, AC—12, 32 and 110 Volt, DC—also Dual Voltage, AC-DC Types, Manual, Full-Automatic or Self-Starting. \$99 and up. Shipped READY TO RUN.

WRITE FOR DETAILS AND PRICES

## D. W. ONAN & SONS

449 ROYALSTON AVE.

MINNEAPOLIS, MINN.

## New... SMALLER 15c SIZE IN FLASHY BOX

In every family where records are enjoyed, you'll find a demand for the sensational RECOTON liquid Record Renewer that cleanses, lubricates and protects—2-oz. bottle 50c, or this handy 15c bottle, powerfully displayed as illustrated at left.

Ask for samples of  
SUPERIOR and ACOUSTIC  
hi-fidelity needles

## RECOTON

CORPORATION  
178 Prince St., New York City



DEALERS  
WHO HAVE  
**"SOMETHING  
ON THE  
BALL!"**



We're interested in dealers who have a reputable radio service business; dealers who can turn over their tube stock at least every three or four months; who have facilities to display sales-producing advertising materials; and who have a reputation for maintaining standard prices.

Dealers who qualify as Tung-Sol retail partners sell to a market free from interference with already established Tung-Sol retailers, and they make full profit on every sale.

If you have this type of establishment  
— write us today.

# Vibration Tested TUNG-SOL RADIO TUBES

Booth 410, Radio Trade Show

TUNG-SOL LAMP WORKS INC. Dept. E Radio Tube Division  
SALES OFFICES: Atlanta - Chicago - Dallas - Denver  
Detroit - Kansas City - Los Angeles - New York  
General Offices: - - - Newark, New Jersey

## Wholesale Branch Moves

NEWARK — The Wholesale Radio Service Company's branch has moved from 219 Central Avenue to its own building at 24 Central Avenue, where two salesfloors tripling available space are to be maintained.

## De Wald Exhibits Line

CHICAGO—The DeWald Radio Mfg. Corp. of New York will exhibit its line of new radios and a "Phonoscope" model here in the Blackstone Hotel June 14-17.

## Distribution News

**AMPERITE** — *Dave Kubrick*, well known in both musical and sound trade circles, has joined the Amperite Company as its representative in the metropolitan New York area specializing in the sale of the firm's contact pickup unit proving so popular for amplifying the output of musical instruments.

**WARD-LEONARD** — *W. B. Pray Sales* of 84 State Street now represents the firm in the radio products field in the New England territory, working out of the above Boston address.

**PHILCO**—*J. H. Burke Co.*, of 674 Commonwealth Ave., Boston, has this firm's line in the established Boston area.



**BENJAMIN AT BARRINGTON**—One of the best shots we've seen of *Dave's Henry Benjamin*, snapped by the *J. P. Seeburg Corporation's H. T. Roberts* at the latter's Illinois farm

**ANSLEY**—The following representatives have been signed to handle this company's Dynaphone and DynaTone lines: *Frank A. Baumgarten*, 405 Penn Ave., Pittsburgh (West Virginia, eastern Ohio and western Pennsylvania); *Gerald B. Miller*, 8208 Santa Monica Blvd., Los Angeles (California, Nevada and Arizona); *Vernon C. MacNabb*, 5105 N. Capitol Ave., Indianapolis (Indiana, Louisville, Ky., Cincinnati and Dayton, Ohio).

**COLUMBIA RECORD**—*B. O. Radio, Inc.*, of 620-634 Market Street, Newark, has Columbia, Brunswick and Vocalion disc distribution for northern New Jersey. Mr. Needle has joined the *B. O.* staff, will contact the trade with records.

## Dealer Helps

**COPPER PLATED PAPER**—*The Sisalkraft Company* of 101 Park Ave., New York, has a new folder to which samples of its copper-armored "Sisalkraft" paper widely used in the building business and with many potential radio and electronic shielding applications are attached.

**TUBE CHARACTERISTICS**—The Radio Tube Division of the *Ken-Rad Tube & Lamp Corp.* has just prepared for distribution a new pamphlet giving essential characteristics of metal and glass receiving tubes. Complete as of May 15.

**3 FLOOR DISPLAYS**—*Philco* announces three elaborate floor displays. There is an illuminated, adjustable type accommodating 3 consoles and 8 table models; a type with concealed lighting designed to accommodate 18 to 20 Philco Transitone table types, compacts, portables and record players; a third display designed to highlight four farm sets.

## SMOOTH ... QUIET ... DEPENDABLE

"PINCOR" offers the only complete line of "B" power supply equipment for police units, aircraft and radio broadcast service and sound systems. Frames, sizes and capacities to fit any requirement.

"PINCOR" dynamotors are the last word in efficiency and regulation. Deliver high voltage current for proper operation of your apparatus with a minimum of A.C. ripple. Compact, light weight. With or without filter. Send for catalog.

VISIT BOOTH NO. 210 AT THE CHICAGO TRADE SHOW

**PIONEER GEN-E-MOTOR CORPORATION**

Dept. R-IF, 466 West Superior Street, Chicago, Illinois



Without obligation kindly send me "PINCOR" Silver Band Dynamotor catalog and data sheets.

Name .....

Address .....

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

Also send me Converter Catalog.



## ... LET US SUPPLY YOUR FASTENINGS

FOR RADIO—SOUND—TELEVISION ELECTRICAL AND SPECIALTY APPARATUS

Whatever your product may be, you are faced with the problem of locating numerous items that form an integral part of your production. Whether it's a screw—nut—washer—lug—grommet or any one of a myriad of parts, each can be a "goat getter" if not easily located.

We Carry in Stock: Screws—Nuts—Washers—Lugs—Rubber Grommets—Rivets—Eyelets—Etc.—Etc.

Manufacturers and Jobbers only—

SEND FOR CATALOG 51

**FEDERAL SALES COMPANY**

24-26 South Jefferson Street

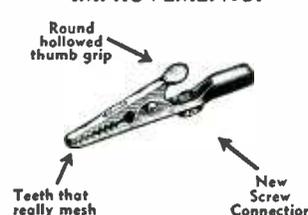
Chicago, Illinois



## MUELLER Presents—A Complete New Line of Alligator Clips

All Popular Types Insulated and Uninsulated

### IMPROVEMENTS!



Plus a Unique Solid Copper R. F. Alligator!

Send for Free Samples and Sheet 701

**Mueller Electric Co.**

1584 E. 31st St. Cleveland, Ohio



**PLEASURE BEFORE BUSINESS** — Knocking out 12,500 miles during a spring circuit of the trade, IRC's Dan Fairbanks (at left in both shots) found time to peel down to shirt-sleeves (top photo) and polish off fried chicken with "Spec" Harrison and Mal Wolf of Houston's Geophysical Supply, tour the Oklahoma City countryside with Mr. and Mrs. Harry Savage of Southern Sales

**CONTROLS, RESISTORS** — The Clarostat Mfg. Co., Inc. of 285-7 North Sixth St., Brooklyn, N. Y., has three new and effective dealer helps: (1) An up-to-the-minute compilation of volume control replacements for all standard radio sets in use, (2) Six envelope-stuffer sized folders covering line-voltage ballasts and regulators, plug-in resistors, composition and wire-wound controls, sound system controls and attenuators and power resistors and (3) A combination bulletin board and folder rack useful in any service shop or store. Details from Clarostat jobbers.

**TELEVISION CAPACITORS**—The Solar Manufacturing Corporation of 599-601 Broadway, New York, has just released a six-page bulletin known as T-1, giving complete technical details on its line of capacitors especially designed for television.

**MEN THAT MAKE MAJESTIC**—Majestic Radio & Television Corp. has a 14 by 20-inch brochure containing a detailed picture of firm's organization. Pictured are execs, factory exterior and interior facilities. Explained is the firm's finance plan, plus the new Majestic sales policy in which sales quotas are abolished. Included in three colors are photos of the firm's latest radio merchandise. Brochure available to distributors.

**TUBE SALES AIDS**—The Raytheon Production Corporation has just announced an elaborate new line of free displays and advertising material designed to help dealers and servicemen increase radio tube profits and speed up turnover. Among other things, spectacular window display effects can be obtained with the new material.

**PEEK - A - BOOTH** — To facilitate proper demonstration of television in daylighted or brightly illuminated rooms of any kind a booth which may be assembled by the dealer has been designed by the Allen B. DuMont Labs., Inc., Passaic, N. J., is obtainable at cost to this firm's retailers.

**SOUND EQUIPMENT**—A new 8-page catalog by the Webster Electric Company contains pictures plus complete specifications of a 12-watt portable or fixed sound system and amplifier, 20-watt fixed or portable sound system and amplifier, 50-watt portable or fixed sound system and amplifier, 50-watt booster power stage, 20-watt mobile sound system and many accessories. Address: Racine, Wisconsin.

**REPLACEMENT TRANSFORMERS**—The Standard Transformer Corporation's replacement transformer guide and catalogue, fifth edition, is just off the presses and may be obtained from the factory at 1500 North Halsted St., Chicago, or from the firm's jobbers.

## Can you test

**LOKTALS? BANTAMS? "S" TYPES?  
35, 45, 50, 70, 85 VOLT  
HEATER TYPES?**



**Take advantage of NATIONAL UNION offers NOW before contract points GO UP JULY 1st**

**Your Choice of these famous makes tube testers ALL GUARANTEED to TEST LATEST TUBES!**

Here's the chance of a lifetime to get the tube testing equipment you always want and need. National Union now makes it possible for you to choose from all the newest models of leading instrument manufacturers . . . every one guaranteed to test all the latest tubes! AND—right now is the time to get it! Before the Purchase Points Go Up July 1st.

See your National Union jobber at once. He will give you details of the simple N.U. plan which has already provided thousands of satisfactory deals. Arrange to have the tester you choose shipped immediately.

**NATIONAL UNION RADIO CORPORATION  
NEWARK, N. J.**

**NATIONAL UNION  
QUALITY**

QUALITY is the National Union By-Word. Radio Service Engineers recognize and recommend the finer quality, research skill and time-proven experience that backs every N.U. tube. For absolute customer satisfaction, you should feature National Union Quality.

**GET A NEW TESTER  
Free!**

National Union Radio Corporation  
57 State Street, Newark, N. J.

Please send me information on how I can get my choice of leading test equipment FREE.

Name .....

Address .....

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

RR-639

## THE SEASON'S NEW SETS

(Continued from page 27)

remote controlled. Two models, \$14.95 and \$16.95, called "Multiplex Little Nippers". \$2 filter, extra, recommended for remote control use.

A series of new Victrolas and record players just announced covers every conceivable need. Four are portables for either home or outdoor use, one is a home compact type, another a home console and still another a large phono-radio combination. The portables sell for \$69.95, \$49.95, \$11.95 and \$9.95, the first two including \$4.50 worth of records and the last two \$2.25 worth of discs.

A new Pick-Me-Up portable, available in four color combinations, is ready at \$16.45 fob Camden. Uses batteries only, contains a built-in antenna.

Two deluxe table models covering a wide band of frequencies are seen. Available in either mottled brown or ivory finish at \$29.95. Include simplified Victrola plug-in, are ultra-modern in style. Dial is of a new inclined vision type.

A new two-unit auto radio is also included in the line, uses 7-tubes, instantly selective pushbutton tuning of five stations, requires no special dash plates. Fullview edge-lighted dial, antenna noise filter, combined high and low frequency control and automatic compensated volume control. Lists at \$44.95 fob factory. Two single unit sets are also ready, will sell for \$24.95 and \$29.95 fob.



"... and you push this button when someone starts to tune in something else during your favorite program."

**REMLER**—Concentrating much of its initial new season effort on the new model 93, a portable which works either on batteries or on ac or dc electric light lines. Lists at \$39.90 with batteries, \$36.50 without. Features include: 5-inch permanent magnet speaker, standard battery pack, built-in antenna with provision for external auxiliary, covered front which snaps onto the back and so may be kept out of the way, foolproof safety switching from power line to batteries.

**SONORA**—Seen in this firm's new line is a 7-tube phono-radio console with built-in record albums, a 7-tube table-type combination and a 1½ volt battery portable radio with built-in spring-wound phonograph.

Featured in the line will be three straight table type electric phonographs at \$19.95, \$24.95 and \$33. Will be called "Duet", "Trio" and "Sonophonic", in this order.

There are to be three even more popularly priced wired type record playing units designed to work in conjunction with a separate radio and three wireless type record players in similar table type cases.

**SPARTON**—Sparks-Withington's line includes a model 590-1 designed to operate as a portable on either self-contained batteries or ac-dc lines. It's a 5-tube superhet with full avc, five-inch permanent magnet dynamic speaker, loop built into hinged back cover.

There are also series 500BW and 500BV "personal" table models in brown or ivory Bakelite cases. These are five-tube house current types using four-inch electro dynamic speakers. And a line of "limited edition" table types, unique and beautifully cabinetted table types on which production is controlled to boost their appeal among people who value relatively rare furnishings and equipment.

Seen also in the line is an 11-tube allwave superhet, model 1160, a console combining conventional tuning and "Selectronne" push-button control.

**STEWART-WARNER**—Among the many new models to be seen by this firm's distributors at sectional meetings scheduled later in the month will be a table model considered by the management to be a radical and important departure, introducing a new trend in styling and construction.

Consoles and combinations (there are to be at least three of the latter, including one or more table types) all use the new, improved Magic Keyboard system of tuning and magic dial, are reported to be tops with respect to reproduction quality.

Two juvenile sets having an unusual tie-up with leading figures popular with kids are expected, an unusual chairside cabinet design with space for magazines is to be introduced and demonstrations of a 26-tube combination television and standard broadcast-band radio receiver to retail at approximately \$500 will be conducted in cities where picture transmissions are available.

Radio prices, it is understood, will range from \$9.95 to \$119.95. Production started during the last week of May.

**STROMBERG - CARLSON** — 1940 line includes the greatest variety of models ever offered by this company, and at new low prices.

Prices, all fob Rochester, range from \$29.95 to \$795. Consoles start at \$69.95 with a Labyrinth radio for \$99.95 (\$19.55 less than any model with this feature ever before offered). Radio-phonographs begin as low as \$69.95.

There are seven new radio-phonographs, including table and arm-chair types and one replica of a Chippendale commode chest. Also an improved No. 14 record-player, in walnut cabinet with full-size lid at \$24.95. Table type radios included in the line come in walnut and maple. Three have authentic period designs, an early American and two Chippendales.

Included, too, is a portable battery type set at \$29.95 complete. Three

"night-table" radios strike a new functional design note.

Continuing as design features to be widely publicized are Carpinchoe leather speakers and the Labyrinth, Bi-focal tuning eye and slide-rule dial. Motor tuning is found in more models, with and without remote control. Most sets have a television-phonograph connection and one model was designed so that it could if required receive frequency-modulated transmissions.

**TROY** — Last-minute checkup on the west coast indicates that this company will have 14 new equipment models. There is an ac-dc set at \$8.95, another in Bakelite at \$12.95, a similar type plus push-buttons at \$16.95, one in wood at \$19.95. Seen also is an ac push-button and phono combination at \$39.95, a two-band pushbutton job at \$29.95, a similar set plus phono at \$49.95, a dwarf portable at \$19.95, a deluxe portable at \$29.95 and a phono portable at \$39.95.

An 8-tube set is also seen, available as chassis alone, transcription player unit or complete table model. There is also an 8-tube allwave chassis available chassis alone, table model, console, straight phono or automatic record-changing combination. The line is nicely rounded out with an armchair style set available with a wireless record player (automatic or straight), as an automatic wired type phonograph or as a straight phonograph. Planned is an additional 6-tube, 5 pushbutton tuner.

**WILCOX-GAY** — Interesting development to be headlined by this plant during the coming season is a recording device now in production and likely to be available in quantities before the end of the month. Called "Recordio", it is said by the management to be designed in every detail for use by the average consumer who is skillful enough to operate a radio and phonograph but somewhat at sea when confronted by more complicated mechanisms.

First model likely to be seen will be one console package comprising recorder, a high-grade radio set and a phonograph. Price not determined at this writing but understood to be in the range popular for combina-

**PARMAK**

## ELECTRIC FENCER



*Mr. Radio Dealer:*

ELECTRIC FENCING is a companion industry to radio. Huge demand—wanted by every modern farmer—*six million farmers* need it. A fast selling—big profit spring and summer business for you. More than 60,000 farmers, dairymen, stockmen, use PARMAK World's Largest Seller.

Write for our **BIG PROFIT EXCLUSIVE** territory plan for radio dealers.

**PARKER-McCRORY MFG. CO.**  
2609-15 Walnut St.  
Kansas City                      Dept. 2-H                      Missouri

## TONKABINETS

for RECORDS



- No. 7801—\$7.95 retail. Height 27½"; Top 14½" x 15¾". 5-ply walnut; remainder walnut finish. Roll-proof shelf for loose records.
- Make extra profits selling TONK Record Cabinets. A complete line of attractive cabinets, genuine walnut or mahogany throughout.
- Dealers—write for new folder giving complete descriptions.

**★ TONK MFG. CO.**  
1912 N. Magnolia Ave., Chicago, Ill.

## Repair radios expertly

This book gives the essentials of theory and technique that clarify radio troubles and help you make quick, accurate repairs.

*Just Out!*



## Principles and Practice of RADIO SERVICING

By H. J. HICKS

*Radio Instructor, Hadley Vocational School*

300 pages, 6 x 9, 212 illustrations, \$3.00

**INCLUDES CHAPTERS ON:**

- selecting and using test equipment
- servicing public address systems
- getting and keeping service business

Shows how to install, test, and repair radio receivers, giving not only instructions in all the servicing procedures, but also plain treatment of the theory of electricity and radio needed for most effective approach to servicing problems. Written in excellent self-study style for servicemen who want to improve their skill and readers who want to learn this practical field from the ground up.

**10 DAYS' EXAMINATION ON APPROVAL—SEND THIS COUPON**

**McGraw-Hill Book Co., Inc., 330 W. 42nd St., N. Y. C.**

Send Hicks—Principles and Practice of Radio Servicing for 10 days' examination on approval. In 10 days I will send \$3.00, plus few cents postage, or return book postpaid. (We pay postage on orders accompanied by remittance.)

Name .....

Address ..... City and State .....

Position ..... Company ..... R.R. 6-39  
(Books sent on approval in U. S. and Canada only.)

tions. Following within a few weeks will be a separate "Recordio", complete with respect to making records and playing them back in the home but without radio.

Records of a new, inexpensive variety readily handled by the layman are to be provided by the company.

### THEY WON'T TALK

(Continued from page 31)

really worth it, and simply must not slip through our fingers).

Sometimes we get to talking to the prospect about his work, and the n & a develops naturally, or can be traced. This is also true of other topics of conversation. It all boils down to one fundamental rule of conduct, as opposed to specific illustrations:

I spoke a moment ago of the "psychologically proper moment." The floor man who is stiff and formal will have no such moments. The floor man who is cordial and informal, to the greatest degree in keeping with his job, will have many of them. He can bring them about himself.

This brings me to another way I know of trying to get the n & a. This method is seldom used, and I may be springing something new on you; but I believe the lack of popularity of this idea is mostly due to the lack of incentive already mentioned.

#### A Last Resort

A dealer may have pads of slips printed, and on each slip provide a place for the walk-in's name and address. The slips are numbered consecutively, and each pad is naturally gummed to keep the numbers in consecutive order.

Then he has a box with a slot in it, something like the ticket box at the movies but smaller. It doesn't cost the prospect a thing to put his n & a on one of the slips and drop it into the box. Any incentive preferred by the dealer may be employed to induce prospects to fill in a slip.

Now let's assume that the floor man has a prospect he can't sell on the floor. It's a radio the prospect is interested in, but the floor man

can't even arrange for a home demonstration. (The prospect is going away for two weeks, and leaving tomorrow).

To make matters worse, the floor man hasn't even succeeded in wheedling out the n & a. He'd like to come right out and ask for it, but in this particular case he's afraid of a refusal. He might even offend the man. (The gentleman has *said* he would be back. Does the floor man doubt his word?).

So . . . as they're walking toward the door, and as they pass the box, the floor man smiles and says, "By the way, did you get in on this?" (He knows he didn't because he saw the man come in).

The prospect will usually look over the display, smile, write his n & a on one of the slips and drop it into the box. And while he's doing it, of course, the floor man is never watching very closely.

(Suppose the man doesn't bother? Well, the floor man can *still ask* for the n & a, can't he?)

When the prospect is out of the store, the floor man simply goes back to the pad and looks at the next number. If the number is 247, then he knows the prospect dropped in number 246. He marks #246 on his memorandum, with the rest of the data—the model the man liked, when he said he'd be back, etc. Later, when all the slips are taken out of the box for that day, he simply gets the n & a off number 246.

Nice?

I hope to tell you it's nice. And the best part of it all is that, in no case of this kind, have you been *warned* by the prospect that he doesn't want to be bothered at home! You can make the follow-up without that hanging over your head.

Not that we shouldn't make a follow-up, even when we have received such warning (tactfully, of course). And I'll tell you why.

In the first place, the prospect doesn't mean what he says. Take my word for it, because I've been back often enough to know. And I haven't been shot yet.

In the second place, even if he *does* mean what he says, you still have a right to follow him up. Why? He bothered you in the store, didn't he? Then you have a right to bother him. A legal right. I know. I asked a lawyer about it!

### RECORDS

(Continued from page 39)

\$25,000 in radio, 90 per cent of it table models.

Some 40 employees work for Rush and he encourages them to join everything in town. He himself is president of the Kiwanis Club and a member of the Chamber of Commerce. One of his employees is on the school board. The more contacts, the more business, he feels. He goes after the school kids, giving them screwdrivers and little gifts to check up on bald tires and other potential business for his various operations.

On collections Rush believes that you have to temper the wind to the shorn lamb. When a man is sick or out of a job, if he has made ten payments on an appliance, Rush picks up the paper from the finance company in order to save the poor fellow's hide.

Should you ever drop into Alexandria to see Johnnie P. Rush, go over to the major appliance store rather than his filling station or the grocery. "The staple businesses nearly run themselves," he says, "the specialty merchandise takes constant plugging and coaching, but it's a lot more fun."

### TRADE-IN ALLOWANCES

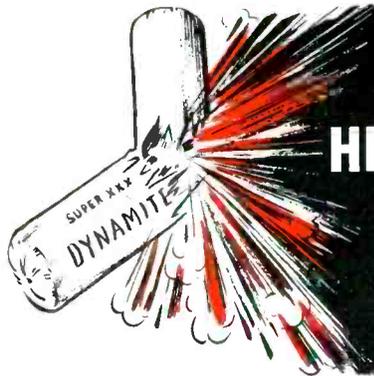
(Continued from page 40)

secondary uses unless brought forcibly to their attention.

Where trade-ins are to be resold, it is the concensus of opinion among interviewed dealers following this policy that they should be reconditioned, sold for the allowance figure plus reconditioning expense, overhead and a small net profit.

While the ideas involved in the above paragraphs may not meet all needs and all circumstances, or even all tastes, it is important to note that they are included here solely because field work produced evidence that someone, somewhere, was using them successfully. Trade-in procedure is becoming more and more the yardstick by which radio retailers' profits are measured and thus it is our opinion that the control methods described warrant careful consideration.





# HERE'S DYNAMITE FOR DETROLA DEALERS!

## BLAST

### YOUR WAY TO NEW SALES RECORDS WITH THESE TRIPLE PAYOFF NUMBERS!

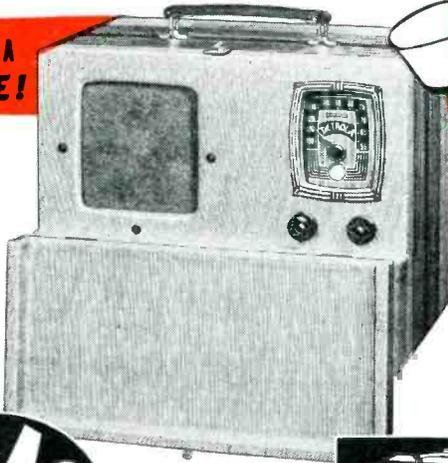
**NUMBER 1** IN THE DETROLA PAYOFF PARADE!

## DETROLA Triple-Purpose PORTABLE RADIO

They're going like hot-cakes because they've got what it takes . . . what the public wants! 5-tube superheterodyne, air-conditioned cabinet to prolong life of batteries. Automatic Volume Control. Largest directional antenna loop. Oversize electro-dynamic speaker with permanent magnet . . . and dozens of other exclusive Detrola features!

**\$24.95**

Model 295A-



Model 295A—Standard Airplane Luggage finish.

Tan Detrokoid (295T) or White Detrokoid Cowhide (295W) at \$29.50



Model 295A-

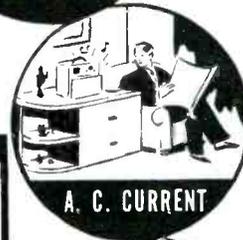
3 RADIOS FOR THE PRICE OF 1



BATTERY



D. C. CURRENT



A. C. CURRENT

Three times the pleasure at 1/3 the cost. That's the secret of this new model's amazing popularity. Be the first in your city to cash in on this red hot special!

**NUMBER 2** IN THE DETROLA PAY-OFF PARADE! CREATING A NEW MOTORING SENSATION! THE FAMOUS "PEE-WEE" AUTO RADIO



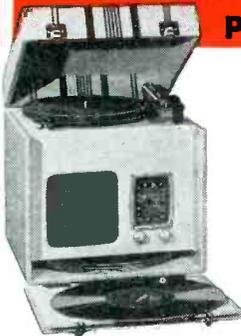
**\$14.95**

MODEL 297



Quickly installed by anyone, on steering column or in cowl. Universal mounting arm. Illuminated disk tuning dial. 4" permanent magnet, electro-dynamic speaker. 4-tube superheterodyne with 5-tube performance. Exclusive features assure lowest battery drain. High sensitivity and selectivity. Handsome satin crackle finish. \$14.95. Model 297

**NUMBER 3** IN THE DETROLA PAYOFF PARADE. A NUMBER THAT'S REALLY HOT. PORTABLE RADIO PHONOGRAPH



MODEL 2743

The last word in radio-phonograph portability. 5-tube superheterodyne with DETROSCOPE (no ground or aerial needed) 5" dynamicspeaker, Automatic Volume Control, beam power output. Crystal pickup and self-starting AC motor. Standard broadcasts and police calls. Unique, practical design for use as radio or phonograph. Airplane luggage finish. Model 2743, \$29.95

**\$29.95**

**ONE HIT AFTER ANOTHER! IT PAYS TO BE A DETROLA DEALER**

First with electric tuning in popular priced radio sets.

First with the world-famous PEE-WEE radios.

First with Radio Phonograph combinations at popular prices.

First with Portable Battery Radios at popular prices.

**DID YOU GET YOURS?** If you didn't get your copy of the exciting broadside with detailed information on these TRIPLE-PAYOFF numbers, clip the coupon below and mail it in TODAY! No obligation.

*Always the Finest.. FIRST from Detrola*

**DETROLA CORPORATION**  
DETROIT, MICHIGAN

**DETROLA CORPORATION**  
DETROIT, MICHIGAN

Gentlemen: Without obligation, rush me a copy of the colorful broadside with complete details of this sensational trio.

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ADDRESS \_\_\_\_\_  
CITY \_\_\_\_\_ STATE \_\_\_\_\_

# CROSLLEY FREEZORCOLD TWO TEMPERATURE

puts Crosley dealers  
in the refrigeration busi-  
ness head and shoulders  
above competition.

# SHELVADOR

## 1 FREEZING COLD STORAGE

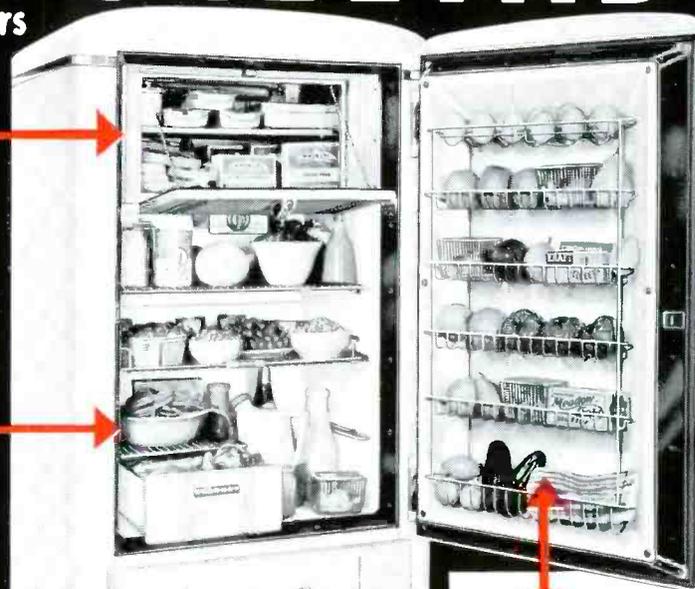
for meats, game, frozen food, ice cream, pie dough. Gives women NEW ideas on home refrigeration—advantages of frozen food sales—provides EXCUSE to get rid of old, out-moded refrigerators.

## 2 MOIST FOOD STORAGE

High humidity efficiently obtained by use of secondary coils keep cooked and other foods at peak of flavor—does not dry them out—keeps vegetables garden fresh for incredible time.

## QUALITY PRODUCT

Freezorcold Shelvadors incorporate every proven practical feature of standard refrigeration. Fabricated from A-1 materials throughout in the finest plant of its kind in the U. S. Equipped with quick ice cube release, high humidity crisper, sliding and removable shelves, illuminated cold control, interior light, improved electro-saver, hermetically sealed power unit. Dulux finished exterior, acid resisting porcelain interior, brilliant, oversized sturdy hardware.



## 3 PRACTICAL SHELVADOR

It is to be expected that such a practical method of making ALL refrigerator space usable would be imitated.

But the Shelvador is a feature of convenience that does not cut into the space inside of the refrigerator.

—and the entire refrigerator is accessible by the opening of only ONE door.

The Shelvador's efficiency and convenience is attested in signed statements by women from one end of America to the other.

**NO OTHER  
REFRIGERATOR  
COMBINES THESE  
3 ADVANTAGES**

# ONLY

# 15

# TO \$20. MORE THAN PRICES OF COMPARABLE REGULAR & DeLuxe SHELVADORS

## CROSLLEY REALLY OPENS THE PROFITABLE REPLACEMENT MARKET

Here is an entirely NEW refrigerator that will revolutionize home refrigeration. It will be a source of steady business for alert dealers right through this summer and next winter.

**THE CROSLLEY CORPORATION**  
Home of "the Nation's Station"—WLW—70 on your dial  
POWEL CROSLLEY, Jr., President CINCINNATI  
See the Crosley Building at the New York World's Fair

**MAIL COUPON TODAY**

Crosley Corporation,  
Cincinnati, Ohio  
Send me literature,  
discounts and information on products  
I have checked.

**I WANT TO  
MAKE MONEY**

Name.....  
Address.....  
City..... State.....

- Crosley Automobile
- Freezorcold Shelvador
- 6 ft. LEADER Shelvador at \$99.50
- Crosley Press Jr. Camera
- Crosley Radio
- Reado facsimile
- Washers and Ironers
- Gas and Electric Stoves

# NEW!

# THE PERSONAL SPORTS RADIO

## Motorola "SPORTER"

**The World's Most  
Convenient Portable  
4 TUBE • SUPERHETERODYNE**

*NEW AND UNIQUE!* An innovation in the trade. The magnet you need to attract customers to your store right now. Plays anywhere. Everyone will enjoy new thrills in listening to favorite programs with the "Sporter"—*the most convenient portable radio in the world.* As compact and easy to carry as a camera or field glasses. Ideal for hikes and a perfect companion at every sporting event. With the "Sporter" your customers can now enjoy sports better than ever before, as they can hear the broadcast while watching the fight, the race or the game. Leatherette case with shoulder strap Loop Aerial. Weighs 5 lbs. *Order an ample supply today.*



AT THE BALLGAMES    AT RACE TRACKS    ON THE WATER    WHILE GOLFING

ALSO A FULL LINE OF MARVELOUS VALUES IN NEW 1940 MOTOROLAS COMPRISING TABLE MODELS • CONSOLES PORTABLES • WIRELESS RECORD PLAYERS • PHONOGRAPH-RADIO COMBINATIONS AND BATTERY OPERATED SETS

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