

SEPTEMBER, 1937

# RADIO RETAILING

McGRAW-HILL PUBLISHING COMPANY, INC.

25 CENTS PER COPY



Serviceman says we'd have to send out the army and the navy to get back his copy of the

## MALLORY-YAXLEY Radio Service Encyclopedia

WHEN Byford Dunn—proprietor of Dunn's Radio Shop at Carrier Mills, Ill.—likes something he doesn't mind saying so.

"A word about your Mallory-Yaxley Radio Service Encyclopedia," writes Mr. Dunn. "It is the last word in 'Labor Saving Machines'. The only way to get mine back would be to trade me a better one—or send out the army and navy! If I had not had that book I would have been up in the air a few days ago. A boy brought in a radio he had taken the old volume control out of and with the wires cut where they fastened in the radio and not on the control. With my Mallory-Yaxley Radio Service Encyclopedia I had it going in a few minutes—and there was the price of my manual!"

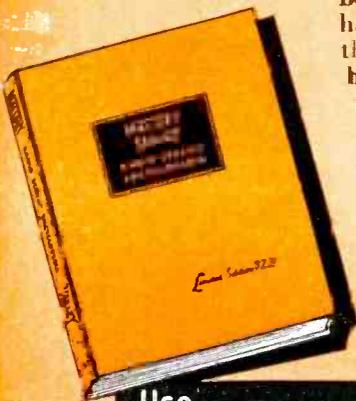
F. C. Robinson, of Livingston, Montana, is equally enthusiastic. He writes: "The Mallory-Yaxley Radio Service Encyclopedia is a fine book and well worth much more than was charged for it. It will help many a service-

man out of a tight place!"

Read this... from Sanford Helt, Chief Engineer of the American Broadcasting Corp., at Lexington, Kentucky... "In my fourteen years of radio, I've never seen anything to equal your Mallory-Yaxley Radio Service Encyclopedia. I bought the volume as soon as it came out as I wanted it in my technical library."

Interesting reading, these comments from other men in the field! But—how about you? When are you going to save those extra hours and make those extra dollars that other men are saving and making with this great book that completely covers Schematics-Circuits, Volume Controls, I. F. Peak Frequencies, Transformer Circuits, Condensers, Tubes and Vibrators?

You'll have to act promptly, for there are only a few copies left. See your Mallory-Yaxley distributor right away about this greatest help a serviceman ever had!



Use

**MALLORY**  
REPLACEMENT  
CONDENSERS...VIBRATORS

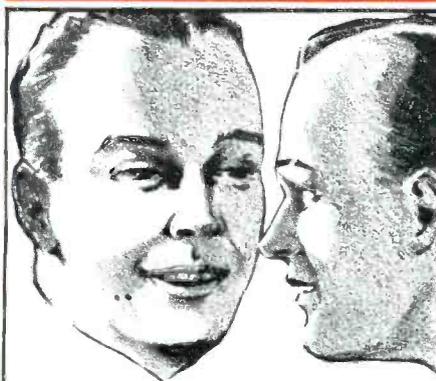
P. R. MALLORY & CO., Inc.  
INDIANAPOLIS INDIANA

Cable Address—PELMALLO

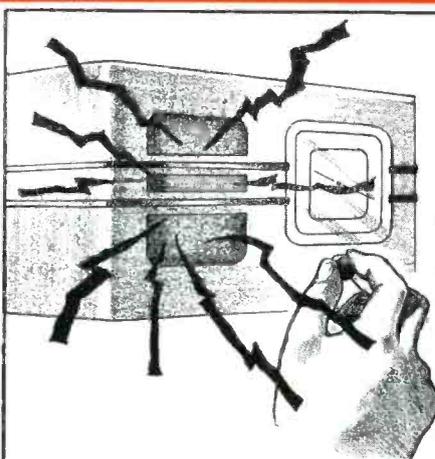
Use

**YAXLEY**  
REPLACEMENT  
VOLUME CONTROLS

# DO YOU KNOW THESE ESSENTIALS ABOUT VOLUME CONTROLS?



**DO YOU KNOW**  
that the resistance value of a volume control is not critical? It is commercial practice to allow a resistance variation of plus or minus 20%. Most circuits will allow even greater variation.

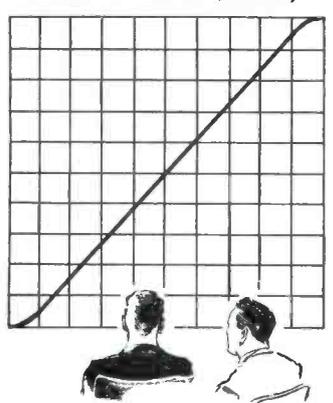


**DO YOU KNOW**  
that taper is critical—and if the incorrect taper is employed the volume control action will be sudden and perhaps noisy?



**DO YOU KNOW**  
that there are only two kinds of taper necessary for proper volume control operation? The left hand taper used in shunt circuits, and the right hand taper used in series circuits.

YAXLEY No. 4 TAPER (LINEAR)



**DO YOU KNOW**  
that a linear taper is really not a taper at all—the resistance is uniform over the element? That linear tapers are rarely used except in low resistance values?



**DO YOU KNOW**  
that Yaxley tapers are easy to remember? Left hand is number 1 and right hand is number 2.



**DO YOU KNOW**  
that the Mallory-Yaxley Radio Service Encyclopedia completely debunks the subject of volume controls and explains how to easily determine the proper replacement control for any application? See pages 101 to 105!

**DO YOU KNOW** that in developing constant improvements in Yaxley Replacement Volume Controls, Mallory-Yaxley engineering has brought about undreamed of precision in universal application to meet all service needs for over 12,000 different radio receiver models?

*That's worth knowing — if you profit by the knowledge!*

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

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

Use  
**YAXLEY**  
REPLACEMENT  
VOLUME CONTROLS

# RADIO RETAILING

SEPTEMBER, 1937

O. FRED. ROST . . . . . Editor  
 W. MacDONALD . . . . . Managing Editor  
 C. A. NUEBLING . . . . . Technical Editor  
 T. H. PURINTON . . . . . Assistant Editor  
 HARRY PHILLIPS . . . . . Art Director

Tom Blackburn . . . . . Chicago  
 George Tenney . . . . . San Francisco  
 H. S. Knowlton . . . . . Boston

HOWARD EHRLICH  
 Executive Vice-President  
 H. W. MATEER  
 Manager

RADIO MONTH . . . . .	By O. Fred. Rost	7
SOUND AND SERVICE PHOTO SHORTS . . . . .		13
FIGURES . . . . .		17
TODAY'S TRADE-IN MARKET . . . . .	By W. MacDonald	18
INSTALLING INTER-COMMUNICATORS . . . . .	By Albert A. Schuhler	20
RADIOS FOR RENT . . . . .		22
UP FRONT WITH TESTERS . . . . .	By E. F. Staunton	24
WHY GOOD SERVICEMEN CHARGE . . . . .		27
PARTS OVER THE COUNTER . . . . .	By Jack Grand	28
TESTER AND PARTS MAKERS . . . . .		31
SEPTEMBER NEWS . . . . .		35
PREVIEW OF NEW PRODUCTS . . . . .		45
CIRCUITS . . . . .		61
AMATEUR NOTES . . . . .		65
SERVICING AUTOMATIC TUNING . . . . .	By C. A. Nuebling	68
SHOP SHORTCUTS . . . . .		75
TRICKS OF THE TRADE . . . . .		83
LETTERS . . . . .		92

## McGRAW-HILL PUBLISHING COMPANY, INC.

Publication Office  
 99-129 North Broadway, Albany, N. Y.  
 Editorial and Executive Offices  
 330 West 42nd Street, New York, N. Y.

Cable Address: MCGRAWHILL, New York  
 Member A.B.P. Member A.B.C.

James H. McGraw, Jr. . . . . President  
 Howard Ehrlich . . . . . Executive Vice-President  
 James H. McGraw . . . . . Honorary Chairman  
 B. R. Putnam . . . . . Treasurer  
 D. C. McGraw . . . . . Secretary  
 A. W. Morrison . . . . . Circulation Manager

RADIO RETAILING, September, 1937, Vol. 22, No. 9. Published monthly, price 25c copy. Subscription rates—United States and possessions, Canada, Mexico and Central American countries \$1. All other countries \$2 a year or eight shillings. Printed in U. S. A. Entered as Second Class Matter, September 8, 1936, at Post Office, Albany, N. Y., under the Act of March 3, 1879. Cable address "McGrawhill, New York." Member of A.B.P. Member of A.I.C. Copyright 1937 by McGraw-Hill Publishing Co., Inc., 330 West 42d Street, New York, N. Y.

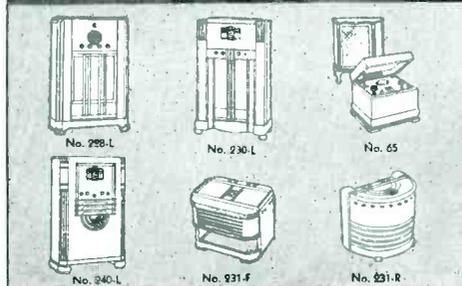
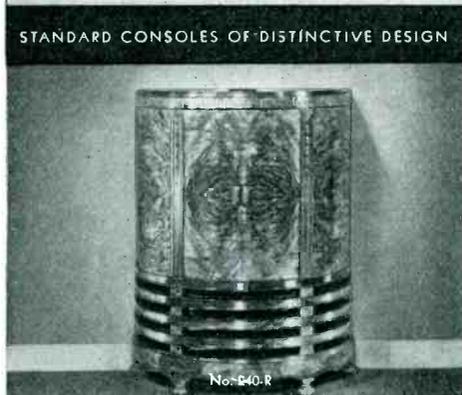
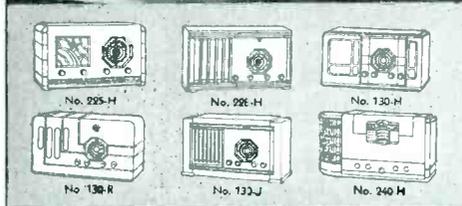
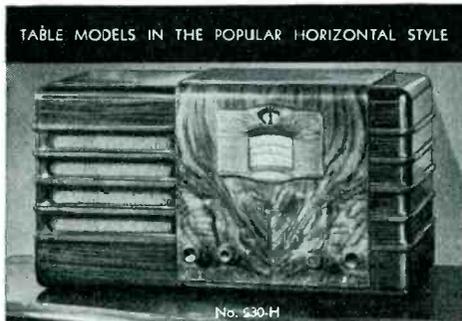
Branch Offices: 520 North Michigan Ave., Chicago; 883 Mission St., San Francisco; Aldwych House, Aldwych, London, W.C. 2; Washington; Philadelphia; Cleveland; Detroit; St. Louis; Boston; Atlanta, Ga.

## SALES STATIC . . . I THINK I'LL WAIT FOR TELEVISION

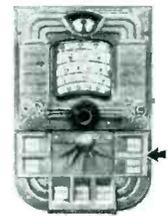


# Radio's Outstanding **ACTION** Feature

The New  
**FLASH TUNING**



Of all this season's improvements in radio operation, none equals Stromberg-Carlson's method of automatic tuning. A twist of a knob—and flash... there's the station, with the call letters instantly lighted up. And it's the same knob you use for regular tuning—that's the best of it—no complication—no trouble. Dealers who have seen these latest Stromberg-Carlsons are wild with enthusiasm over this automatic tuning convenience. Besides, the station is *kept in tune exactly* through perfected 2-tube and 3-tube A.F.C. circuits. Pre-selected stations are easy to set up. Women, interior decorators and all who are strong on *appearance* are delighted with its freedom from the "machine" look.

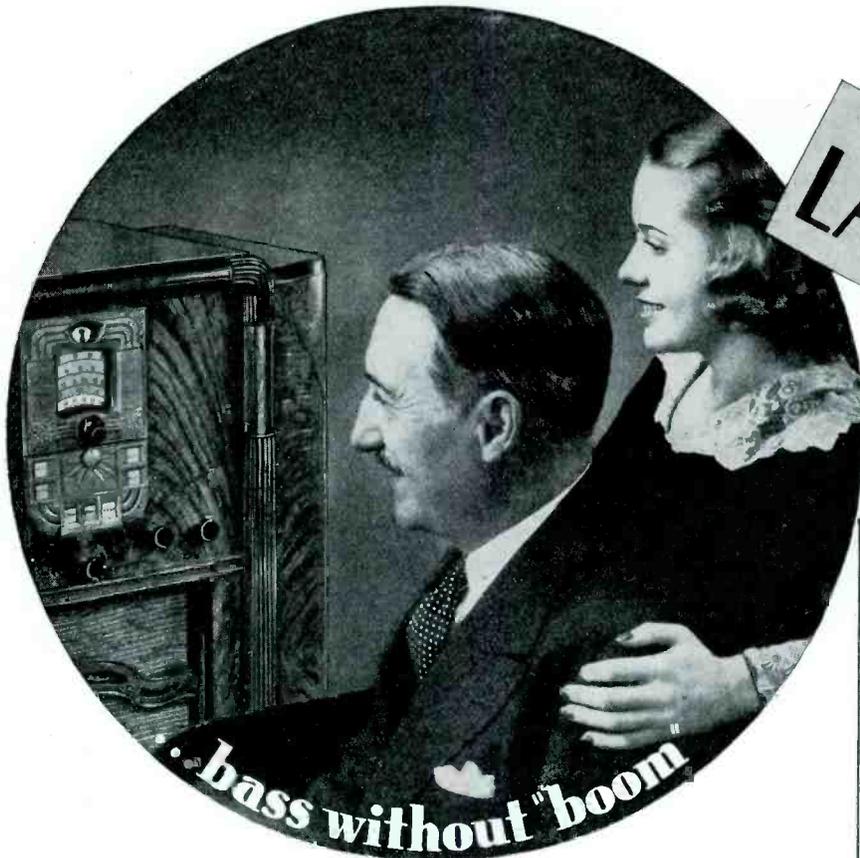


**Flash Tuning**  
Visual Automatic Station Finding in which you see the station you're tuned to because its call letters light up when you reach it. Automatic Frequency Control makes Flash Tuning, accurate tuning.

Other operating features? Yes, a host of them—altogether putting Stromberg-Carlson away out in front in making a radio that ships right, works right and is easy to use.

*There is nothing*  
**Stromberg**

# -and Radio's Greatest TONE Feature



The Acoustical  
**LABYRINTH**

The current year reveals no radio advance comparable to "Labyrinth" tone. It still remains the outstanding important feature of high quality radios. It is patented and exclusively Stromberg-Carlson, obtainable only in Stromberg-Carlson receivers. The "Labyrinth" gives natural reproduction of speech and music; doing away with cabinet "boom." It increases the bass response—resulting in rich, full audio quality; projects sound from the front of the cabinet only thus avoiding sound-wave interference.



**Labyrinth Radio**  
The long, winding passageway of the Acoustical Labyrinth, takes the place of the usual box-like cavity in the cabinet which is the source of the exaggerated boom in low tones.

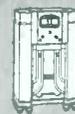
With "Labyrinth" tone; with the most beautiful and exclusive cabinets ever seen in radio; with Stromberg-Carlson quality of workmanship which everybody knows; with a price range from \$57.50 to \$1050 the line offers to any dealer an opportunity for money-making probably never before presented in radio.

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

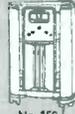
*All prices slightly higher in Southeastern States and West of the Mississippi.*

*finer than a*  
**-Carlson**

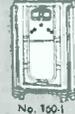
CONSOLES WITH THE FAMOUS ACOUSTICAL LABYRINTH



No. 145-L



No. 150-L



No. 160-L



No. 240-W



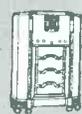
No. 70



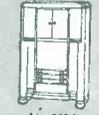
No. 240-M



No. 240-S



No. 250-L

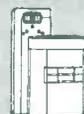


No. 780-L



No. 950-L

RADIO-PHONOGRAPHS . . . SINGLE RECORD and AUTOMATIC



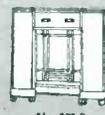
No. 145-P



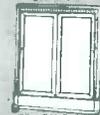
No. 200-P



No. 160-P



No. 231-P



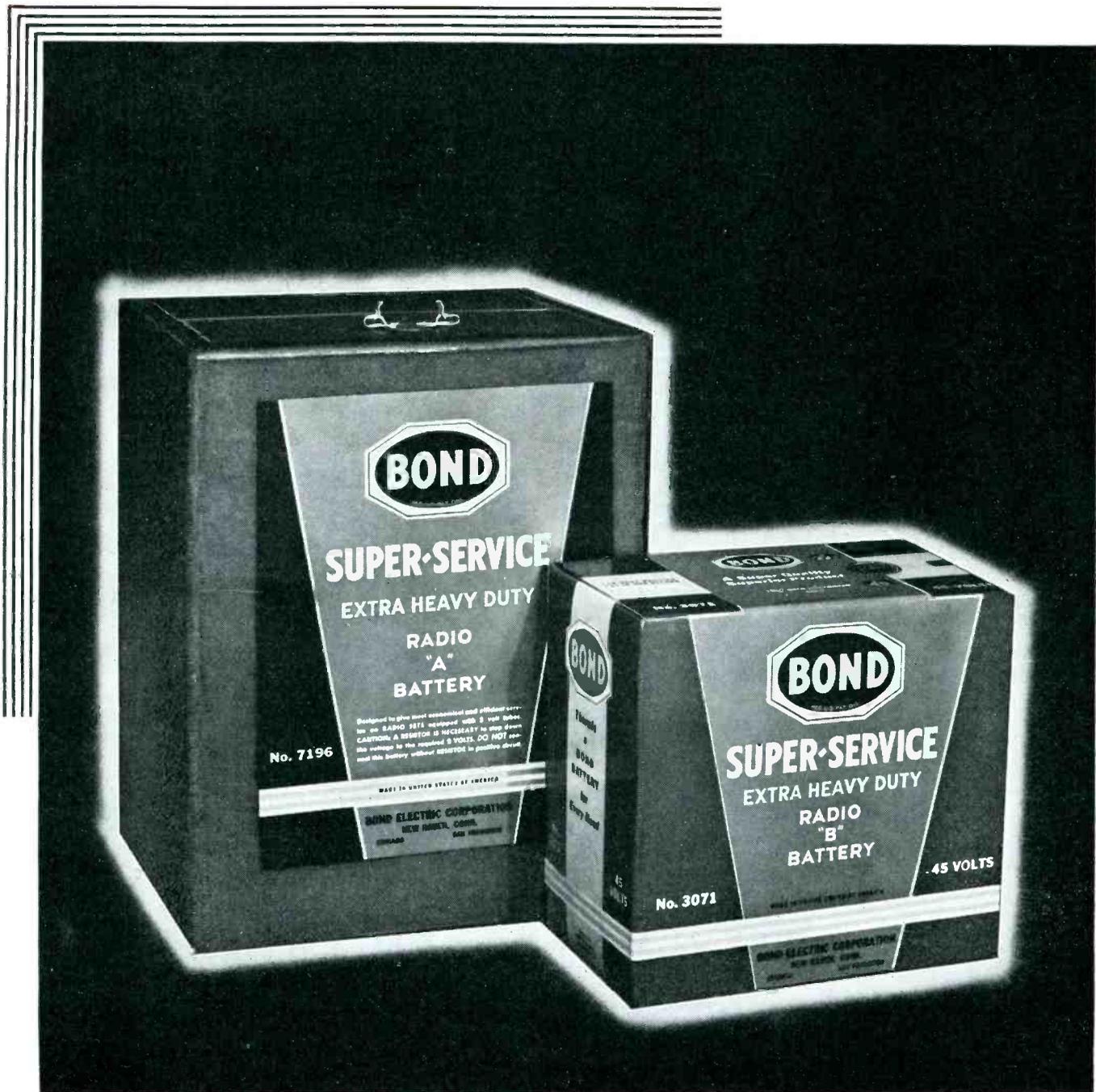
No. 240-P



No. 72



No. 74



## Tamper-Proof Factory-Sealed Power

**N**EW POWER THAT LASTS LONGER... recuperation up to 120% more than the expected and accepted service life of ordinary batteries — and *that's not all!*

Other practical "points plus" for increased sales and service satisfaction are:

**PILLOW TOP**... improves appearance, eliminates cracked tops and useless weight.

**TAMPER PROOF SAFETY SEAL**... covers plug-in connection... easy to remove... cannot open up accidentally.

**SAFETY SEAL AND DATE LINE**... assure consumer of fresh untapped power... they insure you against unfair complaint.

Sell with the trend. Your customers willingly spend more and spend easier for quality products protected by factory-sealed tamper-proof containers. Cash in on public insistence for protected quality. Profit with Bond. Be the first dealer in your locality to sell sealed power.

Insist on Bond Super-Service Safety Seal Batteries. Ask your jobber salesman for full details. Write or wire for name of nearest jobber.

NEW HAVEN, CONN.

BOND ELECTRIC CORPORATION  
CHICAGO, ILL.

SAN FRANCISCO, CALIF.

**THERE'S A BOND BATTERY FOR EVERY BATTERY NEED!**

Now... with its NATIONAL ADVERTISING  
Reaching Virtually Every Home in America...

# Emerson Radio

... with the "MIRACLE TONE CHAMBER"  
is "JUMPING" Dealer Sales and Profits



Mechanical and Design Patents Pending

Adding new and greater force to Emerson's liberal local cooperation—newspapers, billboards, broadcasts, point-of-sale—now there is running a regular nationwide campaign in

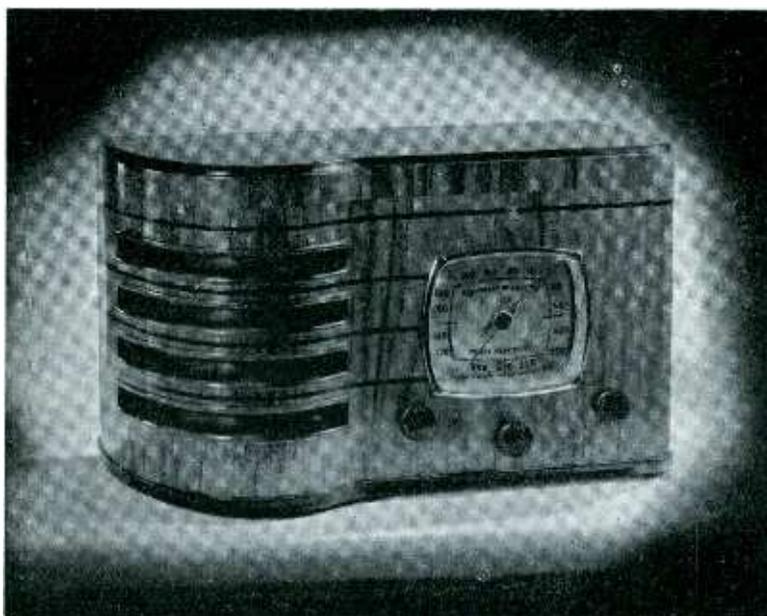
SATURDAY EVENING POST  
COLLIER'S RADIO GUIDE  
LADIES' HOME JOURNAL  
COSMOPOLITAN ESQUIRE  
AMERICAN MAGAZINE  
TIME

Now is the time to make EMERSON your FEATURED line—in windows, in store, in ALL of your advertising and selling. Why? Not merely because of the dollars and drive back of its promotion, but also because it MOVES FASTER and gives you a GREATER PROFIT—because the Emerson you sell today will sell another and another tomorrow.

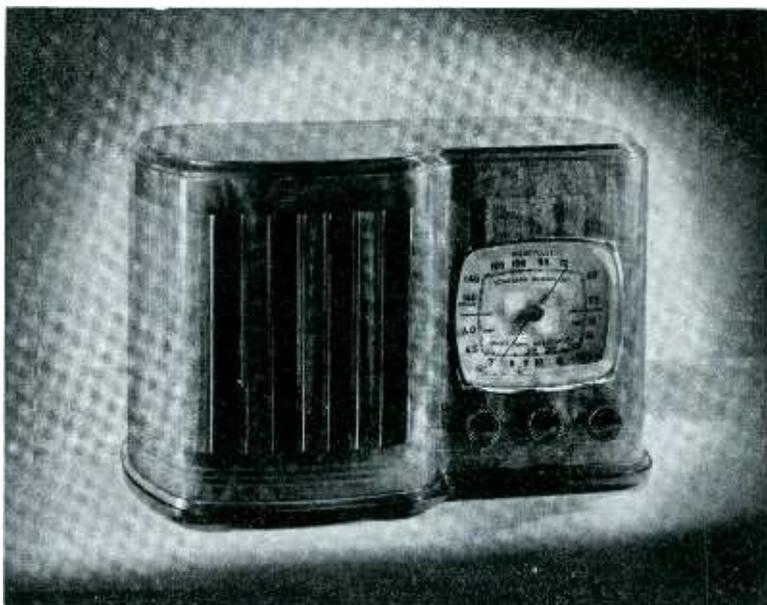
48 Great Models. Table Sets,  
Combination Radio-and-Phonographs, Chairside  
Models, Consoles, Portable Sets, Battery  
Sets, Auto Radio

\$14.95 to \$750

Ask your nearest Emerson distributor now.



EMERSON Model R-167 with "Miracle Tone Chamber" \$29.95  
Same List Prices Everywhere



EMERSON Model AM-169 with "Miracle Tone Chamber" \$39.95  
Same List Prices Everywhere

EMERSON RADIO AND PHONOGRAPH CORPORATION • 111 Eighth Ave., New York, N. Y.

World's Largest Maker of Small Radios

Cable Address: EMPHONOCO, N. Y.

LIKE A

*Bombshell*

FROM THE SKY

DETROLA

*Announces*

**ELECTRIC TUNING!**

They expected us to do it—AND WE DID IT! Detrola has a complete set-up for you on radio's NEWEST and BIGGEST feature—*Electric Tuning!* NOT manual tuning—NOT variable trimmer tuning—NOT mechanical tuning—but *genuine Electric Tuning* in its most simplified and most accurate form . . . and at unequalled prices that give you more profit and the public a great deal more for their money. Be the first to offer Electric Tuning Radios at moderate prices.



**JOBBERs and DISTRIBUTORS**  
A few exclusive territories still available. Phone, wire or write for particulars.

*Press the Button*  
**THERE'S YOUR STATION**

To Retail at  
**\$69<sup>50</sup>**

The first Electrical Tuning table model radio in America and at a sensationally low price. 8 tubes with 12 tube performance. AC Superheterodyne. Bands; Standard Broadcast, Police, Aviation, Amateur, Foreign. 532-16000 KC. 8" dynamic speaker. Telabeam Tuning Eye—Automatic Volume Control. Tone Control. Illuminated Network Dial. Cabinet: 12" x 22" x 9".

*Write for Illustrated Literature*



**MODEL C1**  
8 tube AC Superheterodyne. 532-16000 KC. 14" dynamic speaker. Tuning Eye. Bandshell Baffle. Standard, Police, Aviation, Amateur, Foreign Bands. Cabinet: 39" x 22 1/2" x 12 1/2".



**MODEL C2**  
11 tube AC Superheterodyne. 532-16000 KC. 15" dynamic speaker. Tuning Eye. Bandshell Baffle. Standard, Police, Aviation, Amateur, Foreign Bands. Cabinet: 41" x 24" x 13 1/2".



**MODEL C3**  
14 tube AC Superheterodyne. 532-16000 KC. 15" dynamic speaker. Tuning Eye. Bandshell Baffle. Standard, Police, Aviation, Amateur, Foreign Bands. Cabinet: 42" x 25" x 14".

**DETROLA CORPORATION • DETROIT, MICHIGAN**

# September

1 9 3 7

## The RADIO MONTH

---

**Tydings** Congress has passed the Tydings-Miller price maintenance law which permits the use of minimum price contracts in interstate commerce, provided that the states involved are among those 42 which have enacted so-called fair trade laws.

In signing the act the President stated that he was doing so "in the hope that it will not be as harmful as most people predict." RADIO RETAILING shares that hope and ventures the opinion that the harm, if any, will not come to those who retail radio sets, or those who buy them. Fair trade laws, used intelligently, provide a bridge to more effective and economical cooperation between the manufacturer, distributor and dealer.

**Trade-Ins** Those fair trade laws may represent the hoped-for panacea to all trade ills for some lines of retail merchandise but when a trade-in problem is involved, as is the case with radio sets, they merely offer the first step to price stabilization.

In New York where a dozen radio manufacturers have started to sell under the state's fair trade law (the Feld-Crawford Act) Senator Feld, co-author of the bill, recommends that contracts should merely specify that radio dealers shall allow a reasonable amount on trade-ins. Such vague and elastic provision is insufficient and manufacturers who are in earnest about protecting the market for their products are going further.

Sparton specifies in its contract maximum allowances equal to 10% of the list price of new sets listing at up to \$49.99 and increases the percentage in three steps, based on list-of-new-set, to a top allowance of 25% on sets costing \$250 or more.

Crosley allows 15% for trade-ins on sets listing up to \$69.95. Philco, with longer experience in operating under Fair Trade laws (in Illinois) has re-

ported most satisfactory sales results, when specific amounts of trade-in allowance on specific sets were advertised to the public.

Law makers have provided the needed tools for curing one of the evils of trade. It is up to the radio industry to find the proper technique for using them.

**Taxes** In states where sales taxes are imposed retailers of radios, autos and major appliances have struggled with the problem whether, when *an article of the same kind* is taken in trade as part payment, the sales tax applies to the full value of the transaction or only to the amount of actual cash which will change hands.

The Michigan Board of Tax Administration has cleared the air for Michigan retailers by ruling that the state's 3% retail sales tax will be levied only on the difference between trade-in allowance and price of the new purchase. This applies also if the "new" purchase involves a used or reconditioned article of the same kind.

Retailers in other states should cooperate in obtaining similar clarification of this question.

**Going Up** The price boosts on sets which we predicted in our last issue have begun to materialize, large makers being the first to make the move. Increases average 5%, some upping the list prices, others cutting trade-in or special allowances, and in a few cases where hot models up to now were carrying the maximum dealers discount, the discount was trimmed so as to leave the models in the same price brackets.

Statistics on increases in material and labor costs show that substantially bigger price boosts could have been justified which means that the manufacturers themselves are taking some of the losses.

**Good Prospects** The map just published by Brookmire to show estimated consumer income for the *next six months* gives a most encouraging picture, indicates that the retail business for the rest of the year should be substantially above last year, even if the very optimistic predictions made for some of the states are not realized. For the whole United States income is expected to be 21% above the same period of 1936, which means that retail sales should run approximately that much ahead.

Radio dealers should take a larger share of consumer's income than in many years because new sets offer drastic and easily demonstrated advantages—high-priced sets will be easier to sell—in good times it is easier to hold trade-in allowances down—net profits on each sale should be much higher.

**Chair Sides** One of the best independent radio merchants in the country tells us that he is selling one chairside model to every three consoles, where customers can be built up to pay over \$90 for the new set.

Another dealer in the same mid-western city found one out of six buying chairside with most of his chairside sales ranging between \$50 and \$100.

The leading department store reported sales for four consoles to one chairside and the department head felt that the popularity of chairside would increase rapidly.

It is said that the novelty and utility features of chairside can be used advantageously to clinch a sale, when a customer finds it difficult to make a selection from the console models.



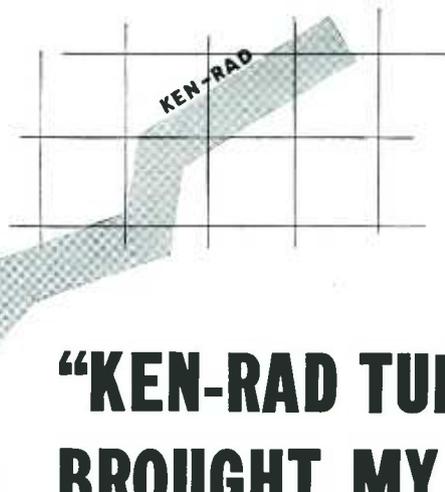
D. Field Root

EDITOR

"Could you have listened to my set with the old and the new tubes you could truthfully testify that Ken-Rad Tubes brought it to the peak of performance in reception. Radio is my hobby and I believe myself qualified to be a competent judge of really good radio performance."

*Walter P. Honchell*

Mr. Walter P. Honchell  
114 Williams St.  
Lawrenceburg, Indiana



**"KEN-RAD TUBES  
BROUGHT MY  
RADIO TO  
THE PEAK OF  
PERFORMANCE"**



*Manufacturers of a complete line of Standard Glass Types, G Series, and Genuine All-Metal Radio Tubes.*

Enthusiasm among customers for the items you sell means an ever-increasing repeat business. This is the backbone of profits. For dependable performance and dependable profits tie in with Ken-Rad. Write us for our dealer proposition.

**• KEN-RAD BULBS, TOO**

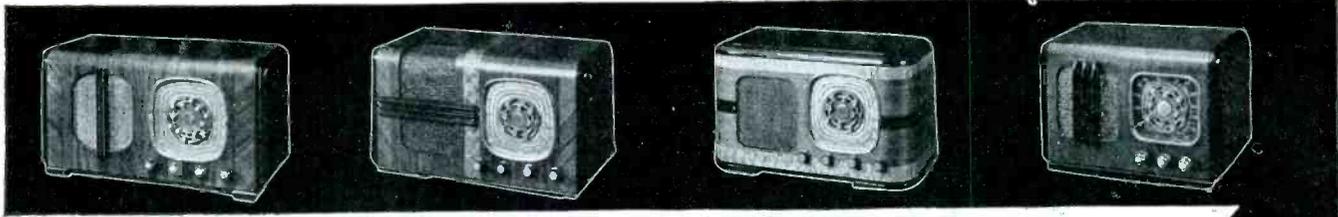
Cheap electricity means an ever-increasing lamp field. Get your share of profits with Ken-Rad Bulbs.



**KEN-RAD**  
★ *Radio Tubes* ★

**KEN-RAD TUBE & LAMP CORPORATION, Owensboro, Kentucky**

*Also manufacturers of Ken-Rad Electric Light Bulbs*



Model 830  
8-Tube A.C.  
\$52.25

Model 730  
7-Tube A.C.-D.C.  
\$39.50

Model 630  
6-Tube A.C.  
\$40.50

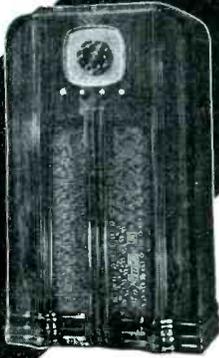
Model 627  
6-Tube A.C.-D.C.  
\$29.95

# 1938 is a TRAV-LER year

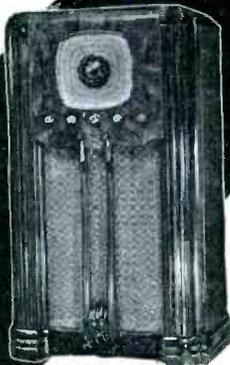
## • Exclusive Automatic Tuning Units in Table Models

A complete line of radio sets having Travel-matic Tuning; carefully engineered. Housed in table models and consoles of outstanding beauty, priced in the volume brackets . . . . . Trav-ler offers the dealer the money-making radio line for 1938.

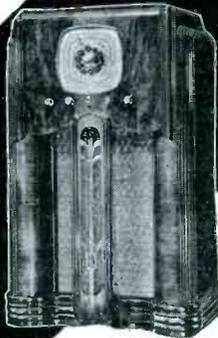
Ten Quality Price Leaders Without Automatic Tuning . . . Priced from \$14.95 to \$37.95



Model 138  
8-Tube A.C.  
\$77.50



Model 112  
12-Tube A.C.  
\$109.50



Model 115  
15-Tube A.C.  
\$137.50



MODEL 527 \$29.95  
5 TUBE A.C.



Model 630  
6-Tube A.C.  
Chairside  
Combination  
\$127.50



TRAVELMATIC TUNING

An exclusive Trav-ler development. An unlimited number of stations can be logged. No tools or special keys required. Easily set from front of dial. Depressing and rotating with the finger automatically tunes any station.

Truly an automatic line from the small popular priced table model to the larger console at prices heretofore unknown, making Trav-ler the outstanding line this year.

Be the first in your territory to feature these outstanding models. Travel with Trav-ler.

## Sets with 1, 2 and 3 Bands

- Beam Power Output
- Automatic Tuning
- Pre Selector
- T.R.F. and Superheterodyne Circuits
- 13 Meter Coverage
- Auditorium Type Speakers

That the Trav-ler name has withstood the varying conditions of the industry for the past sixteen years is an enviable record and positive proof that it has not varied from its policy—"to build up to a standard of perfection and not down to a price."

Trav-ler merchandise will definitely give you higher quality for less money. Other models with Travel-matic tuning not shown include two Battery Table Models and two Battery Consoles.



"TRAVEL WITH TRAV-LER"

Trav-ler Radio & Television Corporation  
1036 W. Van Buren St., Chicago, Ill.

Without obligation please send me Trav-ler Catalog RR-937 on 1937-8 Line.

Name .....

Address .....

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

# Build Up

RCA NOW OFFERS FREE WAYS OF INCREASING

## HOOK UP TO CHECK-UP THROUGH CENTRAL TELEPHONE EXCHANGE

It's the most spectacular check-up promotion ever offered to radio dealers and service men

THE RCA Fall Check-Up promotion beginning September 20th features the advertising of a Central Telephone Number that prospects call when they want an RCA radio check-up. The telephone exchange—an independent telephone number having no connection with RCA—then relays the call to the nearest qualified RCA tube dealer. He does the job—pockets the profit. That's all there is to it. It's simple—but effective.

The RCA Central Telephone Exchange is being established in over 112 cities. A partial list of these is shown at the right. All tube dealers, particularly those located within a 10¢ calling distance of a Central Telephone Exchange can build business by tying in with this promotion. **BUT YOU MUST BE IN ON THIS PROGRAM BEFORE SEPTEMBER 20th.** Remember, RCA pays all the costs and a purchase of 50 tubes qualifies you for this listing. Get in touch with your RCA or Cunningham tube distributor **RIGHT AWAY** for full details.

HERE'S HOW WE'LL MAKE 'EM PHONE!

*For Better Radio Reception*  
Get RCA's 10-Point Check-Up!  
Systematically locates the trouble and includes inspecting, cleaning and adjusting your radio for only... **\$1.50**  
CALL (Phone) **0000** for your nearest Authorized RCA Service Dealer... He recommends RCA Tubes

We'll make prospects phone by running 4-inch newspaper ads, 4 times as large as the one shown,

on radio pages three times a week. Or by sponsoring spot broadcasts on local radio stations. As soon as prospects find out how inexpensive a check-up is—how *easy* it is to get in touch with *you*—they'll keep your telephone ringing and your cash register humming a merry profit tune!

### Some of the 112 cities in which the RCA Central Telephone Exchange Check-Up Plan will operate:

Bridgeport, Conn.	Baltimore, Md.	Minneapolis, Minn.
Hartford, Conn.	Richmond, Va.	St. Paul, Minn.
Portland, Me.	Tampa, Fla.	St. Louis, Mo.
Boston, Mass.	Atlanta, Ga.	Omaha, Nebr.
Providence, R. I.	Chattanooga, Tenn.	New Orleans, La.
Springfield, Mass.	Nashville, Tenn.	Memphis, Tenn.
Albany, N. Y.	Evansville, Ind.	Oklahoma City, Okla.
Buffalo, N. Y.	Louisville, Ky.	Tulsa, Okla.
Rochester, N. Y.	Cincinnati, Ohio	Dallas, Texas
Syracuse, N. Y.	Dayton, Ohio	Forth Worth, Texas
Utica, N. Y.	Akron, Ohio	Denver, Colo.
Jersey City, N. J.	Cleveland, Ohio	Salt Lake City, Utah
Newark, N. J.	Columbus, Ohio	Portland, Ore.
Trenton, N. J.	Toledo, Ohio	Seattle, Wash.
New York, N. Y.	Youngstown, Ohio	Tacoma, Wash.
Camden, N. J.	Detroit, Mich.	Oakland, Calif.
Harrisburg, Pa.	Chicago, Ill.	San Francisco, Calif.
Philadelphia, Pa.	Peoria, Ill.	Los Angeles, Calif.
Reading, Pa.	Indianapolis, Ind.	Spokane, Wash.
Pittsburgh, Pa.	Milwaukee, Wis.	Sacramento, Calif.
Washington, D. C.	Duluth, Minn.	Fresno, Calif.



# Your Business

**YOUR RADIO SERVICE AND APPLIANCE SALES!**

## PULL IN MORE PROSPECTS WITH **38 SALES AIDS**

EVERY ONE OF THEM WILL HELP YOU MAKE MORE MONEY—AND EVERY ONE OF THEM IS FREE

ASK YOUR RCA TUBE DISTRIBUTOR TO SUPPLY YOU WITH THE BOOK OF DEALS SHOWN AT RIGHT

### HERE ARE A FEW OF THE 38 DEALS

With each 25 tube purchase—100 unimprinted postcards (form No. 1337), or 100 check-up tags (form No. 2244)—free.

With each 40 tube purchase—100 prospect cards (form No. 732)—free.

With each 60 tube purchase—200 leaflets (form No. 700), or 500 "not-at-home" cards (form No. 317)—free.

With each 70 tube purchase—300 repair tickets (form No. 696)—free.

With each 100 tube purchase—100 imprinted envelopes and check-up letters (form No. 1341), or 40 log books (form No. 913-S)—free.



### Please ship the following RCA Tubes

Type	Quantity	Type	Quantity
24A			
26			
27			
35			
45			
47			
71A			
80			

In accordance with the Special RCA Free Promotional Material offer (effective Sept. 1, to Nov. 1) please ship in return for the tubes ordered in excess of 50 (amount required for telephone listing) the sales promotional items indicated below, using name and address shown under "Telephone Qualifications" for imprint information.

Form # \_\_\_\_\_ Form # \_\_\_\_\_

Form # \_\_\_\_\_ Form # \_\_\_\_\_

#### "TELEPHONE QUALIFICATIONS"

Service Work regularly done \_\_\_\_\_ No. years \_\_\_\_\_

From Store or Home \_\_\_\_\_ Service Notes used \_\_\_\_\_

Equipment Owned—Checker  Oscillator   
Oscillograph  Output Meter

Name of Firm or Business \_\_\_\_\_

City \_\_\_\_\_ Telephone \_\_\_\_\_

Form 2245

Note to Distributor—After order has been filled send card to RCA District Office so eligibility for Telephone Listing can be determined

**YOUR DISTRIBUTOR CAN GIVE YOU FULL DETAILS. OR, BETTER STILL, IF YOU WANT ANY OF THE MATERIAL OFFERED, FILL IN AND CLIP THE COUPON AT LEFT AND MAIL IT TO YOUR JOBBER.**



# Radio Tubes

**RCA MANUFACTURING CO., Inc., Camden, N. J.**  
**A SERVICE OF THE RADIO CORPORATION OF AMERICA**

# Announcing

## Start-Charger BRIGGS & STRATTON WASHER-MOTOR

ELECTRIC CRANKING . . . WASHING . . . BATTERY CHARGING

### Again — Briggs & Stratton Leads with the Gasoline Farm Washer's Greatest Improvement

Leading makes of gasoline driven farm washers are now equipped with the new Briggs & Stratton Start-Charger Washer Motor.

These new Start-Charger models are self-starting like a modern automobile and are just as easy to operate as any electric washer in a Hi-Line home. Better still, the owner can charge his radio and other storage batteries — even while the machine is doing the washing. Think how convenient and practical this is — and think of the widespread and intense interest every farmer off the Hi-Line will show when he reads of the new Start-Charger Washer Motor in State and National farm papers.

Be the first in your community with the new Start-Charger Washers. If you haven't already stocked these models, get in touch with your washer manufacturer immediately.

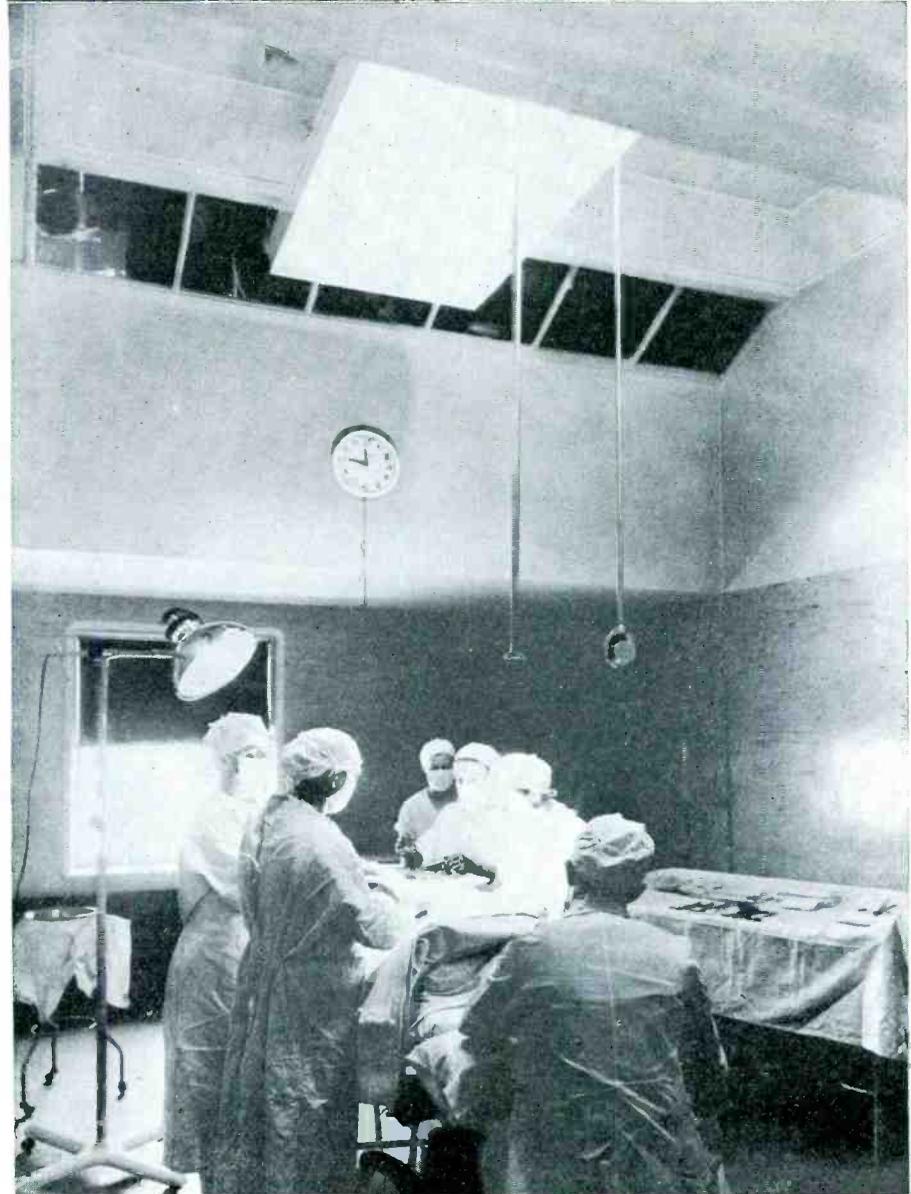
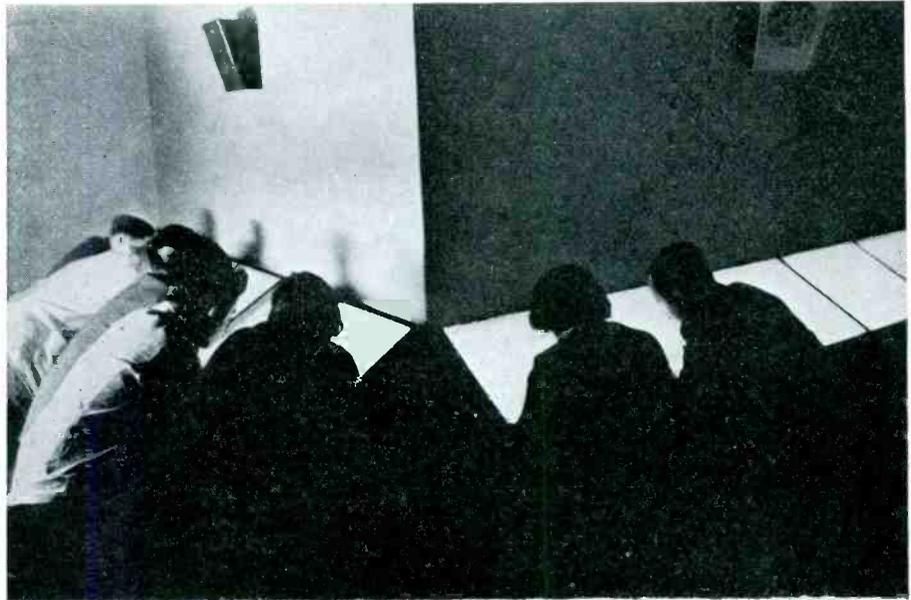
BRIGGS & STRATTON CORP., Milwaukee, Wisconsin, U. S. A.



Most of your rural customers will not have Hi-Line service for many years. Why pass up this business when you can make plenty of sales now on Start-Charger gasoline washers. Each month, in State or National farm papers, Briggs & Stratton are telling farmers to see you for a demonstration.

## INTERNES LOOK LISTEN

**BOSTON**—Wired for sound is the operating room of the Massachusetts Memorial Hospital. Surgeons, wielding knives, instruments, explain each step of the operation to internes, students, looking down from the glass-partitioned gallery, listening over an RCA amplifier installed by the Eastern Radio Company.



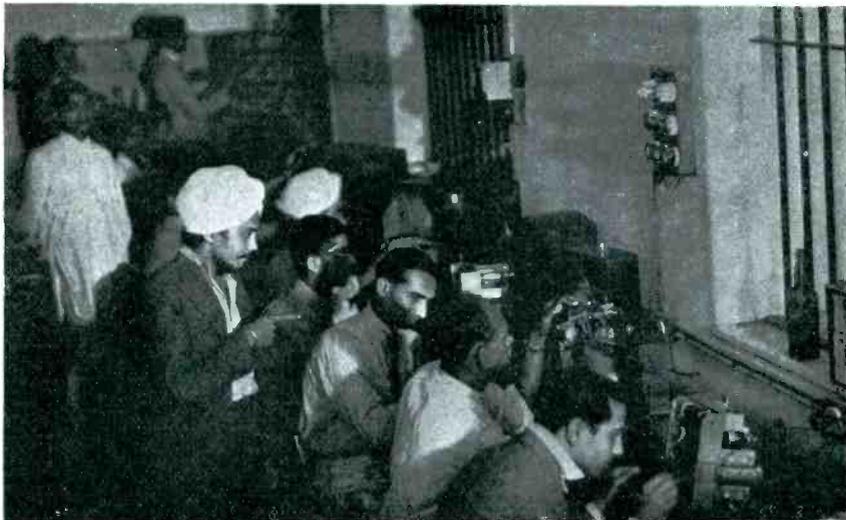
## Window Shoppers Tell All

**CHANUTE, KANSAS**—G. A. Phillips tells of a dealer selling radios and refrigerators in a nearby town of 8,000 people who bought a new two-way intercommunicator, placed one station just outside his show window, fixed it in the "talk" position and listened to the comment of window-shoppers back inside at his desk.

The dealer informs Phillips that he picked up enough gossip about the appliance needs of people he knew by this method to pay for the cost of the system in sales.

# SOUND and SERVICE

Display....Management....



**TURBANS AND TESTERS**—Even in far-away India the value of expert service department direction is recognized. Eastern Electric and Engineering Company's Bombay repair chief is pictured giving the bench crew a few pointers



**"KEEDOOZLE" STORE**—In Memphis, clever Clarence Saunders has opened this automatic service grocery. Each customer receives an individual key on entering. Selections are made by turning the key in slots beside desired articles. The key is then surrendered to the cashier, who inserts it in a master release slot. Triplett-designed relays maneuver selected items onto a conveyor belt which delivers goods to customer. Contact between the service organization stocking bins and cashier is maintained over a Webster-Chicago inter-communicator, appearing on the right of the latter's desk



## Service Price Schedule

CHICAGO—From Ray Pentecost of Metropolitan Radio Service, organization doing repair work on a cooperative basis for seven outside, independent servicemen, comes the following interesting scale of prices, adhered to for the past seven years:

Service (testing away from shop) ..	\$1.00
Minimum shop labor charge .....	1.00
Service (removal and return of chassis) .....	1.00
Time test for "faders" (customer request) .....	per hr. .50
Tube test (when necessary to remove chassis) .....	.25
Curb service (auto-radio) .....	1.00
Remove auto radio from car (single unit type) .....	1.00
(two separate units and cables) .....	1.50
Exchange vibrators (rebuilt, 90 day guarantee) .....	1.50
<b>Balancing:—</b>	
To include check of all voltages (and corrections) and replacement of not more than 3 to 5 resistors or 1 to 3 small bi-pass condensers.	
Neutrodyne .....	4.50
Midget R. F. sets .....	1.00
Midget superheterodynes .....	3.00
Auto-radio superheterodynes .....	3.50
Single-band superheterodynes (large) .....	4.50
All-wave superheterodynes (1st band) .....	3.50
Each band additional .....	1.00
<b>Transformer replacements:—</b>	
Midget sets (labor) .....	1.00
All others (labor) .....	2.00 to 3.00
Tarred in types (extra) .....	.50
Auto sets (labor) .....	2.00
Above .....	plus cost of transformer.
<b>Power Supply work:— (includes labor)</b>	
Small sets.	
Paper box or tubular type, 8-8 electrolytic filter .....	1.90 to 2.40

# PHOTO SHORTS

## Advertising....Selling

A.C.-D.C. filters (2 section)...1.90 to 2.40  
 A.C.-D.C. filters (4 section)...2.40 to 3.60  
 (Above conditional on net cost  
 of condensers used)

Power Supply work, standard sets.  
 Minimum labor charge ..... 1.00  
 (allows 1 hr. bench work)  
 Additional time, per hour..... 1.00  
 Plus manufacturer's list for parts re-  
 quired.

Outside men, for whom Metropolitan  
 does work, pick up sets and bring these  
 to the shop for estimate, for which they  
 are not charged. Receiving the esti-  
 mate, they give their own quotation to  
 the customer, pick up the set, returning  
 it to the home later.

Service is guaranteed for 90-days. A  
 card asking if the set is performing  
 satisfactorily is mailed the customer  
 10 days before the expiration of this  
 period.

### First Part \$3.50

MADISON, WIS.—“How much will it  
 cost to fix?” To answer this invariably  
 asked question quickly enough to get  
 the business, D. Head and J. Symons



**SILVER STREAM**—From the imaginative art studios of Paramount Pictures came this “bus-body of the future.” Used in a new “flicker,” it was rescued from the scrap-heap by Max S. Karp of Los Angeles, who transported it to a vacant lot near the heart of the city, cleared a driveway at the rear, turned it into perhaps the most novel radio sales and service shop in the country



**SOUND SERVES SOAP-BOX DERBY**—For the third successive year Elliott Wilkinson (right, wearing sun-glasses) takes time out from his busy radio parts and accessories business to sound-equip the truck used as headquarters by judges of the local soap-box derby. As kids coast downhill 10,000 spectators lined up along the four-block course are kept informed of their competitive position



**TUGBOAT TALKBACK** — Inter-communicating system on a large scale is the installation on the docks of the Boston Towboat Company. A mike installed in the office by Eastern Radio permits officials to talk to captains, who answer back from their own decks, the speaker working in reverse as the pickup device

of H & S Radio Service have devised a pricing-schedule which, if somewhat unconventional, appears to return them a satisfactory profit over an extended period.

Head and Symons quote "3.50 for the first part replaced, 50 cents additional for others." This estimate includes both labor and material. It all averages out satisfactorily to the store when business is normal, they claim.

## Service Debt Collection Method

MACON, GA.—H. M. Stanton of this city is using an extremely interesting and effective method of collecting service debts from poor-pay patrons. Says Stanton:

"All repairs strictly cash is a stand-



ard sign in most radio service organizations. But how many of us are able to adhere to this rule?

"Here's a foolproof method that has proven itself in service and won't make any enemies except those who will not pay. Since October of last year, when we discarded \$347 worth of bad accounts and put it into effect in order to avoid further licks we have lost only five tenths of one per cent on collections!

"You will notice that the form reproduced here is titled 'Delivery Receipt' and has a detachable bottom. It is an innocent looking document but, once signed, gives you a *bill of sale to secure debt* on the radio that you have repaired. If it is not paid in thirty days, it may be submitted to the Municipal Court for collection by a deputy, which will not cost you a cent! Furthermore, you may collect one-ninth extra for your trouble!

"Note that the form Reads, 'In consideration of cash, 10% has been deducted. Statement appears as net. Gross



after 30 days. Thus, a \$4.50 bill if unpaid after 30 days, becomes \$5! At the time that the customer signs the form, the bottom part is filled out, detached and given to him. If he pays any money on account, this may serve also as a receipt.

**DELIVERY RECEIPT**  
**STANTON SOUND SERVICE**  
MACON, GA.

CUSTOMER John Jones  
ADDRESS 300 Cherokee Ave.

In consideration of cash payment 10 per cent has been deducted. Statement appears as net. Gross after 30 days.

Make Philo  
Model 70 Serial No. B-5131  
Repair Charges \$4.50

June 5, 1937

THIS IS YOUR NET BILL. WE DO NOT SEND OUT STATEMENTS, WE HAVE NO COLLECTOR.

DATE June 5, 1937  
CUSTOMER John Jones  
ADDRESS 309 Cherokee Ave  
AMOUNT \$4.50

**STANTON SOUND SERVICE**  
REPAIRING  
"At Prices You Can Afford To Pay"  
203 COTTON AVENUE  
PHONE 1178

**THE FORM USED —**  
When signed by the service customer it makes the repaired receiver Stanton's property until the bill is paid. (Ed. Note: Size is actually 7 x 8 1/4 in.)

**A CUSTOMER SIGNS**  
—Shirt-sleeved, he puts his John Henry on the Delivery Receipt, departs intending to pay for the work later

**PAYMENT UNDER PRESSURE —** Where ordinary means fail to secure Stanton's fee in a reasonable time a deputy armed with Municipal Court authority collects in the home or picks up set

"Show this form to an attorney and explain that you wish to have it changed to conform to your own state laws. He may make a small change of several words. Have the form (after change in wording is made) copied verbatim. Get a proof and have your lawyer check it carefully, for a misplaced comma, or semicolon could alter the entire technical meaning.

"Ask your lawyer if this note must have signature of a notary public in your state to be legal. Also ask if your business must be registered in the Superior Court under the various state 'Trade Name Act.' This legal service should cost no more than \$5. Be sure that the printer uses correct type sizes as it is important that certain legal phrasing be in as small type as possible.

(Ed. Note: Small type below double-ruled line reads as follows:

In consideration of services and materials furnished by the Stanton Sound Service, in the value set out above, I hereby sell, convey and deliver to it with full warranty of title the above described personal property; as provided in Sec. 67-1301 et seq. Code of Ga. 1933, title to vest in the Stanton Sound Service until this account is paid in full. Loss, destruction or injury to said property shall not abate my liability for full payment of this account.

Should this account not be paid within 30 days the Stanton Sound Service is authorized to take possession of said property and sell it to pay the debt; either at public or private sale, with or without advertisement, and the Stanton Sound Service may purchase at said sale; all expenses to be paid from the proceeds of said sale.

This account to bear interest at 8 per cent per annum with all cost of collection including 15 per cent attorneys fees.

Wherefore witness my hand and seal, this 1933  
Signed, sealed and delivered in presence of  
.....L. S.

Notary Public, Bibb County, Ga.

"Upon receipt of self-addressed, stamped envelope we will be glad to send a copy of our form to any reader of *Radio Retailing*."

# FIGURES

## RADIO RETAILING'S MONTHLY BUSINESS BAROMETER

### QUICKER CANADIAN PULSE

The Canadian RMA reports that Dominion set makers sold 79,872 receivers worth \$6,259,568 at list in the first six months of 1937, as compared with 64,522 worth \$5,569,719 in the initial half of 1936. Sales included 47,646 a.c. models valued at \$4,287,866 against 42,923 at \$4,120,486 and 17,768 battery models valued at \$1,127,417 as against 9,642 at \$721,708 and 14,458 automobile models valued at \$844,285, as against 11,957 at \$727,525.

Radio receiver license sales to the Canadian public increased 20 per cent in the fiscal year ending March 31. The Government sold a total of 1,038,500 at \$2, as against 862,109 in the previous year.

### RETAIL REFLEX

In a survey just completed and here briefly highlighted, *Radio Retailing* finds that:

*Retailers obtaining half or more of their gross radio volume from service sales. . . . Derive 82.56 per cent of their radio income from this source, 17.44 per cent from set sales. 89.43 per cent operate from stores, 40.83 per cent practice outside selling in some form and 99.19 per cent repair receivers of any make.*

*Retailers obtaining half or more of their gross radio volume from set sales. . . . Derive 77.04 per cent of*

their radio income from this source, 22.96 per cent from service sales. 92.5 per cent operate from stores, 82.22 per cent practice outside selling in some form and 83.7 per cent repair receivers of any make.

### BROADCAST DOLLARS UP AGAIN

Figures released August 13 by the National Association of Broadcasters show that broadcast network time sales increased 28.7 per cent in the first half of 1937 as against the first half, 1936. Six months' time billing hit \$65,426,432 as against \$50,802,179.

The principal increase for the first six months occurred in the national network field, the increase here rising from \$11,527,860 to \$16,528,100.

Broadcasting outstripped other advertising mediums by a substantial margin, considering percentage gain over last year, with national magazines showing the next best volume increase.

### FACTORY FIGURES

*Zenith* reports a consolidated operating profit for the first quarter of its fiscal year ended July 31 of \$1,122,184, after depreciation, excise taxes and liberal reserves are deducted but before provision for Federal income and excess profits tax and undistributed profits tax. Production, shipments and profits for the first quarter are reported as the largest in its history.

RADIO EXCISE TAX COLLECTIONS		
5 per cent on radio and phonograph apparatus, exclusive of auto-radio		
	1937	1936
January	\$683,578.06	\$601,144.68
February	464,853.41	423,673.38
March	360,922.38	336,043.04
April	331,618.50	321,006.84
May	329,074.51	220,750.43
June	394,641.50	422,696.37
<b>Total</b>	<b>\$2,564,688.36</b>	<b>\$2,325,314.74</b>

*Stromberg-Carlson* sales for May, June, July, August, upped 40 per cent, according to radio sales manager Lee McCanne. Models placed by this company in the "furniture model" classification accounted for 25 per cent of this increased business.

*Kadette* radio production, now at the highest point in this company's history, according to Charles Verschoor, president of International Radio Corporation, stepped up in July to triple the order volume on the books in July, 1936.

*Wincharger* sold 2,100 32-volt giant type units in the thirty-day period ending August 15. Some export business is included in this figure.

*Norge* gas and electric range sales skyrocketed during the first six months, sales increasing 41 per cent over a similar period last year. Open orders at the end of June represented approximately two months' business, indicating, according to the management, that sales momentum will continue throughout 1937.

## Where Replacement Radio Parts Are Purchased



Retailers obtaining half or more of their gross radio volume

From SERVICE Sales



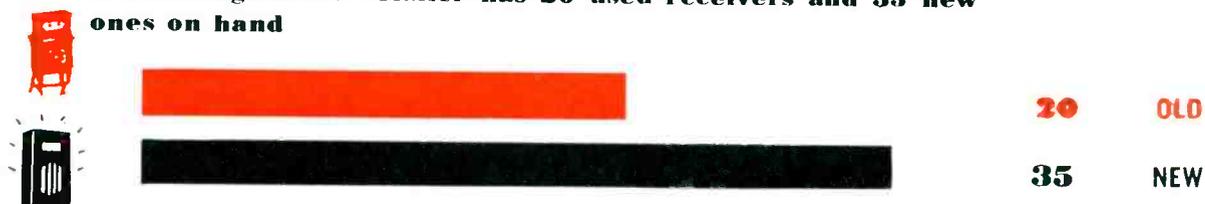
Retailers obtaining half or more of their gross radio volume

From SET Sales

# TODAY'S

## OLD SETS VS. NEW

The average radio retailer has 20 used receivers and 35 new ones on hand



## DOLLARS IN AND OUT

Allowances average \$13.91 per set, re-sales return \$7.55



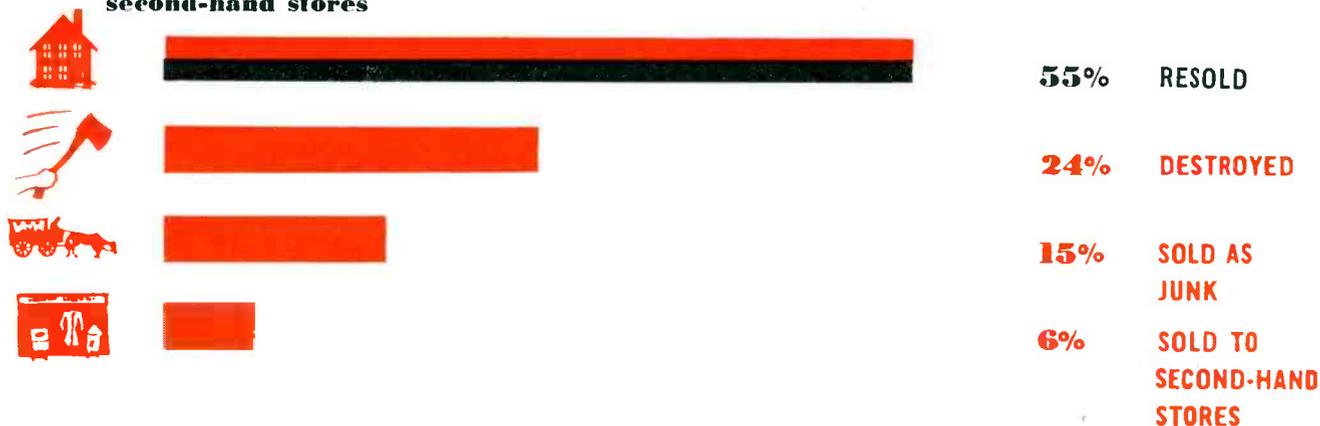
## RE-SALE EXPECTATIONS

65 per cent of the merchants reporting re-sell trade-in stocks at a loss. 22 per cent make a profit, 13 per cent break even



## METHODS OF DISPOSAL

55 per cent of all used radios are re-sold to consumers, 24 per cent destroyed, 15 per cent moved as junk, 6 per cent cleared to second-hand stores



# TRADE-IN MARKET

**T**OUGHEST nut to crack in the retail radio business is the handling of trade-ins on an economical basis. Long sought by dealers, to whom it is of vital importance, solution of this problem is now coming in for close scrutiny by both manufacturers and distributors, pressure of recently enacted Fair Trade Laws practically forcing such consideration.

Serious stumbling block to students seeking a solution has been the paucity of facts concerning the actual state of today's trade-in market. In order to help the industry hurdle this initial barrier *Radio Retailing* has just interviewed typical dealers in 22 states, presents in the following paragraphs an unembroidered analysis of its findings.

As we go to press 93 per cent of the nation's radio dealers have one or more used receivers in stock. 84 per cent of all the stores cooperating with us in the compilation of these figures have between 1 and 49 used radios on hand, 7 per cent have between 50 and 99 and 2 per cent have between 101 and 199. The average dealer has 20.

The average amount allowed by dealers for each trade-in now in stock is \$13.91. Basing their estimate on past experience, these dealers expect to dispose of trades now on hand for an average of not more than \$7.55 apiece. Considering trade-in transactions alone, without reference to possible margin on new set sales, this means that turnover of trade-ins represents a 46 per cent direct loss.

Fully 55 per cent of all used radios now in dealer stocks are destined for re-sale to consumers. 24 per cent of those taken in trade are to be destroyed, 15 per cent sold to junkmen and 6 per cent moved to second-hand dealers. Precisely what will later happen to this last mentioned group we have no means of determining but it seems obvious that many of these, too, will eventually

get back into neighborhood homes.

Of particular interest is the fact that 65 per cent of all radio dealers anticipate loss on trade-in turnover transactions, considering their entire used set stock. 22 per cent expect to profit, say they have over the past year, while 13 per cent state briefly that they hope to break even.

That the practicability of making

readily re-sold than consoles. The demand for second-hand equipment, apparently, is heaviest from those who wish sets for auxiliary or semi-portable use.

Trade-in allowance maximums are now limited to 10 per cent of the new set's list in a sufficient number of retail stores to indicate a growing trend in this direction. Curiously, this is the figure most manufacturers are heard discussing.

Many dealers still feel factories should immediately inaugurate an extra 10 per cent mark-up covering trade-ins, collecting and destroying used sets taken in by dealers operating under this protective discount. The idea is old, involves certain difficulties, but persists.

Retailers, in the main, object to manufacturers or distributors advertising "unusually liberal trade-in allowances" and so aggravating an already delicate situation. Seeking financial aid from set makers the trade, it seems, yet wants to retain complete control.

And the trade feels, finally, that it should in many cases be possible for manufacturers in some way to standardize trade-in allowances by nestling under the wing of Fair Trade laws.

In some states wording of Fair Trade Laws may permit control of trade-in allowances but inasmuch as few of these have yet been fully interpreted from the legalistic angle there is much uncertainty. Take New York, for example. One active dealer association in this state has just passed a resolution calling upon manufacturers operating in the area to limit trade-in allowances under Feld-Crawford Act provisions. Yet almost crossing in the mails to the press comes a statement from Senator A. Spencer Feld, co-author of the Act, stating that manufacturers operating under his bill have no right to specify the exact amount to be allowed.

Just what latitude the word "exact" gives the radio industry is not clear.

By W. MacDonald

## Facts Obtained by National Survey Show Present State of Dealer Stocks

a profit on trades has become steadily more difficult is obvious when it is known (RR *Dec.* '35) 54 per cent of all radio dealers made a profit on such business just two short years ago while the remaining 46 per cent either lost or broke even.

**T**HE retail picture is still further illuminated by the knowledge of new set stocks at present in dealers hands, gleaned from this most recent survey.

The average radio store has 35 new receivers in stock at the present time. These cost an average of \$49 apiece and, figuring at list, the average dealer goes into September selling with \$2,489 worth. Comparison of used and net set stocks, permitted by these figures, should be enlightening to many.

Casual comment picked up while obtaining trade-in data from cooperating retailers indicates, although findings cannot in this case be shown mathematically:

Used table models are much more



# How To INSTALL

By  
Albert A. Schuller

*In this, the first published article on the subject of sound inter-communicator installation "after the sale is made," the author . . . a signal-circuit specialist of long standing . . . devotes himself at the Editor's request to electrical and mechanical details about which practical pointers have heretofore been most meagre.*

*Written particularly for radio and sound retailers now encountering a demand for more comprehensive and elaborate systems, much of the information given here will nevertheless be useful in connection with simpler set-ups as the consumer can frequently be sold the value of additional ruggedness and permanence.*

**F**IRST of all, sound inter-communicator installations should be properly laid out. Any station requiring a source of current, such as a master or a selective unit, should be located as closely as possible to an electric light outlet. All stations should be located as conveniently as possible for the persons who are to use them. Usually, the best location in offices is found to be on one side of a desk, and a trifle toward the rear.

In locations where a considerable amount of vibration is prevalent, such as in factories, or even on typewriter desks, the stations should be placed on a sponge rubber mat or heavy pad of felt. This precaution will in most cases prevent extraneous sounds

from being picked up and transmitted to the other stations in the system.

Stations should be mounted in the proper vertical position, away from obstructing surfaces, in order to allow adequate ventilation. Stations must never be mounted above or near radiators.

### Twisted Pair Best

The proper type and size of wire must be used with inter-communicators if the best results are to be ob-

tained from wires and cables having a great number of "twists per inch." In some cases standard telephone wire and cables may be used. It is best, however, to consult with the manufacturer of the set before proceeding on this basis.

In addition to the wires and cables having many turns or twists per inch the insulated conductors should where possible have a woven wire shield served around same, which in turn should be grounded securely

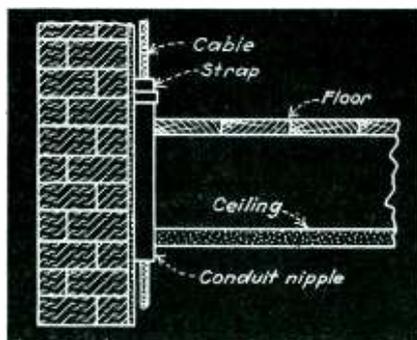


FIG. 1—Simple, safe method of carrying an inter-communicator system cable through from floor-to-floor

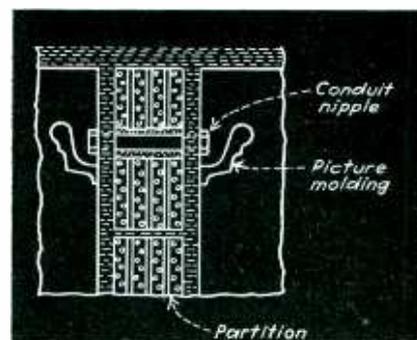


FIG. 2—Cable concealed in the picture molding is best carried through walls in this manner

tained. It is generally agreed that twisted wires should be used, whether they be of the pair type or are made up into cables. This type of wire largely overcomes inductive noises and crosstalk. The best results are

obtained from wires and cables having a great number of "twists per inch." In some cases standard telephone wire and cables may be used. It is best, however, to consult with the manufacturer of the set before proceeding on this basis.

In small systems where two to four wires are to be used, twisted-stranded or solid conductors may be used.

Locating instruments for best results . . . Avoiding "crosstalk" . . . Carrying cables through floors, walls . . . Choice of wire . . . Proper use of terminal blocks, connectors . . . Outside runs . . . Protecting against heat, moisture

# Inter-Communicators

Where more than this number of conductors are required, the use of twisted pair cable is recommended. Cable is readily installed and presents a workmanlike appearance.

Concerning the sizes of wires to be used for various distances: After a survey on this subject, it is felt that No. 18 B & S gauge wire is satisfactory on circuits up to 250 feet, while No. 16 B & S gauge wire may be used up to and including 500 feet. A number of manufacturers have found that No. 22 B & S gauge wire is satisfactory in cables on circuits up to 100 feet.

### Avoid Pipes, Other Wires

The wiring should be carefully protected against mechanical injury and moisture, especially at points where it passes through floors and walls. One good method of carry-

ing the wire if poorly protected, and may result in impaired service.

Wires should be separated as far as possible from steam and water pipes, so as to prevent trouble due to moisture. It is also necessary to isolate these wires from other electric circuits, which may cause interference. Where wires are run "open," and it becomes necessary to cross pipes or electric circuits, run wires above at these points. Where the wires are run in conduit, and it is necessary to run them parallel to other electric circuits, there should be a separation of at least six inches between the two systems.

In "open" interior installations, twisted-pair wires should be supported by cable clamps, bridle rings or insulated staples. Cables in "open" work should be supported by cable clamps, or straps. In dry lo-

cations, braided wire or "flame-proof" cable may be used. In damp locations, weather-proof, rubber-covered and lead-covered cables should be used.

### Cable Support Methods

In "open" exterior installations where circuits run from one building to another, weather-proof twisted-pair wire should be supported by means of bridle rings, porcelain or glass insulators on either poles of wall surfaces. Lead covered cable should be supported by cable rings from a messenger wire, or attached to wall surfaces by cable clamps. The messenger wire should be grounded as a protection against lightning discharges.

Underground installations between buildings should be run in lead-cov-  
(Please turn to page 57)

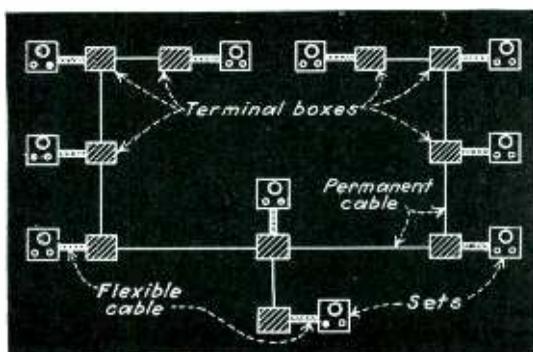


FIG. 3—This typical terminal box system uses both permanent and flexible cable to good advantage

ing wires or cables through floors is shown in Fig. 1. A method of carrying wires through walls is shown in Fig. 2. This is a very important procedure as the slightest amount of moisture may affect the insulation of

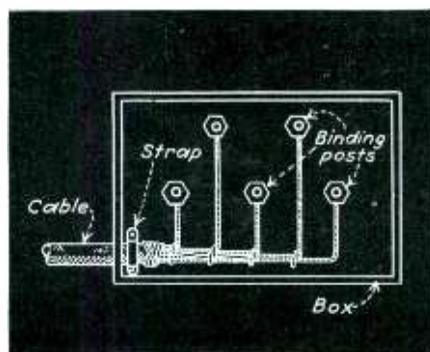
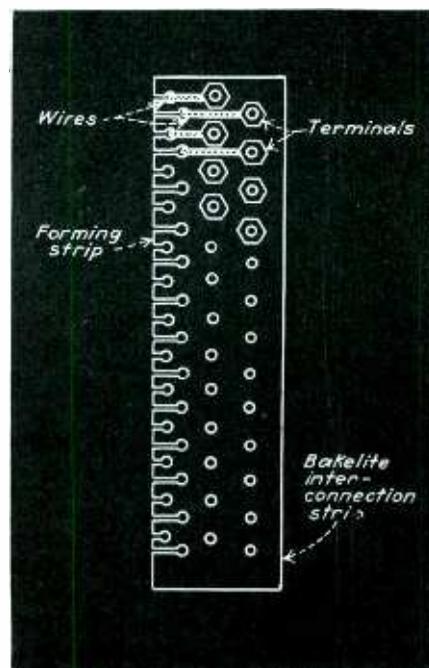


FIG. 4—Fanning, lacing wires at a terminal block. If the cable is lead-covered to expose wires saw-cut in a circle, about one-third through casing, then bend slightly backward and forward, sliding off casing when it breaks

FIG. 5—This type terminal block has its own "forming strip." No fanning, lacing is required





In England, this type of business has been developed to a high point, usually involving an option to buy

invite a representative to call with a demonstration receiver.

Plainly, in all booklets, rental charges appear.

**Rates Plainly Printed**

While there are some differences in rental rates (plan details differ, see later paragraphs) the following figures may be considered fairly typical:

**Monthly Payments**

	1st Year	2nd Year	3rd Year
5-valve, one band, table model	10/ (\$2.50)	8/ (\$2.00)	6/ (\$1.50)
5-valve, all-wave, super het	12/ (\$3.00)	8/ (\$2.00)	6/ (\$1.50)
5-valve, all-wave, consolette	14/ (\$3.50)	10/6 (\$2.62)	5/ (\$1.25)
8-valve, all-wave, table model	16/ (\$4.00)	12/6 (\$3.12)	8/ \$2.00
8-valve, all-wave, console	18/6 (\$4.62)	15/ (\$3.75)	10/6 (\$2.62)

Note, particularly, that rental rates diminish each year the consumer continues to rent the same set. If a new model is ordered, naturally, a new rate prevails and the diminishing payment feature is generally sacrificed, at least in part. This feature is basic to most commonly patronized plans, which usually may be terminated by either party on one month's notice.

The alternative of paying a smaller, fixed sum monthly is sometimes offered, the renting company in this case securing a signed contract in which the consumer agrees to pay a premium if the radio is returned within 3 years.

Three operators require no deposit, make no installation or other initial charge. One bills each new customer 5/6 (\$1.37).

In all but one instance payments are made monthly "in arrears", even though most circulars, for purely psychological reasons, show weekly rates. The exception requires one month's rental in advance.

**Option To Purchase**

With one exception, all five plans studied include option to purchase. Offers vary all the way from crediting of the entire rentals collected in the first 6 months, or one year, to

(Please turn to page 57)

**PRINTED PROMOTION — Elaborate booklets with return postcards invariably do the initial selling, representatives following up with home demonstrations**

## RADIOS FOR RENT

**R**EPOR TED because it appears to have exploitation possibilities here, perhaps providing a subtle new sales approach too, is the highly-developed British business of renting radios.

**Sales By Mail**

In London alone at least five companies specialize. Most of these are chains, having branch offices in other cities and maintenance men throughout territories served. One claims traveling engineers cover twenty counties in England and Ireland daily.

Initial selling is invariably accom-

plished by elaborately illustrated direct-mail booklets, frequently running as many as 20 printed pages in color, and containing halftone illustrations of radio models available. (*Radio Rentals* features "Ekco", *Universal Renters* pictures only "Halycon" and "Belmont", *Rentertainments* pushes "Philco", others use private brands.)

Included are dissertations concerning the advantages of rent vs. purchase, i.e.: no depreciation yet receiver always up to date, free service and tube replacement, free insurance, etc. Within such booklets, invariably, are also found postage-prepaid return cards with which the consumer may

# KADETTE RADIO

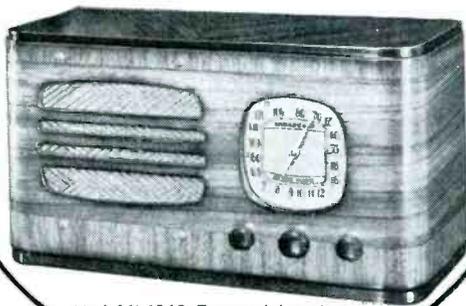
## IS STEALING THE SHOW

The public is still discovering the phenomenal value built into the 1938 Kadettes—the demand for Kadette is bigger than ever.

The two amazing models illustrated—10 tubes for only \$19.95 and an 11 tube console for only \$49.95—are the biggest promotional values ever offered. Throughout the country they're pulling the public into dealers' stores.

Cash in on this profit opportunity—push the line the public wants to buy. Take advantage of Kadette's spectacular promotional plan. Use the complete series of newspaper mats—pull the public into your store with the radio value of the year. Get YOUR added PROFIT—NOW.

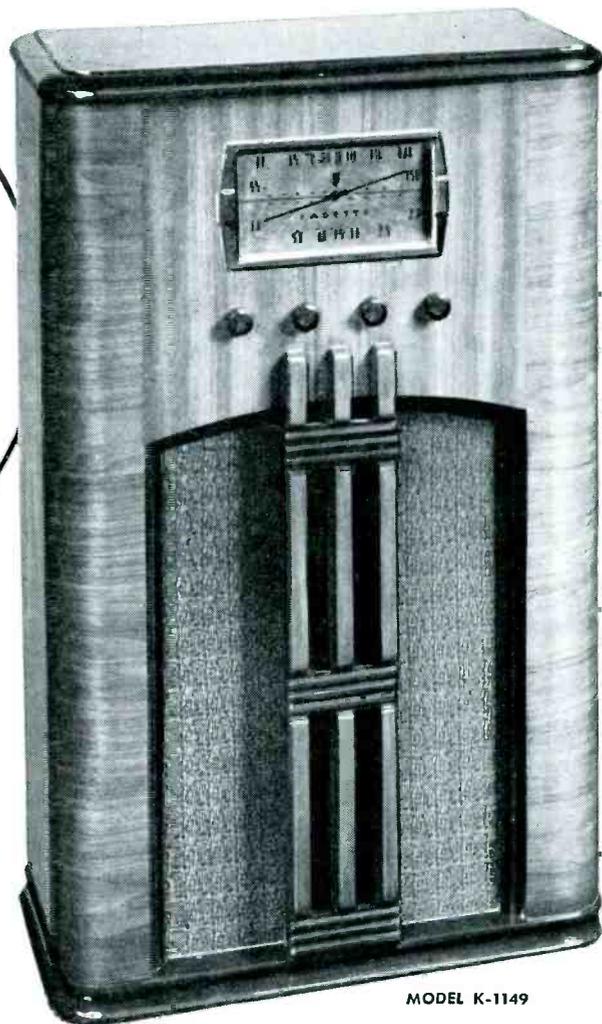
**10 TUBE**  
AC SUPERHETERODYNE  
**\$19<sup>95</sup>**



*Model K-1019. Tunes std. broadcast and 49 M. foreign bands.*

**11 TUBE**  
AC SUPERHETERODYNE  
**\$49<sup>95</sup>**

Completely new transformerless circuit with 100% automatic volume control—full tone control. Beautiful grained piano-finish cabinet. Tunes std. broadcast and 49 M. foreign bands. Phone your distributor today.



MODEL K-1149

**Kadette Division: INTERNATIONAL RADIO CORPORATION, 552 Williams St., Ann Arbor, Michigan**



# KADETTE

*The World's  
Best  
Value*

# UP FRONT



**MAN AT WORK**—P. W. Kidd of Supreme Radio Service knows people can't resist watching him repair radios, thinks a congested bench the best attraction

**Modern instruments were made to be seen as well as used, build customer confidence, service and set sales**



**STREET-SCENE**—R. W. Senesac and Jay E. Chilson of SOS Radio Doctors, Chicago, work at a brilliantly illuminated bench plainly visible from the sidewalk

**F**EATURE your instruments! Fascinate your customers with modern test instruments! Oscillographs, big meters, flashing tube testers and bright, colorful gadgets are meant to be seen as well as used. Display your equipment in the front of your store. Stop hiding your most potent sales argument in the rear of your shop.

Let your customers see you work. With modern equipment, servicing of even the most complex receivers is becoming a routine task. Service work with good equipment is a precise science. Servicemen no longer need to grope blindly for radio faults in the vain hope of hitting

upon the trouble. It is as interesting to watch a skilled man service a radio as it is to see an artist paint a picture or a glass-blower pattern intricate designs.

### *Wired For Sound*

Try this experiment for a week: Move your service bench to the front window of your shop. Provide plenty of light and repair one set at a time in full view of your public. Arrange with the nearest traffic cop to keep the crowds moving.

If you have the "gift of gab" and local ordinances permit, connect up your sound system to a lapel micro-

phone and talk as you work. Tell exactly what you are doing and why you are doing it. If you are using an oscillograph, explain the meaning of the patterns you obtain. Be just as technical as you wish, use the biggest words in your radio vocabulary, the men in your audience will never admit they don't know what you are talking about but they will be subtly flattered in thinking that you know that they understand your phrases.

To prevent the impression that your services are too expensive, mention occasionally the low cost of high quality work facilitated by good instruments. Point out that the saving

# WITH TESTERS

By  
E. F. Staunton



**JUST INSIDE**—L. P. Evans of Evans Radio, records an incoming repair job while his assistant, L. E. Easley, focuses an oscillograph in plain view of the customer



**BACK, YET VISIBLE**—Harry Dodge of Dodge Radio Service has cut through a partition so his 18-ft. bench, floodlighted may be seen from out front

in time effected by these instruments results in lower service costs than with the older, guess-work methods.

### **Small Town Suggestion**

Opportunities for servicing-display benches in store windows are greater in small towns than in large cities as people are less hurried and more inclined to window-shop. The fascination of a man at work will stop a greater number of good prospects than any other form of advertising.

If you regularly use the newspapers for advertising, phone the editor to have his photographer take a picture of you at work on a Saturday evening when the crowd is the greatest. This publicity will bring

hundreds of additional prospects to your window to see for themselves how a radio is repaired.

For a few dollars you can buy an extra print of the photograph from the photographer and use it in your direct mail advertising.

Instruments are the distinguishing mark of a good serviceman. No one knows about your equipment unless it can be seen. Instrument manufacturers are becoming more aware of the sales value of colorful test equipment. Modern instruments have a real merchandising appeal. They convince the prospective customer that you are scientific in your methods and thorough in your work. They more than justify their cost.

Good service builds confidence and also leads to the sale of new receivers. Many service customers are prospects for a new radio. The trade you attract with your service display will increase your floor sales of good receivers.

### **Good Sales Ammunition**

Buying a radio in this day of keen competition is largely a matter of confidence in the man who is selling it. Your window display establishes your qualifications as a radio expert. This is your sales ammunition. With it you can sell the better class of radio receivers.

Test equipment should be placed "up front."

# SELLING PARTS OVER THE COUNTER

**T**HE parts business appears to be enjoying a new wave of prosperity. Many in the business are wondering where increased volume is coming from. Is it a flash-in-the-pan or of a substantial, lasting nature?

It is the author's opinion that the parts business is on a firmer footing than at any time since its inception. For while home set building has been revived to a certain extent by the consumer's interest in foreign short-wave reception the real backbone of the business today is the consumption of components by servicemen, an expanded group of even more equipment-ambitious amateurs who are never finished improving gear, sound equipment users who simply did not exist in the old days and engineers and experimenters employed by industrial and research laboratories.

The important point, here, is that parts volume now is based primarily on the firm foundation of commercial or semi-commercial uses.

## *Selecting Stock*

Obviously, inasmuch as the major market has changed, it is important that it be differently sold. As an aid to the successful stocking and distribution of parts the following suggestions are made:

Study your territory. In order to determine what replacement parts to stock for servicemen make a survey of the number and types of radios that have been sold in the locality. A careful study of service manuals will aid here. Preference should, of course, be given to older models.

Attend "ham" meetings whenever possible. Listening to discussions at these meetings will provide an insight



**NOTHING TOO SMALL**—Says the author (left): "Some parts salesmen feel they are wasting time selling small items. But good service on these eventually brings back customers with larger orders."

into circuits favored by such groups. Stock selection should be heavy along these lines.

Make a survey of the industries in your locality. Determine, if possible, the types of experiments being conducted by the various laboratories and stock accordingly.

## *Investment Required*

Seldom, even in smaller cities is it possible to do a major parts business if the stock to be carried is valued at less than \$5,000. Even this does not provide much more than a "bare-ones" return, as will be noted from the following figures:

Basing figures on a \$5,000 stock, 30 per cent turnover monthly is considered excellent. This means a

\$1,500 business. The average gross profits are 30 per cent from selling price, or \$450. Deduct the overhead, which is seldom less than 20 per cent, and you have a profit of \$150 monthly on an investment in a \$5,000 stock. These are average figures and are only intended as a guide on investment requirements.

Keep an accurate inventory of all stock. The importance of this cannot be overlooked. There are many ways of keeping track of stock and every organization usually finds a method best suited to its needs.

## *Display and Advertising*

Careful consideration must be given to the proper placement of parts in stock. Fast movers must be



**How to attract and hold the business of amateurs,  
service and sound men, laboratory and industrial  
engineers, electrical students and set builders  
. . . Selecting and maintaining a "sweet" stock . . .  
Investment required . . . Turnover obtainable . . .  
Practical tips for the staff**

**By Jack Grand**

*Sun Radio Co., New York*

given special attention. Eye appeal is the best and least expensive salesman in any organization. If merchandise is properly placed many customers spot something that they forgot, or see something that they did not even come in for, suddenly deciding to buy.

Advertise. Everyone likes to patronize a popular place. Customers even boast of dealing in these establishments. In this way they indirectly recommend the store of their choice. This popularity is best obtained through advertising coupled with efficient service.

**Personnel Training**

Employees must be carefully selected. The parts salesman is of

particular importance, as he is the contact man and connecting link between the management and customer. It is he who is instrumental in gaining the goodwill and confidence of the customer. The manner in which he handles a sale enhances the reputation of the organization. Knowledge, experience and personality are his only tools.

**Tips for Countermen**

In order for the parts salesman to be successful, there are certain rules that he must follow. These are here enumerated in order of importance.

*Personal Appearance.* A clean shave, clean shirt, pressed clothes and shined shoes creates an appearance that breeds a better clientele.

**COUNTERSIDE MANNER** — Advises proprietor Sam Schwartz: "Study your customer. Rushing a slow man or taking your time with one in a hurry creates new business for your competitors."

*Smile.* Oftimes, it is extremely difficult to do this but, remember, a smile goes a long way in soothing a customer's feelings when he has some real or imaginary troubles.

*Patience.* This trait stands in good stead when listening to the customer. Let him tell his troubles and jokes. Take a little time with him, as this puts him in good humor. It is surprising how much sales resistance is cut down when the customer is in a jovial mood.

*Names.* Try and remember the customer's name. A person always feels that there is something distinctive about him if you can remember his name. This gives the salesman an edge over any competition.

*Arguments.* Avoid arguments with customers. Let each feel that he has a perfect right to make a complaint.

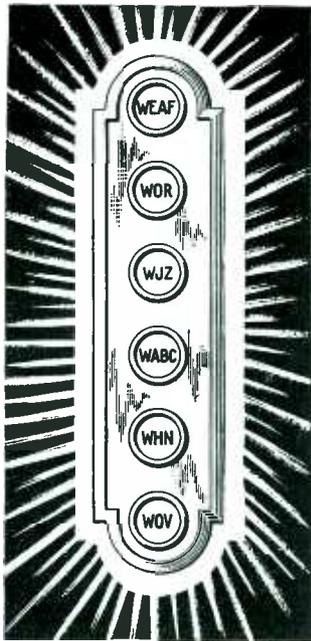
*Types.* Study your customer. Find out whether he likes to browse around or wants fast service. Rushing a slow customer or taking your time with a man in a hurry, creates new customers for your competitor.

*Small Sales.* At times small sales irritate salesmen and they feel that they can't waste time on five-and-ten stuff. Some customers may buy small for a while, but good service on small parts may cause them to give nice, large orders in time.

*Service.* Drop routine matters when a customer approaches. Some are very touchy and feel that they are being slighted if you let them stand around even for a few minutes. You may be doing something important but always remember that whatever you are doing won't run away, but a customer may.

*Customers Choice.* Learn individual likes and dislikes. When you

*(Continued on page 59)*



# THE CONSUMER WILL CHOOSE *FLASH-O-MATIC* Tuning

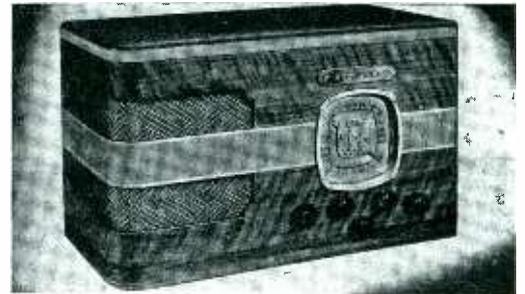
*Because It Has Instantaneous Sales Appeal!*

New in Design . . . Revolutionary in its simplicity . . . 6 different stations in less than a second! No complicated push-buttons . . . just a single knob that eliminates hand shifting and eye searching . . . can be operated blindfolded! That is why the radio buyer will choose the new Fada Radio with Flash-O-Matic Tuning . . . that is why Fada Radio offers the dealer "Sure-Fire" profit possibilities.

Fada offers the dealer "Stay-Sold Performance" in every price range . . . it is the radio line that has withstood the test of time.

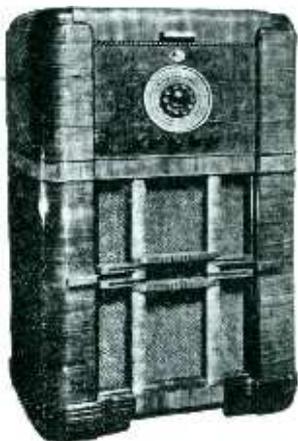


Fada Consoles feature the Flash-O-Matic 10 which tunes 10 different stations.



## FADA TABLE MODELS FEATURE "FLASH-O-MATIC" TUNING

The new Fada Table Models for 1938 are featured in AC and AC-DC with Flash-O-Matic Tuning and the new Fada Golden Glo-Dial. They are unsurpassed in beauty, performance and value.



Fada Radio-Phonograph combinations feature the Flash-O-Matic 10 which tunes 10 different stations.



### NEW FADA MERCHANDISER

The most effective silent salesman offered to the radio dealer. One display with three separate uses. Available through Fada's co-operative advertising plan.



See your Fada jobber or write direct.

**FADA RADIO & ELECTRIC CO., LONG ISLAND CITY, N. Y.**





**A BEST SELLER AMONG RADIO DEALERS!**

*The new—pocket size*

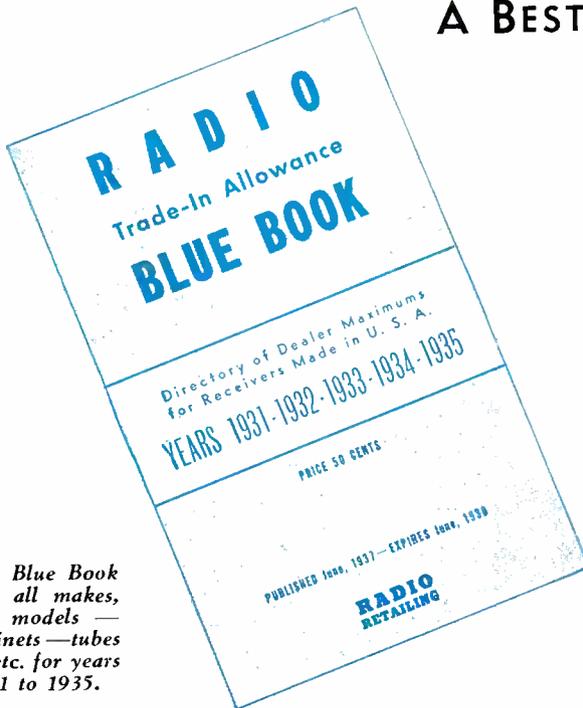
**“RADIO TRADE-IN ALLOWANCE BLUE BOOK”**

to

**—end the bickering and trouble over a fair trade-in price**

**and to**

**—help radio dealers make a decent net profit on set sales!**



*The Blue Book lists all makes, and models — cabinets — tubes — etc. for years 1931 to 1935.*

**Radio Dealers can use this handy "Trade-In Blue Book" to**

- end the wrangling over the proper "trade-in" allowance on an old radio set.
- establish a basis for appraising old receivers so that a legitimate net profit is obtained on the new set sale.
- give official appearance to the "trade-in" allowance quoted the customer.
- to offset competitive allowances which are out of line with a just valuation.
- refer to in front of customer and show that the figure the dealer quotes is in excess of the suggested allowance for any set.

**ORDER YOUR COPIES TODAY**

Do "trade-ins" make your store a battle ground? Every radio dealer has to face the problem of appraising "trade-in" sets on which too generous an allowance wipes out the net profit from the sale of a new receiver and too small an allowance drives the customer to a competitor's store.

To help dealer's arrive at a just "trade-in" allowance figure, Radio Retailing has published the first authentic, comprehensive directory of "trade-in" maximum allowances ever compiled for radio receivers made in this country from 1931 to 1935. This un-paralleled data appeared in Radio Retailing's June issue but the immediate demand for it was so wide spread that the entire directory was reprinted in a handy, pocket-size book and is now offered to the trade at a nominal price.

Every radio dealer should have this book on his counter and in the hands of his salesmen. It can be used to drive home to the customer a semi-official "trade-in" figure which is fair to the dealer and will insure a legitimate profit on the sale of any receiver. An investment of 50c in the **TRADE-IN ALLOWANCE BLUE BOOK** may save you hundreds of dollars in the course of the year and eliminate most of the headaches arising from lengthy arguments with your customers.

Order a copy of the "Radio Trade-in Allowance Blue Book" for your store today and you'll be surprised at its value as a year around selling aid. Simply attach the coupon to your letterhead and mail it with the fee.

**SINGLE COPIES  
50c Each**

**Quantity Rates as Follows:**

25-99 Copies—40c each

100-499 Copies—35c each

More than 500 Copies—25c each

All Orders for Less than 10 Copies Must Be Accompanied by Full Remittance in Currency, Check or Money Order

**USE THIS HANDY COUPON TO ORDER YOUR COPIES TODAY**

**RADIO RETAILING**  
330 W. 42nd St., New York, N. Y.

Gentlemen:

Attached is \$.....for which you are to send me .....copies of the handy, pocket-size "RADIO TRADE-IN ALLOWANCE BLUE BOOK" by return mail, postage pre-paid.

*Remittance Must Accompany This Order*

Name .....

Firm .....

Street .....

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

RR9-37

★  
★  
*Announcement*

On December 1st of this year your  
Grunow Distributor will display

*Grunow*  
**THERMENE**

—the most amazing development  
in refrigerator history . . . a com-  
panion line to the popular electri-  
cally powered Grunow models.

GENERAL HOUSEHOLD UTILITIES CO.  
CHICAGO, ILLINOIS

CHILLED BY

THE FREEZING

FLAME



# September

# NEWS

## 72 So Far

Manufacturers reserving exhibit space at October 1-3 parts show already numerous

NEW YORK—From managing director Ken Hathaway at the new offices of Radio Parts Manufacturers National Trade Show, Inc., 53 West Jackson Blvd., Chicago, came the following list of exhibit space reservations from equipment makers for the New York Radio Parts Trade Show as of August 31:

Aerovox, Brooklyn	Crowe, Chicago
Alpha Wire, New York	Drake, Chicago
American Mic., Los Angeles	Eby, Philadelphia
American Phen., Chicago	Electro-Acc.
Amperite, New York	Fort Wayne
Arcturus, Newark	Gen'l Ind., Elyria
Atlas, New York	Hammarlund, New York
Belden, Chicago	Hickok, Cleveland
David Bogen, New York	Hygrade-Syl., Emporium
Brush, Cleveland	Int. Res., Philadelphia
Bud, Cleveland	JFD, Brooklyn
Cardwell, Brooklyn	Jefferson, Bellwood
Centralab, Milwaukee	Kester, Chicago
Clarostat, Brooklyn	Krauter, Newark
Clough-Brengle, Chicago	Lenz, Chicago
Cont.-Diamond, Newark (Del.)	Lifetime, Toledo
Cornell-Dubilier, S. Plainfield	Magnavox, Fort Wayne
Coto-Coil, Providence	Mallory, Indianapolis
	Meissner, Mt. Carmel
	Muter, Chicago

National, Malden	Supreme, Greenwood
Nat'l Union, New York	Tech. App., New York
Ohmite, Chicago	Thordarson, Chicago
Operadio, St. Charles	Tohe Deutsch, Canton
Oxford-Tartak, Chicago	Triplett, Bluffton
Pioneer, Chicago	Tung-Sol, Newark
Precision, Brooklyn	United Sound, Chicago
RCA Mfg., Camden	United Trans., New York
Radiart, Cleveland	Utah, Chicago
Radio City, New York	Vulcan, Lynn
Radiotechnic, Evanston	Ward Leonard, Mt. Vernon
Raytheon, Newton	Ward Prod., Cleveland
Readrite, Bluffton	Webster Co., Chicago
Recoton, New York	Weston, Newark
Shure, Chicago	Wincharger, Sioux City
Simpson, Chicago	Wirt, Philadelphia
Solar, New York	
Sprague, No. Adams	
Stand. Trans., Chicago	

As previously announced, exhibits will be set up at Commerce Hall, Port Authority Building, while headquarters will be maintained at the Hotel Victoria. The two points are a short, convenient subway jump apart.

## RMA Board Expanded

Increased representation given to parts, accessories members

WASHINGTON—Providing more adequate representation, especially of parts and accessory manufacturers, seven newly-chosen directors were added to



**LADIES AND LADDERS**—"World's largest microphone" says Universal of Inglewood of this 6-ft., working instrument at present in California. It'll go to several jobbers soon for publicity purposes, says president James R. Fouch. With accessories?



**PARTSMEN GO FISHING**—On an expedition off the coast of Maine, left to right: *Morris Green* of Philadelphia's Radio Electric Service, *Charley Golenpaul* of Aerovox, *Aaron Lippman* of Newark, *Howard Rhodes* and *Jack Simberkoff* of Aerovox, *Hall Gayhart* of Milwaukee's Radio Parts Company, *Bill Schoning* of Chicago's Lukko Sales and *Harry Gerber* of Boston. The foot at the right belongs to *Lew Hatry* of Hartford's Hatry & Young

the RMA's Board at the last formal meeting held here.

New part and accessory division directors are: S. I. Cole of New York, J. J. Kahn of Chicago, H. E. Osmun of Milwaukee, and Ray F. Sparrow of Indianapolis. New set division directors are: P. S. Billings and Ernest Alschuler of Chicago and S. T. Thompson of New York.

The Radio Manufacturers Association board of directors is thus increased from 18 to 25 members.

## DETROLA GOES NATIONAL

**Announces new plan of radio-refrigerator distribution through jobbers, dealers**

DETROIT—Detrola Corporation, intensively covering the Michigan market since 1931, now spreads itself out into the national field, manufacturing radios and refrigerators in a new 300,000 sq.ft. plant, operating through distributors and dealers.

New merchandise, including an electric-tuning table model radio, was shown for the first time to Michigan dealers at the



**BATTLE, LAKE ERIE—John J. Ross (right), president of Detrola, engages in friendly fistcuffs with William J. Kappel of Pittsburgh**

Fort Shelby Hotel late in August by president John J. Ross, who announced that in 1936 his company stood in 6th place in the industry on the basis of sets produced. At this initial trade meeting director of sales Horace H. Silliman acted as toastmaster.

## New RCA "Selection Plan"

**Manufacturer will recommend that record distributors give logical dealers exclusive rights**

CAMDEN—From RCA comes word that it will henceforward recommend that record distributors divide their market areas into natural territories, select the one dealer in each apparently best able to push discs, give this dealer exclusive merchandising rights.

Although distributors will not be obligated to operate under this plan, it is nevertheless being strongly urged by company management in the belief that such concentration will be beneficial to the factory, the distributor and the dealer concerned.

Sales specialists have been appointed to carry this story to the trade, help distributors and dealers operate under the suggested plan.

## Gerstenberger Joins Clarion

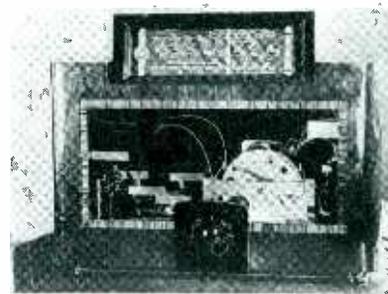
CHICAGO—R. B. Lacey, vice-president of the Clarion Corporation, has appointed Lloyd A. Gerstenberger, located at 2735 Newport Ave., Omaha, Nebraska, district manager for the Iowa and Nebraska territory.



**GRINNELL GATHERING—Grinnell Brothers of Detroit, laying extensive plans for promotion of Detrola radio, held a dinner late last month at the Fort Shelby Hotel, invited representatives of the Michigan Detrola Sales Company**



**DETROLA DEALERS—Michigan Detrola Sales Company unveiled new Detrola radio, featuring an electric-tuning table model, for these dealers at Detroit's Fort Shelby Hotel August 26. Detrola president John J. Ross attended, director of sales Horace H. Silliman acted as toastmaster**



**ONE KNOB TUNING—This radio, exhibited at a recent German radio show, employs one ball-jointed knob performing all tuning functions. By moving it horizontally, or vertically, the user may adjust volume, change bands. Rotating it handles main tuning in the usual manner**



**PRIZE—Four-feet high, silver on an ebony base, named "Spirit of Radio," this trophy is to be awarded by the Emerson Radio & Phonograph Corporation to the distributor turning in the best 1937-38 business record**

## Cornell-Dubilier Expansion

SOUTH PLAINFIELD—To meet heavily increased demand for industrial capacitors the Cornell-Dubilier Electric Corporation has just taken over the manufacturing equipment and sales staff of the Electric Machinery Manufacturing Co., Inc., Minneapolis.

## 32 Volts Thrown Open

SIOUX CITY—The Wincharger Corporation has just announced a new set-up affecting 32-volt, 650 watt Giant Winchargers. Wincharger service stations are now being authorized all over the country, will act as dealers.

Margin on the line was jacked up August 15, making it more attractive to radio dealers, farm implement houses electrical contractors and battery outlets in rural territories.

# RAYTHEON

*Alone*

IS RESPONSIBLE FOR  
THE SALE OF OVER...

**3,000,000  
FARM RADIOS!**

Over ten years ago RAYTHEON developed and pioneered the 2-volt battery tube. It was the improvement the engineering world was waiting for—to make possible real radio reception in rural localities!

Since then, there has been no outstanding development until the announcement of the new RAYTHEON LOW DRAIN cathode-type tubes which permit AC operation from battery sets without excessive battery drain.

Again RAYTHEON was responsible for tripling the sales of battery receivers! When you buy replacement battery tubes with the name RAYTHEON on the base you are getting tubes made by the engineers who invented them with the added advantage of proven field experience!



# RAYTHEON

445 Lake Shore Drive, Chicago, Ill.  
55 Chapel Street, Newton, Mass.

421 Lexington Ave., New York, N. Y.  
355 Howard St., San Francisco, Cal.

415 Peachtree St. N. E., Atlanta, Ga.

## FOR BETTER RECEPTION



**RED HEAD'S DADDY**—J. P. ("Jimmy") Burke, sales manager of Consolidated Wire & Associated Corporations' Condenser Division, points with pardonable pride to three fast-moving "Red Head" brand condensers

## Consolidated In Fall Drive

New production control system plus aids for trade announced

CHICAGO—Consolidated Wire & Associated Corporations' Condenser Division, of which J. P. Burke is sales manager, has just announced a new production control system designed to speed up deliveries, has formulated a policy designed to increase movement of "Red Head" capacitors from distributors stocks. Included is a cooperative advertising plan, counter and window displays.

Burke, in addition to directing Condenser Division sales, is now checking on manufacturing operations, conferring with his engineering staff relative to sales features such as flexible mountings, keeping his finger on the pulse of production.

## Feld On Fair-Trade

Co-author of New York act, in letter to GE, says basing of used set allowance on new set price is not legal

NEW YORK—An opinion of vital importance to all manufacturers, distributors and retailers particularly those in the radio industry and in allied industries in which the problem of trade-in merchandise is a factor, was made public August 20 in a letter written by the Hon. Senator A. Spencer Feld, co-author of the New York State Fair Trade Act which bears his name. His letter is as follows:

Mr. D. W. May, District Radio Sales Manager  
General Electric Company  
570 Lexington Ave.  
New York City.

My dear Mr. May:

Sometime ago you submitted to me a so-called Fair Trade contract as issued by your company, under the Feld-Crawford Act and asked me to give you my opinion concerning its legality.

I have compared your contract with other

similar contracts in the trade and I find, after careful consideration, that your contract is a reasonable one and covers all the ramifications possible under the Feld-Crawford Act, taking into consideration every legal phase of this act.

You also asked me to give you my opinion as to the so-called trade-in allowance provision contained in your contract. I personally feel that your clause covering this trade-in allowance is the best possible way of handling this situation. There is no way in which anyone can tell in advance the value of a set to be taken in for a trade-in-allowance and the only possible way to accomplish this and keep within the law is to provide for a reasonable value on the old set.

To permit a pre-determined value on an old set for trade-in-allowance would be equivalent to nullifying the provisions of the Feld-Crawford Act and would not, in my opinion, be sanctioned by the Courts. Any allowance based solely on a percentage basis of the list price of the new set would be equivalent, in my opinion, to the giving of an additional discount in violation of the Feld-Crawford Act and therefore not legal. This allowance must be based upon a reasonable basis in order to comply with the law.

The intent of the Feld-Crawford Act was to protect the dealer as well as the customer from unfair trade practices. Therefore, it is my opinion that the Courts will not enforce a contract which provides for a percentage basis of a trade-in allowance on the amount paid for the new set, but on the other hand will enforce a contract which provides for a reasonable allowance based upon the actual true value of the old set.

My opinion has been given to you after careful thought taking into consideration all the conferences that were held during the pendency of this Act before the Legislature and after its passage.

Yours very truly,  
(signed) A. Spencer Feld

## Miles Moves

NEW YORK—The Miles Reproducer Company has moved its service room to larger quarters at 812 Broadway.



**OPEN HOUSE**—Bob O'Reilly of Oak Manufacturing, who's firm treated 175 industry guests to a day at Crystal Lake, and Waters of Scott



**TRIUMPH TRIUMVIRATE**—Ed Doyle, Jim Kennedy and Jim McCarthy of Triumph romped off with the golf prizes awarded at an Oak Manufacturing Company party held 30 miles northwest of Chicago recently

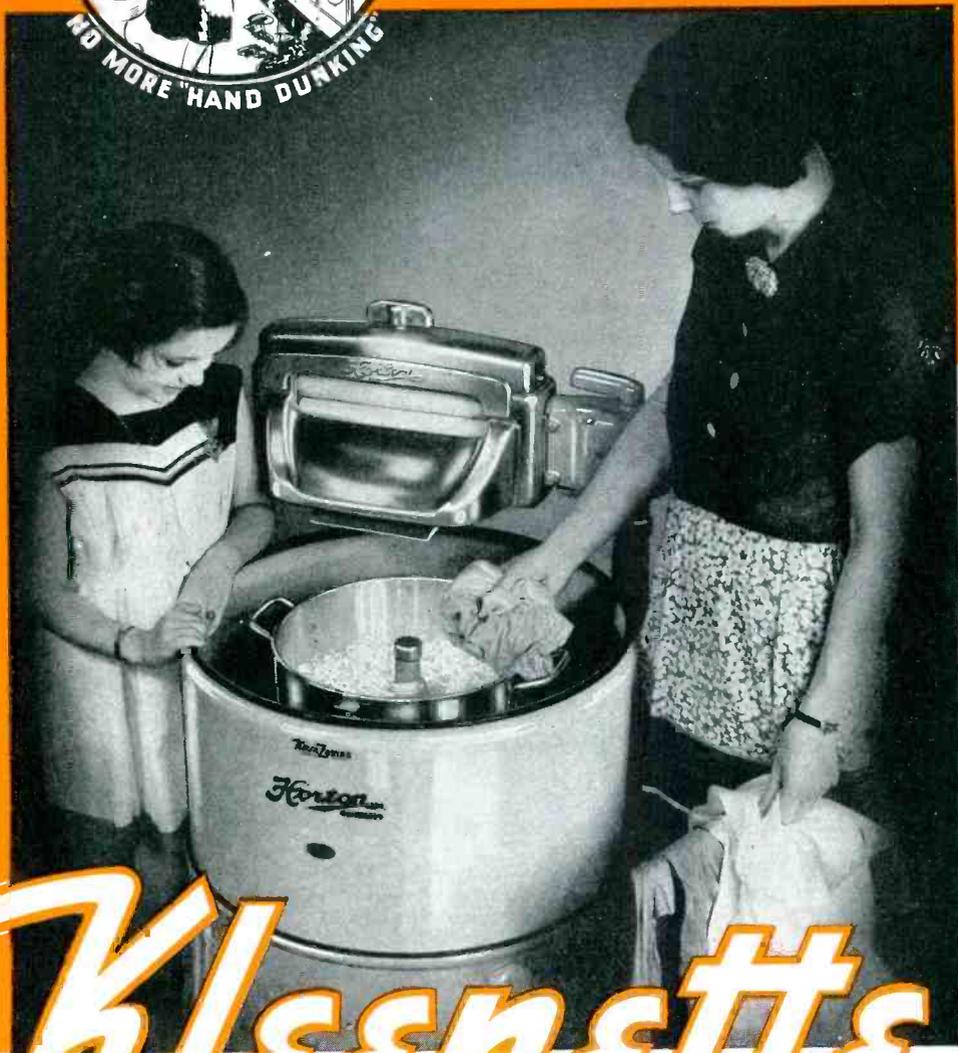


**CONQUERORS RETURN**—So successful was a recent tour of this trailer owned by Hudson Valley Asbestos of Albany that the entire staff turned out to celebrate when it rolled home. Left to right: Alfred C. Laroe, Henry Kuhl, Thomas Cerasoli, William Fraser, (Stromberg) Mildred Bell, Marshall A. Pursel, Frank Hollands, Clément Clifford, Dean Cortright, Roy Van Alstyne and Eldred Adams



# Everybody's talking about this **NEW** Personal **WASHER**

**\$10.00**  
**MARVEL**



# Kleenette

PATENT APPLIED FOR

by **HORTON**



### WASHES

Baby Clothes, Diapers, Playsuits, Lingerie, Stockings, Hankies, Socks, Curtains, Girdles, Blouses, all Fine Fabrics and Garments.

### DRY CLEANS

*(in non-inflammable fluid)*  
Gloves, Dresses, Neckties, Drapes, Chair Covers, Sweaters, Blouses, Spats, Scarfs and many other garments.



### TINTS AND DYES

Sweaters, Dresses, Skirts, Gloves, Blouses, Undies, Doilies, Drapes, Scarfs, Chair Covers, etc.



### STERILIZES

Baby's Things, Handkerchiefs, Clothes from sick-room; protects Baby's health, prevents spread of colds and sickness!



For midweek washings—for laundering fine fabrics—for dyeing and tinting—for sterilizing and bleaching—for dry cleaning (with non-inflammable fluid)—for every sort of “between-wash” cleansing job, *here is the modern wonder of washing machine development!*

No moving parts inside Kleenette tub. Nothing to wear out. No rubbing, no scrubbing, no wear on clothes—just a gentle, positive water action that cleanses and protects lightest, finest garments!

Every woman wants Kleenette the instant she sees what amazing help it gives her—how it saves her time, work and money—lengthens the life of her most prized possessions! No more “dunking” filmy garments in the basin—no more “wash bowl hands”!

Think of the women *you know* who will want Kleenette! Picture the tremendous sales possibilities

in this *new complete home laundering system* by Horton, originator of Kleen-Zoning!

Right now, Mr. Dealer, get the whole story. Wire, or send the coupon. Quick action means quick profit. No obligation—act at once!

**HORTON MANUFACTURING CO.**  
906 OSAGE ST., FORT WAYNE, IND.  
*With no obligation to us, rush full story of Kleenette and the Horton proposition.*

Name \_\_\_\_\_  
Street \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_

*(Paste on back of postcard, or insert in envelope, and mail NOW!)*

**HORTON WASHERS, IRONERS, SINCE 1871**

## RURAL ELECTRIFICATION ADMINISTRATION

High Line Construction Contracts  
Awarded by the REA since last issue  
of RADIO RETAILING

ALABAMA Cherokee County Electric  
Membership Corp., Center, 226 miles.

CALIFORNIA Surprise Valley Electri-  
fication Corp., Alturas, 349 miles.

GEORGIA Crisp Farmers Cooperative  
Association, Cordele, 57 miles.

INDIANA Wabash County Rural Elec-  
tric Membership Corp., Wabash, 270  
miles. Hancock County Rural Electric  
Membership Corp., Greenfield, 321  
miles.

IOWA Maquoketa Valley Rural Elec-  
tric Corp., Anamosa, 286.6 miles. Ben-  
ton County Electric Cooperative, Vin-  
ton, 187 miles. Greene County Rural  
Electric Cooperative, Jefferson, 85.5  
miles.

KENTUCKY Meade County Rural Elec-  
tric Cooperative Corp., Brandenburg,  
117 miles. Green River Rural Electric  
Cooperative Corp., Owensboro, 294.5  
miles. Owen County Rural Electric  
Cooperative Corp., Owenton, 117.75  
miles.

MARYLAND Southern Maryland Tri-  
County Cooperative Assn., Welcome,  
165 miles.

MICHIGAN Southeastern Michigan  
Rural Electrification Cooperative, Bliss-  
field, 125 miles. Ingham County Elec-  
tric Cooperative, Inc., Eaton Rapids,  
340 miles. Presque Isle County Elec-  
tric Cooperative Assn., Onaway, 72.8  
miles. Thumb Electric Cooperative of  
Michigan, Bad Axe, 3 sections, 1612  
miles. Fruit Belt Electric Cooperative,  
Paw Paw, 156 miles.

MINNESOTA Wells Electric Associa-  
tion, Wells, 38.5 miles. Brown Rural  
Electrical Association, Sleepy Eye,



**GRUNOW ACQUISITION—M. W. (Tommy) Thompson**, formerly with Stewart-Warner's radio and then this firm's Alemite division, becomes General Household Utilities advertising and sales promotion manager, succeeding Tod Reed, who recently joined the sales staff of the magazine "Look"



**MAGIC KEYBOARDERS**—Massachusetts dealers gathered in the auditorium of the John Hancock Life Insurance building in Boston August 23 to see presentation of the new Stewart-Warner line by Hunt-Marquardt, Inc., distributor. Seven hundred attended. Count 'em!



**ST. PAUL STEWART-WARNERITES**—Kelly-How-Thompson, distributor, packed 'em in late in August, showing Stewart-Warner's "Magic Keyboard" sets in this area for the first time

169.5 miles. South Central Cooperative Electric Assn., Fairmont, 196 miles. Freeborn-Mower Cooperative Light & Power Assn., Albert Lea, 163 miles. Wright-Hennepin Cooperative Electric Assn., Cokato, 151.5 miles. Nobles Cooperative Electric Assn., Ellsworth, 216 miles.

MISSISSIPPI City of Holly Springs, 55.67 miles.

MISSOURI Intercounty Electric Co-  
operative Assn., Licking, 133.7 miles. Howard County Electric Cooperative Assn., Fayette, 124 miles.

MONTANA Ravalli County Coopera-  
tive Electric Assn., Corvallis, 108.8  
miles. Yellowstone Valley Electrifica-  
tion Assn., Huntely, 134.7 miles. Jef-  
ferson Valley Rural Electric Coopera-  
tive, Whitehall, 40 miles.

NEBRASKA Southern Nebraska Rural  
Public Power District, Hastings, 430  
miles. Eastern Nebraska Public Power  
District, Lincoln, 421 miles.

NEW JERSEY Tri-County Rural Elec-  
tric Company, Inc., New Brunswick,  
126 miles.

NORTH DAKOTA Baker Electric Co-  
operative, Inc., Baker, 48.5 miles. Cass  
County Electric Cooperative, Inc.,  
Kindred, 457 miles.

OHIO Licking Rural Electrification,  
Inc., Newark, 143.5 miles. Tri-County  
Rural Electric Cooperative, Inc., Swan-  
ton, 160 miles.

OKLAHOMA Caddo County Electric  
Cooperative, Albert, 160.97 miles.  
Oklahoma Inter-County Electric Co-  
operative, Norman, 218.75 miles.

OREGON Nehalem Valley Cooperative  
Electric Assn., Jewell, 50.5 miles.

TEXAS Hill County Electric Coopera-  
tive, Inc., Itasca, 289 miles. Limestone  
County Electric Cooperative, Inc.,  
Mart, 249 miles. Denton County Elec-  
tric Cooperative, Inc., Denton, 552  
miles.

VIRGINIA Northern Neck Electric Co-  
operative, Warsaw, 161 miles.

WISCONSIN Chippewa Valley Elec-  
tric Cooperative, Cornell, 59 miles.  
Taylor County Electric Cooperative,  
Medford, 230 miles. Clark Electric  
Cooperative, Neillsville, 690 miles.  
Richland Cooperative Electric Assn.,  
Richland Center, 129.2 miles. Vernon  
County Electric Cooperative, Westby,  
505.5 miles.

WYOMING Wyrulec Company, Lin-  
gle, 53.5 miles. Wheatland Rural  
Electric Assn., Wheatland, 56.5 miles.

# Ride the Crest of the Wave!

with **Sentinel** the **DOUBLE PURPOSE RADIO**

## and **RAD-O-FONE** The **PRIVATE COMMUNICATION SYSTEM**



Superlative  
Radio  
Performance

*Plus*

A Private  
Communication  
System



**CITY RADIO FARM RADIO**

from  
**\$21<sup>95</sup>** to  
**\$99<sup>95</sup>**

from  
**\$26<sup>95</sup>** to  
**\$89<sup>95</sup>**

With every Modern Radio Feature  
Plus **RAD-O-FONE**

## Sweeping Ahead to Greater Sales and Added Profits!

Sentinel Dealers are riding the crest of the wave—the wave of buying by the Sentinel-conscious public—a wave that's smashing its way to new highs in sales and profits.

No wonder! Never before has any radio dealer had so much to offer his customers. In the cities—on the farms, RAD-O-FONE has captured public approval, approval that keeps the Sentinel Dealers' cash registers working overtime.

Even with RAD-O-FONE this sensational Sentinel 1938 Line would still be outstanding! It's got everything, Automatic Tuning, Splendid New Performance, Value, New Low Prices, National Advertising and a *Complete Line* with 110 volt AC Models and 2, 6, and 32 volt Farm Models, every model in every classification a set that you can safely **RECOMMEND** to your customers—*everything* needed to make Sentinel the outstanding "Profit Line of 1938!"

Ride the Sentinel Wave to New Profits. Send in the Coupon today!

### ★ WHAT IS RAD-O-FONE?

The most sensational radio development in years—another exclusive Sentinel feature! RAD-O-FONE provides the equivalent of TWO radios—radio in one location, second speaker in another location—and a control system that allows conversation between the two!

**MAIL THIS COUPON NOW!**

#### SENTINEL RADIO CORPORATION

2222 Diversey Pkwy., Dept. RRS, Chicago, Illinois

Please send me complete information on the 1938 Sentinel Line.

Name .....

Address .....

**Sentinel**  
THE DOUBLE PURPOSE RADIO

## Certificates For Shops

Supreme awarding prizes to servicemen maintaining complete set of instruments

GREENWOOD, MISS.—The Supreme Instruments Corporation is at present conducting a survey to determine just what instruments are owned by radio servicemen, will award gold certificates to shops which, in the opinion of its engineering staff, are considered completely equipped.

Interesting feature of this new survey is the fact that Supreme will send, along with certificate awards, copy written to be used in the completely equipped shop's local newspaper as publicity calculated to swell customer lists.

## Kadette Plant Expands

ANN ARBOR—C. A. Verschoor, president of the International Radio Corporation, has just approved a new two-story modern factory addition which will bring to his company 12,000 additional sq.ft. of needed floor space. The addition will contain a modern machine shop, enlarged shipping and receiving facilities, permit the sales and advertising department to have more room.

From Gere Burns, sales promotion manager, comes word that in addition to furnishing advertising mats to dealers through distributors Kadette is now making these available to dealers through newspaper offices in their own towns. A service organization contacting 5,500 small town newspapers is taking care of the details of this new plan.

## Ruralite Speeds Up

SIoux CITY—Jimmie Jones, president of the Ruralite Engineering Company, advises that factory facilities are being expanded so that this firm may turn out 200 chargers per day. Increase in demand from rural areas makes this move necessary, he says.

## Regal Licensed

NEW YORK—The Regal Amplifier Manufacturing Corp. of 14 W. 17th St., has secured a license to manufacture and sell public address and inter-communication equipment from Electrical Research Product, Inc., under patents owned or controlled by Western Electric, A.T.&T. Trade-name will be "Ramco".

## FRONT MEN FOR FACTORIES

DETROLA—Announces appointment of new distributors: Elliot-Lewis Electrical Co., Inc., Phila.; Emmons-Hawkins Hardware Co., Huntington, W. Va.; Refrigeration and Appliance Corp., Cleveland; Sanford Samuel Corp., New York.



**CARRINGTON TO C-B—"Gene" Carrington, well known to the industry, particularly in the Chicago area, has just joined Clough-Brenigle, where he will head a new division soon to be announced**



**CUBAN COCKTAIL—A toast, at the successful conclusion of RCA-Victor's first Cuban convention. Left: Julian Lastra of Humara & Lastra. White coat: Tom Joyce, RCA's advertising manager and the principal speaker at the convention. Camera fiend: E. J. Anzola of RCA's advertising department.**

EMERSON—Richmond Hardware, branch in Richmond, Va., now has Virginia and central North Carolina. Mayflower Lamp distributes in St. Louis territory, Cloud Brothers has the line in northern Indiana and southwestern Michigan, out of South Bend. Williams Distributing of Clarksburg, W. Va., with a branch at Charleston, covers West Virginia, southeastern Ohio and northeastern Kentucky. Midland Instrument of Billings, branches at Butte and Great Falls, has Montana and northern Wyoming. Inland Radio of Spokane covers eastern Washington and Idaho north of and including Idaho county. Home Electric handles western Washington as far south as Lewis and Pacific Counties, also Alaska, office in Tacoma.

GIRARD-HOPKINS—Following new representatives appointed: R. A. Adams of Detroit, all of Michigan; A. T. R. Armstrong & Co., Toronto, all of Canada; Nat Spitz, New York, covering metropolitan area; A. H. Baier, Cleveland, Ohio territory.

HOWARD—J. H. Weymouth appointed district sales manager for Texas and W. Louisiana.

New distributor appointments are: Birmingham Electric Battery Co., Birmingham, Ala.; Glasgow-Allison Co., Charlotte, N. C.; Hatry and Young, Hartford; Kaemper-Barrett Corp., San Francisco; Nelson Hardware Co., Roanoke, Va.; R. M. Rolston, Inc., Kalamazoo, Mich.; Southern Sales Co., Oklahoma City, Okla.; Taylor Supply Co., Harrisburg, Pa.

C. C. Smoot, San Francisco, and W. P. Swartz, Los Angeles, new factory representatives for entire west. E. T. Rice to cover New England. R. B. Noll and Jean Mannion, Chicago, for Middle West.

## DEALER HELPS

GENERAL ELECTRIC, Lamp Division, Cleveland, has just released three free booklets to aid lamp sales. "Three Second Selling" gives 58 ways to more and larger sales; "You Can Do It Too" tells actual experiences of 47 Mazda agents, shows various window displays. Technical information on determining how much light is necessary is explained fully in "Light Conditioning."

SENTINEL NEWS—Shows complete line of the Sentinel Radio Corp. 2222 Diversey Parkway, Chicago. Lists farm radios, gas charger, wind-chargers and other accessories. Available free.

SOLAR—Novel 3 color counter display card for showing "Little Giant" capacitors. In black, red and silver, with easel back; suitable for wall, counter or window. Write Solar Mfg. Corp., 599 Broadway, New York City.

ELECTRO-VOICE new bulletin contains new game, lists 20 popular questions of the I. Q. type, answers given on another page. New, interesting, humorous, valuable as review data for readers.

AEROVOX — Fifteenth anniversary catalog. Large 32-page book lists complete line of condensers and resistors. Eight pages of exact duplicate replacement condensers, covering practically all standard set requirements.

KADETTE—Novel set display panels. Accommodate 6, 7 and 10 table receivers. Available to dealers in three types, 84 in. high, 57 or 51 in. wide, with table-like shelf 16½ in. deep.

FADA—A four section set display has just been made available. Sections may be used individually or combined. When all four sections are combined it houses 11 table models and 2 floor models. Floor models are provided with a platform trimmed in enamels and chromium.

For the table sets, the lower section of the display has built-in compartments for 4 models, the upper section holds up to 8 sets on table top platforms. Unusual and effective lighting increases the beauty of the display. Comes complete with lamps and necessary fittings.

# Money in the Bank For You!



THAT'S WHAT THESE TWO SENSATIONAL, NEW RCA VICTOR SELLING HELPS MEAN!  
THEY'LL WORK FOR YOU LIKE BEAVERS—BRINGING HOME THE BACON  
IN THE FORM OF GREATER VOLUME AND INCOME.

# 1

## RCA Victor ELECTRIC TUNING CONTEST!

Designed to pull hundreds of new prospects into your store where you can make demonstrations and sales—this great contest begins September 20th—runs for 5 weeks. And during those weeks you'll have chance after chance—every day—to make more money!

There's no doubt about this contest's pulling power. It will bring the people into your store in flocks and droves because it's an *easy* contest—and a *free*

one... because every one of the \$50,000 worth of prizes is a valuable prize... because 1022 prizes are *guaranteed* to persons in your territory each week... because local newspaper advertising will tell everyone in your community about it—and send them to your store for demonstrations and entry cards! Get behind this spectacular contest—push RCA Victor at every opportunity—and your sales will grow bigger each day!

# 2

## A MAGAZINE WITHIN A MAGAZINE! RCA's "LISTEN" IN LIFE!

The Aug. 16th issue of Life presented to America the most revolutionary advertisement of modern times. It was a "magazine within a magazine", 6 pages, run by RCA and called LISTEN.

LISTEN is a dramatic picture "magazine". Each month it tells the RCA story in a new, different, refreshing way—a way that guarantees consumer reading. LISTEN is going to

make millions conscious as never before of the great part RCA plays in radio and sound entertainment. It's going to inspire new and greater public confidence in the RCA trademark. It's going to mean easier selling for dealers who feature RCA products—and will make every RCA Victor dealer a bigger man in his community.



# RCA Victor

RCA MANUFACTURING COMPANY, INC., CAMDEN, N. J.

A SERVICE OF THE RADIO CORPORATION OF AMERICA

## 300 MILLION

RCA RADIO TUBES HAVE BEEN BOUGHT BY RADIO USERS... IN TUBES, AS IN RADIO SETS, IT PAYS TO GO RCA ALL THE WAY!

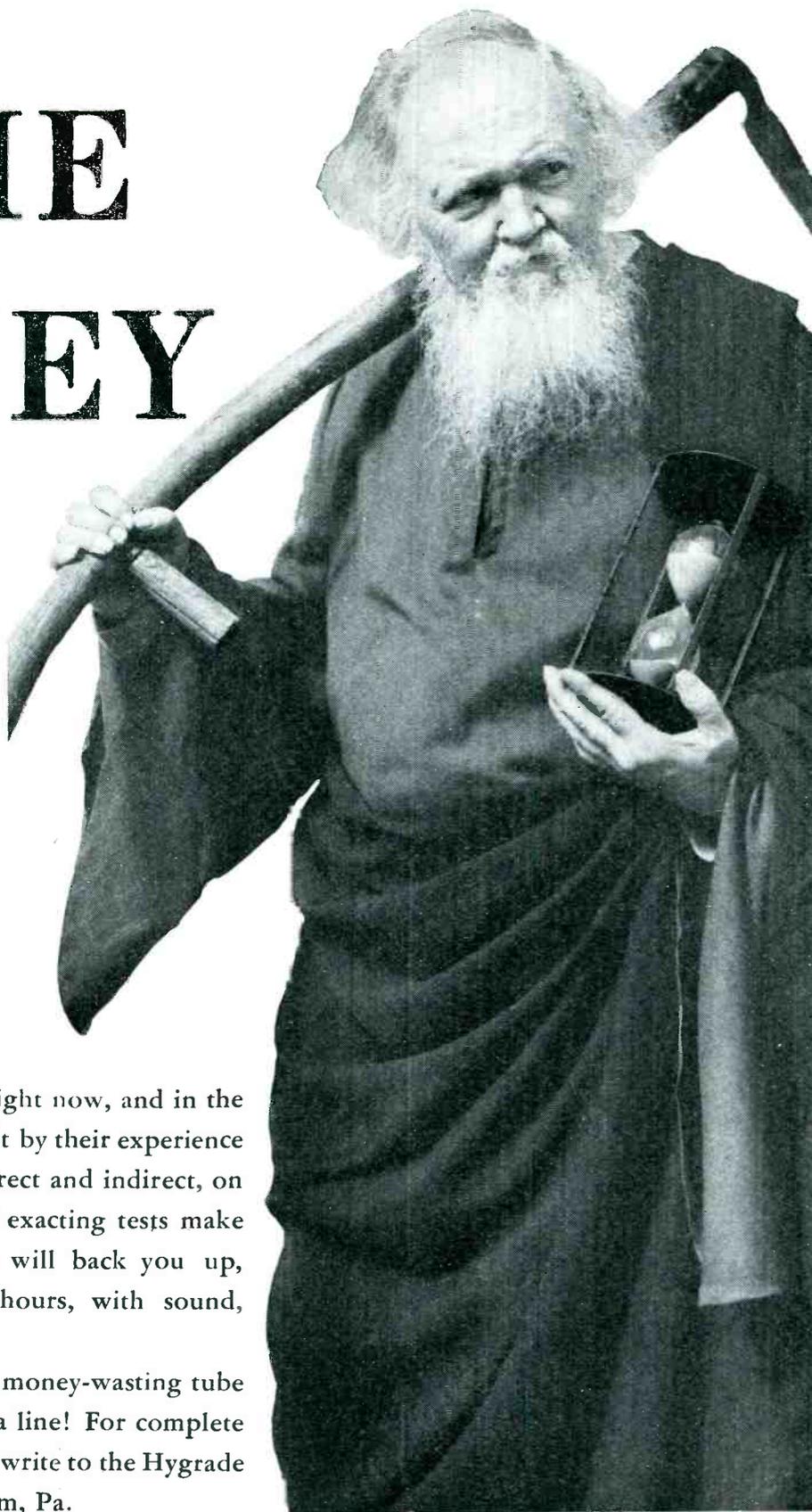
# TIME IS MONEY

***Why waste both in defective tube replacements, when there's a line like Sylvania on the market?***

Poorly-functioning or defective tubes can raise the devil with a retailer's business. Tube replacements waste time and—according to that old proverb, Time itself is money.

Why trifle with so important, so vital an item? Thousands of dealers have found that the most profitable line of tubes—right now, and in the long run too—is Sylvania. Profit by their experience—and you'll make a profit, direct and indirect, on every tube you sell. Scores of exacting tests make sure that every Sylvania tube will back you up, through thousands of useful hours, with sound, dependable performance.

Rid yourself of time-killing, money-wasting tube troubles! Switch to the Sylvania line! For complete sales and technical information, write to the Hygrade Sylvania Corporation, Emporium, Pa.



# SYLVANIA

THE SET-TESTED  
RADIO TUBE

# PREVIEW of NEW PRODUCTS

## MAJESTIC

Majestic Radio & Television Co.  
2600 W. 50th St., Chicago, Ill.

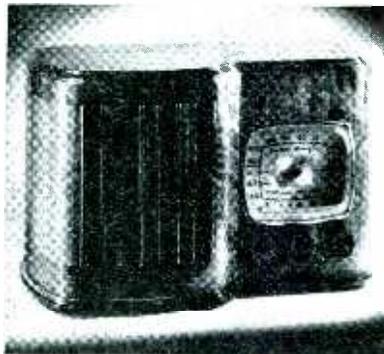


**1656 CONSOLE**—12 push button automatic radio eye tuning; stations are logged at front of cabinet; 16 tubes; 4 tuning bands; phonograph attachment; 12 in. speaker in acoustically treated chamber; cabinet of highly polished matched quarter-striped, figured butt and Oriental walnut woods

## EMERSON

Emerson Radio & Phonograph Corp.  
111 Eighth Ave., New York, N. Y.

**AM-169 COMPACT**—6 tube ac-dc superhet; American, foreign and police reception; "Miracle Tone Chamber"; 6 1/2 in. dynamic speaker; avc; tone control; beam power tube; cabinet of hand-rubbed walnut and Oriental wood; \$39.95



## WILCOX GAY

Wilcox Gay Corp.  
Charlotte, Mich.



**CHAIRSIDE RADIO**—Automatic telephone type dial; automatic muting; straight line glass scale; 14.8-50 and 170-550 meters; 5 tubes; modernistic cabinet blending light and dark woods for contrast; \$44.95

## DETROLA

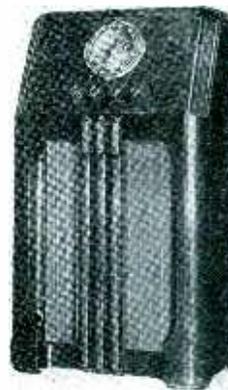
Detrola Corp.  
Detroit, Mich.

**ELECTRIC TUNING TABLE SET**—Said to be the first table set on the market with automatic tuning; eight stations may be pre-selected; two stations on the same frequency may be logged separately; Telabeam tuning eye; 8 tubes; pre-selector; High Q coils; 532-16,000 kc; \$69.50; Detrola also offers 8, 11 and 14 tube consoles, all with electric tuning



## GRUNOW

General Household Utilities Co.  
2650 N. Crawford Ave., Chicago, Ill.

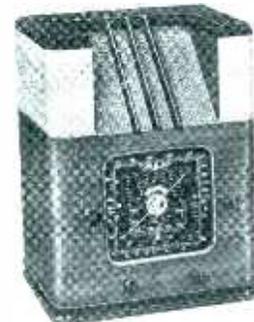


**653 TELEDIAL CONSOLE**—Inclined panel model with indirectly lighted, Glo-Gold Teledial set in a grained, center-matched walnut panel that has been tipped back at a moderate angle for convenient tuning; 6 tubes; ac; 550-18,000 kc.; 12 in. "morning glory" speaker; Teledial provides 10 buttons for fast automatic tuning

## ULTRAMAR

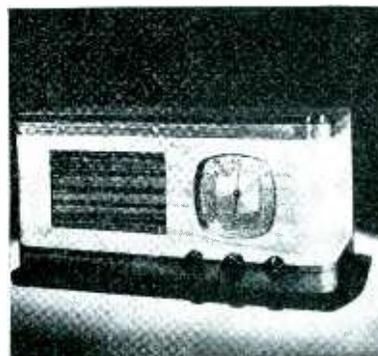
Ultramar Mfg. Corp.  
1160 Howe St., Chicago, Ill.

**1938 LINE**—24 models; all have new "World Spanner" master tuner, phantom station finder and "tunedelight" dial which includes the names and exact locations of all stations for each particular country; choice of models ranging from 5 to 20 tubes for all wave bands from 5 to 2100 meters



## KADETTE

International Radio Corp.  
Ann Arbor, Mich.



**MODEL K-1024**—10 tube chassis; exceptionally attractive cabinet of Prima Vera, maple finished with contrasting grains of walnut; large, easily read dial; \$19.95



# SCIENCE

*"Symbol of the Radio Age"*



## WORLD'S LOFTIEST SIGN ON RCA BUILDING, RADIO CITY, N. Y.

The new RCA sign stands 900 feet above Rockefeller Plaza. The letters—24 feet tall on the north and south sides of the building, 18 feet

on the west side—are constructed of 5000 pounds of solid aluminum. By night they are brilliantly lighted with a new kind of golden-amber helium

gas, contained in 2376 feet of specially constructed Claude-Neon tubing. The sign is visible for many miles around New York City.

# RADIO CORPORATION

RADIOMARINE CORPORATION OF AMERICA

NATIONAL BROADCASTING COMPANY

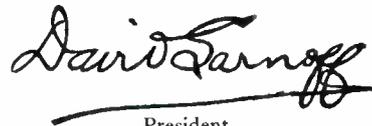
# ...Vanguard of Industry

“INDUSTRY today is following the vanguard of science into new and infinite realms of knowledge. It would be a rash astronomer who said that he had calculated the outermost limits of space, beyond which there is nothing. It would be a rash physicist who claimed that he had dissected the atom into its ultimate, indivisible fragments. Science and knowledge have no boundaries.

“So it would be a rash economist who predicted any limit to the tangible results of scientific thought in the form of new goods and services placed at the disposal of mankind. In fact, it is only by a constant development of new goods and services that we may expect to re-engage the man-power released by technological improvements in established industries. The market for every new commodity eventually reaches a saturation point and becomes primarily a replacement market, so that a more efficient technology reduces the number of workers needed in that field.

“But science is simultaneously creating new employment, both by the modernization of established industries and by the creation of new ones. In our own generation we have seen the automobile, the airplane, the motion picture, and the radio provide totally fresh fields of activity for millions of men and women. Many of our older industries have engaged scientists, with notable success, to develop new and remodel old products to meet the needs of a modern era.

“The industry which has not learned how to employ scientists to make it new, and keep it new, is doomed. Few industries are so stagnant as not to be aware of this; but there are some so conservative that the scientist is called upon to turn salesman and show them how modern science can rejuvenate them to meet present-day realities and survive.”



President  
Radio Corporation of America

## Your free copy of “TELEVISION” is ready!

This new book of more than 20 recent laboratory and field reports on the new art by leading RCA engineers will be sent without extra charge to all paid-up subscribers

to the RCA REVIEW, an outstanding quarterly journal of radio progress. \$1.50 per year (foreign, \$1.85). Address RCA Review, 75 Varick St., New York City.

# OF AMERICA *RADIO CITY, NEW YORK*

RCA MANUFACTURING COMPANY, INC.

RCA INSTITUTES, INC. • RCA COMMUNICATIONS, INC.

## MASTERFONE

Communication Engineering Corp.  
110 E. 42nd St., New York, N. Y.



**INTERCOMMUNICATOR** — Conversations may be initiated by either the master or remote station through use of "talk-listen" lever; complete privacy for all stations; from one to five remote stations may be hooked up; connected by a single, shielded microphone cable; master and one remote unit is \$32.50; additional remote stations, \$9.50 each

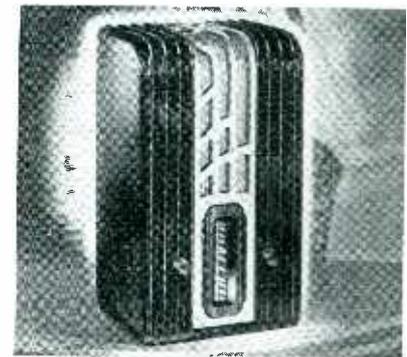
## STEWART WARNER

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



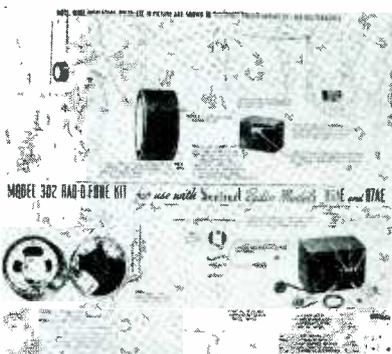
**MODEL 1883 AC-DC** — Front and ends are one continuous panel of center match stump walnut, decorated with rosewood inlays; dial panel is recessed in top and covered with plate glass; 6 tubes; 540-1720 and 5800-18200 kc.; 4 1/2 in. Magic Dial; avc; ac-dc

**MODEL 3041** — Unique design; performs and appears equally well in 3 different positions: upright, horizontal with dial on side or horizontal with dial facing upward; fits snugly in any corner of the room; 5 octal base glass tubes; 540-1720 kc.; avc



## SENTINEL

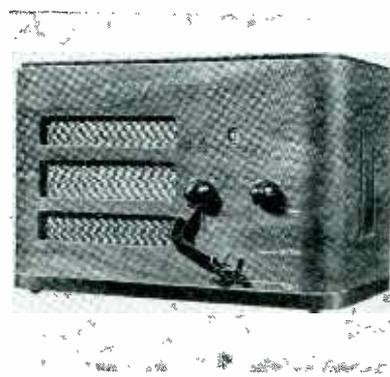
Sentinel Radio Corp.  
2222 Diversey Parkway, Chicago, Ill.



**RAD-O-FONE KIT** — Any owner of a Sentinel dual purpose radio can have a two-way telephone system by installing the Rad-O-Fone; consists of an external speaker unit which may be placed at any point up to 400 ft. away and the switch box to be placed on or near the radio; programs may also be heard on the extension speaker

## CROSLEY

Crosley Radio Corp.  
Cincinnati, Ohio



**CHATBOX** — Two-way loud speaker communication for home, business or industry; may be connected by plugging power cord into receptacle on, where electrical interference may be transmitted or where it is desired to operate the system without other units picking up conversation, a direct wire connection can be used; \$19.99 per single unit

## PRESTO

Presto Recording Corp.  
139 W. 19th St., New York, N. Y.

**JUNIOR SOUND RECORDER** — Records voices or musical instruments on records that can be played immediately; makes high fidelity, noise free records up to 12 in. diameter; plays any record up to 12 in. in diameter; connects to radio to record programs on the air; operates on 110 ac; \$149 complete with microphone, ready for operation



## INTERCALL

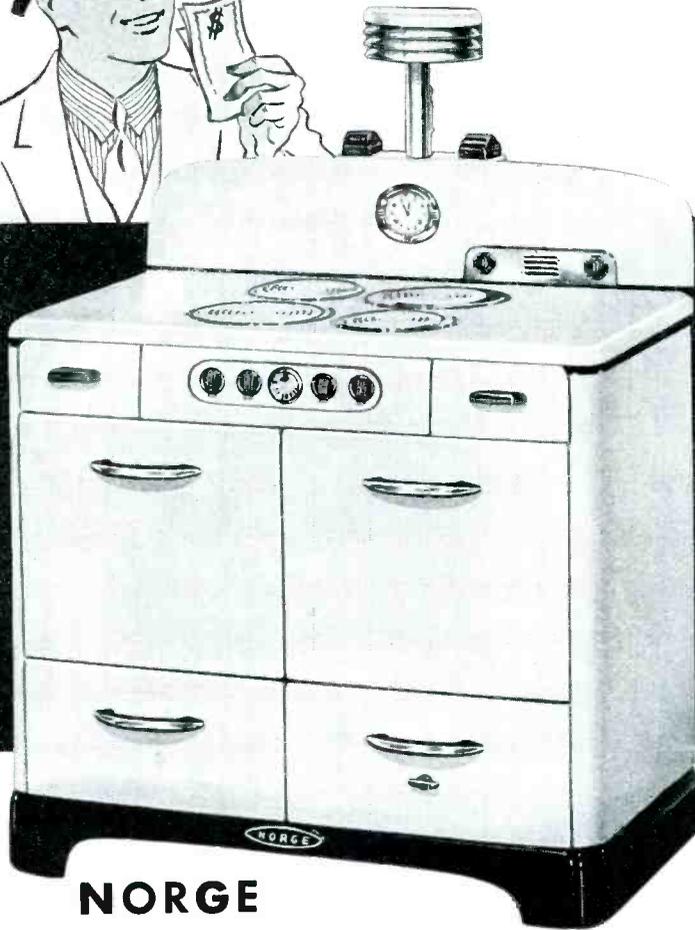
Intercall Systems, Inc.  
Dayton, Ohio

**INTEROFFICE SYSTEM** — Model U-5, illustrated, has a maximum of 5 stations; every station a master unit; may be had with or without ear phone which cuts out speaker for confidential conversations; Model U-10 has a maximum of 10 stations; a Bi-way system for quick two-way communication also offered; simple, light socket installation



**SHOW YOUR PROSPECTS**

*Bigger Values • Smarter Styles*



**NORGE  
ELECTRIC RANGE**

For styling, for features, for sound value that will arouse enthusiasm in even a lukewarm prospect—Norge Electric Ranges are the answer to a dealer's search for a line that creates its own momentum and keeps the dollars rolling into the cash register.



**ROLLATOR REFRIGERATION**

Again Norge leads with unequalled sales appeal in a complete line of Rollator refrigerators: Low-Temp, Deluxe and Standard models. 12 flexible interior arrangements in most Low-Temp and Deluxe models.



**AUTOBUILT  
WASHER**

**DUOTROL  
IRONER**

Sell Norge home laundry equipment and say goodbye to frequent service calls. The dependability of Norge washers and ironers is one of the biggest reasons for the great sales records dealers have enjoyed with this line.

**SALES RECORDS PROVE . . .**

that dealers who handle the Norge line of plus value home appliances, and consistently follow Norge sales training methods, increase their profit possibilities. Liberal finance plans make it easy to be a Norge dealer. A smashing sales promotion and advertising campaign backs your efforts. Investigate today!

**NORGE DIVISION Borg-Warner Corp.,**  
606-670 E. Woodbridge St., Detroit, Mich.

**NORGE**

**PLUS-VALUE HOME APPLIANCES**

ER-5  
ROLLATOR REFRIGERATION (Domestic and Commercial) • GAS AND ELECTRIC RANGES • WASHERS AND IRONERS • WHIRLATOR OIL BURNERS • GAS BURNERS • FINE-AIR FURNACES • COAL STOKERS • AIR CONDITIONING • CIRCULATOR ROOM HEATERS

## RCA VICTOR

RCA Mfg. Co.  
Camden, N. J.

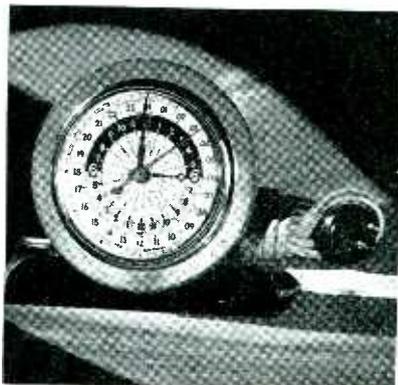


**MODEL 85E**—Effectively combines dual utility and beauty in design; big, easy to read dial; dynamic speaker; avc; 540-1720 and 5800-18,000 kc.; 5 tubes (6A7, 6D6, 75, 42, 80); lustrous lacquer cabinet, walnut finish; space for books or ornaments on lower shelf; \$44.95; one of four new low priced models

## GORDON

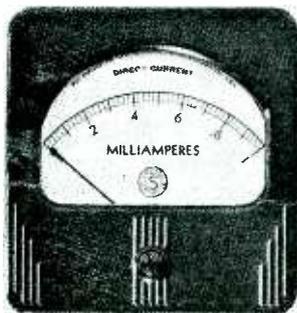
Gordon Specialties Co.  
440 So. Dearborn St., Chicago, Ill.

**WORLD CLOCK**— Gives time, at a glance, for all of the 24 time zones around the globe; attractively colored 24-hour dial plainly marked with GMT and standard time scales which also directly tell the local standard time in principal countries and cities; Waltham self-starting movement; modernistic in appearance; can be mounted flush in a panel



## SIMPSON

Simpson Electric Co.  
5216 W. Kinzie St., Chicago, Ill.

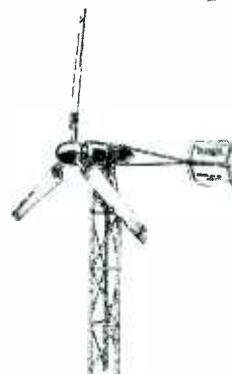


**PANEL INSTRUMENT**—Illuminated dial of non-warping translucent material; bridge type construction and soft iron pole piece which, it is claimed, give it greater accuracy and added stamina; available in both dc and ac volt meters, milliammeters and microammeters, as well as thermo couple ammeters and milliammeters in all conventional ranges; mounts in a round hole  $2\frac{3}{4}$  in. in diameter

## RURALITE

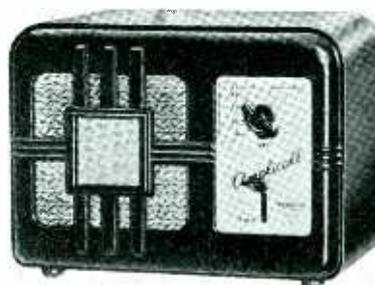
Ruralite Engineering Co.  
Sioux City, Iowa

**WIND CHARGER**— Driven by a 3-blade, variable pitch propeller, speed of which is automatically held at a maximum of 300 rpm; generator is of 4-pole type, 32 volt, 1000 watts and can easily be operated at an output up to 1250 watts; two types of tower mounting—one for guy tower, the other for any standard windmill tower



## WEBSTER-CHICAGO

Webster Company  
5622 Bloomingdale Ave., Chicago, Ill.

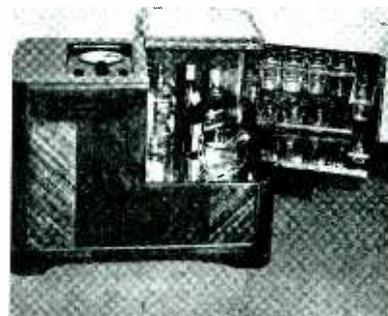


**FC-7R PAGING SYSTEM**—Answers demand for a small size call system for factories, hotels and institutions; it is a further extension of the inter-communicating systems, this time using a full 7 watt amplifier; master station can call any or all of the 5 stations at one time; any station may reply to master station

## RADIOBAR

Radiobar Co. of America  
7100 McKinley Ave., Los Angeles, Calif.

**40-10 ARMCHAIR**— Complete cocktail service; ample space for Seltzer and liquor bottles; chrome leak-proof mixing bar with tray space; 5 tube Philco radio; Oriental walnut cabinet with Satinwood inlaid borders; figured butt walnut is used for striking contrast; alcohol resisting lacquer; \$99.50



## CONVERSAFONE

Conversafone, Inc.  
17 W. 60th St., New York, N. Y.



**INTERCOMMUNICATOR**—Complete two-way system consisting of a master and one remote station; volume control, talk-listen and on-off switch on master station; instant and direct communication; operates on ac or dc; any ordinary two wire cable used for connecting purposes; \$19.95

# *a reason for* **Leadership-**

Readers can get from a publication only what the publisher puts into it editorially.

And what the readers receive for their money largely determines what the advertisers get for their advertising dollars.

Here is a major reason for the leadership of RADIO RETAILING—in reader interest and, resultantly, in advertising effectiveness.

Not even the calloused reader of radio trade journals is conscious of just how much more RADIO RETAILING is giving its readers than are its contemporaries. More in quantity . . . more in quality . . . more by every reasonable standard!

A recent study of the editorial contents of RADIO RETAILING and the next leading journal tells the story.

For the first six months of 1937, RADIO RETAILING contained:

34% more editorial matter than publication 'B'

41% more statistical material than publication 'B'

223% more description of new products than publication 'B'

56% more material devoted to service than publication 'B'

128% more space devoted to technical diagrams than publication 'B'

49% more material on price and set specifications than publication 'B'

Understandable, then, is the preference—established by no less than six recent reader interest surveys conducted by advertisers and their agents—of radio distributors, dealers and service men for RADIO RETAILING.

Understandable too, is the selection of RADIO RETAILING as their preferred publication by the 100 and more leading advertisers in the radio field.

## **RADIO RETAILING**

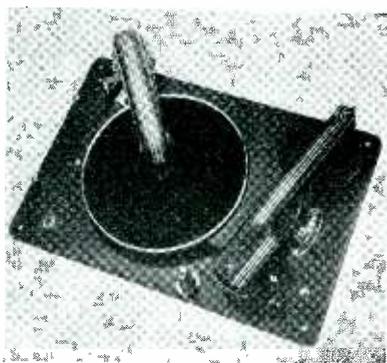
**330 WEST 42nd STREET, NEW YORK, NEW YORK**

\* Publication "B" is the next nearest journal in point of editorial content.

## RCA

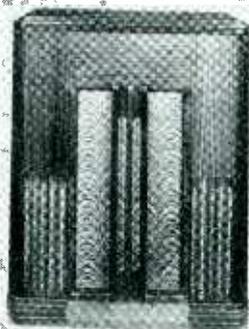
RCA Mfg. Co.  
Camden, N. J.

**AUTOMATIC RECORD CHANGERS** — Two models; one plays and automatically changes eight 10-in. records and repeats last record or will play and repeat 12-in. records when loaded singly, \$49.95; the other is a de luxe model with new crystal pick up and spring balanced tone arm; needle automatically adjusts to proper playing position; \$99.50; illustrated



## SONORA

Sonora Electric Phonograph Co., Inc.  
160 Varick St., New York, N. Y.

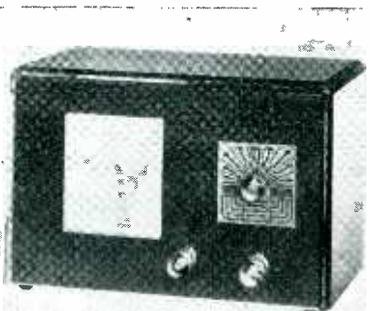


**MINUET PHONOGRAPH-RADIO**—Available with or without automatic record changer; phonograph equipped with amplifier rated at 25 watts; 12 in. electro-dynamic speaker; shortwave reception; console cabinet of pencil striped walnut is of simple design; album space for 75 records

## PRATT

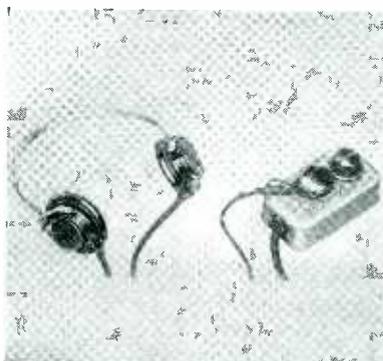
Pratt Mirror Glass Radios  
665 Fifth Ave., New York, N. Y.

**GLASS RADIOS** — Come in shades of blue, rose, crystal, green, amber, gold and gun metal; 6 tube superhet, long and shortwave; ac-dc operation; Quam speaker; avc.; illuminated dial; Pratt also makes a mirrored end table to place radio on and an all mirrored electric jump clock, an excellent accessory item



## TRIMM

Trimm Radio Mfg. Co.  
1770 W. Berteau Ave., Chicago, Ill.

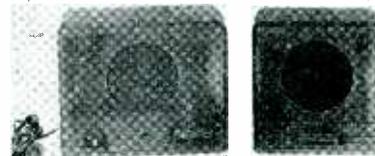


**HEADSET ATTACHMENT KIT**—Universal switching — headset or speaker or headset and speaker; silver blue wrinkle finish adapter box; ideal for bedside radio, providing reception without disturbing others, shortwave listeners and the hard of hearing

## TURNER

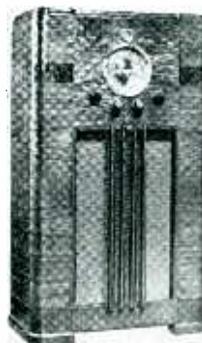
Turner Co.  
Cedar Rapids, Iowa

**TWO WAY SPEECH RELAY**—Outlying stations require no switch for receiving or originating a call; operator of master station can supervise one or all stations and can hold selective individual communication or operate entire system simultaneously; will carry up to 4 outlying stations; master station, \$52.25; desk type station, \$11.60; "loud call" speaker, \$12.70



## CROSLLEY

Crosley Radio Corp.  
Cincinnati, Ohio

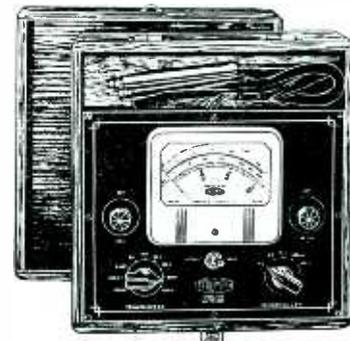


**DYNATROL II**—Incorporates Dynatrol electric tuning; makes use of an impulse motor rather than the conventional motor mechanism; dial pointer stops immediately upon release of electric tuning knob, does not coast; 11 tubes; 525-22,000 kc.; local-distance switch on the i.f. system; large, gold reflector Mirro type dial; Iris tuning indicator

## TRIUMPH

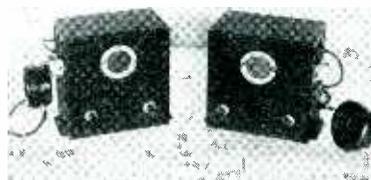
Triumph Mfg. Co.  
4017 W. Lake St., Chicago, Ill.

**320 MULTIRANGE ANALYZER**—A foundation meter having a 50 microampere movement which is connected to perform ac or dc voltage, dc milliampere, and resistance measurements; the most familiar values appear in the upper two-thirds of the scale divisions to facilitate accurate reading; \$38.50 f.o.b. Chicago



## PRIVAPHONE

Miles Reproducer Co., Inc.  
112 W. 14th St., New York, N. Y.

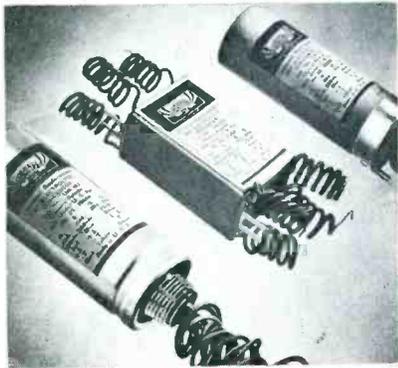


**INTEROFFICE** — Private telephone station system between two or more points; battery and buzzer included; 3 conductor cable is used between stations; for desk, shelf or wall installation

## CORNELL DUBILIER

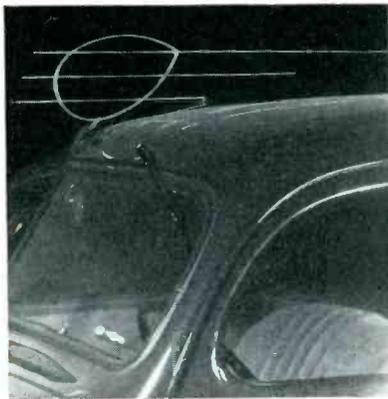
Cornell Dubilier Electric Corp.  
South Plainfield, N. J.

**UNIVERSAL REPLACEMENT ELECTROLYTICS**—New type UM series for ac-dc sets; by stocking only 3 replacement condensers any ac-dc receiver can be quickly serviced; color coded leads with color key clearly printed on label assures simple and accurate hook up



## MARS

Mars Mfg. Co.  
29 E. Madison St., Chicago, Ill.



**AUTO AERIAL**—Decorative custom-built antenna; no holes to drill; one type for all cars; rust proof with bright silver-like finish; can be installed in about 30 minutes; furnished with lead-in, cement, etc.; \$2.85, individually boxed; Mars also makes a bullet door antenna, \$1.85

## AMPERITE

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

**KONTAK MIKE**—Can be used on all vibration instruments such as the guitar, violin; no tools or drilling necessary; flat response from 40-9000 cycles; output of -40 db.; will operate on any amplifier having two or more stages of amplification; foot operated volume control tremendously increases range and effects of instrument



## BOND

Bond Electric Corp.  
New Haven, Conn.



**STYLO FLASHLIGHTS**—Two cell focusing spotlights; cases are striking in design, harmoniously combining the use of maroon or blue lacquer finish and chrome; new type 2-in-1, three position safety lock switch; new type bulb shock absorber; with lens and reflector assembly removed, case serves as candle light

Have You Investigated?

THE NEW 1938

**Majestic**  
MIGHTY MONARCH  
OF THE AIR!

... THE LINE OF  
**AUTOMATIC RADIOS**  
CHALLENGES COMPARISON ON  
EVERY POINT!

A COMPLETE  
MODERN LINE BACKED BY  
**AN EXCLUSIVE  
DEALER FRANCHISE**

**FACTORY-TO-DEALER PLAN  
OUTSTANDING CABINET  
BEAUTY... SALES-PERFORM-  
ANCE IN THESE ADVANCED  
FEATURES:**

- \* AUTOMATIC BASS COMPENSATION
- \* AUTOMATIC VOLUME EXPANSION
- \* ELECTRIC AUTOMATIC TUNING
- \* TELEMATIC AUTOMATIC TUNING

Complete Line of Table, Chairside and Console Models with Automatic Tuning... A Price Range That Permits Profitable Merchandising!

Write Today for Detailed Information

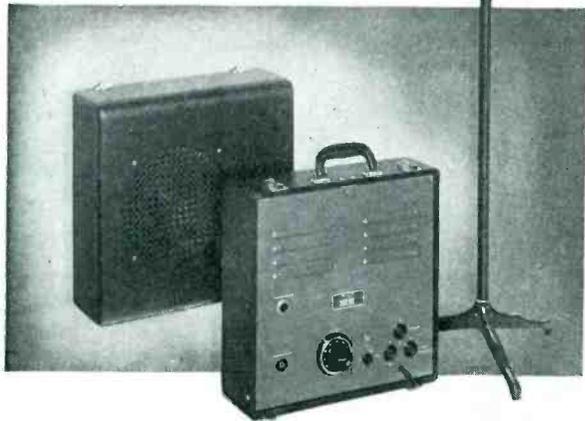
**MAJESTIC RADIO &  
TELEVISION CORP.**

2600 West 50th Street

Chicago

Cable Address: "Majestic—Chicago"

**NEW REMLER**  
Portable P. A. System



**• Outstanding Tone Fidelity**

Matched units . . . low price . . . a revelation in high fidelity! Ingeniously designed to occupy small space . . . light in weight . . . completely portable . . . ideal for permanent installation to serve audiences up to 1500 or more persons.

12 watt, metal tube voltage amplifier with push-pull "beam tube" power output stage. Ten inch high fidelity auditorium speaker in baffle equipped case with cables and plugs.

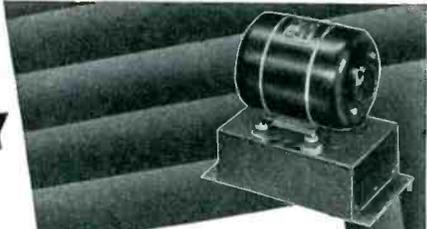
Complete with Remler Crystal banquet stand microphone, list price. . . . . \$120.00  
With floor stand microphone. . . . . 122.50

REMLER COMPANY, LTD.

19th at Bryant

San Francisco

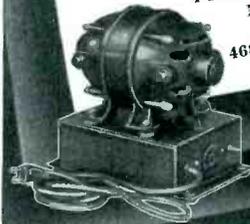
**"PINCO"  
POWER  
SUPPLY  
UNITS**



**DYNAMOTORS  
GEN-E-MOTORS  
CONVERTERS**

"PINCO" dynamotors, gen-e-motors and rotary converters provide the last word in power supply units for air craft, police, marine and auto radios; also for public address systems. Now widely used by leading air lines and municipal and federal agencies throughout the world. Available in a wide range of capacities for every requirement. Compact, light weight. Sturdily constructed to assure long dependable service. Write for complete information.

PIONEER GEN-E-MOTOR CORPORATION  
Manufacturer of "PINCO" Products  
Dept. No. R-11  
465 W. Superior Street, Chicago, Illinois



**OTHER  
"PINCO"  
PRODUCTS**

RED TOP and GOLD CROWN gas-engine driven electric light and power plants, 100 to 2000 watts: alternating or direct current; air or water cooled; remote control. Send for literature.

*It's here* **RURALITE**

**LEADERSHIP IN  
DEALER PROFIT  
QUICK TURNOVER  
FINER  
QUALITY  
EXCLUSIVE TERRITORY**

MODEL "1000"  
32 VOLT  
RURALITE

You will search in vain for a more efficient and more economical 32-volt wind-electric plant than the Ruralite Model "1000". No charger at any price performs so nicely and operates so economically.

If you want to sell Quality Merchandise with genuine pride, you'll sell Ruralite. The only 1000-watt charger that gives you the height of quality and all the new worth-while wind-electric advancements with the added advantage of low price.

Write for exclusive territory franchise Today—tomorrow may be too late.

Wherever there's a windmill, you'll find a prospect for Ruralite.

Write

**RURALITE ENGINEERING COMPANY, Sioux City, Iowa**

for literature and information on 6 volt Junior and Senior Wind-chargers.

**American DYNAMIC Multi-Purpose  
MODERN IN DESIGN  
At a New Low Price**



- Semi-Directional
- Close or Distant Pick-up
- Excellent Frequency Response
- Immune to Temperature Changes
- Exceptionally Rugged

The D-5-T . . . . . List Price \$32.50  
High Impedance—10,000 ohms

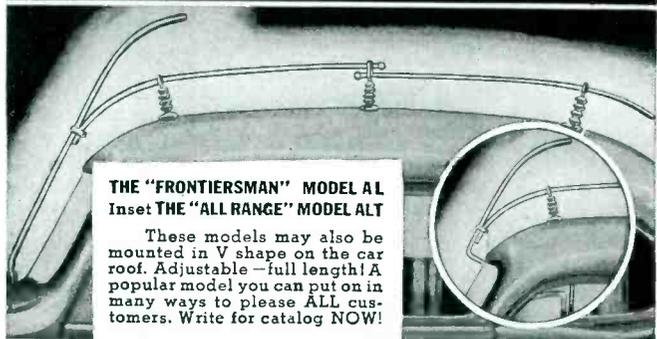
The D-5 . . . . . List Price \$27.50  
Low Impedance—50 ohms

Both Include 25' Shielded Cable and Plug

Write Today for Complete Catalog

**AMERICAN MICROPHONE CO., INC., LTD.**  
1915 S. Western Ave. Los Angeles, Calif.

**INSIST ON WARD AERIALS!**



THE "FRONTIERSMAN" MODEL AL  
Inset THE "ALL RANGE" MODEL ALT

These models may also be mounted in V shape on the car roof. Adjustable—full length! A popular model you can put on in many ways to please ALL customers. Write for catalog NOW!

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

**NORGE**

Norge Div., Borg-Warner Corp.  
Detroit, Mich.

**AIR CONDITIONER**— Portable; powered with heavy duty Rollator compressors; for home or office; heavy gauge steel cabinet, finished in American walnut with center vertical panel in French burl walnut finish set off by black lines simulating inlays



**HORTON**

Horton Mfg. Co.  
Ft. Wayne, Ind.

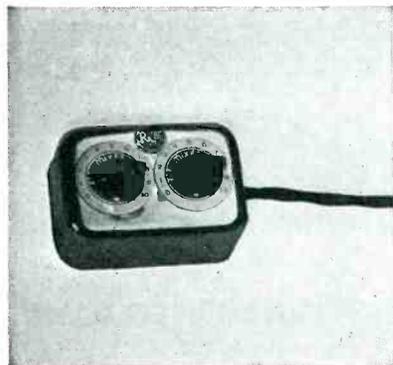
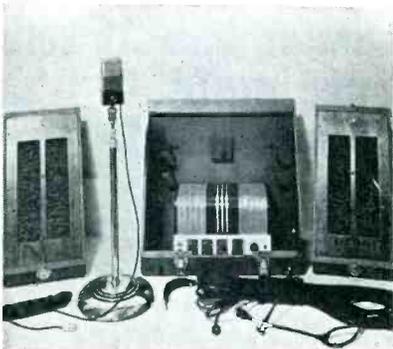


**KLEEN ZONING WASHER**—De luxe model 381; 8-sided cabinet incloses full 23 in. tube; floodlight enables quick, easy inspection of wash; super-sensitive "push-pull" bar safety release; comes in lustrous light gray or white finish with black legs, chromium accents; Horton also announces two other new washers and two Beauty-Aid ironers

**RCA**

RCA Mfg. Co.  
Camden, N. J.

**PG-112 PORTABLE SOUND SYSTEM**—For audiences up to 2,000; amplifier operates from either 110 v. ac or from 6 v. storage battery in conjunction with a dynamotor, making system suitable for mobile applications; leatherette case holds all equipment; \$199.50 fob Camden; RCA has also just announced another portable system and three improved power amplifiers



**REMOTE ELECTRIC MIXER**—Operator may control volume from a strategic point and regulate it according to changing audience conditions; mixing is accomplished electrically in the amplifier rather than in the signal circuits, reducing wiring and eliminating need for shielding; two controls for mixing the input of as many mikes and more may be added; \$24.25 fob Camden

# NOW'S THE TIME!

**GET READY FOR THE BIGGEST FALL AND WINTER "SOUND" MARKET IN HISTORY**



Model AP-1832B—18 Watt Portable System. Complete as illustrated. **\$154.50**

CHURCHES INDUSTRIES THEATRES  
SCHOOLS HOTELS STORES

They're going to be busy this winter. They're going to be crowded. They're going to need Electro-Acoustic Sound Equipment—the modern necessity wherever people gather.

AND HERE'S THE LINE

## ELECTRO-ACOUSTIC

**SPEAKERS**

A complete new line of Magnavox Speakers. All types and sizes—electro-dynamics and permanent magnet dynamics—6" to 15"—distinctively labelled and attractively packaged. Built to satisfy every requirement of high fidelity voice and music reproduction.

**SYSTEMS**

A complete high quality line of Electro-Acoustic Sound Systems for every portable and permanent installation. Featuring advanced design—matchless flexibility—superb appearance—outstanding performance. Fully licensed.

VISIT THE ELECTRO-ACOUSTIC DISPLAY AT BOOTHS 38 AND 39 AT THE New York Trade Show Oct. 1st to 3rd

**• MAIL THIS COUPON NOW!**

ELECTRO-ACOUSTIC PRODUCTS CO. Dept. R, Fort Wayne, Indiana Date \_\_\_\_\_

Please send me special bulletin on the Model AP-1832B—18 Watt System and the name of my nearest distributor. I am also interested in receiving complete information on  Electro-Acoustic Portable Systems  Electro-Acoustic Amplifiers  Magnavox "EA Special" Speakers

Name .....

Address .....

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

## BRIGGS STRATTON

Briggs & Stratton Corp.  
Milwaukee, Wis.

"START-CHARGER" WASHER MOTOR— Self-starting; made especially for power farm washing machines; may also be used to charge radio batteries; most battery charging can be done while "Start-Charger" motor is supplying power of washing; consists of a new model WM farm washer, 4 cycle gasoline motor and a special 6 volt starting motor and generator



## AEROVOX

Aerovox Corp.  
70 Washington St., Brooklyn, N. Y.

MICA CAPACITORS— Because of the high voltages and frequencies to which mica capacitors are subjected in radio transmitters and certain electronic applications this porcelain-case line has been developed; capacities from .00005 to .1 mfd., as well as dc test voltages from 200-12,500



## TRIPLETT

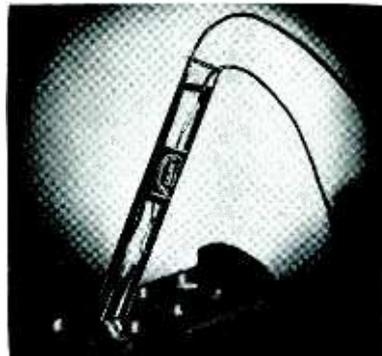
Triplett Electrical Instrument Co.  
Bluffton, Ohio



DE LUXE SET TESTER— Has complete facilities for ac and dc voltage, direct current and resistance analyses in addition to incorporating a condenser tester, free point tester and decibel meter; front illuminated indicating instrument with extra large dial; shadowgraph meter for the line voltage control; black leatherette or metal case

## GLASSMIKE

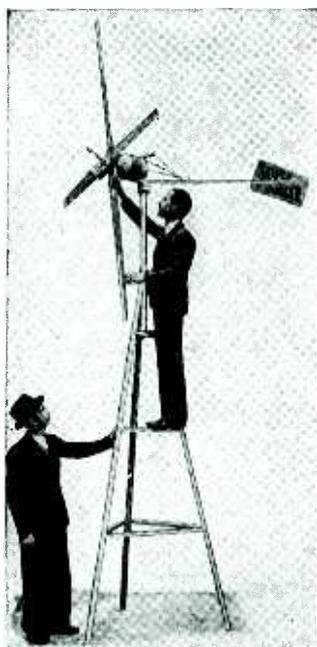
Condenser Products Corp.  
1369 N. Branch St., Chicago, Ill.



CONDENSER — Cart-ridge is contained in a glass tube, the glass being sufficiently non-porous to exclude all moisture; plates are tinfoil and are contacted by flat helical pig tails which actually become part of the plates; rated at 600 working volts; photo shows Glassmike submerged in test tube of water

# SUPERCHARGER

NOW HAS A BRAKE!



SUPERCHARGER has added another smash feature that makes it far-and-away the outstanding value in the 6-volt wind charger field! The new positive-action makes it easy to prevent overcharging! Because SUPERCHARGER generates current in only a 4-mile breeze, you can sell it in any locality. In most areas operates a few lights in addition to radio. Write today for full information.

- Charges in 4-mile wind
- 2 to 5 times more current
- 6-volts—25 amps. capacity
- 8-ft. propeller
- Charges anywhere
- 10½ ft. galvanized angle iron tower, optional

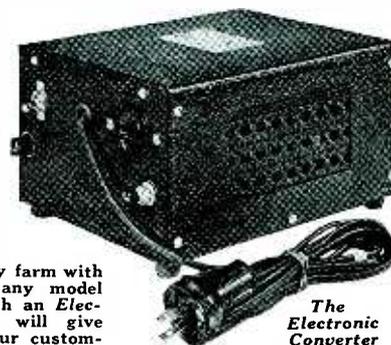
32-volt models also available

**BREEZ-ELECTRIC CORPORATION**  
440 N. Oakley Blvd. Chicago, Ill.

# NOW

NEW THRILLS FOR FARM RADIOS  
Any 110 Volt AC Radio  
Operates from 32 Volts DC with an  
**ELECTRONIC CONVERTER**

Also Models for  
Converting any DC  
Voltage to 110 AC



Now you can offer every farm with a 32V power supply any model 110 volt AC radio—with an *Electronic Converter*—that will give new radio thrills to your customers. They want big time reception and a wide selection of models rather than be limited to a few 32V sets that have no trade-in value and are obsolete when the high line arrives. The *Electronic Converter* not only opens the great remaining farm market for easy-to-sell 110V radios—but there is a nice cash profit in every converter you sell. Only *Electronic Converters* offer a record of proved satisfaction. Tested, recommended and used by leading manufacturers including

Arvin	Northern Electric	Stromberg-Carlson Tel.
Canadian Marconi	Rogers Majestic	Mfg. Co.
Clough-Brengle	Simplex	Stromberg-Carlson Tel.
Eastman Kodak	Spartan	Mfg. Co. of Canada,
Fairbanks-Morse	Spartan of Canada	Ltd.
General Electric	Stewart Warner-Alemite	Universal Battery Co.
Mohawk Radio, Ltd.	of Canada	Zenith Battery Corp.

Tie with Electronic and boost your profits. Write for full details.

**ELECTRONIC LABORATORIES, INC.**  
Dept. RR-937, Indianapolis, Ind.

## INTERCOMMUNICATORS

(Continued from page 21)

ered wire or cable, the same to be drawn into galvanized or zinc-coated conduit.

Where cable or wire enters a building from outdoors in the "open" method of wiring, they should be bent down to form a drip loop at the point of entrance.

The most economical wiring arrangement may be to either "loop" from one station to another, or to run separate circuits to a station from the nearest terminal box. This, of course, is dependent upon the lay-out of the system, and the type of system used. Fig. 3 shows a typical lay-out of a system using interconnection or terminal boxes.

A terminal box should be used wherever a connection is made to a set or a junction in the wiring is necessary. In any event, where several wires are to be attached to one terminal nut on these blocks, the wires should be separated by washers.

Where cables are brought into terminal blocks, the wires should be fanned and laced before being attached to terminal screws and nuts. An example of such handling of cable is shown in Fig. 4. This is likewise true of the handling of separate wires. They should also be laced. Lacing may be eliminated by the use of terminal strips with forming strips as shown in Fig. 5.

Interconnection cabinets may also be made up of a number of multiple contact receptacles to receive plugs which are attached to the station wires or cables. Separable multiple connectors may also be used which will allow connecting or disconnecting at any time.

After a cable is "skinned," whether it be of the braided or lead-covered type, the ends should be sealed with melted paraffine to prevent moisture from "creeping" into the cable and causing a breakdown in the insulation of the wires.

## RADIOS FOR RENT

(Continued from page 22)

conversion of the rental fee into somewhat larger "time-payments" in the second year of the contract. In this latter case the customer pays, say, 2/10 (60¢) per week as rental on a receiver during the first year. In the second year the fee would or-



TYPE BH  
INTERCOMMU-PAGING  
SYSTEM

Write for  
**BULLETIN NO. 111**  
GIVING COMPLETE  
DETAILS

**OPERADIO**  
MANUFACTURING COMPANY  
PUBLIC ADDRESS EQUIPMENT HEADQUARTERS  
ST. CHARLES • ILLINOIS  
EXPORT DIVISION: 145 WEST 45<sup>th</sup> STREET NEW YORK CITY

dinarily diminish to 2/3 (56¢) per week but the customer may continue to pay the original 2/10 throughout the second year, owning the receiver at the end of that period.

To one plan, ownership of the radio is integral. The customer owns the radio at the end of three years rental and the company is released from maintenance obligations. Cost to the consumer, outright purchase as against rental and "automatic ownership", is compared by its sponsor as follows, in this company's printed sales booklet:

**Ordinary Purchase**

	£	s.	d.
Cash price	12	12	0
Interest at 7½ per cent. per annum for 3 years	2	16	3
Valve replacement (one set only)	3	10	0
Repairs and adjustments over 3 years, minimum say	3	3	0
	£22	1	3 (\$110.31)

**"Automatic Ownership"**

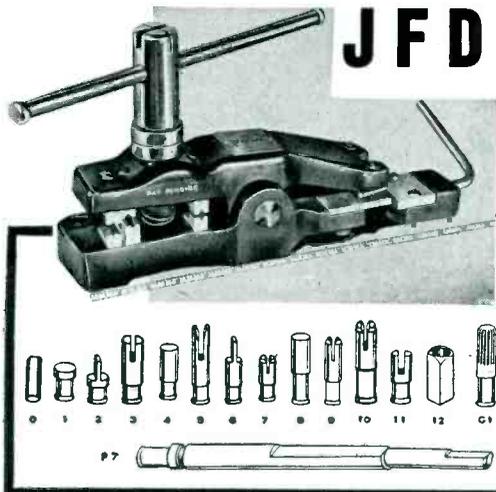
	£	s.	d.
12 monthly rents of 11s. 6d.	6	18	0
12 monthly rents of 9s. 6d.	5	14	0
12 monthly rents of 7s. 0d.	4	4	0
Valve replacements		Nil.	
Repairs and adjustments		Nil.	
	£16	16	0 (\$84)

Another plan, which continues indefinitely as a rental plan unless the

consumer wishes otherwise, permits purchase of the rented model on payment of a small extra fee at the end of three years.

London companies almost uniformly feature one particular brand in their rental circulars, as noted in an earlier paragraph. One offers 4 table models, another 4 table models and 2 consoles, another 5 table models, another 2 table models, another 3 table models.

One leases extra speakers as well as sets. And offers both mechanical refrigerators and electric sweepers.



**AUTO RADIO REMOTE-O-CABLE REPLACER**



**J. F. D. SHAFTEING AND CASING**

With the Remote-O-Cable Replacer, a supply of shafting and casing, same as used by leading Auto Radio manufacturers and an assortment of fittings, you can immediately deliver any length or type of Auto Radio Control Cable. Properly connect any auto radio to any dashboard head.

Auto radio jobbers, distributors and servicemen write for full particulars.

**\$47.50**  
LIST

**J. F. D. MANUFACTURING COMPANY**  
4109 Fort Hamilton Parkway, Brooklyn, N. Y.



**THE MOST OUTSTANDING VALUE EVER OFFERED IN A**

*Freed-Eisemann*

**FAMOUS SINCE BROADCASTING BEGAN**

The new model 30-D is one of the leaders in the new FREED-EISEMANN fast selling line of 1938 sets—all embodying style, performance, quality, at liberal discounts. 10 tube, AC/DC, Foreign and American band Superheterodyne radio with "Electric Eye" tuning; includes 49 meter Foreign stations.

**LIST PRICE \$29<sup>95</sup>**

*Distributors and Dealers: Write for 1938 catalog and wholesale prices on complete line of sets listing from \$18.95 to \$49.95.*

**FREED MANUFACTURING CO., INC.**  
44 West 18th St. New York, N. Y.

**Janette Rotary Converters**

The original D.C. to A.C. converters with all wave filters developed exclusively for radio and sound apparatus.

**CAPACITIES:** 35 to 3250 watts.  
6, 12, 32, 115 and 230 volts D.C. to 110 or 220 volts, 1 phase, 60 cycle A.C.

**Insist on a Janette**  
Ask For Bulletin No. 13-25

**Janette Manufacturing Company**  
556-558 West Monroe Street Chicago, Ill. U. S. A.  
BOSTON - NEW YORK - PHILADELPHIA - CLEVELAND - MILWAUKEE - LOS ANGELES  
DETROIT - SEATTLE

**What's Radio Retailing Say?**

If you read it in RADIO RETAILING it is true—and timely.

That goes for both the editorial and the advertising contents of this, the radio industry's recognized leading publication!

**RADIO RETAILING**  
330 W. 42d St., New York, N. Y.

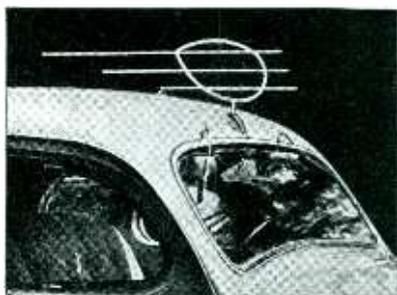
## SELLING PARTS

(Continued from page 29)

know that a certain customer has an aversion for a product, even though you disagree with him, do not make any effort to sell him that product as it will create antagonism.

*Forcing a sale.* Never sell a customer anything against his will. If you think that you are offering him something with greater advantages and he appears reluctant give him time and he may overcome his aver-

The Auto Aerial Sensation  
of the Year



### MARS

#### CUSTOM BUILT AERIAL

Here is a car top aerial that sells instantly, is easily installed—NO HOLES TO DRILL.

Bright silver-like rust-proof finish—long range—minimizes static and motor noises—fender mounting for convertible coupe—lead-in, cement furnished.

**\$2.85** ONE TYPE ALL CARS  
Individually boxed

Cowl Rod Attach, 30¢ additional  
Complete line Hinge Pin Aerials.

Ask your jobber or write  
us giving jobber's name.

**MARS MANUFACTURING CO.**  
29 East Madison Street, Chicago, Ill.

sion of his own accord.

*Customer's pocketbook.* Do not sell a customer more than he can pay for. Invariably, in a short time the customer will discover that he cannot spare this money. He will attempt to return merchandise for credit, a bad habit to get customers into.

*Competitive items.* Never knock a competitive item. Admits its good qualities, then explain your product and its advantages.

*Recommendations.* Whenever you recommend an item be prepared to give a good reason for this preference. A customer is always suspicious whenever he is switched. Unless you can show him a practical difference, a loss of confidence is the result.

*Frankness.* If you cannot answer a question correctly, admit it. The respect of the customer is gained by this frankness. An excellent answer under these conditions is "I don't know but I will find out for you."

*Read.* Make yourself familiar with the popular circuits. Many parts salesmen get credit for being wizards on radio subjects just because they have foresight enough to read the various trade journals and technical magazines. The benefits are twofold. Not only does the subject become familiar but recommendation of additional parts that the customer overlooked becomes possible. This means more business.

*Allied subjects.* Try to become familiar with as many allied subjects as possible. A broad knowledge enables the parts salesman to give practical suggestions that will always keep customers coming back to him. The value of a salesman to a concern can only be determined by his following.

*Boost.* Always have a good word for the management. If you have any grievances, never express them to your customer but try and straighten them out with the "boss".

# BOGEN SOUND SYSTEMS

## ALWAYS FIRST with the LATEST

This organization has not been content merely with keeping abreast of modern trends and developments. Repeatedly we have been

"FIRST with  
the LATEST"

In keeping with this policy, we will present for the first time in commercial sound equipment—

### Binaural Amplification and Electronic Tone Correction

Don't fail to hear these radical and different methods of sound amplification. On display at

Booth No. 14, Commerce Hall  
National Trade Show  
N. Y. C.—October 1-3

**DAVID BOGEN CO., Inc.**

663 Broadway  
New York City

**PIONEERS IN  
PUBLIC ADDRESS  
DEVELOPMENT**

THE *Eyes* HAVE IT!



Solar  
Capacitor Analyzer

Your eyes and the MAGIC TUBE  
see all, hear all, work to a wish!

Write for Descriptive Literature



SOLAR MFG. CORP. 575-681 Broadway New York, N. Y.

## UNIVERSAL'S Complete Instantaneous School and College Recorder



For speech, language, dramatic and music depts. Play back immediately on the same machine or file for future. Simple to operate. Results guaranteed. New catalog of portable and professional and school and college recorders.

Recording Division

**UNIVERSAL MICROPHONE CO., Ltd.**

424 Warren Lane

Inglewood, Calif., U. S. A.

# IRC

REC. U. S. PAT. OFF.

Initiative — Resourcefulness — Cooperation  
to advance the interests  
of the industry

# Metallized CONTROLS Now Available in SPECIAL REPLACEMENT TYPES

With the First and Only ...

## SILENT SPIRAL CONNECTOR

(Designated in Guide with Prefix "J" — Patent Applied for)

"Because It's Positive—It's Positively Noiseless!"

## IT ELIMINATES THE MOST COMMON SOURCE OF NOISE IN *Any* CONTROL

The outcome of two years of engineering development work, IRC brings you the outstanding control improvement in years—positive and continuous electrical connection between the center terminal and adjustment arm. This new Silent Spiral Connector spells complete elimination of sliding, metal-to-metal contact in the place where most control noises originate. This, together with the exclusive "Knee Action" 5-finger Element Contact, is double assurance that these new IRC Special Replacement Controls are exceptionally quiet and permanently so.

The Silent Spiral Connector comes on all IRC Special Replacement Controls listing at \$1.50 and up (not standard types). These special units are specifically designed for those extremely critical replacement jobs that cannot be handled with standard types. They are identified by the letter "J" preceding their part number in the IRC Guide. See them at your IRC jobber's today.

### GET THIS NEW GUIDE **FREE!**

Just off the press! 208 pages! Lists standard and special replacement types for practically every radio receiver made. Includes handy control and resistance calculation data, complete IRC Resistor Catalog, etc. Ask your jobber, or write direct to us.



NO SLIDE

NO FRICTION

NO NOISE

# INTERNATIONAL RESISTANCE COMPANY

401 NORTH BROAD STREET, PHILADELPHIA, PA.

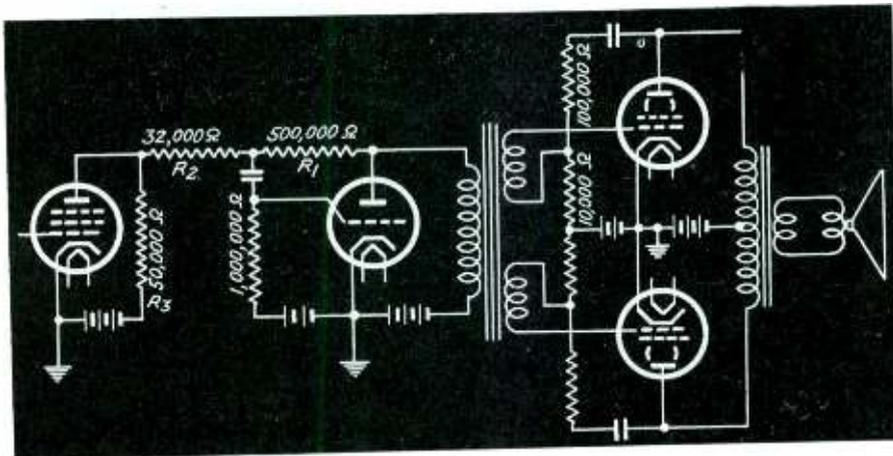
Factories or Licensees in Canada, England, France, Germany, Italy, Denmark and Australia

**MAKERS OF RESISTANCE UNITS OF MORE TYPES, IN MORE SHAPES, FOR  
MORE APPLICATIONS THAN ANY OTHER MANUFACTURER IN THE WORLD.**

# SERVICE

DESIGN • REPAIRS • INSTALLATION

## CIRCUITS



### Double Degeneration

The desirable features of degeneration in an output stage have been doubled by Philco through the use of degeneration in the driver stage also. The essential diagram is shown in the illustration. For the sake of simplicity batteries are shown in place of the usual plate supply.

Degeneration in the pushpull output stage is supplied through a resistor network. A capacity couples the output of this stage to network on which is tapped the split secondary of the input transformer.

Returning to the drive stage, the requirement of this tube is to supply distortionless power to the output tubes. If a distorted signal is fed to the grid of the output tube, the net result can only be a distorted output, no matter how much degeneration is employed in the final tubes. Hence it can be seen that degeneration in the driver stage is even more important than that in the output stage.

In this stage similar results are obtained by a slightly different voltage-combining network. If the tube on the left of the figure is considered to be a resistance, it will be seen that the feedback circuit is made up of resistance  $R_1$ ,  $R_2$  and  $R_3$  in shunt with the tube, and hence there will be impressed upon the grid of the tube, due to this network, a portion of the reversed output signal, including whatever distortion

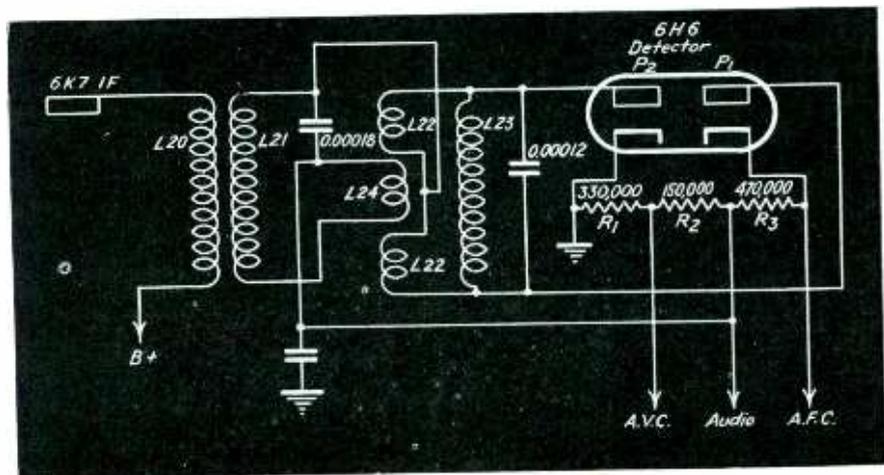
may be present in it. Likewise, considering the driver tube as a resistance and the first tube as a voltage source, there will be supplied to the grid of the tube a desired signal obtained across part of the voltage divider, including the resistance  $R_2$  in series with the combined resistance of the grid leak  $R_1$  and the tube. Due to the relative magnitudes of the several resistors in this latter case, substantially all of the signal from the voltage amplifier tube will be supplied to the grid of the driver tube, hence this circuit will operate with a minimum of distortion.

### Discriminator Detector

Novel detector design is shown in RCA's new models. All control voltages; avc, afc and the audio signal are obtained from the 6H6 detector discriminator. The detector and avc action are quite normal, the discriminator should have further explanation.

The third i.f. transformer, consisting of 5 windings ( $L_{20}$  to  $L_{24}$ ), tunes to 460 kc. The upper and lower halves of  $L_{22}$  may be considered as two secondary coils; the upper coil aiding the primary coil  $L_{24}$ , the lower coil opposing. The function of  $L_{23}$  is to tune the secondary circuit to 460 kc. Therefore, maximum voltage will be applied to the diode circuit P2 when the i.f. signal is above 460 kc. When the signal is below 460, maximum voltage is placed on plate P1.

The resulting dc. voltages developed across  $R_1$  and  $R_2$  from the diode rectification are always in opposition. Polarity of this voltage is dependent on whether the i.f. signal is higher or lower in frequency than 460 kc. The bias on the oscillator control tube is supplied by this voltage. Hence the frequency of the oscillator varies in accordance to the received signal. Afc action may be eliminated by throwing a switch, not shown in the diagram, which grounds the cathode of P1 and removes the a.f.c. voltage.



# Clicks with them all

## MODEL 775 WESTON SERVISSET

"The most complete, most versatile servicing tool ever offered servicemen."

"This WESTON 20,000 ohms-per-volt analyzer is the 'tops', and the new 773 Tube Checker leads them all."

"WESTON quality, dependability and long life, at prices we can afford. Big WESTON Meters, too."

"We need high sensitivity, and we trust WESTON to provide it... just as they do for all industry."

"These instruments are quickly removed from the combination case, and can be used individually for portable, counter or panel use."

"With 772 we can service all receivers... measure photo-cell currents and service television as well."

Your profits this fall and winter will depend, to a large extent, on your equipment. See the WESTON Model 775 Serviset today. Examine it carefully. Compare it, feature by feature, with any other equipment the market affords. Then consider that it is WESTON built... that it provides the sound engineering, the quality materials, the dependable accuracy and the long, useful life that the name WESTON assures. See the Model 775, as well as all other WESTON instruments for radio use. Visit your jobber today, or send the coupon for complete information.

All WESTON Radio Instruments can be purchased under the WESTON Investment Plan



Model 772 Analyzer also is available in this light-weight, solid-wood carrying case with real luggage handle.



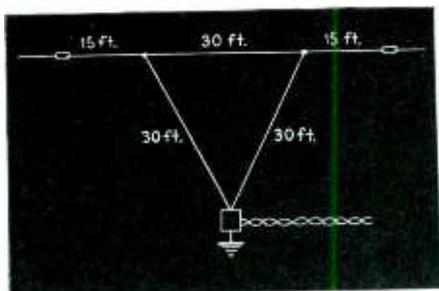
Model 773 Tube Checker in individual carrying case. Also available in attractive, polished, solid-wood counter case.

WESTON ELECTRICAL INSTRUMENT CORPORATION  
581 Frelinghuysen Ave., Newark, N. J.  
Send data on Model 775 and other radio instruments.

Name .....

Address .....

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

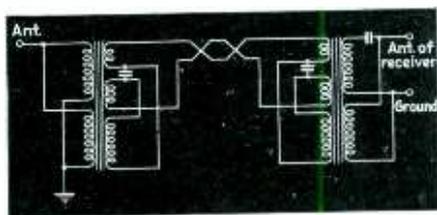


## Noise Reducing Antenna

New design in an all-wave receiving antenna and coupling transformer brings forth this diagram from RCA.

The antenna proper may be a vertical self-supporting metal mast; for maximum short wave signal strength the type shown in Fig. 1 is recommended. In both cases the antenna is worked against ground.

A multiple antenna coupler is employed to provide a uniform signal throughout the frequency range. The upper windings of each transformer are for high frequencies, the lower section for the broadcast band. In the broad-



cast section of the transformer, no attempt was made to match to the impedance of the line. Instead, the line is treated as a capacity which is used to resonate the windings. The antenna circuit, the line circuit, and the set circuit are each resonant to the middle of the broadcast band. Tight coupling is used in the coupling transformers to broaden the response curve.

As the line is resonant on the broadcast band, the performance changes somewhat with change in line length. However, this effect is surprisingly small.

One important factor in reducing noise is the capacity shielding between primary and secondary of the line to set transformer. This shielding should be very thorough for best results. The shield is connected to the set chassis. A magnetite core improves the magnetic coupling between antenna and line, and line and set.

## Qumlative-Wound Antenna Coil

A new design of the antenna coil of RCA Receivers shows a definite improvement over previous coils. The

winding is universally wound, the same as i.f. coils, with 10 strand litz wire. However, in winding, the form is drifted longitudinally, so that the completed coil approximates one having an infinite number of universally wound pi sections.

This results in considerable increase in selectivity at frequencies 460 kc. from resonance due to the improved L/C ratio. The result is the reduction of birdies and whistles. Adjacent channel selectivity is improved by 50 per cent also.

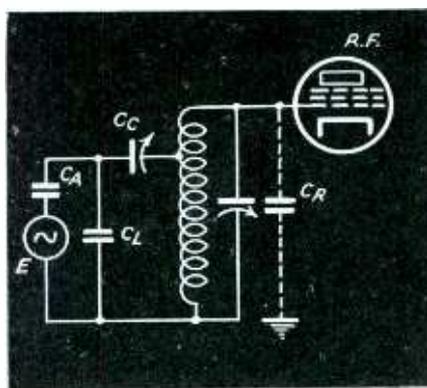
The "Q" of earlier coils was approximately 60, whereas the new coil approaches 120, which is a desirable factor in the input circuit.

A further factor in the qumlative coil is the small space taken up by the coil and shield. It is more adapted to compact chassis design than would be an ideal single layer or bank wound coil.

## Adjusting Auto Antenna Circuits

In auto receivers it is important that the antenna circuit and receiver input circuit are tuned for maximum signal voltage. The signal voltage is usually quite small since antenna length is limited. Therefore care should be exercised in adjusting these circuits as outlined by G. E. engineers.

In the schematic above,  $C_a$  is the antenna capacity,  $C_l$  the lead-in capacity,  $C_c$  the antenna adjusting capacity,  $C_r$  the reflected capacity on the circuit due to antenna and lead-in capacity, E



is the signal voltage supplied by the antenna.

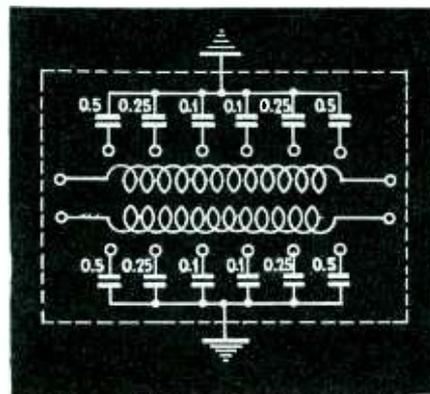
It will be noticed that  $C_a$  and  $C_l$  are in series. If  $C_a$  is smaller than  $C_l$ , as is generally the case with rod antennas, quite some voltage is lost in the antenna itself. As  $C_a$  approaches  $C_l$ , more of the antenna voltage is supplied to the tuned circuit. For this reason the lead-in capacity should be kept as low as possible. Keep the cable

short and make sure it is not flattened.

In the factory, the antenna capacity is considered at 250 mmf., connected from the lower tap to ground. This supplies the correct reflected value of  $C_r$  so the circuit will track throughout the band. In the field, all that is necessary is to adjust  $C_c$  until this same condition is reached. The range of  $C_c$  is such that any antenna from 2000 to 400 mmf. can be reduced to 250 mmf. at the set end.

For lower values of antenna capacity (50 to 400), the effect on the tuned circuit is to supply less than the correct amount of  $C_r$ . In such cases the higher tap on the coil is used in order to return the circuit to resonance.

Both  $C_l$  and  $C_c$  represent a loss in voltage. The receiver must be sufficiently sensitive to overcome these. If a low capacity antenna is used, the cable capacity  $C_l$  should be reduced by cutting the cable as short as possible. This will allow  $C_c$  to be increased and permit greater coupling.



## Universal Line Filter

The circuit of a novel line filter by Miller is shown in the following diagram. Various size capacities may be used in conjunction with an inductance in each leg of the line to filter disturbances caused by refrigerators, oil burners and sign flashers.

The unit consists of 12 condensers in sizes from .1 mfd to .5 mfd that may be chosen to bypass either or both ends of the series inductances. A common connection to all capacities is grounded. The advantage of this type filter is that it can be adjusted to perform under different types of interference. By choosing the proper set of capacities to shunt the inductances almost any interference may be prevented from feeding back into the power line.

A steel case which should be grounded prevents radiation from the unit.

# Peace of Mind WITH CORNELL-DUBILIER Condensers



Here's ONE lad who'll rest well tonight — secure in the knowledge of a job well done. He uses Cornell-Dubilier condensers exclusively—he KNOWS they're the BEST.

If a task is worth doing at all — it's worth doing well. And servicing jobs "stand up" when C-D condensers go into 'em.

No matter what the radio circuit — there's a rugged, dependable C-D condenser designed for it. The use of C-D in servicing means

**PROFITS • SATISFIED CUSTOMERS • PEACE OF MIND**

For complete description and listing of Cornell-Dubilier capacitors, send for Catalog No. 151A today. Available at all C-D authorized distributors. World's largest and oldest exclusive condenser manufacturer.

**MICA • PAPER • DYKANOL • WET AND DRY ELECTROLYTICS**

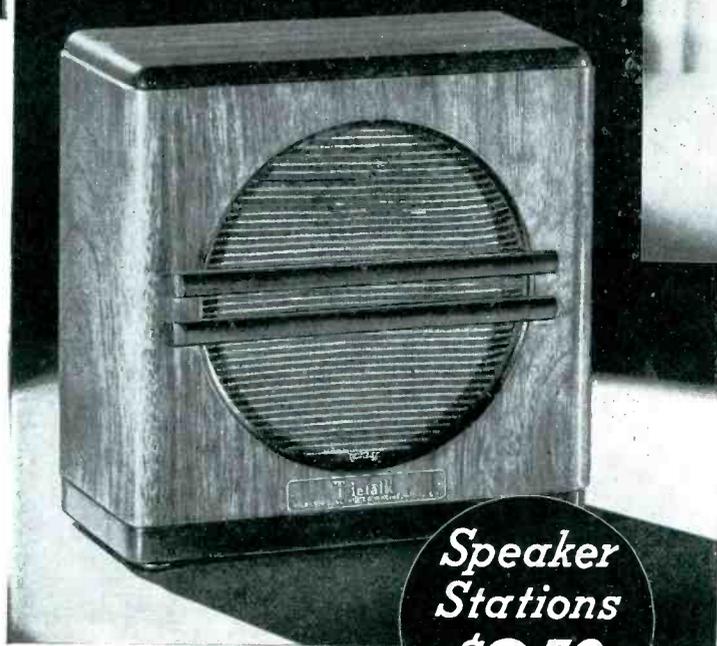
Photograph illustrates several of the convenient C-D capacitors for everyday modern A.C.-D.C. receiver servicing.



**CORNELL-DUBILIER**  
**ELECTRIC CORPORATION**  
**South Plainfield, New Jersey**



*A New low priced model*  
**Teletalk**



**Speaker Stations**  
**\$9.50 each**



**Master Station**  
**\$39.50**

**Selective Master Station . . . One to five speaker stations . . . Solid walnut hand-rubbed cabinets . . .**

● Webster Electric scores again! This time with the highest quality, low priced electronic inter-communication system on the market—the model 105 Teletalk!

This new model permits communication between one point and from one to five other points, either selectively or as a group. System operates satisfactorily up to 3,000 feet. With special transformers, a distance of five miles can be used with satisfactory results. It is replete with features: volume control, selector switch, talk-listen-idle switch, pilot light and provision for including a buzzer system.

The cabinets are the finest to be found on any similar system: Solid walnut with a hand-rubbed finish. *And the price is no higher than the best competing systems.*

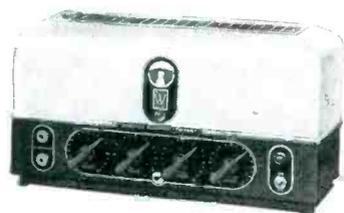
**WEBSTER ELECTRIC COMPANY • RACINE, WIS., U. S. A.**  
 Established 1909 Export Department—100 Varick Street, New York City  
 Cable Address "ARLAB" New York

*Send for this new book*

This beautiful new book describes the complete line of Webster Electric Teletalks and contains complete information and photographs of many of the thousands of Teletalk installations throughout the country

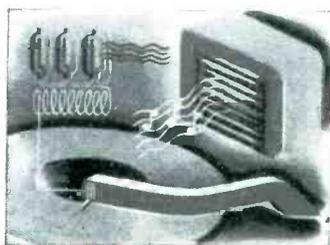


**THE WORLD'S FINEST SOUND EQUIPMENT**



Investigate the new Webster Electric Sound Equipment. A complete range of self-contained, portable, semi-portable and mobile systems from 5 to 50 watts, fully streamlined in a combination of red, silver and black. From an appearance as well as a performance standpoint — the World's Finest Sound Equipment. Send for catalog.

**THERE'S A NEW PICK-UP COMING!**



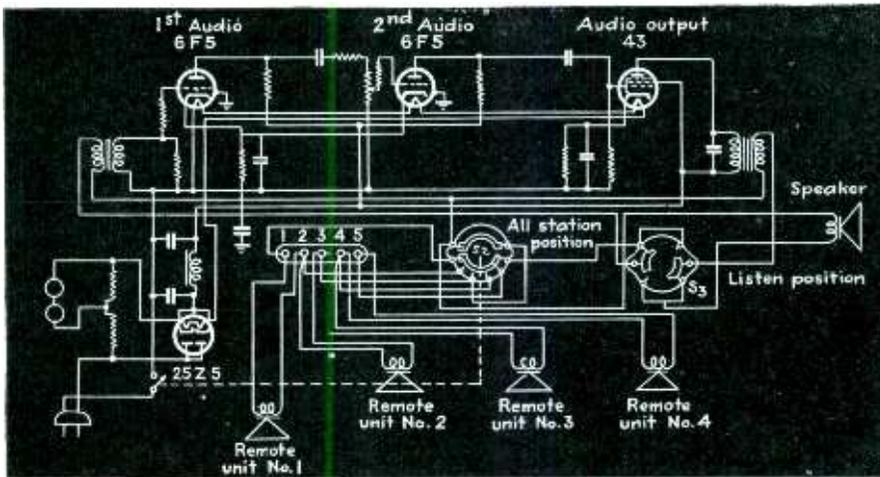
Webster Electric announces a new electric phonograph Pick-up that will be unlike any other ever developed. New in design. New in principle. New in performance characteristics. Write for information as to how you can profit by the increasing replacement demand.

Webster Electric Sound Systems are licensed by agreement with Electric Research Products, Inc., under patents owned by Western Electric Company, Inc., and American Telephone and Telegraph Company, Inc.



# Webster Electric

**PORTABLE AND SEMI-PORTABLE SOUND SYSTEMS • ELECTRONIC INTER-COMMUNICATING SYSTEMS • ELECTRIC PHONOGRAPH PICK-UPS • TRANSFORMERS AND FUEL UNITS FOR OIL BURNERS**



## Multi-station Intercommunicator

P. M. dynamic speakers serve the dual purpose of microphone and speaker in the G. E. intercommunicator diagrammed above. A three stage audio amplifier powered by a 25Z5 supplies the audio power and gain. Thus the unit may be operated on a.c. or d.c.

For any set of conditions the master station, incorporating the amplifier and switching system, and from one to four "speaker phone" remote stations may be used. The remote stations are connected to either the input or output circuit of the amplifier by means of the "talk-listen" switch S3.

As an example of operation, when the talk-listen switch is in the normal "listen" position, the remote station functions as a microphone and is connected to the input of the amplifier. The master station speaker is connected across the output. When S3 is placed in "talk" position the master station speaker functions as a microphone while the remote stations act as speakers. The selector switch S2 connects either one individual or all remote stations to the master unit. When all remote stations are in operation they are arranged in series-parallel across the input or output of the amplifier.

For operation up to 2000 feet the connecting cable may be ordinary No. 16 or No. 19 twisted cable. Distance greater than this require the use of a line transformer feeding a similar line. The transformer should have a 5 ohm primary and 200, 500 or 600 ohm secondary.

## Sonic-Arc Baffle

Methods to improve the acoustical properties of the radio cabinet are receiving considerable attention. A new system used by RCA in this year's

models employs the "sonic arc," so called for its curved reflecting properties. Because of the curved construction, the wood panel encloses the cabinet cavity with sufficient rigidity despite its thinness.

The openings necessary to the operation of the system are provided in the form of a series of holes near the bottom front edge of the baffle, as well as openings in the corners and around the chassis shelf. These combined openings give the cabinet a resonant frequency of about 70 cycles. Frequencies below this value are accentuated by the reso-

nant condition of the speaker cone and its suspension system. At frequencies slightly above the cabinet resonance (100 cycles), the speaker and its suspension system combine with the cabinet to increase the output.

## New Tubes

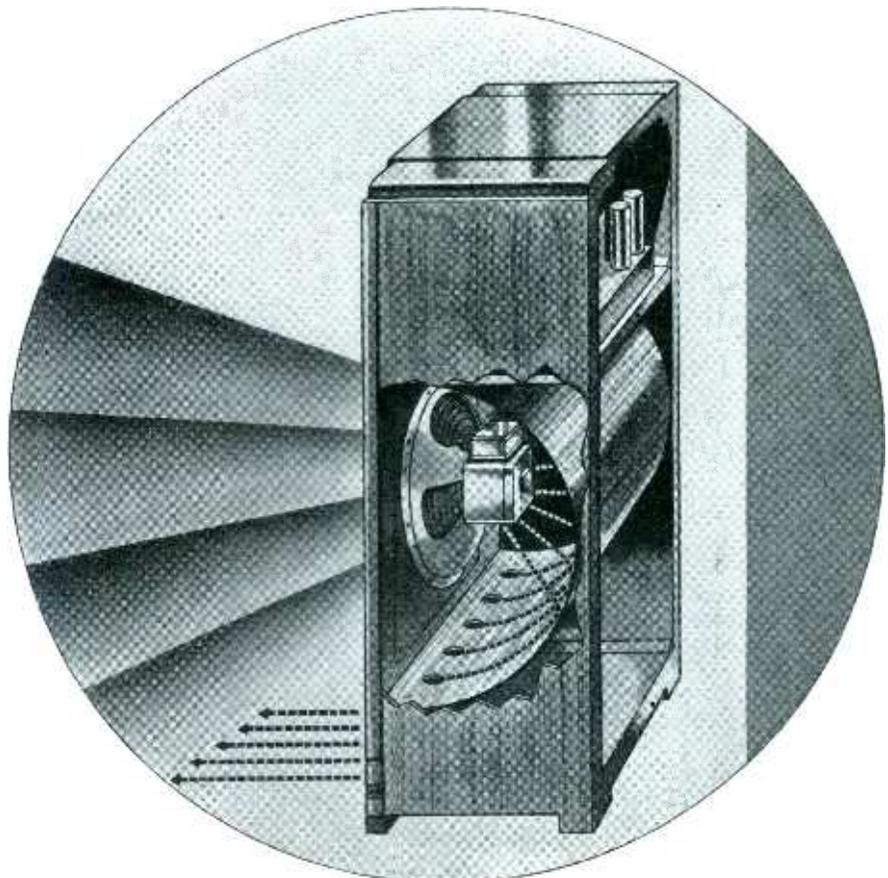
6A5G complete characteristics were given in the February issue; however we neglected to state that a unipotential filament is used. The heater is center-tapped inside the tube and connected to cathode.

A new phototube has been announced by RCA, it is as follows:

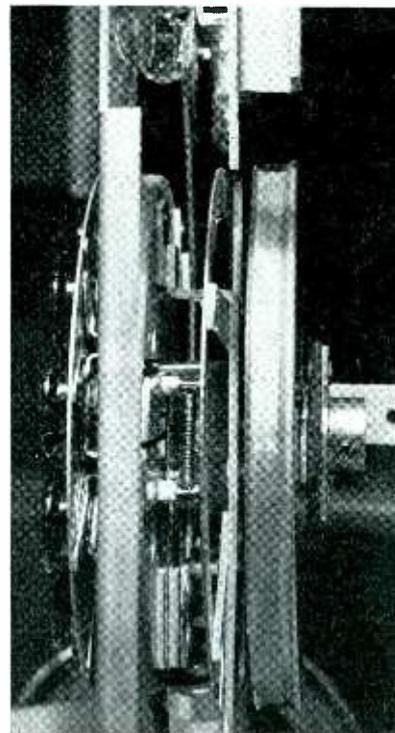
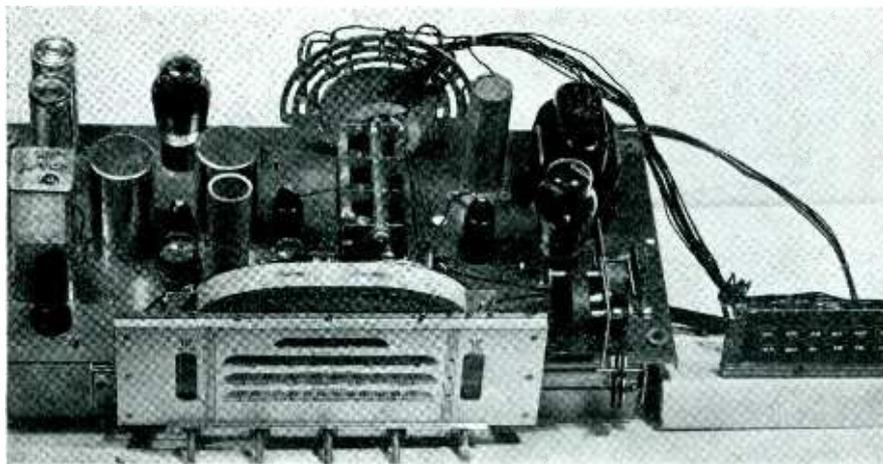
921 a gaseous type phototube with an entirely new type mount. Length is 1 1/4 in. approx., diameter 1 5/8 in.

Maximum ratings and characteristics are:

Anode-Supply Voltage (D. C. or Peak A. C.)	90 Volts
Anode Current	20 Microamperes
Ambient Temperature	50 Degrees C.
Sensitivity: At 0 cycles	100 Microamp./lumen
At 1000 cycles	97 Microamp./lumen
At 5000 cycles	90 Microamp./lumen
Gas Amplification Factor	Not over 10
Load Resistance:	
With anode-supply voltage of 90 volts	
For currents greater than 2 microamp.	.4 min. Megohms
For currents less than 2 microamp.	.1 min. Megohm
With anode-supply voltage of 75 volts	
For currents less than 3.5 microamp.	.0 Megohm

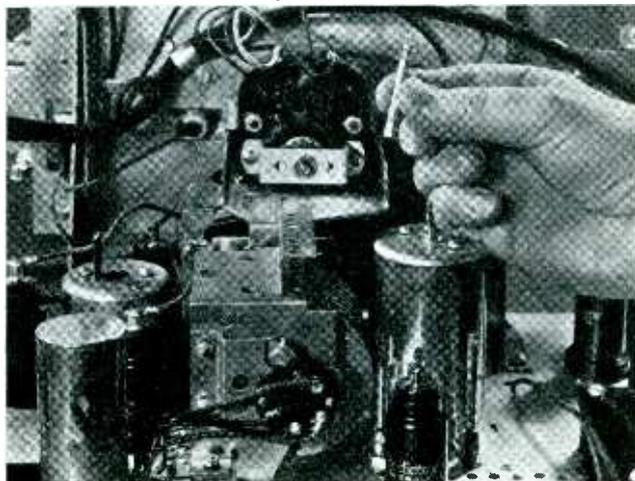


# SERVICING



*Touch tuning system by G.E., threaded shaft below motor moves dial.*

*The works of Arvin's dial-type tuning, silencer switch shows in lower center.*



*Adjusting key in RCA models ready to be inserted in one of the station setting holes.*

A few years ago most manufacturers considered pre-selected tuning impractical; it would not remain calibrated. Recent introduction of a.f.c. discounts slight imperfections in tuning, thus pre-selected tuning becomes nearly fool-proof.

Full design details for all models are not available as we go to press. It can be said, however, that systems so far seen are divided into three classes: motor-driven, pre-calibrated trimmer type, and telephone dial type. Of these the first and last mentioned are most common.

## **Motor Driven Types**

Some pushbutton models with motor drive provide for as many as 15 stations. Other models range between 8, 10, and 13 individual points.

The RCA model allows pre-setting of

8 stations. The mechanism consists essentially of a quick engaging and disengaging motor, tuning condenser, driving gear train, and 8 mechanically interlocked (pushing one button releases all others) station selector pushbuttons. Each button is respectively wired to eight adjustable station selector discs mounted on a drum, direct coupled to the tuning gang.

When the motor is not energized the armature is pushed to the rear, slightly out of the magnetic center, by a small spring. The motor shaft is disengaged from the driving gear mechanism by this action. Pressing any of the 8 buttons starts the motor, causes the armature to be drawn forward due to solenoid action and engages the tuning drive gear. The motor continues to operate until the insulated segment of the motor disc breaks the motor circuit.

When adjusting the system any 8 sta-

tions may be chosen. Turn the "Manual-Electric-Remote" control to "Electric." Depress pushbutton No. 1 and wait until the station pointer comes to rest. Turn the "Manual-Electric-Remote" switch to "Manual." Remove adjusting key from receptacle on top of station selector drum mechanism. This is accomplished from rear of chassis.

## **Easy to Adjust**

Referring to the illustration, insert the key in position No. 1 and push all the way down to properly fit in the slotted disc. Tune the receiver very carefully by means of the manual tuning knob, using the tuning indicator to insure exact resonance. Remove key and turn control switch back to "Electric." Button No. 1 is now set for electric tuning. The remaining 7 buttons are set in identical fashion.

# AUTOMATIC TUNING

How to adjust the new motor-driven gang condenser, push-button trimmer and mechanically-rotated dial systems



Setting Philco Cone-centric dial requires special tool, inserted through tuning knob.

By

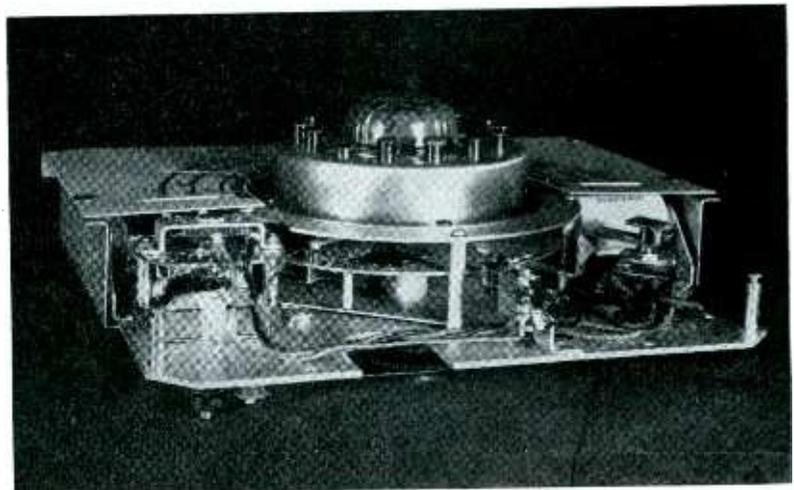
**C. A. Nuebling**



15 push buttons of Stewart Warner, eccentric discs stop shaft at station settings.



Stations are set on Sentinel by thumb screws on dial rim. Bottom pin is condenser stop.



Bottom view of compact Westinghouse dial; note station stop below depressed button.

RCA automatic tuning models have provision for remote tuning also. A similar set of pushbuttons, mounted in a convenient box and connected to the receiver by a multi-wire cable is used. The cable is attached to the rear of the chassis, so as to parallel the front panel buttons.

Audio signal suppression and a.f.c. are automatically switched into the cir-

cuit when electric tuning is used. This switch is actuated by the solenoid action of the motor armature. No signal is present in the speaker until a station is exactly in tune.

### Tunes Short Waves

Another motor-driven system, the "Touch Tuning" employed by G.E., has 13 station selector buttons. Actually

there are 16 pushbuttons on the front panel. The remaining buttons are for scanning, manual tuning, and turning the set off. In addition to automatically tuning stations on the broadcast band several buttons may be used for favorite short wave bands such as 49, 31 and 16 meters. For short wave tuning it is necessary to throw the band switch manually to the desired band. If the

**25,000 OHMS PER VOLT**

**TRIPLET**

**DE LUXE  
SET TESTER**

*Entirely New*

Modern Design  
for Quick  
Accurate Set  
Testing



Model  
1601  
**\$45.33**  
In Metal  
Case

- D.C. Volts at 25,000 Ohms per Volt. A.C. Volts at 1,000 Ohms per Volt. Reads to 2000 Volts A.C. and D.C. in 6 Ranges.
- Resistance Measurements to 20 Meg-ohms.
- Condenser Tester to 30 Mfds.
- Free Point Tester.
- Incorporates Exclusive Plug-in Type Copper Oxide Rectifier.
- New Single Zero Adjustment for Ohm-meter.
- All A.C. Operated—No Batteries Used.
- 250 Microamperes to 20 Amperes in 8 Ranges.

Triplet's new DeLuxe Set tester incorporates the very latest features in set testing. Ultra high class and professional appearance. Durable etched panel having natural silver background with sunken black lettering. Control knobs and other fittings are finished in red. The exclusive plug-in type copper oxide rectifier is the approved, most

accurate method for rectification, with the newly added advantage of easy replacement due to accidental damage or overloading. Replaces as easily as removing an ordinary fuse, in leatherette case, as shown, \$49.33.

TRIPLET'S NEW  
DELUXE LINE OF  
RADIO TESTERS

**SETS A  
"NEW HIGH"**

IN ACCURACY,  
APPEARANCE AND  
PRACTICABILITY



Model 1690

*Other De Luxe Items:*

- Model 1690 Oscilloscope . . . With 2" screen . . . exclusive Triplet turret type mounting. Linear Sweep 15 to 20,000 Cycles complete with tubes and instructions . . . In Metal Case, \$47.00
  - Model 1630 . . . Outstanding Signal Generator for extreme accuracy . . . zero leakage . . . 100 K.C. to 30 M.C. in six ranges complete . . . In Metal Case, \$45.00
  - Model 1631 . . . same as 1630 but in addition incorporates electronic frequency modulation . . . In Metal Case, \$55.00
  - Model 1670 . . . Vibrator Tester . . . completely tests all vibrators under actual performance conditions . . . In Metal Case, \$24.00
- All DeLuxe Testers in two case styles: Sturdy metal with black wrinkle finish, 14½"x7½"x1½". Leatherette covered case has removable cover and compartment for accessories, size 15½"x12"x6½".

**TRIPLET**  
*Precision*  
**ELECTRICAL INSTRUMENTS**

The Triplet Electrical Instrument Co.  
209 Harmon Ave., Bluffton, Ohio

..... Please send me more information on..... Model 1601;  
..... Model 1690;..... Model 1630;..... Model 1631;  
..... Model 1670. .... I am also interested in.....

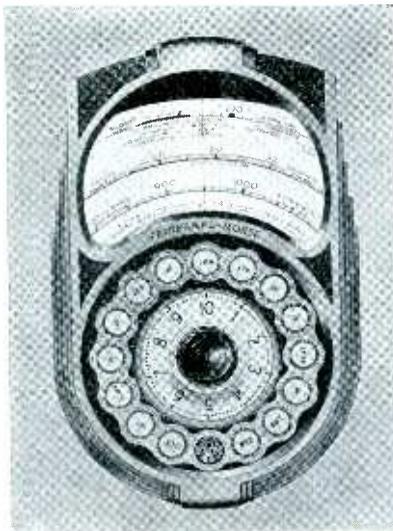
Name .....

Address .....

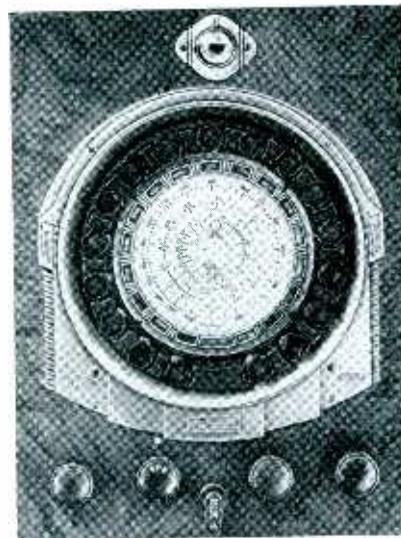
City..... State.....



*Tele-dial of Grunow permits 16 spot tuning.*



*With Fairbanks-Morse, each selector button has a definite individual frequency range.*



*Telephone dial of Wells-Gardner, 17 buttons tune your favorites.*

49 meter band is wanted, the corresponding button is pressed; the pointer automatically comes to rest in the center of the band. The listener then presses the "Manual" button and tunes in the particular station by the manual tuning knob. The tuning ratio of the dial is quite high, 120 to 1.

The motor is a special 6-volt reversing type, using a split phase winding with a capacitor of about 1 mfd. On the shaft is a friction clutch pulley with two prongs projecting away from the motor and parallel to the shaft. The motor pulley is belted to a larger pulley on a horizontal shaft supported along the front apron of the chassis. The shaft is threaded and on it rides a split nut, mechanically coupled to the dial.

In operation, the motor turns the screw and causes the nut to travel from one end to the other, in so doing it moves the pointer and likewise rotates the tuning condenser a half turn. A reversing switch operated from the tun-

ing condenser shaft reverses the motor at the end of each run.

Station stops are adjustable from the rear of the chassis. The 13 buttons are connected to adjustable contact pins mounted in three semicircular rows at the tuning condenser rear. Coupled to the tuning condenser is a roving contact which passes over the pins. When the roving contact strikes a contact pin, respectively connected to a depressed button on the front panel, a relay mounted at the end of the motor shaft is energized. This successfully opens the motor circuit, opens the silent tuning contact, puts the a.f.c. in operation and blocks the motor pulley. This last operation stops the tuning condenser instantly, the friction clutch removing any jar.

#### **Station Scanning**

Depressing the "Scanning" button permits the listener to slowly cover the dial from end to end. When the desired program is found the button should be released; thus it is no longer necessary to crank a dial when tuning over the band.

Adjustment of the system is similar to the forementioned type. The contact buttons are set to the correct position, then tightened by hand. Changing one button setting does not affect any other settings.

Motor driven automatic tuning is also used by Arvin. The method of control, known as the "Presto-Station-Changer," is somewhat similar to the above types. A maximum of 10 stations can be pre-selected in this model.

To set up the pushbuttons, unscrew the knob in the center of the dial and remove escutcheon which it holds in place. Next, tune in a station manually by means of the right hand knob. Select the button nearest the bottom of the dial for this station; depress the button and

rock the dial until this button engages and locks the dial. Unscrew the bakelite top on this button two full turns, and, still holding the button depressed, manually tune in the desired station again. During this operation the muting switch will prevent the operator from hearing the station, but its exact location will be indicated by the 6E5 tuning indicator. With the button still depressed, tighten the bakelite top and release. The station will then be properly tuned in. To check this, move the dial off the station, depress the button and return it to the lower center locked position.

This same procedure should be used in setting up the other nine buttons.

Full details of Stewart-Warner's pictured system are not available at the moment. It is, however, possible to pre-select 15 separate stations and new settings may be made without interfering with other positions.

Westinghouse places the pushbuttons around the manual control knob. Provision is made for 14 point tuning. Depressing any button starts the motor drive, turning the condenser gang.

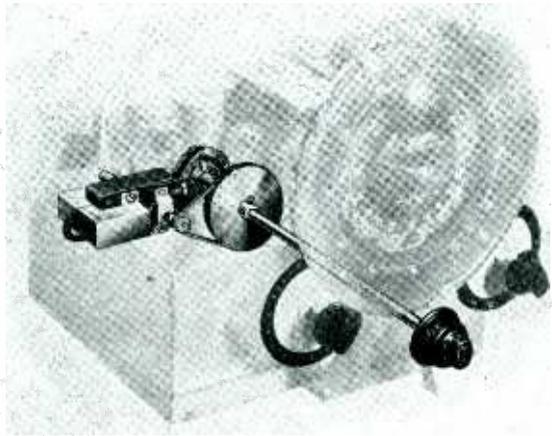
The motor and associated equipment are built directly behind the tuning dial. See illustration for details of construction.

Still another method of motor-drive is that designed by Zenith. A large, high ratio vernier dial is activated by a reversible motor. Turning a knob on the front panel to the right starts the motor, which moves the pointer across the dial. Releasing the knob when the pointer reaches the desired position, then tuning slightly with the manual control, solves the problem of tuning with a band-spread dial. If the station is at the other end of the dial the control knob is turned to the left, reversing the motor.

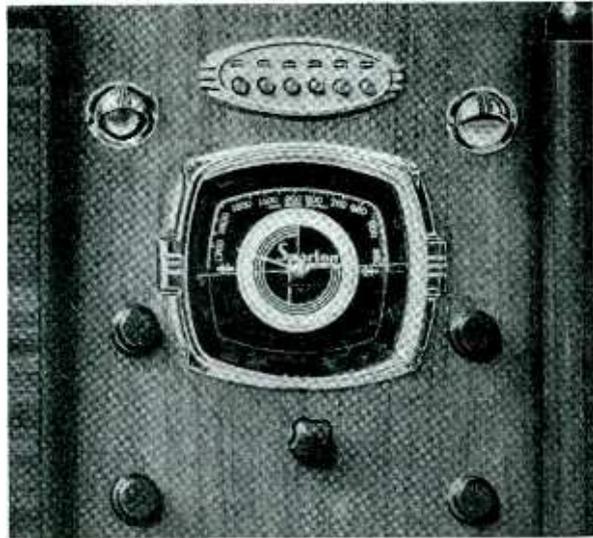
The new line of Admiral receivers also possesses automatic tuning. Design notes are not yet available. It is, how-



*Automatic tuning system of Detrola, built into a table model*



**Motor driven dial of Zenith; reversing switch is at rear of shaft.**



**Capacity selector of Sparton, tunes independent of main tuning dial.**

ever, a motor driven system controlled by 10 pushbuttons.

#### **Capacity Selected System**

A novel system, precalibrated trimmers selected by pushbuttons, is used by Sparton. Six desired stations are pre-tuned by three trimmer type condensers each. The capacitors tune the r.f., mixer, and oscillator stages. The push-button switch connects the proper set into the receiver circuit, at the same time releasing any other buttons. Automatic frequency control keeps the station always in exact tune.

The trimmers are easily accessible without removing the chassis. Stations are set up in a manner similar to aligning a receiver. A Viso-Glo tube in the set indicates exact resonance. This method of tuning is instantaneous, the station is in tune the moment the push-button is pressed.

#### **Manual Types**

Mechanical tuning has been further refined by several manufacturers. Grunow receivers preselect 16 stations. Stations are tuned in a manner similar to dialing a telephone. Station setting is accomplished by adjusting various stops along the dial frame.

Other manual types are Sentinel, Wells Gardiner, Fairbanks-Morse, Wilcox-Gay and Philco. The principles involved in these models are essentially alike. Philco differs slightly in that conical stops are used at the various station points. With this system the station is tuned roughly by hand; pushing the tuning knob inward automatically centers the dial exactly on the station. Adjustment is simple, requires a special tool which is inserted from the front of the cabinet through the selector knob. This permits the various stops to be adjusted to the desired station.

In adjusting the Sentinel dial, (see illustration) slide the knurled tabs on the edge of the dial plate so they are directly in line with the station's frequency marking on the dial. This is accomplished by turning the tab to the left to loosen it. When it is in position it should be tightened again. The station call letters are inserted on the metal frame attached to the knurled metal tab.

To tune this dial, grasp the knurled tab opposite the desired station marking and swing dial until the tab is underneath indicator stop. The station will then be in exact tune.

To set the Wells-Gardner dial pictured above the seventeen station stops are moved to individual positions and the tuning carefully adjusted manually, similarly to former telephone dial types. A bi-metallic thermostatic condenser compensates for drift caused by temperature changes. Thus the tuning is substantially constant over a long period of time.

All adjustments on the Wilcox-Gay system can be made from the front panel. They are as follows:

Using a long thin screw driver, unscrew set screw located at the end of decorative crank. This allows the dial plate to be lifted off, exposing tuning mechanism and the 10 tuning buttons.

Turn the tuning mechanism until the two buttons farthest apart are at the bottom; unloosen the red head screw approximately five turns. This removes the silent tuning while the stations are tuned and the dial set up.

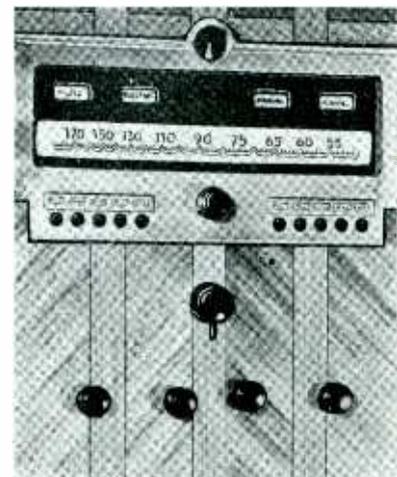
After tuning in the station desired, unloosen the station button nearest to the index slot at bottom, place one end of cam attached to knob in the slot. Hold the cam in this position and carefully tune in the station. When the station is perfectly in tune tighten station button very firmly. Repeat the above procedure for each tuning button. Station call

letters may then be inserted in the buttons by pressing the proper disc along with a celluloid disc into the opening. This is best accomplished with the eraser end of a pencil.

When all buttons are adjusted the dial plate should be replaced, it is held in place by tightening the tuning crank.

Other methods of automatic tuning will undoubtedly appear in future receivers. It can be said however, that 1938 models introduced this feature, made it work, and placed it on a production scale; pioneer methods were only experimental.

Its present popularity is proof that automatic tuning is a highly desirable feature to any radio. It has been brewing a long time, and at long last broken the ice. Although the methods of control may change, it is safe to say, that in the future, receivers will be tuned automatically, thus rounding out another phase of radio history.



**Electric tuning dial of Majestic preselects any 10 desired stations**

**There's a 'NEW DEAL'**  
**in EQUIPMENT DEALS!**



**QUICK DELIVERY TO YOU!**

**SMALL DOWN PAYMENT**

**TUBES AT STANDARD LIST PRICES**

**ARCTURUS HELPS YOU SELL**  
 The finest line of dealer helps on the market today. Write for descriptive catalog.

**ARCTURUS makes it easier than ever before to obtain up-to-the-minute shop equipment! . . . .**

Here is your chance to keep your shop absolutely up-to-date with standard equipment. The new ARCTURUS PLAN makes it possible for you to get the equipment you need, even the most expensive unit—and get it quickly, with only a small down payment.

**AND REMEMBER**—when you buy ARCTURUS TUBES under this plan you pay **STANDARD LIST PRICES**, less standard discounts. We haven't added one cent extra. This means that ARCTURUS offers a sensational Equipment Deal and **STILL SELLS TUBES AT STANDARD PRICES!**

The small monthly tube requirements make it easy for you to own this equipment. Some deals require the purchase of less than one tube per day! No need to "oversell" yourself on tubes.

Equipment offered includes Tube Testers, Set Testers, Oscilloscopes, Analyzers, Signal Generators, Combination Unit Assemblies, Portable Typewriters, a Genuine Neon Sign and a long list of other high quality shop equipment.

**MAIL THIS COUPON FOR DETAILS**

Arcturus Radio Tube Co., Newark, New Jersey.

Gentlemen:

Send complete details of your new Equipment Deal.

- I am a Dealer
- I am a Serviceman

**ARCTURUS**

**INDEPENDENT TUBES FOR DEALERS WHO DO THEIR OWN INDEPENDENT THINKING**

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

RR-1



# In one year WHAT SUCCESS!

220

All sold on deferred payments

## Model 220 Roto Ranger

Tube and Set Tester

In the opinion of hundreds, the Model 220 is the greatest of all analyzing equipment. The "Roto-Ranger" feature places twelve distinct scales at your finger tips. Utilizes latest tube testing circuit. Has filament return selector. Tests all types of condensers on separate scales. Has separate resistance scales of 100 ohms, 100,000 ohms, 100 megohms. Three D.C. scales of 8-300-1000 volts. (2500 ohms per volt.)

Net price..... \$62.75  
Time Price: \$12.50 down and 6 monthly payments of \$9.60 each.



275

## Model 275 Roto Ranger

High Sensitivity Set Tester

With the Roto-Ranger convenience and a sensitivity of 10,000 ohms per volt, this is one of the most outstanding instruments on the market—a new Simpson development. Ranges are D. C. volts 0-10-50-300-1000; A. C. volts 0-8-150-1000; ohms 0-2,000-200,000-20 megohms. Milliamps 0-10-100-500; Microamps 0-100.

Net price..... \$42.50  
Time Price: \$8.50 down and 6 monthly payments of \$6.60 each



201  
202

## Model 201 and 202 Roto Ranger

Volt-Ohm-Milliammeter

A Volt-Ohm-Milliammeter with Roto-Ranger Feature with the following ranges: Model 201 (D. C.) Ohms, 0-20-200-2,000-20,000-200,000-20 megohms; Microamps, 0-200; Milliamps, 0-10-150; Volts, 0-8-300-1,000. Model 202 (A. C. and D. C.) A. C. volts, 0-8-130-1,000; D. C. volts 0-8-300-1,000; D. C. Milliamps, 0-1-8-130; Ohms, 0-100-0-50,000-2 megohms.

Net Price D. C. Model..... \$32.50  
Time Price: \$6.50 down and 6 monthly payments of \$5.00 each  
Net Price A.C.-D.C. Model..... \$35.75  
Time Price: \$7.00 down and 6 monthly payments of \$5.50 each



## Model 210

All-Wave  
Signal  
Generator

A signal generator as accurate as it is beautiful. Heavy aluminum castings give proper shielding. Single rotary selector switch provides modulated, unmodulated and externally modulated radio frequency and 400 cycle audio output. Range: Continuously variable from 94 kilocycles to 26 megacycles—all on fundamentals. Divided into 6 bands, 94-216, 215-550, 550-1500 kilocycles and 1.5-4.0, 4.0-10.0, 10-26 megacycles, selected by means of a 6-position rotary switch.

Calibration: At 6 points with quartz crystal oscillators. Maximum change in original calibration over long periods of time are less than 1%.  
Net Price, A. C. line operated ..... \$49.00  
Time Price: \$9.85 down and 6 monthly payments of \$7.50 each  
Battery operated type (Model 211) ..... \$39.50

HOW DID IT HAPPEN? How did a line of testing equipment, unheard of one short year ago, move so swiftly into the front ranks of radio analyzing equipment. How, for example, did the Simpson Model 220, unknown only eleven months ago, become the fastest selling instrument in its price class?

Was it because Simpson Equipment brought fresh ideas (long overdue) into the radio testing field? Was it because the Roto Ranger feature marked the greatest single advance in ten years of instrument building? Was it because . . . but why go further?

The answer, we believe, is that this success, like all achievements, was not due to any one thing, but rather to the sum total of MANY THINGS. It was the logical achievement of an organization that started afresh and anew, with unsurpassed experience in instrument building to guide it, but with none of the handicaps of old methods, old facilities, or old ideas to hamper it!

A serviceman expressed the big idea in a simple, but forceful way, at the New York Show when he exclaimed, "There IS something about these Simpson Instruments that GETS you!"

Hundreds of servicemen saw that "something" at the New York Show, and hundreds more saw it at the Chicago Show. They saw the revolutionary advances in Simpson Instruments, and they saw something that is even more significant to the experienced eye—a new beauty of design and workmanship in every outward detail from panel to pointer that gave unmistakable evidence of a watch-like precision which carries into the minutest hidden detail.

The thousands who purchased these instruments have had their first impression eloquently confirmed in truly flawless performance. They have found instruments that do the job better and quicker—instruments that DO "STAY ACCURATE." Look at them here. Notice the range of service they cover, and the better way they cover it. But look at them "in the flesh" too—at your jobber's. You will then know HOW it all happened—in ONE SHORT YEAR!

SIMPSON ELECTRIC COMPANY  
5216 Kinzie Street, Chicago, Ill.



New

## Model 100 ANAL - O - SCOPE

A NEW FREE POINT TESTER for use with any Set Tester or Volt-Ohm-Milliammeter. Has five sockets with a complete set of series type jacks connected into the various circuits for measurement of voltage, current and resistance between any tube elements or socket contacts. By selecting a card corresponding to the tube under test and placing it on the ANAL-O-SCOPE a complete picture of the elements and connections is in view while all tests are being made.

The cord and plug method of analysis is combined with the "Free Point" method in this modern testing unit. Furnished complete with test prods, adapters and cards covering all popular tubes. Can be kept up to date at low cost.  
Net Price..... \$17.50



250

20,000 OHMS PER VOLT

## Model 250 -- Set Tester

This new Simpson Set Tester sets a new "high" in sensitivity and value. Negligible current consumption (20,000 ohms per volt) means incredibly accurate voltage readings on ranges of 2.5-10-50-250-1,000. Same ranges for A.C. at 1,000 ohms per volt. Current readings from 1 microamp to 500 milliamps. Accurate resistance readings as low as 1 ohm up to 40 megohms. Built and mounted as only Simpson Instruments are built. Send coupon for details covering range of tests. SEE IT!

Model 250 (20,000 ohms per volt model)—Net Price..... \$42.50  
Time Price: \$8.50 down, 6 monthly payments of \$6.60 each.  
Also built in 10,000 ohms per volt model. Net Price \$32.50

## Model 215

A. C.-D. C. Volt-Ohm-Milliammeter

The first small instrument (only 5 1/2 x 7 x 3") to incorporate a big, 4 1/2 - inch, easily read dial. Ranges: 0-2.5-10-50-250-1,000 volts A. C. or D. C. (at 5,000 ohms per volt D. C. and 1,000 ohms per volt A. C.); Milliamps, 0-10-100-500; Microamps, 0-250; Decibels five ranges—12 to +55; Ohms 0-4,000, 0-400,000, 0-4 megohms.

Net Price..... \$25.75



## Model 205

Volt-Ohm-Milliammeter

Here is Simpson quality and accuracy in a pocket edition. Only 5 1/4 x 2 7/8 x 1 3/4". Highest resistance ranges ever provided in an instrument of this size—0-2000-200,000 ohms—2 megohms; Volts 0-10-50-250-1,000 (D. C. only); Milliamps, 0-10-500.

Net Price..... \$13.25



## Mail This Coupon

SIMPSON ELECTRIC CO.  
5216 Kinzie Street, Chicago.

Please send facts covering Simpson Instruments checked:

- Model 220  Model 275  Model 201  
 Model 202  Model 250  Model 215  
 Model 205  Model 210  
 Anal-O-Scope

Name .....

Address .....

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

# SIMPSON

Instruments that

## STAY ACCURATE

### ASK YOUR JOBBER

# SHORTCUTS

## Matching Odd Impedance Values

By H. D. Hooton

Very few radio service men make any attempt to repair output transformers; instead, it is usually more practical to replace the faulty unit with another one of the same type. However, in many dynamic speakers, especially the older ones, the voice coil may have some odd value which is difficult to match accurately with the ordinary standard universal replacement transformer. Of course special transformers can be obtained from the manufacturer (if he is still in business) but this requires time, sometimes as long as several weeks. In cases of this kind it is usually best to re-vamp a standard replacement transformer in order to obtain the desired impedance.

The procedure is not so difficult as many service men may believe. In practically all of the universal output transformers the secondary or low impedance winding is placed on the outside of the coil and is readily accessible by merely removing the protective paper cover. Most transformers of this type are tapped at various points on the winding such as 0, 2, 4, 6, 8 ohms, etc. Suppose, however, that our voice coil is 5.43 ohms (the actual value of one popular permanent magnet dynamic speaker) and that we wish to use the output transformer tapped as listed above. If we remove the paper it will be found that the secondary consists of two layers of rather heavy enameled wire close-wound. It is necessary to determine the amount of turns required to produce an impedance of one ohm. If the entire winding (8 ohms impedance) consists of 52 turns then the amount of turns required for a one ohm impedance will be  $\frac{1}{8}$  of 52, or 6.5 turns. In order to match our 5.43 ohm voice coil the proper point for locating the tap will be 6.5 times 5.43 or about 35  $\frac{1}{2}$  turns from the 0 end of the secondary winding. Other values are determined in the same manner.

Another simple method of locating the tap is to connect one voice coil lead to the 0 terminal of the transformer and the other to the test prod. Touch the sharp point of the prod to various turns of the transformer secondary, making a good contact but being careful not to damage the insulation. It is necessary to feed a 1,000 cycle audio signal to the output tubes while this procedure is being carried out. The loudest and clearest signal will be heard at the point where the impedances match. The difficulty here is that the human ear must be depended upon to determine the

## WEBSTER-CHICAGO DEVELOPS ANOTHER BIG "SOUND" MONEY MAKER



### SELECTIVE PAGING SYSTEM WITH TALK-BACK FEATURES

... AT UNBELIEVABLY LOW PRICES



Model FC-7R  
Size 9" x 7 $\frac{1}{4}$ " x 6"

- 7 Watts of Power
- Talk to Any Station or to All Stations
- Talk Back From Remote Position Thru Speaker

Again Webster-Chicago blaze the trail of Sound progress . . . opening a vast new market for the Sound Dealer. Previously a paging or call system consisted of an amplifier, microphone and the required number of speaker

stations. Now for smaller factories, hotels, auto stations, departmental installations in larger factories, in fact for any paging system covering up to 20 to 3000 sq. ft. of floor space . . . A new low priced design having in addition a selective switch so that the operator can talk to any one station only or can throw the switch so as to talk to all stations at once. Talk Back from positions of 20 to 40 feet can be done from each station. And in doing this, equipment has been greatly simplified; just one small master unit encloses microphone and necessary speech amplification equipment and one specially designed speaker for each station. (Transmitter shown will handle up to 5 stations.)



Model DA-8  
Double End Speaker

Example	LIST	MODEL FC-7R	\$70.00
of Low	LIST	MODEL DA-8	\$20.25
Prices	LIST		

Model FC-7R will accommodate up to 5 speakers, will handle 20 to 30,000 sq. ft. of floor space at average noise level.

# WEBSTER - CHICAGO

The Complete line of Public Address Systems, Sound Equipment and Accessories . . . Popular-Priced Leaders in the Sound Field For Over 12 Years!

Strict Dealer Policy Fully Licensed

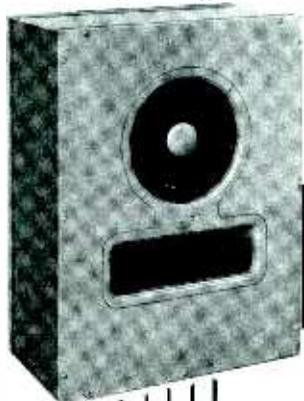
WEBSTER-CHICAGO  
Section S-8, 5622 Bloomingdale Ave., Chicago, Ill.  
Please send me more information on Model FC-7R;  
Model DA-8 Speaker \_\_\_\_\_ Send Catalog.  
Name \_\_\_\_\_  
Address \_\_\_\_\_ State \_\_\_\_\_  
City \_\_\_\_\_

**THE COMPLETE LOUD SPEAKER—NO BAFFLE REQUIRED**

**PERI-DYNAMIC  
REPRODUCERS**

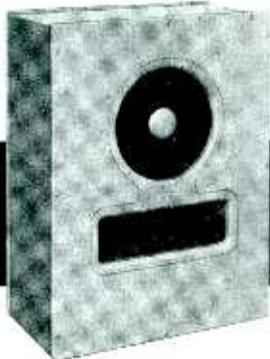
**Models KM and KV**

**... OFFERED IN SIZES TO MEET  
ALL REQUIRMENTS**

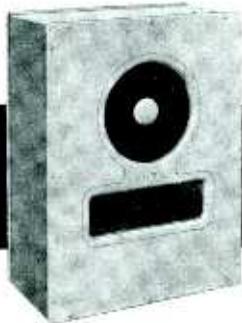


Model KM-15

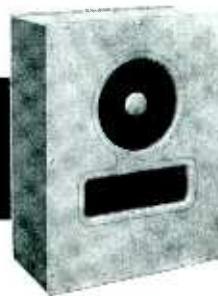
For 15" Speaker



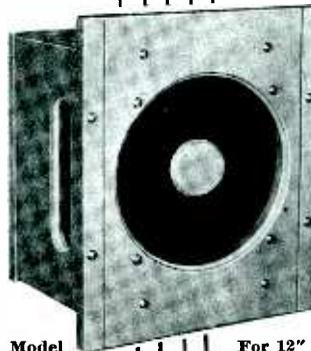
Model KM-12  
For 12" Speaker



Model KM-10  
For 10" Speaker

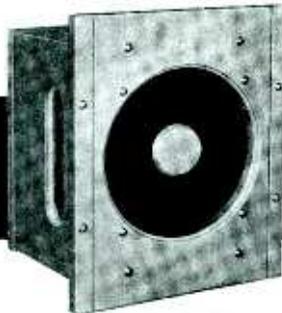


Model KM-8  
For 8" Speaker

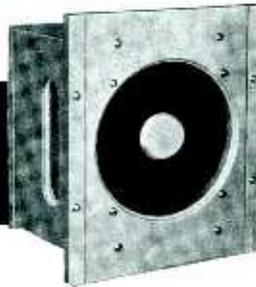


Model KV-12

For 12" Speaker



Model KV-10  
For 10" Speaker



Model KV-8  
For 8" Speaker

**Model KM**

Recommended for all kinds of voice reproduction and reinforcement, involving both voice and music, they are absolute essentials to the best reproduction in music because of their incorporation of the *Bass Reflex* Principle. This model should be used with radio receivers, phonographs, and in all cases where reproduction of music is the predominate requirement. Available with specially designed 8, 10, 12 and 15-inch Jensen Speakers.

**Model KV**

Recommended for use where reinforcement or reproduction of voice is the predominating requirement, for speech reinforcement, stage, ballroom, for paging and similar uses. Broadly stated, *Model KV* should be used for speech only when music is an incidental background for voices. Offered with specially designed 8, 10 and 12-inch Jensen Speakers.

Be sure to choose *Peri-Dynamic Reproducers* with your next sound system. Now offered with all systems by leading manufacturers of public address equipment.

The day of the loud-speaker with nondescript baffle is as out of date as the automobile with a hand crank.

Whole octaves added to music, speech crisp and intelligible, objectionable resonance and boom eliminated, performance independent of acoustic environment. Jensen *Peri-Dynamic Reproducers* mark a new era as definite as that created by the electro dynamic speaker. Models KM and KV are shipped in knock-down kits. The kits consist of speaker and knock-down enclosure, each packed in separate corrugated box containers, shipped together. All necessary screws, bolts, grilles, brackets, etc., included for assembly. Assembly instructions are complete. No tools necessary except an ordinary screw driver.

Enclosures are finished with two coats of French gray. Prices are very economical, and compare with ordinary speakers, considering that no baffle is required. For example, Model KM with 8-inch speaker, has a list price of only \$20.50, Model KV with 8-inch speaker lists at only \$12.50.

**Knock-Down Enclosure and Speaker Ready for Shipment**



JENSEN RADIO MFG. COMPANY,  
6601 S. Laramie Ave., Chicago, Ill.

RR-9-37

Please send me FREE 12-page folder, "The Guide to a New Day" and other descriptive literature . . . giving complete technical information about these New Jensen Peri-Dynamic Reproducers.

Name .....

Address .....

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

# SHORTCUTS

accuracy of the match. It is better to use the first method outlined above.

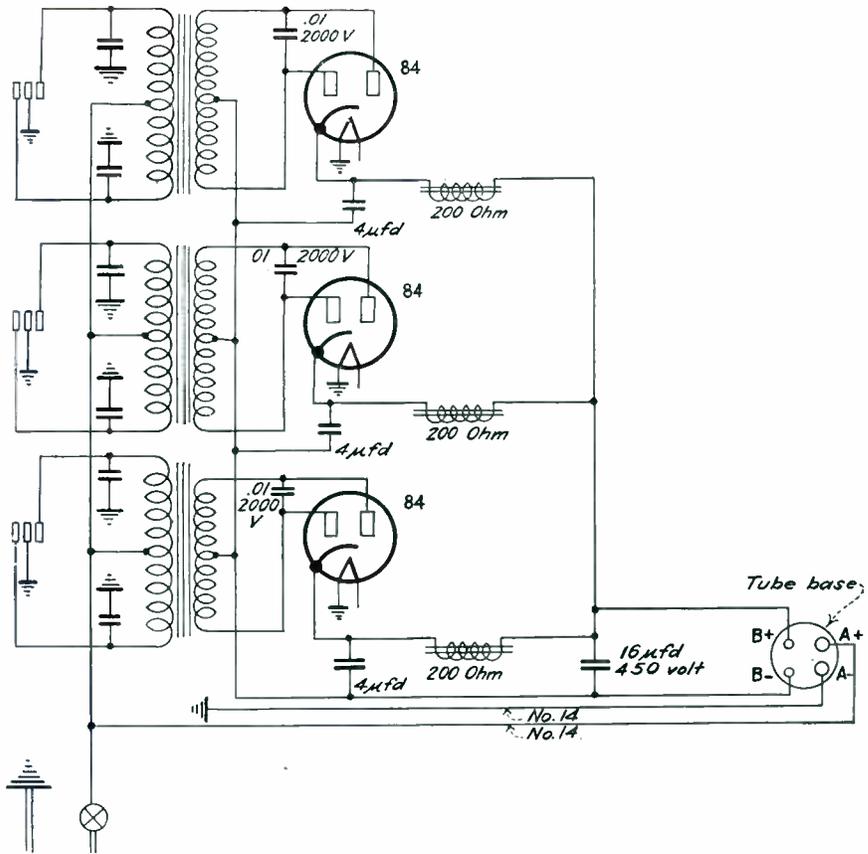
In either case, if the wire is unwound to facilitate soldering the tap, be sure to rewind the secondary turns in the original direction. The replaced winding should be impregnated with paraffin, coil dope or similar material in order to prevent the absorption of moisture and to keep the turns in place.

## Emergency Vibrator Supply

By Gerald Evans

When AC is not available, and an expensive 6 volt power supply is out of the question, the best and most satisfactory substitute is a 6 volt vibrator supply system, built in dual or triple on the same chassis.

Vibrator transformers and vibrators should be of the auto radio types, but of the highest voltage economically obtainable. Three of these transformers, three vibrators, and three type 84 tubes, make up the fundamental circuit. Either three chokes can be used, or one large choke is equally satisfactory, but the



# TODAY'S BIGGEST VALUE IN Precision RADIO TESTERS

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

**COMBINATION VOLT-OHM-MILLIAMMETER AND FREE POINT TESTER ONLY \$28.35**

Precision built throughout, Readrite-Ranger Radio Testers need no apology from the highest class servicing shops. In fact, you will find them using these rugged testers on calls because they have been particularly designed to withstand rough field work. Ask your jobber to show you today's biggest values in precision radio testers.

READRITE METER WORKS

920 College Dr., Bluffton, Ohio

Please send me more information on Model 640-740.

.....Model 640; .....Model 740. I am also interested

In.....

Name .....

Address .....

City .....

State.....



The Readrite-Ranger Model 640 Free Point Tester has eight automatic switch type and ten single action jacks. Five sockets will handle any type radio tube. Model 740 Volt-Ohm-Milliammeter has 3" Square Triplett Precision Instrument. Scale readings: 10-50-250-500-1000 AC and DC Volts at 1000 Ohms per Volt (DC Accuracy 2%; AC 5%); 1-10-50-250 DC M.A.; 0-300 Low Ohms; High Ohms to 250,000 at 1-1/2 Volts. (Rheostat adjustment for 13-1/2 Volts for Ohms readings to 2 1/2 Megohms.) Batteries may be added permitting such readings in 250,000 Ohms steps. Low Ohms to 1/2 Ohm with 25 Ohms in center of scale. Backup circuit used. Current draw is only 1 M.A. Batteries, accessories and instructions included.

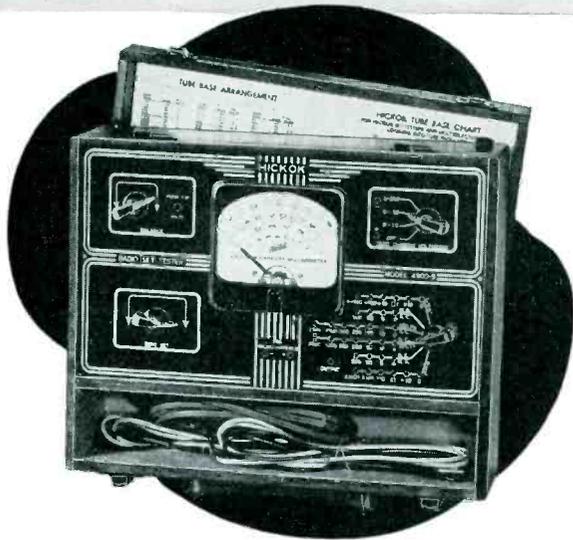
**PRECISION BUILT ONLY \$28.35**

**NO EXTRA CASES TO BUY**

**ALSO AVAILABLE AS SINGLE TESTERS**

See Our Display • Booth No. 105 • Radio Parts Show • New York City

# For Super Service - HICKOK TESTING INSTRUMENTS



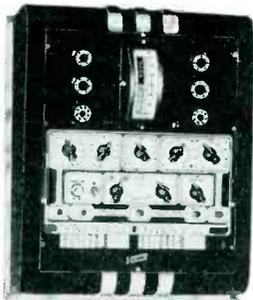
NATIONALLY APPROVED  
Greatest Accuracy  
Wider Ranges  
More Useful Features

## ZERO CURRENT VOLTMETER

(Set Tester) Model 4900 D. C. Potentiometer Type

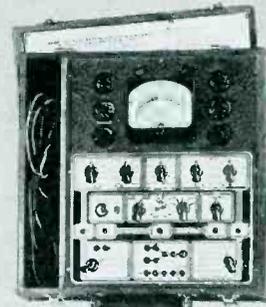
This new radio servicing tool meets all service requirements of the latest sets for accurate measurements of voltages in A.V.C. and A.F.C. and similar circuits. It measures D. C. Volts at infinite resistance per volt, A. C. and D. C. Volts at 1000 ohms per volt, microamperes, milliamperes, resistance, capacity and output. You will wonder how you ever got along without one.

## MUTUAL CONDUCTANCE TUBE TESTERS



AC 51-C is a counter instrument for testing tubes only. • AC 51-P is a portable instrument of the same type.

Engineers agree that Mutual Conductance is the best way to test tubes and **Direct Reading Mutual Conductance is an Exclusive Hickok Method.** It checks tubes in Micromhos and as "Good, Doubtful, Bad." Elements tested separately. Checks gas content. Tests for SHORTS hot or cold.



AC 51-X is a portable and counter instrument for testing both tubes and sets. Indicates volts, ohms, milliamperes, microfarads, etc.

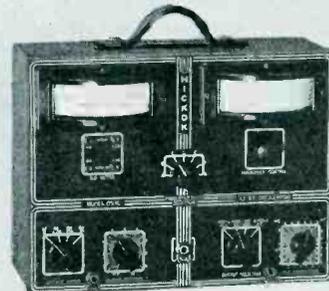
Hickok Testing Instruments are held in high regard by radio engineers because of their excellent performance, unfailing accuracy and sturdy construction. Why not standardize on this Quality Line and know that you are using the best instruments available?

### OS-10 OSCILLATOR AND NEW SIGNAL GENERATOR

All wave Audio and Radio Oscillator with many exclusive features: **Calibrated Output on both A. F. and R. F.,** external electronic frequency modulator for oscillograph use, 100 inches of direct reading frequency scales, edgewise db meter.

EASY PAYMENT PLAN, IF DESIRED

### OS-10 OSCILLATOR



### THE COMPLETE LINE OF HICKOK INSTRUMENTS

Set Testers • Tube Testers • Oscillographs • Modulators • Appliance Testers  
Oscillators • Panel Meters • Volt-Ohm-Milliammeters • Capacity Testers

### THE HICKOK ELECTRICAL INSTRUMENT CO.

10514 DUPONT AVENUE • • • CLEVELAND, OHIO

### MAIL THIS COUPON

THE HICKOK ELECTRICAL INSTRUMENT CO.  
Cleveland, Ohio

Please mail Radio Service Instrument catalog to

Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_

SEE YOUR NEAREST DISTRIBUTOR

# SHORTCUTS

three 50 milliamper chokes can probably be obtained cheaper. This complete unit can furnish a current of 150 milliamperes and a voltage depending on the transformers used, which should have as near the same voltage output as possible, within 10%.

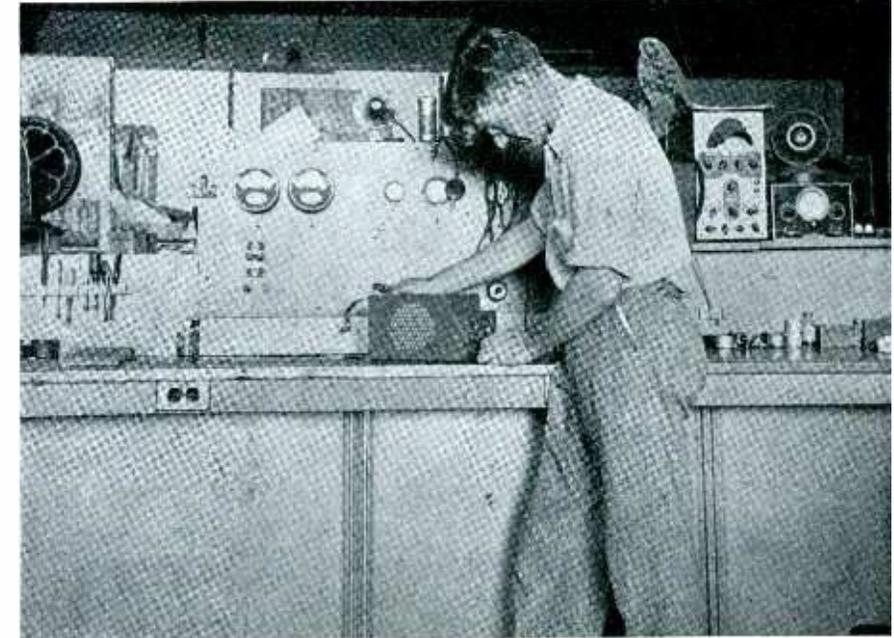
The transformers need not be synchronized, no attempt is made to combine the paralleled power until it is rectified and filtered, as shown in the diagram.

A triple unit of this type can drive the average 20 watt sound system to its rated output if the proper transformers are selected, and to 12 to 15 watts with most any auto type units. The output is smooth and free of hum, in fact less hum will be noted than with AC, and very little difference in volume will be noticed, in most cases.

## Distortion in Battery Sets

By H. D. Hooton

In most modern dry battery operated receivers some kind of resistance network across a portion of the "B" supply is used to obtain the various "C" bias voltages as required. In many circuits, such as the "Air-Castle" 1075B, the current through the network is not



**WON'T TALK**—When sets get cranky H and S Radio Service, Madison, Wisc., gives 'em the third degree in this modern shop

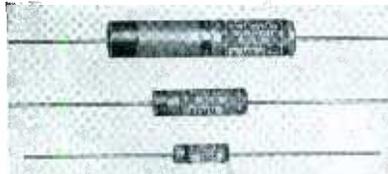
equal to the drain on the remainder of the battery with the result that the voltage of the "C" portion of the "B" battery does not drop so rapidly as that of the part which supplies the plate and

screen power. This means that as soon as the "C" batteries begin to drop, the bias voltage becomes too high for the particular plate voltage. When the individual "B" voltage drops to 40 volts

## Quiet, Insulated, and Reliable RESISTORS

CONTINENTAL CARBON bakelite insulated resistors are impervious to moisture, conveniently small and noiseless in high gain circuits. They are recommended for use in compact amplifiers and radios.

M3, 2"x13/16", 3 Watt, \$.33  
M1, 1"x9/32", 1 Watt, .20  
M1/2, 5/8"x7/32", 1/2 Watt, .17



CONTINENTAL CARBON ceramic insulated resistors have withstood the tests of time in actual service. Where space permits, ceramic insulated resistors are recommended for the utmost in stability and long life. In close tolerance applications, these resistors are the choice of leading test instrument manufacturers of precision equipment and meters.

H5, 3"x9/16", 5 Watt, \$.51  
E2, 2"x3/8", 3 Watt, .33  
D2, 1 3/4"x1/4", 1 Watt, .20  
G4, 1"x1/4", 1/2 Watt, .17

Send for Bulletins 104B, 105, 103A, and 101A

**CONTINENTAL CARBON Inc.**

13902 Lorain Ave., Cleveland, Ohio  
Also Toronto, Canada

*Money Talks*



● But so does the Spieler — reels and realms of talk—even expensive printed talk won't make pretty do as pretty says. It's results that count. Play Safe — Buy Exact Duplicate Radiart Replacement Vibrators from your Dependable Radiart Jobber.

# SELL

## BEFORE YOU

# BUY

**H**OW would you like to have a good stock of nationally advertised radio tubes on your shelves—without paying a nickel until they're sold?

That's how the Tung-Sol Consignment Plan works for radio dealers who can qualify. You don't pay for the tubes until you've collected your cost and profit. That's worth looking into—to see if you are eligible for this unique plan.

More than 8,000 dealers have

qualified—and are going places in the tube business.

Full profit—no investment—no dead numbers to write off a loss. Easy to sell, because your trade knows that Tung-Sol means top flight tube efficiency.

## TUNG-SOL

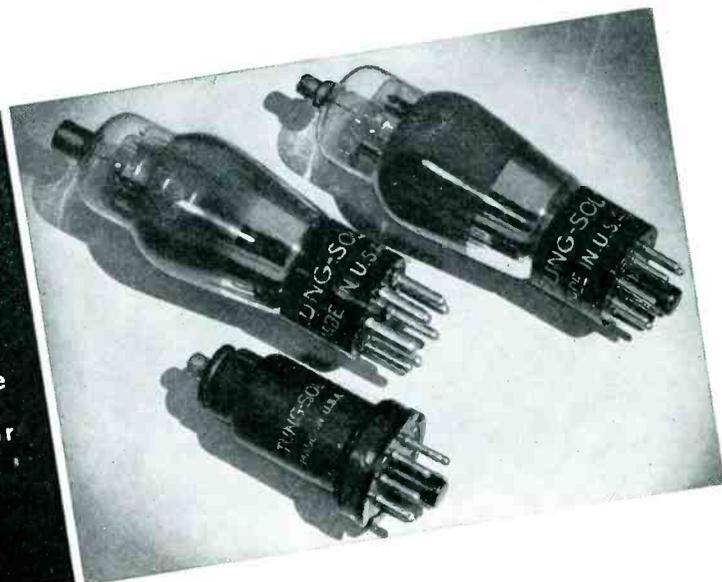
*Tone-flow Radio Tubes*

TUNG-SOL LAMP WORKS, INC.

Dept. B Radio Tube Division

SALES OFFICES: Atlanta, Boston, Charlotte, Chicago, Dallas, Detroit, Kansas City, Los Angeles, New York  
General Office, Newark, N. J.

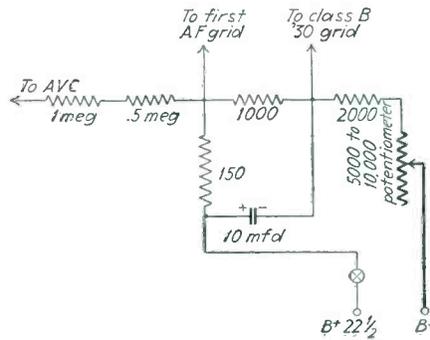
The Tung-Sol franchise is still available to a limited number of dealers who can qualify. Write for the name of your nearest wholesaler.



# SHORTCUTS

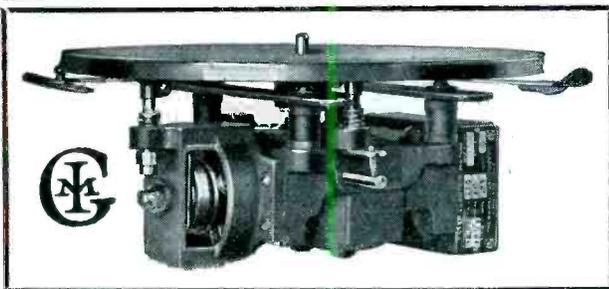
or less, distortion usually arises, the lower the "B" voltage becomes the more distortion is present.

In cases of this kind the bleeder network may be re-designed to equalize the two drains and to supply the proper bias voltages, or the bias may be lowered by means of an external resistor as shown in a typical circuit. In most instances the latter is recommended as the design and adjustment of bias networks is beyond the abilities of many radio service men. As the diagram shows, the 5,000 to 10,000 ohm rheostat or potentiometer is connected in series



with the "B" minus lead, the increased resistance across the battery having the effect of setting back the audio and I.F. grid return leads toward the positive end of the network.

The customer should be instructed in the proper adjustment of the variable resistor and it is advisable to provide some kind of pointer and dial so that the arm can be returned to the correct point required for the various "B" voltages. When installing a new set of batteries, the arm is always returned to the zero resistance position, thus reducing the bias.



### Have You Made Your Tests?

Order a sample now, for thorough testing. Please be sure to specify exact voltage and frequency of current you use.

**The GENERAL INDUSTRIES CO.**  
3737 Taylor Street, Elyria, Ohio

## Give Phonograph Customers a BUY Under the Turntable

INSTALL the kind of phonograph and radio-phonograph motors that YOU like. The kind that invite inspection—that you can talk up and sincerely promise to give superb service. General Industries FLYER Motors, famous for smooth, steady, unwavering operation, independent of variations in record drag and regardless of pickup weight. Providing accurate playing of fine records to the complete satisfaction of most critical listeners. Noiseless—completely free from motor whir and hum. Precision-built for long service.

General Industries governor-controlled, induction type, self-starting Flyer Motors have every newest modern electrical and mechanical advantage. Backed by over 30 years of success in designing and building specialized precision-built phonograph motors—more than a million sold. AC, DC or universal AC-DC types for all commercial voltages and frequencies.

**Announcing**  
THE NEW RIDER MANUAL

The Greatest

**ADVANCE SALE of any RIDER MANUAL**

Enthusiastic ordering even before it was published, that is the story of Volume VIII, out November 10th. Jobbers ordered heavily merely from a description of its contents. They visualized the value of the "plus" services which it offered to servicemen.

**VOLUME VIII IN TWO SECTIONS**

1. **MANUAL:** Over 1600 pages giving complete circuit information on 1937-38 models of over a hundred manufacturers.
2. **INDEX:** Of about 118 pages makes it easy to quickly find the data in all eight Rider Manuals.
3. **"HOW IT WORKS":** A separate section giving a description of the Technical Features of new sets, such as A. F. C.—motorized tuning, etc.

**PRICE \$10.00**  
**ORDER TODAY FROM YOUR JOBBER**

**JOHN F. RIDER, Publisher,**  
1440 Broadway, New York

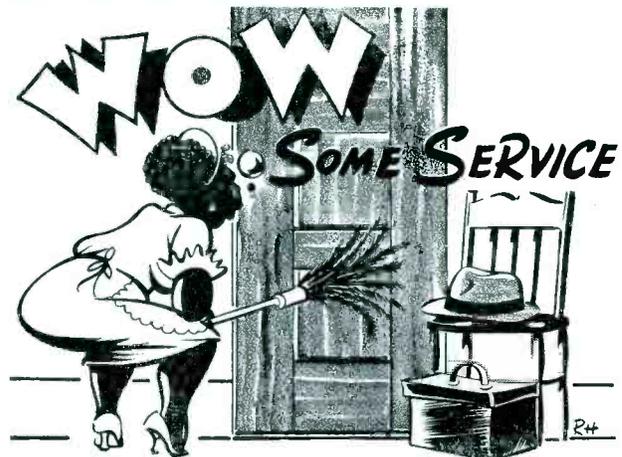
**Rider Books**

**VIBRATOR POWER SUPPLIES**  
by Garstang and Rider  
It becomes increasingly important that servicemen have this information on Vibrator Supply Systems. 280 Pages—Profusely Illustrated—Hard Covers—\$3.00.

**AUTOMATIC FREQUENCY CONTROL SYSTEMS**  
by John Rider  
With Automatic Frequency Control Circuits in many new higher-priced models, knowledge of "AFC" means money in your pocket. Cash in on profitable "AFC" work. 144 Pages—Hard Covers—\$1.00.

**VOLUME VIII**  
*Rider*  
**MANUAL**  
OUT NOVEMBER 10TH

**OVER 1600 PAGES**  
**PLUS THE NEW SUPPLEMENT**



The radio serviceman gives real service when he uses Ward Leonard Replacement Parts. They are honestly rated and made right, therefore work done with them "stays done." Send for Servicemen's bulletin 507A. It will help you build a permanent business. See our booth at Radio Parts Manufacturers Show, Port of Authority Building, New York, Oct. 1st to 3rd.

## WARD LEONARD ELECTRIC COMPANY

35 South Street, Mount Vernon, New York

Please send me free copy of Bulletin 507A.

Name .....

Address .....

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

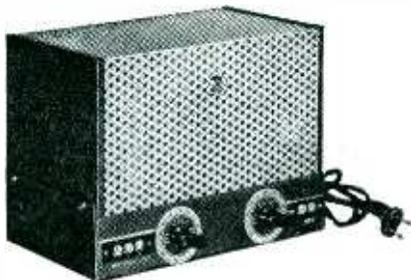
Jobber .....

# ANOTHER RCA FIRST

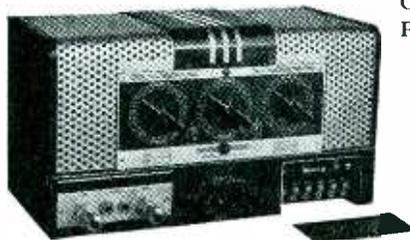
## REMOTE ELECTRIC MIXING



● (at left) The most important and valuable item ever developed for use in connection with PA equipment. Permits mixing of input circuits at any desired point remote from the amplifier. Shielded signal circuits not required. An absolute requisite for ball park, auditorium and similar installations.



● (above) A new high gain, general purpose, quality amplifier at low cost. Beam power output. Excellent frequency response...continuously variable tone control, reverse feed back circuit...microphone and phonograph inputs... wide variety output impedances... attractively finished in silver gray and aluminum. MI-4264, Price \$36.50 (Less Tubes).



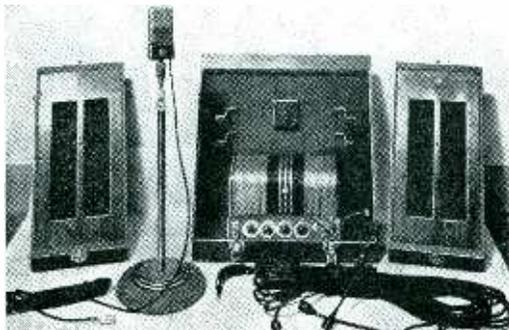
● (above) A de luxe, 24-watt amplifier with remote electric mixer. Splendidly shielded and cushioned input circuits insure quiet operation. Inverse feed back circuit... continuously variable tone control... automatic bass compensation for phonograph reproduction... two 250 ohm and two 0-5600 inputs... variable output impedance 4 to 250 ohms... finish, silver gray and aluminum. MI-4284, Price \$133.50 (Less Tubes and remote electric mixer unit).



● (above) A remarkably efficient 12-watt amplifier. Operates from either 110 volts AC or 6-volt dynamotor. Excellent mobile unit for sound trucks, buses, etc. 250 or 500,000 ohm inputs. Finished in silver gray and aluminum. MI-4274, Price \$78.60 (Less Tubes).



● (above) Two ace microphones for PA use. Left, RCA Junior Velocity "Mike." Provides real reliability and long life. New alnico magnets—marked increase in sensitivity, much higher signal to noise ratio. High, intermediate, or low output impedance. Adjustable mount, highly flexible. Unaffected by temperature or pressure changes. Bi-directional with null plane. MI-4036, Price \$43.50. Right, RCA Aerodynamic "Mike." Small enough to fit the hand. Excellent frequency response. High sensitivity. Excellent for close talking. No external excitation or power required. MI-6226, Price \$26.50.



● (above) A universally adaptable PA System. Operates from 110-AC or 6-volt storage battery and dynamotor. Permanent or mobile installation. 12 watts output, two powerful dynamic speakers with RCA velocity microphone. Provides a highly efficient PA System for numerous locations where good sound is paramount. PG-112, Price \$199.50.



See your nearest RCA Commercial Sound distributor for the new RCA Sound Catalog, or write direct to us in Camden, New Jersey.



# Commercial Sound

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

# TRICKS

## BELMONT 440

Replacing pilot lights. . . . It is necessary to remove chassis to replace pilots. Lamps are wired in series; replace with 6-8 volt .15 amp. bulb.

## BELMONT 675

No signals when tone control switched to bass position. . . . Shorted .02 mfd. condenser across output transformer. If set is dead with both settings of tone switch check 13,000 ohm screen dropping resistor for open.

## BOSCH 370

Hissing and weak signals. . . . Open primary in antenna coil. Weak oscillation on all stations. . . . Open bypass (C33) in same circuit.

## CROSLLEY 168

Hissing on all stations, lack of avc. . . . Replace dual 8 mfd. 25 v. condenser in cathode circuit of second detector and output tube with?

## CROSLLEY 706

Warm-up howl, stops if first audio tube is removed. . . . Shunt 500,000 ohms across grid of first audio. Also lower grid resistor of detector to 1 megohm.

## DETROLA WARWICK MODEL

Inoperative over part of broadcast band. . . . Replace voltage dropping resistor in screen circuit of 57 detector-oscillator. Original value is 50,000, replace with 40,000.

## FORD PHILCO 1936

Loud deep hum. . . . Check .25 mfd. in grid return of output tube for open.

## FORD PHILCO 1937

When installing a Ford radio in 1937 Fords increase the generator charging rate. To eliminate the possibility of burned out generators they are equipped with a "stop" marking on the third brush, making the charging rate 12 to 14 amperes. When installing a set adjust the charging rate according to the drivers requirements.

## GRUNOW 1937 MODELS

Inoperative on broadcast band . . . look for open oscillator coil or defective 6K7 r.f. tube.

RADIO RETAILING, SEPTEMBER, 1937

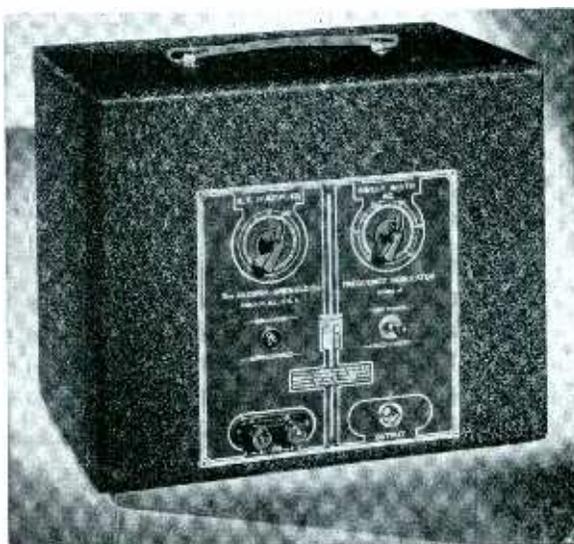
# INTRODUCING



Keep your customers satisfied! Ninety per cent of service calls are caused by condenser breakdown, so why jeopardize customer good will and create a flock of profitless "call-backs" by using inferior condensers. Use GLASSMIKE the condenser that's absolutely impervious to moisture, and *guaranteed* for a year. It's new, different, sealed in a glass tube, and it costs no more than ordinary condenser. Ask your jobber for GLASSMIKE—write today for descriptive circular with specifications.

**ASK YOUR JOBBER**  
to Show You "GLASSMIKE"

**CONDENSER PRODUCTS CO.**  
1369 NORTH BRANCH STREET  
CHICAGO • ILLINOIS



## NOW A PERFECTED MODULATOR

■ Kendall Clough, pioneer, of Cathode Ray and Electronic test equipment again scores a sweeping victory. After years of exhaustive study and research Clough-Brengle announces the . . .

### New Model 111 Electronic Frequency Modulator

One Positive—One Negative Beat!! No more! No less! Unit supplies only the frequency modulation needed to delineate receiver response curves on the Cathode Ray Oscillograph. Balanced Circuits, Band Pass Filters, Push Pull Coils and Unit Shielding have eliminated harmonics and spurious repeat points. Low impedance C-B coaxial cable provided with each instrument. Use with any R F Oscillator.

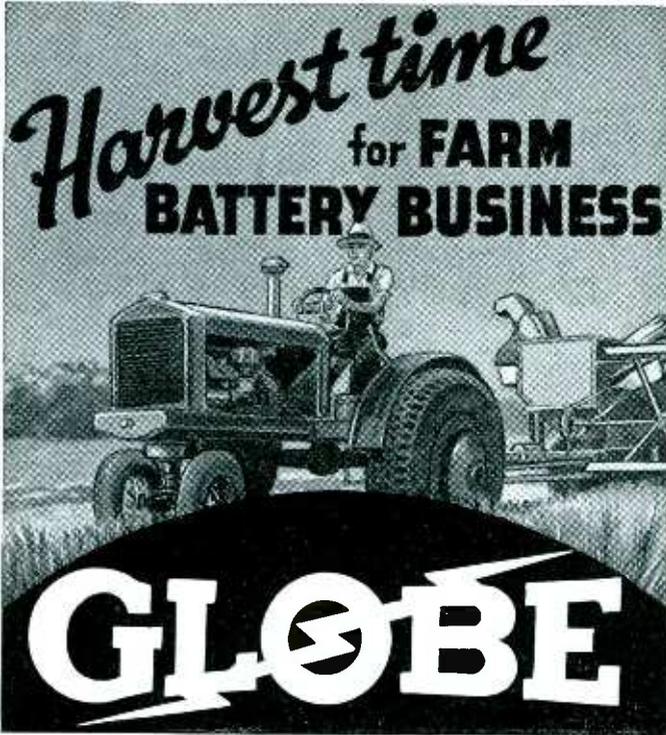
**FREE** Write today or see your parts distributor for complete description. **FREE**

LOOK  
INSIDE—  
THEN  
DECIDE

**The CLOUGH-BRENGLE CO.**

2819 WEST NINETEENTH STREET  
CHICAGO ILLINOIS





## A Complete Line for Every Radio and Light Requirement

THIS Fall there's more money on American farms than there has been for many years. Sales of Radio and other farm batteries will be substantially larger.

Here's your chance to reap big rewards with the nationally known Globe line—first on the farm. There is a Globe high efficiency battery to meet every rural power and light requirement together with splendid service from 8 Globe factories and 5 warehouses to insure prompt delivery.

It's Harvest time for farm battery business. See that you cash in with Globe. GLOBE-UNION INC., Milwaukee, Wis.

**2 - VOLT  
6 - VOLT  
GLASS JAR  
BATTERIES  
FOR RADIO  
AND LIGHTS**

for  
**Farm Homes  
Summer Cottages  
Camp Trailers  
Freight Trailers  
Boats and Yachts  
Tenders  
Filling Stations  
Garages  
Stores**

No. 35—6-Volt Radio "A" Battery.



No. 25—2-Volt Radio "A" Battery.



Glass Jar Cell with Ball-type indicator.

GLOBE-UNION INC., Milwaukee, Wisconsin  
Rush Bulletin 87-A and full details about Globe radio and light batteries.

Firm Name.....  
Street.....  
City and State.....  
Individual..... RR-5



NOT in years has there been such a heavy demand for wire in connection with the Serviceman's business. You have noticed it—we have noticed it.

With Public Address going like a prairie blaze and Radio a seething hotbed of activity which promises to be sustained, you will be needing GOOD WIRE.

CORWICO Wires are scientifically produced to do their job 100%. Antenna Systems, P-A Cables, Hook-up Wires—"made by engineers for engineers." Use CORWICO on your next contract.



**NOISE-MASTER  
ALL-WAVE ANTENNA**

### Eliminates "Man-Made" Static on Broadcast as well as Short Waves

LICENSED by Amy, Aceves & King, engineered with traditional CORWICO care, this masterly aerial system fits every set and every location. Filters out nuisance noises caused by electrical devices. Improves reception generally—widely endorsed by Service men.

**No. 14** (illustrated above) **\$6.75 list**

FOR broadcast and shortwave frequencies; designed to eliminate "man-made" static and afford better reception. Two to 6 sets can be operated at the same time with an additional lower transformer for each added unit. Other "Noise-Master" units available.

WRITE FOR INFORMATION.

CORWICO Wire Catalog available to Service men.  
Distribution is exclusively through Jobbers.

**CORNISH WIRE CO., Inc.**

30 Church Street  New York, N. Y.

# TRICKS

## SEARS ROEBUCK

Hum . . . speaker field is used as filter choke. Reversal of these leads will clear up trouble.

## SILVER MARSHALL 60

Distortion . . . Due to the high grid resistance (1 meg) on the 6F5 audio the grid often draws current on strong signals. This discharges the bias cell and lowers the bias on this tube. Change the 1 meg. resistor to .25 meg. Very little decrease in volume will result.

## SILVERTONE 1640

Motorboating . . . check .2 mfd screen bypass for open.

## SILVERTONE 1721

Fading or motorboating . . . replace 4-8 mfd electrolytic with 8-8 mfd 450 volt unit.

## STEWART WARNER R126A

Intermittent, distortion . . . replace C3 a .1 mfd condenser connected to grid of 75.

## STROMBERG CARLSON 641

Distortion. . . Check bias voltage of 45 output tube, filament circuit may be grounded at choke terminals inside can. Disconnect filament circuit from lugs and tape up separately.

## TRUETONE 6K

Crackling, noisy . . . remove the chassis and solder short leads from coil grounds to chassis. The original grounds were made through rivets and have worked loose from vibration.

## With an ear to the ground

Champion's knowledge of market trends—and foresight, places Champion Jobbers and Dealers out front.

The definite trend to Glass Resistor Ballast tubes for Initial Set Equipment was anticipated by Champion. Result—adequate stocks of all popular types are now available to meet replacement demand.

Order NOW—Cash in on this Profit Market  
**CHAMPION RADIO WORKS**

DANVERS, MASSACHUSETTS

Manufacturers of QUALITY Radio Tubes Since 1924

## CUT YOUR SERVICE OVERHEAD

*Meissner*



### Dual Universal WAVE TRAP

The only Wave Trap that will eliminate both channels of interference at the same time.

Serves two purposes. Suppresses code and noise interference at intermediate frequencies and at the same time eliminates interference from a station in the broadcast or police band. The dual control makes this possible.

Cat. No. 8048 . . . . . List Price \$2.65

Note:—Beautiful large counter display cards furnished FREE. Sold by All Leading Jobbers.

**MEISSNER MFG. CO.**  
Mt. Carmel - Illinois

# DEMAND OHMITE

### BROWN DEVILS

Vitreous Enamel—ideal for use under humid conditions.

### RED DEVILS

The resistor that will take heavy overload.

### Wire Watts

The universal 1-watt resistor for use in any radio receiver circuit.

### DIVIDOHMS

The Vitreous Enameled Adjustable Resistor for experimental work and an excellent voltage divider.

### RHEOSTATS

All-Porcelain—from 25 Watts to 1,000 Watts.

Ask Your Jobber For Ohmite—

Write For Complete Catalog

**OHMITE MANUFACTURING CO.**

4845 Flournoy Street

Chicago, U.S.A.

★  
Composition and wire-wound controls.

★  
Both standard and exact duplicate units.

★  
Also metal-tube resistor replacements.

★  
Most accurate and complete listings insure right choice.

★  
Ballasts, hum-balancers, and other units.

★  
And your Clarostat Jobber has been selected to serve you best.



## The Correct REPLACEMENT

The most extensive and accurate listings of sets and their *matched* replacement needs, PLUS largest line of exact-duplicate and standard units, guarantees the correct replacement when you insist on CLAROSTAT.

### New MANUAL . . . .

Just issued. Over 200 pages. Most extensive and accurate listings yet made available. ABSOLUTELY FREE. Ask your jobber or write direct for copy.

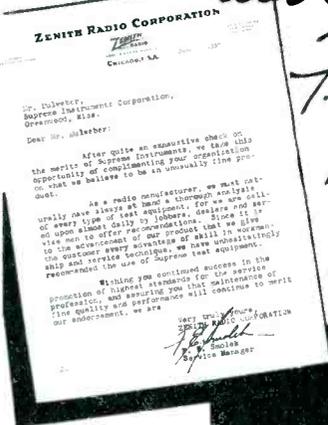
**CLAROSTAT** *Manufacturing Co. Inc.*



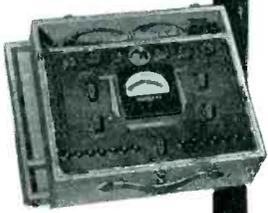
285-287 NORTH SIXTH STREET  
BROOKLYN, NEW YORK, U.S.A.

• OFFICES IN PRINCIPAL CITIES •

"We unhesitatingly recommend  
**SUPREME**  
 test equipment"



SERVICE MANAGER  
**J. E. Smolek**  
**ZENITH**



**MODEL 502** tube and radio tester. 7 instruments in one! Tests tubes and electrolytic capacitors on "Good-Bad" scales. Tests electrostatic capacitors for leakage on neon lamp, plus a complete DC volt meter with ranges from 0.2 to 1400 volts in 4 ranges, plus a complete AC volt meter with ranges from 0.2 to 1400 volts in 4 ranges, plus a complete ohmmeter with ranges of 0.1 ohms to 20 megohms (self-contained power supply), plus a 4 range output meter with ranges from 0.2 to 1400 volts AC. Cash Price only \$49.95 or \$5.50 deposit and ten monthly payments of \$4.95.



**MODEL 551** analyzer provides a method of making voltage, current and resistance readings directly from the tube socket without removing the chassis from the cabinet! Can be used either as a set tester or an analyzer, and permits analysis of all voltages from 0.2 to 1400 volts AC in 4 ranges—and 0.2 to 1400 DC volts in 4 ranges at 1000 ohms per volt. Three DC current ranges of 0.7-35-140 mils. 4 output ranges from 0.2 to 1400 volts AC. Self-contained ohmmeter circuit measures from 0.1 ohm to 20 megohms in 5 ranges. Single multi-contact selector switch makes any range instantly available. 20 functions and ranges in all. Cash price only \$38.95 or \$4.25 deposit and ten monthly payments of \$3.86.

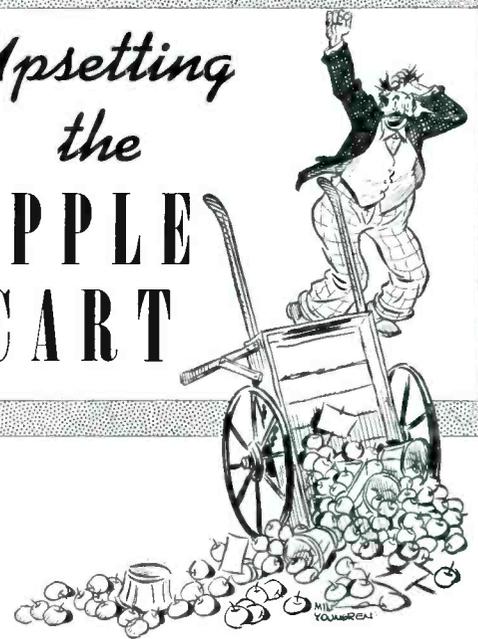


**MODEL 546** oscilloscope is a full-size instrument with a 3" cathode ray tube, yet sells for no more than a miniature 1" scope. Has vertical and horizontal Spot Centering Controls on the panel, an Intensity and a Focus Control, Synchronizing Control, Linear Sweep Range Selector, Fine Frequency Adjuster and Horizontal and Vertical Gain Controls. Use with a Signal Generator for complete visual alignment of radio receivers. Cash price only \$59.95 or \$6.50 deposit with ten monthly payments of \$5.95.

YOUR PARTS JOBBER WILL SELL YOU ANY SUPREME INSTRUMENT ON S. I. C. EASY PAYMENT  
 —THE LOWEST TERMS IN THE RADIO BUSINESS

**SUPREME INSTRUMENTS CORP., Greenwood, Miss.**  
 Export Dept., Associated Exporters Co., 145 W. 43rd St., New York City, Cable Address LOPREN, New York

Upsetting  
 the  
**APPLE  
 CART**



"Wha' d' y' mean — upsetting the apple cart?"

No! Stancor is not upsetting prices, for the Stancor price policy is *firm*. Stancor often gives better-than-usual *value*, but by manufacturing improvements, not shorter margins.

No! Stancor is not violating the ethics they have tried so hard to help establish in the industry.

But Stancor is upsetting the apple cart with . . .  
 the most complete transformer line,  
 the most compact transformer line,  
 the finest new catalogs and manuals ever issued by the industry,  
 and . . . a new brand of jobber promotion.

It's too long a story to tell, here. Ask our nearest representative or drop us a line and say, "Let's hear the news."

**STANCOR**

PRODUCTS

**STANDARD TRANSFORMER CORPORATION**

850 BLACKHAWK STREET • CHICAGO

# TRICKS

## WELLS GARDNER 1937 MODELS

In a few of the volume controls used on the early 1937 radios of the series mentioned above, the manufacturer used a plating which under certain conditions can develop a "whisker." This "whisker," which can be seen only under a microscope, may short circuit the element.

When this occurs in auto sets, it usually manifests itself by a reduction in volume. The resistance of the control element when measured will be found to be much less than the rated value—

sometimes as low as 1000 ohms.

This condition is easily remedied by connecting a 45 volt battery from the movable arm to ground. The movable arm may be at any point between the high potential (high volume) end of the control and the center position. Do not move it below the center position to avoid damaging the control. Any "whisker" touching the element will be burned away. In the case of the Series 6J auto set, the movable arm connection may be made at the control grid of the 6B7 tube.

This same condition is much less likely to happen in house sets because of greater spacing in the volume control. However, if it does occur, it will usually manifest itself in low volume, the set cutting out entirely or noise when the control is turned. The remedy is the same as mentioned above.

## ZENITH 4F-133

Inoperative, pilot light burned out. . . . Replace pilot with 2.9 volt bulb only. Pilot is wired in series with the two 15 tubes.

CHANGER



Model "L"  
Automatic  
Record  
Changer  
Unit

PICKUP

MOTOR



### Have You Ordered Your Test Samples?

Shown above, Model "L" Changer Unit. Changes eight 10-inch records or seven 12-inch. Model "K" changes eight 10-inch records and plays 12-inch records changed by hand. Please specify exact frequency and current needed for your samples.

## USE THE CHANGERS THAT SELL COMBINATIONS

General Industries Popular Priced Changers

TAKE advantage of the natural desire of average radio-phonograph customers to have the fine advantage of automatic playing. Equip them—at moderate cost—to enjoy fine music without interruption—to dance or listen at their ease without the bother of changing records. . . . The general run of people can afford automatic playing as placed within their reach by General Industries Record Changer Units. You can make more sales and better profits by installing these units. Easily done with low labor cost. Dependable for long trouble-free service.

The GENERAL INDUSTRIES CO. 3737 Taylor St.  
Elyria, Ohio

## AC CURRENT ANYWHERE! In CARS . . . On FARMS . . . In DC DISTRICTS

With New  
**1938**  
DC-AC  
**INVERTERS**



FOR OPERATING—Standard 110 volt or 220 volt AC Radios Public Address Systems, Electrical Testing Equipment, etc.

List price as low as \$20.00. \*Without Filter. As low as \$22.50 with filter. (Standard Discounts Apply).

### PROVEN—DEPENDABLE—GUARANTEED

**OUTSTANDING FEATURES** • Interference-Free All Wave Radio Operation • Improved Long Life ATR Vibrators of new design and construction having dual arms and using eight 1/4" diameter tungsten contacts assuring increased long life and reliable service. • Four Point Voltage Regulators make possible the correct output voltage for minimum to maximum loads and also help compensate for input voltages which are lower or higher than normal. • 32 Different Types for DC input voltages ranging from 6 to 220 volts and having AC output voltages of both 110 and 220 volts.

### OTHER ATR PROFIT MAKERS

#### ATR AUTO RADIO "A" BATTERY ELIMINATOR



Specially Designed for Demonstrating and Testing Auto Radio Sets on Regular AC Lines, 105-125 Volts, 60-60 Cycles. Has many other uses. Comes completely equipped with On-Off Switch, Pilot Light Indicator, 10 ampere Fuse, Rubber Mounting Feet, 6 ft. Rubber Cord, Heavy Gauge Metal Cabinet.  
ATR Standard Model Rated output 6.3 volts at 6.5 amps (Without Meter) Dealer's Net Price Complete . . . \$13.95  
ATR Heavy Duty Model Rated output 6.3 volts at 14 amps (Without Meter) Dealer's Net Price Complete . . . \$21.00  
Any of the above models equipped with indicating voltmeter, add \$1.00 extra.

#### ATR Auto and Farm Radio Replacement Vibrators

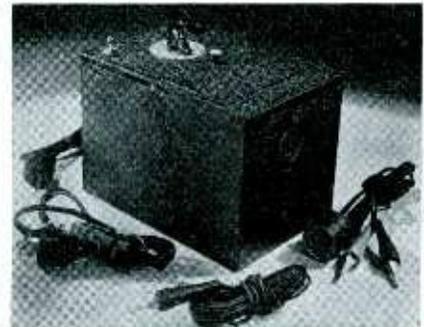
A COMPLETE LINE FEATURING • Longer Life • Precision Construction • Improved Performance • Lower Prices  
(backed by More Than Six Years of Experience in Vibrator Design and Research, Development and Manufacturing.)

**ATR Automatic Tapering BATTERY CHARGER**  
Keeps Auto Battery fully charged right in the car! Operates from any 110 volt AC 50-60 cycle line. Equipped with a full wave dry disc type rectifier unit. Comes completely equipped.  
Model 400 Maximum charging rate 4 amperes . . . \$ 7.95 List  
Model 600 Maximum charging rate 6 amperes . . . \$11.45 List  
(Standard Discounts Apply)

**AMERICAN TELEVISION & RADIO CO.**  
St. Paul, Minnesota, U. S. A. Cable Address: "Lixex" New York



Interference analyzer (at right) diagnoses noises. Recommends Cure. Only \$7.50 (Serviceman's Net Cost).



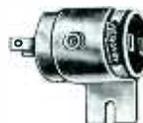
You can't afford to be without this servicing instrument.

## Interference Filters

Carry a few AEROVOX noise filters. A type for every noise source.

Also used at set when noise source is beyond reach.

Attractive folder for set owners builds up demand.



Noises mean dollars for you. There's a buck or two in each noise. If you think, talk and sell AEROVOX noise suppression, you'll add many dollars to your income. We can show you how.

### New CATALOG . . . .

Just issued. 32 pages. Full page on noise suppression. Ask local jobber or write us for copy.





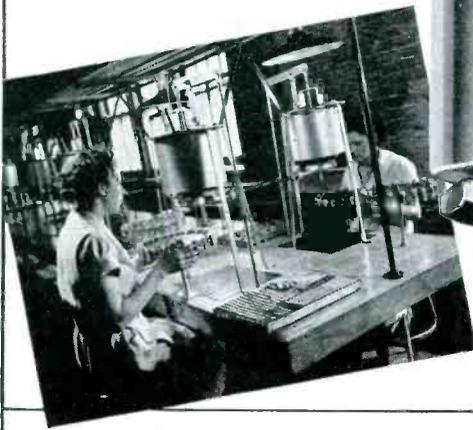
## RED HEAD BRAND CONDENSERS

### A QUALITY PRODUCT

● Precision built of the finest materials and constructed to the highest standards of engineering practice—Red Head Condensers bring you the utmost in serviceability and dependability. Their popularity in all branches of the Radio industry has been attained solely on the basis of performance. Scientific control in manufacture coupled with materials of the highest purity imparts to "Red Head" Capacitors unquestioned quality.

### ALL TYPES AND SIZES

● "Red Head" Capacitors are available in all standard sizes and capacities—Bypass and Electrolytic—high and low voltage. Start using "Red Heads" now—they cost no more than ordinary capacitors.



A precision product of the highest quality

### for THE JOBBER

An unusually attractive proposition awaits the jobber on "Red Head" Condensers. Attractively packaged, they make an ideal resale unit for both the dealer and serviceman. Despite "Red Heads" high quality, they are priced to net you real profits.

### for THE MANUFACTURER

Manufacturers will find in "Red Head" brand condensers a practical solution to their capacitor problems. Quotations will be furnished upon receipt of specifications. Our engineering staff will be glad to confer with you on special requirements.

Write for Prices

**CONSOLIDATED**  
WIRE AND ASSOCIATED  
**CORPORATIONS**

512 SO. PEORIA ST., CHICAGO, ILL.



# Utah



No Haggling over the Counter when you say—  
**"IT'S A UTAH"**

You're in business to make money . . . so think twice about Utah Speakers and parts. First, remember that there are more than 3,000,000 sets in use TODAY equipped with Utah parts. Second, Utah's 12 consecutive months of sales increase prove that servicemen and parts buyers, more and more, are looking to Utah for replacement parts.

Just bet your next order that UTAH Speakers are easiest to sell. Try it. Dealers have found that the easiest way to more sales at bigger profits is UTAH—the name that means "Worth the Money" to parts buyers. Address department RR9 for complete information.

**UTAH RADIO PRODUCTS CO.**

CHICAGO, U. S. A.

TORONTO

BUENOS AIRES

ONTARIO, CANADA

(UCOA RADIO PRODUCTS CO.)

**"16 YEARS OF LEADERSHIP"**

# TRICKS

## ZENITH 230, 245

Motorboating. . . . This is almost always caused by insufficient filter. Add an additional 4 mfd. to the filter circuit; this will also reduce the hum level.

## ZENITH 420

Rapid motorboating, no reception. . . . open 500 mmf. condenser across plate and cathode of the 56 second detector.

## ZENITH 770B-775B-476B

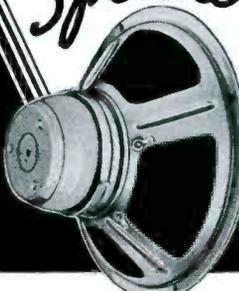
Dead. . . . Check for open 1/4 watt 99000 ohm diode load resistor on 56 diode second detector.

## ZENITH 805, 807, 808

Distortion after a few minutes operation. . . . Replace .02 mfd. 400 volt audio coupling condenser to 600 volt.

## ZENITH AUTO SETS

Intermittent, noisy. . . . Check antenna trimmer, adjustable from outside of case, for metal filings. Fine grains of metal tear from the movable plate thread when this condenser is adjusted. Replace with new condenser (part #22-583).



**CINAUDAGRAPH**  
*Speaker*

**CINAUDAGRAPH**  
**Magic Magnet Speakers**

—extensively utilized by all leading radio receiver and P. A. equipment manufacturers—are available in a complete range of sizes from 5 1/2 to 18 inches, to meet your every radio requirement.

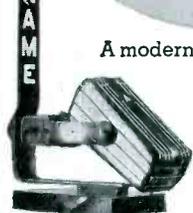
If you demand utmost dependability and fidelity of reproduction from your equipment—in-sist on Cinaudagraph P. M. speakers. Carried in stock by all progressive distributors. Free descriptive literature on request.



**CINAUDAGRAPH CORPORATION**  
Speaker Division • Stamford, Conn.

## the AMPERITE VELOCITY with NEW DESK STAND

the LEADING VALUE IN P. A. EQUIPMENT TODAY!



A modern, versatile combination. Ideal for Desk, Pulpit, Footlights, Banquets. Leaf spring suspension acts as extra shock absorber.

STAND ONLY  
LIST \$4.00

Name Plate with maximum of 10 letters.  
LIST \$2.00

### Microphones:

Models RBHn (High Imped.); or RBMn (200 ohms); with Cable Connector & Switch . . . LIST \$42.00.

Models RBSn, RSHn, streamline design, slightly lower output than above, with switch only . . . LIST \$32.00.

### NEW "HAM MIKE"

No Peaks! No Splashing! Real Broadcast Quality!

RF CHOKE CIRCUIT INCLUDED IN MICROPHONE

Finest mike ever designed for "hams". No peaks, thereby allowing a higher percentage of modulation without splashing. Output, -68 db. Operates directly into grid of tube. Rugged. Not affected by climate or pressure changes.

MODEL HAM (High Imped.) or MODEL HAL (200 Ohms) Gunmetal, LIST \$22.. Chrome, LIST \$23.00. Price includes special Ham Desk Stand with individual call letters, and 6 feet of cable.



### AMPERITE MODEL RAL

A popular Amperite \$22 LIST Velocity of very high excellence. Used for both speech and music. No peaks. Flat response over audible range. Output, -68 db. Triple shielded. Fitted with shock absorber and swivel bracket. MODEL RAL (200 ohms) with 8 ft. of cable; MODEL RAH (2000 ohms) high impedance, with 12 ft. of cable. Gunmetal, LIST \$22.00 Chrome, LIST \$23.00



FREE: Window Decal & Window Display

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



## Slash

### Your Equipment Costs!

Model 350, (5000 ohms per volt) Multirange Analyser is the latest addition to the Triumph line. Only \$19.95 with a 3" square meter, \$24.95 with a 4 1/2" square meter. Thirteen practical ranges, a.c. d.c. volts, 0/3/15/150/600, d.c. mils 0/15/150, and 3 resistance ranges, 0/5000/1,500,000/15,000,000 ohms.

Triumph test instruments cost less! Practical utility, good appearance, and merchandising value of Triumph equipment increases your professional prestige and service profits. Your low original cost effects substantial savings without sacrifice of quality. Choose Triumph!



### Sensational!!!!

Say all who have seen and heard the Visograph. Thousands in use now. It flashes reports on radio health. It shouts out loud if a radio tube is dead! Here is a tube merchandiser and tester combined. Checks electronic conductance, opens, shorts and leakage of every tube on the market, \$39.95. Distributors, write for proposition.

### TRIUMPH MFG. CO.

4013 W. Lake St. Chicago, Ill.  
(In Canada, Big A Co., Belleville, Ontario)

Send Catalogs and free Instructions on How to Operate an Oscillograph Wobbulator.

Name .....  
Address .....

# INDEX TO ADVERTISERS

September, 1937

	Page		Page		Page
AEROVOX CORP. (Condensers)	87	HICKOK ELECTRICAL INSTRUMENT CO. (Test Equipment)	78	RIDER, JOHN F. (Service Manuals)	81
AMERICAN MICROPHONE CO. (Microphones)	54	HORTON MFG. CO. (Electric Washers)	39	RURALITE ENGINEERING CORP. (Wind-Electric Chargers)	54
AMERICAN TELEV. & RADIO CORP. (Vibrators)	87	HYGRADE-SYLVANIA CORP. (Tubes)	41	SENTINEL RADIO CORP. (Farm Radio Sets)	41
AMPERITE CO. (Microphones)	89	INTERNATIONAL RADIO CORP. (Radio Sets)	23	SIMPSON ELECTRIC CO. (Service Instruments)	74
ARCTURUS RADIO TUBE CO. (Tubes)	73	INTERNATIONAL RESISTANCE CO. (Resistors)	60	SOLAR MANUFACTURING CO. (Condensers)	59
BOND ELECTRIC CORPORATION (Batteries)	4	JANETTE MANUFACTURING CO. (Rotary Converters)	55	STANDARD TRANSFORMER CO. (Transformers)	86
BOGEN CO., DAVID	59	JENSEN RADIO MFG. CO. (Speakers)	76	STEWART-WARNER (Radio Sets)	25
BREEZE-ELECTRIC CO. (Wind-Electric Chargers)	54	J. F. D. DISTRIBUTING CO. (Auto Radio Replacement Parts)	58	STROMBERG CARLSON TELE. MFG. CO. (Radio Sets)	2, 3
BRIGGS & STRATTON CORP. (Gas Engines & Generators)	12	KEN-RAD CORP. (Tubes)	8	SUPREME INSTRUMENT CORP. (Test Equipment)	86
CHAMPION LAMP WORKS (Radio Tubes)	85	MAJESTIC RADIO & TELEVISION CORP. (Radio Sets)	53	TRAV-LER RADIO CORP. (Radio Sets)	9
CINAUDAGRAPH CORP. (Sound Equipment)	89	MALLORY & CO., INC., P. R. Inside Front Cover (Replacement Parts & Power Packs)		TRIAD MANUFACTURING CO. (Tubes)	58
CLAROSTAT MFG. CO. (Volume Controls)	85	MARS MANUFACTURING CO. (Auto Antennas)	59	TRIPLET ELECTRICAL INSTRUMENT CO. (Test Equipment)	70
CLOUGH-BREngle CO. (Test Equipment)	83	MEISSNER MFG. CO. (Wave Traps)	85	TRIUMPH MFG. CO. (Test Equipment)	89
CONSOLIDATED WIRE & ASSOC. CORPS. (Condensers)	83	NORGE DIVISION, BORG-WARNER CORP. (Refrigerators)	49	TUNGSOL RADIO TUBES, INC. (Tubes)	80
CONTINENTAL CARBON CO. (Resistors)	79	OHMITE MANUFACTURING CO. (Resistors)	85	UNIVERSAL MICROPHONE CO., LTD. (Microphones)	59
CORNELL-DUBILIER CORP. (Condensers)	64	OPERADO MANUFACTURING CO. (Inter-Communicating Systems)	57	UTAH RADIO PRODUCTS CO. (Vibrators)	88
CORNISH WIRE CO. (Antennas)	84	PIONEER GEN-E-MOTOR CORP. (Electric Plants)	54	WARD-LEONARD ELECTRIC CO. (Replacement Parts)	81
CROSLEY RADIO CORP. (Radio Sets)	Inside Back Cover	RADIART CORPORATION (Vibrators)	79	WARD PRODUCTS CO. (Auto-Radio Antennas)	54
DETROLA CORPORATION (Radio Sets)	6	RADIO CORP. OF AMERICA (Sound Engineering)	46, 47	WEBSTER-CHICAGO (Sound Equipment)	75
ELECTRO-ACOUSTIC PRODUCTS CO. (Sound Equipment)	55	RAYTHEON PRODUCTION CORP. (Tubes)	37	WEBSTER ELECTRIC CO. (Inter-Communicating Systems)	66
ELECTRONIC LABORATORIES, INC.	56	RCA MANUFACTURING CO., RA- DIVISION (Commercial Sound)	82	WESTON ELECTRICAL INSTRUMENT CORP. (Test Equipment)	62
EMERSON RADIO & PHONO. CORP. (Radio Sets)	5	RCA MANUFACTURING CO., RA- DIOTRON DIV. (Tubes)	10, 11		
FADA RADIO & ELECTRIC CO. (Radio Sets)	30	RCA MANUFACTURING CO., SET DIVISION (Radio Sets)	43		
FREED MFG. CO., INC. (Radio Sets)	58	READRITE METER WORKS (Test Equipment)	77		
GENERAL ELECTRIC CO. (Radio Sets)	Back Cover	REMLER CO., LTD. (Inter-Communicating Systems)	54		
GENERAL HOUSEHOLD UTILITIES (Radio Sets)	34				
GENERAL INDUSTRIES CO. (Phono. Motors, Record Changers)	81, 87				
GLOBE-UNION (Batteries)	84				

## SEARCHLIGHT SECTION

### Classified Advertising

Classification	Page
CATALOGS	91
RADIO STOCKS	
Allied Radio Co.	91
G & G Majestic Refrig. & Radio Parts Service	91
Midwest Appliance Parts Co.	91
Miles Reproducer Co.	91
Radolek Co.	91
S. R. Co.	91

McGraw-Hill Publishing Company, Inc. Publication Office: 92-129 North Broadway, Albany, N. Y. Editorial and Executive Offices: 330 West 42d Street, New York, N. Y. Branch Offices: 520 North Michigan Avenue, Chicago; 883 Mission Street, San Francisco; Aldwych House, Aldwych, London, W. C. 2; Washington; Philadelphia; Cleveland; Detroit; St. Louis; Boston; Atlanta, Ga.

# SEARCHLIGHT SECTION

EMPLOYMENT and BUSINESS OPPORTUNITIES—SURPLUS STOCKS—DISCONTINUED MODELS

**UNDISPLAYED RATE:**  
15 cents a word, minimum charge \$3.00.  
*Positions Wanted* (full or part-time salaried employment only)  $\frac{1}{2}$  the above rates, payable in advance.  
(See ¶ on Box Numbers.)  
Proposals, 50 cents a line an insertion.

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

**DISPLAYED—RATE PER INCH:**  
1 inch ..... \$8.00  
2 to 3 inches..... 7.80 per inch  
4 to 7 inches..... 7.60 per inch  
An advertising inch is measured vertically on one column. 3 columns—30 inches—to a page. Contract Rates on request.  
Radio Retailing

(New advertisements must be received by October 6th for the October issue)

**SELLING OPPORTUNITIES OFFERED—WANTED**  
Selling Agencies—Sales Executives  
Salesmen—Additional Lines

## OPPORTUNITY WANTED

REPRESENTATIVE with 7 years' radio trade experience now seeks exclusive agencies for South Africa on commission basis. Receivers, office inter-communication systems and replacements, etc. RA-114. Radio Retailing, 339 West 42nd Street, New York City.

## New "SEARCHLIGHT" Advertisements

must be received by the 6th of the month to appear in the issue out the same month.

Address copy to the  
Department Advertising Staff  
Radio Retailing  
330 West 42d St., New York City

## OVER 10,000 PARTS FOR VACUUM CLEANERS AND WASHING MACHINES

24-HOUR SERVICE!  
Attach this "Ad" to Your Inquiry and Receive Complete Catalog  
Manufacturers Factory Representatives  
MIDWEST APPLIANCE PARTS CO.  
2722 W. Division St. CHICAGO, ILL.

**\$500,000 GENUINE MAJESTIC-GRIGSBY GRUNOW REFRIGERATOR & RADIO PARTS. 2090 REFRIG. UNITS SEND FOR PRICE LIST. UNITS G & G GENUINE MAJESTIC REFRIGERATOR & RADIO PARTS SERVICE 5801 W. DICKENS AVE. CHICAGO, ILL.**

## CLOSING OUT!!!

HUNDREDS of AMPLIFIERS, P.A. SYSTEMS, MICROPHONES, COMPONENTS, etc., at LOW-EST prices. Write for our Bulletin 36.  
We are moving to new and larger quarters.  
MILES REPRODUCER CO., Inc. (Est. 1923)  
New Address: 812 Broadway, near 12th St. New York, N. Y.

## Attention Service Men and Dealers FACTORY CLOSEOUT OF RADIO TUBES

R. C. A. licensed new unbranded, fully tested and guaranteed. Quantities Limited—Order Now

TYPES			
1A6	6B7	35	57
1C6	6C6	41	59
2A3	6D6	42	75
2A6	6F7	43	77
2A7	10	46	78
2B7	12Z3	49	82
5Z3	24	50	85
6A6	32	55	99V
6A7	34	56	99X

While they last 20¢ each

Special discounts allowed to quantity purchasers  
F.O.B. Passaic, N. J.

No order less than (\$1.00) one dollar will be accepted

S. R. Co.

66 Lexington Ave., Passaic, N. J.

## Quick-Touch DIAL 1938 KNIGHT 5 TUBE SUPERHET



Only 1325 A Real Leader!

Here's a new set that's perfect for a price-leader! An amazing performer with latest features. New Quick-Touch Dial—tunes 12 stations in 12 seconds! R.C.A. and Hazeltine licensed 5 Tube A.C. Superhet circuit.  $4\frac{1}{2}$ " full-vision dial. Tone control, A.V.C., etc. Gets police calls. Priced low to sell. See this set and 64 other new 1938 KNIGHT "Extra-Value" Radios in ALLIED'S new 1938 Catalog—just out. Investigate this great line of radio profit-makers today!

## New RADIO SUPPLY GUIDE Just Out!

Write for the new 1938 ALLIED Radio Catalog—your Complete Buying Guide. 164 pages packed with Everything in Radio! Over 12,000 parts, latest test equipment, new KNIGHT Integrated Sound Systems, books, tools, etc. All standard lines at prices that mean more value—more profit for you. Send coupon now!



ALLIED RADIO CORP.  
Dept. 18J-8, 833 W. Jackson Blvd.  
Chicago, Ill.  
 Send your FREE new 1938 Radio Catalog.  
Name .....  
Address .....  
City..... State.....



# STOP SEARCHING!

HERE IS YOUR "GUIDE"

## SEND FOR THE NEWEST BOOK IN RADIO!

Here is the solution to all your radio supply problems . . . Here is your key to the fastest service . . . Lowest Prices . . . and the largest stock of Radio Repair Parts in the world! This Radolek new 1937 Radio "Profit Guide" is the most complete and up-to-date Radio Parts Catalog ever published . . . over 160 pages . . . bringing to you over 12,000 individual Repair Parts . . . hundreds of new items . . . a complete new selection of Radio Receivers, Amplifiers, Tubes, Tools, Books, and Instruments . . . Everything you need . . . always in stock . . . Radolek gives you what you want when you want it and at the right prices . . . Send for your FREE copy of this big New Book NOW!



FASTEST SERVICE

COMPLETE STOCKS

LOWEST PRICES

## AUTO RADIO HEADQUARTERS

EVERYTHING IN AUTO RADIO—at the right Prices . . . Universal control heads . . . Dash mounting adapted Kits . . . Every type auto aerial . . . Cables and fittings . . . Complete vibrator guide . . . Everything you need . . . Ready for prompt shipment.

## RADOLEK

601 W. Randolph St., Dept. A-11, CHICAGO

Name .....  
Address .....  
Serviceman?  Dealer?  Experimenter?

Rely on Radolek for "Everything in Radio"

## Hollywood Headache

Radio manufacturers, distributors and dealers are all suffering from a common malady, whether they know it or not. My term for this malady is "Hollywood Headache."

While the best brains of radio engineering have been hard at work designing receivers capable of delivering improved quality, reducing radio interference, the broadcast boys have been doing a Rip Van Winkle on their overstuffed studio couches.

For two years I have been telling Detroiters how to get rid of interference and how to get better reception quality, through newspaper columns and over Station WWJ. Now they are talking to me, and I am doing the listening. And so is the dealer who sold them late model receivers capable of reproducing accurately over a wide acoustic range. For he has told them that they could get programs clear as a bell, could hear all the instruments in an orchestra in their correct pitch and volume.

But the broadcasters are now making us look like fakers. It is the West Coast chain programs that are bad, that are giving us "Hollywood Headache." Transmission is good from New York to Chicago, but farther west and over the Rockies . . . terrible!

Intermittent crashes that sound like static but are certainly not picked up locally mar programs. High-pitched whistles are frequently transmitted throughout programs. High and low audio frequencies are woefully lacking.

What is this, faulty lines? Or trouble at the key broadcasting stations?

DETROIT

W. A. JACOBY

Yours is the first complaint on this score we have seen. Perhaps some broadcast reader can answer.

## Exporters Please Copy

I have been in India for just over a year now and feel the need of several changes on the part of the export departments of the radio manufacturers. Two I will mention.

First: Better export packing. Shipping sets with valves in the sockets may be okay in USA but invariably we find one or two lying loose in the cabinet, smashed of course. Speakers should be packed separately even if in the same case with the set. The heavy speakers of console sets break loose the baffle boards to the resultant damage of both cabinet and speaker.

Second: Allwave sets going down to 13 meters. In English countries the 13 meter Daventry station is especially desired. At-

mospheric conditions are so poor during monsoon weather that reception is hopeless except on 13 meters. The failure of sets to go down to 13 meters is the chief flaw that the English set dealers bring out against American sets. We lose 25 per cent of the sales we do because of this lack.

P. O. BANGALORE HEIGHTS, SOUTH INDIA  
E. J. HENNING  
(Ry. Stn. Krishnarajapuram)

Spicer College

## Modern Diogenes Rewarded

The inclosed ad appeared in the Peoria "Star" of August 3.

Can it be that radio dealers are at long

last beginning to be truthful in their advertising?

PEORIA R. O. BUTTERFIELD  
*Butterfield's Radio and Sporting Goods*

## Boston, Mass.

We are guided by *Radio Retailing* in making purchases of new goods and have studied each issue with interest.

We take the liberty to inquire about an auto-radio bearing the name "Automatic Radio Co." We have never seen this maker advertise in your magazine and would like to know how long this set has been on the market. If you can inform us how this auto-radio rates with others we would appreciate this very much.

GRAFTON, W. VA. GEORGE FAVISH

Glad to give you this firm's address but we must decline to compare any one manufacturer's merchandise with anybody else's. Matter of policy with us.

## Calls Servicemen Suckers

In answer to the letter entitled "Penurious Pay," in your August issue, may I comment that if even the street-cleaners in Little Old New York average more mazzuma per week than any two average servicemen then the obvious conclusion is that we servicemen are the real McCoy and right at the top of the list when it comes to classifying suckers.

We must belong to servicemen's organizations.

We must study to keep up with the times.

We must keep our instruments up to date.

We must have manuals.

We must have the latest tools.

We must advertise.

We must have an automobile.

We must check tubes free.

We must compete with wholesalers at times.

Why can't we receive proper remuneration for all of this? Why must we be the laughing-stock among all the service crafts?

BROOKLYN, N. Y. JAMES L. KEARNS  
*Kearns Sound Laboratories*

## Booster

We wish to let you know that we are glad to have a trade magazine like *Radio Retailing*. We look forward each month with lots of interest for *Radio Retailing* to see what's new, such as service tips and news from the manufacturers of radio equipment.

WEST MONROE, LA. J. P. MCKEE  
*McKee Radio Service*

## Another

I am interested in securing information relative to the possibility of securing one dozen copies of page 25 in *Radio Retailing* for April, 1937. The page in question is titled "Sound in Industry." I would appreciate receiving this information at your earliest convenience.

NEW YORK HAROLD FOX

When they are not out of print we gladly supply a few copies of articles to subscribers who have a definite use for them. No charge if we have them to send.

## And Still Another

May I take this opportunity to compliment you on the high standard you are maintaining in your publication, attempting to express in my own poor fashion the pleasure and invaluable information I derive from my monthly perusal of this goldmine of facts and figures. It's the tops!

MANSFIELD, OHIO GEORGE E. LINGFELTER  
*Ling's Radio Service*

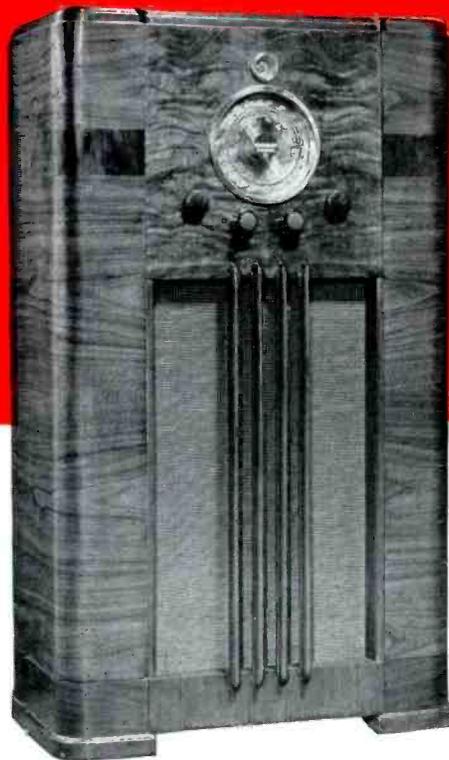
ANOTHER CROSLEY RADIO SENSATION

THE CROSLEY DYNATROL 11

ELECTRIC TUNING

11 TUBES

\$89.95



Crosley Dynatrol—Model 1127—11 tubes . . . 3 bands, 525-22,000 Kc. . . . Receives American, foreign, amateur, aviation, police, and ships-at-sea broadcasts. Dynatrol motor-drive electric tuning. Latest type IRIS tuning indicator. Mirro-Dial, edge lighted, gold reflector-type with graduations fused on the convex glass. 10" electro-dynamic speaker. Tone compensation on broad automatic volume control.

Continuously variable tone control. 10 watts output. Extra large cadmium plated chassis. Power supply noise filter. Push-pull pentode output. Greater selectivity with local-distance switch. More beautiful cabinet with sloping front panel of stump walnut, sliced walnut top and half-round walnut pilasters, decorated with stump walnut bands. Hand rubbed finish. Cabinet dimensions: 40" high, 24 $\frac{1}{4}$ " wide, 12 $\frac{3}{4}$ " deep.

Once again Crosley crashes through with another sensational radio leader from the 1938 All-Star Radio line . . . an eleven-tube console model with electric tuning for only \$89.95. Like every other model in the Crosley All-Star line, the Dynatrol 11 is by a wide margin the biggest radio value in its own price class. Like all the other All-Star models, too, it is a natural sales leader that has all America "Swinging to Crosley." Have your Crosley Distributor demonstrate the startling Dynatrol Electric Tuning feature, as well as the score of other powerful selling features that distinguish this and other Crosley All-Star models. See and hear these models today. Stock and sell them . . . and join the profitable "Swing to Crosley."

*(Prices in South and West slightly higher)*

**THE CROSLEY RADIO CORPORATION - CINCINNATI** POWEL CROSLEY, Jr., President

Home of "the Nation's Station"—WLW—500,000 watts—70 on your dial

YOU'RE **THERE** WITH A CROSLEY



# TOUCH TUNING

*Just press a button—that's all*



**More SALES**  
**More PROFITS**

## FOR RADIO DEALERS EVERYWHERE

It's a natural sales scoop — packed with sales features that GIVE YOUR CUSTOMERS MORE FOR THEIR MONEY. It's packed full with sensational features that give you more to talk about — more to demonstrate — more to sell — a bigger opportunity for profits.

**G-E TOUCH TUNING** — with 16 button controls. Fully automatic. Just press a button — that's all.

**G-E TONE MONITOR** — an amazing improvement . . . this newly perfected circuit corrects tone distortion.

**G-E LOUVER DIAL** — "easy to read as a ruler" from natural standing or sitting position. Incorporates VISUAL 4-point TONE and VOLUME CONTROLS.

**G-E "Custom-Craft" CABINETS** — smartly styled. Beautiful and rare veneers — plus 10 additional sales features.

**MODEL F-107—10 TUBES—3 BANDS  
—16 BUTTONS**

## GENERAL ELECTRIC IS BACKING ITS SENSATIONAL NEW LINE WITH THE MOST FAR-REACHING AND SWEEPING ADVERTISING PROGRAM IN ITS HISTORY

- in **MAGAZINES** — a smashing schedule that will help you sell G-E Radios.
- in **NEWSPAPERS** — Right now . . . 637 newspapers in 473 cities are telling the G-E Radio story to still more millions.
- **ON THE AIR** — every week the G-E "Hour of Charm" tells the G-E Radio story to still more millions.
- **ON BILLBOARDS** — throughout the nation the G-E Radio story is told to America's outdoor population.
- with **ACTION WINDOW DISPLAYS** — in thousands of windows telling the G-E Radio story.
- and 10 **SALES-MAKING SALES PROMOTION ITEMS** — to help you sell G-E Radios.

## GET ABOARD THE G-E BANDWAGON FOR EXTRA SALES AND PROFITS

*The New*  **GENERAL ELECTRIC**  
**RADIO**  
FOR REPLACEMENTS SPECIFY GENERAL ELECTRIC PRE-TESTED TUBES

Appliance and Merchandise Department, General Electric Company, Bridgeport, Connecticut