

MAY, 1937

# RADIO RETAILING

McGRAW-HILL PUBLISHING COMPANY, INC.

25 CENTS PER COPY

*Spotting the features*

THAT HELP YOU MOVE  
RCA VICTOR RADIOS FASTER!



## Number 2

### RCA VICTOR'S MAGIC BRAIN

Magic Brain eliminates interference, insures more stations, better tone, easier tuning. Silver-plated copper-band coil system now gives even better performance than previously. The first radio frequency stage used even in D-band ahead of first detector, has the "Watchman Tube," which guards programs against noise and interference, and super-charges them four times.



### THESE 24 EXCLUSIVE RCA VICTOR FEATURES ALSO MEAN FEWER "FIRST YEAR", NON-PROFIT SERVICINGS

Magic Voice; Magic Brain; Magic Eye; Metal Tubes; Worldwide Reception; Super-Fidelity Speakers; Higher Fidelity Tone System; Duo-plane Speaker Mountings; Tone Compensation; Dynamic Expansion; Micro-tone Control; Music Speech Control; Beam Power Amplifiers; Antenna

Wave Traps; Built-in Antenna Couplers; Automatic Volume Control; Permanent Adjustment; Stabilized Oscillator Circuit; Rubber Fleated Chassis and Condensers; Selector Dial; Band Spreaders; Edge lighted Dial; Record Player Connections; Magnificent Cabinets.

**RCA VICTOR**  
**MAGIC VOICE**  
**MODEL 9K3.** A  
price leader in the  
quality class . . .  
with Magic Brain,  
Magic Eye and  
Metal Tubes.



### RCA ALL THE WAY

Most broadcasting equipment is built by the Radio Corporation of America. Most power on the air is RCA installed. The newest RCA Victor sets keep the thread of RCA quality unbroken from the microphone to you. They bring your customers reception to match the fidelity with which RCA equipment and NBC engineering put programs on the air.

RCA Victor wants to help *you* make more money. Why? Because by so doing, *you* can help RCA Victor make more money.

We sincerely think that by giving you the details concerning RCA Victor's 24 features for finer performance... by urging you to tell your prospects about these features, just as we tell you about them... that you can sell *more* RCA Victor radios—and sell them *faster* and *easier*! Because these features are not mere claims. They are facts that prove beyond question the extra quality built into RCA Victor radios. And if you point out these features to your prospects—talk about them—they'll prove more convincing than ten

thousand fancy claims.

Note the 24 features shown on this page. Read all about the one "spotted." If you didn't get the information previously published here on Feature Number 1, let us know and we'll send it to you. Keep these and subsequent pages on hand. Study them. Use them. They'll prove welcome selling aids to you.



**RCA Victor**  
RCA MANUFACTURING CO., INC.  
Camden, New Jersey  
*A Service of the Radio Corporation of America*

I always thought...  
I never knew...  
I had an idea...

Well..here are facts!

**MALLORY-YAXLEY**  
*Precision Radio REPLACEMENT*  
PARTS COST NO MORE THAN  
ORDINARY PRODUCTS

THREE service men check the prices of Mallory Condensers, Mallory Vibrators, and Yaxley Volume Controls against the prices of competitive products. All three are surprised to learn—and tickled to death to know—that Mallory-Yaxley products with all their well-deserved prestige and popularity *cost no more than ordinary products.*

Said one—"I always thought that because Mallory-Yaxley had done so much for the service man that I'd have to pay a premium to use their products." Said another—"I never knew that a company big enough to publish a book like the Mallory-Yaxley Radio Service Encyclopedia would charge no more for its products than I pay for those of companies that have done little or nothing to advance the service man's interests."

And the third remarked—"I had an idea that products with the reputation and prestige of the Mallory-Yaxley line just couldn't be priced on a really competitive basis."

So—if you "always thought"; if you "never knew"; if you've "had an idea"—check with your dealer or distributor—through counter or catalogue and get the proof that will make you say: "I'm going to buy Mallory-Yaxley from now on!" And—after you've used these precision replacement parts awhile you'll find that the good-will and good business they build make Mallory-Yaxley products *actually cost less in the long run!*



*No More Time Wasting*

when you get a copy of the  
**MALLORY-YAXLEY RADIO SERVICE ENCYCLOPEDIA** from your distributor.

All the information on Circuits—Schematics, L. F. Peak Frequencies, Transformer Circuits, Condensers, Volume Controls, Vibrators and Tubes—in one book, on one page, on one line for any receiving set.

Use

**MALLORY**  
REPLACEMENT  
CONDENSERS...VIBRATORS

P.R. MALLORY & CO., Inc.

P. R. MALLORY & CO., Inc.

INDIANAPOLIS

INDIANA

CABLE ADDRESS—PEMALLO

Use

**YAXLEY**  
REPLACEMENT  
VOLUME CONTROLS

# RADIO RETAILING

MAY, 1937

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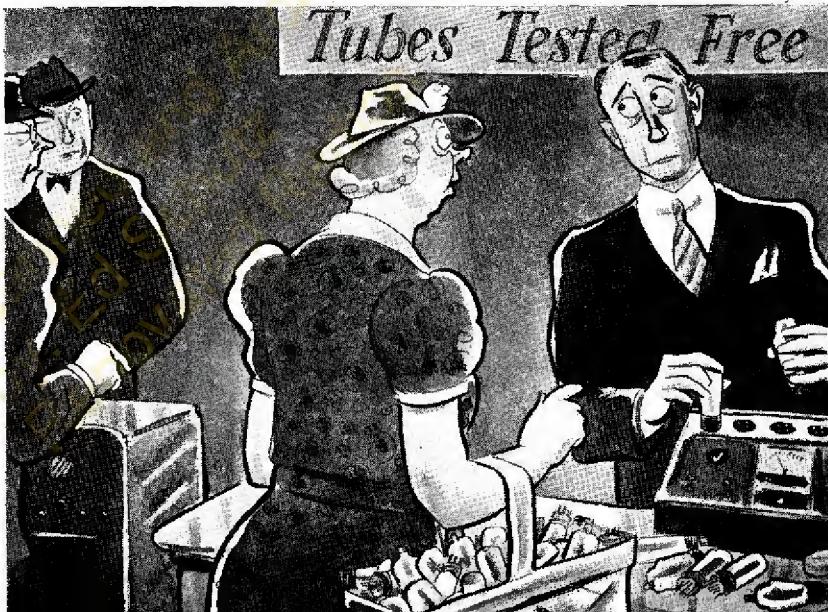
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SALES STATIC . . . "HOW MUCH IS ONE LIKE  
THAT VERY BAD BULB?"





## New Models with the Famous Labyrinth New Ideas in Cabinet Styling New Exclusive Selling Features

Never before have there been radios with such lure to the buying public as in the coming line of Stromberg-Carlsons.

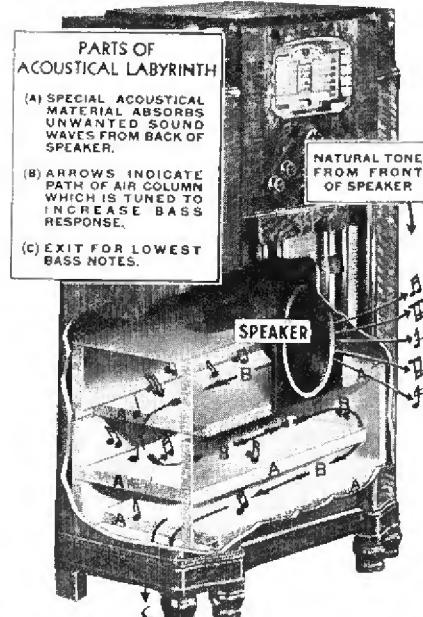
The Labyrinth—most important contribution to tone in radio history will be presented in sets of appealing beauty.

Advanced features of engineering design which out-range anything heretofore known in providing radio enjoyment, will give an ease of selling to delight every dealer's heart.

Prices will be aggressively competitive. Everything in the new presentation combines to insure again that "There is Nothing Finer Than a Stromberg-Carlson."

*Some desirable territories are still open. Write our Sales Department.*

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



### LABYRINTH RADIO

The long, winding passageway of the Acoustical Labyrinth, an exclusive Stromberg-Carlson feature, takes the place of the usual box-like cavity in the cabinet which is the source of the exaggerated boom in low tones. It gives you deeper bass notes, with a new fidelity and increases the volume capacity and accuracy of the loud speaker.

# Stromberg-Carlson

**RCA RADIOTRONS**  
THE CHOICE OF MILLIONS  
OF SET OWNERS

# RCA Radio News

RCA Manufacturing Company, Inc. • Camden, New Jersey  
A Service of the Radio Corporation of America

**RCA "CHECK-UP"**  
THE CHOICE OF THOU-  
SANDS OF SERVICE MEN

To the consumer, RCA Radiotrons mean high quality...To the radio man, RCA Radiotrons mean easier selling, higher profits

# BUILD NEW SALES AND GET PAID FOR DOING IT!

## "Service Men's Meeting of the Air" Unique "Check-Up" Salesman!

RCA and its distributors are sponsoring a new radio program on 51 stations from coast to coast which is helping you sell the Check-Up idea in a unique way.

At the beginning of each program, a frequency run is broadcast. It serves to make the listener sit up and take notice. Then, when the consumer is wondering why his set does not receive the signal, the announcer will say: "If your tonal range is quite limited—or if your reception is generally not as good as you would like, call your local radio service engineer for a Check-Up. These men are all radio experts and they will locate the source of your set's trouble with this Check-Up service, which includes 10 testing, cleaning and adjusting steps, all for only \$1.50."

## Auto Radio Check-Up Opens New Field for Sales of Service, Tubes and Parts

1,412,000 auto radios were sold last year. This year it is estimated there will be 1,750,000 more sold. Car dealers aren't prepared to service them. You are! These radios need attention more often than home sets—and the RCA Auto Radio Check-Up Plan gives you a great opportunity to cash-in on extra business.

## THERE'S MONEY FOR YOU IN THESE FIGURES

The figures shown here are glowing evidence that radio set ownership furnishes the key to increased service and appliance equipment sales—sales you can make!

7 out of every 10 homes have a radio set.

BUT

8 out of every 10 radio homes have only one radio.

In 7 out of every 10 radio homes

## Radiotron Ads Tie-in with Your Window to Help You Sell "Check-Up"

RCA Radiotron, the only tube manufacturer doing any national consumer advertising, crashes through this month with full-column advertising in Saturday Evening Post and Collier's. These advertisements sell the Check-Up idea by using a powerful new theme—"Tired Tubes"—which is tied in with national events that are news! A sample of one of these vividly



The streamer at left and ad at right will help you tie-up with the Coronation

alive, newsy ads is shown above. Others will follow every other week—based on the big championship fight this Summer, the World Series, the thrilling football games and other important events throughout the year.

## TIE-INS FOR YOUR STORE

Not only is RCA doing a tremendous advertising job, but is further helping you cash-in on the Check-Up by supplying you with colorful window streamers, which tie-in with the timely advertising! The first of these streamers based on the Coronation, is scheduled to be mailed to subscribers to the 1937 RCA Display Service, May 1st. They will be sent for display at the same time magazines are running advertisements which will feature a similar event. In this way both the advertising and displays will be doubly effective!

## GET THIS YEAR-ROUND DISPLAY SERVICE!



Shown here is the second of the RCA window displays in the 1937 Display Service. This one is going out to subscribers now. It can be used very effectively either by itself or as a background for the advertising tie-in streamers mentioned in the preceding article. This particular display provides you with a blackboard, chalk and eraser, so you can write in your own message.

Your RCA Tube distributor will be glad to give you further details. See him today.

## RCA Radiotron Spring "Check-Up" Plan a Proved Way to Profits

58 out of every 100 radios in your neighborhood *need* service, repairs, new tubes! This fact, plus the many other startling, yet bona-fide, figures revealed in columns 1 and 2 (lower left)—tell you *why* the RCA Spring Check-Up Plan is successful.

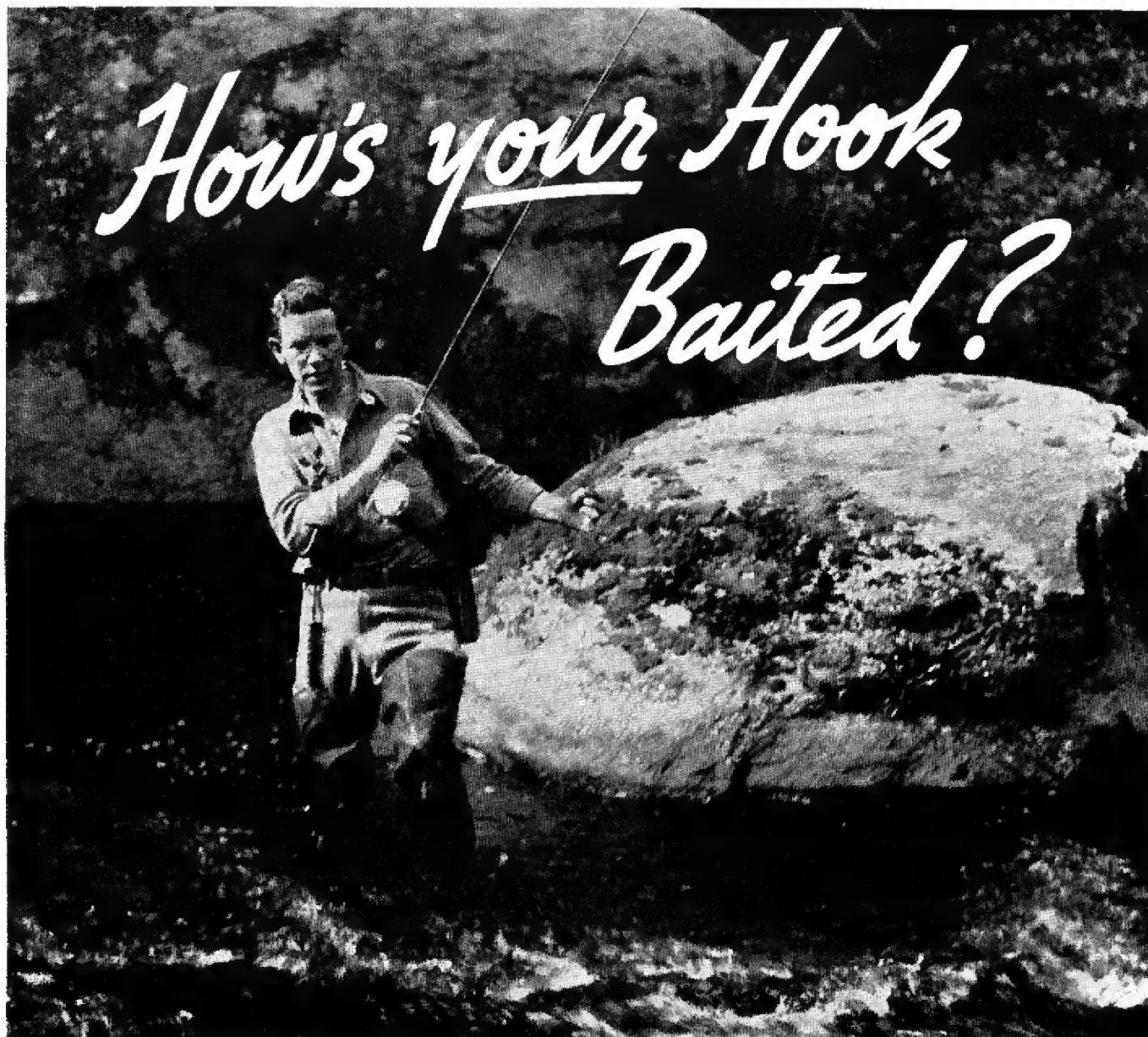
With the Check-Up you can get into the homes whose radios need service. People will realize the worth of a radio check-up, because they know the benefits of other check-ups—auto, health and dental. And, in your role of "Radio Doctor" you can get the chance to sell *more* than tubes. For, as the figures show, nearly all the homes need electrical appliances, new radios. Hence, you can make valuable sales contacts, find new prospects, while performing a service for which you are paid!

## New RCA Pindex Tells Position of Tube Prongs

How many times have you laboriously checked tube charts and service notes to find which tube pin is plate, which is grid, etc.? And even after you found them you still were not sure you were right?

Well, here's the answer to all of these and many other questions—the RCA Pindex. In operation this clever device is simplicity itself. Pick out the type number of the tube, pull the slide until that number appears in the opening beside the indicated "socket" and the pin positions are graphically shown. No tables, no numbers to remember, no complicated figuring.

Pindex is small (3" x 6 1/2"), flat, fits neatly into your pocket. It is made of heavy celluloid for long wear. Ask your RCA Tube distributor how to get yours.



# How's your Hook Baited?

## SYLVANIA QUALITY TURNS MANY A TUBE CUSTOMER INTO A NEW-SET SALE!

The customer who occasionally drops in to buy tubes represents a fair tube profit. But he's more than that! He's potentially a customer for a new set—a refrigerator or other home appliance—and occasional new parts . . . if you, and the tubes you sell him, *treat him right.*

Sylvania tubes have *got* to be dependable. Over 80 separate manufacturing tests protect you against business-killing kick-backs . . . they "go to bat" for you every time on performance. Fair list prices, and the kind of technical and sales helps that build profits, make Sylvania a

thoroughly profitable line of tubes to carry.

Make Sylvania's acquaintance—and you'll find Sylvania will make bigger, better tube profits for you. For complete sales and technical information write to the Hygrade Sylvania Corporation, Emporium, Pa.

# SYLVANIA

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T H E   S E T - T E S T E D   R A D I O   T U B E

---

# A new way for you to make both Friends and Profits

• If you sell 2 or 6 volt radio sets, you should be vitally interested in the new line of Willard radio batteries and the new proposition Willard has for radio dealers. Here is a new line of batteries, especially designed for 2 and 6 volt sets . . . a popular-priced line bearing the most famous name in the battery industry. And a plan that makes it easy to add batteries to your other lines.

## Look at the advantages these new Willard Radio Batteries offer your customers . . .

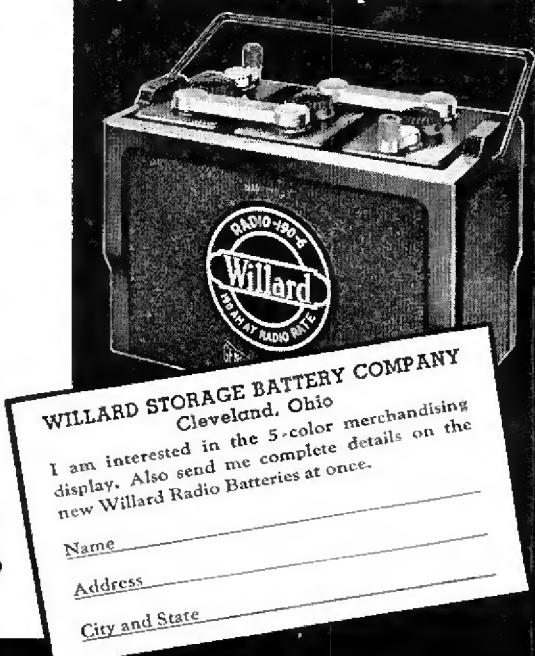
- *Designed by men who know radio.*
- *Built specially for 2 and 6 volt radio use.*
- *Noiseless, tight-fitting connections.*
- *Convenient, bail-type handles.*
- *Finest workmanship and materials.*
- *Less frequent recharging.*
- *Longer life and better performance.*
- *A radio battery that costs less to own.*

Protect your reputation—sell Willards—the batteries that will give your customers extra long service and steady, unwavering power...batteries that will make both friends and profits for you.

MAIL THE COUPON TODAY FOR FULL DETAILS ON THIS MONEY-MAKING PROPOSITION.



Wouldn't you like to know how you can get this attractive 5-color merchandising display? Just mail the coupon below.



# Willard RADIO BATTERIES *cost less to own*

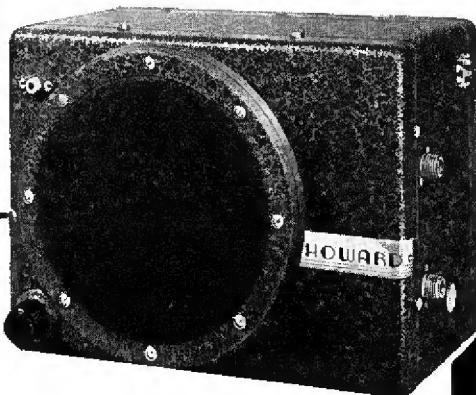
# THE NEW 1937 LINE HOWARD AUTO RECEIVERS

## BREAKING SALES AND PERFORMANCE RECORDS EVERYWHERE

Three great models: A six-tube built-in speaker, a six-tube Deluxe with separate speaker and an eight-tube Deluxe.

### COMPETITIVELY PRICED AND CARRYING FULL DISCOUNTS

If you do not have complete information on this fast selling high performance line, do not fail to wire or write at once.



**YOU ARE INVITED** and it is our earnest hope you will attend and make your headquarters the HOWARD DISPLAY OF 1938 HOUSEHOLD RECEIVERS at the Blackstone Hotel during the Radio Parts Show June 10th to 13th inclusive.

### SEVEN REASONS WHY EVERY LIVE DISTRIBUTOR WILL MAKE IT HIS BUSINESS TO BE AT THE HOWARD DISPLAY:

- 1 **BECAUSE**—HOWARD receivers are made by the oldest manufacturer in radio.
- 2 **BECAUSE**—Since the inception of radio, the ownership and management has never changed hands.
- 3 **BECAUSE**—Cabinet designs and dials are so outstanding they will be the talk of the Radio Show.

4 **BECAUSE**—Every receiver offered by HOWARD has the same custom built quality that made the HOWARD name famous.

5 **BECAUSE**—Of the 100% jobber and dealer set-up which offers complete protection in your territory.

6 **BECAUSE**—All receivers are outstanding values, made possible through concentration on fewer models covering the entire popular price range.

7 **BECAUSE**—Of the cooperative advertising plan and the distinct distributor and dealer helps offered.

**HOWARD RADIO CO.**  
1735 BELMONT AVE. CHICAGO

## *America's Oldest Radio Manufacturer*

---

# RADIO RETAILING

MAY, 1937

O. FRED. ROST, Editor

## WARM WEATHER MYTH

RADIO DEALERS WHO ACCEPT a slump in set sales during the spring and summer months as something inevitable and incurable are simply hiding behind an antiquated and outworn theory.

It is true that in practically all retail lines the average of monthly sales drops somewhat during warm weather. In summer people eat less heavy foods but they eat more ice cream, drink more. They burn less fuel in their stoves and furnaces but more in their automobiles. They spend less time wearing out indoor furniture and more outdoors, on porches, in the garden, in parks, at resorts, in summer cottages. Warm weather brings a shifting in what is used rather than cessation of consumption.

\* \* \*

WHEN IT COMES TO RADIO ITS BROAD acceptance as an all-year-round necessity is widespread, penetrates to all classes and types of retail buyers, so that there is no longer a real excuse for any drastic summer sales slump. If a retailer experiences it, its cause is most probably a slump in sales effort. Records of alert radio dealers prove that this is so.

Radio has ceased to be a seasonable commodity to the extent that skates, sleds, bathing suits are seasonable. While the fall months and the Christmas holidays will continue to give extra impetus to public interest in radio, the spring and summer months, from the standpoint of the actual use of radio sets, today command almost equal consideration.

Until recently any definite proof that public interest in radio continued through the

summer months without any serious setback, was lacking. Now a study made by Dr. Daniel Starch (for CBS) proves that this is so. Personal interviews with 182,000 radio listeners justified the conclusion. Advertisers, who use radio, have found out that the summer months are good radio months and in the last two years the volume of radio advertising for summer broadcasts has grown faster than that for the non-summer months.

It being a known fact that radio sets are used practically as much in summer as in winter, it follows that the interest of radio listeners in set-performance, in new sets, tubes, parts, aerials, etc., must be at least equal. Therefore it remains only for the radio dealer to capitalize that continuing interest by suitably planned and persistently continued sales effort.

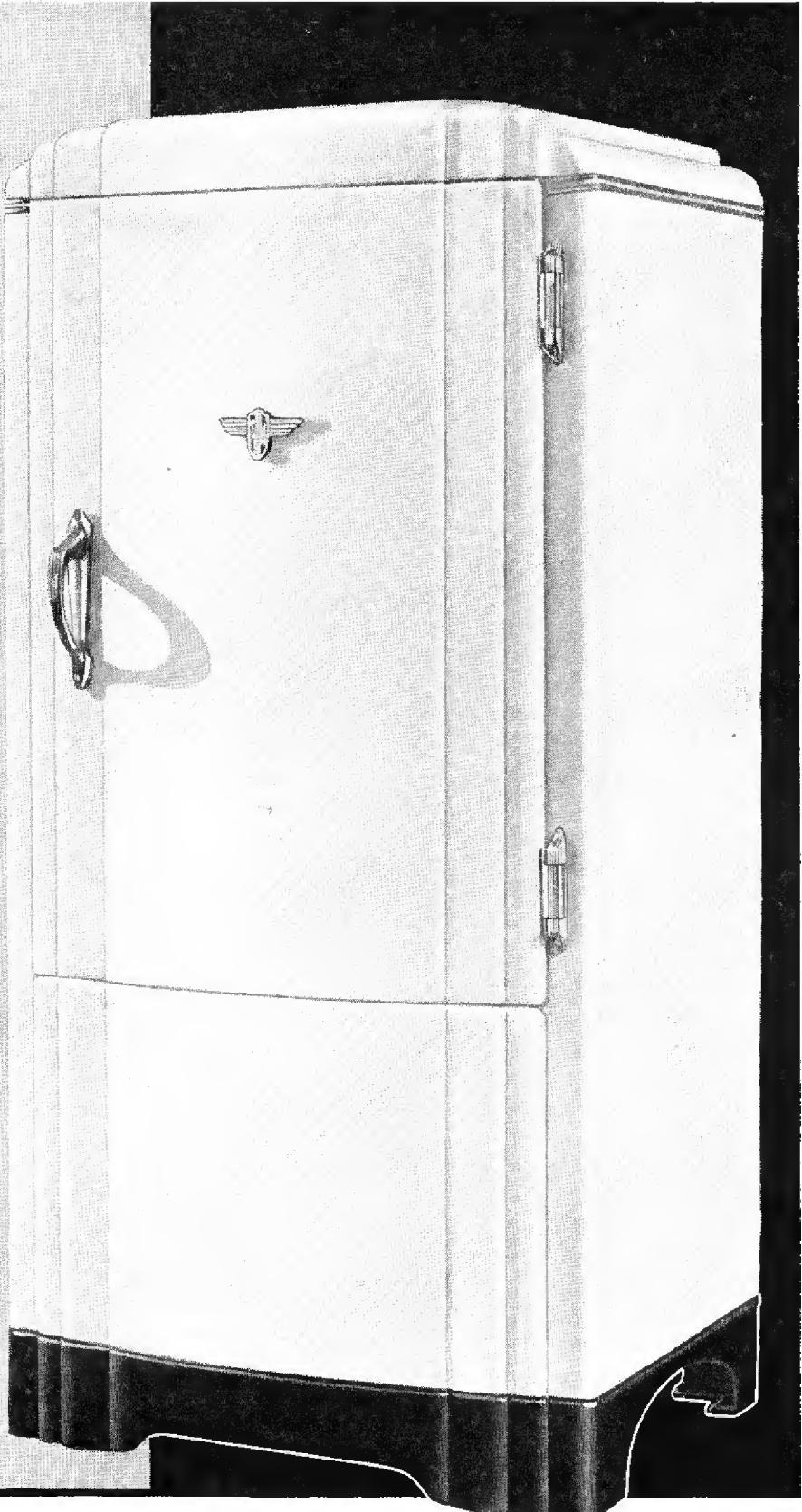
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THE PROSPECT LISTS AND CUSTOMERS list should be used as the basis for an all-summer sales campaign. Where a home is struggling along with an antiquated model, a properly planned sales attack will generally produce the sale of a new model. Where new sets have been sold within the last year or two an inspection call may produce some tube replacement or aerial business or possibly the call will bring the opportunity for selling a second, third or even fourth set.

There are numerous other ways through which the wide-awake radio dealer can bend the so-called traditional summer sales slump into a profit peak but it can't be done while warming the chairs in the back room and bemoaning his fate.

*Six Reasons  
Why You  
Should Sell*  
**STEWART  
WARNER**

- 1 Outstanding PUBLIC ACCEPTANCE—proved by sales gains that smashed all records last year and are continuing through 1937!
- 2 MORE FEATURES FOR YOUR MONEY—including 6 absolutely exclusive Stewart-Warner developments that win buyers on sight!
- 3 DEPENDABILITY and FREEDOM FROM SERVICE with the exclusive twin-cylinder Slo-Cycle Compressor.
- 4 PROVEN LOW OPERATING COST—demonstrated year after year in homes from coast to coast.
- 5 Special FLOOR PLAN and RETAIL FINANCE PLAN for the exclusive benefit of Stewart-Warner dealers.
- 6 COAST-TO-COAST RADIO BROADCASTS on Columbia network with HORACE HEIDT and his Brigadiers.



Phone or wire your Stewart-Warner distributor now!

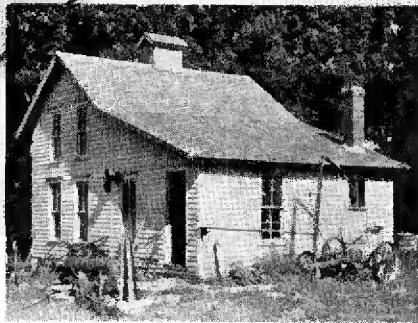
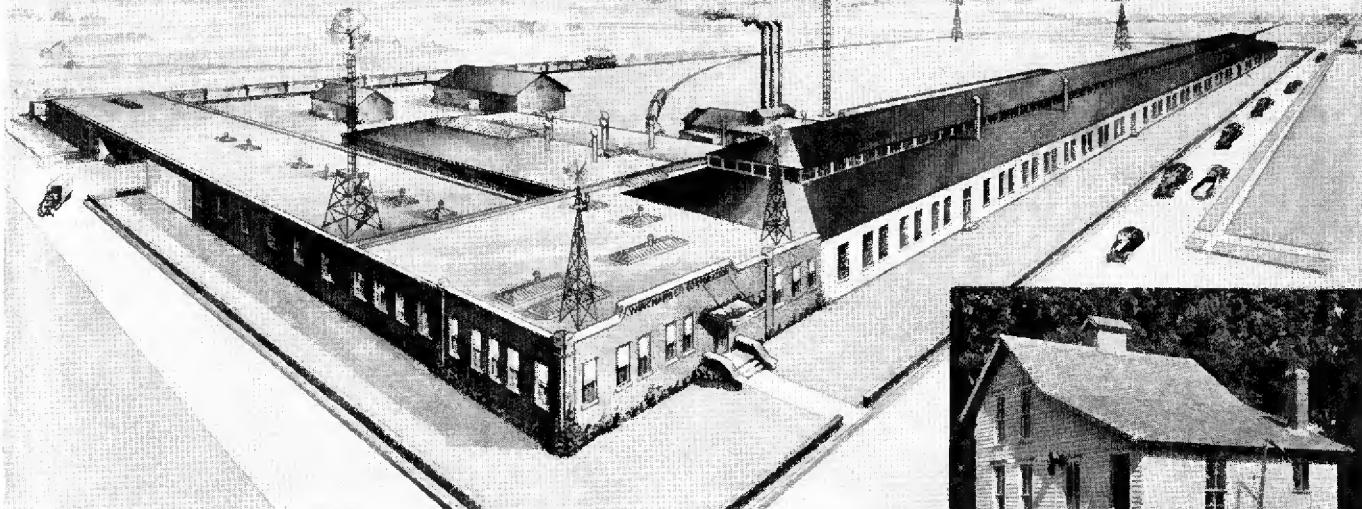
# STEWART-WARNER

# DEALER PROFIT PLAN PROVES HUGE SUCCESS!



## FORCED TO TRIPLE MANUFACTURING FACILITIES!

### NEW WINCHARGER FACTORY IS WORLD'S LARGEST WIND-ELECTRIC PLANT



DEALERS are wildly enthusiastic over Wincharger's profitable new simplified merchandising program! Sales have jumped to a new high! Increased manufacturing facilities were needed *immediately*—so Wincharger has moved into this great new factory, with *three times* the space and equipment available in our former plant!

New dealers everywhere are stocking Winchargers and displaying them with farm radios, *ready to cash in* on the great \$100,000.00 national advertising campaign soon to be released. Manufacturers and distributors are making preparations to profit by this intensive promotion of 6-volt farm radios. The entire radio industry is looking forward to the *biggest year* in history for 6-volt farm radio sales!

Five million of America's 6,280,000 farm homes need new radios NOW! More than 4 million of these homes

are located away from the high line. *These non-electrified homes can best depend on Wincharger for radio power.* The 6-volt DeLuxe Radio Wincharger is the farmer's most dependable, least expensive source of electric current for radio. Wincharger is the key to this fertile farm market—a market which needs more than 4 million new farm radios **RIGHT NOW!**

And the great new Wincharger factory is our pledge to the radio industry that we will be able to *meet all demands* promptly and efficiently, with an even higher quality of guaranteed performance than that which has earned the unanimous endorsement of leading radio manufacturers!

Wincharger also manufactures the 32-volt Giant Wincharger farm power plant for practical, complete electrification of the farm, and the Hi-Way Wincharger for charging truck and trailer batteries on the highway.

Let the Wincharger Corporation help you get your share of sales in the rich new "wind-electric" market. For complete details, write

From this little woodshed workshop to the huge factory shown above in a short ten years! From the slow hand methods used by John and Gerhardt Albers in making the first successful Wincharger to modern mass production in little more than two years! The new Wincharger factory, largest of its kind in the world, has a capacity of 2000 Winchargers a day!



The Genuine 6-Volt DeLuxe Radio Wincharger

proven 22% more efficient by impartial "watt-hour" tests. Built for years of dependable service. A charger of known efficiency and dependability. Only the Genuine Wincharger has these exclusive features:

**Albers Air-foil Propeller  
Dual-Purpose Governor  
Double-Brush Collector  
Ring  
Roller-Bearing Turntable  
Special Air-cooled  
Generator  
Positive-Acting Auto  
Brake  
Rail-Steel, Angle-Iron  
Tower  
The Wincharger  
Guarantee**

**WINCHARGER CORPORATION SIOUX CITY, IOWA**

# Hotpoint

## REFRIGERATOR SALES..

### HOTPOINT REFRIGERATOR SALES

#### Leap Ahead to New Records!

The public demand for the new Hotpoint Refrigerator is setting new sales records everywhere. Seldom has an electric refrigerator received such rapid and sweeping public acceptance. But seldom, too, has a refrigerator offered such a wealth of sales-building features—such eye-filling beauty for modern, all-electric kitchens, —as this sensational new Hotpoint.

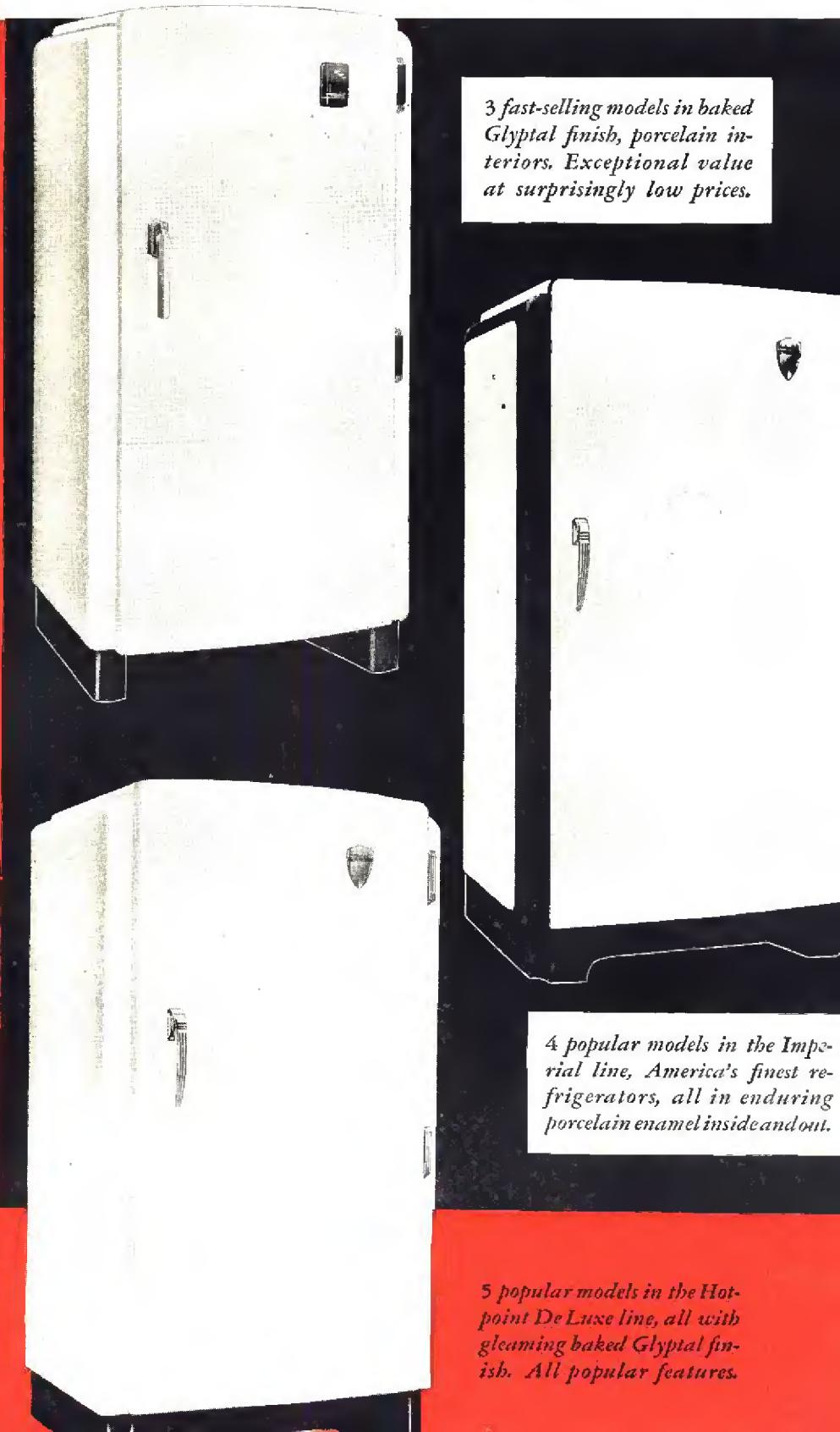
Faster freezing at lower cost...dependability...streamlined styling...amazing economy...quiet operation—these are a few of the brilliant features that have made Hotpoint the outstanding refrigerator "buy" of 1937. Hotpoint's Vacuum-sealed THRIFTMASTER Unit delivers more power at lower cost.

Hotpoint's SPEED-FREEZER produces ice and frozen desserts faster than ever before. Hotpoint's lifetime all-steel cabinets are styled for enduring beauty and Hotpoint's complete line offers a refrigerator model for every purse and purpose.

Now is the time for you to cash in on unprecedented public demand for America's No. 1 refrigerator buy. The big profit months are ahead. With Hotpoint, you get plenty of full-profit sales with minimum resistance. Call your distributor! Ride high, wide and handsome to the biggest year in Hotpoint history!

#### HOTPOINT OFFERS 3 COMPLETE LINES

Thriftmaster and Speed Freezer standard equipment on all 3 lines of Hotpoint Refrigerators. There's a model for every need—a price for every purse.



3 fast-selling models in baked Glyptal finish, porcelain interiors. Exceptional value at surprisingly low prices.

4 popular models in the Imperial line, America's finest refrigerators, all in enduring porcelain enamel inside and out.

5 popular models in the Hotpoint De Luxe line, all with gleaming baked Glyptal finish. All popular features.

# Leap ahead to new records!

## SPEED FREEZER

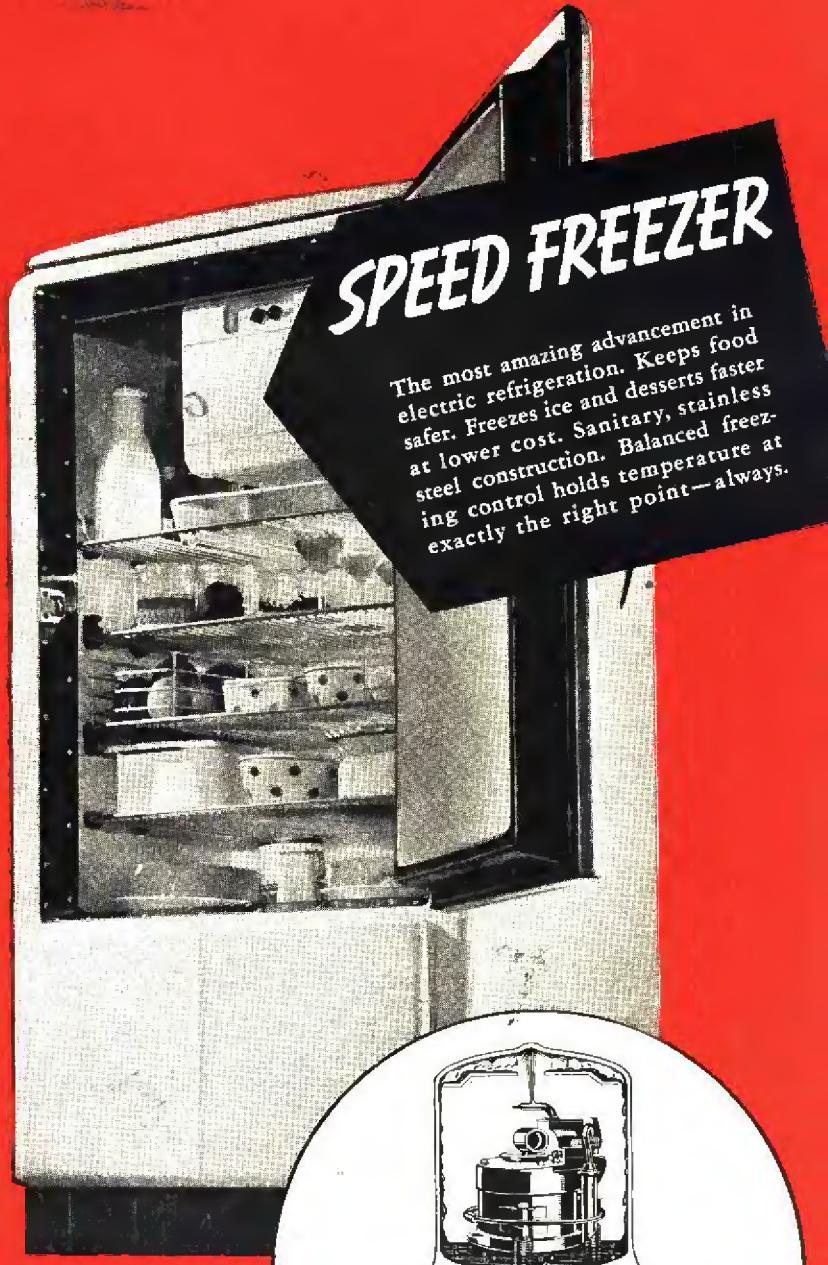
### Shows the Way to New Sales Records!

Give a dealer a vital, tangible feature—something the customer needs; something easily understood—and you have a perfect set-up for fast sales. That's why Hotpoint's sensational new Speed Freezer is blazing the way to bigger sales and profits for Hotpoint dealers everywhere.

Refrigerator buyers have always wanted faster freezing, greater economy. The Hotpoint Speed Freezer, powered by the vacuum-sealed Thriftmaster, makes ice and frozen desserts faster than ever on a mere "trickle" of electricity. Power is stepped up—current consumption is reduced. These are cold facts—easily demonstrated—to every customer.

Check the cabinet construction... mechanism... and features! You'll be convinced that here is a refrigerator line you can sell—profitably! Then look at Hotpoint's powerful advertising—magazines, newspapers, posters, direct mail—everything to direct a constant stream of sales through your store!

Tie up today with Hotpoint—the name everybody knows—dependable for over thirty years in 16,000,000 American homes.



The most amazing advancement in electric refrigeration. Keeps food safer. Freezes ice and desserts faster at lower cost. Sanitary, stainless steel construction. Balanced freezing control holds temperature at exactly the right point—always.



#### VACUUM-SEALED THRIFTMASTER

Hotpoint's Thriftmaster Unit is permanently vacuum sealed, for longer life. Highly efficient. Five cent's worth of current now makes twice as much cold as ever before. The Thriftmaster carries five year protection plan.

# Hotpoint

## REFRIGERATOR

Edison General Electric Appliance Co., Inc.  
5680 W. Taylor St., Chicago  
Please send us literature on the new Hotpoint line  
for 1937. We are particularly interested in your plans  
for selling

- Complete Line
- Ranges
- Refrigerators
- Laundry Equipment
- Water Heaters
- Dishwashers

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

OVER 90% of all manufacturers of washing machines power their farm models with air-cooled, 4 cycle Briggs & Stratton Gasoline Motors, widely recognized everywhere for dependability, economy and long, trouble-free service life.



May  
1937

# THE RADIO MONTH

## TRADE INS

Appropos April *Radio Retailing's* proposal of a scrapping program, sponsored or backed by the manufacturers, it is interesting to note that last year Chevrolet went to the rescue of its trade-in laden dealers, paid \$20 for each car scrapped, took over 100,000 used cars off the market via that route during the first three months. Other car divisions of General Motors had similarly conducted scrapping programs. Now let's see who will be the first radio manufacturer to adopt trade-in scrapping as a national policy, equipping a husky representative with a trusty sledge hammer, sending him out to break up radio trade ins, giving the dealer a suitable credit of \$5 or \$10 for each sledged set.

## SET AGE

A survey made in the Chicago territory by the Marketing Department of DePaul University shows that a surprising number of ancient radio sets are still doing duty. In the course of that survey 5,360 radio homes were contacted. One year old sets were found to account for 20.6 per cent, two years old for 20.3 per cent of the total, while three year old scored 18.7 per cent, the four year old, 14.7 per cent and those five years or older equaled approximately 20 per cent.

If those percentages may be considered as typical for the whole country it means that over 6 million homes have radio sets that are 5 years or more old, are waiting for some live dealer to do a selling job.

## FILE YOUR PROTEST

Tax-sfers wish to get their fingers deeper into the broadcasting pie and a bill introduced by Congressman John J. Boylan, of New York, would tax stations on a wattage basis on a sliding scale

ranging up to \$3 per watt so that some stations would have to pay \$150,000 per year and giant WLW would put up 1½ million smackers annually for the privilege of going on the air.

The bill is said to have the blessing of Federal Communications Commis-

unfair methods of competition have been entered against manufacturers and dealers in radio sets at New York, Philadelphia, Chicago, Washington, 9 in all, who labeled their sets Bell, Edison, General Electric, Majestic, Marconi, RCA, Victor and with other well known brands without legal authority from the owners of those trade-marks.

Four other concerns and three individuals will escape a formal similar order if they behave. The commission's findings against the whole flock were that they cooperated and were engaged in a scheme to deceive the public and to compete unfairly with other manufacturers and dealers.

## SIDETRACKED

Interests that were formerly associated with the Chrysler auto manufacturing enterprises recently acquired a plant that is well equipped for making auto-radios. The inference is that auto-radios for Chrysler-DeSoto-Dodge and Plymouth cars may be made in that plant and thus a substantial volume of auto-radio business will be sidetracked out of the industry as a whole into an auto-maker-controlled or subsidized unit.

Radio dealers and distributors everywhere will lose business by this. Their only means of combating the trend is to form strong alliances with car dealers who would much rather make the long profit by buying sets when and where they wish, rather than take what the car maker gives them—at a short or no profit.

sioner George H. Payne. Its passage would have far reaching and destructive effect on the whole industry. If a tax on broadcasting stations is justified it should be a reasonable one, not oppressive. Write your Senator or Representative your views, and ask that the Boylan bill be defeated or its tax provisions drastically reduced.

## FEWER FAKERS

The Federal Trade Commission has cracked down on another batch of fakers who have been sailing under false colors. Orders to cease and desist from using



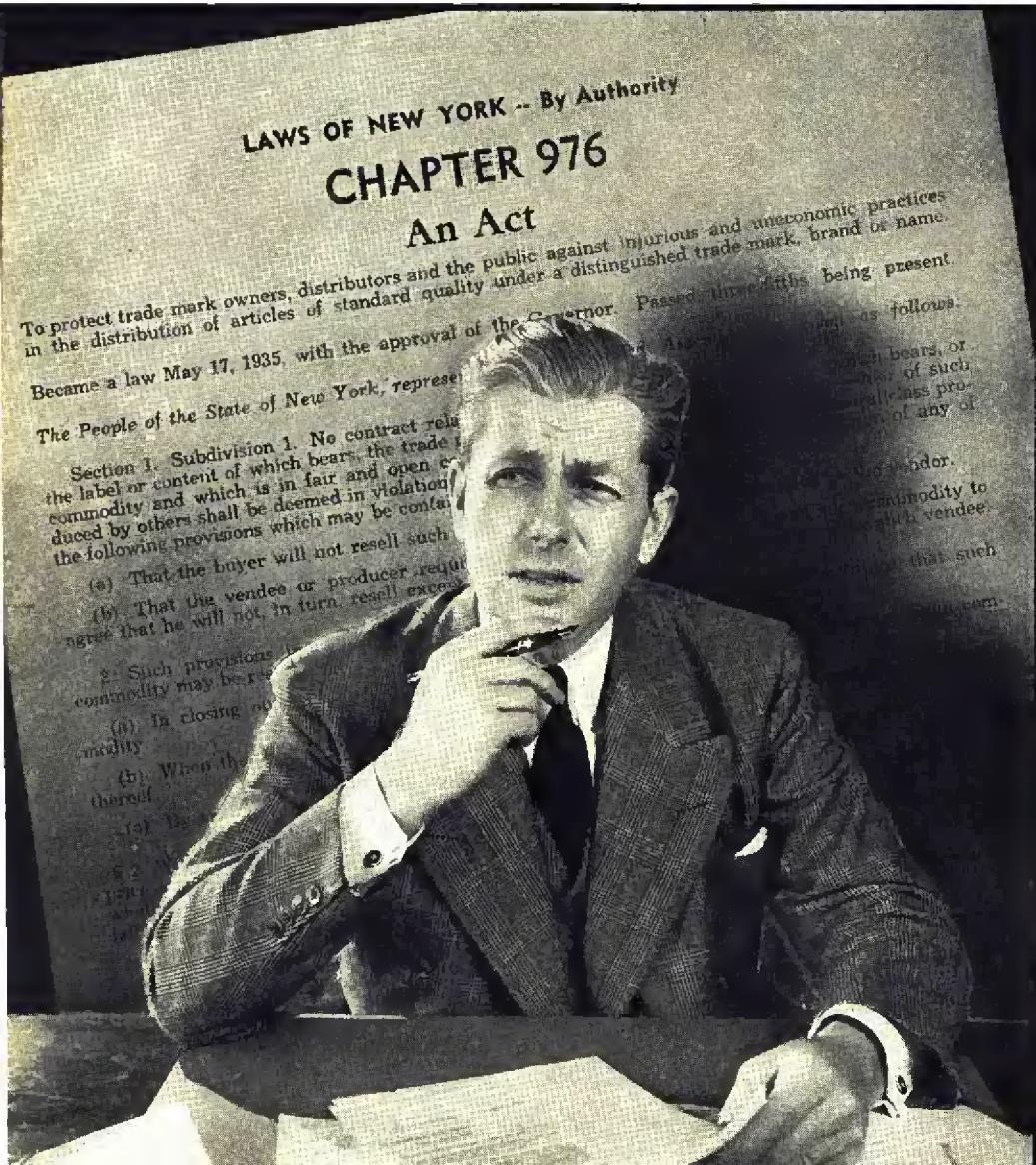
Fred. Post

EDITOR

# F A I R T R A D E L A W S . .

**What they mean to  
the radio industry**

**By D. C. Frederick**



## ALABAMA

No Fair Trade or allied laws in force. Legislature not now in session.

## ARIZONA

Fair Trade law now in force. Permits resale price agreements between manufacturers of trade-marked goods and dealers. Violators may be sued for damages by competitors. State also has Anti-Price-Discrimination law. Requires equal prices for all buyers, whether large or small concerns, if all conditions under which purchase is made are equal. Proved violations draw heavy penalties and damages for injured competitor.

## ARKANSAS

Fair Trade law now in force. Permits resale price agreements between manufacturers of trade-marked goods and dealers. Violators may be sued for damages by competitors. State also has Anti-Price-Discrimination law. Requires equal prices for all buyers, whether large or small concerns, if all conditions under which purchase is made are equal. Proved violations draw heavy penalties and damages for injured competitor.

## CALIFORNIA

Fair Trade law now in force. Permits resale agreements between manufacturers of trade-marked goods and dealers. Violators may be sued for damages by competitors. State also has Anti-Price-Discrimination law. Requires equal prices for all buyers, whether large or small concerns, if all the conditions under which purchase is made are equal. Proved violations draw heavy penalties and damages for injured competitor. Additional trade legislation pending. Legislature now in session.

## COLORADO

Fair Trade law now in force. Permits resale price agreements between manufacturers of trade-marked goods and dealers. Violators may be sued for damages by competitors.

## CONNECTICUT

Fair Trade bill reported ready for presentation to legislature, now in session.

## DELAWARE

Both Houses of legislature, now in session, have passed a Fair Trade bill.

## FLORIDA

Fair Trade bill reported ready for presentation to legislature, now in session. State has a so-called Commercial Discrimination act, which aims to eliminate price discrimination between localities.

## GEORGIA

Fair Trade law now in force. Permits resale price agreements between manufacturers of trade-marked goods and dealers. Violators may be sued for damages by competitors.

## IDAHO

Fair Trade law now in force. Permits resale price agreements between manufacturers of trade-marked goods and dealers. Violators may be sued for damages by competitors. An Anti-Price-Discrimination act, passed this year, prohibits discrimination in selling price only.

## ILLINOIS

Fair Trade law now in force. Permits resale price agreements between manufacturers of trade-marked goods and dealers. Violators may be sued for damages by competitors. Legislature still in session and is reported to have an Anti-Price-Discrimination bill under consideration.

## INDIANA

Fair Trade law now in force. Permits resale price agreements between manufacturers of trade-marked goods and dealers. Violators may be sued for damages by competitors. State has also Anti-Price-Discrimination law. Requires equal prices for all buyers, whether large or small concerns, if all conditions under which purchase is made are equal. Proved violations draw heavy penalties and damages for injured competitor.

**FAIR** Trade laws in force in 37 states—in 2 more states such laws passed by both houses of the legislature and only awaiting the governor's signature—then 6 other legislatures now in session, with such laws under consideration.

That's the picture as of May 1st, and its significance is, that by the time the 1937 legislative season has ended

# STATE BY STATE SUMMARY\*

\* As of May 1, 1937

## IOWA

Fair Trade law now in force. Permits resale price agreements between manufacturers of trade-marked goods and dealers. Violators may be sued for damages by competitors. A new Anti-Price-Discrimination bill has passed both houses of the legislature, now in session.

## KANSAS

Fair Trade law now in force. Permits resale price agreements between manufacturers of trade-marked goods and dealers. Violators may be sued for damages by competitors. An old so-called Anti-Trust law also prohibits price discrimination between localities.

## KENTUCKY

Fair Trade law now in force. Permits resale price agreements between manufacturers of trade-marked goods and dealers. Violators may be sued for damages by competitors. An unfair Trade Practices law, enacted last year, prohibits discrimination in selling price only and provides severe penalties for violations.

## LOUISIANA

Fair Trade law now in force. Permits resale price agreements between manufacturers of trade-marked goods and dealers. Violators may be sued for damages by competitors. An old Anti-Price-Discrimination act applies to differences between localities only.

## MAINE

Fair Trade law now in force. Permits resale price agreements between manufacturers of trade-marked goods and dealers. Violators may be sued for damages by competitors.

## MARYLAND

Fair Trade law now in force. Permits resale price agreements between manufacturers of trade-marked goods and dealers. Violators may be sued for damages by competitors. Additional trade legislation reported to be under consideration by the legislature, now in session.

## MASSACHUSETTS

Legislature, now in session, has a Fair Trade bill under consideration. A 25-year old Anti-Trust law, still on statute books, was intended to eliminate price-discrimination between localities and provides heavy penalties.

## MICHIGAN

Governor of this state is expected to sign a Fair Trade act which was passed by both houses of the legislature, now in session. An old Anti-Trust law applies only to price discrimination on agricultural commodities and petroleum products.

## MINNESOTA

Fair Trade law now in force. Permits resale price agreements between manufacturers of trade-marked goods and dealers. Violators may be sued for damages by competitors. State has also Anti-Price-Discrimination law. Requires equal prices for all buyers, whether large or small concerns, if all conditions under which purchase is made are equal. Proved violations draw heavy penalties and damages for injured competitor.

## MISSISSIPPI

No Fair Trade or allied laws in force. Legislature not now in session.

## MISSOURI

Legislature still in session and reported to have a Fair Trade bill under consideration. Under an old Anti-Trust act price discrimination between localities is prohibited and subject to heavy penalties and fines.

## MONTANA

Fair Trade law now in force. Permits resale price agreements between manufacturers of trade-marked goods and dealers. Violators may be sued for damages by competitors. The 1937 legislature enacted an unfair Trade Practices act which applies only to discrimination in selling prices and provides for heavy penalties and fines.

40 or more states with over 80 per cent of our population will permit Fair Trade agreements between manufacturers and dealers.

What does all that mean to the radio dealer? What's the good of such Fair Trade laws? How do they operate? Who benefits by them and — how? Those are questions which arise naturally in the minds of every

## NEBRASKA

Fair Trade law now in force. Permits resale price agreements between manufacturers of trade-marked goods and dealers. Violators may be sued for damages by competitors. An old Anti-Price-Discrimination act applies only to price discrimination between localities but legislature, now in session, has before it a much broader measure of this type.

## NEVADA

Fair Trade law now in force. Permits resale price agreements between manufacturers of trade-marked goods and dealers. Violators may be sued for damages by competitors.

## NEW HAMPSHIRE

1937 legislature reported as having a Fair Trade bill under consideration.

## NEW JERSEY

Fair Trade law now in force. Permits resale price agreements between manufacturers of trade-marked goods and dealers. Violators may be sued for damages by competitors. 1937 legislature reported to have a modern Anti-Price-Discrimination measure under consideration.

## NEW MEXICO

Fair Trade law now in force. Permits resale price agreements between manufacturers of trade-marked goods and dealers. Violators may be sued for damages by competitors.

## NEW YORK

Fair Trade law now in force. Permits resale price agreements between manufacturers of trade-marked goods and dealers. Violators may be sued for damages by competitors. An Anti-Price-Discrimination bill is reported before the 1937 legislature.

## NORTH CAROLINA

Fair Trade law now in force. Permits resale price agreements between manufacturers of trade-marked goods and dealers. Violators may be sued for damages by competitors. The 24-year old Anti-Trust law applies only to price discrimination between localities.

## NORTH DAKOTA

Fair Trade law now in force. Permits resale price agreements between manufacturers of trade-marked goods and dealers. Violators may be sued for damages by competitors. The 24-year old Commercial Discrimination Act applies to price discrimination between localities.

## OHIO

Fair Trade law now in force. Permits resale price agreements between manufacturers of trade-marked goods and dealers. Violators may be sued for damages by competitors.

## OKLAHOMA

Fair Trade law now in force. Permits resale price agreements between manufacturers of trade-marked goods and dealers. Violators may be sued for damages by competitors. State has also Anti-Price-Discrimination law. Requires equal prices for all buyers, whether large or small concerns, if all conditions under which purchase is made are equal. Proved violations draw heavy penalties and damages for injured competitor.

## OREGON

Fair Trade law now in force. Permits resale price agreements between manufacturers of trade-marked goods and dealers. Violators may be sued for damages by competitors. State has also Anti-Price-Discrimination law. Requires equal prices for all buyers, whether large or small concerns, if all conditions under which purchase is made are equal. Proved violations draw heavy penalties and damages for injured competitor.

## PENNSYLVANIA

Fair Trade law now in force. Permits resale price agreements between manufacturers of trade-marked goods and dealers. Violators may be sued for damages by competitors. 1937 legislature still in session.

retailer when he realizes that this great wave of such laws has swept across the whole country practically within a year.

Here are the answers.

Basically Fair Trade laws have one major objective, namely: To stabilize the retail selling price of merchandise that is sold under a registered trademark and nationally advertised.

## RHODE ISLAND

Enacted in 1936, the Fair Trade law applies specifically only to those who sign agreements but competitors may sue for damages if injured by the wilful acts of a wholesaler or retailer in failing to maintain contract prices.

## SOUTH CAROLINA

Fair Trade law now in force. Permits resale price agreements between manufacturers of trade-marked goods and dealers. Violators may be sued for damages by competitors. An old Anti-Discrimination act is in force. Selling below cost is prohibited.

## SOUTH DAKOTA

Fair Trade law now in force. Permits resale price agreements between manufacturers of trade-marked goods and dealers. Violators may be sued for damages by competitors. The law against unfair business methods prohibits price discrimination between localities.

## TENNESSEE

Fair Trade law now in force. Permits resale price agreements between manufacturers of trade-marked goods and dealers. Violators may be sued for damages by competitors. An old Anti-Discrimination act is in force.

## TEXAS

1937 legislature has a Fair Trade Act under consideration. An old Anti-Discrimination act is still in force.

## UTAH

Fair Trade law now in force. Permits resale price agreements between manufacturers of trade-marked goods and dealers. Violators may be sued for damages by competitors. The Trade Act of 1933 applies only to price discrimination between localities.

## VERMONT

No Fair Trade laws in force. 1937 law on price discrimination applies only to buying of dairy products.

## VIRGINIA

Enacted in 1936, the Fair Trade law applies specifically only to those who sign agreements but competitors may sue for damages if injured by the wilful acts of a wholesaler or retailer in failing to maintain contract prices.

## WASHINGTON

Fair Trade law now in force. Permits resale price agreements between manufacturers of trade-marked goods and dealers. Violators may be sued for damages by competitors.

## WEST VIRGINIA

Fair Trade law now in force. Permits resale price agreements between manufacturers of trade-marked goods and dealers. Violators may be sued for damages by competitors.

## WISCONSIN

Fair Trade law now in force. Permits resale price agreements between manufacturers of trade-marked goods and dealers. Violators may be sued for damages by competitors. The Unfair Trade Practices Act prohibits price discrimination if all other conditions are equal and provides heavy penalties.

## WYOMING

Fair Trade law now in force. Permits resale price agreements between manufacturers of trade-marked goods and dealers. Violators may be sued for damages by competitors. State has also Anti-Price-Discrimination law. Requires equal prices for all buyers, whether large or small concerns, if all the conditions under which purchase is made are equal. Proved violations draw heavy penalties and damages for the injured competitor.

## © RADIO RETAILING

They are labelled as "Fair Trade" laws because they legalize the establishing of a basis of fair trading and of fair competition, which puts the small dealer on the same footing as chains, mail-order houses and department stores when it comes to the selling price at which a radio set, a pair of shoes or any other trade-marked and advertised article is offered.

MEMORANDUM OF AGREEMENT

Between BLANK RADIO COMPANY, an Illinois corporation, hereinafter called blank, and the undersigned, hereinafter called "THE RETAILER",

In consideration of the sale to the retailer of commodities which bear the trade mark, brand or name "Blank" and the premises by the retailer, it is agreed:

1. The retailer will not advertise, offer for sale, sell or resell any of the foregoing commodities at prices higher or lower than the retail list price set opposite each commodity:

|          |      |
|----------|------|
| Model X1 | \$50 |
| X2       | 50   |
| X3       | 65   |
| X4       | 85   |
| X5       | 90   |
| X6       | 110  |
| X7       | 125  |
| X8       | 150  |
| X9       | 200  |

Blank reserves the right to change said price schedule and add any new commodity thereto at any time by notifying the retailer in writing thereof, and the retailer agrees that all such changes shall thereupon become a part of this contract.

2. The retailer agrees not to make any price concession, directly or indirectly, in the sale of said commodities, in combination or otherwise, except as herein provided.

3. Both parties agree that this contract is made under the provisions of the Illinois Fair Trade Act.

THIS CONTRACT SHALL BE OPERATIVE WITHIN THE STATE OF ILLINOIS ONLY.

This contract may be cancelled by either party hereto upon ten (10) days notice in writing to the other.

IN WITNESS WHEREOF, the parties hereto have executed this agreement in duplicate in the State of Illinois this day of , 193

RETAILER BLANK RADIO CORPORATION

RETAILER: \_\_\_\_\_ By: \_\_\_\_\_ Pres.

### Typical Manufacturer-Retailer Fair Trade Agreement

to the public by its manufacturer.

However, just because a state has such a law on its statute books it does not follow that its operation becomes automatic and blankets all sales of trade-marked goods. Instead, the law merely permits the making of price agreements, prescribes some of the basic procedures and provides for suitable penalties but—there is nothing in any of the laws of the different states that makes the use of Fair Trade price agreements compulsory.

This means that the initiative has to be taken by the manufacturer and for him the procedure is briefly as follows:

Because each of these laws is strictly applicable only to the particular state which has enacted it, it is necessary to create a set-up by which all the transactions carried out under a price agreement are kept wholly within that particular state. (Such agreements are not at the present time legal where inter-state commerce is involved.) To do that is the responsibility of the manufacturer but it will be well for the dealer to make sure that the intra-state limitations of the law are observed.

The typical price agreement between manufacturer and dealer will specify the various models and the list prices at which they are to be sold, and in them the dealer will agree not to make any price concessions, directly or indirectly, but to sell the trade-marked articles at the price as listed unless such price is changed by the manufacturer.

It follows that where a manufacturer enters into such a contract with every dealer who handles his line and sincerely insists on observance of the terms, the retail prices at which the articles are advertised or offered to the public become stabilized immediately at the price level which is specified in the contract. Whether it be the biggest chain or department store in the territory or a small dealer in a country town, there would be no cut price competition to disturb the minds of the public or the stability of the trade.

### Non-Signees Must Observe

In most states the law even applies to retailers who have not signed an agreement but who have been properly notified of the list prices at which the goods are to be sold. Any violations on the part of a non-contract dealer would be subject to the same provisions for damages that the law holds for contract customers. In fact, those provisions are the "teeth" which are expected to prevent flagrant violations by the cut-price artists. They permit any dealer to sue for damages, when a competitor has sold articles at less than the prices stipulated in the price agreement.

As to the benefits derived from operating under a price agreement, the answer is obvious. Before such agreements were legalized the manufacturer of trade-marked goods had little or no legal means of stopping cut-price competition or keeping his products out of the hands of concerns that used them as loss-leaders or as the football in price battles. The result was that regardless of who was battling or who was the price pirate, the small independent local dealer always suffered the most. He had only two choices, either to meet the price cuts and lose all his profit, or to lose sales by standing pat on the list price.

All that is changed where a manufacturer decides to take advantage of the Fair Trade laws. When a manufacturer does that, the dealer knows that he is not going to be undercut by other retailers. He knows that gifts, premium offers, coupons and other attractions are not allowed to be used as means to dodge the established list prices and evade the law. He knows that current models will be offered at the same price in his entire trading area and that if any retailer, large or small, offers price-protected goods at lower prices at clearance or close-out sales, that re-

tailer must be prepared to prove that those are genuine clearance or close-outs, otherwise he will be in trouble and subject to suits for damages.

Thus these Fair Trade laws, when taken advantage of, change at once the position of the independent retailer to one of complete equality with any other retailer—regardless of size—when it comes to the retail selling of any line of trade-marked radio sets, tubes, batteries, parts or sound equipment, that are marketed under price agreements.

Therefore the independent retailer now can afford to plan ahead with greater confidence, can arrange for more aggressive sales effort, better displays, more advertising, in behalf of any line of merchandise on which the manufacturer is giving price protection via the Fair Trade route.

### Anti-Price-Discrimination Laws

These laws represent one form of restriction by which legislators have endeavored to offset the great advantages that normally accrue to mass buyers such as chains, department stores and mail-order houses through their tremendous buying power and in their most ideal form they place the small or independent retailer in position to purchase on an equal footing with his larger competitors.

In substance those laws prohibit price discrimination on articles of equal quality, grade and description when the effect of such practice is injury or restriction of free and open competition or may indirectly promote the establishing of a monopoly in any given field. The only price differences which under those laws are not considered as discriminating are those which are based on differences in the quantity purchased, selling methods, delivery or manufacturing costs or general market conditions.

In a majority of states these so-called Anti-Price-Discrimination laws compel the state's Attorney-General to revoke the permit or charter of any concern that has been convicted 3 times of violating this law and the penalties for violations range from \$100 to \$5,000 and in some states include imprisonment up to one year. Furthermore, a person or concern injured as a competitor by violations of these statutes through improper price discrimination may sue for an injunction and demand triple damages. However, here again it must be borne in mind that these laws, being enacted by a state, can apply only to transactions within that state.

# FIGURES

## RADIO RETAILING'S MONTHLY BUSINESS BAROMETER

### BROADCAST BREVITIES

CBS sold \$23,168,148 worth of time in 1936 to 87 clients. The average sponsor spent \$257,292 for such time and 79.3 per cent used this network's facilities the previous year.

*Mutual* reports an 11 per cent increase in March time billings as against March 1936. Total reached \$212,861. First quarter total: \$602,311, 16 per cent above last year.

### MARCH EXCISE

Internal Revenue Bureau collections of the federal five per cent excise tax on radio and phonograph apparatus for March, this year, totalled \$360,922, a 7.4 per cent increase over collections for March, 1936. For the entire first quarter of 1937 tax collections totalled \$1,509,353, an increase of 11 per cent over the 1936 first quarter.

### EXPORT EXCERPTS

American set makers shipped 117,820 receivers out of the country in January and February, declaring these at \$3,035,318. This compares with the

95,056 valued at \$2,494,654 in the same period last year.

There were 1,529,955 tubes exported in the same period, valuation \$652,218. In January and February 1936 1,036,259 were shipped, dollar value \$458,125.

### CONSUMER SURVEY

A questionnaire sent to 1,000 families reading *The American* magazine produced the following table showing average age of radios in use:

| Year Bought         | %    |
|---------------------|------|
| 1936 .....          | 13.9 |
| 1935 .....          | 16.8 |
| 1934 .....          | 12.7 |
| 1933 .....          | 8.8  |
| 1932 .....          | 11.3 |
| 1931 .....          | 8.4  |
| 1930 .....          | 13.1 |
| 1929 .....          | 8.1  |
| 1928 & earlier..... | 6.9  |

This makes the average set age 3.6 years. Twenty-four families had forgotten their radio's birthday and didn't answer this question.

Interesting facts concerning the num-

### AIR MONEY SPENDERS\*

|                         |       |
|-------------------------|-------|
| DRUG                    | 32.8% |
| FOOD                    | 27.4  |
| AUTOMOTIVE              | 10.2  |
| LAUNDRY SOAPS           | 6.1   |
| RADIO                   | 5.6   |
| PETROLEUM               | 5.3   |
| TOBACCO                 | 3.8   |
| MISCELLANEOUS           | 1.5   |
| PAINT                   | 1.3   |
| HOUSE FURNISHINGS       | 1.1   |
| BUILDING                | 1.0   |
| STATIONERS & PUBLISHERS | .8    |
| CONFECTIIONERY          | .7    |
| CLOTHING                | .6    |
| FINANCIAL               | .6    |
| JEWELRY                 | .5    |
| MACHINERY               | .3    |
| BREWING                 | .3    |
| SCHOOLS                 | .1    |

\*NBC, first quarter, 1937

ber of radios in the average home were also spotlighted. 898 families out of the 1,000 have one receiver, 40 have two, 3 have three, 1 has four and 58 have none.

Auto-radio came in for its share of surveying too. Just 19.8 per cent of the 1,000 families questioned had such receivers. The remaining 80 per cent had none. Yet 79.1 per cent owned cars.

### FIRST QUARTER FACTS

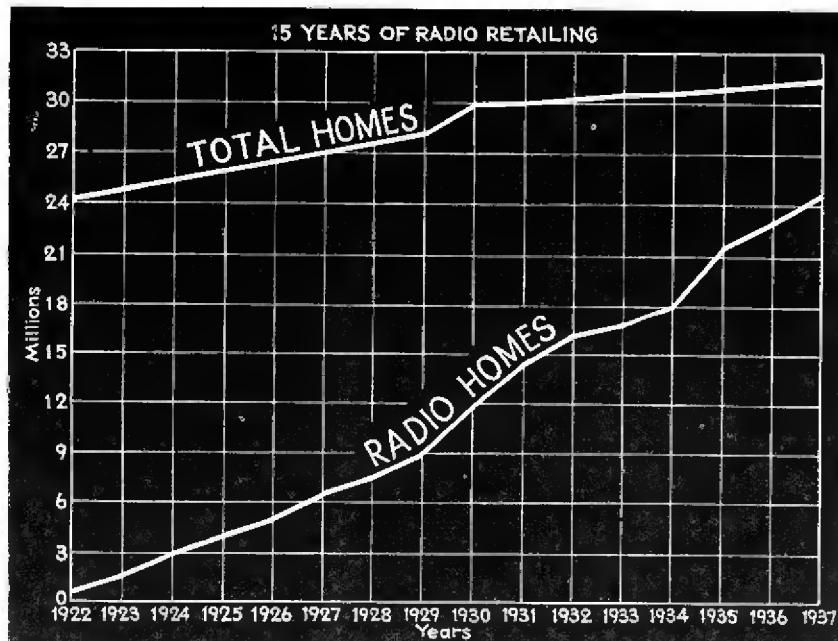
Retail washer sales hit an all time high in the first quarter. Jerry Bolmen of the American Washing Machine Manufacturers Association reports that 460,681 were sold, an increase of 10.77 per cent over last year.

Household ironers also upped, totaling 49,887 in the first three months, a 7.18 per cent increase.

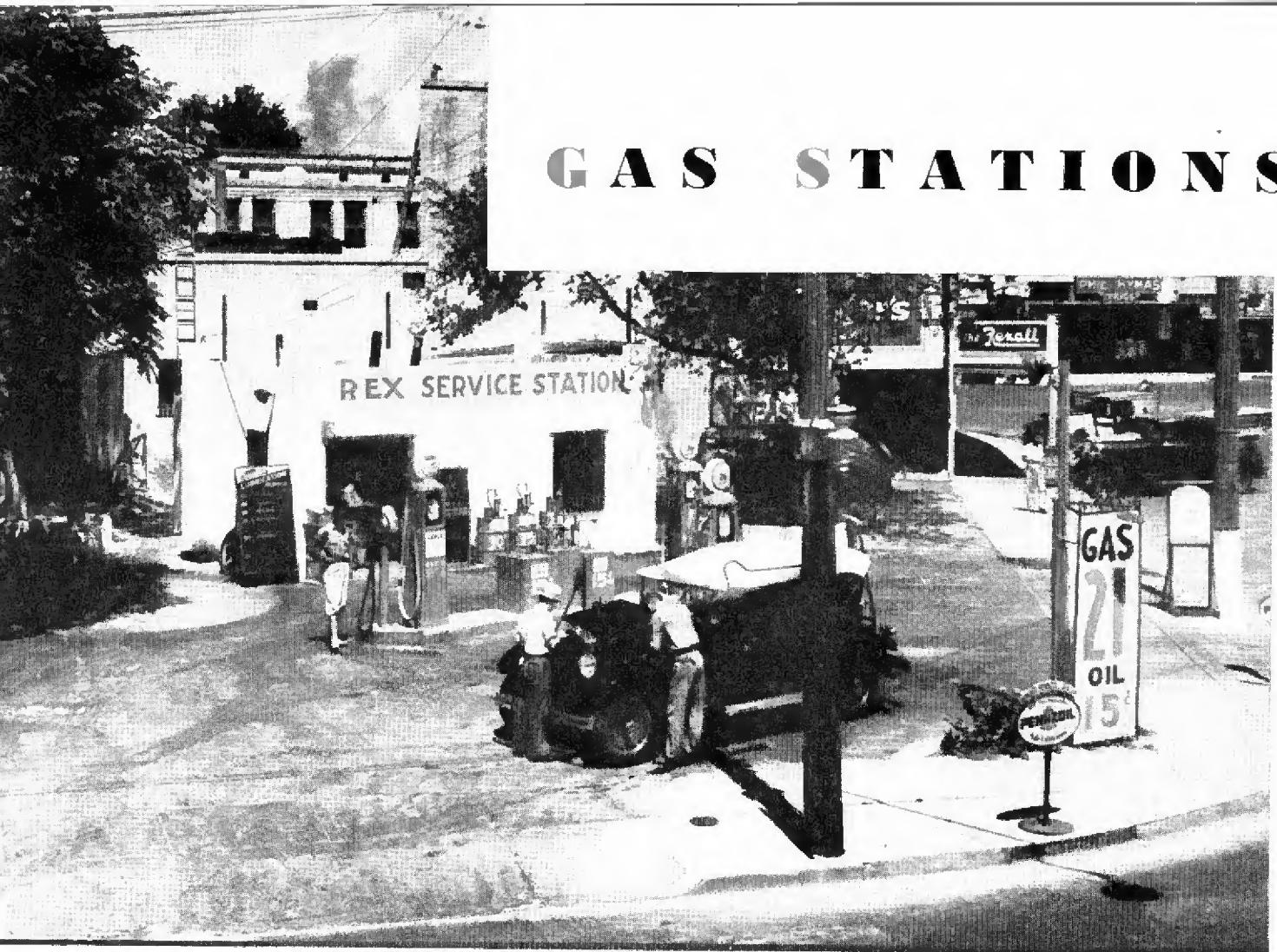
Installed air conditioning equipment totalled \$31,648,290, compared to \$11,005,980 in the first quarter of 1936, an increase of 187.5 per cent. These facts come from William B. Henderson of the Air Conditioning Manufacturers Association.

### FACTORY FIGURES

*Norge* reports its first quarter business 32 per cent above last year's initial three months. Refrigerators are up 29 per cent; washers, 21 per cent; commercial high-sides, 24 per cent; electric ranges, 523 per cent; furnaces, 571 per cent; oil burners, 117 per cent. Total unit sales by the Borg-Warner household divisions reached 171,702.



# GAS STATIONS



PUBLIC acceptance of auto radio within the last five years, and in the last two years in particular, has created an important specialized field. With 23,000,000 automobiles on the road and only 3,900,000 equipped with radio, 81% or 19,000,000 present a market still untouched. In addition to this, 4,000,000 cars will be manufactured in 1937, only 15% or less of which will come from the factory equipped with auto radios.

This vast new market represents a grand opportunity for the smaller radio dealer with vision to build a larger volume of profitable business than heretofore enjoyed with home radios and service only. Somebody will, of necessity, get this additional business, but it is particularly adapted to the exclusive radio dealer's experience and facilities.

The independent radio dealer in the smaller towns, because of his individual qualifications, is in an ideal position to not only sell auto radios but to install and service them properly. He can derive lasting benefit from a planned marketing campaign. Therefore, let us analyze this fast growing new market.

Auto radios are bought by only

one class of people, namely—auto owners. And to sell them anything one must find them. When the average retail store, located as it is on streets where pedestrian traffic is greatest, exposes its merchandise to the casual passerby it is analogous to firing a gun into a herd of wild horses in the hope of hitting a stallion. True, you may hit one now and then, but you will surely waste a lot of ammunition. The hunting season may be over before you get a shot at another herd.

#### *Where Car Owners Congregate*

To catch fish one must go where there are fish. Why not do your gunning for auto radio purchasers where automobile owners congregate and stop? Where is that place? Why, it's the Gasoline Station. Every car owner, rich or poor, limousine or flivver, must necessarily visit a gas station and fill up several times weekly.

Right here is a fine market for auto radio. A particularly fine one for the service station salesman who has the advantage of seeing his prospective radio customers regularly and being able to offer his customer convenient

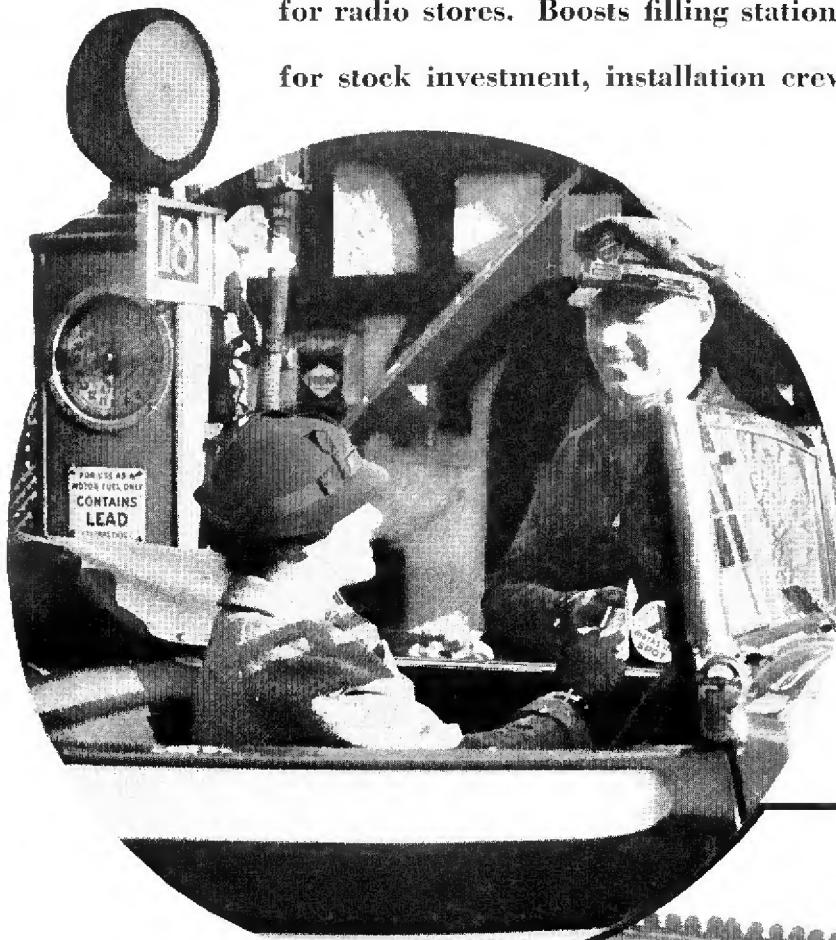
**2,000 AUTO-RADIO PROSPECTS PER MONTH**—That's the number the average filling station contacts. And "store traffic" actually improves in summer! Where could radio dealers better spend 10 per cent commissions? A 5-man outside crew could scarcely compete

installation and repair facilities. He sees his prospective buyer at least twice weekly and is therefore able to choose the most favorable moment for his sales presentation. For the same reason the station salesman is able to keep after his prospect regularly, which is something the store salesman is unable to do. In solicitation work he can introduce the subject of auto radio while serving the customer with his primary needs.

Assuming that we know that this is the proper market, why not avail yourself of this opportunity? It has been done successfully in a Long Island, N. Y. town of 2,500 population as well as in Brooklyn, New York, a borough of the City of New

# SELL FOR TRADE

Pumpmen push car sets on commission basis in eastern experiment. Arrangement mutually profitable. Swells sales, service for radio stores. Boosts filling station gross without necessity for stock investment, installation crew



Photographs by Ewing Galloway

York with a population of 2,000,000.

Here is how you can, at no cost to yourself, take advantage of a built up group of auto owners, most of whom are potential purchasers of the product you wish to sell. These people represent the accumulation of the greatest purchasing power in your community. They are the people who have money to spend for luxuries. They are the preferred credit risks in every respect. And your product is one of the items on their list of "wants" far more often than any other.

Make a list of all the up-to-date gasoline stations in your community. After you have satisfied yourself that

(Please turn to page 54)

By W. M. Hollis

ICE. ALREADY BROKEN—Most car owners patronize pet stations, know the attendants. After the tank is filled, what an opportunity to glance under the dash, talk radio if none is seen! Tags, printed and cut out to resemble control heads (note circular disc just back of windshield) may be affixed to wheel or dash, insidiously help sell the idea

A RADIO DEALER DOES THE WORK—But the customer who buys an auto-radio here, where it is convenient because his car needs washing anyway, need not know that the station carries no stock, has no installation man of its own



# DISPLAY ..... MANAGEMENT .....

## Twin Stores With Novel Exchange Plan Clear Trades

DENVER—Tough to turn over without loss are used radios on the floor of dealers pre-occupied with new merchandise. Not so tough for down-the-alley outlets set up to horse-trade.

Le Moine Bechtold skins this cat with a management method at once effective and novel. The Le Moine Music Company, main-drag emporium classed up to attract middle and upper-crust prospects, displays new radios and luxury electrical appliances. All receivers taken in trade are shunted to the Le Moine Radio Exchange, operated one block away on a lower rent artery.

The Exchange stocks only used radios and new washers, the latter appliances because they sell well to prospects with low incomes, have primarily a utility appeal.

The main store ducks trafficking with prospects whose ideas are obviously bigger than their incomes, people with very old radios having practically no re-sale value and money enough for only the cheapest of midgets even when time financing. These prospects are sent to the Exchange. The Exchange offers them a few dollars for their old equipment against the purchase of newer

but still not completely new merchandise, even offers to finance the purchase. Where the purchase price is not high, Bechtold points out, financing is less risky.

Keynote of the idea is the fact that the Exchange manager has been instructed to make it easy for radio prospects to "get in on the ground floor." His is a twin objective. First, to make enough money by sheer canniness to steadily reduce the subsidy-sum drained from the main operation and, second, to build new business for the main store in a safe and sane way.

The first objective has been well nicked in the past 6 months. At present 60 per cent of the used sets moved by the Exchange are straight cash or time transactions involving no swap. These result in a somewhat better than break-even statement. The remaining 40 per cent of the outlet's transactions involve swapping an old set for a still older one, with a little cash thrown in. This part of the operation barely keeps its head above water. It does, however, provide a means of attacking the second objective. For by stepping up users of old sets to newer and better ones by



**NEW RADIOS, LUXURY APPLIANCES**  
—That's all Le Moine Music's main showroom displays to men with money. Used receivers taken in trade are shunted to a smaller shop operated by the company one block away.

easy stages a point is frequently reached where such prospects have enough equity in their current radio to warrant shunting them back to the main store for a brand new model.

To date, the Exchange has been advertised only in the classified columns of daily newspapers. It is close enough to the main store to permit customers to be shuttled readily from one to the other. Aside from this cooperation in the interest of Bechtold business, however, the Le Moine Music Company and the Le Moine Radio Exchange operate as individual stores, keeping separate books, circularizing and servicing their own customers.



**USED SETS, NEW WASHERS**  
—These sell best to low-income group prospects, constitute the stock of Le Moine's Radio Exchange. This subsidiary builds buyers to new set level for the main store by stepping them up from trade-in to trade-in.

# ADVERTISING ..... SELLING .....



## Salesmen Share Dealer's

### Used Set Risk

SHEBOYGAN, WIS.—A unique method of making salesmen share the re-sale risk has enabled the H. C. Prange Department Store to keep its floor clear of trade-ins.

Explains Eitel F. Meyer, radio department manager: "When a customer has a trade to offer the salesman does his own appraising. The maximum he may allow, except in those few cases where a buyer for the trade is already available and the new set has a substantial list, is \$10. The firm offers to pay approximately 75 per cent of any allowance quoted up to the \$10 maxi-

mum while the salesman must pay the balance. If he fails to re-sell the set he takes in trade, this sum is deducted from the new set commission.

"No used set can be placed on our floor. They belong to our salesmen, to sell as their own property. Purchasers sign a sales slip reading as follows:

'I have today purchased.....  
of ..... his personal  
merchandise, and not the merchandise of H. C. Prange Co. It is  
understood by me that this merchandise is not guaranteed in any  
(Please turn to next page)

## Wind Charger Statistics

MAUSTON, WIS.—Interesting despite the fact that dealer experience undoubtedly varies from community to community are these statistics concerning the Carl O. Onsager Tire Company's wind-charger business in 1936:

Oscar Knutson of the company reports that Onsager sold 33 units. Only 2 farmers installed their own and the balance paid \$5 to have the firm do it.

Three out of the 33 strung up lights. The others used the chargers solely to operate radios.

Two towers, one 55 feet high and the other 20, were erected for customers. Both cost the consumer \$20 despite variation in size due to materials specified.

Seven service calls have been made. Three were due to misplacement of the charger mountings due to weather encountered during the year.

Here's the way a typical Onsager battery set sale shapes up:

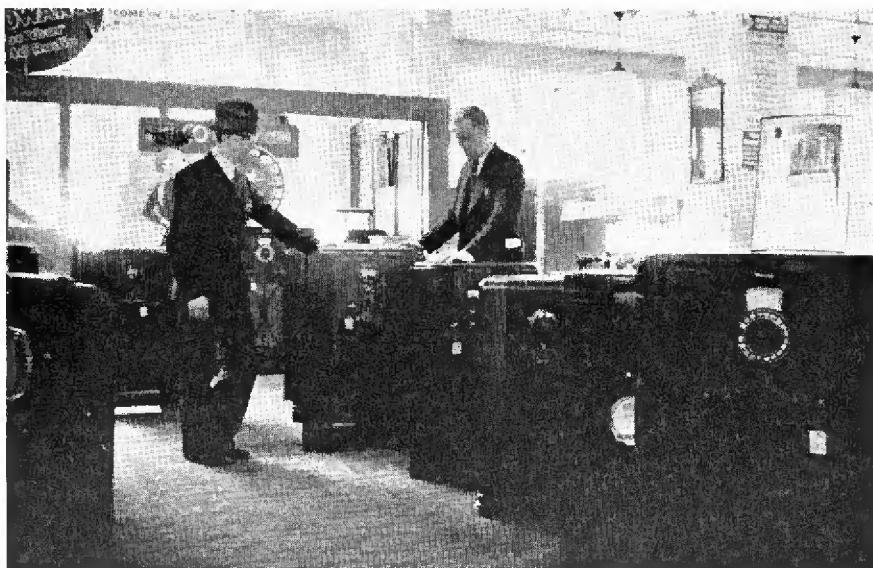
|                           |         |
|---------------------------|---------|
| Four-tube table set ..... | \$39.95 |
| Wind-charger .....        | 15.96   |
| Battery .....             | 13.25   |
| Aerial .....              | 5.00    |
| Installation .....        | 5.00    |
|                           | <hr/>   |
|                           | \$79.16 |

"Accessories", says Knutson, "sure do things to the unit sale!"

**SKYLINE SALESMEN** — Two sample wind-chargers, mounted high in the air over the Carl O. Onsager Tire Company store, sell themselves



# DISPLAY...MANAGEMENT...ADVERTISING...SELLING...



**ON HIS OWN**—This salesman on Prange's floor won't go wild on trade-in allowances in order to sell the new set. For he must re-sell the old radio himself or take a commission cut

(Continued from preceding page)

way and also that it cannot be returned for credit.

(Signed) .....  
(Address) .....

"This plan has been in use for more

than a year and is working out well. It keeps our salesmen from allowing too much on trades, relieves the store of the used set handling problem and has not in any way injured new set business so far as we are able to determine from current turnover records."

## Follow Up Nets 75%

MILWAUKEE—Automobile salesmen have long since learned that when they can induce a prospect to sit behind the wheel of a new car and drive, the sale is half made. People really in the mood for merchandise can scarcely resist once they have it in their hand.

They feel that it is already theirs and hate to part with it.

Around this principle of selling revolves the success of Max Bernstein's Empire Radio Store. Max's place of business is only 24 by 27 feet overall but it is located in a sufficiently busy street to attract floor traffic. It is the proprietor's opinion, however, that only the easiest sales are made right on the floor. Like many other dealers, he gets names and addresses of prospects considered "hot". Unlike most others, he sends his salesmen out to their homes next day with the merchandise, whether

**FIRST STEP**—In Empire's 24 by 27-foot store a prospect shows interest in a new console

**DOOR STEP**—That's where the sale is clinched next day. Max Bernstein takes a chance, delivers it for demonstration

home demonstration is asked for or not.

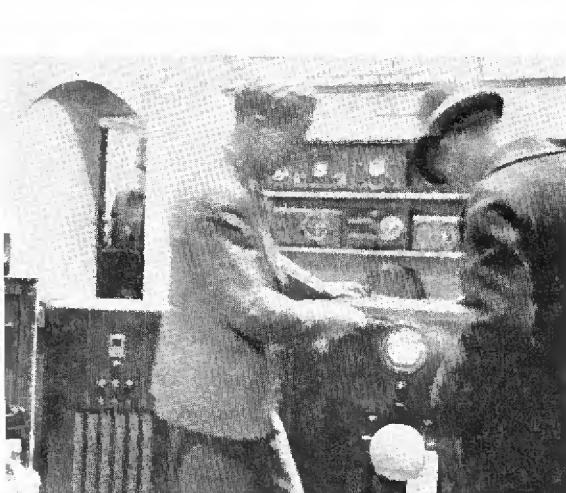
Table models are sold in this manner to apartment house dwellers. Salesmen take five or six along in their cars. But Bernstein goes even farther. His men take out consoles on the same basis.

Admitting that one man's meat is another's poison and that the average dealer gets it in the neck when he practices promiscuous home demonstration, Bernstein nevertheless insists that it can be made to pay if salesmen are properly trained. Seventy-three per cent of his business last year came from this source.

Most prospects are surprised that the firm goes to the trouble of delivering a set for demonstration just on the chance that they will permit it to be installed. Some few refuse to admit the salesman but most of them dislike turning the men down and, so long as the set is already on the doorstep, permit it to be installed.

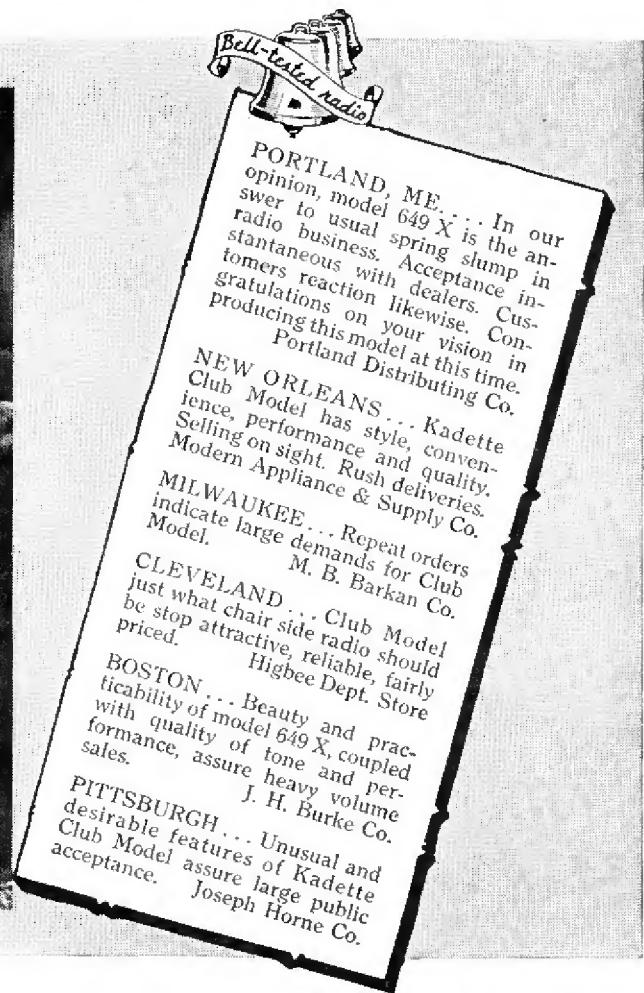
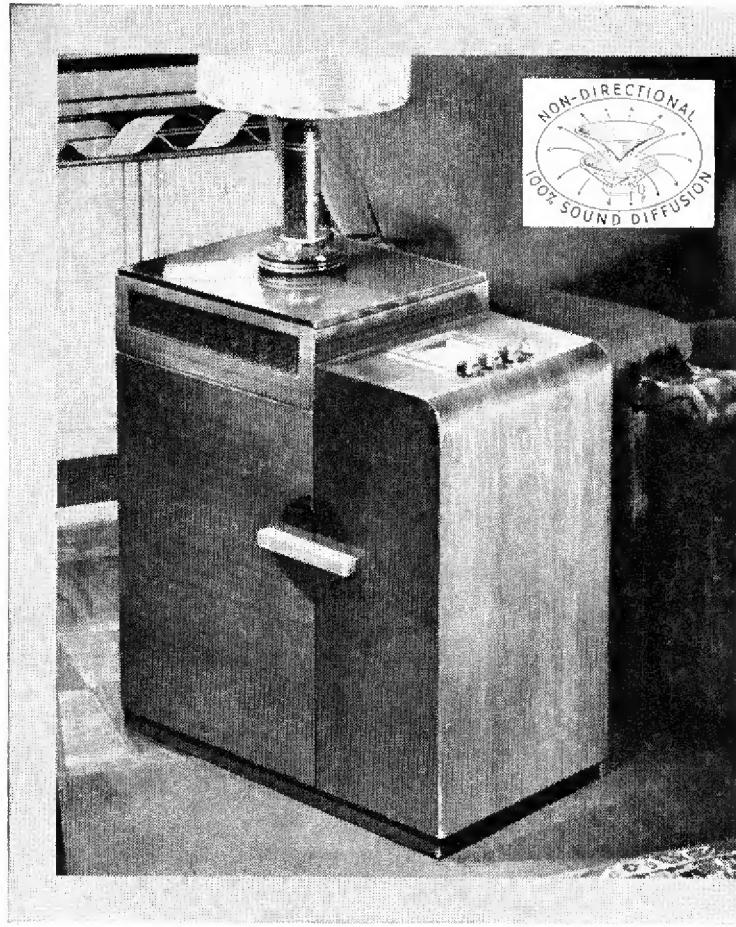
Once in the home the radio, if it pleases the prospect, is thought of as his property rather than that of the dealer and, like the automobile driven over a test stretch, practically sells itself. Hesitation and further shopping ceases where the prospect really intended to buy in the first place but couldn't quite bring himself to the point of plunking down the cash.

This method of selling, admits Bernstein, is expensive if the percentage of sales to demonstrations is low. It is not, however, if the percentage of sales to demonstrations is high, as it is in his case. Table model sales are generally closed on the first visit. Consoles usually remain for a day or two before the contract is signed. Selling cost is higher on the latter but still not too high in view of the extra margin.



# A Smash Hit!

## THE NEW KADETTE "EQUAFONIC"



"Equafonic" sales are breaking all records! Dealers report orders exceeding every expectation. Kadette's new Equafonic principle that projects sound in every direction with equal intensity is taking the buying public by storm.

Other Equafonic features: beautiful, modernistic cabinet, hand-rubbed piano finish. Illuminated cocktail service rack, lamp socket in back of cabinet. New 6V6 beam tube amplifier.

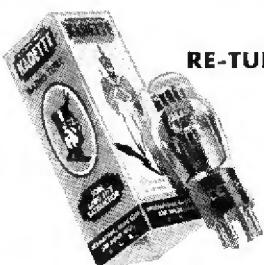
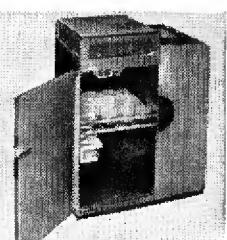
Advanced AC 6-tube circuit tunes standard broadcast and European bands—540 to 1850 kilocycles (552 to 162 meters) and 5300 to 17,500 kilocycles (56.5 to 17 meters).

Push the "Equafonic" and pile up profits! Let it boost your sales records!

INTERNATIONAL RADIO CORPORATION  
535 Williams Street Ann Arbor, Michigan

**CLUB MODEL**  
with  
**CELLARETTE**

**\$55**



### RE-TUBE WITH KADETTE

The Cream of the  
Tube Market—  
picked and sold  
by Kadette.



# NEW NOTE ON NOISE



**Legislation is coming . . . Quiet electrical appliances are in process of design . . . But the retailer can help himself in the meantime by erecting modern antennas, installing filters**

says

**K. C. Bridges**

*W. H. Tait Radio Products, Toronto*

EVER since radio was born we have been listening in not only on broadcasts but also to oil burners, street cars, leaky power lines, transformers and similar electrical equipment which could scarcely classify as "entertainment." Dial telephones came along later and now that short-wave receivers are with us in force there are more varieties of noise in the air than Mr. Heinz could ever think of. Automobile ignition alone is serious on shortwaves. I know one dealer who has lost the sale of four expensive allwave sets on one short street just because a bus line passes the door.

The sorry part of this whole business is the fact, pointed out by W. MacDonald in the November, 1936, issue of *Radio Retailing* ("Noise is Costing Us Money"), that most noise-producing electrical equipment could have been made noiseless at extremely low cost at the time of manufacture. Surely it is time something was done about this noise problem that has cost radio manufacturers, distributors and dealers thousands of dollars. It is

very gratifying to note increased activity by noise-prevention leagues and even by individual communities.

The Canadian public has been fortunate to obtain the help of the Dominion Government's radio branch. The Canadian listener pays a yearly

Racket-reduction begins  
with the installation—  
Tait's truck serves several  
dealers.

CHECK-UP—The author runs down noise with a portable receiver and a loop

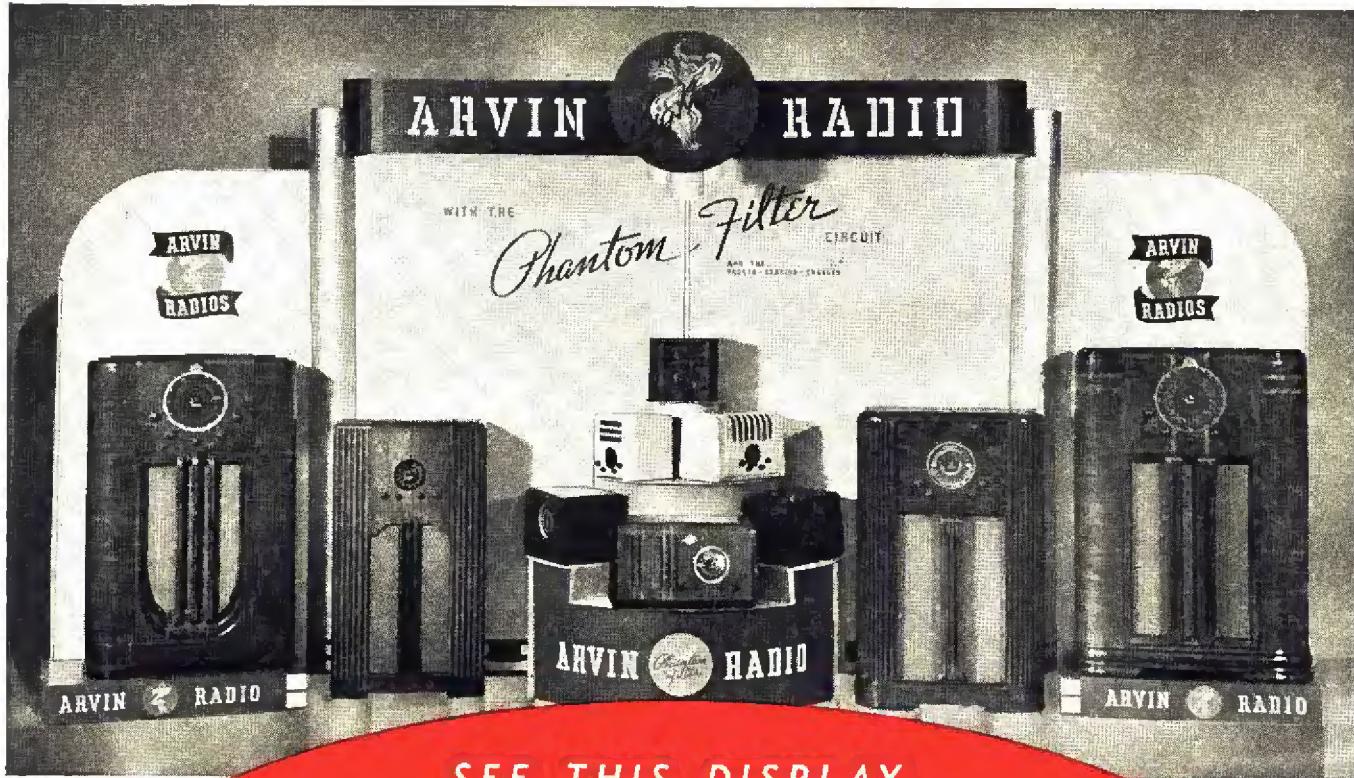
radio license fee of \$2, the greater part of which goes for the maintenance of a large staff working constantly on this problem.

Radio interference cars, fully equipped to track down and locate any type of racket, are located in all the larger centres of population. These cars also cover the suburban and rural districts when necessary. If a listener thinks that his area is unduly noisy he (or his dealer) phones the local radio inspector. An interference car is dispatched and the investigator listens to the radio set of the complaining customer. He then locates the noise source and explains to the owner of the offending apparatus just how much disturbance and nuisance he is creating. Instructions for quieting the equipment are given without charge and in nine times out of ten the result is 100 per cent cure.

Incidentally, legislation has just passed through the Dominion Parliament making it absolutely illegal to own or manufacture any piece of equipment creating radio disturbance. The owner or operator of such equipment can be summoned to court and fined as much as \$50 per day for every day the offending apparatus is allowed to broadcast after its owner has been told how to make it silent. This law is not yet being enforced but it soon will be.

We know that the proper way to  
(Please turn to page 57)



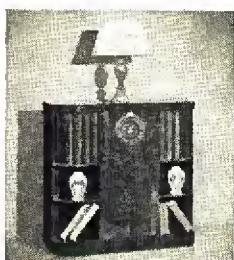


SEE THIS DISPLAY  
AT YOUR JOBBER'S

# NEW 1938 ARVINS

WITH THE *Phantom Filter Circuit*

• Anyone who knows the technical side of radio knows this: The basic difference between radios lies in the circuit—the way the various characteristics of coils, condensers, transformers and tubes are knit together. In the Phantom Filter Circuit, Arvin engineers have combined these and other units in a way that produces better radio reception. It is apparent when you listen to the new Arvins alongside other radios. Do that now—at your jobber's.



ARVIN PHANTOM QUEEN Model 1247—a lovely 12-tube combination bookcase radio, priced at \$140.00. Has automatic tuning with Arvin's Presto-Station-Changer...and all other modern features. Other consoles and table models shown above on impressive Arvin Floor Display.



BETTER RADIO RECEPTION because of the Phantom Filter Circuit—that's the dominant sales idea in Arvin national consumer advertising. Full page announcement in Post and Collier's coming soon. Miniature reproduction shown above.

• The Phantom Filter Circuit is a powerful sales producing feature—because it means better radio reception. And that's exactly what folks want in radios. That—plus cabinet styling which appeals. Of course, the new Arvins have every modern radio improvement, including automatic tuning with Arvin's Presto-Station-Changer in the larger models. Arvin has both the performance and the styling that makes sales. See them. The line is "hot!" Noblitt-Sparks Industries, Inc., Columbus, Indiana.

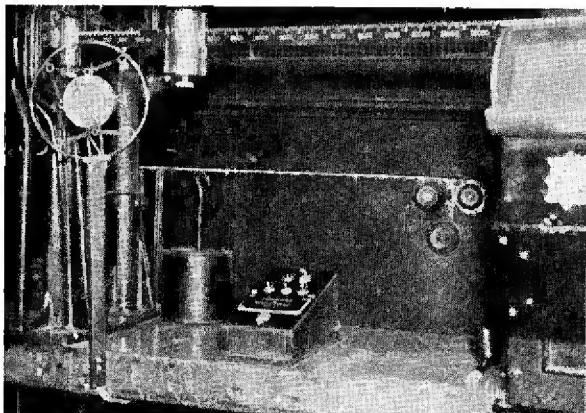
ARVIN PHANTOM BACHELOR Model 628CS—a distinctive chair side console, popularly priced at \$69.95. This is one of 19 beautiful Arvin radios priced to sell from \$19.95 to \$160.00. Also 2 and 6-volt battery models in console and table cabinets. Prices slightly higher in extreme South, Denver and West.



*Sales are Booming on Arvin Phantom Filter Car Radios*

# S O U N D

Profit rewards dealer ingenuity and initiative



## DISTRIBUTION

In the weighmaster's shack at the Dobbin coal yard in the Bronx *Barry & Cortley* of New York has installed a microphone, amplifier and switch panel which facilitates communication with two weighing platforms and a distant loading chute.

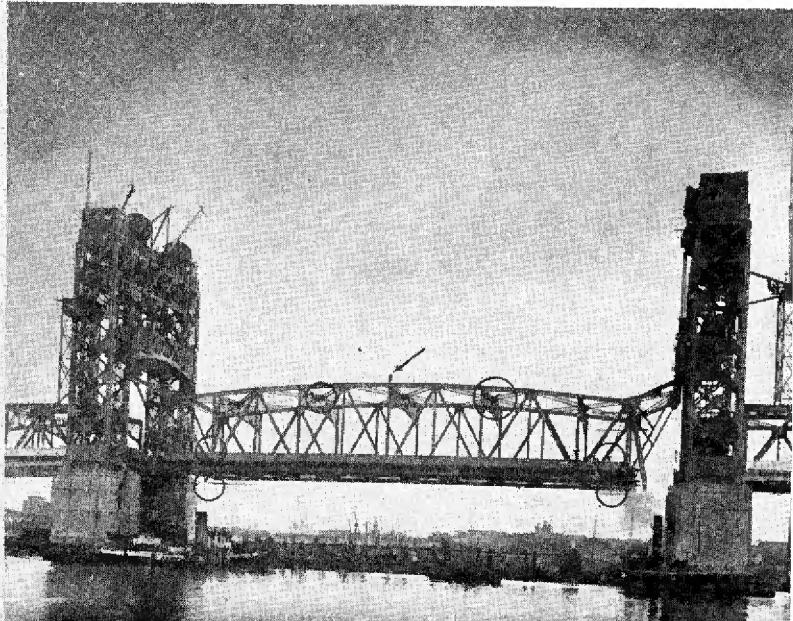
Truckdrivers hear the weighmaster's stentorian queries via this trumpet-inclosed p.m. dynamic speaker slung up on the loading house wall out of harm's way



And truckdrivers talk back to the weighmaster over this recess-protected microphone installed in a shallow "closet" beneath the trumpet

## CONSTRUCTION

Final link of New York's Tri-borough bridge is raised into position 135 feet above East River. War Department allows 6-hour maximum for job. *Davie Electric Company* equips foreman (arrow) with microphone, installs six speakers (circled), runs 100-watt amplifier on a.c. cabled from shore. Co-ordinating directions audible to hoist operators (tower tops); steelmen and fire-boats pumping water into float on which span was towed into position. Time: 5½ hours

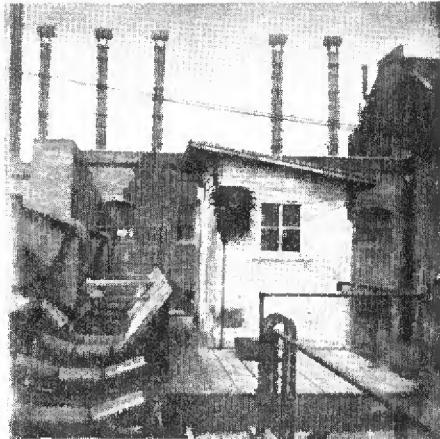
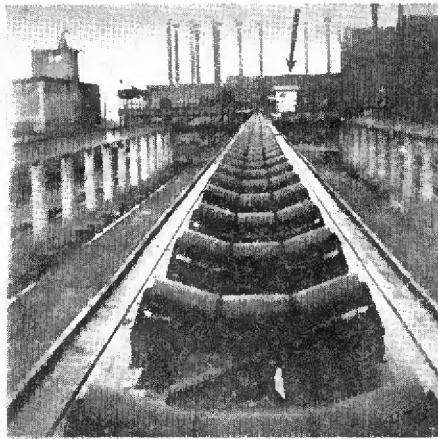
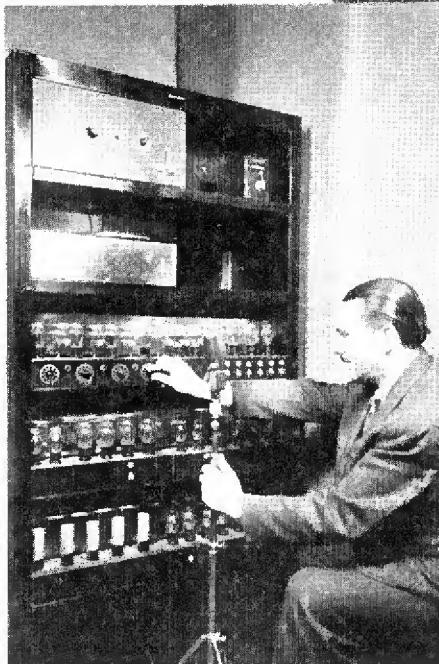
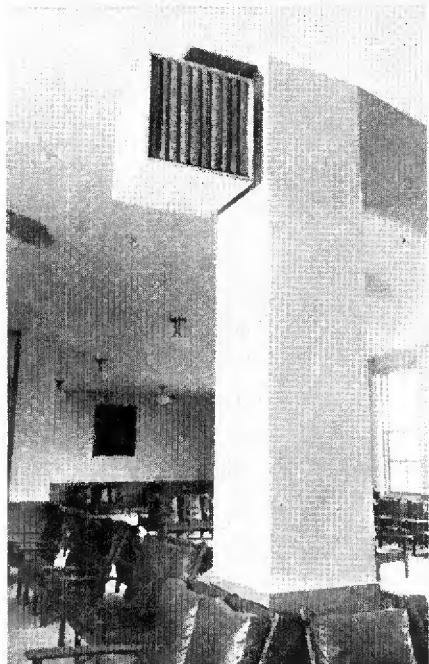


# A T W O R K

when modern equipment is fitted to consumer needs

## DIRECTION

Royden Denike (left) watches J. B. Crofts, executive of Brooklyn's Abraham & Strauss department store, pep up the personnel without stirring from his office



**PRODUCTION** To Don W. Deymon of Findlay, Ohio, goes the palm for selling a novel installation to the Great Lakes Sugar Refinery. Three pictures tell the story of its use. Step one: Sugar beets are delivered by truck to this weigh house

The beets then go onto this 1200-ft. conveyor (belt not in place in photo), travel to the small "tare" house in the distance, 18-feet above ground, where 15 lb. samples of every load have dirt wire-brushed off, tops removed

From this novel housing, open at both ends, and its concealed 8-inch p.m. dynamic, flows music with sufficient volume to entertain employees before and after closing hours, in the 30 by 60-ft. restroom

E. Goldberg of the Polyamp Company, who installed the system, "rides gain" during a checkup. Four channels are available

Cleaned samples are weighed in the tare house (close-up) and the percentage of weight loss microphoned back to the weigh house, where calculations show the net. The plant pays on this basis. Formerly, truck-drivers passed weight slips to the tare house at the end of a long stick

# **COMING FOR 1937-38**

## **Another Great G-E "FIRST"**



# **TOUCH TUNING!**

### **"TOUCH A BUTTON — THAT'S ALL"**

A great exclusive feature—a great exclusive sales opportunity—and backed by the greatest advertising and promotion program we have ever sponsored.

**GENERAL ELECTRIC**  
  
**RADIO**

**APPLIANCE AND MERCHANDISE DEPARTMENT, GENERAL ELECTRIC COMPANY, BRIDGEPORT, CONN.**

# HAVE IT DONE RIGHT

## "Haywire" Installation Hopelessly Handicaps Auto-Radio



### "INSTALLATION EXTRA"

— because experienced dealers know there is no shortcut to good sensitivity, low noise level

**RADIO**

# NEWS

## PEOPLE • PRODUCTS • PLANS

### Thirteenth For RMA

Annual convention precedes parts show at Stevens; has interesting program

WASHINGTON—The program for the Radio Manufacturers Association's 13th annual convention to be held at Chicago's Hotel Stevens June 8 and 9, just preceding the Radio Parts Manufacturers National Trade Show, has just been announced. Here's the detailed time-table:

Tuesday, June 8—10 a.m., meeting of board of directors, president Leslie F. Muter presiding. 10:30 a.m., meeting of Export Committee, chairman S. T. Thompson. Meeting of Engineering Committee, chairman W. R. G. Baker. Meeting, Traffic Committee, vice-chairman O. J. Davies. 12:30 p.m., Membership luncheon-meeting in the south ballroom, includes annual business meeting and annual reports. 2:30 p.m., Set Division's annual meeting, chairman Arthur T. Murray. Tube Division's annual meeting, chairman B. G. Erskine. Parts and Accessory Division annual meeting, south ballroom, chairman Arthur Moss.

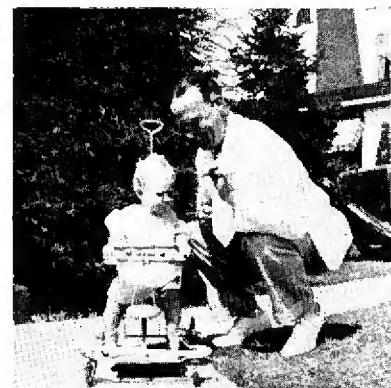
Wednesday, June 9—10:30 a.m., Parts and Accessory Division annual meeting

(continued), chairman Arthur Moss. Amplifier and Sound Equipment Division annual meeting, chairman Peter L. Jensen. 12:15 p.m., Credit Committee luncheon meeting, Eastern and Western Divisions, chairman Arthur Moss, vice-chairman Edward Metzger and Phil C. Lenz. Business session with NCO follows. 12:30 p.m., Luncheon meeting, new RMA Board of Directors. Election of president and other officers for ensuing year. 7 p.m., Annual Membership Dinner, members and guests, chairman A. S. Wells, Grand Ballroom, ladies invited, dancing.

### New Policy For Amer. Bosch

Increased demand for police, export and private-brand radios taxes factory facilities, forces dropping of trade-marked line

SPRINGFIELD, MASS.—On April 30, the United American Bosch Corporation, its plant facilities taxed to capacity by orders for police, export and private-brand radios, other divisions working under forced draft on automotive ignition, magnetos, gas water heaters and Diesel engine parts, discontinued production of its trade-



**GRANDAD DAVIN**—"Youngest grandfather in the radio industry" is the claim of **Jimmy Davin**, General Household Utilities. Married while extremely young, he has both a son and a daughter with children. Told to put her hand out is Mercedes Davin Franz

marked home and automobile radio line.

From Roy Davey, sales manager of the radio division, to more than a hundred distributors went the following letter:

"As you well know, the efforts of United American Bosch cover many fields. Our company is one of the three largest producers of automotive battery ignition and our production of magnetos is the largest in the world. In the Diesel engine field we supply the majority of all the injection pumps and nozzles which are used in this country. The company's line of general automotive products is very broad and we are an important producer in this field. The gas water heater division has grown to substantial proportions and this equipment is today one of the leaders in the high grade gas appliance market. In all these lines the production demands have increased substantially, during the past year.

"In our radio division we have experienced a very large increase in our export volume and at the same time the volume of our private brand business has developed to the point where, with the increasing demand for factory facilities from our other divisions, we no longer have available manufacturing space which will permit the continuation of our own domestic trademarked production of home and car receivers. Our withdrawal from our own domestic trademarked production of home and car receivers permits us to concentrate on and to continue more aggressively our export, police and private brand radio activities and it is because of this that the decision which we are here announcing to you has been made.

"Because of the substantial increase in both export and private brand lines, it becomes impossible for us to serve our distributors with a large enough amount of American Bosch trademarked radio to make the sales of such sets profitable to our distributors and to us.

"This letter, as well as advising you of



**SUPREME COMMAND**—In the plant at Greenwood, Mississippi, RR's candid camera clicks while Supreme Instruments Corporation execs map promotion plans for their new 2-inch cathode ray tube oscilloscope. (Left to right) Charles A. Carroll, secretary; H. H. Shotwell, purchasing agent; Donald N. Dubweber, president; Samuel C. Milbourne, technical service manager, and Floyd Fausett, vice-president and chief engineer

the corporation's policy, as it affects American Bosch domestic trademarked radio, also serves as a notification as of this date of the Corporation's exercise of its right of cancellation of any and all existing radio agreements with you as well as all of its wholesalers and distributors.

"We have in the case of most of our distributors had a long and pleasant relationship and it is with deep regret that this radio relationship must be terminated."

One of the pioneers of the radio business, United American Bosch has long been a factor in police, export and private brand fields as well as in the American marketplace for trade-marked goods. Decision to discontinue production of trade-marked radios came just before *Radio Retailing's* deadline, was reached when it became obvious that pressure from other divisions would make it difficult if not impossible to serve distributors on a basis profitable to them and to the Corporation itself.

## Alter Sinks Spur

Cuts off key retail accounts Grunow formerly sold direct. Limits production planning to 90-days. Sets up new model jury.

CHICAGO—Over initial saddle-sores and now firmly gripping General Household Utility reins as director of sales, Harry Alter . . . his brother assuming responsibility for the Grunow distributorship in the family since 1928 . . . informs *RR* in an exclusive "minute-interview" that he plans definitely to eliminate "key" retail accounts hitherto sold direct, concentrate all company shipments in the hands of distributors. "The backbone of the industry is the independent dealer", says Alter. "The depression showed that his sales have made the real profit for the manufacturer. Why should his goodwill be jeopardized by possible friction with key accounts that are out of contact with the distributor and likely to carry on promotions which hurt the independent's chances?"

Further applying his distributor's viewpoint to the Grunow policies Alter states that because he is certain the trade can-



**RADIO TO REFRIGERATION**—F. E. Basler, who used to be AK's sales manager and now occupies the chair of g.s.m. at Gibson Electric Refrigerator Corp., points out the line's highspots to Jack Helliwell, who also used to be with AK and now steps out to represent Gibson in Texas, Louisiana, Mississippi, Arkansas, western Tennessee and eastern Missouri, working out of Dallas.

not intelligently estimate volume more than 90-days ahead the factory will whittle down its production schedule to this period to avoid overloaded inventories. "Production schedules planned over a long period are fine for the purchasing agent and the production department," he contends, "but not so good for the trade."

To Grunow's long-practiced "battle" conference idea in which organization men periodically check 100 makes of radios and 34 refrigerators, keeping a finger on the pulse of design and merchandising policy, Alter adds an additional fillip. He has appointed a jury of merchandising men to pass on Grunow's own new models.

Grunow Board of Directors, hitherto unpublished, is: Charles Albers, W. C. Griffith, Wm. C. Grunow, Herbert Lorber, A. G. Messick, Clare Scott, C. E. Whitehill.

## Cunningham Steps Down

Resigns as RCA Manufacturing president but continues on Board. Throckmorton takes over duties, sans title

CAMDEN—E. T. Cunningham has resigned the presidency of RCA Manufacturing Company, continues as a member of its board of directors, is retained as counsel on production, sales and trade relations. G. K. Throckmorton, executive vice-president, assumes Cunningham's duties but retains his present title.

Says David Sarnoff, president of the Radio Corporation of America, of which RCA Manufacturing is a subsidiary: "Mr. Cunningham was appointed in 1931 to co-ordinate and to integrate the varied sales and manufacturing activities of RCA in the fields of radio tubes and receivers, Victor phonograph records, Photophone equipment, radio transmitters and miscellaneous radio products. Today these activities are consolidated in the RCA Manufacturing Company and this company is operating on a profitable basis. Having successfully completed the task of integration which he

undertook, Mr. Cunningham has now requested that he be relieved of future active responsibility."

## New Name In Sound

Vocograph, Meck at helm, entered amplifier arena May 1

CHICAGO—John S. Meck, who swung a soldering iron on Thorola production lines in the early days, wrote snappy advertising copy for concerns such as Jewell, Operadio, Thordarson, Pioneer, Hallicrafters and Continental Carbon, more recently resigned the post of Clough-Brengle sales manager, is back in the radio ring as president and general sales manager of the newly formed Electronic Design corporation.

On the market May 1 came this firm's line of "Vocograph" sound equipment and accessories, to be merchandised through regular jobber channels.



**VOCAL FOR VOCOGRAPH**—John S. Meck, new president and general sales manager for the new Electronic Design Corporation



**PARDONABLE PUFF**—Pearl Brunswick of RCA-Victor, Chicago. Knows 450 dealers by their first names, is Windy City's only woman distributor's saleslady

## RCA Shuffles Execs

CAMDEN—From executive vice-president G. K. Throckmorton of the RCA Manufacturing Company comes the following news of RCA Victor sales executive changes:

Vance C. Woodcox, formerly manager of national field activities, takes over new supervisory sales activities under the general sales manager of package goods, H. C. Bonfig. F. D. Wilson, former central division manager, becomes manager of national field activities.

S. D. Camper, formerly Detroit district manager, now runs the central division, out of Chicago. L. W. Teegarden, former New York district manager, replaces eastern division manager John W. Griffin, resigned.

J. W. Cooke, former district manager in Dallas, has been appointed western division manager. J. E. Francis, former western division manager, will devote his time in a general supervisory capacity on the west coast.

F. G. Ostman, formerly national service manager, is the new district manager for Dallas. E. C. Cahill becomes national service manager.

J. K. West, former Philadelphia district manager, is now district manager for New York. H. H. Kronen, formerly sales rep in Boston area, becomes Philadelphia district manager.

W. H. Kelley, former sales representative in Chicago, has been appointed Balti-



**KNOWS HIS FARMERS** — *Mort Duff*, new advertising manager for Wincharger, is a specialist in the business of writing copy designed to interest ruralites

more district manager. R. A. Forbes, formerly district manager in Baltimore, is now acting in the same capacity in Minneapolis. H. A. Edwards, former district manager in Minneapolis, has gone to the home office at Camden.

N. A. Woodford, Seattle district manager, has been sent to a similar job at Detroit. E. S. Carter, former Seattle sales rep, has been appointed district manager.

**COULD YOU SELL  
A BEAUTIFUL WALNUT  
CONSOLE RADIO WITH  
REAL AUTOMATIC TUNING  
AT \$54 95 ??**

**NEWS FLASH:  
COMING JUNE 1  
Grunow**

## Majestic Steps Up

Moves to Kenwood district, hires Hirsch, Lyons

CHICAGO—To a new building at 50th and Rockwell, in the heart of the Kenwood manufacturing district, goes N. L. Cohen with his Majestic Radio & Television Corporation. Replete with private railroad siding, complete "daylighting", this thoroughly modern plant can turn out 2,500 receivers daily at peak, employ 1,500.

Newly appointed chief engineer is Charles J. Hirsch, graduate of Columbia, holder of A.B. and E.E. degrees, successively with Edison Laboratories, Fada, the Societe Mechanica La Precisa in Italy's Naples. To assist him is Walter Lyons, B.S., M.E.E. and M.S. from Toronto's McGill, more recently with Canadian Victor, Wells-Gardner, Emerson and Hazeltine.

## Elbow-Room For Solar

NEW YORK—Otto Paschkes, president of Solar Manufacturing Corporation, has just signed his John-Henry on a lease for an additional factory at the foot of West 23rd Street, Bayonne, will immediately move the company's electrolytic condenser production there. This adds 75,000 sq.ft. to Solar's facilities.

Office remains at 499 Broadway, New York City.

## Bigger, Better Berndt

SYRACUSE—W. E. Berndt, one of central New York's leading jobbers who moved to bigger, better quarters May 15, says the new layout permits more lavish display, speeds up receiving and shipping of merchandise.



## Southern Servicers Convene

DALLAS—The National Radio Service Association holds its Fifth Annual Convention here May 23, 24 and 25 at the Hotel Baker, simultaneously staging an exhibit of radio and electronic devices. Eighty-eight booths, many of which are already taken, are provided and talks scheduled are to include: "Establishing Better Credit Standing With Your Distributor" and "Cost Accounting Methods in the Radio Service Business."

F. H. Gable, 6821 Snider Plaza, is chairman.

## Batteries By Appointment

PHILADELPHIA—From J. F. Kelly, Jr., export manager for the Electric Storage Battery Company, comes word that 10 tons of Exide batteries will be used by BBC in broadcasting the coronation ceremonies from London.

## Bruntion Moves

SAN FRANCISCO—Julius Bruntion & Sons, operator of KJBS and distributor for Arvin, has moved to new quarters at 1470 Pine, expanding to handle mounting sales volume.

**SCHNEIDERHAWN'S ONTHANK**  
— *G. W. Onthank*, elected to A. A. Schneiderhawn Company's board of directors, made treasurer and assistant general manager. Lives in Des Moines, will help push Zenith

# WHY DO INCREASING THOUSANDS OF DEALERS Pay Cash FOR RAYTHEON TUBES?

NOT BAD INTEREST  
ON YOUR MONEY!



IT costs upwards of 5% to "sell" tubes to dealers on any of the "no investment" finance plans. Who pays the 5% or more? In most cases it is you—the dealer. Under other policies the dealer is asked to get it from the customer. But it comes out of the dealer's "hide" either way.

RAYTHEON protects your investment because thousands of dealers know that (1) RAYTHEON is the tube with great consumer acceptance and fair list prices that insure faster turnover... (2) RAYTHEON is the tube that is not sold at cut prices, insuring full profit... (3) RAYTHEON is the tube that needs no apologies or explanations, due to its long established quality.

These facts are the reasons why increasing thousands of dealers and service men are finding RAYTHEON the safest and most profitable tube investment.

## ASK YOUR JOBBER

See Raytheon display Booth No. 91, Radio Parts Manufacturers' National Trade Show, Stevens Hotel, June 10, 11, 12 and 13

# RAYTHEON

RAYTHEON PRODUCTION CORPORATION

420 Lexington Ave., New York, N. Y. 445 Lake Shore Drive, Chicago, Illinois  
55 Chapel Street, Newton, Mass. 555 Howard Street, San Francisco, Cal.  
415 Peachtree Street, N. E., Atlanta, Ga.

RAYTHEON IS THE MOST COMPLETE LINE—ALL TYPES OF GLASS, OCTAL BASE, METAL, RESISTANCE AND AMATEUR TRANSMITTER TUBES



**FAREWELL FANFARE**—Left to right: *Jose Iturbi, A. R. A. Allen, Eugene Ormandy, Tom Joyce (RCA-Victor sales manager), Mrs. Ormandy and Mayor S. Davis Wilson of Philadelphia*

## Barnstorming Three B's

**Philadelphia Orchestra plays Brahms, Beethoven, Bach in major cities for RCA-Victor**

**CAMDEN**—Effective hypodermic for record sales is the current coast-to-coast concert swing of the famed Philadelphia Orchestra featuring compositions by Brahms, Beethoven and Bach for RCA-Victor. Directed by Eugene Ormandy, who will periodically relinquish his baton to pianist-conductor Jose Iturbi, Leopold Stokowski and Charles O'Connell, the orchestra started and will finish its tour with a nationwide-broadcast on "Magic-Key" time, is now barnstorming in a special 10-car Pullman.

Welcomed with open arms by record retailers spending advertising and display tie-in money freely, the caravan has already played Nashville, New Orleans, Memphis, Little Rock, St. Louis, Tulsa, Dallas, El Paso, Los Angeles, Pasadena, San Francisco, Salt Lake, Denver, Lincoln, Des Moines, Minneapolis, Milwaukee, Ann Arbor, Toledo and Toronto. On the circuit are Montreal, Northampton and White Plains, where the tour comes to an end May 20-22.

Cleverly ballyhooed in advance to Kiwanis, Rotarians, by music-critic Peter Hugh Reed, the tour has already earned the plaudits of music-lovers. Grandstand publicity stunt was a broadcast from the train's baggage car, converted into a temporary studio, while the special was in motion.

## Whole Plant Transplanted

**Halson enters model factory in Connecticut, opens new display-sales offices in N. Y.**

**NORWALK**—From New York to this city comes the Halson Radio Manufacturing Corp., into a 52,000 sq.ft. plant set in

the center of a three and one-half acre plot permitting future expansion. At 116 Main, this plant will have every modern facility for straight-line radio receiver production. Charles S. Halpern and Philip J. Halpern are in full charge of operations. Z. Benin, chief engineer, has been installed in a laboratory providing the last word in experimental and design facilities.

Simultaneously with the opening of this new plant, the management sets up extensive display and sales offices at 136 Liberty, in New York City. A complete line will be stocked here for convenience of metropolitan dealers and service facilities will be available. The export department will function from New York and Lewis E. Dorfman, the company's general sales manager, will make it his headquarters.

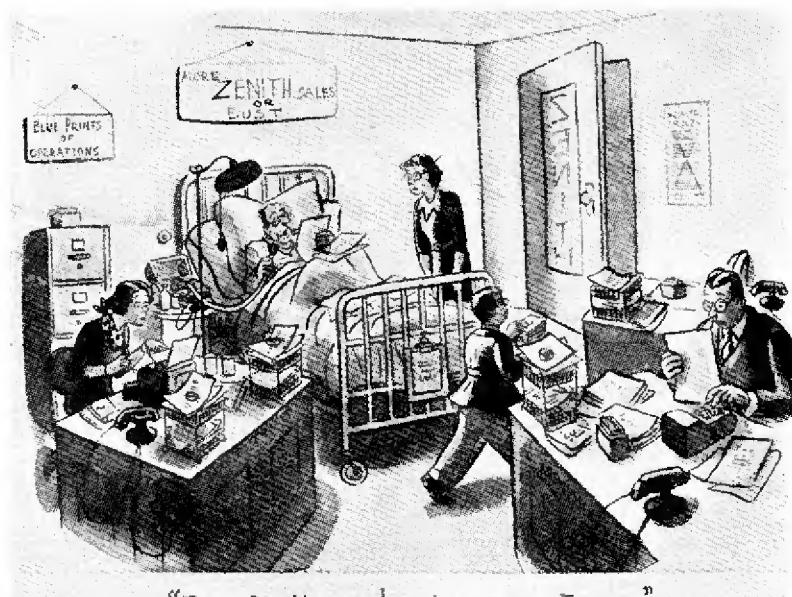
## FRONT MEN FOR FACTORIES

**EMERSON**—Holman's Inc., of Sumter, S. Carolina, headed by H. L. Salisbury, now has this line in central South Carolina. Electrical Specialties, Detroit, C. Schmidt and R. A. Wallace at the helm, has it in south Eastern Michigan. Nashville Chair, under Ed Lindahl and Al Mayes, gets the Nashville and central Tennessee territory. Howard Bristol of Fergus Falls, Montana, is honored, western Minnesota and eastern North Dakota. Commonwealth Utilities, Chicago, headed by S. E. Schulman, H. Miller and J. Grosman, now has Emerson in northern Illinois and Indiana. Arthur Fulmer of Memphis takes hold, E. Bowen directing, in western Tennessee, northern Mississippi, southeastern Missouri and southwestern Kentucky. Philadelphia Motor, W. D. Harris in charge, gets Allentown, Pa., and vicinity.

**G-E**—Lee Cooper, formerly with a Philadelphia wholesale house and well known to the Pennsylvania trade, has been appointed radio specialist for the Allentown, Lancaster and Williamsport areas. Shelby York gets a similar appointment on the West Coast, headquartering in San Francisco.

**GIRARD-HOPKINS**—New agents: Arthur H. Baier, of 2015 E. 65th St., Cleveland, covering the state of Ohio; Alvin C. Leonard, 253 Plymouth Bldg., Minneapolis, working in Wisconsin, Minnesota and the Dakotas; Theo. W. Keller, 303 Harrison St., Council Bluffs, for the states of Iowa, Nebraska, Kansas and Missouri.

**RADIOTRON**—Zack Radio Supply, San Francisco distributor, coming up fast in the "ham" game, now has this tube line.



**TRUTH, NOT FICTION**—*E. A. Tracey, Zenith's vice-president in charge of sales, practically made his room in Chicago's Henrotin Hospital a branch office last month 24 hours after an operation. So reports our local newshound, picturing the situation thus*

## Enter, Interstate Ass'n

New serviceman-dealer club formed in upstate N. Y.

ELMIRA—Latest trade association to form is the Interstate Radio Association, meeting every other week in rooms donated by the Elmira Association of Commerce, admitting servicemen and dealers to membership for \$1 per year. Less than 3 months old, already boasting 90 members from as far away as Pennsylvania, the club is primarily educational, hears prominent speakers from the industry's list every other meeting, is conducted as a school by Professor Ralph Palmer on alternates.

Robert French is president; Joseph Douglas, vice-president; LeRoy Argyle, secretary; William Ozard, treasurer; Ralph Palmer, committeeman on education, and Harold F. Jenkins, membership committee chairman.

Already on the club's list of speakers have been John F. Rider; Harry Kalker of Sprague; Walter Jones of Sylvania; Harry Segar of National Union; and Professor Wm. Ballard, Jr. of Cornell University. Scheduled for spring meetings are Billie Thomas of Radiart, John S. Meek.



**IT'S WALLIE** — *Walter J. Bauman*, vet radioman formerly with Bremer-Tully, Crosley and United Reproducers, who has just become sales manager for the Ariston Mfg. Co. of Chicago, maker of speakers, wet and dry electrolytic condensers

### More Reps. For Pilot

LONG ISLAND CITY, N. Y.—Long important in the export field and a factor in the domestic market, the Pilot Radio Corporation is further intensifying its drive for additional distribution in this country by expanding its domestic sales organization.

Sold for two years to franchised retailers solely through factory representatives under a novel merchandising plan designed to insure stability of prices, discounts and territorial protection, the line is to be further pushed by additional personnel. Applications from qualified sales representatives in Bos-



**DOWN IN FRONT** — *Russ Jimieson* of Chicago's Radolek, deep-knee bends while demonstrating the latest Triumph oscilloscope-wobblulator so that technicians from Martin's Tinker Shop (Hammond, Ind.) can get an uninterrupted view

ton, New Haven, Buffalo, Chicago, Milwaukee, Cleveland, Denver, Atlanta and other cities are now being considered by M. B. Sleeper and other Pilot executives.

Reason for sales organization expansion, according to Sleeper, is recent acquisition of additional plant space in the company's building at 3706 36th Street.

### Patent For Sonora

NEW YORK — The Sonora Electric Phonograph Company's "Melody" model armchair phonograph, offered the trade two months ago, has proven so popular with the trade that the company's management has deemed it desirable to obtain a design patent on the style.

Available with or without a radio, for a.c. or a.c.-d.c. operation, the unit contains album space sufficient to accommodate more than 100 records.

### Gone With Breeze

CHICAGO—Lloyd Hapfield has just joined the Brecz-Electric Corp., manufacturer of "Supercharger" wind-driven chargers, and

will be Southwestern division manager, with headquarters at Wichita. Lloyd was formerly with S. A. Long Electric, Zenith distributor, and General Household Utilities' sales department.

## Show For Bostonians

Distributors exhibit radio-electrical wares at Copley Plaza June 22, 23

BOSTON—To the first floor of the Copley Plaza Hotel 3000 dealers vitally interested in new radio and electrical appliance lines will trek June 22 and 23. The Radio Wholesaler's Club, Inc. is holding its 10th Annual Radio & Electrical Trade Show at that time, limiting admission strictly to dealers, their salesmen and servicemen, excluding the public.

Continued will be the Club's practice of awarding a \$50 door prize, according to the show committee consisting of Thomas Burke, chairman; Alan Steinert, Hollis Vaughan and L. Warner. Campbell-Fairbanks Expositions, Inc., is again handling decoration details.



**BUSINESS-BENT FOR BENDIX** — Technician Tim Murphy, chaperoning Bendix Day-Rad testing equipment samples, shoves off from the plant in the first of an educational fleet trekking dealer-ward. David E. Johnson, sales manager, and F. G. Willis (foot on running-board), vice president, wish him bon voyage

# No matter where you're located you can make money selling **SERVEL ELECTROLUX**

**Any family anywhere  
is a prospect for this  
different refrigerator**

**S**ERVEL ELECTROLUX—the refrigerator in which a tiny flame takes the place of all moving parts—can be operated on virtually any type of fuel.

For city and town homes, it runs on either manufactured or natural gas.

For farm and other country dwellings, it runs on kerosene or bottled gas.

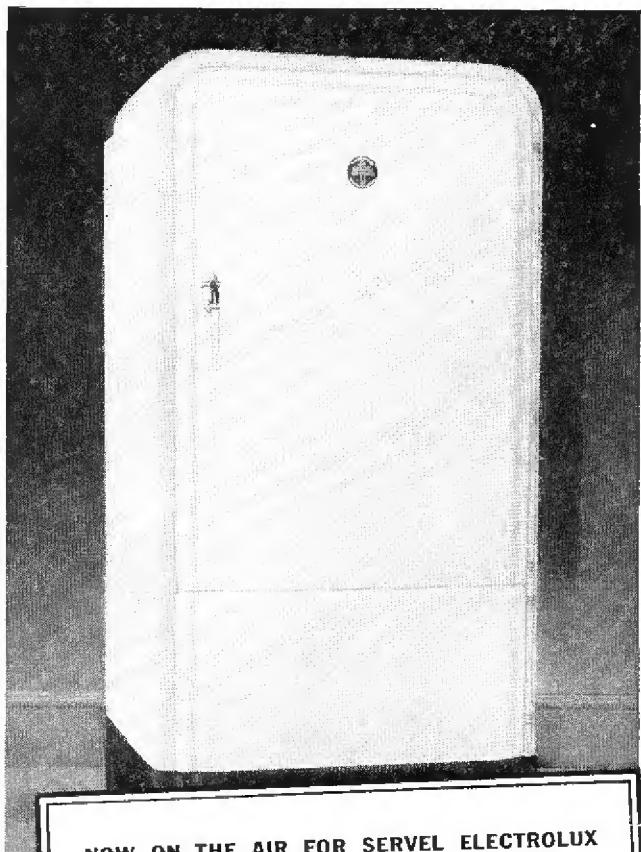
Thus, a dealer—no matter where he's located—can make money with this *different* refrigerator. Every family is a prospect. And, today, Servel Electrolux is helping the dealer *sell* prospects everywhere with the greatest advertising campaign in its history.

National magazine advertising is telling the story of Servel Electrolux to more than 32,000,000 people a month.

Radio's greatest dramatic show—"The March of Time"—is broadcasting the advantages of this different refrigeration to millions more every week.

These exclusive advantages have been established by Servel Electrolux' amazing performance record during the past ten years. Permanent silence, low operating cost, lasting satisfaction—these have become bywords for the refrigerator that has no moving parts.

1937 gives you a big opportunity. An opportunity to profit from Servel Electrolux' proved per-



**NOW ON THE AIR FOR SERVEL ELECTROLUX**  
**DEALERS**—"The March of Time," one of radio's most popular shows, every Thursday evening, 10:30 P.M., E.D.T., over the Columbia Broadcasting System. Sponsored by Servel, Inc.

formance, its ever-mounting popularity, and from a really sensational advertising program.

There are several dealer franchises still open. Write at once for information. Servel, Inc., Servel Electrolux Sales Division, Evansville, Indiana.

## **THESE EXCLUSIVE SELLING POINTS ARE YOUR STAR SALESMEN**

- Permanent Silence
- No Moving Parts To Wear

- Lasting Efficiency
- Continued Low Running Cost

- Finest Modern Beauty
- Every Worthwhile Convenience

## Big Little Set Booster

Emerson's Hast, completing trade swing, reports interest high in concern's book, "Big Business of Small Radio"

LITTLE ROCK—Emerson's classy and convincing book called "The Big Business of Small Radio," produced as the company's 1937 opening campaign gun, is making dealers and distributors sit up and take notice, reports Nate Hast, general sales manager. Nate left New York early in April, hit as far north as Minneapolis, as far west as Denver and as far south as New Orleans, found his customers up to



SERVICE ANGLE—Completely divorced from production is Stromberg-Carlson's new customer service department, handling all repairs and replacement parts. Charles E. Angle heads it up



SERVICE BY SCOOTER—L. Post of Day & Night Auto Parts, Greenwood, Miss., delivering a Supreme instrument in a rush, thinks these new "Motor-Scoot's" will quickly become popular in the radio business



FROM HITHER AND YON TO ZENITH—Newly appointed district sales managers for Zenith: (Left to right) James H. Hickey, formerly with A-K; J. H. Souther, formerly with Crosley; G. A. Lyons, also from A-K; J. H. McKee of RCA; C. H. Wilks, out of Brunswick; Fred H. Strayer, from Hygrade-Sylvania and R. E. McGreevy, from Appliance Distributing

their ears in small set psychology.

"Dealers, especially in the South, are going to keep radio pressure on this summer" advises Nate. "I attribute much of the trend toward summer radio selling to the effect of our properly timed drive."

### Show Date Set

NEW YORK—A Fall show is to be conducted by Radio Parts Manufacturers National Trade Show, according to K. A. Hathaway, with the date tentatively October 3. Scene of the exhibit will probably be the Port Authority Building and headquarters the Hotel Victoria.

Questioned concerning the reason for planning the display downtown and headquarters in the mid-town area Hathaway pointed out that there was no hotel which could provide the space probably to be required for exhibits and that the City subway provided an almost perfect door-to-door service between the two points named.

Details are to be announced at a later date.

### Radiobar Promotion Stunt

NEW YORK—Cleverly planned to swell both replacement and new set business in the metropolitan market is the Radiobar Company's current offer of two receivers for the two best consumer letters entitled: "Why I Am Glad I Bought a Radiobar" and two more for the two best betters entitled: "Why I Would Like to Own a Radiobar." For the next four best letters in each classification complete sets of Radiobar glassware are to be awarded.

Entrants must obtain blanks from dealers.

### Arcturus Addition

NEWARK—William (Bill) J. Johnston has joined the equipment sales division of the Arcturus Radio Tube Company, will headquartered at the company's branch office at 1301 South Michigan, Chicago, contacting receiver and equipment manufacturers in the middle west.

### Winking Girl

NEW YORK—Cleverly contrived to stop at least the male population is Hygrade-Sylvania's latest display novelty. Miss Sylvania, life-size dressed as a pert bellhop in red jacket and brass buttons, winks wickedly as a light flashes behind her right eye. Two actual tubes are poised on a tray in her hand.

Paul Hesse, photographer extraordinary, is responsible for the picture.

**AUTOMATIC  
TUNING**

**WILL MOVE INTO  
NEW LOWER  
PRICE LEVEL IN  
1938**

**NEWS FLASH**

**Grunow**

**COMING JUNE 1**

# PREVIEW of NEW PRODUCTS

## INTER-COMMUNICATORS

Several new makers, many new models, have appeared on the scene since "Radio Retailing" published its original pictorial review in December, 1936.



PRIVACY, TOO—This particular Teletalk model provides several channels, has an external mike and phone in addition to the usual speaker. (Webster Electric Co., Racine, Wis.)



STREAMLINE STYLING—Here's the control unit of the Bulletphone, achieving novel appearance through the use of a popular microphone-type case plus a telephone base. (Transducer Corp., New York)



STEEL FOR STRENGTH—Made in steel for utility applications such as this one and in wood for offices or the home, this unit is extremely flexible. (Operadio Mfg. Co., St. Charles, Ill.)



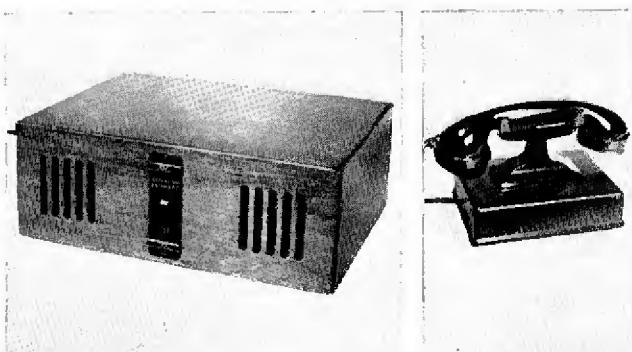
COMPACT CONTROL—This new and novel unit with a 45-degree angle case comprises speaker, mike and switch. An external amplifier is used. (Sound Systems, Inc., Cleveland)



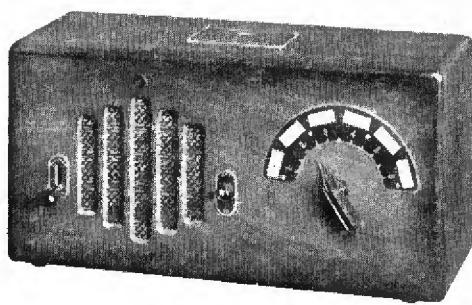
BEDSIDE MANNER—In the home, as well as in business, the Transfone does a job. Its uses around the house are legion. (Transfone Corp. of America, New York)



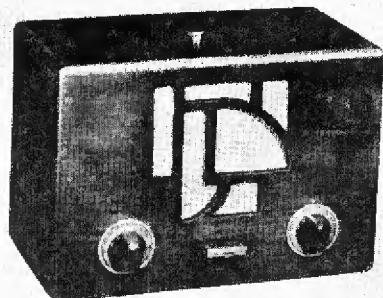
MINIATURE SWITCHBOARD—Busy businessman can reach anyone in the plant by flipping the proper toggle. (Conversafone Co., New York)



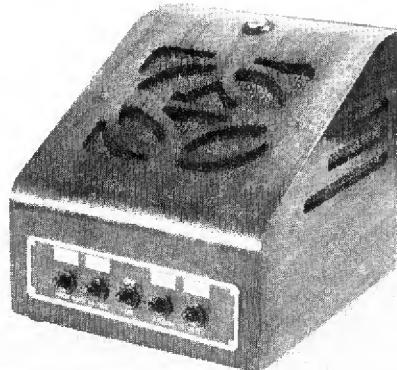
SERVICE SIMPLIFIED—A reasonably-priced new model produced by a long-in-business maker of inter-communicating devices. (Dictograph Products, New York)



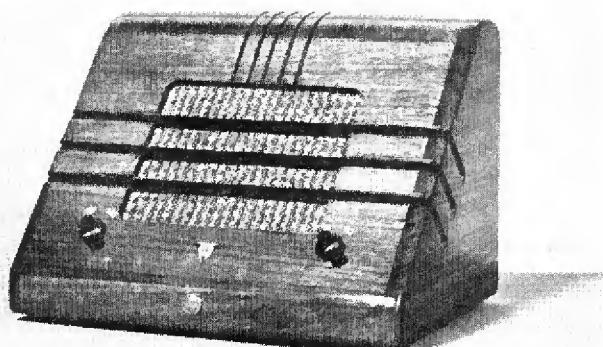
**ADDED FEATURES**—This *Electrocall* model is somewhat more elaborate than units introduced earlier, still carried in the line. (United Scientific Labs., New York)



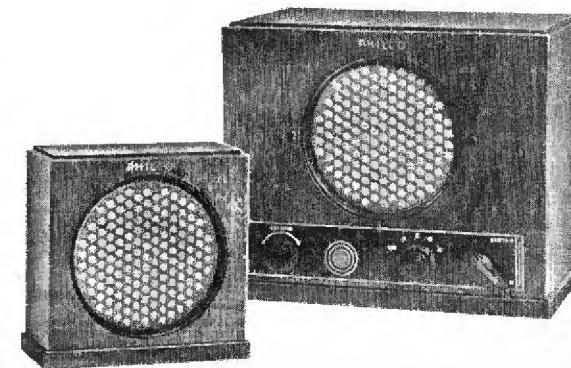
**ANOTHER NEW MODEL**—A *Bellfone* hot off the production lines in many different types. (Bell Sound Systems, Columbus, Ohio)



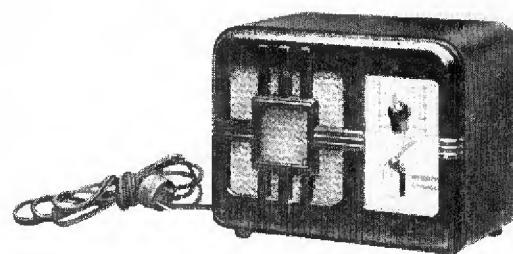
**FLEXIBLE LINE**—One of the several new *Communo-Phone* devices. (David Bogen Co., Inc., New York)



**SLANTED FOR SOUND**—A new design trend attracting attention is exemplified in this unit, part of a complete line including types with telephone-type selector dials. (Electronic Sound Labs., Inc., Hollywood)



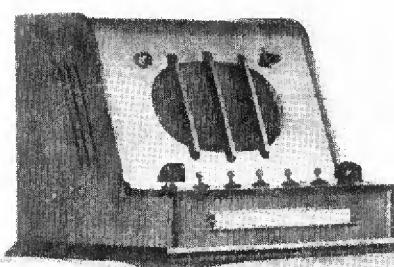
**FROM ANY POINT**—No need to stop what you are doing as you can speak or hear from any part of the room. (Philco Radio and Tel. Corp., Philadelphia)



**APPEARANCE PLUS**—*Amplicall*, available for two stations or several, is as neat and compact as any well-styled radio. (Webster-Chicago)



**CARRIER-EYE**—If the person who is receiving wishes to talk, the Carrier-Eye indicates this to the other station. (American Carrier Call Corp., New York)



**STEP SAVER**—Organizations, both small and large, will find this inter-office system an aid to quick communication. Two to six stations. (Universal Sound Systems, Inc., Cleveland)



# RADIO RETAILING ANNOUNCES...

In its June issue, Radio Retailing becomes the *Radio Industry Trade Show in Print* . . . a "national trade exposition" between the covers of the nation's authoritative radio publication . . . the meeting place of makers and their products, sellers and service men of the industry . . . where the industry gets the low-down on what's what and who's who in radio.

## New Editorial Arrangement

For this occasion Radio Retailing takes on special editorial dress and arrangement. It will be bigger . . . more

colorful . . . more dramatic than ever . . . arranged for easy-reading and ready-reference.

Figuratively speaking, the big June issue of Radio Retailing takes its army of readers by the hand, leads them from "floor to floor" through its "printed convention hall" . . . from "booth to booth"—"exhibit to exhibit"—starting with receiving sets, going on to parts, sound systems, testing equipment, accessories, etc.

Products are pictured . . . specifications are given in details . . . prices are quoted—even manufacturers' literature is described.

But that isn't all! There's more to the "trade exhibit in print" than this!

## Guide to Trade-in Allowances

In addition to its regular features (many of them exclusive with Radio Retailing) the June issue introduces new and vitally important elements . . . data never before given the trade.

Most important of these innovations is Radio Retailing's *Radio Industry Standard Guide to Trade-in Allowances* . . . giving trade-in values on all makes and models of radio sets!

There'll be a special section devoted to this information—worth the "price of admission alone!"

## June Contents Sectionalized

The entire big book will be sectionalized; products will be classified by product groups—each group receiving special editorial background . . . historical . . . informative . . . inspirational. The manufacturers' "exhibits" will, where possible, be grouped to receive the benefits of this editorial background.

### EXTRA JUNE EDITORIAL FEATURES

Special dress and arrangement; contents sectionalized by product groups

Announcement and specifications of new lines and sets

Directory of manufacturers in each classification

Standard Guide to Trade-in Values

Service trends and developments

Latest merchandising progress

Special Parts Show edition; news and data for those who attend at Chicago

(in addition to Radio Retailing's many regular monthly features)



# the RADIO INDUSTRY TRADE SHOW <sup>IN</sup> PRINT

## A Great "Reserved Seat" Audience

The Radio Industry Trade Show in Print will have a "reserved-seat" audience of 29,000 as follows:

- 1 The big distribution to Radio Retailing's *regular reader* - audience, totalling over 21,000 (19,700 full paid).
- 2 An *extra distribution* to 5,000 hand-picked radio dealers and service men who do not receive Radio Retailing regularly.
- 3 And for those interested in the National Radio Parts Trade Show a *special show edition* of 3,000 to be distributed at Chicago. Note: (available only to advertisers whose copy is received by May 28).

## Special Parts Show Edition

The special National Radio Parts Trade Show edition will include preprints of all advertisements in the regular big June issue of Radio Retailing, for which copy or plates are in our hands by May 28th.

We repeat: advertisers who would avail themselves of this extra 3,000 distribution at no extra cost only have to reserve space, and make sure that copy is in before that deadline — May 28th.

## Extra Long-lived Usefulness

The June issue becomes the current reference medium and sales manual of the radio industry. Its factual, historical inspirational and reference data will give it *extra long life*... cause it to be read, referred to and used for at least six months — probably longer.

## THE ADVERTISERS' OPPORTUNITY

All these extra features—*special editorial background . . . long-lived, useful editorial content . . . 5,000 extra distribution of the regular issue . . . additional 3,000 Parts Trade Show edition—a total of 29,000 . . . mean exceptional opportunity for the manufacturer-advertiser, because he pays no "extras" for all this extra value! There is no increase in advertising rates for the June issue.*

## Remember These Dates!

There's only one stipulation: advertising must be received on or before these closing dates:

FOR PREPRINTING IN THE SPECIAL NATIONAL RADIO PARTS TRADE SHOW EDITION—MAY 28.  
FOR RADIO RETAILING'S REGULAR JUNE ISSUE—"THE RADIO INDUSTRY TRADE SHOW IN PRINT"—JUNE 7.

For further particulars, address

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

## EXTRA OPPORTUNITY FOR ADVERTISERS

Special and regular editorial features and sectional grouping provide exceptional background for manufacturers' announcements — greater reader-interest — extra long-life of the June issue

Great "class" distribution — 29,000 copies!

21,000, (19,700 full-paid) to Radio Retailing's regular readers

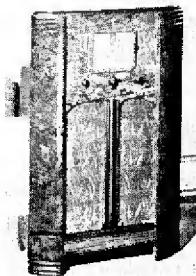
5,000, to selected dealers and servicemen

3,000, distribution of special Parts Show edition, carrying all advertising received by May 28

This extra distribution at no extra cost!

(Radio Retailing is the only A.B.C.—A.B.P. Publication in the radio field)

## G. E.



RCA-VICTOR

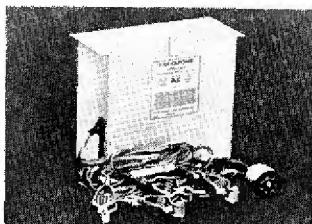
*RCA Mfg Co., Inc.,  
Camden, N. J.*

**Models:** 85BK, 85BT, Pak-O-Powr.

**Description:** Farm radios, 5 tubes; 530-1720 and 2100-22,000 kc.; minimum battery drain by use of class B power system with a special driver stage; permanent magnet speaker; magnetite core if. transformers; magnetic tuned oscillator coils; shortwave stations listed on dial; ave; connections for record player. Model 85BT, upright table set; 85BK, console.

While both are designed for 2-volt power supply using air cell A, B and C batteries, RCA-Victor has introduced a conversion unit called the Pak-O-Powr, that adapts the new sets to 6-volt operation.

**Prices:** 85BT, \$42.95; 85BK, \$59.95; Pak-O-Powr, \$10. — *Radio Retailing*, May, 1937.



U. S. E.

*United Sound Eng. Co.,  
St. Paul, Minn.*

**Device:** Amplifier.

**Description:** Type 20-C comes in a heavy gauge steel, die punched cabinet with rounded corners, finished in smooth telephone black. Escutcheons are etched aluminum.

Type 20-E has twenty watts output using 6L6 tubes and is provided with independent faders for two high impedance microphones. — *Radio Retailing*, May, 1937.



LIFETIME

*Lifetime Corp., 1010 Madison Ave., Toledo, Ohio*

**Device:** Trumpet units.

**Description:** Electro-dynamic and permanent magnet speaker units; new diaphragm and head assembly is interchangeable on any Lifetime unit; by keeping an extra head assembly on hand quick diaphragm replacements can be made in emergencies.

**Prices:** P.M. unit, \$45; electro-dynamic, \$55; extra head assembly, \$30; diaphragm, \$10. — *Radio Retailing*, May, 1937.

ICA

*Insuline Corp. of America, 25 Park Pl., New York, N. Y.*

**Device:** Steel cabinets.

**Description:** Black crystallized-finished steel cabinets in knock-down form for easy assembly; seven sizes ranging from 9x5x6 in. to 18x12x9. — *Radio Retailing*, May, 1937.



*General Electric Co., Bridgeport, Conn.*

**Models:** Battery radios.

**Description:** Silent Tuning and Colorama Tuning Indicator, automatically operated by same push-button control; worldwide reception; large Alnicore speakers, sliding rule tuning scale, automatic band indicator.

Four basic models, a 5 and a 7 tube table set and a 5 and a 7 tube console, all equipped for 2-volt air cell operation. By addition of GE Power adapter each can quickly be converted for 6 v. operation. — *Radio Retailing*, May, 1937.

CROSLEY

*Crosley Radio Corp., Cincinnati, Ohio*

**Models:** Refrigerators with built-in radio.

**Description:** Choice of several models; five tube superhet radio is mounted in top of refrigerator; refrigerators are so constructed that the tops equipped with radios and those without are instantly interchangeable; chromium dial frame and knobs to match hardware; radio is in no way connected with the operation of the refrigerator. — *Radio Retailing*, May, 1937.

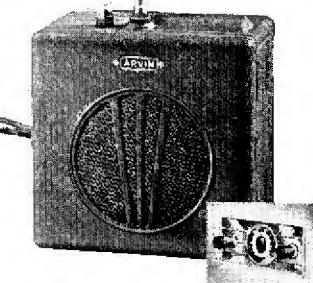
ARVIN

*Noblitt Sparks Industries, Inc., Columbus, Ind.*

**Model:** 9A auto radio.

**Description:** 6 tubes; 5 in., in-the-set speaker; metal case finished in taupe morocco; for use with any of 47 matching panel or universal controls.

**Price:** \$29.95, regardless of control selected. — *Radio Retailing*, May, 1937.



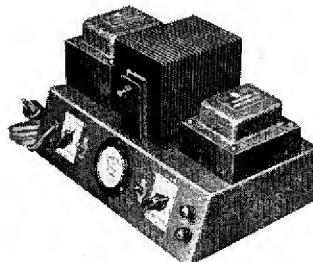
WEBSTER ELEC. CO.

*Webster Electric Co., Racine, Wis.*

**Device:** Magnetic pick-up.

**Description:** Critically damped armature which eliminates resonance peaks and transient response; bearing and arm design coordinated to maintain compensated bass response and smooth tracking; inherently light construction which eliminates need for counter-balancing and detrimental inertia effect; both vertical and lateral stops.

**Price:** \$8. — *Radio Retailing*, May, 1937.



STANCOR

*Standard Transformer Corp., 850 Blackhawk St., Chicago, Ill.*

**Device:** Auto-radio test pack.

**Description:** Source of direct current for demonstrating auto-radios and accessories under actual service conditions; also serves as a precision source of low-voltage current for testing auto sets and parts; protected with a circuit breaker in the primary; equipped with accurately calibrated meter; special surge suppressor; electrostatically shielded.

Three models: Junior suitable for operating one average auto-radio; Standard, 2 sets; DeLuxe, 4 sets. Latter has Hi-Lo switch and continually variable voltage control. — *Radio Retailing*, May, 1937.

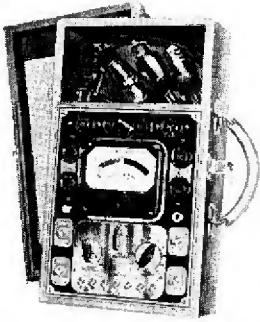


BRACH

*L. S. Brach Mfg. Corp., 55 Dickerson St., Newark, N. J.*

**Device:** Store demonstration antenna system.

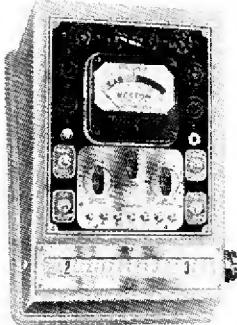
**Description:** Provides simultaneous reception for several receivers; designed for noise reduction and all wave lengths. — *Radio Retailing*, May, 1937.



### WESTON

*Weston Electrical Instrument Corp., Newark, N. J.*

**Device:** 773 tube checker.  
**Description:** Unusual operating flexibility; designed as a "matched companion unit" for the 772; 772 and 773 may be purchased in a single combination; features "anti-obsolete" circuit and switching system; 4½ in. meter; total emission tests are made on a specific load basis; has "noise-test" jack, where headphones or amplifying unit may be plugged, to check on possible sputtering, frying or other tube noise in any or all electrode circuits; hot-cathode leakage test provided; direct reading line-



### ARISTON

*Ariston Mfg. Co., 4049 W. Diversey Ave., Chicago, Ill.*

**Model:** P.M. speaker.  
**Description:** Comes in two pieces; if cone becomes damaged it can be replaced without returning entire unit to factory; closed magnet circuit is maintained and does not need to be returned to factory to be re-magnetized; 5, 6 and 8 in. sizes.—*Radio Retailing*, May, 1937.



### TELETOUCH

*TeleTouch Corp., 37 W. 54th St., New York, N. Y.*

**Device:** Burglar alarm.  
**Description:** A "package" burglar alarm for homes and businesses; no separate-mounted light source required; complete in a single unit; installed in 30 seconds.—*Radio Retailing*, May, 1937.

### ELECTRO-ACOUSTIC

*Electro-Acoustic Products Co., Ft. Wayne, Ind.*

**Device:** 30 watt beam power stage.  
**Description:** Class A power amplifier; designed for

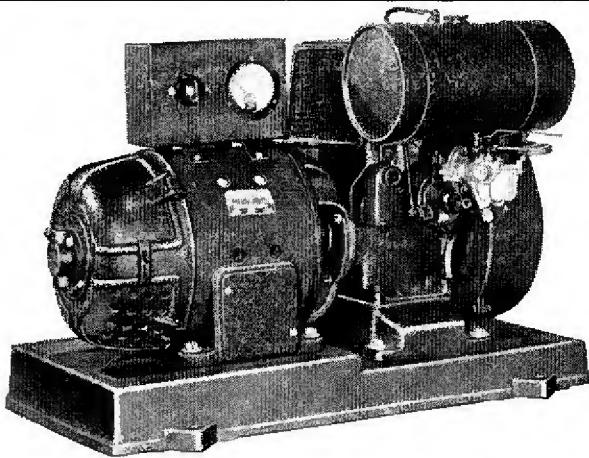
heavy duty operation; suitable for all p.a. applications requiring more than 30 watts power; sturdily built with all parts enclosed.—*Radio Retailing*, May, 1937.

### FREED-EISEMANN

*Freed Mfg. Co., Inc., 44 W. 18th St., New York, N. Y.*

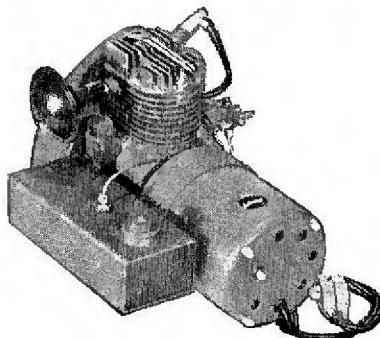
**Model:** 26 portable.  
**Description:** 6 tubes, superhet, ac-dc, dynamic speaker, self-contained aerial, illuminated dial. Available in black or brown fabrikoid or blue, green, red or brown striped airplane cloth.  
**Price:** \$29.95.—*Radio Retailing*, May, 1937.

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### "GOLD CROWN" HEAVY DUTY POWER PLANT

For farm, home, camp or wherever "city" electricity is unavailable "PINCO" Gold Crown gasoline engine-driven light and power plants have no equal. These heavy duty, sturdily built, large capacity power plants will provide ample power for city lighting, washing machines, electric tools and appliances, etc., for only a few cents per day. Available as follows: 32 to 110 volts D. C., 600 to 1500 watts. Push button starting. Also 110 volts A. C., 600 to 1500 watts, 60 cycles—affording electric lighting without a flicker. Gold Crown plants will give years of dependable, uninterrupted service. Prices from \$149.50 up, f. o. b., Chicago. Mail coupon for complete information.



### "BABY JUMBO" POWER PLANT

A light weight, portable, economical power plant for lighting, radios, battery charging and operation of home and farm electric tools and appliances. Push button starter, ammeter, "V" belt pulley, cut-out relay, etc. Price \$49.95 list, f. o. b., Chicago.

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For converting 6, 12, 32, 110 or 220 volts D. C. to 110 or 220 volts A. C. Capacities up to 1000 watts output, 50/60 cycles. For public address systems, Neon signs, radios, etc. With or without filter.

### DYNAMOTORS

A dependable power supply for police, air craft and marine radio service and sound systems. 135 to 1000 volts D. C. output, 6, 12, and 32 volt input. Various capacities. Compact and light weight.

### PIONEER GEN-E-MOTOR CORPORATION

Dept. No. R-IEE, 466 West Superior Street, Chicago, Illinois.  
Please send complete information on:

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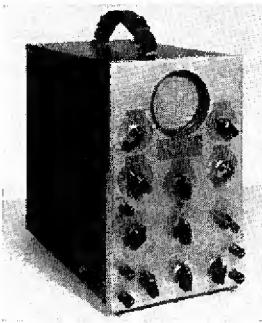
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## DU MONT

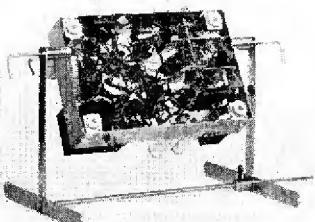
Du Mont Laboratories, Inc.,  
Upper Montclair, N. J.

**Devices:** 3-in. oscillograph; cathode ray tube.

**Description:** Oscillograph—designed especially to be used in conjunction with any standard frequency modulator and oscillator or with any of the new designs of frequency modulated oscillators; employs Du Mont type 34-XII 3 in. cathode ray tube; amplified sweep with a frequency range which allows observation of a single wave from 15-30,000 cycles per second.

24-XII 2-in. cathode ray tube is of the high vacuum type with four electrostatic deflection plates, two common, mounted in a glass envelope having a full 2-in. fluorescent screen.

**Prices:** oscillograph, \$54.50; tube, \$7.50.—*Radio Retailing*, May, 1937.



## ACRO

Acro Tool & Die Works, 1401  
Wilson Ave., Chicago, Ill.

**Device:** Chassis cradle.

**Description:** Holds chassis in any position; special mechanical clamps hold chassis in vise-like grip; frees both hands for work; may be used to display chassis; made of steel.

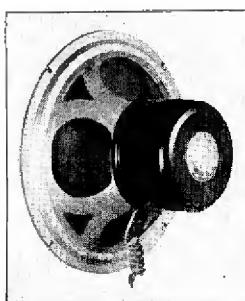
**Price:** \$4.85.—*Radio Retailing*, May, 1937.

## UTAH

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

**Device:** P. M. speaker.

**Description:** Thirty-four models with cone diameters ranging from 5 to 14 in., employing magnets weighing from 5 to 46 ounces and with output capacities as high as 30 watts. A new type molecular structure in the magnet greatly lengthens magnetic life, the statement reads. —*Radio Retailing*, May, 1937.



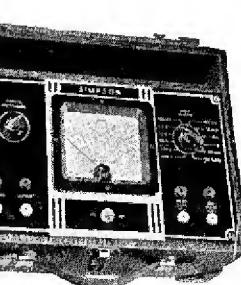
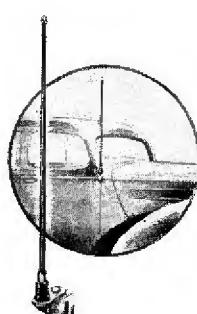
## TOBE

Tobe Deutschmann Corp.,  
Canton, Mass.

**Model:** Door hinge auto antenna; condenser.

**Description:** Tapered door hinge antenna 40 in. long constructed of a special heat-treated and tempered steel finished in black enamel with a dash of red; easily mounted; of the type used on Tobe interference survey cars for several years.

Tobe also offers a blue ribbon Micronol transmitting condenser, processed in oil and designed to operate at 2,000 volts continuously; while essentially designed for amateur and commercial transmitting work, it is ideal for use in p.a. and amplifier systems.—*Radio Retailing*, May, 1937.



## SIMPSON

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

**Devices:** Set tester; panel instrument.

**Description:** At 20,000 ohms per volt the set tester has full scale voltage readings of 2.5, 10, 50, 250 and 1,000 for d.c. and the same a.c. ranges at 1,000 ohms per volt. Readings as low as 1 microampere and up to 500 milliamperes are available. A 25 amp. range for checking the current draw of auto radio is also included. Resistance readings range up to 40 megohms and tests as low as  $\frac{1}{2}$  ohm can be made accurately.

Panel instruments with bridge type construction and short iron pole pieces are also announced in the low-price range. Increased initial accuracy and lasting accuracy are claimed for this construction.—*Radio Retailing*, May, 1937.

## BRUNO

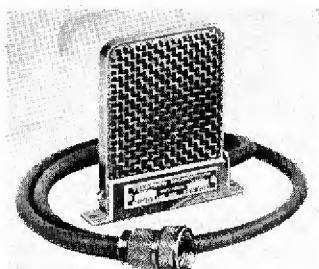
Bruno Laboratories, Inc., 20  
W. 22nd St., New York, N. Y.

**Model:** Velotron microphones.

**Description:** Model SP, output, —55 db.; measures only  $2 \times 2 \frac{1}{2} \times \frac{1}{2}$  in. and weighs, with 3-ft. cable, 5 oz.

Model WS is an improved Velotron enclosed in a die cast case; by an ingenious application of directional "fins" the angle of pickup at the front of the microphone has been widened considerably while that of the rear has been reduced.

**Prices:** SP, \$13.50; WS, \$31.—*Radio Retailing*, May, 1937.



## OXFORD TARTAK

Oxford Tartak Radio Corp.,  
925 West Van Buren St.,  
Chicago, Ill.

**Model:** Permanent magnet speakers.

**Description:** Range in size from 3 to 14 in. in diameter.

In addition there is a trumpet type permanent magnet speaker with 6-in. cone housing for use with an exponential horn and a new spun aluminum exponential horn, model XA-22 is also offered for use in connection with the Permag trumpet or standard dynamic trumpet.—*Radio Retailing*, May, 1937.



## RCA VICTOR

RCA Mfg. Co., Camden, N. J.

**Models:** Record players.

**Description:** R-93-A, efficient motor insuring more constant speed of the turntable; improved pick-up arm; quieter operation.

Model R-93-2, de luxe model; completely new mechanism; both 10 and 12-in. records may be played with the lid closed; automatic starting of the turntable and bass compensation.

**Prices:** R-93-A, \$18.50; R-93-2, \$28.95.—*Radio Retailing*, May, 1937.

## JACOBS

Charles F. Jacobs,  
270 Lafayette St.,  
New York, N. Y.

**Device:** Antenna spreader.

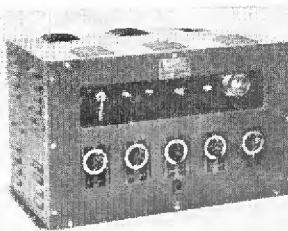
**Description:** Made in both 5 and 7-in. diam. sizes; aluminum; facilitates erection of cage antenna or counterpoise.

"Lead-in" antenna spreaders,  $2\frac{1}{2}$  in. in diameter, also made.—*Radio Retailing*, May, 1937.

## TRIUMPH

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

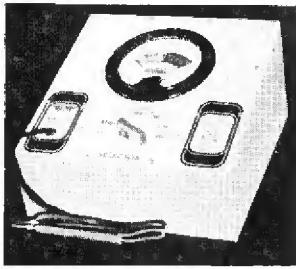
Device: A-B-C battery tester.  
Description: Voltage tests are made under loads comparable to normal operating conditions; ranges for 3 and 4½ v. A batteries, tests made at ½ amp; C and B batteries tested at 20 m.a. loads.—*Radio Retailing*, May, 1937.



## ELAMCO

Electric Amplifier Corp.,  
135 W. 25th St.,  
New York, N. Y.

Device: Series B amplifiers.  
Description: Two high gain channels are provided for crystal, sound cell, high impedance velocity and dynamic microphones, these channels may be mixed and volume controlled in each; four low gain channels are provided for magnetic and crystal phonograph pick-ups, radio tuners, remote lines, preamplifier outputs, etc.; built-in transformer with multiple output impedance of 4, 8, 15 and 500 ohms; tubes are mounted horizontally in a separate well-ventilated compartment at the top, available in standard, portable and rack-panel forms. Four models.  
Prices: \$87.50—\$117.50.—*Radio Retailing*, May, 1937.



## WEBSTER-CHICAGO

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

Model: Sound system.  
Description: 30-watt, all-purpose, may be used on either 110 volt a.c. or 6-volt d.c., changeover by means of plug-in type power pack; complete system consists of 30-watt amplifier with phonograph turntable, an integral part of the amplifier housing, new type crystal microphone and two heavy duty permanent magnet speakers.—*Radio Retailing*, May, 1937.



## TOPSTREEM

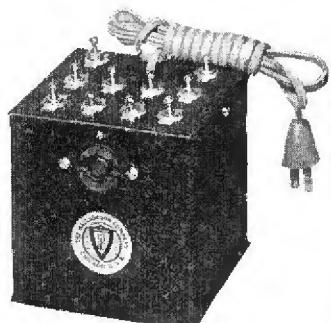
Automotive Radio Products  
Co., 1208 LaSalle Ave.,  
Minneapolis, Minn.

Device: Auto aerial.  
Description: Finished in chrome with black and chrome fittings; fits all models; installed with specially prepared cement and rubber vacuum cups; "V" type design.  
Price: \$5.50.—*Radio Retailing*, May, 1937.

## HALLDORSON

Halldorson Co., 4500 Ravenswood Ave., Chicago, Ill.

Device: Vari-Volt transformer.  
Description: For the service man to use at his bench to adjust line voltage for any requirement; supplies voltages from 0-256 volts in 2-volt steps or from 0-128 volts in 1-volt steps. Power output, 250 watts maximum.—*Radio Retailing*, May, 1937.



**NONE HAVE DARED...**  
to Build Sound Amplifiers  
with "HUSHED POWER"  
Performance!



## New VOCAGRAPH Sound Systems

Combine—  
Startling Performance  
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Here at last is the answer to your sound problems! Quality performance at a new low cost.

You ask how it is done, for **NONE HAVE DARED** to take such a revolutionary step. Only VOCAGRAPH, with the advantages of "Hushed Power" design and modern production methods, can afford to offer so much performance per sound dollar.

The new VOCAGRAPH line has been designed today—for today's needs—eliminating time-worn engineering and production handicaps.

The complete line contains over twenty models in separate chassis, semi-portable and fully portable systems. Write today for your copy of the new engineering bulletin, "NONE HAVE DARED," and the complete VOCAGRAPH catalog.

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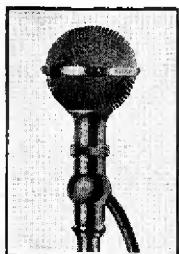
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At various prices. In any location. NOISE-MASTER drives effective on broadcast as well as shortwave bands. Send for complete information.

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## High-Powered High Quality

U.S.E. Type 60-C Amplifier  
60 Watts Output. Three Mikes. Electric-Eye Monitors.

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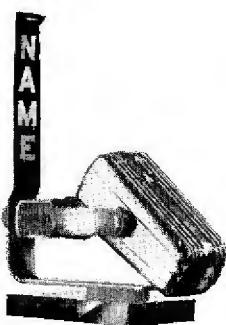
## TELECHRON

Warren Telechron Co.,  
Ashland, Mass.

Model: Globetrotter clock.

Description: Round the world clock; the hands tell the time in any particular zone while the revolving outside numeral disc of 24 hours divided into dark for p.m. and light for a.m. shows at a glance the time in all sections of the world.

Price: 7.50.—*Radio Retailing*, May, 1937.



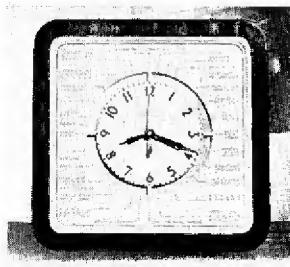
## AMPERITE

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

Model: Desk stand.

Description: Radical departure from standard design; microphone may be rotated in practically any position; leaf spring suspension acts as shock absorber. A name plate is available with any number of letters up to 10.

Price: \$4; nameplate \$2.—*Radio Retailing*, May, 1937.



## TRANSDUCER

Transducer Corporation,  
30 Rockefeller Plaza,  
New York City

Model: Bullet microphone in colors.

Description: Now available in red and ivory as well as black, or any combination of black, red and ivory. These combinations are made up by using one color for the rear section of the housing, with contrasting color for the front section.

Prices: Red or ivory, \$27, black, \$24.50.—*Radio Retailing*, May, 1937.

used providing a total of 85 db. gain; the audio unit is a single chassis and will operate directly on d.c. line; another chassis is used for the power supply.

Model PAK-5 uses a 6V6 beam power tube, 15 watts of power obtained through the use of three stages, providing 85 db. gain.

A high power amplifier for p.a. service uses four 6LG's in the output stage, provides 70 watts self-bias or 110 watts fixed bias. A total of four stages are used to obtain 110 db. gain. May also be obtained for amateur service with a UTC Varimatch modulation transformer.—*Radio Retailing*, May, 1937.

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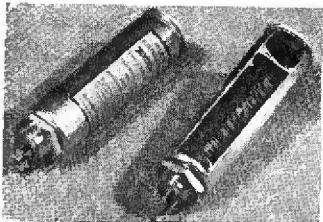
## BENDIX DAYRAD

Bendix-Products Corp.,  
South Bend, Ind.

Device: Cathode ray oscillograph.

Description: Built in sweep circuit; built-in amplifiers to adjust for the sensitivity of set; measures for peak voltage a.c. with or without amplifiers; measures audio quality in audio amplifiers; frequency measurements by use of Lissajous figures; study of transient and recurrent wave forms; tests audio radio vibrators.

Price: \$85.—*Radio Retailing*, May, 1937.



### MICAMOLD

*Micamold Products Corp.,  
1087 Flushing Ave.,  
Brooklyn, N. Y.*

**Device:** Wet electrolytic condenser.

**Description:** New design of the anode structure so that the current has the shortest average path from the can to all points on the anode surface; elimination of the hard rubber liner not only further reduces the power factor, it is stated, but eliminates a material that often contains sulphides which cause anode corrosion. — *Radio Retailing*, May, 1937.

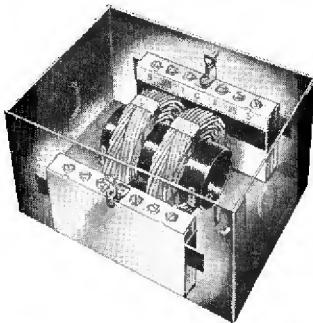
### CROSLEY

*Crosley Radio Corp.,  
Cincinnati, Ohio.*

**Model:** Roamio Fiver.

**Description:** Chassis is essentially the same as that used in new Crosley Fiver; one piece construction; mounts under instrument panel; fits in behind the dash; large illuminated dial; a.v.c.; five octal base tubes.

**Price:** \$19.99.—*Radio Retailing*, May, 1937.



### MILLER

*J. W. Miller Co., 5917 S. Main St., Los Angeles, Calif.*

**Device:** Universal power line filter.

**Description:** As name implies it may be used for any filter application by simply making the correct internal connections; four sizes rated at 5, 10, 20, and 30 amp.—*Radio Retailing*, May, 1937.



### MILLION

*Million Radio & Tel. Labs.  
361 W. Superior St.,  
Chicago, Ill.*

**Models:** Testers.

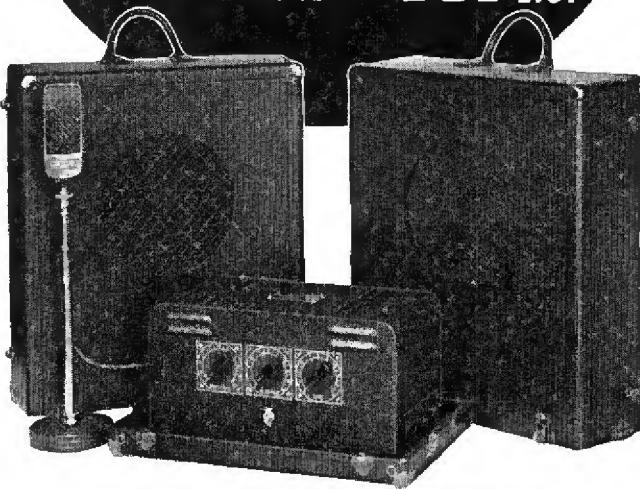
**Description:** Model TM, tube tester, good-bad me-

ter, neon leakage tests, makes all tests hot, all tubes.

Model TV same as TM but with analyzer scales as follows: Bypass condensers, .01 to 3 mif.; ohms (shunt scale) 0 to 10M; (series scale) 0-15 megohms; volts d.c., 0 to 30-300-900 at 5000 ohms per volt; microamperes 0-300; milliamperes 0 to 3-30-300-600; amperes 0-9. Model VO, a.c.-d.c. voltmeter - milliammeter; 0-3-30-300-900 volts a.c. and d.c. at 5000 ohms per volt; 0-300 microamperes d.c.; 0-3-30-300-600 millamps d.c.; 0-10,000 ohms shunt scale; 0-7.5 megohms series scale with self-contained battery.

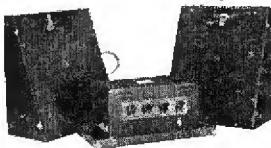
**Prices:** TM, \$18.95; TV, \$27.95; VO, \$19.95.—*Radio Retailing*, May, 1937.

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ONLY \$117 LIST**



14-26 Watt PORTABLE P. A. UNIT MODEL 117

**2 Heavy Duty Speakers . . . Veletron Microphone with Banquet Stand . . . electronically mixes two microphones and phonograph . . . all coming complete in a three piece SINGLE carrying case . . . compact, easy to carry . . . beautiful.**



Model 124-W

**22-40 Watt Portable Unit**  
Price complete with Model 822-P Amplifier, crystal microphone with floor stand, 2 speakers compactly mounted in leatherette covered carrying case . . . \$19.80  
Amplifier alone with \$8.50 tubes . . .

• The buy of all Portable Units . . . an outstanding value, a bargain if there ever was one. The HIGHEST powered quality unit you can obtain anywhere at SO LOW A PRICE, this is THE Unit you can't go wrong on.

**PRICE—complete \$117.00**  
with tubes . . .

Amplifier alone, with \$49.00 tubes . . .

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The Most COMPLETE Line of Intercommunicating Systems, P. A. EQUIPMENT, P. A. SPEAKERS and RADIO REPLACEMENT SPEAKERS THE MARKET AFFORDS. EASY TIME PAYMENT PLAN.

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GLOBE-UNION INC., Milwaukee, Wisconsin  
Bush Bulletin 87-A and full details  
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Street.....

City and State.....

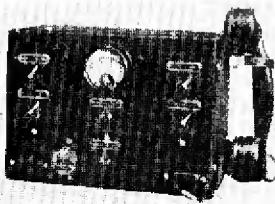
Individual.....

RR-3



### 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**



### RADIO RECEIVER

*Radio Transceiver Labs.,  
8627—115th St.,  
Richmond Hill, N. Y.*

Model: Type HFM mobile crystal control.

Description: For 5 and 10 meters; designed to use a single quartz crystal 6L6 tube oscillator; a push-pull tuned grid circuit is employed in order to excite fully the 6N7 tube doubler. A 6C5 and a 6L6 are employed to 100% plate modulate the doubler stage. Standard input is for a single button microphone.

The entire transmitter is housed in a steel cabinet, 8½x12x6½ in. 150 M.A. at 300 volts and 6.3 volts at 2.9 amps. are required from the power supply.

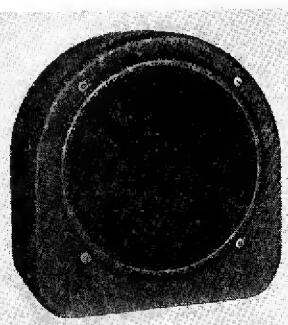
Price: \$45 net, f.o.b. New York, including coils for the four bands; Bliley LD2 mounted crystal within 5 kc., \$4.80; tubes \$4.26.—*Radio Retailing*, May, 1937.

### WRIGHT-DECOSTER

*Wright-Decoster, Inc., St.  
Paul, Minn.*

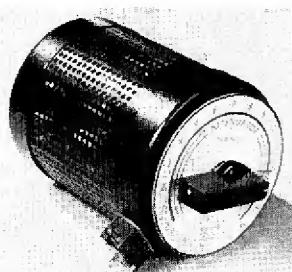
Model: Speakers.

Description: Model 1136 auto speaker—combination of a new cabinet and the 980 Nokoil permanent magnet reproducer; the screen covering the grille opening is dusted with a velvet fibre giving a velvet finished effect so that no grille cloth is necessary and the sound is al-



lowed to come through freely; single stud or base mounting.

Model 596 incorporates the No. 482 5-in. Nokoil reproducer in an attractive steel cabinet; permanent magnet type; made especially for use as an extra or remote speaker; finished in black crystal-line but may be had in any color at a small extra charge.—*Radio Retailing*, May, 1937.



### KNIGHT

*Allied Radio Corp., 833 W.  
Jackson Blvd., Chicago, Ill.*

Model: 11.

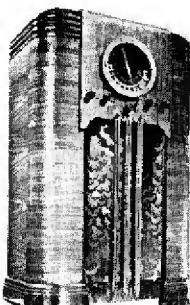
Description: Automatic dialing; 16-560 meters; giant color band dial; metal tubes; 12-in. speaker; a.f.c., a.v.c.; inter-station noise silencer; r.f. pre-selection.—*Radio Retailing*, May, 1937.

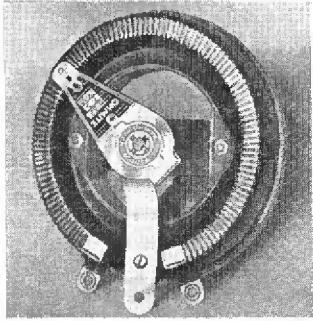
### CLAROSTAT

*Clarostat Mfg. Co., Inc.,  
285 N. 6th St.,  
Brooklyn, N. Y.*

Device: Attenuator.

Description: Handles considerable power with low insertion loss; safely dissipates 25 watts of power continuously, regardless of setting, and has a minimum insertion loss of 1.3 decibels, the statement reads. Standard surge or input impedances available are 8, 15, 50, 200, 250 and 500 ohms.—*Radio Retailing*, May, 1937.





### OHMITE

*Ohmite Mfg. Co., 4835 W. Flournoy St., Chicago, Ill.*

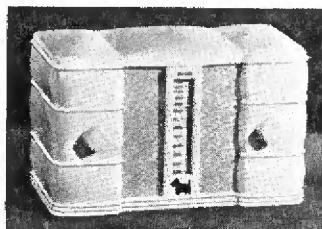
**Device:** 1 kw Rheostat.  
**Description:** Power rheostat; 12 in. in diameter; capable of controlling many types of loads formerly believed to require the button contact type of rheostat; constructed of metal and ceramic materials.—*Radio Retailing*, May, 1937.

### REMLER

*Remler Co., Ltd., 19th at Bryant, San Francisco, Calif.*

**Model:** Scottie radio.  
**Description:** Entirely redesigned chassis; three models, all in same cabinet—Model 46, 5 metal tubes, police calls; 47, 5 metal tubes, a.v.c., 540-1715 kc. and 5.4-10.5 mc.; also an ac-dc model with 6 metal tubes.

Bakelite cabinet may be had in ivory, onyx or in black with ivory ornamentation.—*Radio Retailing*, May, 1937.



### RADOLEK

*Radolek Co., 601 W. Randolph St., Chicago, Ill.*

**Device:** 8 watt amplifier.  
**Description:** High gain, high fidelity amplifier; design permits use of crystal, velocity, dynamic and single and double button mikes; phono input for high impedance pickup; field current for one 1000 ohm speaker.—*Radio Retailing*, May, 1937.

### PHILCO

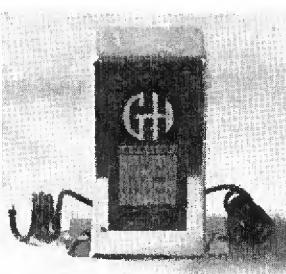
*Philco Radio & Television Corp., Philadelphia, Pa.*

**Model:** Police auto radios.  
**Description:** Two models—821 PV, a variable frequency set and 821 P which is a fixed frequency receiver equipped with a sealed precision quartz crystal; range 1550-3600 kc. Both are equipped with new high flux, permanent dynamic speaker, and improved Q circuit.—*Radio Retailing*, May, 1937.

### ERIE

*Erie Resistor Corp., Erie, Pa.*

**Device:** Insulated resistors.  
**Description:**  $\frac{1}{4}$  and  $\frac{1}{2}$  watt sizes; known as "ceramic-scaled" as they are completely covered with a preformed ceramic case and sealed at the ends with a high-dielectric ceramic cement which bonds itself to the insulating case, the tin-plated terminal wires and to the brass cap covering the end of the solid molded carbon resistance pins. Will withstand as high as 3,000 volts a.c. without insulation breakdown; all resistance values from a few ohms to several megohms.—*Radio Retailing*, May, 1937.



### GIRARD-HOPKINS

*Girard-Hopkins, 1437 23rd Ave., Oakland, Calif.*

**Device:** Paper filter condensers.  
**Description:** New series in full capacities of 1, 2, 4 mfd. and in 600, 800 and 1000 working volts. Rectangular shaped containers in cardboard and aluminum with mounting provisions.—*Radio Retailing*, May, 1937.

# the New RED TOP GAS-O-LECTRIC POWER PLANTS

## NOW . . . an All Purpose A.C. and D.C. Power Plant

The new combination A. C. and D. C. RED TOP light and power plant is by far the most practical unit yet developed for farm, home, trailer, boat, etc. In one plant—both 110-V A. C. 300 watts for lighting, household appliances, small electric tools, etc.; and up to 325 watts D. C. for charging 6, 12, and 32-volt batteries. RED TOP power plants for D.C. only, 175 watts for charging 6 or 12 volt batteries, as low as \$54.50. All have push button starter.

### INSURING YOUR PROFITS

RED TOPS have "what it takes" to insure big profits: 1. Priced right for volume sales, 2. Outstanding design and construction features, 3. A full line to meet every purpose (plants from 100 to 2000 watts A. C. or D. C.), 4. Complete sales and merchandising helps, 5. Attractive discounts, 6. Sold only through established dealers and jobbers.

#### MAIL COUPON FOR DETAILS

**PIONEER GEN-E-MOTOR CORPORATION, Chicago, Illinois**  
*Manufacturer of "PINCO" Products*



**PIONEER GEN-E-MOTOR CORPORATION**

Dept. No. R-IE, 466 West Superior Street, Chicago, Illinois.

Please send me complete information on the new RED TOP Gas-O-Lectric Plants.

NAME . . . . .

ADDRESS . . . . .

CITY . . . . . STATE . . . . .

**MAIL COUPON NOW!**

SINCE 1914 . . THE GREATEST NAME  
IN THE MUSIC REPRODUCING WORLD



U. S. Design Patent No. 104,324  
Size 27" W. x 23" H. x 15" D.

**Check These Features**

1. It is an exquisite arm chair model—a furniture piece suitable for the finest of homes, available in walnut, mahogany or maple.
2. It is a perfected electric phonograph outstanding for fidelity reproduction, with volume and tone compensation—adjustable for the small room or the large hall.
3. It provides space for more than one hundred records.
4. The combination houses a splendid superheterodyne radio, featuring new Beam Power amplification and actually brings in foreign stations on short wave as well as all American broadcast programs.

THE INSTRUMENT OF QUALITY  
**Sonora**  
CLEAR AS A BELL

## The TOPS in faithful phonograph and radio reproduction

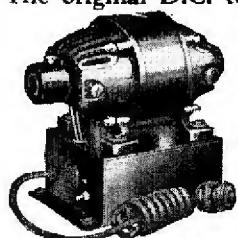
Now—you can supply your customers with just the type instrument that they have been looking for—a compact, artistically designed phonograph that will faithfully reproduce the depth and color of studio quality. And what is more it is obtainable with or without radio.

### Write for our Dealer Proposition

**Sonora ELECTRIC PHONOGRAPH CO., INC.**  
160 Varick 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

555 W. Monroe Street, Chicago, Ill., U. S. A.  
New York — Boston — Philadelphia — Los Angeles — Milwaukee

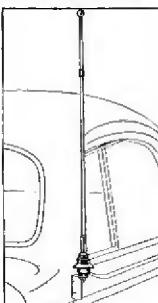
## Here is the CORONATION

MODEL C.O.—\$2.45



### WARD'S SENSATIONAL HINGE AERIAL

Telescopic  
Extends to 54 inches. Made of Stainless Steel and Chromium Plated Brass. Molded Power House Type Insulation.



WARD PRODUCTS CORPORATION MANUFACTURES  
THE WORLD'S FINEST LINE OF AERIALS

TOP -- POLE -- UNDERCAR

SEND FOR CATALOG TODAY - PROMPT DELIVERIES

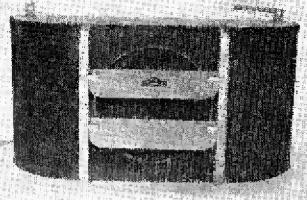
**The WARD PRODUCTS Corp.**  
WARD BUILDING  
CLEVELAND, OHIO

## HICKOK

Hickok Electrical Instrument Co., Cleveland, Ohio

Device: AC-51X tube tester.

Description: A combination tube tester measuring mutual conductance of all radio tubes; also indicates volts, ohms, milliamperes, output, microfarads, capacity leakage and decibels as well as amount of hum in filter systems; checks inductance of chokes with or without the d.c. component of current. — *Radio Retailing*, May, 1937.



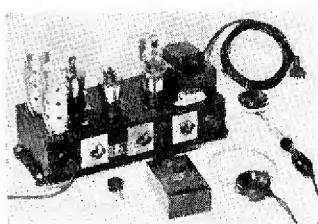
## ATLAS

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

Models: Acoustic "Vari-deflector."

Description: Solves the problem of adequate speaker coverage in indoor installations; may be mounted vertically or horizontally on any corner or wall surface; adjustable louvers; special internal acoustic treatment eliminates resonance and vibration; accommodates a.c., d.c. or p.m. speakers with cone diameter not exceeding 13 in. and a depth of 9 in. Finished in black and silver.

Price: \$12.50.—*Radio Retailing*, May, 1937.



## RADOLEK

Radolek Co., 601 W. Randolph St., Chicago, Ill.

Device: Hearing aid system.

Description: For theatres and churches; easily installed; high gain 15 watt amplifier with additional filter to provide distortionless reproduction; output is designed to feed any number of headphones up to 60; one or two dynamic loud speakers may also be used for sound reinforcement; headphone connections made to control boxes which mount on arm of the seat; feather-weight headphones in the headband or lorgnette styles supplied. — *Radio Retailing*, May, 1937.

## SHALLCROSS

Shallcross Mfg. Co., Collingdale, Pa.

Device: Rotary instrument switches.

Description: For use in output meters, tube checkers, decade boxes, thermocouple banks, analyzers, etc.

Small size, rugged rotary switch with a volume and surface leakage of 10<sup>-2</sup>, employing a ceramic switch plate either single or double deck with brass or silver contact points. — *Radio Retailing*, May, 1937.



## "RED HEADS"

● SERVICE MEN PREFER  
"RED HEAD" CONDENSERS  
THEY'RE DEPENDABLE

### R. M. A. VISITORS

While in Chicago pay us a visit. We would like to show you how "Red Heads" are made. We'll be looking for you!

**CONSOLIDATED  
ASSOCIATED  
CORPORATIONS**  
512 So. Peoria Street  
Chicago :: :: Illinois



### AMPERITE

*Amperite Corp., 561 Broadway, New York, N. Y.*

**Device:** Velocity microphone.

**Description:** Cable connector of positive three-pin type; locking ring eliminates possibility of pulling connectors apart; cable connector is put on the shock absorber, not on the microphone itself.

All amperite velocity microphones and stands now available in eggshell white and pastel shades. Chrome and eggshell finish from stock; pastel shades matched to sample.

**Prices:** Chrome or eggshell, \$1 extra; pastel, \$2 extra.—*Radio Retailing*, May, 1937.

### ABC

*Altorfer Bros. Co., Peoria, Ill.*

**Model:** 127 washer.

**Description:** Swinging wringer with "touch release"; large oversize balloon rolls; fingertouch clothes feeder; French type agitator; porcelain tub with deeply embossed clothes flexers; capacity, 7 lb. clothes per load (dry weight).—*Radio Retailing*, May, 1937.

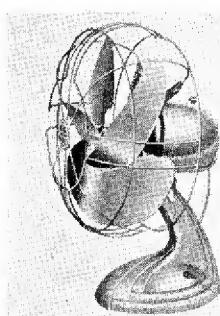
### WESTINGHOUSE

*Westinghouse Elec. & Mfg. Co., Mansfield, Ohio*

**Device:** Electric fans.

**Description:** Completely restyled line; ultra quiet blades of Micarta; improved capacitor-type motor; streamline design for super air-flow; easy tilting, positive latch hinge joint for wall mounting.

Power-Aire models, 10, 12 and 16 in. sizes, desk, bracket or floor styles; Master-Aire, 12 and 16 in. desk and bracket; standard a.c. oscillating fans, 8, 10 and 12 in.; Frost-aire, 10 in. oscillating fan for desk or floor; oscillating Whirl-aire for commercial use, counter and floor models.—*Radio Retailing*, May, 1937.



### LAFAYETTE

*Wholesale Radio Service Co., Inc., 100 Sixth Ave., New York, N. Y.*

**Models:** "Coordinated" sound systems.

**Description:** All components are matched for best results; available in 5 wattage ratings from 5 to 60 watts; call systems, church and auditorium installations, etc. included.—*Radio Retailing*, May, 1937.

# TRIAD

THE

CHOICE OF SERVICEMEN BECAUSE THEY  
ARE USED BY LEADING SET MANU-  
FACTURERS.

**TRIAD MANUFACTURING CO.**

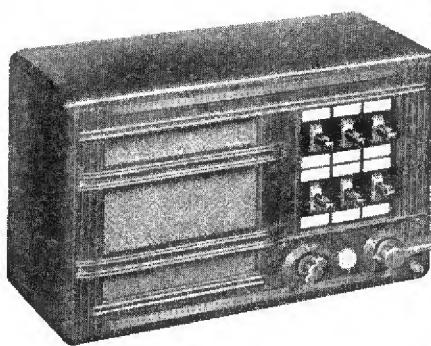
PAWTUCKET

INC.

RHODE ISLAND

THE QUALITY NAME IN RADIO TUBES

# New REMLER INTER-COMMUNICATION SYSTEMS



- Bakelite Cabinets
- 12 Stations Permit up to Six Simultaneous Two-Way Conversations!

Complete line of inter-communication units that will take care of practically every communication requirement. Prices start at \$49.50 for two station systems. Outlying units may be added as required at \$10.00 for wood, or \$12.00 each for molded plastic cabinets. Master units available, equipped at factory with required number of station selector keys for any number of outlying stations up to and including twelve.

Modern bakelite cabinets . . . superior selector system simplifies operation . . . high sensitivity, volume control and many other features. Approved listing by Underwriters Laboratories.

### REMLER—SINCE 1918

Remler systems backed by the reputation and stability of a trustworthy firm continuously under the same management for twenty years. Low prices . . . highest quality. Write for illustrated catalog and name of nearest distributor.

REMLER COMPANY, Ltd. 19th at Bryant San Francisco

# QUALITY PLUS !! ATR



### REPLACEMENT

### VIBRATORS for AUTO and FARM RADIOS

#### A COMPLETE LINE FEATURING



- Longer Life
- Improved Performance
- Precision Construction
- Lower Prices

Backed by More Than Six Years of Experience in  
Vibrator Design and Research, Development and  
Manufacturing.

#### Insist on ATR Vibrators—The Best by Test

Mail the coupon TODAY for your FREE copy of the ATR VIBRATOR GUIDE along with the name of your nearest ATR Jobber.

### AMERICAN TELEVISION & RADIO CO.

St. Paul, Minnesota, U.S.A. Cable Address: "Likex," New York  
Manufacturers of D.C.-A.C. Inverters, "A" Battery Eliminators,  
Battery Chargers and Inverter Vibrators.

American Television & Radio Co., St. Paul, Minn.

Gentlemen:

Please send me a FREE copy of the ATR Vibrator Guide and the name of my nearest ATR Jobber.

Name .....

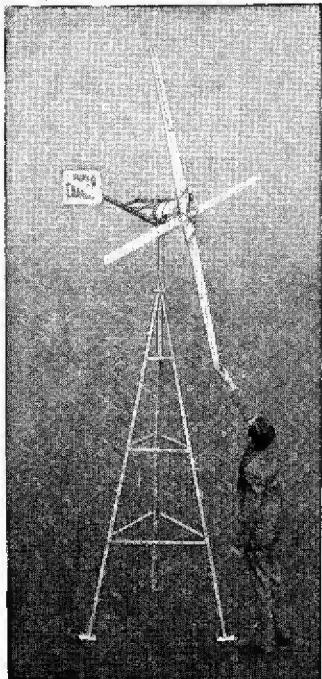
Address .....

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

Check here:  Dealer  Serviceman  Experimenter

## Thanks, Mr. Radio Dealer!

Breez-Electric did not pioneer the wind-charger, but — we *did* pioneer the idea of giving the dealer and distributor a profit for selling them!



**BREEZ-ELECTRIC CORPORATION**  
450 N. Oakley Blvd.

Those of you who have seen the big, new SUPERCHARGER and watched it actually charge in a four-mile wind have found that it is easier to sell than cheap windchargers. The "Pennies from Heaven" sales plan has begun to bring sizeable checks floating your way.

To other dealers and distributors we suggest that you write today for full information. *If you are located in a low-wind area we are particularly anxious to prove to you that*

North, South  
East, West—  
**SUPERCHARGER**  
works anywhere!



Standard G Series glass tubes, radio tubes, genuine tubes  
KEN-RAD TUBE & LAMP CORPORATION, INC., OWENSBORO, KY.  
Also mfrs. of Ken-Rad Incandescent Electric Lamps

## Ken-Rad Radio Tubes

Dependable performance always

Write for our complete dealer sales plan

**KleenZONING**  
by HORTON  
NEW SENSATION IN WASHERS

A new principle in washing machine construction—Kleen-Zoning packs a terrific sales punch! Exclusive with Horton! Write now for details of this dramatic principle—Kleen-Zoning, the new buy-word in washers!

HORTON MANUFACTURING CO.,  
506 OSAGE ST., FORT WAYNE, IND.



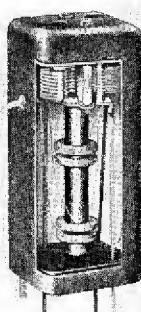
ATLAS

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

Device: Adjustable floor stand.

Description: Maximum portability; can be raised to height of 8 ft.; adjustable rubber-tipped feet prevent wobbling; easily adjusted; locks securely with special clutch attachment; special saddle for mounting the baffle included as part of stand.

Price: \$12.50.—*Radio Retailing*, May, 1937.



MILLER

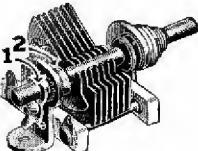
J. W. Miller Co., 5917 So. Main St., Los Angeles, Calif.

Device: Air dielectric tuned series i.f. transformers.

Description: 70 per cent of the total capacity is fixed, and 30 per cent variable by means of semi-circular plates which are held under positive contact and permanently in position by a tri-fingered phosphor bronze spring, providing ease of adjustment. "Q" of approximately 10,000.

Available in both standard and variable selectivity types with either air core or iron core.

Prices: \$5-\$6.50.—*Radio Retailing*, May, 1937.



BUD

Bud Radio, Inc., 1937 East 55th St., Cleveland, Ohio

Device: Remote control switches.

Description: Mount to the rear of a panel with only switch handle protruding giving finger tip, master control over motor circuit contactors, safety and limit switches.—*Radio Retailing*, May, 1937.

JEFFERSON

Jefferson Electric Co., Bellwood, Ill.

Device: Midget transmitting condensers.

Description: Especially useful in tank circuits employed in conjunction

# CURRENT CATALOGS

The various forms of interference in domestic and auto-radio installations and methods of attacking them are disclosed in a vest pocket, 24-page booklet. Be sure to inclose your 10c when sending for it. Continental Carbon Co., Inc., 13900 Lorain Ave., Cleveland, Ohio.

**Oscilograph data**, describing a number of tests which may be made with this instrument, will be found in a technical bulletin released by Triumph Mfg. Co., 4017 W. Lake St., Chicago, Ill.

A vest pocket size chart illustrating the standard RMA mica capacity color code may be obtained from Cornell-Dubilier jobbers.

A comprehensive and profusely illustrated parts catalog, crammed with a wealth of valuable information for the service man, has just been issued by RCA for distribution through distributors.

12 pages of boiled-down facts and figures to "place" the small set business in the retailer's design for living, together with photos of the complete line, make up the booklet now ready for distribution by Emerson Radio and Phonograph Co., 111 8th Ave., New York, N. Y.

A useful list of universal escutcheon kits for 1935-36-37 cars will be found in the folder put out by Universal Controls, Inc., 21-07 40th Ave., Long Island City, N. Y.

To assist in speedily solving the more common radio set problems, the Ranger-Examiner engineers have compiled a new booklet, "Radio Troubles and Their Cures." Write to Readrite Meter Works, Bluffton, Ohio.

**What is Aladdin Polyiron?** Write for technical bulletin 536 put out by Aladdin Radio Industries, Inc., 466 W. Superior St., Chicago, Ill., for the answer.

**Magic Magnet speakers**, air column sound projectors and baffles are listed in the new catalog issued by Cinaudigraph Corp., Stamford, Conn.

Because of the increasing interest in instantaneous recordings, dealers will find the folder obtainable from Presto Recording Corp., 139 W. 19th St., New York, N. Y., of real help.

An up-to-date copy of the 1937 complete catalog of Shure Bros., 225 W. Huron St., Chicago, with new and important revisions, will be sent upon request.

The first issue of "Instrument Topics," the new house organ of Clough-Brengle Co., 2815 W. 19th St., Chicago, Ill. has been mailed. The purpose of this publication is to gather together various procedures in the electronics field and put them together in a form for easy reference. Write to C-B if you would like to be added to the list.

Bulletin 202 of Crowe Name Plate & Mfg. Co., 1745 Grace St., Chicago, contains a quick-reference tabulation of controls for over 100 models of auto-radio. Illustrations and specifications of entire line also included.

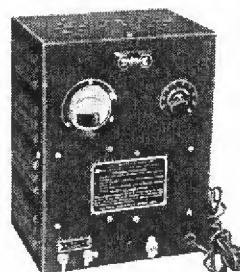
Cognizant of the growing interest displayed by service men in technical explanations of internal and external functions and circuits of testers, Supreme Instruments Corp., Greenwood, Miss., has prepared Design Manual "A."

The increased use of voltage regulating wet electrolytics makes this section of the Solar exact replacement catalog extremely handy. Solar Mfg. Corp., 599 Broadway, New York, N. Y.

Compiled from the standpoint of helpfulness to servicemen, Sprague Products Co.'s (North Adams, Mass.) 1937 catalog has many pages devoted to condenser construction and radio interference elimination. Tel-U-How condenser guide also included.

Oil burner ignition transformers (electrical specifications and dimensions) are covered in a new folder published by Jefferson Elec. Co., Bellwood, Ill.

## YOU NEED THIS GREATEST OF ALL SELLING AIDS!



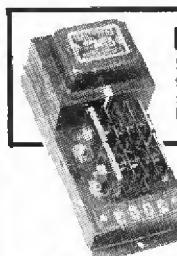
**\$19.75**

List Price  
As Illustrated  
Variable Voltage

### EPCO STORAGE BATTERY ELIMINATOR

For Perfect Demonstration of Auto and other D.C. Radios

Provides 6 volt-10 amps, filtered D.C. from 110 volt A.C. Assures instant, adjustable current at minimum power consumption. Ends forever the messy battery-charging nuisance. Also efficient as battery-charger.



### ELECTROPAK

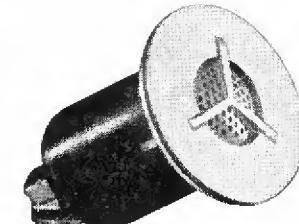
Supplies rectified D.C. for operating relays, solenoids and remote controls. Voltage ranges from 6 to 24 volts, rated at 2 to 15 amps. Operates on 110 volt A.C.



### ADAPTOPAK

Operates A.C. radios in D.C. districts and 110 volt A.C. radios in autos and trailers.

**ELECTRICAL PRODUCTS CO.**  
6537 RUSSELL AVENUE DETROIT, MICHIGAN



## 2-in-1 MIKE

(Directional or Non-directional)

## AT LOW COST!

The "Salt-Shaker" is ideal for all types of public address work. With the acoustic baffle in place (as shown) it's a directional mike. Take off the baffle, and it's non-directional. Either way, it assures regular Western Electric broadcast quality. Its high performance and unusually low price make it a hit everywhere. Dealers, use and specify the 633A!

For full details: Graybar Electric, In Canada; Northern Electric Co., Ltd.

**Western Electric**

GRAYBAR ELECTRIC CO., Graybar Building, New York  
Please send me new bulletin on Western Electric 633A Microphone.

RR-5-37

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



**C**ROWE Auto-Radio Remote Controls are custom-built for all makes of cars—1935, 1936 and 1937 models—and for the principal makes of radios. Made in either airplane or porthole dial types, to match styling of car on which installed.

### Same Controls for All Cars !

Same controls and shafts can be put on any car and re-used when moving radio to another car. A panel kit is the only part required on re-installation jobs.

### Less Stock Investment

This interchangeable CROWE feature enables the distributor and dealer to have a flexible, readily available stock, with much less investment.

### Other Salient Features

The ease with which Service Men may install these panels—no sawing, filing or drilling—compact and handy installation in panel—are among other features.

*Ask for NEW  
Bulletin 202*

which gives complete details  
on these controls.

**CROWE NAME PLATE & MFG.CO.**  
1745 Grace Street  
**CHICAGO, ILLINOIS**

### GAS STATIONS SELL FOR TRADE

(Continued from page 19)

they will suit your purpose because of their reputation, have a talk with the proprietor. Explain that you have a proposition whereby you can increase his station traffic in addition to adding to his profits at no risk to himself. He need make no investment nor take any risks. His attendants will benefit also in added earnings. Surely, this will appeal to him.

Offer to place on demonstration in his station one or two models. Tell him that you will pay to him a ten-per-cent commission for every order taken for an auto radio. You will install and service them for a period of three months or more. All he and his men need do is take the order.

Offer to coach the station attendants in the fundamentals essential to the sale of auto radio. Very often you may find them as well posted as you are on the features which appeal to the buyer. Don't require them to fill out complicated contracts or papers. You or your installation man can and should do that when the buyer takes delivery on the completed job. In the case of time payments the regular chattel mortgage form can be filled out at that time and the necessary signatures secured before the car is released.

The alert and wide awake radio and appliance dealer usually maintains a crew of outside salesmen to whom he pays a commission ranging from ten to fifteen per cent. Why not make the gas station your outside department? The average good sized gas station selling around 25,000 gallons of gasoline per month makes at least 5,000 contacts in that time. Do you know of many retail stores which serves that many people or have such a tremendous potential market? Do you know of any outside salesman who contacts 5,000 prospects per month? Or 5,000 in six months? Even a small gas station, well located, sells 10,000 gallons per month. At five gallons per car that's 2,000 contacts.

Then why not build up a crew of "outside" gas stations at which you can display your line of auto radios? You can well afford to pay a sizable commission for this "plus" business. And the best part of all is that you can do this at no extra cost or outlay. Just a little effort.

Most of these gas station attendants are known by their first names

# 1938 RADIOS MUST HAVE REAL AUTOMATIC TUNING FROM TOP TO BOTTOM OF THE LINE

*Grunow*  
★  
COMING JUNE 1



*As UP-TO-DATE as it looks*

Manufactured by the makers of the original streamlined "BULLET MICROPHONE." The "BULLET-PHONE" is compact . . . good-looking . . . simple to operate. These are but few of the features that make it a winner in this new, rich market.

You've found that the "BULLET" microphone has what it takes to get results. You'll find that the easily installed "BULLET-PHONE" provides the answer for quick sales and profits.

**TRANSDUCER CORPORATION**  
30 Rockefeller Plaza  
New York, New York

to the car owner. Gas stations are conducted on a basis of friendship and confidence between seller and buyer. With gasoline selling for about the same price all over, why should the buyer go to any particular station? Confidence, that's the reason. Confidence. Then why shouldn't you hire this man who by the sheer weight of his personality is carrying on a successful business in your community?

Very few gasoline stations have taken on auto radio. Perhaps they fear that doing so will involve the expenditure of too much needed money or that the volume of sales will not prove worth while. Then, there is the problem of competent service and installation men. Who can blame them? But, you, as a radio dealer, have all these things already and need only what the gas station has—"a prospect list."

A car owner as a rule loves his car almost as much as his wife. And that's no joke. He doesn't want anyone else to drive his car and is very suspicious of anyone in whom he lacks confidence, tampering with it. On the other hand, he just loves to fuss with it. The service station man however enjoys his respect because of his occupation and he likes him to suggest needed repairs or adjustments. Endorsement of the auto radio by the service station men carries a vast amount of weight.

Furnish your new salesman with a price list and the weekly or monthly terms for the time payment buyer. Have them printed on a card for quick and easy reference. Suggest that it be carried in the hat, readily accessible. Remember that you must make it as simple as possible. Service station men are no great shakes as bookkeepers.

#### Promoting the Plan

Plan to make the installations right in the station. People don't mind leaving their cars at a service station whereas they dislike leaving their cars parked at the curb on a busy street for hours at a time during the day. While installations are in progress hang a large banner on the car reading as follows: ANOTHER BLANK RADIO BEING INSTALLED. This will attract the interest of people driving in to the station for gas, oil or other services. The curiosity of people will be aroused with the result that many new prospects will be secured.

Arrange with the stations to display in a prominent position a sign announcing the sale, installation and

service of auto radios. Don't forget the repairs. Many new sales are obtained in this manner and much car radio repair business will be secured by telling the story where it will do the greatest amount of good—right where auto drivers stop for service. Many people stopping at the stations will be reminded of the fact that their car radio needs attention.

Pay a commission to the station man on this business also. The station will "plug" it. While you are repairing or installing a car radio they can solicit a grease job or an oil change. And vice versa. Car radio sales and service is a "natural" at the service station. In addition many home radio repairs and sales may be secured in this wider circle of business contacts.

Instruct the lubrication men to attach a tag to the radio in the car of every car receiving pit service. It should read as follows:

*Should this radio require any adjustment drive your car to blank service station. Our reliable mechanics will make immediate repairs at very low rates.*

Blank Service, Inc.  
Court Square  
Paris, Pa.

These tags will serve as constant reminders. If and when the car owner either wants to buy a new radio or buys a new car and wants the radio transferred to the new vehicle, he'll know where to go. Often, new sales will be received due to the tie-up.

#### Helps Sub-Dealer Too

Perhaps the station can be induced to act as cashier to receive payments on time payment accounts. This is a simple matter to arrange from an accounting angle. Many public utilities in smaller towns as well as larger ones make a practice of this for the convenient payment of subscribers bills. Banks, as a rule, do this work. A small commission is paid. Such an arrangement will appeal to the gas station owner because it will bring the customer into the station regularly and often. Upon their return he not only has the opportunity to sell gas and oil but many other services and accessories as well.

The life blood of the average gas station is the group of so called "steady customers." If you show your local gas station owner that his cooperation with you in such a sales

plan not only will pay him a direct cash profit on every sale but will, in addition, increase his "steady" patronage, the appeal to him as a merchant cannot be overestimated.

Do not fear that after you have built up the idea of auto radio in the mind of the gas station owner, that he will dispense with you and "go it" on his own. When he sees the great amount of effort, organization and technical skill necessary to properly conduct a radio business, in addition to the capital needed for stock, he will soon be convinced that the auto radio business belongs to the radio man.

#### Make Profit on Sales

Many automotive accessory stores are now selling auto radios and "farming out" the installation and service. Perhaps even now you are getting some of this work. It is usually secured by bidding and very often is done at no profit to the installation man. You cannot put the right amount of time into this work and the result is often a sloppy job which brings no credit to you and, on the other hand, lowers the faith of the purchaser in the value of a radio in the car. Why bother with this business? The profit on the sale of an auto radio is a substantial one and should be yours as a radio dealer. If you follow a definite formulated selling plan you can and will get it.

After a while you may start a drive of giving out "boosters" at the various agent-stations. Have them imprinted with the name and address of the station. Again, in this, the station owner will be in accord with you because of the publicity. Get a list of his regular customers. Circularize them. But be very careful to use his name so as to bring the buyer to his station. That, you must remember, is primarily half of the reason for the station acting as your agency. Plenty of this material is available at a very low cost.

Spend a good deal of time with the station men. Teach them to glance under the dash of every car they serve. If there is no auto radio there, suggest one. It will lead to many sales and prospects. The license number of the car will lead to the owner's name and address. From then on, it's up to you.

If you get a prospect from the station man and close the sale outside the station, pay a commission anyhow. The failure on your part to pay such commissions will result in their not

(Please turn to page 57)

## RADIO DEALERS

## RADIO SERVICEMEN



# Get this new radio book

# FREE

Explains just how to spot and repair over 700 set troubles.

Saves your time! Saves your money!

### Time-Saving Information

• Certain radio sets develop trouble peculiar to their particular type of circuit. Each month "Tricks of the Trade" explains how to locate and fix these set failures. The following are examples of the curt, practical way Radio Retailing offers this vital information to you.

#### BREMER-TULLY, BRUNS-WICK 58

Bad volume control  
Often due to fibre projecting too high, causing rotor arm to miss. Push fibre down before replacing control.

#### CLARKSON 60, 61

Set dead or very scratchy  
Look for failure of special audio input transformer primary. Replace with same device or substitute resistance coupling. Tone will suffer if ordinary transformer is used for replacement due to special characteristics of original.

#### CROSLEY 143

Neon pilot lights when set switch is in OFF position.  
Replace leaky .8 mica, 150 volt condenser.

#### MOTOROLA 77

Poor tone . . . Check to see if voice-coil or field wires have been reversed. This causes voice-coil form to become blackened and charred inside due to heat. If swollen, discolored appearance is noted, replace.

#### RCA 420

Operates at low volume on strong signals, intermittently comes up to good volume.  
Check .05 condenser between center terminal of volume control and control grid lead of 2B7 second detector.

• Every issue of Radio Retailing will bring you more of these "Tricks". File them and in a short time with this FREE book you'll have a service manual of un-equalled value.

HERE at last is a trouble-shooting guide that will ring the bell with every serviceman and dealer in the radio game. It contains no useless description, no theories, no amateur data. Every single one of its 56-pages is packed with practical, hard-bitten "how" information that can be used profitably on your service jobs every day in the year. "Tricks of the Trade" is a service book that is different. Once you get your copy you won't part with it for a minute. This one book contains:

704 tested ways of finding and fixing the troubles in specific set circuits.

157 tube socket diagrams showing the connections for that many tubes.

Reference charts showing—the cost of electricity used in operating various appliances—the correct and incorrect way to install radio aerials—reception spectrum —etc.

• Every one of these "tricks" (see typical examples in column to left) were volunteered by

active radio men from their own experiences. Why spend hours testing and re-testing a balky set, when with this book, you can put your finger on the most probable cause of the trouble in a few seconds.

• These "Tricks" will show you how to spot a lot of troubles that won't show up in any test equipment. If you value your time and are interested in saving yourself a lot of headaches—get a copy of "Tricks of the Trade"—today. IT IS FREE TO YOU if you accept this offer now.

### How to Get This Book FREE

Fill in and return the order blank below with the subscription fee to cover one year of Radio Retailing for \$1 or three years for \$2 and you receive this new book—FREE—as our gift.

The book is not for sale separately. No credit orders can be accepted. Don't delay. They won't last long. Mail your order—NOW.

Mail this coupon and payment—Today!

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[All books are sent out by express to insure safe delivery. There is a small handling charge of 15¢—payable to the expressman upon delivery of the book. If you prefer book sent prepaid, add 15¢ to the subscription fee at time of ordering.]

O.K. Attached is \$2 for a 3 year subscription to Radio Retailing. With this order I am to get a FREE copy of the 56-page service book—"Tricks of the Trade". I'll pay the expressman 15¢ for delivery charges. Send the book at once. Check here  if this is renewal order.

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bothering to secure more business.

#### Charge It To Commission

As a retail merchant, you know how expensive it is to locate workable prospects. Newspaper ads, high rent locations, elaborate window displays, etc., etc., and etc. And all for what? Merely to locate "suspects." Usually it will cost more to lure a possible buyer across the threshold of your store than to conduct the rest of your

business. At least one-half the cost of operating a retail store is the expense of getting people to come in. That is true of most all specialty stores and that's exactly what yours is.

Get up on your hind legs. Go out to see these people and sell them the idea I've outlined here. Others have done it and are doing it successfully. What's good for them is good for you too. Show some initiative and energy and I'll warrant that you'll

find it well worth your while. Sure, I know there are several reasons why this plan is difficult but I can tell you twice as many facts why you should use it.

To you, as a merchant, let me say that if you intend to exist in this, the radio industry, you must continuously develop and use new ideas and methods in locating and thoroughly exploring and exploiting new markets. Well--here's one. Go to it.

## NEW NOTE ON NOISE

(Continued from page 24)

get noise-free radio is to stop all interference at its source, but as outlined by Tobe Deutschmann in the January issue of *Radio Retailing*, it is impossible for any one individual to do this with conditions as they are at the present time. Legislation helps but is not the immediate answer.

Just now the average dealer would rather know how to make that expensive set he sold last week to John Smith perform like the manufacturer's representative said it would so that Smith will continue payments without kicking. As it is, reception sounds like a busy day on a battlefield.

The writer has specialized exclusively in noise-reducing antenna systems and line filter work for dealers for the past eight years and here are some of the methods he has found effective in curing noise:

First, make sure that no electrical appliance within the house itself is broadcasting. Interference-producing household appliances can be silenced at a trifling cost in most cases. Factory-made filters save time, do a job. A 1/10 mfd. condenser connected to either side of the a.c. line will usually, however, sufficiently quiet noisy motors of the type used one cleaners, sewing machines, drink-mixers, refrigerators, kitchen exhaust fans. On extremely noisy motors two 1/10 mfd. condensers may be needed. Connect one side of each condenser to a leg of the a.c. line, feeding the motor. Join the remaining two condenser connections together (mid-point between them) and connect from here to the frame of the motor. The motor frame should then be grounded to either a cold water or to a pipe driven into the ground.

Sometimes it may be necessary to use the hookup employed commonly

on noisy elevator motors. These can usually be quieted by connecting a 1/10 mfd. condenser from each brush to the motor frame. Of course, condensers used for filtering must be able to stand the line voltage safely. And when working on motors be sure shafts run true and that bearings are in good shape, otherwise undue arcing will take place at the brushes.

Noisy oil burners can usually be made quiet by inserting a spark suppressor on either side of the electrode leads running from the spark coil. Sometimes it is also necessary to connect a 1/10 mfd. condenser between each side of the transformer primary leads and ground and it may even be necessary to filter the a.c. line at the oil burner's main switch.

Some heating pads are great noise producers and, unfortunately, there seems to be no simple way of silencing them completely. But they could be made quiet in the process of manufacture. S. Ellis, chief inspector for the Toronto Division of the Government Radio Branch, is cooperating with manufacturers of electrical equipment with a view to designing and placing on the market silent appliances. On a recent neon sign installation it was found that by wrapping fine wire (not heavy enough to be noticeable) completely around the tubing in a spiral with turns spaced about two inches apart and grounding this wire, noise would be eliminated where condensers at the transformer failed. Closer spacing would be used for a noisier sign, probably.

#### Antenna is 80 Per Cent

The dealer's next logical place of attack is at the aerial. Providing the receiver is reasonably well shielded to prevent noise pickup by the chassis itself we have not found a single case of interference that could not be con-

siderably helped by the proper type of aerial installation.

We employ a truck to do aerial and installation work for several of the larger dealers in Toronto and work in all kinds of locations. It has been our experience that a transformer-coupled, shielded lead-in type of aerial provides excellent noise reducing characteristics in the broadcast band and we point out here that the average customer tunes to this band at least three-quarters of the time and is inclined to feel that there is not much improvement if his new antenna system is quieter on shortwaves but just as noisy on broadcast.

Frequently we install two antennas. A shielded downlead type for broadcast reception is erected and also a twisted pair (unshielded) doublet type for shortwaves. A switch for selecting the proper one is included. It is, of course, most essential that the antenna proper be placed far from noise sources and at right angles to them. We have run leads as far as 400 feet but this is an exceptional case. Loops mounted on the customer's back fence, connected to the set through a "cold" lead-in have also been found quite useful under certain conditions. A careful study must be made of each individual location if the best results are to be obtained from any noise-reducing antenna.

We have definitely proven, to our own satisfaction at least, that at least 80 per cent of a radio's performance depends upon its installation, regardless of how noisy a location may be. This being the case, it is obvious that the dealer himself must do a more bullet-proof installation job before he can reasonably expect either legislation or action by electrical appliance manufacturers to take part of the noise reduction job off his shoulders.

# SENSATIONAL NEW SUPREME



**2"**  
**OSCILLOSCOPES**  
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Actual tests prove SUPREME 2" OSCILLOSCOPES far superior, more accurate, have four times larger screen area than the 1" kind!

SUPREME'S new 2" Oscilloscopes have created a sensation! In performance! In price! In value! And no wonder! Imagine a 2" Oscilloscope, actually using a 2" cathode ray tube (not a magnifying arrangement), that gives four times more effective screen area than the 1" kind—and yet costs even less than the average 1" Oscilloscope! In addition, you get extra, exclusive features found in no other instruments of similar price. What's more—

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**VISUAL PROOF THAT CAN'T BE DENIED!**

JUDGE THESE COMPARATIVE PHOTOGRAPHS YOURSELF!

This side-by-side comparison shows the same illustration reproduced both in 2" and 1" size. It portrays the demodulated output of the SUPREME Model 580 Signal Generator, obtained with a SUPREME 2" Oscilloscope which contains an *actual* 2" size tube (not a magnifying arrangement). Carrier frequency 600 kilocycles amplitude modulated at 400 cycles. Oscillogram made with vertical plates connected across demodulator stage load resistor of superheterodyne receiver. Judge for yourself which is clearer, more distinct, and which will give a more accurate reading. You'll place your vote for the 2" size!

## MODEL 530—2" OSCILLOSCOPE

**8 EXCLUSIVE features found in no other instrument of similar price!**

1. The *only* 2" Oscilloscope at this price!
2. Exclusive SELECTIVE RETURN SWEEP ELIMINATOR for inclusion or rejection of power supply frequency return sweep!
3. Exclusive UNI-CONTROL allows separate control of two potentiometers from one shaft protrusion on the panel!
4. Exclusive ANTIQUE BRONZE PANEL!
5. Exclusive LIGHT WEIGHT and SMALL SIZE!
6. Exclusive "POWER ON" INDICATOR lamp!
7. Exclusive MAXIMUM FUNCTIONS with MINIMUM number of PANEL KNOBS!
8. Exclusive FLEXIBILITY OF CONTROL FUNCTIONS!

SPECIAL LOW INSTALLMENT TERMS ON SIGNAL GENERATOR-OSCILLOSCOPE COMBINATION

## MODEL 535—2" OSCILLOSCOPE

**10 EXCLUSIVE features found in no other instrument of similar price!**

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2. Exclusive RETURN SWEEP ELIMINATOR for completely removing high frequency linear sweep return!
3. Exclusive SELECTIVE RETURN SWEEP ELIMINATOR for inclusion or rejection of power supply frequency return sweep!
4. Exclusive SNAP-LOCK SYNCHRONIZER for positive interlock between linear time base and incoming signal—Range 15 cycles to over 500 k.c.f.
5. Exclusive UNI-CONTROL allows separate control of two potentiometers from one shaft protrusion—Grouping of controls eliminates groping for controls!
6. Exclusive ANTIQUE BRONZE PANEL!
7. Exclusive SMALL SIZE and LIGHT WEIGHT!
8. Exclusive MINIMUM number of PANEL KNOBS control MAXIMUM number of INSTRUMENT FUNCTIONS!
9. Exclusive "POWER ON" INDICATOR lamp!
10. Exclusive FLEXIBILITY OF CONTROL FUNCTIONS!

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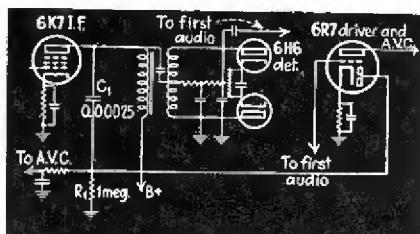
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# SERVICE

DESIGN • REPAIRS • INSTALLATION

## C I R C U I T S



### Novel A.V.C. Circuit

A novel audio driver and a.v.c. stage built around the 6R7 tube is employed in the new G.E. auto radios.

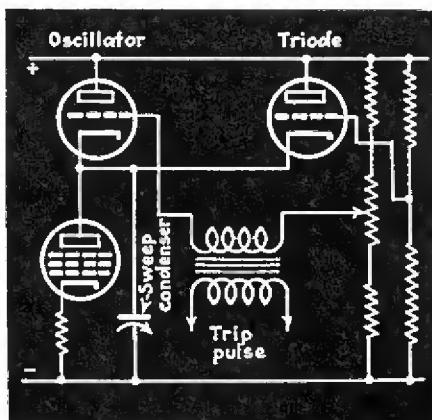
A 6H6 serving as a full wave detector only, rectifies the signal from a 6K7 i.f. The rectified signal is coupled in the usual manner through a volume control to a 6C5 first audio. This in turn feeds the triode section of the 6R7 which drives the 6N7 Class B output stage.

Part of the signal, before reaching the second detector, is coupled back to the diode plates of the 6R7; this is shown in the diagram. The .00025 mfd. capacitor,  $C_1$ , allows a portion of the signal to be rectified by this tube.  $R_1$ , a 1 megohm resistor acts as the diode load, the voltage developed across this feeds directly into the a.v.c. system after passing through the usual filter network.

The advantage of this circuit is that the detector tube may be used to control the a.v.c. circuit directly. This is illustrated by the fact that only a single 6C5 tube is necessary to operate the a.v.c. A considerable improvement in efficiency, which is important in auto radio design, is the result.

current base line on the screen. Also the observed pattern is sometimes caught at some random phase of the sweep frequency, making it appear at a different position. By permitting just a single pulse to sweep the signal, the recurrent base line is absent and a single image made to appear at the most practical part of the screen.

Under normal conditions a sweep oscillator is allowed to build up a plate voltage determined by the grid bias, at which the tube flashes, starting a new



cycle. The frequency of this automatic flashing is determined by the capacity in the circuit and the charging current. To produce a single sweep the oscillator must be prevented from reaching the automatic breakdown point of the sweep oscillator tube. At the same time the tube must be sensitive to a small tripping pulse from an external source.

A triode connected in parallel with the oscillator, except for separate grid bias, accomplishes this purpose. This tube is so biased that it comes into play only after the oscillator has built up a large plate voltage, at which point the triode shunts the charging current. By setting the oscillator's bias so that the triode discharges before the automatic flashing point is reached, recurrent oscillation is prevented. However, a small trip signal in the grid of the oscillator will cause the tube to flash only once, hence a single sweep is obtained.

The trip signal is obtained from an impulse in the primary of the trip pulse

### LOOK FORWARD . . .

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transformer shown in the diagram. This primary impulse is usually taken from the device under observation.

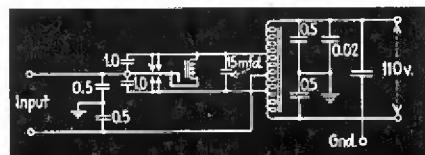
### New Vibrator Transformer

The use of an auto-transformer in the new Electronic Lab converters increases the efficiency of vibrator supplies considerably. In addition, the noise level is below that usually found in supplies of this type.

The design of the transformer is important. The low and high voltage sections are pi-wound, the secondary winding divides equally on each side of the centertapped primary. This is essential since balance in the output winding is necessary.

An eight contact point vibrator is used in the higher wattage units. In cases where greater power is needed a 16 contact vibrator may be employed. This will deliver up to 1000 watts.

Referring to the diagram, the supply is well filtered. Bypasses on the input and output as well as the vibrator itself prevent "hash" from radiating outside the shielded case.





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to advance the interests  
of the industry

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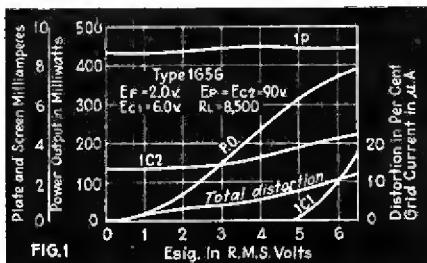
MAKERS OF RESISTANCE UNITS OF MORE TYPES, IN MORE SHAPES, FOR  
MORE APPLICATIONS THAN ANY OTHER MANUFACTURER IN THE WORLD

# CIRCUITS

## 90 Volt Battery Operation

Recently the 1G5G output pentode was announced. This tube is designed especially for operation from a 90-volt B supply. Resistance coupling may be employed and the rated output of 300 milliwatts obtained under Class A operation. Fig. 1 shows operation characteristics determined by Sylvania for 1G5G under the recommended voltage conditions.

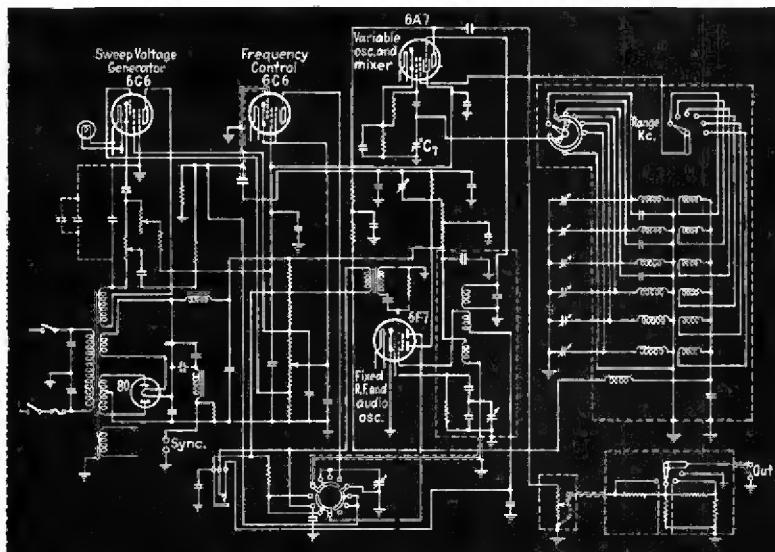
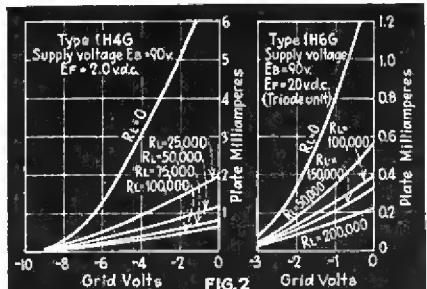
Fig. 2 gives the dynamic characteristics of the 1H4G and also shows similar curves for the triode section of the 1H6G when these tubes are used as resistance coupled amplifiers. These tubes are the "G" type equivalent of the 30 and 1B5/25S respectively. The choice of operating bias for either type should be determined on the basis of the requirements of the output from the



tube. For lowest distortion with a chosen plate load resistor the bias should be selected so that just enough grid potential swing is secured to produce the desired output without permitting the grid potential to reach the grid current region.

Receiver design may call for Class B operation, especially if additional power output is desired. For such service the 1J6G may be utilized. Operation and output characteristics for this type with a 90-volt B supply are excellent.

An output of about 1.2 watts with 10% total distortion can be obtained providing a suitable driver stage is provided. With a 1H4G operated at 90 volts the output obtainable is approximately 450 milliwatts, due to the limited power available from this driver. Additional audio amplification would be required to obtain full output from the Class B stage.



## Electronic Sweep Test Oscillator

A new RCA test oscillator consists of two radio frequency oscillators, one fixed and one variable, whose outputs are combined in a mixer tube to provide the desired radio frequency output. Either amplitude modulation (400 cycles) or frequency modulation (of  $\pm 20$  kc. maximum) of the output frequency may be obtained, depending on which type of modulation is employed on the fixed oscillator. Referring to the schematic the following action takes place:

A fixed r-f oscillator, consisting of the pentode section of the lower 6F7 and its associated inductance and capacity oscillates at a frequency of 800 kc. A pickup coil coupled to this tank circuit feeds energy from this oscillator into the No. 4 grid of the 6A7 combination oscillator-mixer tube. The triode section of this tube, together with its associated inductances and capacities make up the variable oscillator which is tuned by the variable capacitor, C-7. Due to coupling in the electron stream there will appear in the output plate circuit of this 6A7 frequencies corresponding to the sum and difference of frequencies of the two oscillators.

The tuning dial is calibrated directly in kilocycles corresponding to the difference of the two oscillator frequencies up to 7 megacycles. Above 7 megacycles the sum frequency is used.

When amplitude modulation is employed the same action holds true except that the triode section of the fixed oscillator tube oscillates at 400 cycles and is coupled externally to the r-f oscillator section so as to impress audio voltage in series with the plate supply of the oscillator section. The resultant output voltage from the 6A7 tube is amplitude

modulated an amount equivalent to the modulation impressed on the fixed oscillator.

When frequency modulation is employed the above action of the variable oscillator and mixer tubes still holds true but the signal from the fixed oscillator delivered to the No. 4 mixer grid is being varied at a low frequency rate (frequency modulation), consequently the output frequency from the mixer tube will vary in a like manner.

## New Tubes

**6T5.** A new type tuning indicator tube by Sylvania similar to the 6G5. It differs only in that the lighted portion covers a very narrow region at the center of the target when no voltage is applied to the control grid. When a negative voltage is impressed on the grid the width of the fluorescent ring increases until it covers practically all of the target. The changes in diameter of the lighted section are more readily detected than are changes in the shaded angular sector when a 6G5 is employed.

|  |       |       |
|--|-------|-------|
| Heater Voltage .....                   | 6.3   | volts |
| Heater Current .....                   | 0.3   | amp.  |
| Plate and Target Voltage .....         | 250   | volts |
| Plate Current (triode) .....           | 0.24  | ma.   |
| Target Current .....                   | 5.0   | ma.   |
| Grid Voltage (Min. illumination) ..... | 0.0   | volts |
| Grid Voltage (Max. illumination) ..... | -22.0 | volts |
| Triode Plate Resistor .....            | 1.0   | meg   |

**6W5G.** A rectifier by Raytheon designed primarily for automobile sets. It is interchangeable with the 6X5 when higher output is desired.

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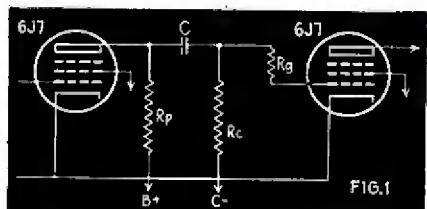
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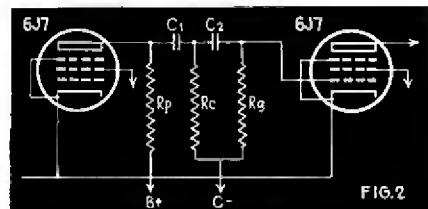


## Stabilized Resistance Coupling

Blocking of resistance coupled stages can usually be traced to the first stage in which a positive potential on the grid causes a large current to flow in the blocking condenser, thereby building up a negative voltage on the grid of the succeeding tube. If the usual coupling system is replaced by that shown in Fig. 1, blocking is less likely to occur. The added resistance by  $R_g$  allows the blocking condenser  $C$  to charge up more slowly.

In a typical installation, two 6J7 tubes operating from a 500 volt plate supply and coupled through a 0.1 mfd. condenser,  $R_p$  was 100,000 ohms while  $R_c$  and  $R_g$  each were 2 megohms, there was a tenfold decrease in tendency to block.

Stable operation in resistance-capacity coupled amplifiers depends to a large extent on the maintenance of proper electrode voltages. Unless the blocking condensers have unusually high insulation resistance, there is a likelihood that the grid bias will be influenced by leakage through the blocking condenser. By introducing an extra blocking condenser



and resistor as shown in Fig. 2, inexpensive commercial condensers may be used in place of specially selected high quality mica condensers. For high fidelity work, the results obtained from these condensers are comparable to that of the higher priced units.

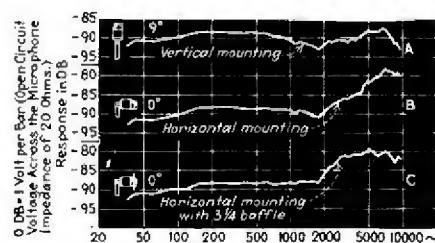
## Convertible Microphone

A convertible microphone, resembling a salt-shaker in appearance, and which can be conveniently and instantly changed from a non-directive unit to a semi-directive unit is one of the latest products of Western Electric. It may be mounted on a desk or floor stand, or

it may be suspended from overhead to suit the requirements.

The device is cylindrical in shape, with one end rounded off in the form of a hemisphere. Perforations are distributed over this head, so that sound waves arriving at all angles reach the diaphragm. When directional characteristics are desired, a disc-ring is slipped over this end of the case, reducing the pick-up from all directions except that in which the microphone is pointed.

For non-directional operation its response is around an output level of -90 db. throughout the range from 40 to 10,000 cycles. With the directional baffle applied, the sensitivity around

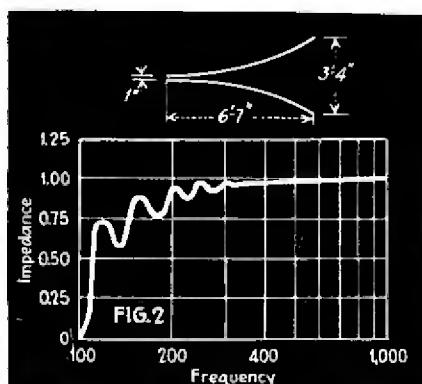
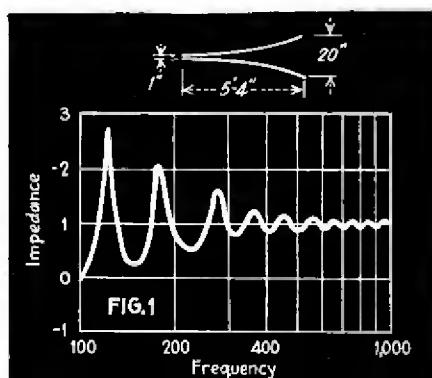


1000 to 3000 cycles is increased and the performance of the microphone for close talking purposes is improved.

The above chart illustrates the frequency characteristics when the microphone is mounted in various positions. The "C" curve was taken with the directional baffle in place.

## Exponential Horn Characteristics

The horn throat acoustic impedance characteristics is of paramount importance in designing a horn loud speaker. The dissipation or radiation of the energy may be considered to take place in the resistive part of the throat impedance. The throat impedance characteristic depends upon length, throat

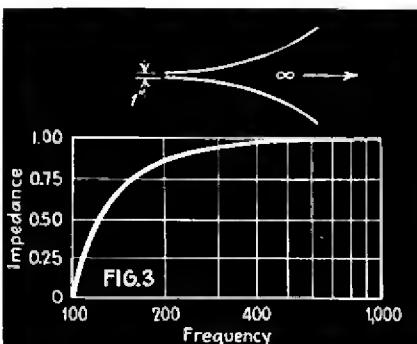


and mouth diameters and the shape of the horn.

A study of characteristics of exponential horns by RCA indicates that there is a definite low frequency cut-off above which the throat resistance increases rapidly and becomes a constant. On the other hand, the throat resistance of the conical horn increases slowly with frequency and shows no definite low frequency cut-off. For these reasons the exponential horn is more desirable and accounts for its almost universal use in horn loud speakers.

The throat acoustic impedance characteristic as a function of the mouth, with the flare and throat kept constant, is of interest in determining the optimum dimensions for a particular application.

Fig. 1 shows that with a mouth of 20 in. the maximum variation in re-



sistance characteristic is 7.5. This should be compared to Fig. 2, a 40 in. mouth shows a variation in resistance of only a few per cent from that of the infinite horn of Fig. 3.

These results show that as the change in impedance in passing from the mouth to the free atmosphere becomes smaller by employing a mouth diameter comparable to the wavelength, the reflection becomes correspondingly less and the variations in impedance characteristic are reduced. Thus a horn becomes an efficient impedance matching device between the vibrating diaphragm and the surrounding atmosphere.

# How To Build An Auto Radio Vibrator Tester

By Lee Leighton

**M**ost of the service problems encountered in automobile radio are in the power supply, particularly the vibrator. This unit, now developed to a degree which makes possible the highly satisfactory results obtainable with car radios, still seems to be a mystery to most servicemen. The scarcity of appropriate service instruments specifically designed for use in testing and servicing these units makes the job even more difficult.

Deciding to build a unit that would meet service requirements, the first step naturally was to determine just what we wanted this tester to accomplish. The problem was not difficult and after careful consideration the requirements were set down as follows:

*First*—Ability to test all radio vibrators rapidly and accurately.

*Second*—Tests to be made under actual operating load conditions with simultaneous readings of input and output voltage and current.

*Third*—Provision for varying input and output voltages. The first to facilitate low and high voltage starting adjustments; the second to ascertain stability under variable loading conditions.

*Fourth*—Instant changeover from synchronous to non-synchronous vibrator tests.

*Fifth*—Polarity reversing arrangement, necessary due to the lack of standardization in synchronous vibrator construction.

*Sixth*—Provision for testing rectifier tubes when in conjunction with non-synchronous vibrators.

*Seventh*—The complete unit was to be small and portable so that it could be easily moved to any position along the bench or carried from car to car; connection to ammeter and ground in the car providing energizing voltage. Rugged construction and protection for meter equipment when not in use.

## Construction

The primary input rheostat is an Arvin car heater variable speed switch. This is simply a rheostat with an off position. It is mounted on the upper left side of the front panel Fig. 1, the knob controlling it shows clearly in the

photo. On the upper right side is the secondary variable load resistor also fitted with a knob to match. This wire wound resistor is 7000 ohms and rated at 25 watts. Mounted between these resistors are the two S.P.S.T. toggle switches. The one to the left is used with the rectifier tube test and the other in conjunction with the testing of Phileo vibrators. Below to the extreme left is the D.P.D.T. polarity reversing switch and to the right of it the three pole three position jack switch with which rapid changeover from synchronous to nonsynchronous vibrator test is accomplished. In the top row from left to right are the standard five contact socket for 84 rectifier test, octal for 6X5 and OZ4 rectifier test, special 5 contact for 1935 Delco vibrators and special 7 contact for Stewart-Warner vibrators.

In the lower row, left to right are the following sockets: standard four contact in which all four prong vibrators are tested; two standard five contact the first for five prong split reed synchronous vibrators, the other for five prong full wave synchronous. The next socket is also standard and in which all vibrators with standard six prong bases are tested. Next to this is another special five contact socket for 1936 Delco vibrators and last a special six contact with external grounding terminal for testing RCA, GE and Emerson polarized vibrators.

The knockdown metal cabinet measures 7x10x8 in. The cover is hinged and when closed provides protection for the meters while the instrument is not in use. Fig. 2 is a rear view. Mounted from left to right are the socket and 84 rectifier tube for the test circuit. The .02 buffer condenser fastens directly to the socket. The "B" choke is next and between this and the socket in the background is the dual 8 MF1 electrolytic condenser. To the right is the half wave transformer and in front of it the full wave transformer. Between them and out of sight is the .01 buffer condenser. The transformers may be any good auto transformers, one half wave and one full wave. All these parts are mounted on a wooden baseboard the dimensions of which are the same as the

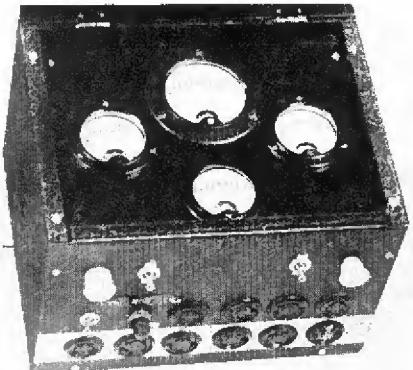


FIG. 1—Front panel and meter layout

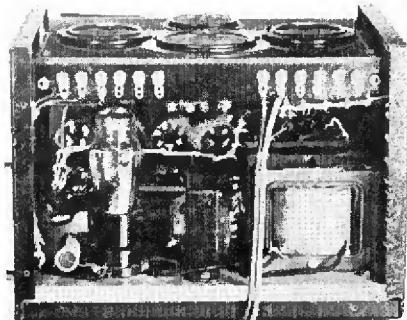


FIG. 2—Chassis construction and wiring details

inside of the cabinet. In assembling the unit the front cabinet panel is scribed, center punched and drilled as in Fig. 4. The parts are then mounted as outlined above. A few words of caution here are not amiss. Note on the schematic that one side of the 84 heater is connected directly to the battery side of the input rheostat. Connected thus, the rheostat if turned off for a few minutes while making an adjustment to the vibrator, the 84 remains heated and ready for instant use as soon as the rheostat is again turned on. In this manner also, the heater is always at the proper temperature for efficient rectification. The 84 will heat with the polarity switch in one position only, remember this when placing the tester in service. This is perfectly all right as the 84 is used only with non-synchronous vibrators and these operate connected in either polarity.

The insulation in the Yaxley jack switch was not intended to handle the high order of voltages encountered in this device. To prevent arcing over and burning of the insulation it was necessary to dope this part of the switch with a number of coats of white shellac. The insulation end of the switch is dipped into a can of shellac, then drained and allowed to dry. Repeat this several times until a hard well glazed coating covers all the insulation material. After this it can be mounted without fear of breakdown, provided that when in use it is set to the desired position, synchronous or non-synchronous before inserting a vibrator for test. When mounting the sockets be sure to arrange

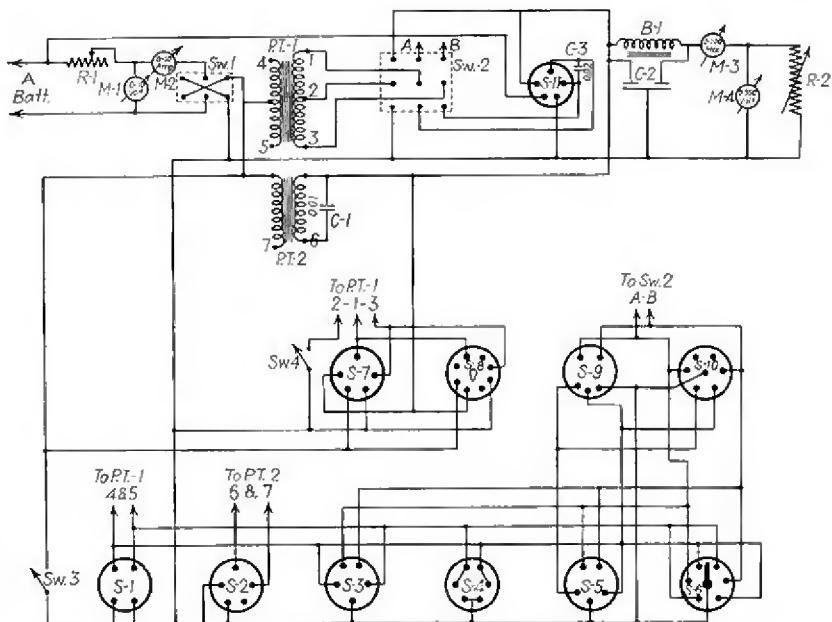


FIG. 3—Schematic circuit. Base connections are for top view of sockets.

the contact holes exactly as in the photo otherwise some of the large square case vibrators will be obstructed by the change over switch now from entering the socket fully.

Before wiring of the front panel is completed you will note that a number of the leads will connect to parts on the baseboard and meter terminal strip. Bunch these leads into two cables, one extending back from the left end of the front panel and the other from the right. This simplifies the wiring. Lace the cables telephone fashion, but before doing so identify each wire with a string ticket or other marker so that there will be no question as to its proper termination in the final assembly.

Circuit constants and parts for the above schematic are as follows:

- Metal cabinet 7x10x8.
  - Bakelite panel 7x10x $\frac{1}{4}$ .
  - Wood base board 6 $\frac{1}{2}$ x9x $\frac{1}{4}$ .
  - Bakelite terminal strip 1x10x $\frac{1}{4}$ .
  - D. C. voltmeter (M-1) 0-10 volts.
  - D. C. voltmeter (M-4) 0-350 volts, 1000 ohms, per volt.
  - D. C. ammeter (M-2) 0-10 amps.
  - Milliammeter (M-3) 0-100 mils.
  - Full wave power transformer (PT-1).
  - Half wave power transformer (PT-2).
  - “B” choke (B-1).
  - Dual Smif condenser 450 volts, (C-2).
  - Buffer condenser .01 mfd, 1600 volt, (C-1).
  - Buffer condenser .02 mfd, 1600 volt, (C-3).
  - S. P. S. T. toggle switches (S. W. 3 & 4).
  - D. P. D. T. toggle switch (S. W. 1).
  - Yaxley 3 pole 3 position jack switch (SW 2).
  - Arvin car heater rheostat (R-1).
  - Variable resistor 7000 ohms 25 watt, (R-2).
  - Socket five prong base mounting (S-11).
  - Socket four prong panel mounting (S-1).
  - Socket five prong panel mountings (S-2-3-7).
  - Socket six prong panel mounting (S-4).
  - Socket special Delco panel mounting (S-5).
  - Socket special Delco panel mounting (S-9).
  - Socket special Emerson panel mounting (S-6).
  - Socket special Stewart-Warner mounting (S-10).
  - Socket Octal mounting (S-8).
  - Small pin prongs Motorola for extension test cable Motorola.
  - Large pin prongs Motorola for extension test cable Motorola.
  - Length 12 inches five wire cable.
  - Battery clips.

Bring the front panel into position and pass the two cables through the cabinet and across the baseboard so they hang out at the rear. Now lay the front panel down with the bottom edge touching the cabinet and the wiring should be completed with the panel in this position.

Getting back to the wiring we have two cables extending out at the back, one on the extreme left, the other to the right. Bend each cable up to a vertical position directly behind the rear flanges of the cabinet side sections and again at the terminal strip. The one on the left is bent to the right, the other to the left. Cut and solder the leads to their respective lugs on the terminal strip. All this shows clearly in Fig. 2.

### *Operation*

To check the tester properly one of each type vibrator known to be good should be used. Don't let this scare you. In the myriads of vibrators in use during the past few years there are but three general types. They are the full wave non-synchronous, half wave split reed synchronous and the full wave synchronous. The Philco vibrator bearing part number 38-5036 used in all their sets prior to 1936 is a full wave non-synchronous vibrator and differs from the others in this class only in that it is equipped with a series driving coil and separate driving points on the main reed. For some unknown reason manufacturers have mounted their vibrators into all sorts of bases with but little attempt at uniformity hence we have for instance, the full wave non-synchronous types in cans with four, five and six prong bases and the synchronous types in five, six and seven prong bases. Many of the latter are of odd arrangement so that special sockets are required to receive them.

In all nine vibrators will provide a complete test and these are as follows:

- 1 Standard four prong full wave non-synchronous such as used in the Motorola 60-88.

2—Four prong Philco part number 35-5036 (original, do not use replacement).

3—Five prong split reed synchronous as in Motorola 77.

4—Five prong full wave synchronous as in Motorola 77A.

5—Five prong Delco as in United Motors 626.

6—Five prong Delco as in Chevrolet 985300.

7—Six prong full wave non-synchronous as in Atwater Kent 666.

8—Six prong full wave synchronous as in R.C.A. 6 M.

9—Seven prong full wave synchronous as in Stewart-Warner R 132.

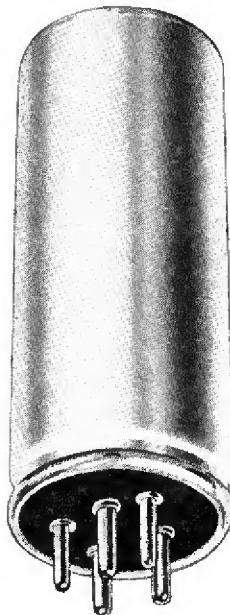
Start with vibrator No. 1 on the list inserting it in the four prong socket bottom row. Snap the three pole switch to the non-synchronous position. Turn the primary rheostat on and both toggle switches off. Set polarity switch in the position that heats the 84 and then always remember this setting. The low range volt meter should now show the value of "A" voltage applied and the ammeter between three and four amperes. The output voltage and current should indicate on the other two meters. Vary the secondary load resistor so that the milliammeter registers between 35 and 50 mils noting the changes in output voltage as the load is adjusted. Also vary the primary rheostat and ascertain by the ammeter if that too is functioning.

If everything so far is satisfactory continue with the next vibrator No. 2. This should be an original Philco part and not a replacement type. This also is inserted in the four prong socket and tests the same as the preceding unit except that it is necessary to snap the upper right toggle switch on. This is the only test in which this switch is used. It is always in the off position otherwise. Continuing, test the five pin half wave synchronous vibrator No. 3 in the five prong socket to the left. The three pole switch can still remain in the non-synchronous position as the half wave transformer now in use is not connected through this switch. If reverse readings are indicated on the "B" volt meter throw the polarity switch. If the output voltage and current are low and the vibrator is known to be good reverse either the primary or secondary of the half wave transformer. This will correct the phasing and need never be changed again.

The five pin full wave synchronous vibrator No. 4 is next. Turn the switch to the synchronous position and insert the vibrator in the next five prong socket. If the meters indicate reverse voltage change the position of the polarity switch to correct this. The voltage and current readings will be higher than with previous types. Remember both upper toggle switches remain off except as mentioned. All standard six pin vibrators are tested in the next socket. The switch is set in the non-synchronous position.

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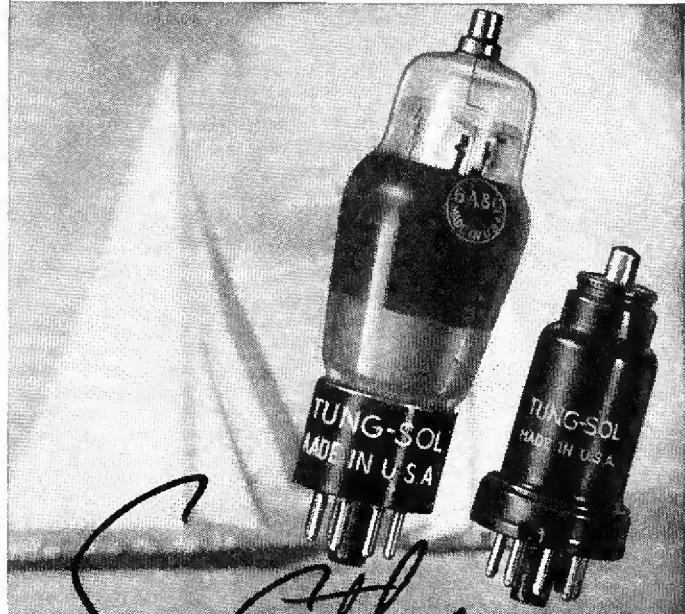
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ials. The first is for all Delco vibrators that can be inserted in this type socket and the last for G.E., R.C.A. and other similarly based vibrators. The switch is set to synchronous test whenever a vibrator is tested in either of these sockets.

In the upper row the last two sockets to the right are also specials. Of these two, the one to the left is for all Delco vibrators that have a similar base pin lay-out and the other for Stewart-Warner, Firestone and several others most of which are manufactured by the Stewart-Warner Company. The switch setting is again synchronous, reverse readings may be corrected by changing the polarity switch.

To test unbased vibrators and any others, new or old, that cannot be inserted in the sockets of this device, a simple extension cable is all that is necessary. It is made with a short length of five wire cable or five separate wires each having a different color. To one end of each wire attach an alligator clip with a soft rubber insulating sleeve over it. To the opposite end of each lead solder a prong removed from the base of an old tube using three small and two large. A much neater job can be had by obtaining five tips such as used by Motorola on the speaker cables. These tips are insulated and easier to handle. They can be had in both small and large size and about the same in dimension as tube prongs.

For full wave synchronous vibrators of the baseless variety all five wires in the cable are used. It is only necessary to insert the tips in the correct socket.

#### Tests Tubes Too

All rectifier tubes used in auto radios other than the obsolete BR can also be

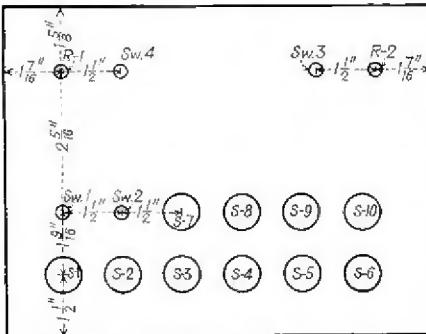


FIG. 4—Panel layout and dimensions

tested in this device. To test an 84, insert it into the standard five prong socket in the upper row. Set the three pole switch to its middle position in which it is neither in contact for synchronous nor non-synchronous tests. Snap the remaining toggle switch on, the one on the upper left. As soon as the 84 cathode is heated plug a standard four prong vibrator into the lower left hand socket. This is necessary to energize the transformer. The quality of the tube as a rectifier will be indicated by

the output voltage and current readings. The load on the tube can be varied by adjusting the secondary load resistor. The 6X5 and OZ4 tubes can both be tested in the octal socket in the same manner as the 84. In testing the OZ4 note that at first the output will be rather low and then jump to maximum a second or two later after ionization.

Quite often you may find a vibrator that will test perfect in this device and act very erratic when plugged back into the radio. In a case like this, suspect the secondary buffer condenser and usually you will not have to check any further. The buffer condenser is a very important part of the power pack design and when replacing one make certain that the capacity is the same as specified by the manufacturer. Overlooking this detail may ruin a good vibrator in short order.

No attempt has been made here to treat on the problems of vibrator adjustments and repairs. For those desiring this experience, a beginning can be made by accumulating a variety of used vibrators and with an instrument such as just described the action of each different type can be studied. Various adjustments should be made and the effects carefully noted. In general, maximum output with minimum or no sparking and not too violent or too little reed action is the desired adjustment. The action should also be smooth and constant and without erratic sputtering.

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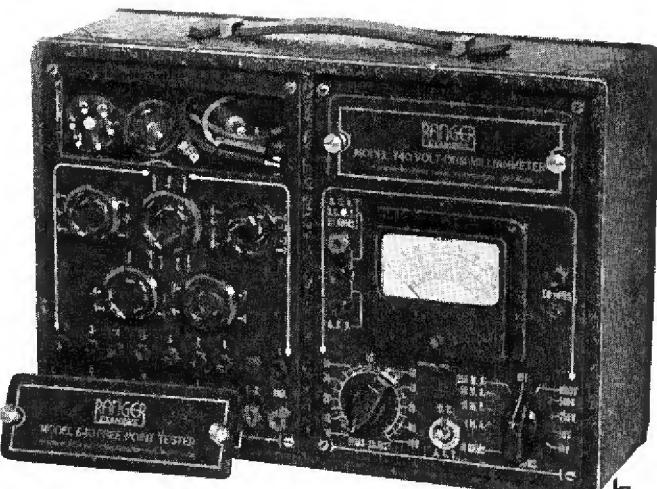


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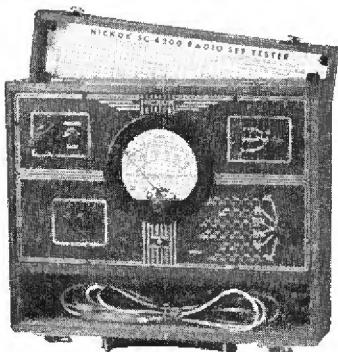
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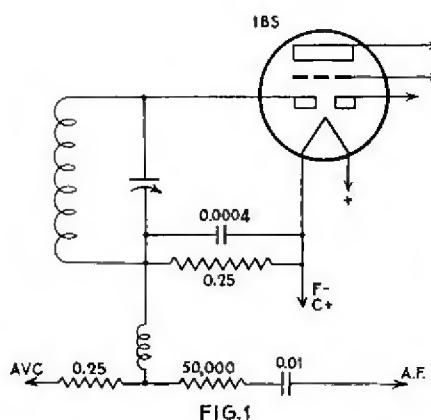
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# SHORT CUTS

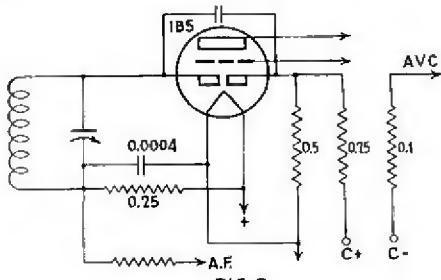


## AVC Delay in Battery Receivers

By H. D. Hooton

The radio service man whose territory includes a rural section is frequently called upon to remodel some of the 2-volt superhets that were sold three or four years ago. These sets may be modernized by the replacement of the 30 as diode detector-AVC tube with the later 1B5 and 1F6 types. There is, however, a great deal more to making this change than merely changing the socket and tube and replacing some connections; it must be remembered that the cathode of the 2-volt tube is the filament and the diode connection affects the detection and AVC in a manner that otherwise might pass unsuspected.

Due to the construction of the 2-volt diodes, whereby one diode encircles one end of the filament and the other diode the other end, the return of each furnishes a different operating condition. The diagram (Fig. 1) shows the usual arrangement that develops no AVC delay, the same diode being used for both detection and AVC purposes. In this circuit the AVC voltage is produced across the  $\frac{1}{4}$  megohm resistor, R<sub>1</sub>, which is the A.F. load resistor as well. At the terminus of the R.F. choke the AVC and A.F. voltages are separated.



the A.F. going through the 50,000 ohm resistor to the grid of the first A.F. tube and the AVC through the  $\frac{1}{4}$  meg resistor to the grids of the tubes under the AVC action. The disadvantage of

this particular circuit is due to the fact that the AVC action starts as soon as a signal is passed to the second detector and there most of the weaker signals will be practically wiped out altogether. On the short wave bands the tuning is likely to be extremely critical also.

Fig. 2 shows a diagram with an AVC delay of 2-volts. An examination of this circuit shows that the AVC and detection are separate, the A.F. or detector return being made to the positive filament terminal; the AVC return is made to the negative filament in the usual manner. However, since the detector is now 2-volts positive with respect to the AVC diode, no AVC action will take place until the signal strength exceeds 2-volts (the AVC diode cannot rectify so long as it is biased negative). This is probably the best arrangement for the average battery set as it operates very well on both the standard and short wave-lengths. The "C" battery, if one is actually

setting. When the gang is turned, however, the short turns up at a different position. This indicates the presence of metal filings or other bits of conductive material lodged between the plates.

It is usually difficult to find the filings as they are often microscopic in size. They could be blown out with compressed air but that is not always available.

A satisfactory remedy of this condition is to burn out the short. Connect a 1 mfd. or larger paper condenser in each side of the 110 volt line. Touch one leg to the stator while holding the other on the rotor plates. If the plates are rotated the charge of the condensers will be shorted by the metal filing. The flash that occurs will burn this particle and completely eliminate the trouble.

## P.M. Dynamics as Replacements

By V. A. West

The thousands of a.c.-d.c. and battery-operated radio sets that are now equipped with magnetic speakers offer the wide-awake service man an opportunity for a speaker replacement almost every time one of these sets is serviced. It has been found that practically every owner of a set of this type will buy one of the new permanent-magnet dynamic speakers if their superior reproducing qualities are demonstrated. However, there is considerably more to making the replacement than merely mounting the new speaker on the baffle-board and connecting its leads to the output of the set.

Frequently when one of these speakers is installed in a battery operated set the receiver may seem noisy and more interference is noticed than when the magnetic speaker was used. This is due to two characteristics of the dynamic speaker: First, the wide frequency response of the dynamic as compared to the magnetic. If the tuned circuits are out of alignment high-frequency noises and interference which were cut off by the limited response of the magnetic will be heard with the dynamic speaker. Second, the better sensitivity of the dynamic will bring noise and interference up to a higher level making these more noticeable.

It is found in many receivers that a high-pitch howl may be heard when the volume control is advanced nearly full-on. This is usually encountered in sets using pentode output tubes and in most cases is due to vibration of some part of the chassis, such as a loose tube shield or microphonic tube. It may

## Burning Out Shorted Gangs

By Robert Sharpe

Very often when servicing old sets one encounters a gang condenser which acts as though it is shorted at a given

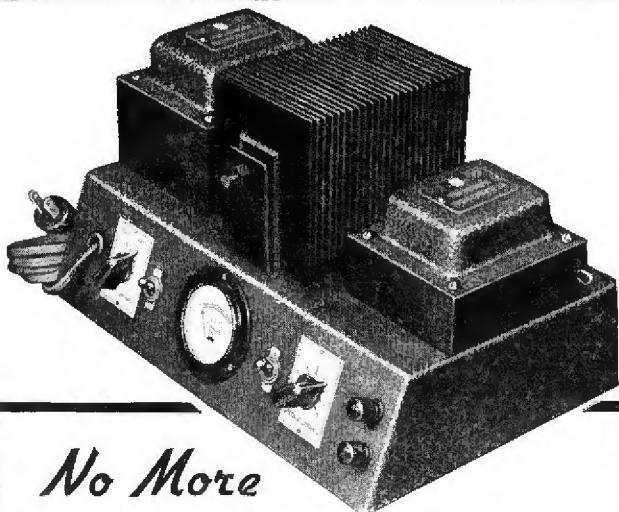
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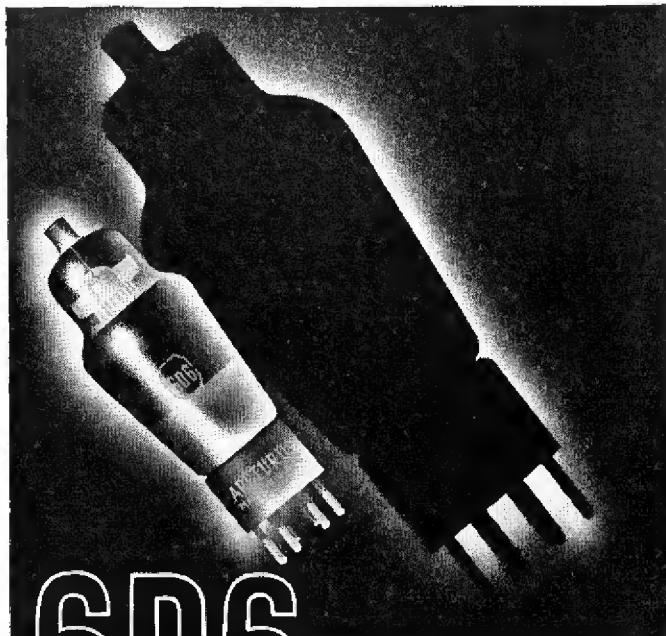
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# SHORT CUTS

also be caused by a poor output tube or an improper connection to the output transformer as outlined above. If the trouble still persists and a check reveals nothing wrong with the chassis, tubes or transformer, a mica condenser of about .006 mfd. capacity from plate of the output tube to the "B" minus will eliminate the howl. It is a good practice to always use rubber cushions under all replacement speakers as a precaution against vibration troubles.

The other troubles experienced with p.m. dynamics are exactly the same and are treated in the same manner as in the regular standard speaker. An exception to this is the loss of field strength due to weakening of the permanent magnets. The usual test for magnetic strength is by touching the poles with a screw driver or a pair of pliers. A good magnet will have a tenacious "pull" while a weak one may have but little attraction or none at all to the iron tool.

Weak magnets may be either replaced or remagnetized. The remagnetizing process is quite simple and takes only a few moments. Construct a magnetizing coil of about 300 turns of number 18 wire, remove the magnet from the speaker, slip it through the opening in

the coil and place an iron or steel "keeper" of about the same cross-section size as the magnet, across the poles. Connect the coil to the terminals of a 6-volt storage battery and, while the current is flowing, strike the magnet a few sharp blows with a hammer. Do not allow the current to flow for any length of time; complete saturation of most small magnets is accomplished in a few seconds.

If the pitch varies as if the dial was being tuned, it is an almost sure indication that the IF tube or tubes are in a state of local oscillation.

If the radio was guilty of oscillating when new, check the connections to the coils in the IF transformers. When the coils are wound in the same direction, the start of the primary should connect to the C-line, the finish to the control grid. In many manufactured IF transformers, the reverse connection of the primary will be found, as compared to the above. The latter connection tends to cause an amplifier to go into oscillation. However, where only one IF stage is employed, no trouble is usually experienced regardless of connection.

A 6G5 tube is a great aid in checking oscillation when connected as an ordinary tuning meter. When a tube in the set goes into oscillation, the tuning eye will nearly close, and as the degree of oscillation is reduced, the eye will open proportionately. Complete elimination of oscillation is not necessary to determine whether progress is being made as was necessary before the 6G5 was available.

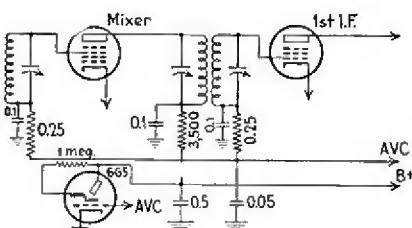
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(Continued on page 73)

## Eliminating IF Oscillation

By Gerald Evans

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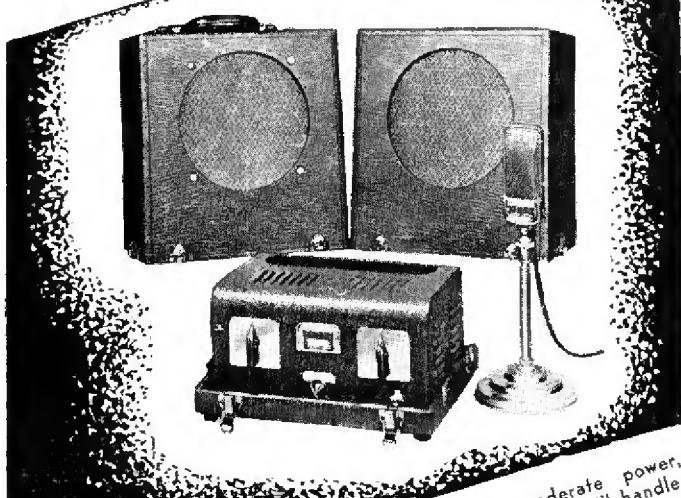
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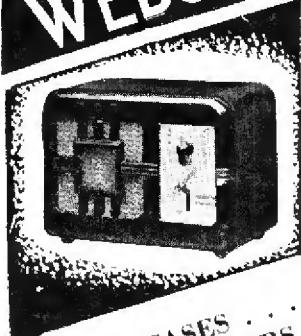
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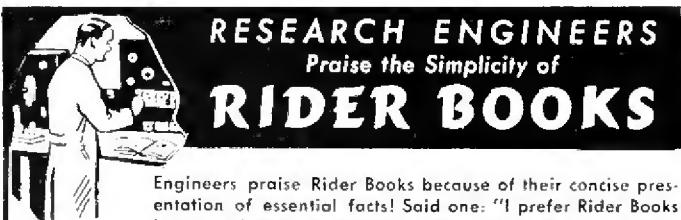
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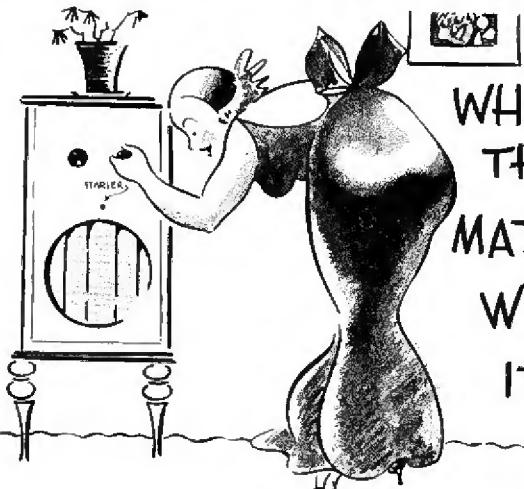
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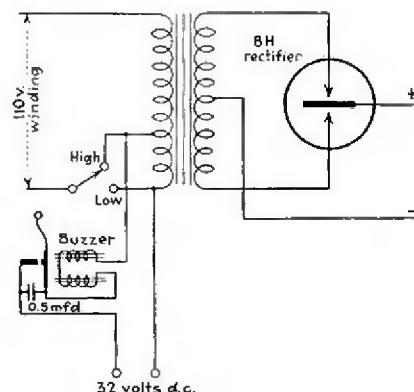
# SHORT CUTS

tector-oscillator and the succeeding IF stages must have their plate circuits isolated. Little trouble will be experienced in the way of feedback between the two IF plate circuits, but the plate return or B plus end of the 1st detector and the 2nd IF tubes will usually cause oscillation if some form of decoupling is not employed. A 3,500 ohm resistor between the B plus line and IF primary of the 1st det. tube, the plate end of the resistor being bypassed by a .1 mfd. condenser makes an excellent filter for this position. Another rule to follow is never to use a smaller condenser as a bypass where IF currents exist, than a .1 mfd. The main B plus line bypass condenser should not be smaller than .25 mfd., and in some cases .5 mfd. The stray IF currents in the plate circuit of the 2nd IF tube are hard to stop.

Many radio sets do not use a condenser to bypass the automatic volume control line. Where two IF stages follow the 1st det., this is one of the most valuable parts of the entire system in preventing oscillation. The condenser should not be larger than .05 mfd., otherwise the lag in the a.v.c. circuit will be too great.

the set operated normally. When the leads to the taps were wired in, however, the trouble reappeared and was at last located in the 0.03 mfd. condenser, C1. The best method of determining whether the trouble is due to this cause, is to remove the leads from the taps as mentioned above.

down to approximately 60 cycles. The contacts will also strike harder because of the weight of the clapper. A .5 mfd.



## Converting B Eliminator to 32 V.D.C.

By B. O. Bass

Eliminators with a high-low switch can easily be converted to deliver sufficient power from a 32 volt d.c. circuit. The Raytheon rectifier type unit is preferable because of low drain. Most of these eliminators have a tapped primary for high-low operation. The winding between the high and low taps proved to be just about the right amount for 32 volt operation.

Bring the two leads from the high-low switch out of the case. Connect one lead in series with a good quality door bell from which the bell has been removed. Leave the clapper arm intact as this will hold the vibrations

to 2 mfd. condenser across the contacts will reduce sparking.

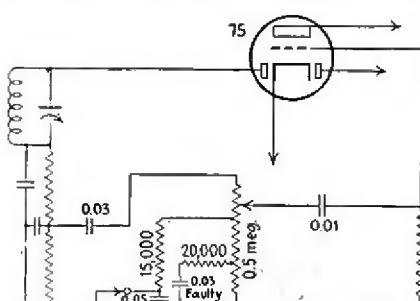
When the voltage is applied to the unit the buzzer will vibrate, breaking up the d.c. The pulses generated can then be stepped up and rectified in the eliminator. Enclose the buzzer in a metal case and wrap in heavy felt packing to reduce noise.

The voltage taps and filter system are left intact, no change is necessary in the eliminator other than bringing out the high-low taps.

## "Fading" in Tone-Compensator Circuits

By D. H. Henderson

Most of the volume controls used on "high-fidelity" radios are designed in such a manner that the low-frequency response is increased at low volume levels in order to preserve good fidelity of reproduction. A typical circuit is illustrated in Fig. 1. This type of control, with its associated by-pass



condensers, however, is sometimes the source of an almost impossible-to-find fading difficulty, especially if the condensers have become leaky.

In the circuit shown, the set was carefully checked for all of the usual causes of fading and finally the volume control was replaced. The condensers were left disconnected temporarily and

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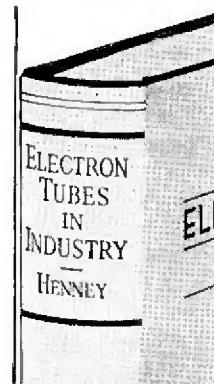
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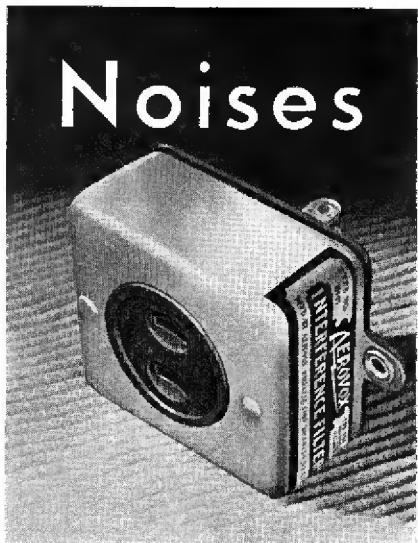
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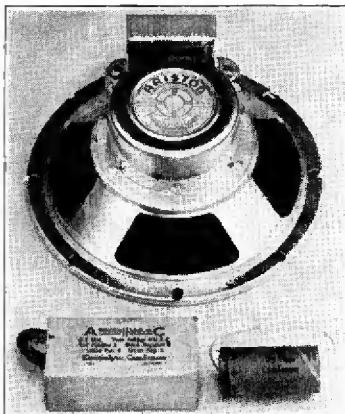
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On the model 65, check the right hand breather screen for ground. Spotting it with solder to the housing is sufficient to prevent interference from feeding in at this point.

### G.E. 63, 65

Intermittent on one band only. . . . Small insulating ceramic bushing on band switch broken. These bushings are held into switch by pressure and may be replaced easily.

### G.E. A-82, A-87

Weak . . . The fixed paddler (C-46) across the secondary of the second i.f. transformer should be 65 mmf. In a few instances this condenser has changed value sufficiently to throw this stage out of alignment. The trimmer (C-45) will not peak and all signals will be weak. Replace C-46 with another 65 mmf. capacitor.

### G.E. 86

Static but station cannot be tuned in. . . . Shorted condenser in sentry box under 6A8 tube. To replace, unsolder all leads on sentry box, remove front dial screws, lift up dial assembly, pull out band shaft, remove front section of sentry box from bottom.

### G.E. 155

Motorboating, normal operation for a few minutes then a thump followed by poor quality. . . . Look for poor ground connection of triple section condenser in corner close to 6L6 tubes. This connection is under a group of bypass condensers and is welded instead of soldered.

## SUCCESSFUL PERFORMANCE UNDER SEVERE CONDITIONS

## AMPERITE VELOCITY ACHIEVES UNIQUE RECORD IN ACTUAL USE

### SUCCESSFUL

in performance: "A magnificent instrument . . . Despite the climate here, results are marvelous and could not be bettered. I am sure", D. Hopkins, Raffles Hotel, Singapore.

### SUCCESSFUL

in design: "Your streamline mike is going over big with our trade. Congratulations on its fine design and performance", H. Ruben, Saugus, Mass.

### SUCCESSFUL

in construction: "We believe no other mike could take the punishment it has and still give such excellent reproduction", Johnston P.A. Service, Oneonta, N.Y.

### SUCCESSFUL

in sales: "The finest type microphone that I ever used . . . Please duplicate my order", Ridley's P.A. Systems, Inc., Tulsa, Okla.

### FEATURES:

1. Output increased 6 DB.
2. Triple shielded—entirely eliminating hum pickup.
3. Eliminates feedback troubles.
4. Excellent for close talking and distant pickup.
5. Acoustically designed to eliminate any possibility of cavity resonance.
6. Fitted with switch and cable clamp.

### NEWS!

MODELS RBHn (High Impedance); RBMn (200 ohms), with Cable Connector and Switch. **\$42.00 LIST**

NEW! Models RBSn, RSHn; streamline; slightly lower output and frequency range than above, with Switch only. **\$32.00 LIST**

Models RA1 (200 ohms); RAH (2000 ohms). Built to Amperite standards; No peaks. Flat response. Triple shielded. Shock absorber. Swivel bracket. **\$22.00 LIST**

Finishes: All microphones have the new standard Gunmetal Finish. Available in Chrome, extra, \$1.00 list.

FREE: WINDOW DECAL advertising your SOUND SERVICE. Four-color design, 5 1/4 x 9 1/4. Write for it now.

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

**AMPERITE**      *Velocity*      **MICROPHONE**

# CUT RATE OUTLETS

*... are places where  
National Union  
Radio Tubes  
AIN'T!*

A nice comfortable feeling! We mean that secure, clean cut feeling a National Union Service Specialist has when he installs N.U. tubes. He knows he's gotten a fair price for premium quality merchandise. He's rendered a genuine service to a set owner and he's not going to be embarrassed by having his customer see N.U. tubes advertised in some gyp joint down the street as a loss leader.

No, Sir! National Union has kept the market clean for you. National Union tubes are not listed in cut price mail order catalogs. You won't find them in price slashing chain stores or department stores.

Your profit margin is reasonable when you sell at established list prices and National Union has always felt that you are entitled to protection on it.

Remember these facts . . . the boys who are selling N.U. tubes are selling them with complete confidence . . . they're not running a chance of customer ill-will . . . because the set owner will never see N.U. tubes offered for sale with the heart cut out of the price!

This business of keeping the market clean for the Service Industry is only one of the reasons that N.U. is such an overwhelming favorite in the service field . . . Have you ever heard the entire National Union sales story? It will pay you handsome dividends to be tied up with N.U.

Find out why . . . send the coupon below . . . NOW.

**MEET US—at the NATIONAL RADIO PARTS TRADE SHOW—Booths 104-105, Hotel Stevens, Chicago, June 10, 11, 12, 13**

CLIP! MAIL!

NATIONAL UNION RADIO CORP. of N. Y.  
570 Lexington Avenue, New York, N. Y. RR-537

Who is the nearest N.U. distributor? I want to find out what N.U. can do for me.

Name \_\_\_\_\_

Street \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_



Hundreds of units to choose from.



Composition and wire-wound types.



Exact resistance and taper required.



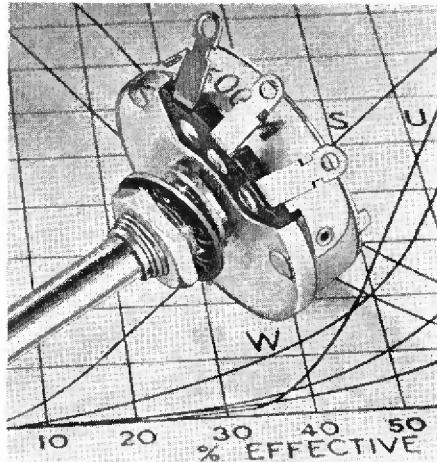
Correct shafts—no sawing or forcing.



Grid bias resistors supplied where needed.



Backed by most accurate and complete listing.



## Matched!

You save time, trouble and money when you insist on CLAROSTAT Exact Duplicate Controls. • These units are right electrically, mechanically, visually. • And that fussy customer is satisfied. • So ask for your copy of our Volume Control Guide.

**CLAROSTAT Manufacturing Co., Inc.**  
285-287 NORTH SIXTH STREET  
BROOKLYN, NEW YORK, U.S.A.  
• OFFICES IN PRINCIPAL CITIES •

**RADIART VIBRATORS**  
**ADVANTAGE No. 1**  
**RUGGED, PROTECTED,**  
**CLOSED FRAME**  
**CONSTRUCTION**  
**THE RADIART CORPORATION**  
CLEVELAND, OHIO



## ELECTROLYTIC REPLACEMENTS

### Paper Wound Condensers

Better filtration . . . years of service . . . every unit tested on 1500 V.



A new line of 600, 800 and 1000 volt condensers for P.A. and transmitting use. Complete line of midget and standard Electrolytics.

• Territories Open to Jobbers

**GIRARD-HOPKINS**

1437-23rd Ave., Oakland, Calif.

# TRICKS

## MAJESTIC 50

Fading . . . Check first audio transformer which is condenser-choke coupled.

## PHILCO 29

Fading after short period of operation . . . Check 350,000 ohm volume control, may vary up to several meg-ohms intermittently.

## PHILCO 37-10

Intermittent oscillation, motorboating . . . Replace 3200 ohm resistor mounted under oscillator coil. This resistor has greatly increased value. Remove r.f. unit and oscillator to get at resistor.

## PHILCO 212

Fading . . . Replace bypass connected to low side of volume control. This is a tone compensator condenser for increasing bass response at low volume.

## PHILCO 1937 MODELS

Distorted, fuzzy . . . Check the voice coil gap for steel filings. This is quite a frequent trouble. Filings get behind the heavy cardboard spacer and gradually work into the voice coil.

## R.C.A. VICTOR 143

Noisy, intermittent hum . . . replace 500 ohm cathode resistor on 76 tube.

## RCA D9-19

Weak, tuning eye will not function, second i.f. trimmer will not peak . . . This is a radio-phono combination, examination of the second i.f. transformer disclosed the trimmers soaked in oil that had dripped from the phono motor. Clean trimmers thoroughly and realign. Use oil sparingly on the motor.

## RCA T7-5

Distortion, high plate current in 6F6 output stage . . . Increase bias resistor to its normal value and distortion will disappear.

## ZENITH 6-M-90, 6-M-91, 7-M-91

Noisy, inoperative at times . . . Check the 600 k.c. padder and tuning condenser. The ground lead to these units often breaks loose. Resolder for a permanent cure.

## MCGRAW-HILL DIRECT MAIL LISTS

As business paper publishers for over fifty years, McGraw-Hill is uniquely equipped to offer complete, authoritative direct mail coverage of Industry's major markets. Extreme accuracy is maintained (guaranteed to 98%) and thorough, careful analysis of markets, complete classification of companies and personnel, etc., the widest possible selections are available. Send for handy reference folder "Hundreds of Thousands of Reasons Why" which describes how McGraw-Hill Lists are built and maintained.

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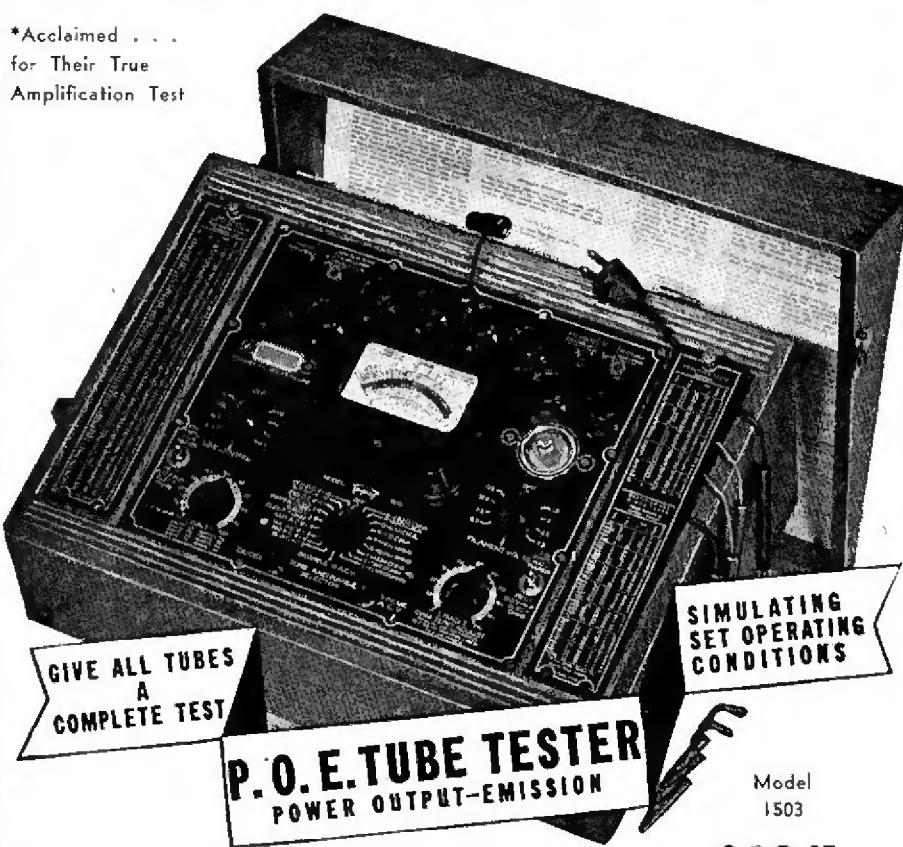
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Mill Supply Houses  
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Production and Maintenance  
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Radio Engineering & Design

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**DIRECT MAIL DIVISION . . .**  
**MCGRAW-HILL PUBLISHING CO.**  
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Complete Lists Covering Industry's Major Markets

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for Their True  
Amplification Test



DEALER PRICE \$46.67

### MADE IN THREE MODELS

Model 1502 P.O.E. Tube Tester has Shadow Graph Line Voltage Indicator. Neon Inter-Element Short Test is made while tube is hot. Complete in Quartered Oak Case. Dealer Price . . . . .

\$36.67

Model 1504 same as 1503 but also combines Free Point Tester in side panels. Dealer Price . . . . .

\$56.67

Model 1503 combines with the P.O.E. Tube Tester separate Universal Volt-Ohm-Milliammeter, Condenser Tester and Decibel Meter. In same Case as the Model 1502. Dealer Price . . . . .

\$46.67

SEE YOUR JOBBER  
WRITE FOR CATALOG

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

Please send me more information on —— Model 1502; —— Model 1503; —— Model 1504. I am also interested in ——

Name . . . . .

Address . . . . .

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



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## SEARCHLIGHT SECTION

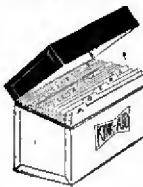
### 1937 TUBES Every Confidence and Unameter TUBE TESTER

can be brought up to date for 1937 octal bases and metal tubes by either adapters, kits, socket units or factory re-vamp jobs at very reasonable rates. From \$2.00 up. You cannot obtain proper test data for the new tubes from any source other than this factory. Send for FREE SERVICE FOLDER No. 152 which describes fully the requirements to bring every model up to date. Tell your friends who own one of the thousands of Confidence or Unameter testers.

**APPARATUS DESIGN CO.**  
Little Rock, Arkansas

Owned and operated by J. R. Williams & Sons

### TOUGH RADIO JOBS DON'T STUMP ME I SOLVE ALL MY PROBLEMS WITH KINK-AIDS



Sent postpaid for only..... \$1.95

FREE—Write for Bulletin RR-5 and sample cards.  
**AKRAD PRODUCTS COMPANY**  
362 Wooster Ave. Akron, Ohio

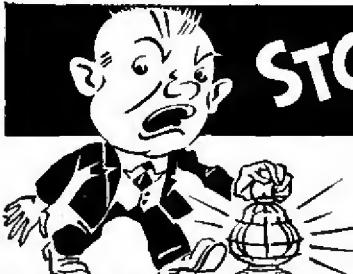
The Leading  
**RADIO**  
PARTS and EQUIPMENT DEALER  
in Buffalo, N. Y.  
is  
**DYMAC RADIO** 216 E. Genesee St.  
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**OVER 10,000 PARTS**  
FOR VACUUM CLEANERS AND  
WASHING MACHINES  
24-HOUR SERVICE!  
Attach this "Ad" to Your Inquiry and Receive  
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Manufacturers Factory Representatives  
**MIDWEST APPLIANCE PARTS CO.**  
2722 W. Division St. CHICAGO, ILL.

New "SEARCHLIGHT" Advertisements  
must be received by the 8th of the month to  
appear in the issue out the same month.

Address copy to the  
Departmental Advertising Staff  
Radio Retailing  
330 West 42d St., New York City



## STOP SEARCHING!

HERE IS YOUR  
"GUIDE"

### Don't Grope Around In The Dark... Send For This New Radio Buying Guide Today!

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 Radio Parts Catalog ever published . . . over 160 pages . . . bringing to you over 10,000 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 . . . ready for prompt shipment . . . at the right prices.

#### YOU NEED THIS BIG CATALOG!

It's FREE! Send this coupon NOW! Radolek endeavors to restrict circulation of the Profit Guide to those actively engaged in the Radio business. Please enclose your business card or letterhead.

Rely on Radolek for "Everything in Radio"

## SEARCHLIGHT SECTION

### EMPLOYMENT BUSINESS OPPORTUNITIES EQUIPMENT—Used or Resale

UNDISPLAYED—RATE PER WORD  
Positions Vacant and all other classifications, 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 1 on Box Numbers)

Proposals, 50 cents a line an insertion.

Box Numbers in care of our New York, Chicago or San Francisco offices count 10 words additional in undisplayed ads. Replies forwarded without extra charge.

Discount of 10% if one payment is made in advance for four consecutive insertions of undisplayed ads (not including proposals).

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1 inch ..... \$8.00

2 and 3 inches ..... 7.80 an inch

4 to 7 inches ..... 7.60 an inch

Other spaces and contract rates on request.

An advertising inch is measured vertically on one column, 3 columns—30 inches—to a page

### WANTED

Commissioned Distributor Salesmen  
Southwest Territory.

**HOWARD RADIO COMPANY**  
1735 Belmont Avenue, Chicago, Ill.



Low price—easy terms—10 days' examination on approval

Bought separately the books in this Library would cost you \$11. By using this coupon you need pay only \$2.00 in 10 days and \$2.00 monthly until the special price of \$10.00 is paid. In addition, we give you 10 days in which to examine the books. Send no money; simply fill in and mail the coupon now; let us know your answer after you have seen the books.

McGraw-Hill Book Co., Inc., 330 W. 42nd St., N. Y. C.

Send Electric Motor Repair Library for 10 days' examination on approval. In 10 days I will send \$2.00, plus few cents postage, and \$2.00 monthly for four months, or return books postpaid. (We pay postage on orders accompanied by remittance of first installment.)

Name .....

Address .....

City and State .....

Position .....

Company .....

R.R. 5-37

## RADOLEK

601 W. Randolph St., Dept. A-7, CHICAGO

Name .....

Address .....

Serviceman?  Dealer?  Experimenter?

# LETTERS

## Why Trades Glut Market

Many a radio dealer has enviously watched the rapidly changing display of used cars in an automobile lot and wished he could find as ready a market for his trade-ins. The used car business is a healthy and important part of the automobile business. The used radio is, more often than not, a disgraceful parasite dogging the heels of nearly every sale.

Why can't it hold its head up?

It could, if set manufacturers would let it!

Let's look at the automobile industry again. In today's market \$2,500 will buy an extremely fine car. Six hundred odd dollars are required to deliver to you the lowest price car. Now \$250 buys an extra fine radio, but does it take sixty dollars to buy the cheapest radio. You know the answer.

The six hundred dollar car possesses all the requisites of a good automobile in generous measure. Sixty odd dollars will buy a good table model radio.

Now automobile manufacturers could undoubtedly turn out a contraption on four wheels that would move along the road for, say, \$149.50. It would bear little resemblance in performance to our popular priced cars in the \$600 class. But does a \$14.95 radio act like a \$60 one?

The automobile industry will not stoop to this, but radio manufacturers have vied with each other to produce miserable little radios at an even more miserable price.

How many used cars are sold at a price higher than the delivery price of the low priced new cars? A few, of course, but the percentage is low.

That is the answer. It is next to impossible to persuade John Doe to pay more for a used machine than a new one, no matter what the difference in the original prices.

If radio manufacturers would stop making cheap new sets, the whole situation would change. Buyers who could not afford a good new machine would buy a

reconditioned used set at a fair price and get more radio for their money than they do in a cheap new machine. Sales of new sets would be stimulated as dealers could afford to give better allowances for sets still of salable age.

As a serviceman and dealer I believe that such a move on the part of manufacturers would do more for the industry than anything else. Extra discounts to allow for trade-ins won't help. They merely encourage price-cutting on no trade-in sales.

Would be glad to hear what others think on this subject.

LAKE GEORGE, N. Y.

R. B. LAWTON

## Distributor Headwork

Lots of radio dealers have a very large stock of used radios. These are becoming a problem to move, as are used cars in the automobile business. A plan that is working very well in this territory, and which we have suggested to a number of our dealers, is as follows:

Say you have a radio that you want \$10 for. Advertise it for \$10.49, 49 cents down and \$1 per week thereafter. Be careful who you sell it to and also take a mortgage contract.

It is surprising the number of used radios that can be sold. You will also find that these customers usually buy a better set as soon as their present contract is completed.

The idea of this is to make the down-payment so low that anyone has it in their pocket and then to make the payments low, too. Some of our friends have closed out their entire stock of used radios.

CHANUTE, KANSAS G. A. PHILLIPS  
*The Phillips Electrical Service*

## Surprise Package Surprises

Certainly want to thank you for the welcome surprise package of a window streamer inclosed as an insert with the

April issue of *Radio Retailing*.

Thank heavens there is somebody at last trying to help us dealers promote the stars on the radio programs.

We certainly would appreciate your sending us more of these fine window streamers for our use in the future. It is now in our window.

NAZARETH, PENNA. C. A. ANGLEMIRE

## Y In H?

Regarding your comments on the letter of Mr. Carl J. Grey in the April issue of *Radio Retailing*, I would like to know why in \_\_\_\_\_ you believe the time's not ripe for legislation concerning the problem of radio interference?

It is the writer's personal opinion that the bill introduced in the Pennsylvania Legislature is quite a practical one. According to my understanding it differs from most of the so-called local ordinances in that it merely provides that electrical appliances sold in the future be quiet and does not make any attempt to force present owners of such equipment to filter or rebuild it.

We know of an instance where a large manufacturer of electrical business equipment shipped several carloads to a concern in Sweden. Upon examination there it was refused on the grounds that it created radio disturbance. It was illegal to sell it in that country.

SHINGLEHOUSE, PENNA. IRVING J. TONER  
*Toner's Radio Service*

Experience leads us to believe that until the average consumer is ready for expensive flag-waving in behalf of a cause, legislation like this is extremely difficult, if not impossible, to enforce. We believe, too, that the average American manufacturer will go farther toward improvement of his product if convinced that the product will then sell more readily, while some are just "orioney" enough to buck legislation. So we've continued to approach the problem from this angle. We feel that legislation should be a last resort.

## PEEK, POSES, PASTES

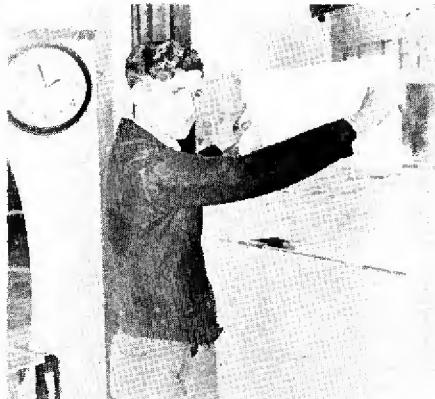
Re-enacted ala *Time*, here's what happened when a typical dealer (Bob Young of Atlantic, Iowa) found *Radio Retailing's* April insert on broadcasting



Surprise . . .



Pleasure . . .



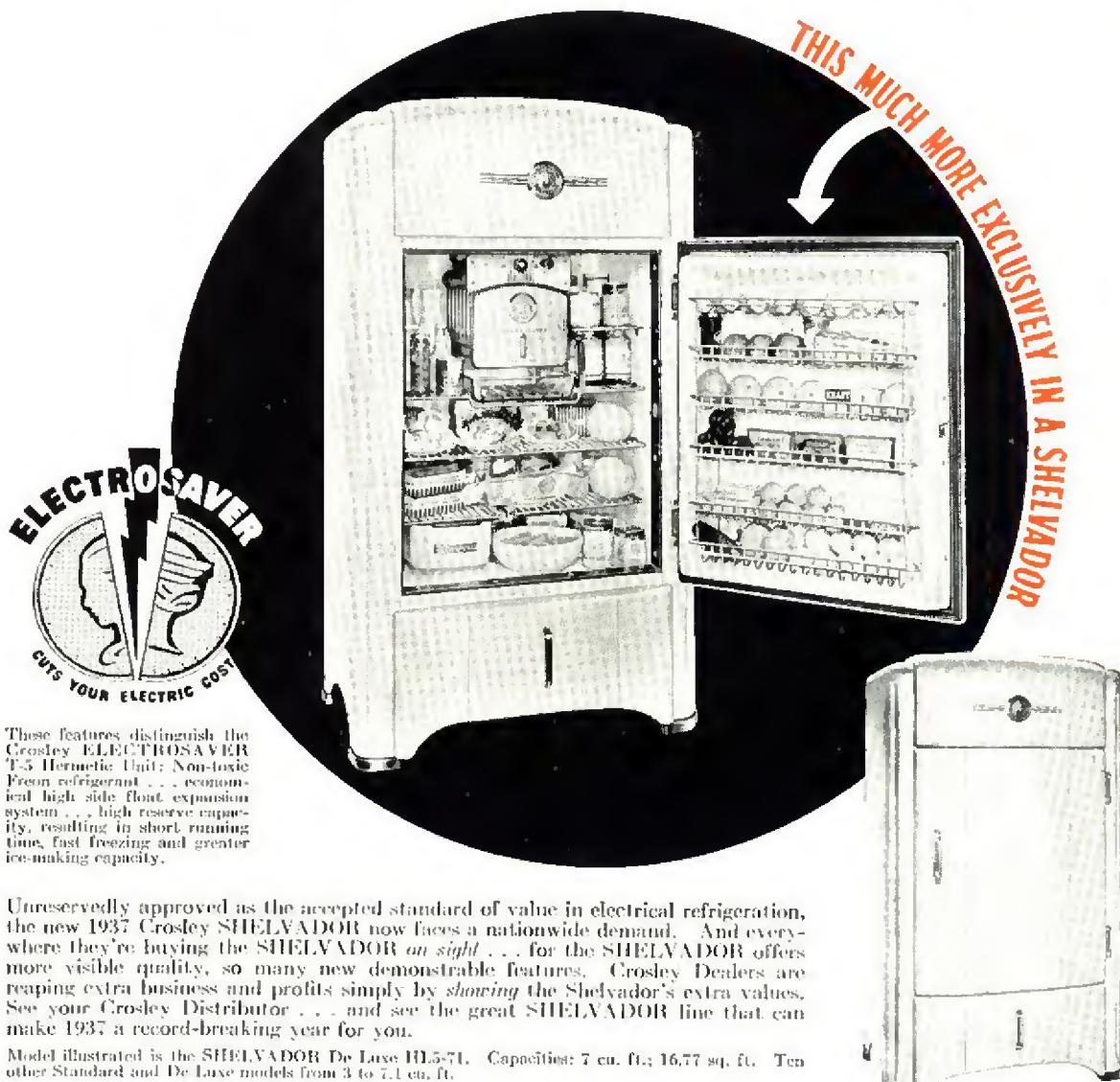
Use . . .

# APPROVED! ACCEPTED! DEMANDED!

*The Outstanding "Buy" in Electric Refrigeration*

## THE NEW 1937 CROSLEY SHELVADOR

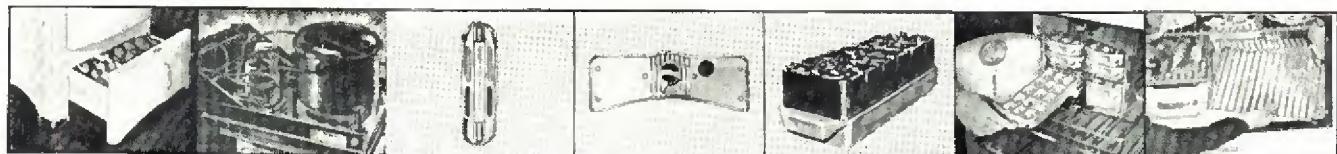
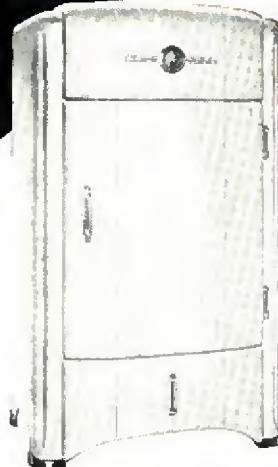
MORE BEAUTY • MORE ECONOMY • MORE CONVENIENCE • MORE USABLE SPACE • MORE ACCESSIBILITY



These features distinguish the Crosley ELECTRO SAVER T-3 Hermetic Unit: Non-toxic Freon refrigerant . . . economical high side float expansion system . . . high reserve capacity, resulting in short running time, fast freezing and greater ice-making capacity.

Unreservedly approved as the accepted standard of value in electrical refrigeration, the new 1937 Crosley SHELVADOR now faces a nationwide demand. And everywhere they're buying the SHELVADOR *on sight* . . . for the SHELVADOR offers more visible quality, so many new demonstrable features. Crosley Dealers are reaping extra business and profits simply by *showing* the Shelvador's extra values. See your Crosley Distributor . . . and see the great SHELVADOR line that can make 1937 a record-breaking year for you.

Model illustrated is the SHELVADOR De Luxe HL5-7L. Capacity: 7 cu. ft.; 16.77 sq. ft. Ten other Standard and De Luxe models from 3 to 7.1 cu. ft.



THE CROSLEY RADIO CORPORATION - CINCINNATI POWEL CROSLEY, Jr., Pres.

Home of "the Nation's Station"—WLW—500,000 Watts—70 on your dial



CROSLEY SHELVADOR  
ELECTRIC REFRIGERATORS

# A GREAT OPPORTUNITY FOR SALES AND PROFITS

*with General Electric Battery Radio*

**IN RURAL MARKETS**



Model FB-77

Model FB-52

## 2-VOLT "AIR CELL" MODELS 6-VOLT SINGLE BATTERY MODELS

**SENSATIONAL FEATURES OF THE 7-TUBE LINE**  
Color Tuning and Silent Tuning with Push-button Control • Tuning Range: 540 to 18,000 kc. • New! "Alnico" Permanent-magnet Dynamic Speaker • Sliding-rule Tuning Scale • Illuminated Dial • Automatic Band Indicator • Super Class "B" Amplification • 2 stages of Intermediate Frequency Amplification • 3-point Tone Control • Automatic Volume Control • Wave Trap • Beautiful Console and Table Cabinets.

**BIG FEATURES OF THE 5-TUBE LINE**  
Greater Distance-getting Ability • Tuning Range: 540 to 1600 kc. and 5800 to 18,000 kc. • Super-sensitive Magnetic Speaker • Sliding-rule Tuning Scale • 2 stages of Intermediate Frequency Amplification • Automatic Volume Control • 2-point Tone Control • Low Battery Drain • Wave Trap • Beautiful Console and Table Cabinets.

### GENERAL ELECTRIC POWER ADAPTER

This compact unit enables the owner of a 2-volt G-E Battery Radio to convert his particular model over to a single 6-volt battery-operated receiver.

Radio prospects beyond reach of the "High Lines" present a vast, rich market for the sale of General Electric Battery Radios. There are probably several thousand prospects in the farms, country homes, camps, roadside stands, boats and yachts, located right in your own trading area. GENERAL ELECTRIC gives you a fast-moving BATTERY RADIO line, having a long list of sensational sales features.... a money-making sales-stimulation plan on wind-driven and motor-driven charging equipment . . . an intensive sales promotion and merchandising program.

Your G-E Radio Distributor will gladly give you full details. Ask for the G-E BATTERY RADIO SALES PLAN—today.



**GENERAL  
ELECTRIC**  
*Battery Radio*