



JAN 1938  
PERIODICAL DIVISION

# RADIO TODAY



RECIPE FOR HAPPINESS — Personal radios for  
Mother, Child, and All the Radio Family  
DECEMBER

*"Take it from me  
G-E TOUCH TUNING is Tops"*  
IT'S SWEEPING THE COUNTRY AT POPULAR PRICES



*Press a button  
that's all*

**GENERAL ELECTRIC TOUCH TUNING MODEL F-96**

General Electric Touch Tuning—the highest development in automatic tuning—is not only sensational in performance but sensational in price. New G-E Touch Tuning series includes Model F-96—9 tubes with 7 Touch Tuning buttons; Model F-107—10 tubes with 16 Touch Tuning buttons; Model F-135—13 tubes with 16 Touch Tuning buttons; and radio-phonograph combination Model F-109—10 tubes with 16 Touch Tuning buttons.

The General Electric Radio advertising and merchandising plan is geared to speed up your sales. And of course, each model carries a money profit worth working for.

**ALL OF THEM GREAT HOLIDAY NUMBERS**



*The  
New  
1938*



**GENERAL ELECTRIC**

**RADIO**

FOR REPLACEMENTS SPECIFY GENERAL ELECTRIC PRE-TESTED TUBES

APPLIANCE AND MERCHANDISE DEPARTMENT, GENERAL ELECTRIC CO., BRIDGEPORT, CONN.

# Andrea is back and **FIRST AGAIN!**

With the traditional Andrea quality  
and INSTANTANEOUS  
ELECTRIC Push-a-Button TUNING

**\$34<sup>95</sup>**  
LIST

with full discount

Perfected button tuning, at a popular  
price — with **FULL DEALER PROFIT**



5-tube super, two bands,  
AC operation, cabinet finished  
in light walnut, 14½" long,  
6½" deep, 8¾" high.

**H**ERE'S the set the trade has been looking for! Instantaneous electric push-a-button tuning at a moderate price, yet with the quality that stays sold. Service expense has been engineered out of this design. One look at the set will convince you it's built to guarantee consumer satisfaction.

For over 21 years the Andrea name has been associated with quality receivers and advanced design. This set is typical of the quality and designs that have made Andrea Radio world-renowned.

What's more, Andrea 6-D-5 model is geared to fast sales and extra profits, without sacrifice of the dependability that builds customer confidence.

Andrea is "going to town" again! Andrea 6-D-5 is only one outstanding model in the line. Here's a "natural" that combines prestige and profit — "a natural" you can't afford to pass up.



The experience of Mr. Frank Andrea is among the longest and richest in all radio, dating back to the early pioneer days.

As early as 1915 Mr. Andrea was recognized as an outstanding radio authority, when he was building precision equipment for the United States Army and Navy. All the radio trade knows Frank Andrea as the first manufacturer of Neutrodyne receivers.

During recent years Mr. Andrea has been engaged in the manufacture of receiving sets for the export trade, where flawless manufacture and trouble-proof design are of paramount importance.

Now Mr. Andrea again enters the domestic field with receivers designed to lead the industry.

Jobbers and dealers, don't delay. Phone, wire or write for full details today. Address: ANDREA RADIO CORP., 4820 — 48th Ave., Woodside, Long Island, N. Y.

OVERSEAS DISTRIBUTORS: Andrea Overseas Models include a complete range of AC, AC-DC, and battery models for all tuning bands, all voltages, and all climates. For trade information, address Export Division, Andrea Radio Corp., (Cable address, RADI.ANDREA, Woodside, N.Y.)

# Andrea Radio

# TAKE THE WORD OF SOME

"I consider Norge by far the outstanding refrigerator both from the selling and the user viewpoint. The Norge Rollator Compressor is the greatest sales feature it has been my good fortune to use in my entire selling experience."

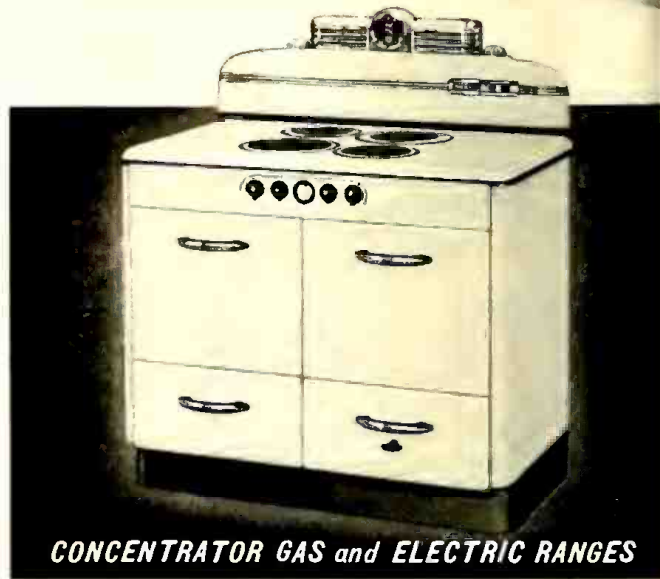
"Selling good merchandise and giving service is the foundation of any successful business. My partner and I decided to make Norge our leading line because we were thoroughly sold on Norge products. We have been very successful."

"We maintain our own service department in which we see that not a nickel is ever charged to our customers for repair or upkeep of Norge products. In three years time we find the cost of maintenance to be exactly \$12.00."

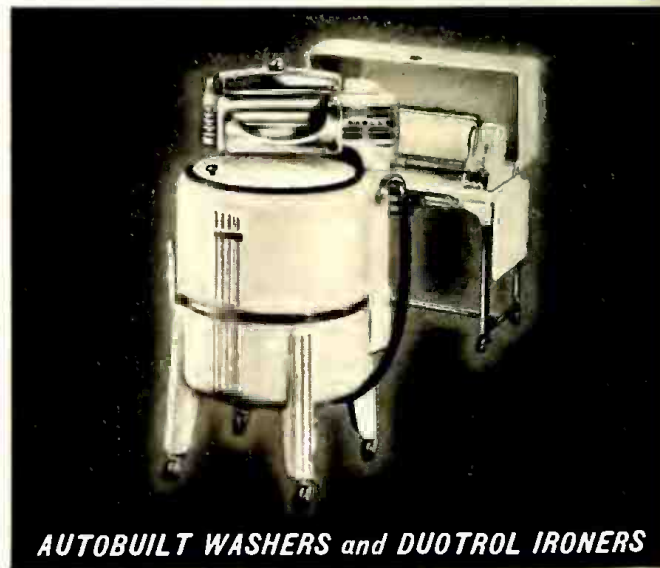


**ROLLATOR REFRIGERATION**

Rollator Refrigeration protected by 10-Year Warranty on the three-moving-ports Rollator Compression Unit.



**CONCENTRATOR GAS and ELECTRIC RANGES**



**AUTOBUILT WASHERS and DUOTROL IRONERS**

# TYPICAL NORGE DEALERS\*

"I not only sell Norge, but I use Norge products in my home—everything from the Low-Temp refrigerator to the range, washer, ironer and oil burner. I always sell prospects the idea of a Norge-equipped home."

"The Norge refrigerator power plant tops all others in performance and service. The refrigerator is a beautiful addition to any home. The outlook for business in 1938 is very good in this district."

"It has been a pleasure to sell Norge equipment. After a thorough study of all refrigerators in this market, I feel I made a very wise move to sell Norge exclusively. The Rollator puts all other refrigerators in the shade."

\*NAMES ON REQUEST

## NORGE erases "Red Ink" Months with ... BETTER PRODUCTS—MORE PROFITS—HIGHER TURNOVER

Every month is a profit month for appliance dealers who handle the full Norge line! There is always sales activity in Norge Rollator Refrigeration, Concentrator Gas or Electric Ranges, Auto-built Washers, Duotrol Ironers, and package heating and commercial refrigeration equipment. 1938 products—greatest in Norge history—give dealers dramatic sales features that *prove* Norge superiority in convincing showroom demonstrations.

Get full details about the valuable franchise Norge is offering now to aggressive dealers who want to make money the year around as Norge Master Merchants. Product turnover is *high*—dealer and salesman turnover is *low* in the Norge picture. Liberal finance plans and a smashing new advertising and sales promotion program back the man who sells Norge to the limit. You owe it to yourself to get the whole story *now*.

NORGE DIVISION Borg-Warner Corporation, Detroit, Michigan

# NORGE

### FREE TO APPLIANCE DEALERS!

A full volume on appliance selling and promotion. One of the greatest dealer helps ever produced. Describes a complete plan of store operation. Tells how to get the most out of advertising and sales promotion. Reveals for the first time a new tested method of visual selling. No matter what products you sell, this book will show you how to make more money in the appliance business.

*Mail Today!*

NORGE DIVISION Borg-Warner Corporation,  
660 East Woodbridge Street, Detroit, Michigan.

I would like to receive a copy of your new book for appliance dealers.

NAME .....

ADDRESS .....

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

TP-2



# A NEW INDUSTRY

Read the Amazing  
of Scientists Who  
Frontier of Wireless

**R**ADIOFONE CORP. manufactures wireless intercommunication systems to meet every requirement. They are designed for operation on straight AC. The multiple, selective, wireless, AC Radiofone is the ONLY system of its kind now on the market. It operates merely by plugging each station into an AC outlet. It consists of 1 Master station (model MM-O) and 5 remote stations (models MM-1, MM-2, etc.) for use on 110-120 v. AC, 50-60 cycle power lines. The Master can communicate with remote stations at will, selectively, while remote stations can communicate with the Master station.

All units are equipped with automatic loud speaker cut-off earphones for private conversations. A separate control serves as a silencer when not in use so that line noises cannot be heard. Radiofones are so constructed that they will communicate from room to room, floor to floor, and building to building in the same general plant.

Absolutely no bridging or condensers are needed for the operation of Radiofones regardless as to the number of

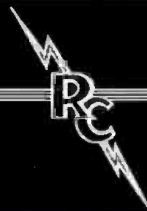


circuits or phases existing in any building. Radiofones operating on straight DC or other specialized wireless communication systems for operation on 25 cycle current or on 220-240 volts will be supplied where required. A 2-station wireless AC Radiofone system is also available wherein each station is a Master unit.

Signalling, alarm and remote control systems all utilizing carrier frequencies developed to meet individual and industrial needs.

**RADIOFONE CORPORATION**

136 WEST 22nd STREET  
NEW YORK, N. Y.



Cable Address  
FONERADIO, NEW YORK

# IS BORN !!!

## Story of This Group Crossed the Last Communication . . .



**N**OTHING in years has fired the imagination and enthusiasm of laymen and merchandisers more than the possibility of a foolproof method of instantaneous wireless intercommunication. But, unfortunately, many concerns in an endeavor to capitalize this enthusiasm and need, began the manufacture of systems which failed to meet either the engineering requirements or those of modern business.

Intercommunication systems fell into the category of "unproven merchandise," yet the need for a practical, foolproof wireless intercommunication method continued to exist.

From the beginning Intercommunication has been a "step child," a by-product of **MANUFACTURERS** who have made them merely to increase their volume without consideration of the special characteristics and requirements of the art. Such practices brought Intercommunication systems into disrepute.

But today, after a long period of exhaustive research and experiments and the expenditure of thousands of dollars

for these purposes, a group of Electronic and Sound Scientists announce the **BIRTH OF A NEW INDUSTRY!** It is founded upon proven principles as distinct and exact in their science and application as those in any industry serving the specialized requirements of modern business. **Radiofone Corporation** has been organized for permanent existence. It is a manufacturing and merchandising enterprise dedicated to the principle of manufacturing wireless devices to meet the specialized requirements of Intercommunication and to merchandising these products thru accepted, ethical channels.

The opportunities in this New Industry, as visualized in the minds of our Founders, are practically limitless. The genius of scientists from Europe and America has been pooled to make possible at last, the finest wireless Intercommunicating systems yet developed . . . systems which have attained such engineering perfection that they may be classed as "**PACKAGE MERCHANDISE.**"

In this complex, modern age where time and speed are always of the essence, the social and industrial applications of wireless intercommunication in homes, schools, hospitals, factories, offices, etc., make the use of **Radiofone** wireless communication systems indispensable.

Inquiries are invited from responsible merchants who are willing to cast off the yoke of skepticism and are ready to grasp the opportunities for profit in this New Industry. Your request for additional detailed information will receive our prompt attention.



View of part of the **Radiofone Corp. Laboratory** where thousands of dollars worth of modern equipment is available to check all components and every step in the manufacture of **Rodifones** to assure perfection in the finished product. Here **Electronic Scientists** are constantly evolving new principles and methods to advance the art.



# A NEW INDUSTRY IS BORN!!!

## Read the Amazing Story of This Group of Scientists Who Crossed the Last Frontier of Wireless Communication . . .

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**RADIOFONE CORPORATION**

136 WEST 22nd STREET  
NEW YORK, N. Y.



Cable Address  
**FONERADIO, NEW YORK**





**NO SQUAT  
NO STOOP  
NO SQUINT**



**... AND THERE'S  
NO STOPPING  
PHILCO  
CHRISTMAS SALES!**

**A**NYWHERE . . . everywhere . . . you hear that Philco selling slogan! "No Squat . . . No Stoop . . . No Squint" has become as much a part of American life as "Stop . . . Look . . . and Listen!"

That's why there's no stopping Philco's onward march. That's why all America is demanding a radio that is 1938 in design as well as in date! That's why the

first thing radio buyers want to see is the Philco that banishes squatting, stooping and squinting. And that's the radio they are insisting on seeing, hearing and buying!

Christmas is almost here . . . the last minute rush is getting under way! And once more, that buying momentum is headed toward Philco . . . leader of the radio industry for eight years in a row!

**PHILCO RADIO & TELEVISION CORPORATION**

Staff—

DARRELL BARTEE  
 J. E. NEARY, JR.  
 M. H. NEWTON  
 B. V. SPINETTA  
 VINTON K. ULRICH

LEE ROBINSON  
 Sales Manager

# RADIO TODAY

ORESTES H. CALDWELL  
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## SETS THIRD QUARTER STILL UP; EXPECT 1937 TOTAL 7,800,000

★ According to information received by receiver licensees, radio-set production and sales for the third quarter of 1937 was 2,604,000 units, an increase of 274,000 sets above the same period last year.

For the first nine months of 1937, receiver production approximated 6,000,000 units—three-quarters of a million sets ahead of the corresponding 1936 period, representing an increase of about 14 per cent.

Fourth-quarter factory sales are expected to fall considerably behind 1936 figures, reports from some plants indicating a recession of 35 per cent or more in October and November. If the fourth quarter for 1937 runs 35 per cent behind the figure for the huge fourth quarter of 1936 (2,932,890 sets), 1937 may close with a total 12-months' sale of 7,800,000 sets.

Unit prices of sets for the third quarter showed a marked increase, amounting to a rise of 8 to 10 per cent.

Following is a summary of factory sales of radio receivers by quarters of 1936 and 1937:

Year	Quarter	Sets
1936	1st quarter	1,287,462
	2nd quarter	1,697,444
	3rd quarter	2,330,959
	4th quarter	2,932,890
	Total	8,248,755
1937	1st quarter	1,579,136
	2nd quarter	1,769,499
	3rd quarter	2,604,000

## CHICAGO PARTS TRADE SHOW, JUNE 8-11

★ The 1938 National Radio Parts Trade Show, to be held at the Stevens Hotel, in Chicago, June 8 to 11, inclusive, will blossom forth with more color and utility than any of its predecessors, according to an announcement from Ken Hathaway, Managing Director of the Show.

Officers of Radio Parts Manufac-

turers National Trade Show elected at the recent annual meeting in Chicago are: S. N. Shure, President; A. A. Berard, Vice-President, and Arthur Moss, Secretary-Treasurer.

The Board of Directors, elected at the annual meeting of Member-Exhibitors during the Trade Show last June, consists of Arthur A. Berard of Ward-Leonard Electric Company, Arthur Moss of Solar Manufacturing Company, H. E. Osmun of Centralab and S. N. Shure of Shure Brothers.

## TUBE SALES DROP, THO 9 MO. OF '37, 9.4% AHEAD OF '36

★ Twenty-seven million radio tubes were sold during the third quarter (July-September) of 1937, a decrease of about 7 per cent below the sales for the corresponding period of 1936.

During the first nine months of 1937, tube sales totaled 73,777,000, an increase of 9.4 per cent over the same period of 1936.

Average unit price of tubes sold

during the third quarter showed a slight falling off, compared with unit prices for the preceding quarters.

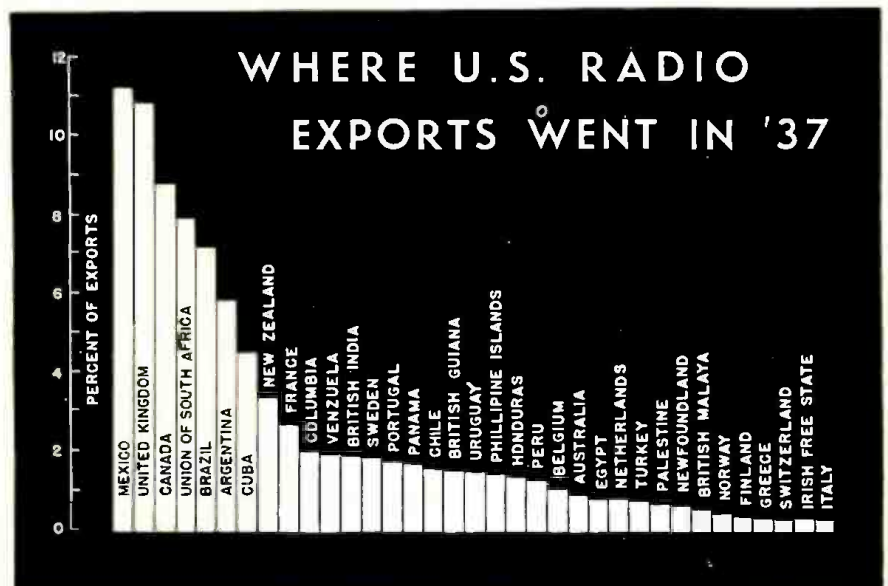
Tube sales by quarters follow:

Year	Quarter	Tubes	Value
1936	Jan.-March	18,475,077	\$ 6,066,462
	April-June	19,971,773	6,595,378
	July-Sept.	28,965,512	9,434,460
	Oct.-Dec.	30,891,846	9,846,100
	Total	98,304,208	\$31,942,400
1937	Jan.-March	22,393,997	\$ 7,170,900
	April-June	24,389,213	8,125,684
	July-Sept.	26,994,000	8,672,000

## WORK ON TRADE-IN ALLOWANCES

★ Radio dealers in the Metropolitan New York area have annexed themselves a kind of national leadership in the matter of radio trade-in allowances. Sincerely anxious to give the Fair Trade laws a real meaning, they have taken steps to settle this most troublesome aspect of actual enforcement.

The center of the effort is the Electrical Appliance Dealers Association of Brooklyn, a powerful organization which has undertaken to compile a "Blue Book" of old-radio values. The





John Erwood, of Webster-Chicago, genial apostle of modern sound.

Brooklyn dealers joined forces with similar organizations from Manhattan, Bronx, Westchester and Queens, and called in attorneys of distributors and manufacturers. William H. Ingersoll, a top-rank national authority on fair trade practices, agreed to take part. Mr. Ingersoll was organizer of the American Fair Trade League and, as president of the New York Advertising Club, appointed the first Better Business Bureau. Active also in the work is the attorney, Creighton Clarke.



F. A. D. Andrea, radio pioneer, gets a fine welcome in the domestic market for Andrea Corp.'s Constant Fidelity.

Commenting on the "Blue Book" action, Mr. Ingersoll told RADIO TODAY that "it carries out the spirit and purpose of the Fair Trade Acts, and since we are considering all the legal technicalities, I believe that it can be made binding and enforceable, and that it will be accepted by all the wholesome interests in the trade."

Since the Brooklyn movement has flagged the attention of many other U. S. dealer organizations, there has appeared the hope that all retailers concerned may be bound together in a National Association of Retail Radio and Appliance Dealers.

### BUSINESS OVERHEADS, 14.9% TO 56.6%

★ The wide range in operating overheads involved in various lines of business, some of which handle radio, was commented on by Frank W. Greusel, Milwaukee distributor, speaking before a group of radio and electrical dealers. The figures quoted by Mr. Greusel are shown below, and should be compared with the average overhead of 30 per cent for radio retail businesses, obtained by RADIO TODAY in its recent survey of selling costs. (See RADIO TODAY, May, 1937).

Department Stores .....	34.2%
Exclusive Electrical Dealers.....	30.3%
Automotive Parts Dealers.....	29.5%
Retail Furniture Stores.....	32.0%
Retail Hardware Stores.....	24.3%
Retail Druggists .....	36.8%
Automobile Garages .....	38.7%
Automobile Agencies .....	13.9%
Country General Stores.....	14.9%
Storage-Battery Service Stations	34.4%
Lumber and Bldg. Material	
Dealers .....	21.6%
Tire Stores .....	36.3%
Retail Jewelry Stores .....	40.9%
Farm Implement Dealers.....	18.4%
Music and Piano Stores.....	40.0%
Sporting Goods Stores .....	29.1%
Electrical Contractors .....	40.0%
Undertakers .....	56.6%

### DOWN TO THE SEA

★ Radio has found it convenient to cruise again. The industry had just had a period during which the seagoing idea was temporarily checked out in the interests of "general purity," but some persons in the trade just aren't home-bodies.

When it decides to, radio charters a mean ship. General Electric radio division of New York and New Jersey has planned a 14-day cruise for 600 dealers and their wives early next year. The guests will make Miami, Havana, Dutch West Indies, Venezuela and Caracas.

The frolic director for the RCA jobbers, Bruno-New York, has set Jan. 12 for the sailing date for 200 dealers who will "be millionaires for 9 days" at Miami Beach.

On Dec. 31, a special Philco train



S. W. Muldowny, chairman of National Union, with Senator Bob La Follette of Wisconsin, on their recent European tour.

will leave New York with the dealer organization (and wives) of the Philco Radio & Television Corp. of New York, headed for a 3-day convention at Atlantic City.

The return to radio cruises got a lively reaction from Pilot Radio Corp. "We offer you an 11-month cruise to each and every one of the 97 countries around the world. Keep your store open only one month of the year," chuckled Pilot, in a playful spirit of *reductio ad absurdum!*



Stancor's J. J. Kahn is in the midst of a big expansion at Chicago factory.



Henry C. Bonfig, new vice-president of RCA Mfg. Co., heading commercial activities in all fields.

### J. M. SKINNER PRESENTS RMA TRADE-PRACTICE RECOMMENDATIONS AT FTC HEARING

★ Appearing at the Dec. 7 Federal Trade Commission hearing, as chairman of the RMA committee on trade-practice rules, James M. Skinner of Philadelphia, explained the radio industry's objections to the form of the radio-trade rules recently tendered by the FTC, and offered a revised draft of rules which represent, he said, views unanimously adopted by radio-industry members.

"We are happy to enter into a trade-practice conference to reach a common understanding as to accepted merchandising practice," said Mr. Skinner, ". . . and to agree to such rules of conduct as are to the advantage of both the industry and public." The differences between the Commission-rewritten rules and the RMA version, explained Mr. Skinner "are mostly differences in verbiage and not in principle."

### Dummy tubes; spiffs

The new RMA version presented by Mr. Skinner at the Dec. 7 FTC hearing resubmits the RMA text of Feb. 9, 1937, plus two additional rules taken from the FTC text of Nov. 22, 1937, namely the rule against "Dummy Tubes," and the rule against "Spiffs and Push-Money." Text of these rules follows:

"Advertisements or representations stating, purporting or implying that any radio receiving set contains a certain number of tubes or is of a certain tube capacity when one or more of the tubes in such set are so-called 'ballast' tubes, or are dummy or fake tubes, or are tubes which perform no useful function."

"It is an unfair trade practice for any member of the industry to give, pay or contract to pay, to any clerk or salesperson of any customer-dealer handling two or more competitive brands of radio merchandise, 'push money,' 'spiffs' or any other bonus, gratuity or payment, as an inducement or encouragement to push or promote the sale of such member's product or products over competing products of other members of the industry."

### FTC Text

Evils covered in the re-submitted Feb. 9 rules relate to false statements concerning distance reception, fading, static, interference, and non-broadcast reception, improper use of terms "All-Wave," "World-Wave," "World-Wide Wave," etc., standard broadcast, branding, sponsorship, imitation of trade-marks, alteration of brand, and commercial bribery. Mr. Skinner explained in detail the radio industry's objections to the use in the FTC draft, of the words "origin," "manufacture" and "distribution," which appear in the opening FTC statement as follows:

Every radio legitimately sold today, explained Mr. Skinner, carries a trade-mark which to the public represents the credit, good-will, and business reputation of the trade-name owner. "As long as he assumes responsibility for the finished product he should be under no obligation to name the origin of his parts. It is believed that it would be extremely confusing and would convey no useful information to the purchaser to trace the genesis of goods back of the firm which assumes public responsibility for the unit product and puts its name upon it."

In resubmitting the RMA definitions of short-wave bands, the RMA spokesman declared: "To require in-



Vance C. Woodcox, new vice-president RCA Mfg. Co., heading package-goods merchandising.

clusion of all the experimental bands, which extend to the little-known frequencies at 100, 200, and 300 million cycles, is equivalent to forbidding any use of the word All-Wave."

"No complex merchandise is sold simply by listing statistics and specifications. . . . Radios are purchased, like anything else, because the public expects to receive from them a service that may be described in terms familiar to the public—terms that may or may not differ from locality to locality." In radio, "certain results generally can be obtained, but the thing is not absolute and should not be treated as absolute. The wording employed in the rules may forbid certain genuine injustices. But it may be interpreted as calling unjust many fair and necessary practices."

E. F. McDonald, Jr., felt "origin" should be included in rules, to identify merchandise.



Webster Electric officials map more success—left to right, L. H. Mingins, New York rep., W. H. Johnson, engg. division, and H. G. Kobick, asst. to president.

# NOW SELL "HAPPINESS"!

Radio sets for every member of the family  
Trade-ins for the blind, the aged, and invalid poor

★ AS 1937 closes, there are 26,000,000 U.S. homes with radio sets. And in these homes are *six million extra sets*—second and third sets—making an average of 1¼ sets per home.

Add in the 5,000,000 auto radios—and the grand total of "radio listening-posts" in the U.S., at the present moment, becomes 37,000,000 sets! Or nearly 1½ sets per home.

## All want 'em

Yet, even at this, we have only begun to provide real radio listening convenience to the American family. For with the complexity of American living, and the variety of modern broadcasting programs, it is no longer possible for any one radio set to serve all the varied demands of its household. Symphony orchestras, jazz, speeches, dramatic sketches, comedy, educational talks, news commentators—all have their special adherents. Extra channels, extra sets, must be provided, if all the eager listeners in the family are to have what they want—when they want it!

So let's call the roll for the average U.S. home!

In addition to the main living-room set—the radio *piece-de-resistance* in every home—mother or the maid needs a radio in the kitchen. Grandmother or grandfather want personal sets to listen to speeches and music. Young daughter needs her own "color" radio—at home or at college. Junior wants to go "short-wave exploring." The youngsters need a radio of their own in playroom or nursery.

In fact, it looks as if any active American family in comfortable circumstances can easily absorb three or four or five radio sets for bare listening comfort!

Here, then, is the still unsaturated market for all the radio sets now in jobbers' stockrooms and dealers' showrooms. No radio stocks will overstay the Christmas season and overhang the January market, if a real start is made during December to supply the extra-set needs of millions of American homes. Christmas money is being spent right and left for other things. See that radio gets its share for additional sets, new sets, extra sets.

## The ill and the poor

And not only in comfortable homes is there a place for more radios. It is in the dwellings of the humble, the houses of the poor, the sick rooms of invalids, the lightless chambers of the blind, that radio sets are bitterly needed. Here, indeed, they can work their greatest miracles of companionship and joy.

Some communities are taking care of this by buying up obsolete and traded-in sets from dealers. The well-to-do are called upon to make donations to local charity organizations, and these gifts are applied on the purchase of sets for worthy individuals, unable to pay for a set of their own.

## Place for trade-ins

Here is a use for traded-in sets. Either get the customer to keep his old set and himself donate it to a worthy charity. Or the dealer can dispose of old sets he takes in by moving them into the hands of people who otherwise could have no radio.

It's trouble and bother—yes! But, compared with the barbarian practice of smashing up old and workable radios with an ax—or burning them in public or private bonfires—there's no comparison.

For old sets that are kept in use still consume tubes and electricity, and they still provide audiences for the broadcasters. Though without purchasing power at present, their owners may not always be penniless and helpless to buy in the future. So, besides being *good samaritanism*, it may also be *good business* to inculcate radio tastes in people who are at the moment unable to pay.

## Repair, re-install old set

An interesting experiment in getting customers to keep their old sets has just been tried out in San Diego, Calif.

The radio dealers there have been conducting a trade-in campaign in which, instead of cash allowances for old sets, the offer was made to repair the customers' old set, put it in first-class shape, and re-install it, thus giving the purchaser two operating radios for the price of one.

**2 RADIOS FOR THE PRICE OF ONE**

Here's the GREATEST OFFER ever made

WITH EACH PURCHASE OF A NEW 1938 CONSOLE RADIO (factory shipment just received)... WE WILL THOROUGHLY RE-CONDITION AND RE-INSTALL YOUR OLD RADIO FREE.

That's your chance to get the very latest radio with world-wide reception that brings in these really BIG things that happen everywhere... a chance to enjoy the pure, rich tone qualities you've been missing and that have been longed for... Practical ONLY in these newest instruments... all this in addition to having your old radio put back in the best possible shape for secondary use. Then, too, the new models will fit in with the newest of furniture.

THAT OLD RADIO RE-CONDITIONED MEANS THAT...

See ANY RADIO DEALER for details of this attractive offer which is made for a limited time only.

**2 RADIOS FOR THE PRICE OF ONE**

Here's the BIGGEST OFFER ever made

WITH EACH PURCHASE OF A NEW 1938 CONSOLE RADIO (factory shipment just received)... WE WILL THOROUGHLY RE-CONDITION AND RE-INSTALL YOUR OLD RADIO FREE

You've been wanting perfect radio performance for a long time... world-wide reception that gets in on the original broadcasts of red hot news; the pure, rich tone qualities and hair-line tuning that is found only in these newest instruments... plus a modern design that will fit the type of furniture you best room affairs.

See ANY RADIO DEALER for the details of this attractive offer which is made for a limited time only.

## EVERYBODY!

**MOTHER** has a place for a bedroom set.

**FATHER's** style suggests a new console.

**SISTER** at college likes to play records.

**BIG BROTHER** needs an auto set.

**DAUGHTER** in high school goes for "color" radios.

**LITTLE FOLKS** depend on nursery sets.

**GRANDPA** plays around with all-wave listening.

**GRANDMOTHER** needs a table model of her own.

**THE MAID** is happier with a kitchen set.

**THE WHOLE FAMILY** would gather 'round a combination.

As explained in the accompanying ads, under this plan:

"That Old Radio Re-Conditioned Means That . . ."

"The children can have one of their very own;

"Grandma can listen to her favorite program;

"Mother can have it installed in her sewing room;

"Dad can hook it up in his den or workshop or maybe run a line out into the garden Saturday afternoons while the football games are on;

"If you have already provided for the above needs, you can pass the old radio on to some worthy organization, friend or relative.

"In fact—Two or more radios have become a necessity in almost every home with diversified tastes and so many marvelous programs on the air."

Explains J. Clark Chamberlain, secretary of the San Diego Bureau of Radio and Electrical Appliances:

"Probably the greatest value experienced from this campaign came from the thought we were able to get over—that an old radio has very little value. The fact that our dealers were willing to repair without cost the old models pretty well sold this point."

He adds: "It may interest you to know that we are selling well ahead

See that every "forgotten listener" has some kind of a working radio set this Christmas!

(Photo by Steichen Studio, N. Y.)

December, 1937

of the quota set at the beginning of the year. Our quota was 12,000 radios for this territory of some 67,000 electric meters and, according to present indications, we will probably reach 13,000 sales this year."

More radios for normal, happy American families—to help them better enjoy the great and varied programs on the air! More radios for the aged, the ill, the invalid poor, the blind, and all those who need radio's companionship.

We still have hundreds of places to sell radios in every community. For look at it any way you will, and you find that we have more bathrooms than we have radio sets in use. At a minimum *any household needs and can afford at least as many radios as it has bathrooms*, if a rough measure of the family's scale of comfort in living is desired. The one-bathroom bungalows perhaps can afford only one radio—maybe more. But the houses with two, three, four, five bathrooms have places for two, three, four and five radios.

So here's the recipe for happiness—and good business, too!

Sell a modern radio for every member of the family in the homes that

can afford convenient listening. And, on the side, see that every deserving person—blind, ill, or too poor to pay—is fixed up with some sort of receiver that will bring him radio's priceless companionship.

## EXTRA \$320,000,000 NOW BEING SPENT

★ About 6,600,000 members of the Christmas Club got their money from the banks of the country around Dec. 1. To the whole group of money-savers went \$320,000,000; they averaged about \$48.55 apiece. The cash was scattered over the nation by some 4,500 banking institutions.

Radio dealers in all trade centers will notice the appearance of the extra funds; they are the basis of many special promotions. Here are the approximate amounts to be released in some leading cities:

San Francisco . . . . .	\$9,825,000
New York City . . . . .	5,725,000
Philadelphia . . . . .	4,575,000
Brooklyn, N. Y. . . . .	3,848,000
Minneapolis . . . . .	2,765,000
Boston . . . . .	2,300,000
Washington, D. C. . . . .	1,165,000
Cleveland . . . . .	1,380,000



# RADIO INDUSTRY AROUSED AT

Condensers in glass tubes were to have been offered next!  
Policing bodies take steps to stop resistor-tube racket

★ DISCLOSURE by RADIO TODAY in its November issue that radio sets are being marketed with as many as eight dummy tubes in a so-called "14-tube" receiver, has attracted wide interest in the radio industry and trade.

Letters and telegrams have poured in, expressing approval of the exposé, ordering copies and reprints for hometown distribution and enclosing evidence and reports of other trade evils and rackets. For it is now revealed that such mischief has not been confined to metropolitan centers, but has been widespread throughout the nation. Misuse of license references has also been freely indulged in. In fact, enough "RCA tubes" have been offered in some of the phony ads to double the dividends of the patent-owners.

As a result of the disclosures, the trade and public have now been put on their guard to accept no longer mere tube numbers as an index of receiver value. Rules and regulations have been drafted by the Federal Trade Commission, Better Business Bureaus, and other policing bodies. The RMA has given recognizance to the evil and how to stop it. Defini-

tions of "what constitutes a tube" have been drawn up by engineering committees, to clarify the situation. And responsible newspapers, including some of those which in the past have been unwitting accessories to radio racketeering, have now instituted strict rules to prevent such misleading radio advertising again creeping into their pages.

## Re resistors

Publication of the "dummy-tube" exposé has brought up the question whether RADIO TODAY regards the use of ballast tubes and resistor tubes as a fraudulent practice and one necessarily conducive to customer deception. Certainly such a position would be untenable. There are legitimate uses for plug-in resistors, probably not more than one (or possibly two) to the receiver—to take the place of other resistors of the strip and cord types. Underwriters' rules that wiring shall be kept below the chassis, complicated by engineering considerations of the heat to be dissipated, have made the plug-in resistor a most desirable aid to the radio-set designer. But such plug-in resistors, whether glass or metal enclosed, should not be

called "tubes," or counted as tubes. They are merely plug-in resistors and should be so designated. Moreover, a single resistor can in most cases be given the proper total ohmage so that rarely is more than one resistor-tube needed.

## "What's a tube?"

The question of "what constitutes a tube" has been discussed thoroughly by engineers and radio leaders. Some radio-set engineers are suggesting that a tube be defined as a device operating at less than atmospheric pressure which depends upon electronic or ionic conduction. Another group feels that a more rigid definition should be used. First of all, the tube should be employed to control, modify or change the form of energy supplied. In construction it should have two or more electrodes mounted in an envelope which is partially or fully evacuated or contains a gas or liquid under any degree of pressure.

In the case of the "famous" 14-tube set described last month, Technical Editor Vinton K. Ulrich found that the glass-coverings of the resistor tubes were not at all essential to the operation of the set. With a hammer

The image shows a collage of newspaper advertisements for various radio models. The ads are overlapping and feature large, bold text for prices and specifications. Key elements include:

- 12 TUBES... AC/DC**: Advertisements for a radio with electric push button tuning, American & Foreign - Electric Tuning Eye, priced at \$49.95 (Half Price) and \$41.64 (Half Price).
- 14-TUBE CONSOLE**: Ad for a Brand New 1938 model.
- 11 TUBE RADIOS**: Ad for a radio with genuine 11-tube performance, priced at \$29.70 (Regular) and \$29.70 (Special).
- 14 Tubes**: Ad for a Famous Console Radio, priced at \$49 (Half Price).
- 6 Tube**: Ad for a Long & Short Wave Radio, priced at \$49.95.
- 11 46**: Ad for a radio with Electric Eye, priced at \$46.
- LARGE 7-TUBE RADIOS**: Ad for a radio with a list price of \$79.95 and a half price of \$39.95.

Newspaper ads from North and South, New England and Middle West pour into the offices of "Radio Today."

# 'DUMMY TUBE' DISCLOSURES

New tube definitions and receiving-set ratings proposed

Radio leaders and trade congratulate Radio Today on exposé

he smashed some of the glass envelopes, and the set went on playing just as well as ever!

## Condensers in glass bulbs

Fortunately, RADIO TODAY'S exposé appeared just at a juncture in the radio industry when the racket of enclosing resistances in glass bulbs and calling them "tubes" was about to be widely extended. One maker had even added a tip cap on his dummy resistor tube, with a fake pigtail to contribute to the "tube" deception. The next step was to be that of enclosing condensers in glass envelopes, stenciling them with football signals and calling them tubes! Transformers, coils and other radio parts, all glass enclosed, might have followed next.

While a few battery set manufacturers feel that the true ballast tube should be included in the tube count, RADIO TODAY has been urged by the majority to campaign for their elimination in the tube count. After all, a set using a ballast tube with a 3-volt battery has only equal performance with equivalent set using an air cell battery with no ballast tube.

## Didn't fool Uncle Sam

In all this racketeering of resistor tubes it is interesting to note that Uncle Sam never lost his equilibrium nor his grasp of the situation! For, while the Federal excise law clearly requires that all tube manufacturers pay a tax on real tubes, the U. S. inspectors intelligently excepted the makers of plug-in resistors—whether glass or metal enclosed—from paying a tube tax. Uncle Sam rightly decided these were *not tubes*, and waived all taxes regularly collected on tubes.

With the number of tubes discredited as an index of receiver performance, radio men have looked around to find some equivalent method of rating sets for the public's understanding.

## "Four-star" radios!

One group has suggested counting the "cathode streams" in a receiver, pointing out this would be a real index of set performance and would automatically adjust itself for multiple-purpose tubes.

Others have proposed that the tube numbers be replaced with a "four-

star" or "five star" rating, like a newspaper edition or a movie. These suggest that various factors of merit be given definite values or percentages so that these, added together, make up the number of stars. But no one has yet answered who is to fix the detail values of various gadgets and receiver features, nor who is going to test the sets and pay for rating them.

Wide discussion in the industry and trade has resulted from the disclosures of the dummy tube racket. Some of the comments received by RADIO TODAY are extracted below:

We appreciate your cooperation and will be glad to have further information and suggestions from you to aid us in our efforts to prevent unfair trade practices in the radio industry.—Ewin L. Davis, Federal Trade Commission, Washington, D. C.

If legitimate radio manufacturers and dealers care to avail themselves of the facilities of the National and local Better Business Bureaus, we should be glad to assist in every way possible in correcting any unfair and deceptive advertising or selling practices.—Edward L. Greene, General Manager, National Better Business Bureau, New York.

I am amazed that bootlegging radio

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## HELP "RADIO TODAY" EXPOSE AND END THESE RACKETS

Continuing its campaign to show up "Rackets that Are Ruining Radio," RADIO TODAY'S editors have collected astounding revelations on other evils that prey upon and injure the radio trade. Here are some of the subjects to be presented in coming issues of Radio Today:

- Gyp Practices in Store Selling of Receiving Sets
- Servicing Rackets—Fake Repairs and Replacements
- Engineering Fakes—Circuits Aimed at Customer Deception
- Consumer Advertising that Misleads and Misrepresents
- Test-Instrument Rackets—The Lowdown on Tolerance Tests
- The "Learn - Radio - and - Earn - \$150 - a - Week" Radio - School Racket
- The "Special Discount" Racket—for "Privileged Purchasers"
- Group Purchasing—Attempts to By-Pass the Jobber

From its staff of special correspondents located in all sections of the United States, RADIO TODAY has accumulated amazing disclosures of rackets that are being perpetrated against the good name of radio. This information is being brought up to date as each installment appears. If you have evidence or tips on situations of this kind, which ought to be brought to light, send them in. RADIO TODAY will investigate such situations and include them in its searching studies of current evils that must be stamped out. Address Editor RADIO TODAY, 480 Lexington Ave., New York, N. Y.



racketeers are now using tubes as ballast. Surely agencies like RADIO TODAY and RMA can induce the state or federal authorities to close up such nefarious proceedings.—Lee de Forest, 5106 Wilshire Blvd., Los Angeles, Cal.

You are certainly to be congratulated. If we can cooperate in any way, please let me know—John H. Payne, chief, Electrical Division, Department of Commerce, Washington, D. C.

Every available means should be employed to stamp out such practices and in this connection we are both willing and anxious to do our share.—E. K. Cohan, Columbia Broadcasting System, New York.

I am afraid the only remedy for a situation of this kind would be an independent laboratory rating for receivers, and the publicizing of the importance of looking for a laboratory approval label on every set.—John V. L. Hogan, New York, N. Y.

Each industry is under an obligation to the public occasionally to warn prospective purchasers as to incorrect business practices on the part of an unreliable minority. Advertising might emphasize to the public "honestly designed receivers, all parts of which are necessary and use-

ful, and with ethically described performance."—Dr. Alfred N. Goldsmith, New York, N. Y.

You are certainly doing a grand job in showing up these evils of radio merchandising. More power to you.—Roy S. Durstine, Batten, Barton, Durstine & Osborn, New York.

Our views are very much in accord with yours, as the Better Business Bureau has attempted on several occasions to eliminate this practice.—Harold W. Webber, Chicago Better Business Bureau.

Possibly RMA, or a board established by RMA, would be willing to identify sets made by legitimate manufacturers—taking them out of the counterfeit or faked class.—John F. Rider, New York, N. Y.

Rush 700 reprints of article.—Crum-packer Distributing Corp., Houston, Texas.

Reprints splendid ammunition for legitimate dealers.—C. R. Rogers Co., Pittsburgh, Pa.

RADIO TODAY goes with me on all service calls and visits to prospective purchasers.—J. E. Stuart, Agawam, Mass.

Every legitimate radio dealer should have a "blow-up" of your article.—J. K. Heimann, Minneapolis, Minn.

More power to you. Give 'em h—!—Tom Elliott, Deer Lodge, Mont.

Keep up the good work!—H. Hudson, Detroit, Mich.

Your article should be put in every newspaper in the U.S.—Mack's Radio Service, Aberdeen, Md.

We have such evils, too. I'm against such business!—W. Paul Lessard, Biddeford, Me.

I'm glad to see you take action.—George T. Wurm, Bridgeport, Conn.

I admire your stand in exposing this malicious misrepresentation.—L. E. Latham, E. B. Latham & Co., New York.

Your movement can be definitely followed up by the various associations.—Leslie C. Rucker, president, National Parts, Wholesalers Association, Washington, D. C.

We want additional copies for our salesmen.—S. T. Randall, Inc., Middletown, N. Y.

You are doing radio another great service. We are making photostatic enlargements for our store windows.—H. L. Everett, Spear & Co., New York.

The most constructive article in any trade paper in a long time.—J. French, Stamford, Conn.

# TELEVISION ENLISTS "HAMS"

## Amateur radio operators invited to aid in field tests

★ AS November was coming to a close RCA startled the radio industry by taking television out of its laboratory and offering it to the radio amateur as a new plaything. Show was jointly sponsored by RCA and the American Radio Relay League.

First step was to demonstrate the 441-line television to the several thousand amateurs in the New York area. And for this showing at Radio City some 14 receivers, employing large cathode-ray tubes, were set up. Signals originated at NBC's studios and were piped over coaxial cable to the Empire State transmitter a mile away and sent back to audience by ultrahigh-frequency radio.

To accommodate all those interested in the demonstration it was necessary to run three showings for two nights. Reaction from the "hams" was favorable and a few indicated a desire to build a receiver to receive the television signals.

Because of the leadership of the amateur group in developing the use of short wave and radio receiving and transmitting equipment, it is only logical that the hams be called upon to aid in perfecting television, state RCA engineers. Mass experimentation by the amateurs, it is believed, will result in the development of new and better equipment—and it will provide for field work on a scale that

is impossible for any one company to perform because of economic limitations.

Rather than entice the amateur with exaggerated claims, RCA explains that the present lack of standardization means that obsolescence is very likely—that changes will be needed as the art progresses.

### Obsolescence feared

Quoting RCA's bulletin, "RCA's field tests in N.Y. have been well publicized. Other investigators are conducting experimental transmissions in several parts of the country. However, there may be a lack of standardization between these transmissions so that receivers suitable for one system may be unsuited for others. No regular program service is available, since stations are frequently off the air redesigning and rebuilding their equipment. These constant changes in transmitters during field test work may make receivers designed for receiving experimental transmissions obsolete—or otherwise may require corresponding changes in receivers."

While in Europe a few months ago, Allen B. DuMont of the DuMont Labs observed that the Europeans were pioneering in commercialized television and thereby pulling ahead

of us by leaps and bounds.

"We might better imitate our English friends in commercializing our own achievements, instead of so much loose talk," states Mr. DuMont most emphatically. "Instead of promising and predicting and boasting, the English have gone ahead with regular television broadcasting which, in turn, has given rise to a very sizable television industry. I venture to say that our overseas friends have learned more in six months of such practical efforts than we can learn in six more years of continued laboratory work behind more or less sealed doors."

With RCA's invitation to the amateurs to participate in the television development, here in America we should have the advantages of field work without the disadvantage of giving the public an experimental television set. Also there will be no demoralizing effect on the sale of regular broadcast sets such as is being noticed in London.

To help the amateur in constructing and operating his equipment, RCA and DuMont Labs will make the essential television parts available and the amateur magazine *QST* is currently publishing articles on the television receivers. National Union has television tubes and basic materials ready for distribution as soon as programs are announced.



A. G. Lindsay—The Crosley Radio Corporation.

A. Prosdocimi, for Solar Mfg. Corp.

W. Spiegel, representing the Regal Amplifier Mfg. Co.

L. L. Minthorne, for Ken-Rad, and JFD Mfg.

Max L. Robinson—Janette Manufacturing Company.

Carrington Stone, Monarch Mfg. Co.

# MEN WHO SELL ACROSS THE SEAS

A group of leading radio export representatives—for products, see page 44



John Bradfield—Internat'l's Kadette.

C. O. Brandes, for Ward Products Corporation.

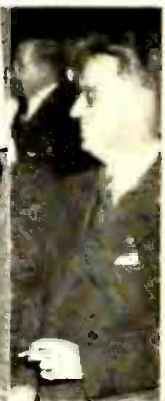
H. J. Scheel, for Majestic and Electro Acoustic.

J. H. Robinson—National Union.

Harry R. Savage, for Hirsh Manufacturing Co.

R. Keiser, International Resistance.

Aerovox Corp. A. W. Williams—



W. C. Braun, Jr., representing Radolek Co.

D. Fernandez—Parris-Dunn.

J. M. Regottaz, radio exporter, RCA.

N. M. Simons—Clarostat Cornish Wire, Pioneer Gen-E-Motor.

Jack Geartner, representing Arcturus Radio Tube Co.

N. A. Triplett—Triplett Instr.

R. W. Gifford, for Norge.

R. A. Rowlands, International General Electric Company.

A. Roche, for Cinaud-agraph and Genl. Industries

Walter A. Coogan, representing Hygrade Sylvania Tubes.

Joseph D. R. Freed, representing Freed Manufacturing Co.

L. M. Braun, for Wholesale Radio Service.



# IS YEARLY ANTENNA RENEWAL NEEDED?

Radio opinion divided on assertion that modern antennas are good for only 12 months' use

★ In a public statement before a group of radio and electrical sales executives from all parts of the United States, Robert Herr, Philco's service manager declared that modern scientific antennas should be replaced at least yearly because of deterioration. In his own words, "No matter how good and durable an outside aerial may be, it will deteriorate at the point where the twisted wires are attached to the flat top and this very decidedly affects reception."

Amplification of this statement by Philco's Henry T. Paiste, Jr. is as follows: "The radio trade has acknowledged the importance of the aerial as part of a radio broadcast receiving system. Radio dealers have found that the excellent performance of modern sets is directly affected by the signal picked up and delivered by the radio chassis to the aerial.

## Replace your old antennas

"Dealers will be performing a real service to their customers if they sell a new aerial to replace aerials more than a year old, and can demonstrate the improvement, because the customer will hear stations which he otherwise cannot receive.

"A 50% loss of efficiency in the aerial," states Mr. Paiste, "means a 50% loss of performance in the radio receiver. All features of the radio are affected. The tone, the number of stations received, success or failure of shortwave, and the successful operation of automatic frequency control are all in proportion to the signal delivered by the aerial system.

## Insulation breaks down

"Naturally noise elimination is very greatly affected by the changes in the aerial after a year's service. The insulator between the aerial proper and its supports, the transmission line carrying the signal to the receiver, and the lightning arrestor are the 3 major sources of loss after it has been exposed for 12 months.

"The breakdown of insulation has a direct effect upon noise reduction," explains Mr. Paiste, "because the transmission line must insulate the two leads in order to accomplish noise elimination. When moisture penetrates the impregnation of an aerial

transmission line, there is a shunt loss across the wires in the transmission line which dissipates part of the energy picked up by the aerial. Eventually, the insulation between the wires will break down completely, and there will be in effect only a single wire between the radio set and the flat top antenna on the roof.

"It is a known fact that even the finest materials used in the best aerial systems on the market have a limited life in terms of the amount of signal delivered to the radio. The dealers and servicemen will be serving their customers' best interests," concludes Philco's Mr. Paiste, "if they replace aerials that have been in use for a year."

## Zenith disagrees

G. E. Gustafson, Zenith's chief engineer writes, "I have just checked with our service department and they do not agree that the comments you had obtained on the replacement of antennas yearly is entirely correct. Some difficulty is experienced with breakage of down leads, but they find that in a good many instances this is due to improper installation. We have marketed antenna systems for several years and experience has shown us that a good grade of rubber insulated down lead will also last much longer than the year's time which had been indicated to you.

"I might mention also that our installation men find in installing a doublet antenna that the antenna that had been used previously had been installed very poorly and was perhaps five or even ten years old, and consequently in very poor shape.

"I am wondering if this in itself isn't quite an important point."

## Emerson cites disintegration

Emerson's chief engineer, Dorman Israel comments, "Of course, if an antenna is replaced every year the listener is quite sure that he is getting uniformly top performance. On the other hand, if an antenna is not replaced until after the second year there will be some instances where performance will suffer due to natural wear and tear of a mechanical and chemical nature on the antenna parts. In a similar way if an antenna is not

replaced until perhaps four years, there will be even more cases of inferior performance.

"I believe that this can be compared somewhat to the automobile industry's recommendation that spark plugs be changed every ten thousand miles. Everyone knows that in many cases spark plugs are good for 100,000 miles but if they are replaced more frequently the owner is sure that their performance will be uniformly good."

## "No need" — Tobe

"So far as replacement of aerials is concerned," states Tobe C. Deutschmann, "it would seem that there is no need for yearly replacement. Thousands of our antenna systems have been in use for many years without replacement, and we do not feel that we should recommend yearly replacement. Of course, the location in which the aerial is used, the care with which it is installed, the initial quality of its components, and many other factors will affect the service it renders. Consequently, it is impossible to lay down an absolute rule in regard to antenna replacement."

## Taco ok's plan

In reference to the life of an aerial and the replacement feature in the aerial business, T. Lundahl of Technical Appliance Corp. believes, "That with an ordinary antenna—straight wire using a single wire lead—the corrosion and deterioration of the materials used and the possibility of broken insulators make it advisable to give the aerial a thorough test at least once a year, or still better twice a year. As soon as the wires show signs of corrosion, it is advisable to replace them to obtain maximum signal strength for the set.

"With the introduction of noise-reducing antenna systems, the developments in this relatively young art are progressing at a very rapid pace. Due to improved designs, aerials become obsolete within a year or two, and in our opinion it is advisable, solely on the basis of obsolescence, to change the aerial once a year even if the aerial may show no sign of deterioration.

"The possibility that the aerial or the transmission line has become dam-

aged during the year, especially during the winter months, is very great, resulting in the gradual lowering of signal strength and noticeable increase in background noises. Loss of efficiency is not very noticeable since it usually takes place gradually. The listener will very rarely notice the slight decrease in the quality when such a decrease occurs over a period of time, with the result that the aerial may hardly be functioning at all but the listener has become resigned to the fact that the quality of his receiver is not what it used to be. The receiver may not be to blame. Often the set can be given its former good performance by replacing the noise-reducing aerial.

"It is our opinion that the progress in the antenna field makes it advisable for any discriminating listener to replace his antenna every year, regardless of the fact that it may appear satisfactory at a casual inspection."

### CBS not sure

"Undoubtedly, there is much merit in yearly antenna replacement," states E. K. Cohan, CBS director of engineering. "On the other hand, I am afraid that, if the statement that radio aerials should be replaced yearly is taken too literally, the average individual will find himself in the same mental state, with respect to aerials, as the motorist who has become convinced that unless the oil is changed every 500 miles the car will go to pieces.

"I am not sure I can go all the way in the belief that radio aerials should be replaced yearly, but there is no doubt whatsoever in my mind that the majority of aerials existing today in urban areas could and should be replaced with antenna systems that will permit the modern radio set to deliver its full value to the owner."

### New antenna with new set —NBC

"The question of time of replacement of an antenna depends, as might be expected, upon the antenna," comments O. B. Hanson, NBC's chief engineer. "In a straight antenna with unsoldered joints, replacement each year would be desirable. With all antenna joints well soldered, inspection every year should be sufficient to extend the useful life of the antenna to three or four years. In general, any antenna should be replaced with a new one every time a new receiver is purchased.

"With reference to the noise reducing type of antenna, mechanical weakness sometimes develops at the point

of junction of the down lead in the doublet type of antenna. The next weak spot is the insulation on the twisted pair down lead where this is used. Certain types of insulation are badly affected by weathering and cheap wire of this type needs to be replaced about once a year. If the twisted pair down lead has good quality rubber with a weatherproof braid over it, it should last three or four years and give effective service if yearly inspections are made."

### "A bit frequent"—RCA

"It is our feeling," states W. J. Zaun of RCA's Installation and Service Division, "that yearly replacement of antennas is a bit too frequent, and our experience both in favorable climate, as well as in extremes of climate, has been very good in this respect. Where a good grade of rubber insulation is used and a secure method of anchorage is employed trouble should not develop over a period of several years due to deterioration or mechanical wear."

### Belden says "2 or 3 years"

"With reference to the subject of antenna replacements, it is thought that they should be made every two or three years, depending on the location of these antenna," states Alfred Crossley, consulting engineer for Belden. "In crowded city districts where smoke and various other chemical effects are met with, it is only natural to assume that the replacement will be made sooner than that in the suburban districts where the atmosphere is normally clear.

"Chemical change or corrosion causes soldered and other connections to develop high resistance joints in the system, and the continuous swaying in the wind soon develops weak parts in the supporting members. These, together with aging of materials, are sufficient reasons why antenna systems should be replaced within the two to three year period, if efficient radio reception is to be maintained."

### Erla doubtful

"While it would be an excellent thing if the aerial system was at least examined yearly," states L. E. Priscal, service manager for Electrical Research Labs., "I doubt very much whether any kind of an educational program would arouse enough interest in the minds of the users to get them to have their antenna systems looked over yearly, much less to have them replaced yearly.

"An aggressive campaign by the manufacturers, the magazines, the newspapers and service men might instill enough interest in the radio set user so that he would have his aerial system inspected yearly. I certainly hope so, as it would undoubtedly eliminate some of the complaints we get from users of our radios on noise and lack of foreign reception. These complaints are remarkably few, and I suppose this is also true with other radio manufacturers. It seems if the user of the radio does have a lot of noise or doesn't get the foreign reception the salesman promised him, he sort of lives with the results he gets, because he is at least partially satisfied with the reception.



Hickson's of Rochester sell all-wave antennas to 75 per cent of their customers. This attractive display shows various antenna parts. Inadvertently contributing to the discussion on this page, item No. 6 on the card in the foreground says that the S-C antenna "stays in the air year after year without maintenance expense."

# ANOTHER HOLIDAY FOR SOUND

Opportunities during the Christmas period for PA sales and service

## SOUND—NEW TOOL OF BUSINESS

★ The sound industry is following very closely the trends and histories of numerous other American industrial developments.

It will be remembered that in the early days of motor cars, the automobile was high priced, expensive to operate, not too dependable, and almost exclusively a rich man's hobby or plaything.

Similarly, the first public-address installations were complicated and costly affairs, hand assembled, requiring the services of one or more skilled technicians, and suitable, therefore, only to great sports arenas or convention halls, where the size of the crowd and the area made it wiser to install sound than to deprive the audience of hearing altogether.

### Dependable

During the past two years sound equipment has begun to emerge very definitely from its limited status as an occasional or luxury device associated mainly with places of amusement. Leading manufacturers have taken every opportunity to simplify and perfect their product and to lower prices. They have devised "packaged sound systems"—powerful, completely self-contained portable units, capable of reproducing speech and music with excellent fidelity—yet so simply designed as to be actually easier to install and operate than a radio set.

In addition to reproducing perfectly, the new sound systems are wholly dependable in operation. Not

## SOUND INSTALLATIONS IN THE NEWS

**CHRISTMAS** dinners, concerts and celebrations staged by schools, churches, clubs, etc.

**WINTER SPORTS** centers, handling outdoor crowds at the season's peak.

**NIGHT CLUBS**, fixing mid-winter schedules for orchestras and entertainers.

**SKATING** exhibitions, where vast indoor crowds hear music and announcements.

**BASKETBALL** courts where training starts in connection with schools, churches, or Christian Associations.

**STORES** recently attracted by new automatic service systems, which include sound equipment.

**STREET BROADCASTS**, developed as a popular novelty by local stations.

**GOVERNMENT PROJECTS**, being dedicated or formally opened in the presence of outdoor throngs.

many major technical changes, therefore, are to be expected in the near future beyond the constant endeavor of the industry's leaders to improve the physical appearance of their product.

Present-day sound equipment is compact, dependable, perfected. Unlike radio, where constant changes must be made to catch the public eye, sound equipment will not become outmoded or obsolete in use. Prices seem entirely unlikely to go below the present low levels.

Sound systems give many years of unflinching service, and the result is the trend toward the widespread use of sound equipment in industry and merchandising. Factory executives in increased numbers are now beginning to appreciate that a sound system in an industrial plant saves time when used as a paging system; builds employee morale when used for leisure time activities; and speeds up production when recorded music is reproduced for workers.

### Advertising aid

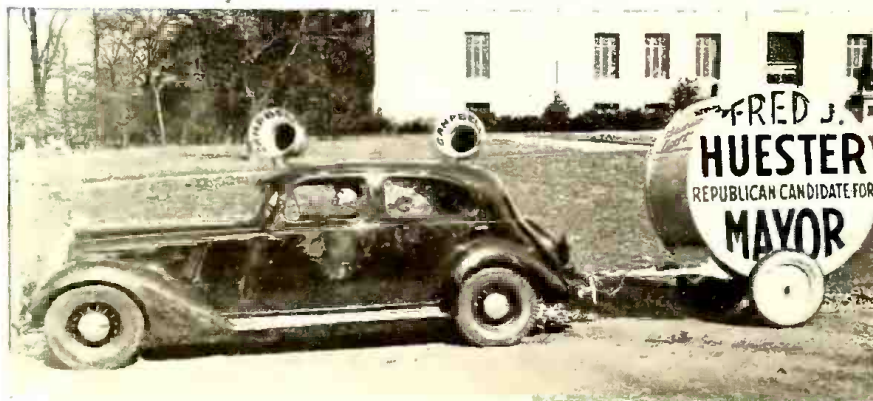
Advertising agencies and store managements are taking cognizance of the profit possibilities of sound equipment. The radio has made it apparent for some time that people respond to audible advertising. Already the leading motor car manufacturers with their fleets of sound-equipped cars have demonstrated the profit in advertising through sound broadcasting. Now sound equipment is receiving widespread attention as the most effective medium for point of sale merchandising.

For example, a housewife shopping in a busy market or self-service food store cannot possibly act on visual appeals alone. She cannot recall all details of a newspaper advertisement, perhaps read hours before. She will not take time to read all details of cards, window displays, and posters. A sound system gives the management the instantly available medium with which to point out special values and offers, to direct store traffic during busy shopping hours.

In short, "sound" is the new tool of modern business.

★ Illustrated and described in a new catalog is the new line of permanent magnet speakers made by Cinaudagraph Corp., Stamford, Conn. In this booklet No. 937 is the "inside story" of the speakers using the magnetic steel alloy, "Niperang," along with frequency response curves and tables. Copies available from Stamford.

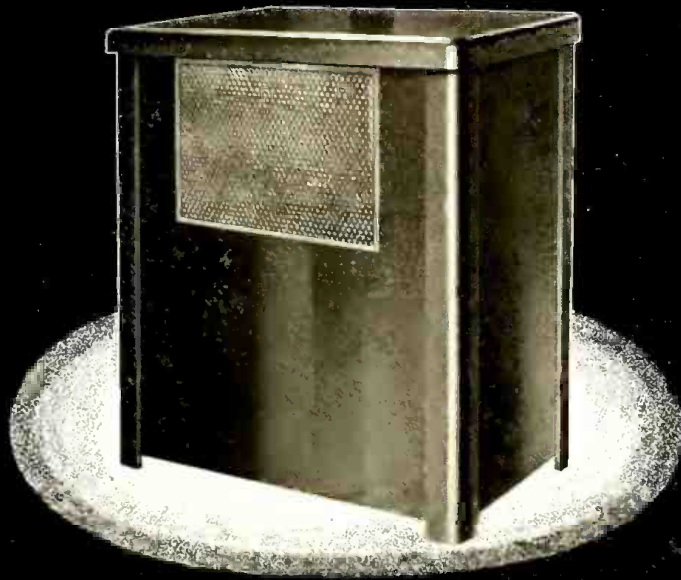
(Continued on page 43)



Sound specialist J. F. Campbell of Scranton, Pa., operated this outfit for a solid 6 weeks and collected \$20 per day. The truck covered a total of 3,500 miles and perhaps more important is the fact that candidate Huester was elected Mayor!

SELL *More* AIR CONDITIONING FOR *Less* MONEY

# Koolroom



## AN INNOVATION IN ROOM COOLERS!

• Some dealer in your community is going to make big money selling KOOLROOM air conditioners to a heretofore untouched market. For as low as \$175, he will offer a full sized unit of unequalled beauty that not only delivers greater cooling performance, but is priced at least \$150 under competition! His sales will probably exceed those of all his competitive dealers combined. And that's only *half* the story. KOOLROOM dealers are getting the biggest discounts being offered in the air conditioning field today. Maybe YOU are the man we want! If we give you the most profitable franchise in air conditioning history, will you turn it into dollars for yourself? Can you beat all competition if you have a unit that surpasses them all—for price, performance, beauty?



*Tear out this section of ad, clip it to your letterhead and mail it TODAY! Get all the facts on KOOLROOM—the most valuable dealership in air conditioning!*

*Advertised prices are based f.o.b. factory and are subject to change without notice.*

KOOLROOM • DIVISION OF INDIAN PRODUCTS CORP., 2338 S. INDIANA AVE., CABLE "TRAILCO", CHICAGO, U. S. A.

**MODEL 33A-W5.** (Portable). Circulates 200 cubic feet of conditioned air per minute. Capacity—4,000 B.T.U. per hour. Equal to melting 600 lbs. ice per day.  $\frac{1}{8}$  H.P. Motor. **\$175**

**MODEL 33-W.** Circulates 225 cubic feet of conditioned air per minute. Capacity—4,500 B.T.U. per hour. Equal to melting 660 lbs. ice per day.  $\frac{1}{8}$  H.P. Motor. **\$250**

**MODEL 50-W.** Circulates 329 cubic feet of conditioned air per minute. Capacity—6,925 B.T.U. per hour. Equal to melting 1,100 lbs. ice per day.  $\frac{1}{2}$  H.P. Motor. **\$350**

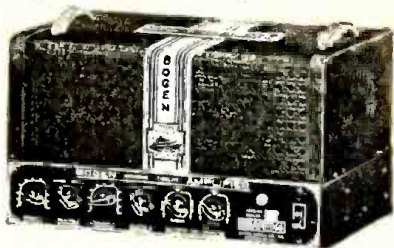
**MODEL 100-W.** Circulates 450 cubic feet of conditioned air per minute. Capacity—14,400 B.T.U. per hour. Equal to melting 2,400 lbs. ice per day. One H.P. Motor. **\$450**

**MODEL 150-W.** Circulates 600 cubic feet of conditioned air per minute. Capacity—19,000 B.T.U. per hour. Equal to melting 3,100 lbs. ice per day.  $1\frac{1}{2}$  H.P. Motor. **\$550**

*Plus Powered · It Cools · Dehumidifies · Ventilates · Cleans · Circulates*

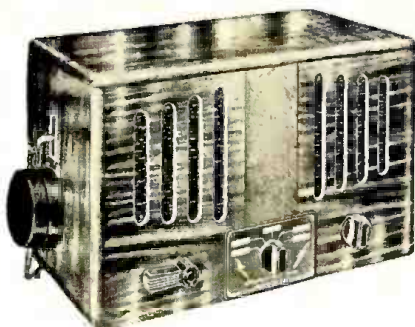
# NEW THINGS FROM THE MANUFACTURERS

## Bogen 18-watt amplifier



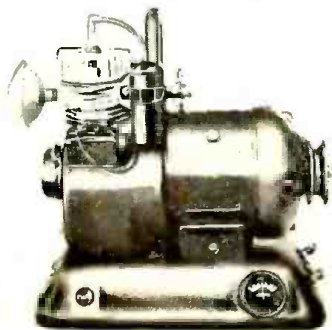
★ 4-channel type amplifier with 18 watts output. Gain of 128 DB. Range from 30-12,000 cycles. Beam power output tubes—electronic tone control. Universal type input. Two sockets for speakers. Model CX-18—list \$100. David Bogen Co., 663 Broadway, New York, N. Y.—RADIO TODAY.

## Radiofone intercommunicator



★ System operates by plugging each station into an AC outlet. Consists of 1 master station and 5 remote stations. For use on AC power lines. All units equipped with automatic loud speaker cut-off—earphones for private conversations. Separate control serves as a silencer when not in use so that line noises cannot be heard. No bridging or condensers needed for operation regardless as to the number of circuits or phases. Models for DC operation also available. Radiofone Corp., 136 West 22nd St., New York, N. Y.—RADIO TODAY—see also advt. p. 4 & 5.

## Tiny Tim battery chargers



★ Four models cover all 6, 12 and 32 volt requirements from 150 to 300 watts. List prices range from \$45 to \$70. Features are push-button starting, controlled voltage generator and automatic shut-off. Outfit includes special farm light battery, wiring kit and the battery charger.

Another unit is the Continental-Westinghouse light plant. These plants are available in 32 and 110 volt models with capacities as high as 1,500 and 2,000 watts, respectively. Continental Motors Corp., 12801 East Jefferson St., Detroit, Mich.—RADIO TODAY.

## Electronic Lab. Vibrapak



★ Model 31 for operation on 6 volts DC and has a variable output ranging from 250 volts at 50 mills to 325 volts at 125 mills DC. Outputs are completely filtered. Other features are that the tap switch for varying the voltage is always at ground potential, eliminating possibilities of high voltage short circuits. And 8-contact converter type vibrator. Vibrator will carry as high as 75 watts on a 6 volt circuit and 125 watts on a 12 volt circuit. Model 51 same as 31, but has 12 volt output. Electronic Laboratories, Inc., 122 West New York St., Indianapolis, Ind.—RADIO TODAY.

## Radio club chair



★ "Lazy man's chair" has radio and telephone compartment on right-hand arm. Left-hand side accommodates a small cocktail bar. Upper sides of arms fold back to make compartments for sundries accessible. Chair has tilting back and reading light installed atop the back. General Product, 1801 Fannin St., Houston, Tex.—RADIO TODAY—see also advt. p. 46.

## G-E police receivers

★ Ultra-high-frequency sets for use in police cars and stations. Tune from 30 to 42 megacycles. Superhet circuit with superregenerative second detector. Fidelity characteristic designed for maximum speech intelligibility. Car receivers use dynamotor power supply fully filtered. Duplex operation with 4 per cent frequency separation. Type SH-1B. General Electric Co., 1 River Rd., Schenectady, N. Y.—RADIO TODAY.

## Precision resistors



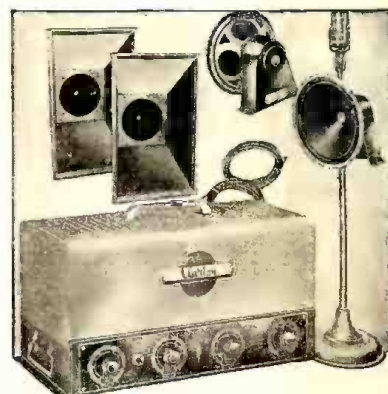
★ Pie-wound precision resistors with non-inductive windings—minimum distributed capacitance. Wound on non-hygroscopic ceramic core—vacuum impregnated. Available in 1 watt ratings—resistance accurate to within 1 per cent. Riteohm type 81. Ohmite Mfg. Co., 4835 W. Flournoy St., Chicago, Ill.—RADIO TODAY.

## Hirsh Duosocket



★ New "Duosocket" makes it possible for one to use any electrical appliance at the same time as the light in the bathroom outlet. Device consists of a socket that screws into regular outlet and accommodates a light as well as having an auxiliary cord attached with fixture at the end for any appliance that may be used in the bathroom, such as electric razor, curling iron, etc. Hirsh Mfg. Co., Box 804, 130 West 3rd St., Oklahoma City, Okla.—RADIO TODAY—see also advt. p. 62.

## Unified sound systems



★ Features of Unified Sound Systems are automatic volume expansion and automatic volume control. Individual bass and treble controls permit tonal increase to compensate for acoustical deficiencies and to gain wide variety of musical effects. Amplifier also has "glo-dial." Transformer Corporation of America, 69 Wooster St., New York, N. Y.—RADIO TODAY.

**RAYTHEON MEETS EXACTING STANDARDS OF**

*More Set Engineers*

**THAN ANY OTHER TUBE!**



**R**AYTHEON makes tubes for the majority of licensed set manufacturers in the United States. For that reason, RAYTHEON tubes not only meet the exacting standards of more Chief Engineers than any other—but they must perform in more diversified circuits than any other tube!

Your RAYTHEON jobber gives you these same standard tubes in sealed cartons for exact replacement in *any* receiver!

Order RAYTHEON for greater permanent tube profits.



**RAYTHEON**

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

420 Lexington Ave., New York, N. Y.  
555 Howard St., San Francisco, Cal.  
415 Peachtree St., N. E., Atlanta, Ga.

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



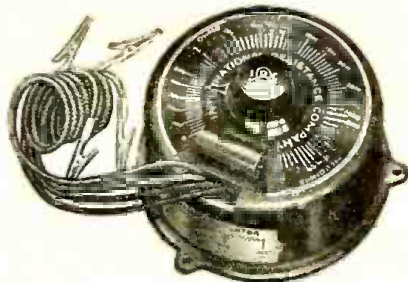
# NEW THINGS

## Beat frequency generator



★ Type 140-A beat frequency generator has frequency range of 20 cycles to 5 megacycles and voltage range from 10 millivolts to 10 volts. Instrument is useful for the design of video amplifiers for television receivers and transmitters. Boonton Radio Corp., Boonton, N. J.—**RADIO TODAY**.

## Calibrated variable resistance



★ Resistance with circular dial for either bench use or panel mounting. Continuously variable in a range from 0 to 1.0 meg. with a direct-reading dial. Used as voltmeter multiplier; resistance or volume control analyzer for the measurement and determination of resistance values by either substitution or voltage measurement method; wire wound rheostat or potentiometer 0 to 30,000 ohms; composition potentiometer 0 to 1 meg. International Resistance Company, 401 N. Broad St., Philadelphia, Pa.—**RADIO TODAY**—see also advt. p. 35.

## Pioneer dynamotors



★ Three new types of dynamotors—types "PS," "CS" and "TS." New end bracket and brush-holder design gives maximum accessibility to commutator for cleaning and inspection. Large number of commutator bars reduces AC ripple to a minimum. The armature runs on grease sealed bearings which insure smooth, quiet operation. Filter is recommended

when unit is used to supply high voltage for radio or sound equipment. Type "PS" for output up to 45 watts with 6 or 12 volts, "CS" outputs up to 250 watts continuous duty. Pioneer Gen-E-Motor Corp., 458 West Superior St., Chicago, Ill.—**RADIO TODAY**—see also advt. p. 53.

## Regal Tokfone



★ Two-way intercommunication system designed for professional and home use. Tokfone Jr. supplied with one remote station and 50 feet of wire. Mounted in attractive cabinets. Other models are 142-EA, handles from 2 to 11 stations; model 510 handles up to 18 stations, and model 141, 2 to 11 stations. Regal Amplifier Mfg. Corp., 14-16 West 17th St., New York, N. Y.—**RADIO TODAY**—see also advt. p. 51.

## Dating and marking kit

★ Kit includes rubber stamps, inks, etc., for marking metal tubes, chassis, etc. Ink is supplied to pad. Kit is in black leatherette finish box and contains ink, solvent, pad, dating stamp, and brush attached to cap. General Cement Mfg. Co., Rockford, Ill.—**RADIO TODAY**.

## Neutralizing condenser



★ Two-plate neutralizing condenser for use in transmitters. Aluminum round-edge plates polished over all surfaces. Mounted on pair of isolantite bars. Micrometer adjustment. Positive locking nut. Capacity range 2 to 10 mmfd with  $\frac{5}{8}$  to  $\frac{1}{16}$  air gap. 3,000 volt rating at minimum spacing. Type N-10. Hammarlund Mfg. Co., 424 W. 33rd St., New York, N. Y.—**RADIO TODAY**.

## 60-watt sound system

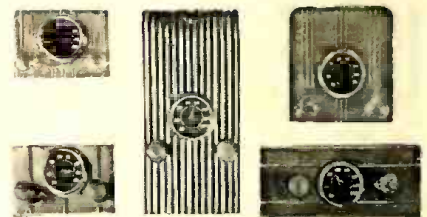
★ Coordinated amplifier system with 60-90 watt output. Modernistic amplifier case with chrome and red plastic trimmings. 124 DB gain and frequency response from 50-1,000 cycles. Variable volume range expansion and automatic volume control. Velocity mike, 4 speakers with baffles, and accessories. Wholesale Radio Service Co., 100 Sixth Ave., New York, N. Y.—**RADIO TODAY**—see also advt. p. 54.

## T.E.M. interphone



★ Two-way amplified intercommunicating system. Master unit handles up to 6 remote stations in standard system. Larger units available. Easily installed using ordinary wire for connections. Designed especially for overseas markets. Telemotor Corp., 260 Fifth Ave., New York, N. Y.—**RADIO TODAY**.

## Auto radio controls



★ 1938 line of escutcheons for new autos. All ratios self-contained in dial mechanism. Adapts all radios—new or old—to the 1938 cars. Star Machine Mfrs., Inc., Hunts Point and E. Bay Ave., Bronx, N. Y.—**RADIO TODAY**—see also advt. p. 58.

## Hushatone pillow speaker

★ Crystal-operated radio set accessory. Used with midget radio receivers or regular home radio. Device is placed under a pillow on chair, bed, couch, etc. Can be used on sickbeds in the home or hospital. Brush Development Co., 331 Perkins Ave., Cleveland, Ohio—**RADIO TODAY**.

## Push-button converter



★ Converter unit to make a push button set out of any receiver. Unit employs 2 tubes—selects 8 stations. Connects between antenna and radio set—no changes in set wiring. May be used as remote control device. Available in neat case or as adapter unit for console. Models 211 and 210 respectively. Howard Radio Co., 1731 Belmont Ave., Chicago, Ill.—**RADIO TODAY**.



*We pause to thank our customers for the splendid support they have given us during 1937... Heartiest wishes for a very merry Christmas... and a prosperous New Year*

**HYGRADE SYLVANIA CORPORATION**

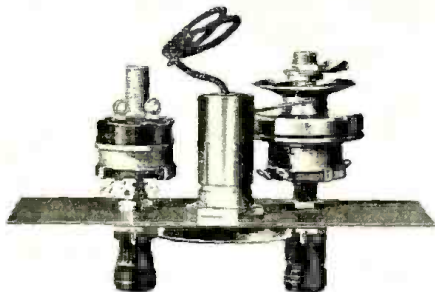
# NEW THINGS

## Headphone volume control



★ "L" pad type attenuator for use in headset cord. Extremely light weight. Maintains constant impedance on amplifier. Designed for multiple headset installations—gives separate control of volume. 2½ inches long—weighs slightly over 1 ounce. Phonohm available in all conventional values of impedance. Centralab. 900 E. Keefe Ave., Milwaukee, Wis.—RADIO TODAY—see also advt. p. 43.

## Stewart auto controls

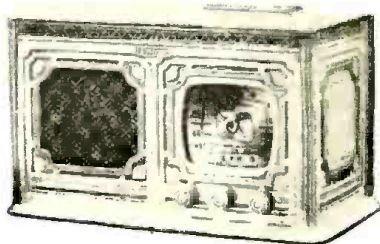


★ Auto radio panel control consisting of 3 independent mechanisms to provide for maximum flexibility. Center unit consists of dial and lighting arrangement, on right hand side the tuning device is located and volume control on left. May be placed in any position on panel. Control will fit majority of 1937-8 cars without necessity of plates. F. W. Stewart Mfg. Corp., 340 W. Huron St., Chicago, Ill.—RADIO TODAY.

## Arvin 1938 auto controls

★ Complete line of tailor-fit controls for the 1938 cars. Adapt 1937 auto radio models for use in the new cars. Controls to fit all makes of cars—1938 models—list \$7.25. Noblitt-Sparks Industries, Columbus, Ind.—RADIO TODAY.

## Emerson receiver



★ AC-DC superhet with 6 tubes including ballast. Beam power output—6½-inch dynamic speaker. Tone control—automatic volume control. Syroco wood cabinet in Chippendale carved effect design. Model AM-187—list \$34.95. Emerson Radio & Phonograph Corp., 111 Eighth Ave., New York, N. Y.—RADIO TODAY.

## RCA television tubes

★ Two cathode-ray tubes suitable for television. Both tubes are of the electromagnetic-deflection type and employ viewing screens on which the picture appears clearly, with a yellowish hue. They are RCA-1800 and RCA-1801, the former being a nine-inch tube and the latter a five-inch tube. They carry suggested list prices of \$60.00 and \$40.00, respectively. These tubes are for experimental use and not for home use. RCA Mfg. Co., Front & Cooper Sts., Camden, N. J.—RADIO TODAY.

## Universal phono-radio combination



★ 8-tube AC-DC portable automatic phonograph radio combination. Operates on 110-220-240 volts. Fuse protects instrument from damage. Changer handles 8 10-inch records automatically—12-inch records manually. Available in fabricoid and leather cases. Marconiphone model D10E. Marconiphone, Inc., 679 Madison Ave., New York, N. Y.—RADIO TODAY—see also advt. p. 27.

## Sectional record cabinet

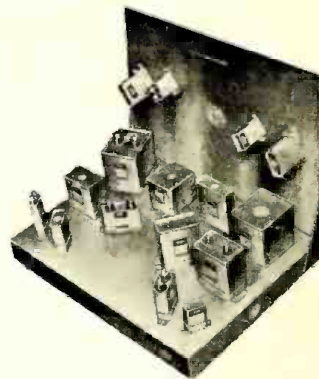


★ Record cabinet that can be expanded to meet needs of owner. Basic unit composed of base and top section—list \$30. Middle sections available at \$17.50 each. Each section will handle 20 albums. Width 27 inches—depth 17. RCA Mfg. Co., Cooper St., Camden, N. J.—RADIO TODAY.

## Supreme frequency modulator

★ Frequency modulator to convert any type of oscillator for visual alignment with cathode ray oscilloscope. Inserted between signal generator and radio set. Model 529. Supreme Instruments Corp., Greenwood, Miss.—RADIO TODAY.

## Condensers with universal mountings



★ Line of high-voltage oil-filled capacitors with universal mounting brackets. Hermetically sealed in non-corrosive containers. Type TJ-U. Cornell-Dubilier Electric Corp., S. Plainfield, N. J.—RADIO TODAY—See also advt. p. 57.

## Record player

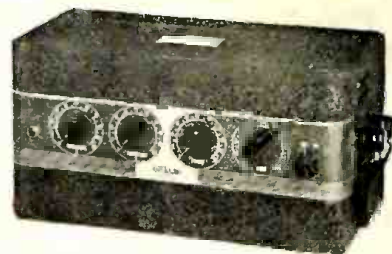


★ Electric record playing mechanism for use with any set. Employs crystal pick-up and 12-inch turntable. Walnut cabinet with lid. Stromberg-Carlson Telephone Mfg. Co., 100 Carlson Rd., Rochester, N. Y.—RADIO TODAY.

## Vibrator transformers

★ Transformers designed to operate from 6-volt battery and vibrator. For portable and farm type equipment. Type 465-271 delivers 245 volts DC at 40 ma. Type 465-281 delivers 295 volts DC at 45 ma. or 270 volts at 67 ma. Jefferson Electric Co., Bellwood, Ill.—RADIO TODAY.

## Operadio amplifier



★ 35-52 power amplifier using beam power tubes. 3 input channels with electronic mixing. Non-resonant equalizer balances tone at both high and low frequencies. Variable output impedances. Fours stages using 8 tubes. Model 835. Operadio Mfg. Co., St. Charles, Ill.—RADIO TODAY.

"I am sincere when I say that Ken-Rad Tubes are the best tubes I have ever had in my radio. Reception is more distinct and clearer than ever before. I shall recommend Ken-Rads to everyone I know."

*Frank W. Metcalf*

Frank W. Metcalf  
1135 W. Elm St.,  
Jacksonville, Ill.

**"I shall  
recommend  
Ken-Rads  
to everyone  
I know"**

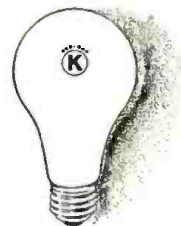
"word of mouth" advertising for your business when you sell dependable Ken-Rad Radio Tubes. Then you make extra sales . . . and extra profits. Advanced engineering and precision manufacture give Ken-Rad Tubes unexcelled performance. You have the good will of your tube customers when you handle Ken-Rad Tubes.



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

● **SELL KEN-RAD  
ELECTRIC LIGHT BULBS**

Ken-Rad Electric Light Bulbs share the good reputation of Ken-Rad Tubes. Here is an excellent profit item.



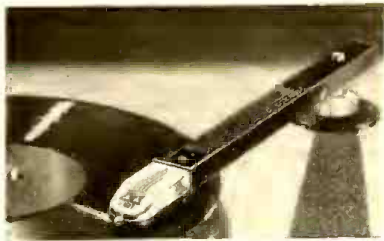
**KEN-RAD**  
★ *Radio Tubes* ★

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

*Makers of Ken-Rad Radio Tubes and Ken-Rad Electric Light Bulbs*

# NEW THINGS

## Microdyne phono pick-up



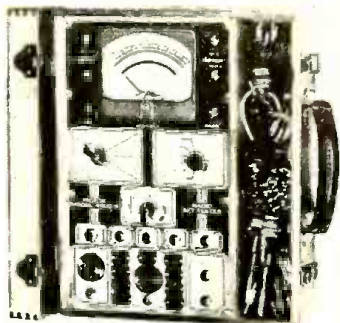
★ Magneto-inductive relay-frequency pick-up. Available with straight or offset arm. Handles records up to 12-inches. Model RF-1—list \$40. Audak Co., 500 Fifth Ave., New York, N. Y.—RADIO TODAY.

## Dual channel amplifier



★ Dual channel 32-watt amplifier incorporating 3-position electronic mixer with individual controls. Output level indicator, tone control. Frequency response plus or minus 2 DB from 30 to 10,000 cycles. Multi-tapped output transformer. Net less tubes \$37.50. Amplitone Products Co., 135 Liberty St., New York, N. Y.—RADIO TODAY.

## Set tester



★ AC-DC voltmeter, ohmmeter, and capacity meter for radio set testing. Measures 0/10/50/250 volts at infinite impedance. AC and DC volts at 1,000 ohms per volt in 5 ranges. 0/500 DC microamps. 3-range millimeter. 5-range ohmmeter reading up to 10 megs. 5-range capacity meter. Self-contained power supply. Model 4800S. Hickok Electrical Instrument Corp., Dupont Ave., Cleveland, Ohio—RADIO TODAY.

## DeVry theater amplifier

★ Public address system mounted on a rack holding two 15 watt amplifiers, two exciter lamp rectifiers, and a changeover switch panel. The amplifiers have a flat frequency range

with a gain of 90 db, and are fed from the pre-amplifiers on the projectors. The input and output impedance is 500 ohms. Tubes used are two 6C6, one 42, two 6A3 and one 523. Amplifiers are connected to the changeover panel in such a way that either one or both may be used at a time, providing double panel and emergency operation. Herman A. DeVry, Inc., Chicago, Ill.—RADIO TODAY.

## Adjust-a-volt transformer



★ Variable voltage transformer giving continuously variable voltages from 0 to 140 in 4/10 volt steps. Output current of 5 amperes. Calibrated dial plate. Black metal case. Net \$10.80. Standard Electrical Products Co., 317 Sibley St., St. Paul, Minn.—RADIO TODAY.

## Solarex xmitting condensers



★ Line of high-voltage capacitors designed especially for amateur radio use. Eleven ratings from 1 mike 1,000 volts to 2 mikes 3,000 volts. Oil impregnated—black metal containers—porcelain stand-off insulators. Solar Mfg. Corp., 599 Broadway, New York, N. Y.—RADIO TODAY—see also advt. p. 63.

## Wincharger with pressure control

★ Air-driven generator for charging batteries. Generator and propeller so mounted that excess wind pressure automatically turns the unit so that the propeller slips. Slipping of propeller automatically governs rate of charge—maximum efficiency at low velocities—slippage at high velocities. Maintains constant rate of charge. Model '38. Wincharger Corp., Sioux City, Iowa—RADIO TODAY—see also advt. p. 45.

## Dynamic desk mike

★ Communications type microphone with dynamic unit. 33 ohm impedance—frequency response follows government regulations for airport land station use. Mike plugs into stand—easily replaced. Chrome plated stand. Universal Microphone Co., Inglewood, Calif.—RADIO TODAY—see also advt. p. 59.

## Lincoln table receiver



★ 6-tube AC all-wave set with 3-band tuning. Cathode ray tuning indicator. Dynamic speaker—full-vision vernier dial. Total of 52 models available for all voltages and currents.—5 to 16 tubes. Console models available with natural angle tuning panel, Lincoln Radio & Television Corp., 833 W. Jackson Blvd., Chicago, Ill.—RADIO TODAY.

## Precision tube tester

★ Instrument makes individual tests of triode, pentode, diode and rectifier plate sections; D'Arsonval moving coil meter with an accuracy of 2 per cent; also English reading "good" and "bad" meter. Tests all tubes released to date, with provisions for any that may be released in the future. Precision Apparatus Corp., 821 E. New York Ave., Brooklyn, N. Y.—RADIO TODAY—see also advt. p. 60.

## 3-gang midget condensers

★ Rotor and stator plates are of brass and securely soldered to their respective shafts. Mounted on ceramic bases, 1¾ wide by 5¼ inches long. Units are supplied in 20 and 35 mmfd. capacity with plate spacings of .06 inch. Other sizes are 100 and



140 mmfd. capacity per section and plate spacing of .023 inch. All are three gang units. Bud Radio, Inc., 5205 Cedar Ave., Cleveland, Ohio—RADIO TODAY.

## Elgin tube tester



★ Emission type tube checker giving individual tests of triode, pentode, diode and plate rectifier sections. Moving coil type meter with 2 per cent accuracy. Has condenser short test. Model 900—net \$15.95. Try-Mo Radio Co., Inc., 85 Cortlandt St., New York, N. Y.

# RECORD DEPT.

## PICTURE OF THE MONTH

★ Soon to be showing at theaters all over the country is the new Republic film, "Manhattan Merry-Go-Round." It contains a series of new tunes which should sell well at record counters for those dealers who plan their promotions at the time the show is enjoyed most widely.

Here are four songs from the picture, listed with available recordings:

- "Have You Even Been In Heaven."  
Bluebird B7183—Willie Farmer and orchestra.  
Brunswick 7962—Joe Rines and orchestra.  
Decca 1476—Ben Pollack and his orchestra.  
Victor 25677—Bunny Berigan and orchestra.  
Vocalion 3704—Henry "Red" Allen and orchestra.  
Vocalion 71106—Bernie Cummings and his orchestra.  
"Mama I Wanna Make Rhythm"  
Bluebird B 7183—Willie Farmer and orchestra.

## WAX WORTH WATCHING

- ★ BENNY GOODMAN quartet playing Vieni Vieni and Handful of Keys—Victor 25705.  
DORSEY BROTHERS orchestra playing Annie's Cousin Fannie and Judy—Brunswick 6938.  
FRANCES LANGFORD singing If It's the Last Thing I Do and Everything You Said Came True with orchestra under direction of Phil Obman—Decca 1464.  
SHEP FIELDS and his Rippling Rhythm orchestra playing Nice Work If You Can Get It and Foggy Day in London from the RKO film "Damsel in Distress," with vocal by Bob Goday—Bluebird B7195.  
BENNY GOODMAN and his orchestra playing I've Hitched My Wagon to a Star and Let That Be a Lesson to You, from the First National film, "Hollywood Hotel," vocal by Martha Tilton—Victor 25708.  
BING CROSBY singing When You Dream About Hawaii and Sail Along Silvery Moon with Lani McIntire and his Hawaiians—Decca 1518.  
OZZIE NELSON and his orchestra playing Once in a While with vocal by Harriet Hillard and Queen Isabella—Bluebird B7256.  
TOMMY DORSEY and his orchestra playing Down With Love and Moanin' in the Mornin', from the musical comedy "Hooray For What," vocal by Edythe Wright—Victor 25692.  
FRANK FROEBA and his orchestra playing My Swiss Hilly Billy from the 20th Century-Fox film "Thin Ice" with vocal by Al Rinker Trio and Tears in My Heart with vocal by Bill Darnell—Decca 1500.  
JEAN SABLON, singing Le Doux Caboulot and Si Mon Coeur Pouvait Te Dire, with orchestra under direction of Norman Cloutier—Victor 25655.

- Brunswick 7962—Joe Rines and his orchestra.  
Decca 1476—Ben Pollack and his orchestra.  
Variety 3671—Cab Calloway and orchestra.  
Victor 25677—Bunny Berigan and orchestra.

Vocalion 71106—Bernie Cummings and his orchestra.

"I Owe You"

Vocalion 3704—Henry "Red" Allen and his orchestra.

"All Over Nothing at All"

Decca 1339—Ella Fitzgerald to Her Savoy Eight.

Vocalion 3671—Tempo King and his Kings of Tempo.

## RECORD TO RELIEVE PAIN

★ A special platter, which plays over and over again and is designed to relieve persons suffering from headaches or toothaches, is being used in Vienna, Austria, and is described by Dr. E. E. Free of New York City.

This record has a "hypnotic" effect and is supposed to talk people out of their pains by the suggestion method. The sufferer lies down, starts the record, and listens intently to the monotonous musical tones which are heard first. Then the record begins to talk about drowsiness and sleep, and finally suggests that the pain has disappeared. After all this has been repeated several times, the easily persuaded persons will imagine that they are OK.

## MARCONIPHONE THE *Acclaimed* LEADER

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with a NEW PORTABLE AUTOMATIC  
RADIO-PHONOGRAPH COMBINATION

### The MARCONIPHONE D-10

—an instrument of incomparable tone and unequalled performance. Mellowness and fidelity never before approached in a portable instrument. Changes eight 10-inch or seven 12-inch records automatically.

Has 10-tube AC-DC receiver for broadcast and short wave bands. Remarkable sensitivity and selectivity. Dual tone controls, bass compensation, full-vision dial, high fidelity 8-inch speaker, crystal pick-up and in-built antenna.

For European use, D-10 is equipped with a voltage switch for 110-220-240 volts, AC-DC. Unique protective fuse circuit prevents damage from short circuit or excessive voltage.

Model D-8—8 tubes, 8-inch speaker, changes eight 10-inch records; 12-inch manually; for long and short wave, available in fabriKoid or various leathers.

Shipments to all parts of the world.

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# ELECTRIC TUNING SYSTEMS

## Simplified explanation of how the Wells-Gardner mechanism works

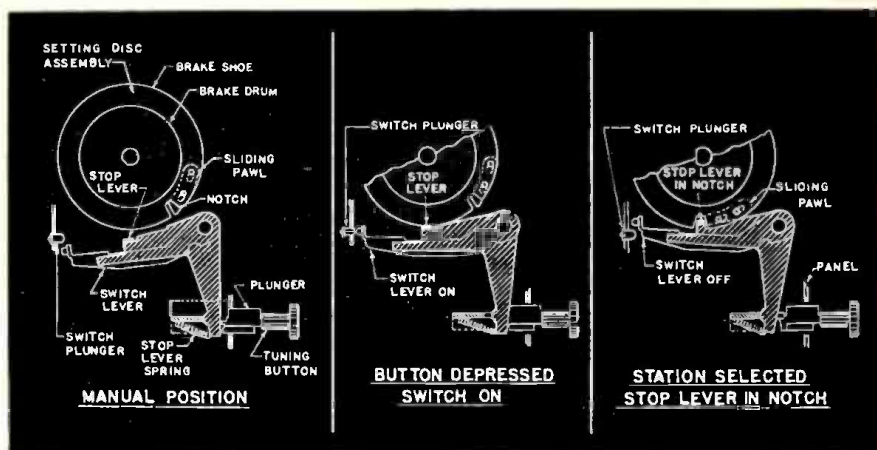
★ CONTINUING the detailed descriptions of electric tuning systems, *RADIO TODAY* this month in the fourth of a series explains the mechanism used by Wells-Gardner. Besides being found in Wells-Gardner and Arcadia sets, this mechanism is used in a number of sets manufactured by Wells-Gardner for other distributors and sold under their exclusive trade names.

The W-G electric tuner is of the mechanical type in that but a single switch is used to control the operation of the motor—station selection being handled by mechanical arrangements instead of electrical contacts.

### Set up from front

The accompanying pictures of the tuner show both front and rear views and the various parts are labeled. At the top the 8 selector units and setting discs are visible. Below them in about the center of the front view the 8 shafts for the push buttons are located. Just above each push button is a smaller button which is employed when setting up the mechanism. Set-up is accomplished from the front of the set.

The locking plate is shown at the front. Its purpose is to hold the tuning button (8 for 8 stations) after it has been depressed and releasing any other buttons previously depressed. Also it shifts the electric-manual lever, when the setting button is depressed, to engage the clutch. It does this by moving the interlocking lever which, in turn, shifts the clutch release lever. The third func-



Figs. 1, 2, 3, showing how station selecting mechanism works.

tion of the locking plate is to release any depressed buttons when the electric-manual lever is turned to manual—the buttons are locked so they cannot be depressed during manual tuning.

The silencer spring assembly also on the front is operated by the thrust on the motor shaft and silences the set while selecting a station.

The motor and train of gears are located on the rear of the tuning unit. The gears are used to reduce the speed of the motor. The motor drives gear No. 1. Gear No. 5 drives the tuning condenser gang.

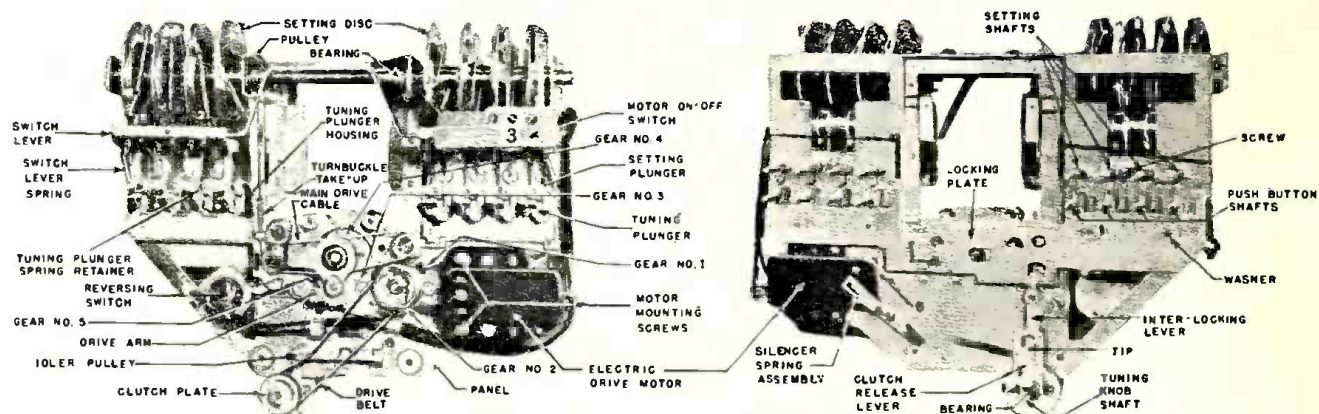
At the lower part of the view the clutch plate and drive belt are shown—these come into operation for manual tuning. The belt connects the manual knob through the clutch to gear No. 2. This power is then trans-

mitted through the gear train to the condenser shaft.

The main drive cable is securely fastened to a pulley on gear No. 4 and drives the setting discs in the top portion of the mechanism. Various idler pullers are used to keep it tight and in position. Since the positions of the setting discs determine the position of the condensers for various stations, this drive cable is kept tight and without backlash. A turnbuckle is provided to permit adjusting the tension.

Reversing of the motor at either extremity of the condenser is accomplished by a pin on gear No. 4, which operates the reversing switch lever.

The motor is controlled by an on-off switch operated by the switch lever shown just below the setting discs on the rear view.



Rear (left) and front (right) views of the Wells-Gardner push-button mechanism. Functions of various parts described on these pages. The gear train and drive belts are located at rear. Locking plate and buttons on front.

In Figs. 1, 2, 3 the operation of the station selecting mechanism is shown. Only the parts essential for operation are shown. Fig. 1 shows the position of the selector parts during manual tuning—the 8 selector units are identical in operation and have identical positions during manual tuning.

When the push button is depressed (Fig. 2) the stop lever is lifted up so that it is next to the brake shoe—and at the same time the switch lever raises and operates the switch plunger which, in turn, closes the motor switch.

### Uni-directional selection

The motor then starts turning the entire setting disc assembly (brake drum and shoe, etc.) in the direction the motor was last turning. Note the pawl in the notch on the setting disc. This pawl is used so that the stop lever will enter the notch only when turning in a clockwise direction. If the direction of rotation is such that the stop lever rides over the pawl, it does not drop into the notch. Just before the tuning condenser reaches the end of its travel the pin on gear No. 4 trips the reversing switch lever and the motor changes its direction.

When the pawl reaches the stop lever, the latter will engage the tip of the pawl which extends just beyond the edge of the setting disc, causing the pawl to slide, opening the notch. The stop lever falls into this notch.

With the stop lever in the notch, the switch lever rises, releasing the switch plunger (Fig. 3). In this way the motor is killed.

Station set-up of the mechanism takes place *after the stop lever is in the notch*. Fig. 4 shows the position of the essential parts just before depressing the setting button. (Note that the parts involved in station selecting have been omitted.) If the stop lever is not in the notch, the rocker arm stop will interlock with the selecting parts and make it impossible to press the setting button.

When the setting button is pressed (Fig. 5) the rocker arm stop drops and allows the rocker arm to rise and lift the drum release lever. When the drum release lever is lifted, the cams which lock the brake drum to the brake shoe loosen and permit the brake drum to turn.

Since the brake drum is loose, it is possible to turn the condenser with the manual control and tune in the station. After the station is tuned in manually, the setting button is released, thus locking the brake drum and shoe together. This procedure is repeated for the 8 setting discs.

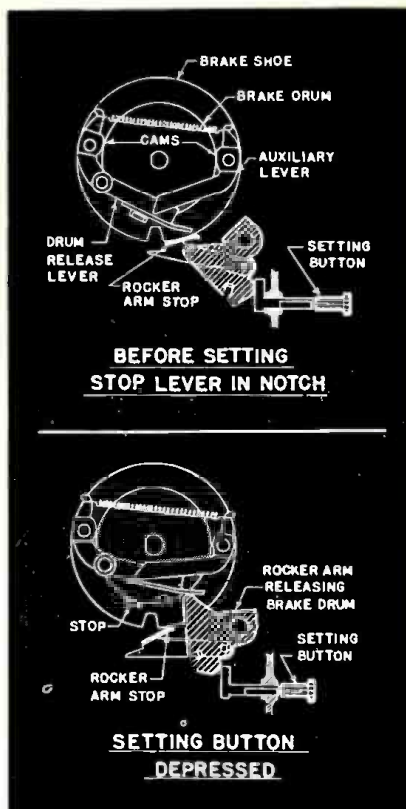


Fig. 4 (top) and Fig. 5 showing operation of station set-up mechanism.

### TWO-STAGE FEEDBACK CIRCUIT

★ Larger Philco models this year use two stages of push-pull amplification with overall audio feedback. Circuit reproduced on this page shows how a separate 6J5G is employed as a phase inverter and how the inverse feedback is accomplished.

Feedback circuit is shown in extra heavy lines and arrow-heads indicate

the path of feedback circuits. The feedback is obtained by taking the output voltage of the 6F6G push-pull output amplifiers and feeding into the grid circuit of the push-pull 6J5G drivers. Note the 70,000 ohm resistor and .1 mike condensers in the feedback circuit, which are used to obtain proper phase relationships.

### POOR SWITCH CONTACT CAUSES RADIO NOISE

★ Of recent we've heard a few servicemen state that some of the new indirect lighting type of lamps will produce an intense racket in the radio after the lamp has been operating a short time.

Seems that the switches used in the lamps are rated at 2 or 3 amps, and upon heating due to the high currents drawn by bulbs, the switch contacts open slightly, causing an arc.

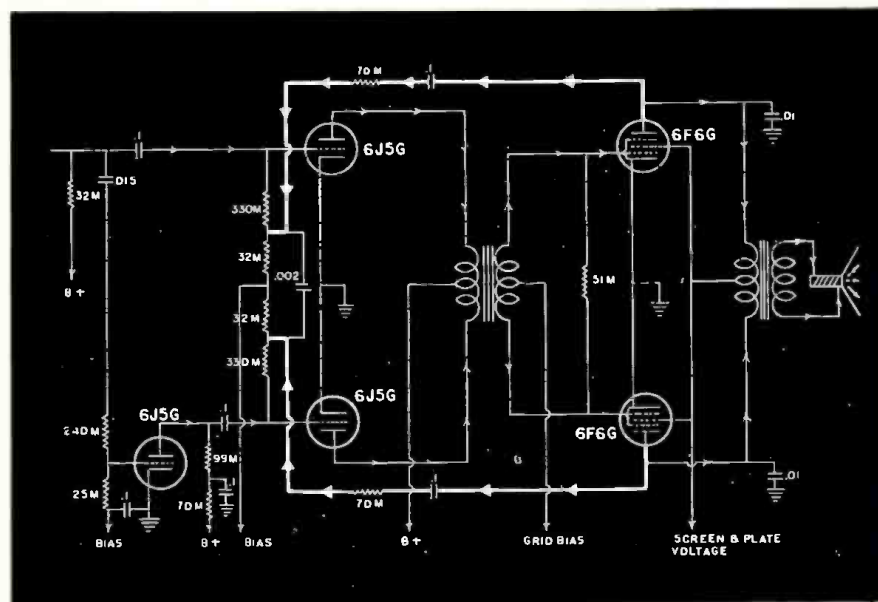
Remedy is to replace the switch with a heavy duty unit designed to handle about 6 amps.

SERVICE SECTION

### MORE STUDY NEEDED

★ Everyone is talking about or recommending that servicemen have this or that type of equipment to do their work efficiently; lectures are given telling of the advantages of one type of testing unit over another and how it will save time, but very little is said about studying, learning fundamentals and their applications.

Contact with many hundreds of servicemen shows that more thought should be given to study. Many excellent books have been written explaining radio and there are a number



Circuit of the 2-stage push-pull inverse feed-back used by Philco.



YOU DON'T PAY  
UNTIL YOU'VE  
SOLD THE TUBES

YOU DON'T PAY  
UNTIL YOU'VE  
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*we have to say it TWICE  
before they really believe it!*

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Sounds too good. Where's the catch?"

There isn't any catch! If you meet Tung-Sol's requirements as a responsible dealer (and more than 8,000 dealers have), you don't pay one red cent for your Tung-Sol Tubes until you sell them and collect your profits. And mind you — the price is NO HIGHER than you pay for any recognized brand. Consignment costs you nothing.

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no more  
Headaches!*

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## STANCOR

STANDARD TRANSFORMER  
CORPORATION

850 BLACKHAWK STREET • CHICAGO

# SERVICE NOTES

of good radio schools conducting correspondence courses in advanced radio — just what the serviceman needs.

Knowing what one is doing is extremely important in this fast-moving radio art. All the test equipment in the world will not tell what's wrong with a radio set unless one knows how to use it. And much more than a superficial knowledge is required to do a job quickly and efficiently so as to show a profit.

A few minutes a day studying the basic radio principles, if not already understood, and the new developments will repay the servicemen by saving many hours in repairing sets. While it is essential to have adequate modern servicing equipment, a thorough technical knowledge of radio is even more important.

## STEWART-WARNER R-183 CHASSIS

★ The R-183 chassis is employed in receiver models 1831 to 1839. Set is a superhet with an R.F. stage operating on all bands. Circuit shows receiver with wave switch in BC position.

Antenna wave-switch makes connections for doublet antenna on short wave band. Note iron-core antenna coil for BC band.

I.F. and R.F. section of set are of usual design. Reactance dimmer type of tuning indicator. Second section of diode used in delayed AVC circuit. Fixed bias from the power supply is used with the 6L6 beam power output tube.

Trimmer locations and frequencies are shown on bottom view of the chassis. Alignment procedure is standard.

## CROSLEY 1117

★ This year's Crosley 11-tube chassis is a 2-gang superhet tuning 3 bands. Set designed for use with a doublet antenna or ordinary type. Wavetraps are used on models shipped to locations where I.F. interference may be prevalent. (Circuit on p. 34.)

A two-stage I.F. amplifier is used. One stage of this I.F. uses resistance coupling. Separate triodes connected as diodes are employed for detection and AVC.

Fixed bias is used on the 2nd I.F. amplifier, the 1st audio stage and to provide a delay on the AVC circuit.

Phase inversion is obtained in the

output stage by using a load resistor in the screen lead of one of the 6K6G tubes. In Series 1 resistors are used in the screens of both output tubes; Series 1 also differs from Series 2 in that a .0001 condenser is connected from the grid of the 2nd I.F. tube to the wave switch—shown in dotted lines.

Chassis layout shows the trimmer locations and proper frequencies.

## PHILCO 38-4 & 38-5

★ The 1938 Philco models 4 and 5 have almost identical chassis. The 38-4 has a cone-centric automatic tuning system, while the 38-5 has a standard dial with a shadow tuning meter. (Circuit on page 34.)

Set tunes on BC band and shortwaves. Separate R.F. coils are used, wired in series—shorting switch shunts BC coil for shortwave reception. A tuned R.F. amplifier is employed on both bands.

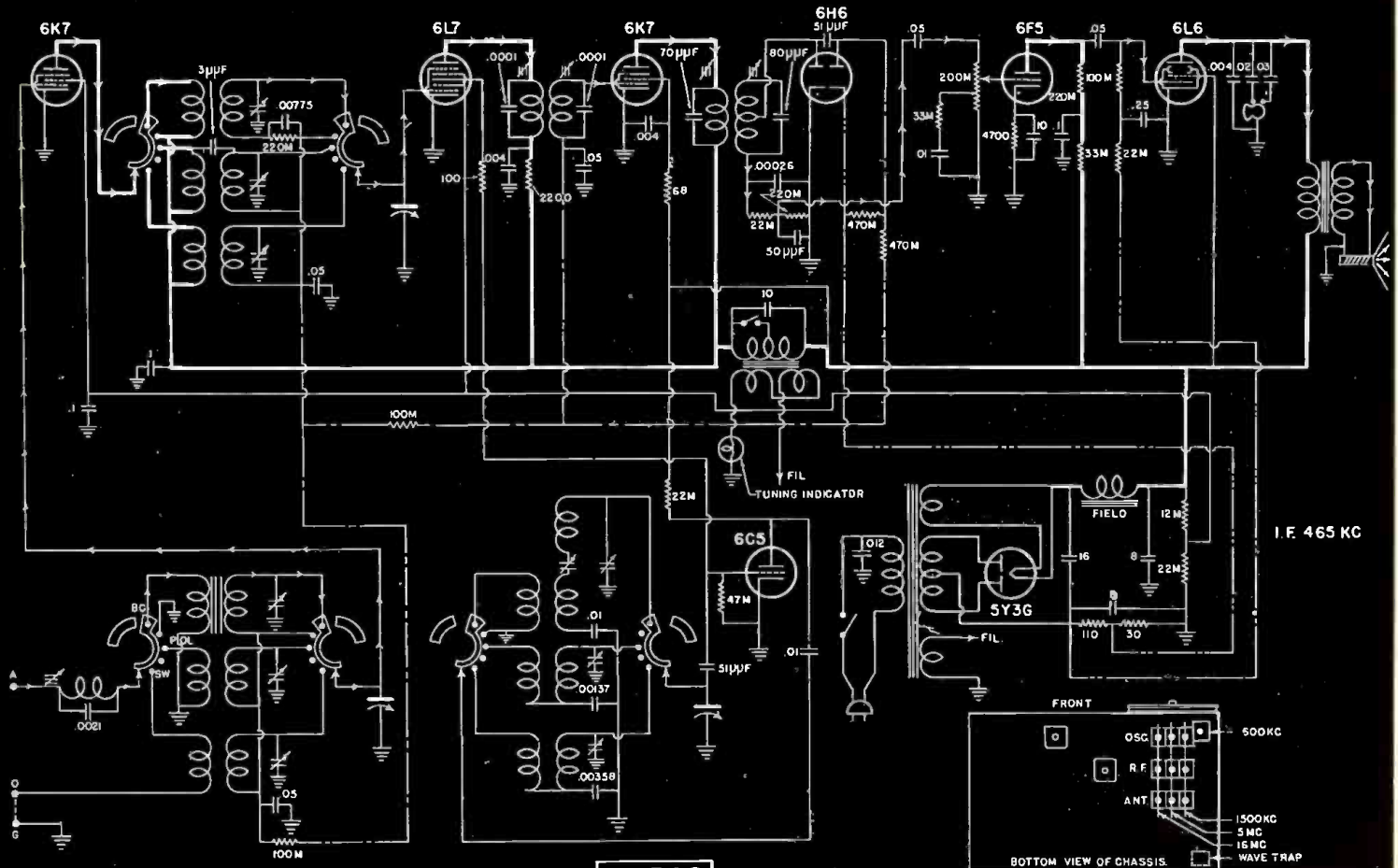
Antenna coil is of low impedance type for use with Philco all-wave antenna system.

The suppressor grid of the I.F. amplifier is coupled back through a tertiary winding in the first I.F. trans-

(To page 36)

## STEWART-WARNER 1831 TO 1839

Chassis R-183



# EVERY TUBE IN SERVES A REAL



WE'RE PUSH AND PULL-  
AND DO OUR DOUBLE  
JOB EFFECTIVELY

I'M THE OSCILLATOR-  
AND I WORK EVERY  
MINUTE

THERE'S NO  
COUNTERFEITING  
IN  
*RCA Victor*

I'M THE RECTIFIER-  
AND I KEEP  
THINGS RIGHT



The RCA Victor name is your—  
and  
guarantee of honest quality—full return  
spent! And it's your protection for a so

There's only one way to stay in business profitably.  
And that's to give your customers the satisfaction of  
full return for their money. When you sell RCA Victor  
merchandise—that's precisely what you do.

Some radio sets are loaded with dummy tubes to  
fool you and your customers. When your customers  
find they've been duped—you suffer.

Every tube in an RCA Victor radio serves a real  
purpose. The 13-tube chassis of RCA Victor Model  
813-K shown here, is just one example. You can sell  
an RCA Victor *confident* you're selling quality mer-

*RCA presents the "Magic Key" every Sunday, 2  
on NBC Blue Network*



OVER 300 MILLION RCA RADIO TUBES HAVE BEEN BOUGHT BY RADIO  
TUBES, AS IN RADIO SETS, IT PAYS TO GO RCA, ALL

# AN RCA VICTOR PURPOSE

**"COUNTERFEIT SETS  
FAKED WITH  
DUMMY TUBES"  
RADIO TODAY  
November 1937**

**I'M THE OSCILLATOR  
CONTROL—I GIVE YOU  
AUTOMATIC TUNING**

**I'M THE AUDIO  
DRIVER— AND HOW  
I DRIVE!**

**I'M THE 1ST AUDIO  
TUBE—AND I BOOST  
VOLUME!**

**I'M THE 2ND IF—WORK  
ING HARD, THOUGH  
YOU CAN'T SEE ME**

**I'M THE MAGIC EYE—  
I MAKE MANUAL  
TUNING EASY**

**I'M THE 1ST  
DETECTOR—AND MY  
JOB'S A HARD ONE**

**I'M THE 1ST IF—  
ALWAYS  
ON THE JOB**

**I'M THE 2ND DETECTOR  
I MAKE THE RADIO  
SIGNALS AUDIBLE**

**I'M THE RF AMPLIFIER  
— AN EXPERT FOR  
TOUGH JOBS**

our customer's—  
n for every dollar  
d future business

handise. Your customers will  
ome back—*satisfied!*  
Go "RCA All The Way" with  
CA Victor. Remember—RCA  
Victor is the buy-word for reli-  
bility—dependability. RCA  
Victor symbolizes high quality,  
new performance, and the newest  
esigns—all at prices that mean  
air profit to you—and honest  
alue to your customers.

3 P. M., E. S. T.,

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RCA MANUFACTURING CO., Inc.  
Camden, New Jersey  
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ERS...IN  
HE WAY!



# EVERY TUBE IN AN RCA VICTOR SERVES A REAL PURPOSE

**"COUNTERFEIT SETS  
FAKED WITH  
DUMMY TUBES"**  
Radio Today  
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THERE'S NO  
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IN  
*RCA Victor*

WE'RE PUSH AND PULL—  
AND DO OUR DOUBLE  
JOB EFFECTIVELY.

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I'M THE RECTIFIER—  
AND I KEEP  
THINGS RIGHT

The RCA Victor name is your—and your customer's—  
guarantee of honest quality—full return for every dollar  
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chandise. Your customers will come back—satisfied! Go "RCA All The Way" with RCA Victor. Remember—RCA Victor is the buy-word for reliability—dependability. RCA Victor symbolizes high quality, fine performance, and the newest designs—all at prices that mean fair profit to you—and honest value to your customers.

I'M THE RF AMPLIFIER  
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OVER 300 MILLION RCA RADIO TUBES HAVE BEEN BOUGHT BY RADIO USERS...IN TUBES, AS IN RADIO SETS, IT PAYS TO GO RCA ALL THE WAY!

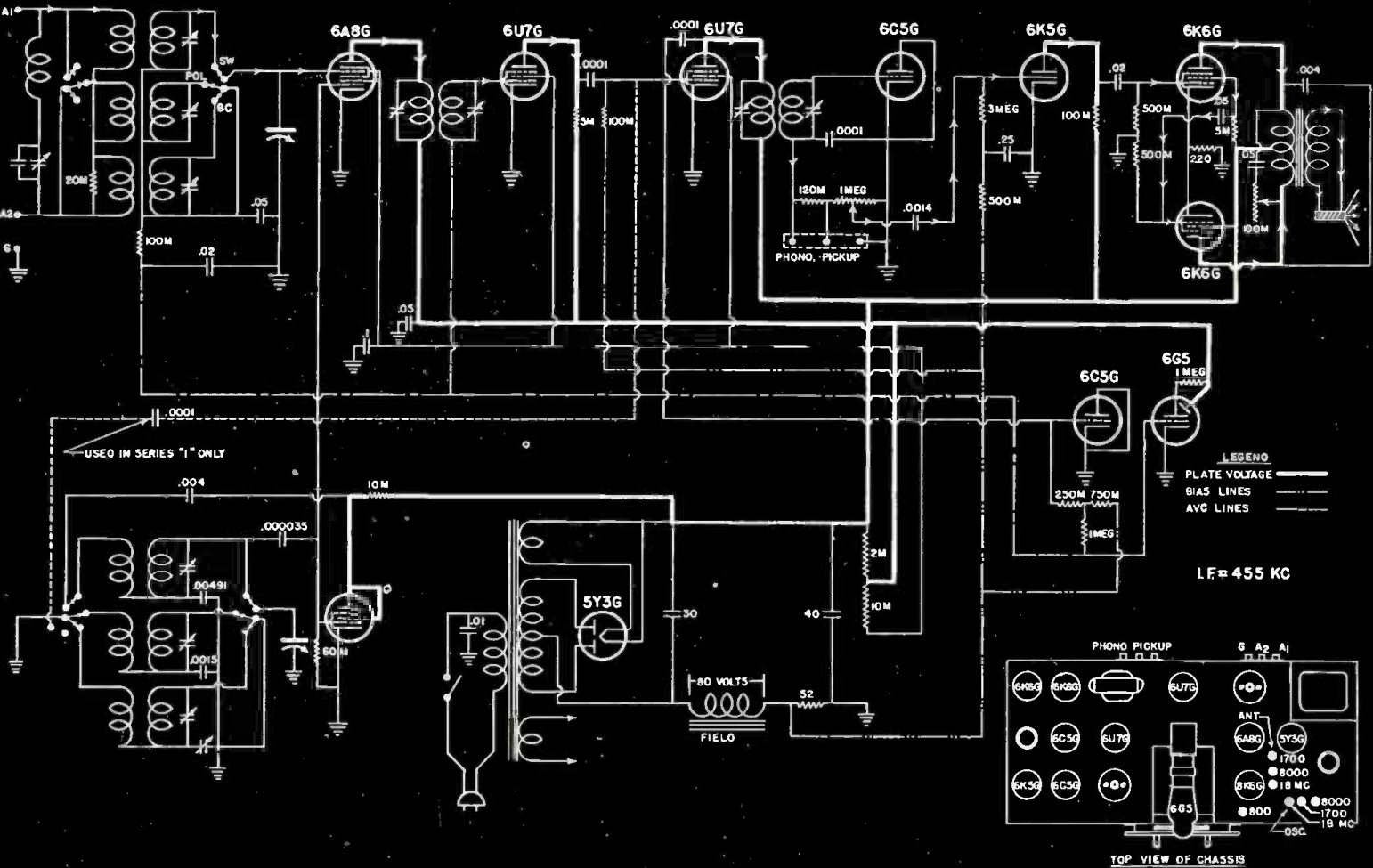
*RCA Victor*

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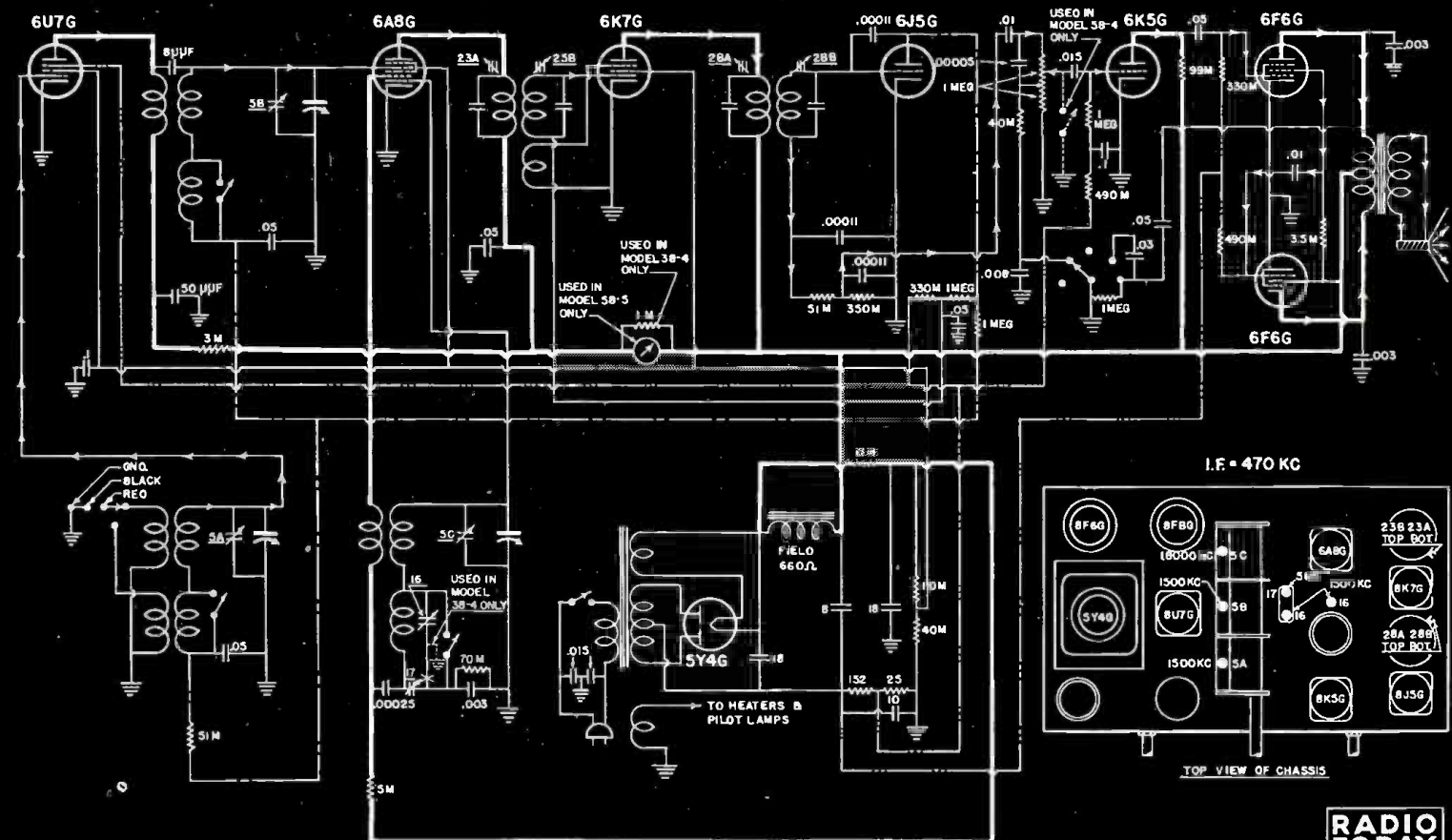
# CROSLY MODEL 1117

Series 2



# PHILCO MODELS 38-4 & 38-5

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# SERVICE NOTES

former to provide for more stable operation of the high-gain stage. A triode tube is used as a double diode—the grid for detection and the plate for AVC.

Chassis layout shows location of trimmers. Since a single trimmer for both bands is used in the antenna and 1st detector stage, it is necessary to follow a definite alignment procedure. First the oscillator 18 megacycle trimmer 5C is adjusted. Then the 1500 KC trimmers 16, 5B, 5A are aligned in the order given. The oscillator series padder 17 is adjusted at 580 KC. The 1500 KC trimmers are readjusted to compensate for changes during the padding. The set is then properly aligned.

## GENERAL ELECTRIC F-96

★ The model F-96 features instantaneous push button tuning. A manual button on the touch tuning keyboard serves to disconnect the trimmers and make the necessary circuit changes for manual tuning.

In the push button position the R.F. amplifier is cut out of the cir-

cuit by automatic switches—I.F. sensitivity is also increased in push button operation.

Push button trimmer locations are shown in a separate diagram at bottom of chart. The frequency range of each trimmer is also given.

The I.F. amplifier is standard, employing 2 stages—one of which is AVC controlled. The second stage feeds the discriminator which has a three-winding transformer. Plate winding of discriminator to transformer is untuned. Second winding performs similar to primary of usual type having 2 windings.

Both the control grid and suppressor of the R.F. stage are AVC controlled for better AVC action—prevents overloading due to strong signals.

Tone switch varies frequency response by introducing degenerative feedback in the two audio stages in addition to connecting a condenser across part of the volume control.

Chassis layout shows location of all trimmers. I.F. and A.F.C. alignment is handled in the usual manner. Alignment of the high frequency band is done first, followed by the police and the BC band. This procedure is necessary because of interlocking trimmer action.

## PROFIT IN REPLACING BELTS ON DIAL MECHANISMS

Since many of the home radio sets use a woven fabric belt in the dial as a drive, the alert servicemen should be awake to this market. With use, these belts stretch and slip, giving poor tuning action.

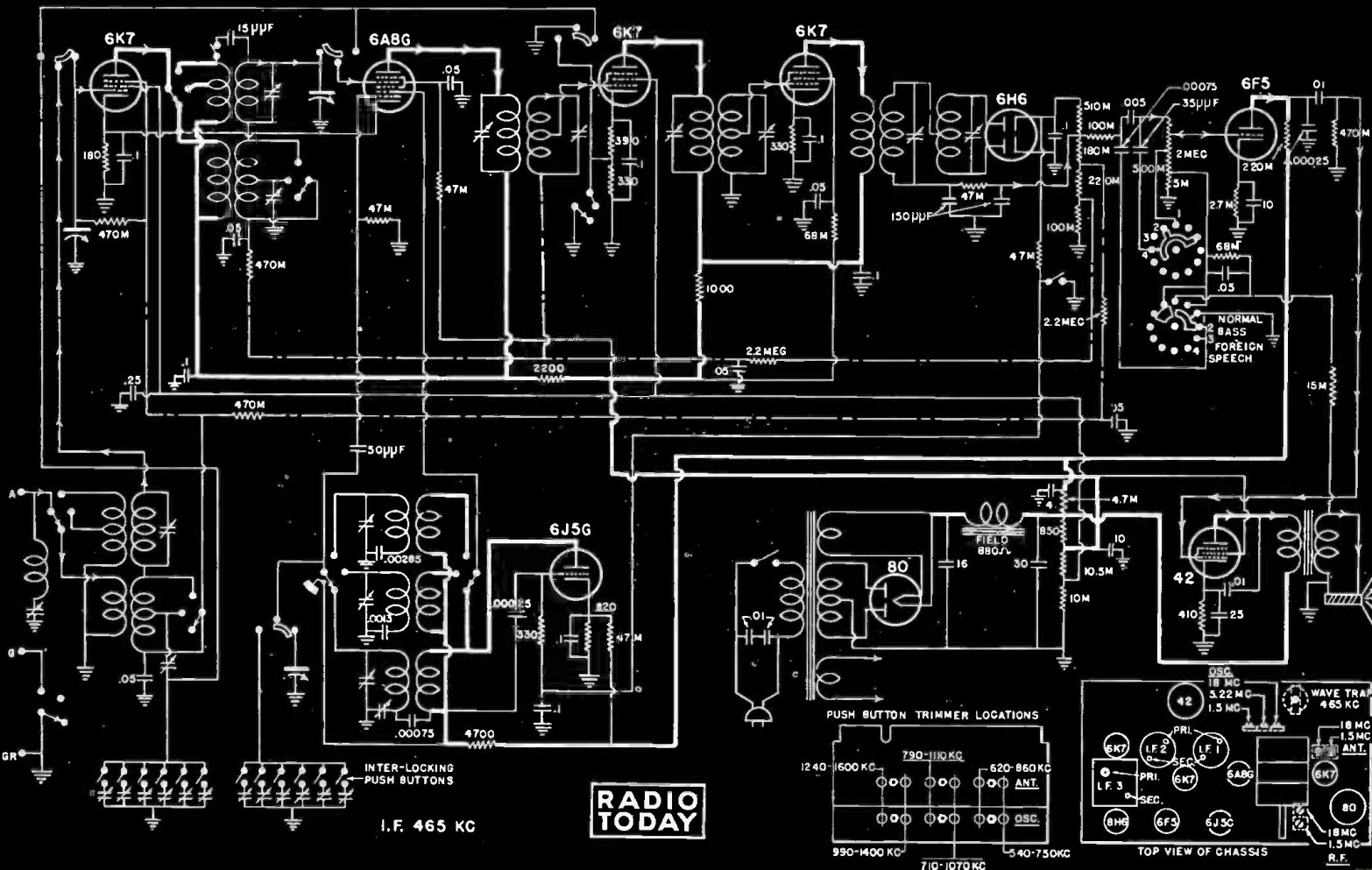
J. Finkel, president of J. F. D. Mfg. Co., points out that “more than half a million home radio sets now in use are equipped with woven fabric belts. Every one of these belts, sooner or later, must be replaced, and this replacement will be constantly repeated.”

To aid the serviceman in handling this business J. F. D. is marketing a display kit with an assortment of 300 belts cross-indexed for easy selection.

## Columbia model C-2 Intermittent frying

★ Faulty insulation between the primaries and secondaries of the r-f coils is usually responsible. It is advised that for this trouble, all coils be carefully checked. Naturally a breakdown of this type would cause plate potential to leak into the circuit. Check for the slightest leakage, as well as for shorts.

## GENERAL ELECTRIC MODEL F-96



**Bruno New York, Inc.**  
RCA VICTOR WHOLESALERS  
800 WEST 20th STREET  
NEW YORK

**Spear & Company**  
Furniture  
New York  
November 18, 1937

Wholesale Distributors  
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November 30, 1937

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STAMFORD CONN

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**S. T. RANDALL, INC.**  
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**STEWART-WARNER CORP.**  
1816-1832 DIVERSEY PARKWAY  
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**LEE DE FOREST LABORATORIES**  
RADIO ELECTRONICS

**COLUMBIA BROADCASTING SYSTEM INC.**  
485 BROADWAY  
NEW YORK

**NATIONAL BROADCASTING COMPANY**  
A RADIO CORPORATION OF AMERICA INCORPORATED  
363 B'RDWAY  
30 BOY HARBOUR PLACE  
NEW YORK

# EXPOSING TRADE "RACKETS"

Disclosure of counterfeit radio sets in the November issue of **RADIO TODAY** has brought a deluge of letters from all branches of the industry, commending and congratulating Dr. Orestes H. Caldwell, Editor. Again **RADIO TODAY** took the leadership in exposing a fundamental trade evil. Here is indisputable evidence of an editorial service resulting in reader acceptance. It is no mere coincidence that, in 25 years of business paper publishing, every magazine edited by Dr. Caldwell has also been first in annual advertising volume.

# ADVERTISING CENSORSHIP

In its campaign against evils that are hurting the industry, **RADIO TODAY's** most recent exposure revealed one of the worst examples of counterfeit sets—seven dummy tubes in a 14-tube chassis! Action by the Radio Manufacturers Association, by the Government and by Better Business Bureaus followed quickly. As we go to press, hearings are being held on the rules of Fair Trade Practice by the Federal Trade Commission. **RADIO TODAY's** policy of advertising censorship, conforming with the new regulations, will be mailed to advertisers and published in the January issue.

# SALES STRENGTH IN NEW APPLIANCES

Electrical merchandise has a call-to-action for radio dealers

## STOP "COURTESY DISCOUNTS," LETTERS BEG INDUSTRIAL EXECS

★ Determined to stop "courtesy discounts" and "wholesale prices" on radios and electrical appliances if possible, the Wisconsin Radio, Refrigeration and Appliance Association is sending out a series of six letters, addressed to 300 leading industrial executives of manufacturing plants in the Milwaukee area, asking their aid in stopping the practice of putting employees' Christmas purchases through company purchasing department channels. Sample letter from the series, follows:

October 26, 1937

Dear Sir:

"... after the ..... Plant had shut down almost the entire business of the town was paralyzed."

How often have you read such accounts in the papers. Loss of income in a plant means loss of income to all the hundreds of shop keepers in the neighborhood.

I can hear you asking . . . "What have I to do with that?"

Just this . . . that when you permit or encourage your employees to buy retail commodities (radio-refrigerators-wash machines-tools-garden implements, etc.) at wholesale through your own buying facilities, you are creating just such a condition in the neighborhood of your plant.

Perhaps you have been far-sighted enough to see the wisdom of refraining . . . in which case this organization thanks you.

In case, however, that you are fostering or permitting such buying activities in your organization, we re-

spectfully ask that you reconsider this move.

The retailer who performs a definite and necessary service in the community cannot exist in the face of your own competition.

Give this merchant a chance to live . . . to prosper . . . and in turn to help you . . . for all business is inter-related.

Surely . . . you will give this your personal attention.

Cordially yours,  
Wisconsin Radio Refrigeration &  
Appliance Association,  
H. L. ASHWORTH,  
*Executive Secretary*

125 E. Wells St.,  
Milwaukee, Wis.

## TEST YOUR SKILL ON 1938 REFRIGERATOR SALES TERMS

★ As the impressive new 1938 "boxes" hit the market, a whole series of new sales words and phrases made their appearance. These terms are an important part of the salesman's equipment as the season gets under way.

From the refrigerator merchandise of Fairbanks-Morse, General Electric, Stewart-Warner, Frigidaire, Westinghouse, Crosley, and Norge, the following terms have been collected. Can you match the manufacturers with the proper phrases?

Moonstone tray	Ribbon shelves
Super freezer	Airplane cold control
Adjusto-shelves	Humidrawer
Norbake dishes	Oven-proof pottery
Double-easy quickube	

Cold storage chest	Dairy basket
Rhapsody-in-blue	Moisture-seal hydrators
Silent meter-miser	Thermo-sealed
Kitchen-proved	Zone control
Econ-o-lite	Express tray
Breaker strips	Ejecto-cube
Cube expeller	Triple thrift
Close-bar shelves	One-button control
Sav-a-step	Speede-Cube
Split shelf	Storadrawer
Lazilatch	Norgloss
Electrosaver	Hydrovoirs
Bonderized	Preservoir
Rubber-floated	Low-temp

## WASHING IN FRONT OF THE STORE

★ Most months of the year, Tesloff & Wilson, appliance dealers, Fond du Lac, Wisconsin, keep a washer out in front of the store and operating so that people who pass can see the action.

Usually there is a dish or bath towel in the water, and many a woman stops to watch the washer. When she does a special salesman who sits in the store watching the machine steps out and begins talking to the woman. Often one or two washer sales a day are made in this manner, according to Joseph Tesloff.

The salesman can usually begin talking to a watching housewife just  
(Continued on page 40)

## CROSLEY CONVENTION GUESTS SEE NEW SHELVADORS AND NEW PLANT at Richmond, Ind., Nov. 29-30.

At the left, the group includes, left to right, Chas. Sawyer, Powel Crosley III, and J. P. Rogers, Crosley vice-presidents. In the center picture, Powel Crosley, Jr., seated in the foreground; Thomas M. Berger, general sales manager, standing. Fielding Robinson, New York distributor, is on the left, and Powel Crosley III, vice-president in charge of radio, is on the right. The gents in the picture at the right are Herb Hieb, Des Moines, Iowa, jobber, and C. J. Stevens, Crosley district manager.





**FAIRBANKS MORSE DEBUTS NEW REFRIGERATORS NOV. 15-16 AT INDIANAPOLIS**—at the table, upper left, the distributors left to right, Chas. Houghtaling, Albany, N. Y.; Al Edson, Albany, N. Y.; Harry Glasser, New York City; Sam Roskin, Boston, Mass.; and George Birkhahn, Middletown, N. Y. In the center photo, W. Paul Jones, FM general manager. In the group standing at the right—W. A. (Bill) Thompson, Birmingham, Ala., jobber; Tom Boone, Norfolk, Va., jobber; Lee M. Ross, Knoxville, Tenn., jobber; Jack Spellman, FM rep. in New Orleans; and J. J. Fitzgerald, FM service engineer.

Below, **NORGE CONVENTION NOV. 15-16 GREET'S 1938 ROLLATOR LINE**—at the table upper left, Robert L. "Believe-It-Or-Not" Ripley (center) the feature speaker, with George W. Borg of Borg-Warner Corp., (left) and Howard E. Blood, Norge president. 'Round the table at the right, Cal Zamoiski (center) Baltimore and Washington jobber for Norge, surrounded by staff members Joe Doyle, "Kauf" Kaufman, Bill Middleman and Saul Greber. Scene at the table lower left includes P. B. Zimmerman (left), recently appointed Norge vice-president; John H. Knapp, (center), new assistant to Norge president; and C. D. Donaven, manufacturing head of the company.



Below, **STEWART-WARNER HONORS NEW REFRIGERATORS NOV. 10-12**—at the left is Frank A. Hiter, SW vice-president and general sales manager. In the center photo, left to right, the faces are those of Morty Salzman, J. N. Golten, and Sam Salzman. Chatting in the group at the upper right are, left to right, E. R. Rutledge, Rudy Browd, and D. T. Lansing. The four gents in the foreground, lower right, are, left to right, Tom Tobin, SW West Coast district manager; Oliver Shaw, jobber of Charlotte, N. C.; C. C. DeWees, SW radio and refrigeration advertising manager; and R. J. Lawrence, SW representative.



# THANK YOU WORLD

*...for proving the  
quality superiority*

# OF NATIONAL UNION

*Radio Tubes and Condensers*

You did it! You proved to us our faith in the scientists, research engineers and production chiefs who have created and manufactured the fine lines of National Union radio tubes and condensers.

Pouring into our headquarters from 117 countries throughout the world have come letters testifying to complete satisfaction in the performance of products bearing the National Union brand. Nothing we could say about the abilities of our Research staff, the tests and checks we make in every step of manufacture would be as convincing as the test of actual service in the field.

The men who are using National Union radio tubes and

condensers in earning their daily living are the men who know. These men tell us National Union to them stands for quality and dependability year in and year out. They say "Give us a product marked National Union and our faith in its performance is unlimited."

To those of you who haven't experienced the pleasure of using National Union tubes and condensers we extend an invitation to join the worldwide group to whom the name National Union means a profitable sound business relationship based on quality and fair dealing. Write or cable for complete information on the National Union program.

## NATIONAL UNION RADIO CORP.

570 Lexington Avenue, New York, N. Y.

U. S. A.

Cable Address: TUBES, NEW YORK

### Would You Trade—?

Competing with ... a dozen nearby dealers ...  
Advertising for ... a dozen nearby dealers ...  
Price cutting by ... a dozen nearby dealers ...  
Sharing turnover with ... a dozen nearby dealers ...

### For...

No competition ... your city exclusively yours ...  
Directly profiting on your every penny spent for advertising ...  
Stabilized price and a full profit ...  
Building sales today and for the future ... with quality ...

● Of course you would trade. You CAN ... if you act at once. Certain cities and territories are yet available to serious radio merchants. The product is the outstanding MASTERPIECE radio, custom built by McMurdo Silver ... One-half of America is already closed to America's best music merchants. Don't delay ... write or wire now for full details to:

McMURDO SILVER CORP., 2900 C.S. Michigan Blvd., Chicago

# REFRIGERATORS

From page 38

"Women like to hear the sound of water in a washing machine," declares Mr. Tesloff. "And in ours they can see it when the cover is off. We consider this one of our best ways of nabbing new prospects on a sort of cold-basis, for the operating machine must lure them into the doorway where it is functioning."

★ Stewart-Warner Corp. has purchased an Indianapolis, Ind., plant from the trustees of the Marmon Motor Car Co. The deal gives Stewart-Warner 22 acres of land and buildings, adding up to 539,000 sq. ft. of floor space. According to J. E. Otis, Jr., president, it is the SW intention to transfer all refrigerator making operations to this new site. This expansion is one of the steps based upon the firm's steady growth and the increasing demand for its products.

★ Johnson Motors have just completed a large new building at Galesburg, Ill., to provide for assembly and warehouse space for the fast-growing refrigerator division of the firm. Expansion program means added space for the engineering, service, sales, production and inspection departments. Activity in refrigeration compressors and evaporators, as well as Johnson's Sea Horse outboard motors, will be increased at the main plant at Waukegan, Ill. Already working at the new Galesburg building are the executives, J. F. Furry, chief engineer; C. A. Thomson, sales manager; C. J. Geske, service manager, and H. L. Bourdon, office manager.

Johnson motors entered the refrigeration field 5 years ago, making mechanical units. A complete line of household refrigerators bearing the name Briggs was introduced about a year ago and met with a success which inspires the current building expansion. The 1938 Briggs line is now in production and deliveries are being made from Galesburg.



Charles R. D'Olive, is now vice-president in charge of Crosley Corp.'s refrigeration division.

# "THIS MUCH MORE IN A SHELVADOR"

## *The Greatest Sales Story Ever Told!!!*



The new 1938 Crosley Shelvador Electric Refrigerator is now available in 11 distinctive models that meet every requirement in capacity and price.

In the past six years Crosley has experienced phenomenal growth with the exclusive Shelvador Electric Refrigerator. This growth dictated plans for an expansion program unrivalled in the Electric Refrigeration Industry . . . a program now in full operation.

The dominating features of this program are the new \$1,000,000 Crosley plant at Richmond, Ind., and the great, new "Proving Ground" installed at the Cincinnati plant. The Richmond plant, the first of four units to be built on this 90-acre industrial tract, is 200 feet wide by 1200 feet long and incorporates the most efficient production facilities known to the industry. It is served by two main trunkline railroads and is *already producing* at the rate of 1500 Shelvador refrigerators daily. In the new "Proving Ground" Crosley has developed the most modern air conditioned testing chambers for *product quality control*. Shelvador refrigerating units are tested under controlled temperature and humidity conditions that approximate extremely severe climatic conditions.

Supporting this program is a product that establishes new standards for quality manufacture and low cost of operation—the new 1938 Crosley Shelvador Electric Refrigerator—unquestionably the greatest Shelvador in Crosley history! Record carload shipments have been made . . . more are now on the rails . . . and on thousands of sales floors women are eying and buying the new Shelvador. All over the nation *sales* are proving that "This Much More In A Shelvador" is still "the greatest sales story ever told."

### "WATCH CROSLY IN 1938"



Powel Crosley, Jr.  
President



T. W. Berger  
Gen. Sales  
Manager



Chas. R. D'Olive  
Vice-President,  
Refrigeration  
Division



Herbert Money  
Chief Engineer  
Refrigeration  
Division



John W. Craig  
Asst. to Chief  
Refrigeration  
Engineer



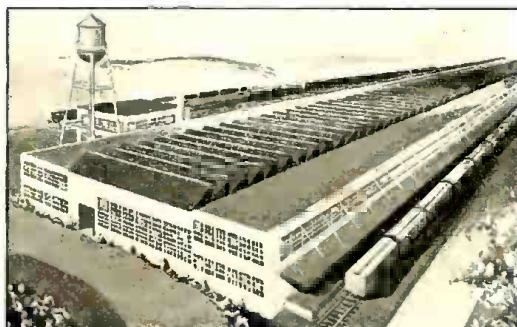
These are the men up in the front line as the 1938 Crosley Shelvador "Big Push" for record refrigerator sales begins.



New "Inside Proving Ground" at the Crosley Cincinnati Plant.



Engineering Staff, Refrigeration Division of The Crosley Radio Corporation.



Shown above is the recently completed first unit of four to be built by Crosley on the 90-acre tract at Richmond, Ind. This first unit, 200 feet wide by 1200 feet long, is the last word in production efficiency with a capacity of 1500 Shelvador cabinets per day.

## THE CROSLY RADIO CORPORATION • CINCINNATI

POWEL CROSLY, Jr., President

Home of "the Nation's Station"—WLW—500,000 watts—70 on your dial

# CROSLY SHELVADOR



Wishing you  
a very merry  
**Christmas**

AND THE HAPPIEST  
OF **NEW YEARS!**



# REFRIGERATORS

From page 40

## Norge Rollators for 1938

★ New refrigerator line for Norge includes 16 models: 8 Standard, 5 De-Luxe, 2 Low-Temp, and one gasoline-electric. Illustrated herewith is model P-71-8, deluxe in porcelain. Capacity is 8.11 cu. ft. Standard accessories include ice tray release, defrosting tray, automatic electric light, double hydro-voirs, adjustable insert shelves, bottle rack, utility basket and accessory set. Twelve variations in arrangement possible with use of insert shelves. Some deluxe models produced in mother of



pearl exterior. Norge Division, Borg-Warner Corp., 670 E. Woodbridge, Detroit, Mich.—**RADIO TODAY**—see also advt. pages 2 and 3.

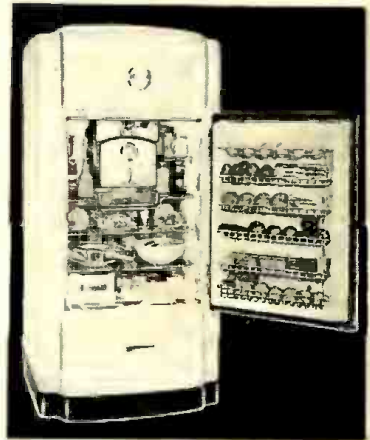
## Fairbanks-Morse E6



★ Illustrated is Model E6, one of the nine models in 1938 line, described in general last month. E6 has storage capacity of 6.53 cu. ft. gross, and shelf area of 12.6 sq. ft. Ice capacity is 91 cubes or 9½ lbs.; 1 double depth tray and 3 standard trays, 2 with ice cube expeller grids. Over-all size is 57½ in. high; 28¾ in. wide; 24¾ in. deep. Features are conservador, visible thermometer. Ribbon shelves. Sliding shelf. Split shelf. Self-sealing vegetable crisper. Dairy basket. Non-refrigerated reserve storage compart-

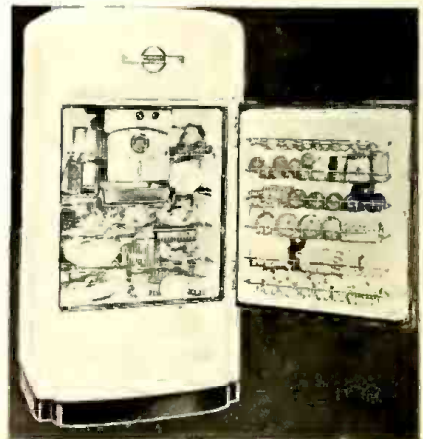
ment. Simplified temperature control. Illuminated dial. Interior light. Dulux finish. Two-way door opener, moonstone defrosting tray. Glass wool insulation, etc. Fairbanks, Morse & Co., Indianapolis, Ind.—**RADIO TODAY**.

## Crosley 1938 Shelvadors



★ New line presented by Crosley includes 4 Deluxe models: KL5-43, KL5-50, KL5-61 and KL5-71; and 7 Standard models: KB5-30, KB5-31, KB5-36, KB5-43, KB5-50, KB5-60 and KB5-71. Deluxe model KL5-61, illustrated herewith, has net storage capacity of 6.1 cu. ft. Total shelf area, 15.8 sq. ft. Makes 140 ice cubes or 11½ lbs. of ice. Features include Shelvador, electrosaver hermetic unit, speede-cube release, refrigerated shelf for fast freeze, 18-point temperature control, built-in thermometer, cold storage tray, 5 flat wire shelves. Three shelvador jars and covers, 6 beetleware dessert cups. Crisper, storadrawer, automatic interior light, ventilated front. Sealed, glass wool insulation. Benderized steel cabinet, dulux finish. Available with built-in, 5-tube radio.

Standard models are represented here by KB5-60, with net capacity of 6.0 cu. ft., total shelf area 14.43 sq. ft. Makes 161 ice cubes or 12½ lbs. of ice. Features include most of those of the deluxe jobs, except for crisper, stora-



drawer, jars, cups, etc. Also available with built-in radio. Crosley Radio Corp., Cincinnati, Ohio—**RADIO TODAY**—see also advt. p. 41.

# The Pendulum Swings Again for 1938 CARS

AGAIN CROWE LEADS with new Panel Mounting Kits for 1938 cars! Official styling! Attractive escutcheons! Softly illuminated dials! Colored knobs! All blending with instrument panel of car. Airplane and drum-type dials. Crowe Interchangeable Controls and Shafts make auto radios adaptable to any car. Re-installation simply by changing Panel Mounting Kit. Get complete details!

ASK FOR SUPPLEMENT 204 AND BULLETIN 202

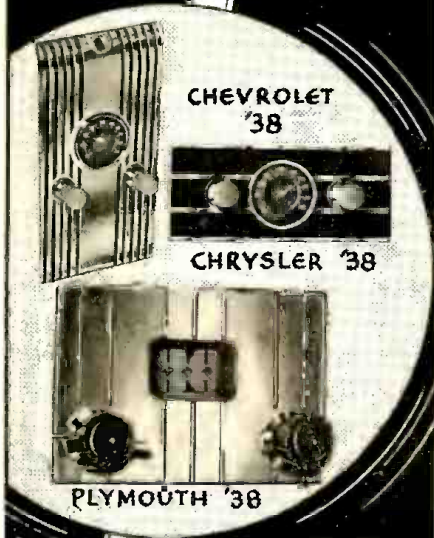
## PHILCO DEALERS!

Crowe-Philco program increases sale of Philco auto radios. Stock Crowe Panel Mounting Kits. Ask for Supplement 204 and Bulletin 201!

CROWE ANNOUNCES NEW PANEL MOUNTING KITS

**CROWE CUSTOM-BUILT**

Manufacturers! Crowe Method of Distribution reduces inventory—improves service—standardizes prices—simplifies selling—stabilizes profits. Write for details.



**CROWE NAME PLATE & MFG. CO.**  
1771 Grace Street  
CHICAGO, ILLINOIS

## PUBLIC ADDRESS

From page 18

### SOUND SOLVES ANOTHER NAVY PROBLEM

★ Because the saluting battery at the Navy Yard at Brooklyn, N. Y., was necessarily situated at some distance from the Commandant's office. Naval officials there faced some special problems. C. H. Woodward, Rear Admiral, U. S. Navy, Commandant, Third Naval District and Navy Yard, New York, has explained the solution to RADIO TODAY:

"The saluting battery is located on the waterfront in order that a salute to ships entering and leaving the Yard can be seen and heard. The Commandant's office is about one mile from the battery. Due to the distance and the intervening buildings, the saluting battery could seldom be heard at the entrance to the Commandant's office.

"To remedy this difficulty a microphone located at the battery was used to feed an amplifier and horn located at the Commandant's office entrance. In this manner the timing of procedure required by Naval etiquette for official calls at the office could be smartly executed since there was no uncertainty regarding the beginning and ending of the gun salutes."

### RADIO AMPLIFIER LABS DEVELOP CUSTOM-BUILT SOUND

★ So that sound dealers may develop their public address ideas and requirements with the aid of factory facilities, D. T. Bell of Radio Amplifier Laboratories, New York City, is expanding a policy of offering specially designed and engineered equipment.

According to Mr. Bell, this trend in PA merchandising is one which helps the dealer to get rush deliveries, aids him to escape list price and special discount competition, puts experienced engineers at his disposal when tough installations come up, and paves the way for "better rental prices on the dealer's own distinctive equipment."

This policy is accented by the company in its design and manufacture of amplifiers, horns, stands, recording equipment, recording heads, etc.

★ From David Bogen Co., Inc., 663 Broadway, New York City, come three new booklets. One is titled "Public Address Blue Book," featuring the Bogen sound products for 1938. Another describes and illustrates the company's custom built sound equipment featuring radio, phonograph and microphone communication for schools, hotels, hospitals, etc. The third concerns the Bogen intercommunicators and lists all the new-model Commophones and paging systems as applied to factories, hotels, etc.

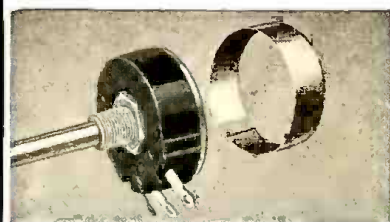


-with Centralab  
in  
at the Controls!

Old Man Centralab at the joy stick! . . . playing a rather "heavy" part in the "Drama of the Skies" as produced by Bendix Radio.

Old Man Centralab is mighty proud of his performance . . . just as he is proud to be associated with Bendix, ace designers and builders of aviation communication systems. Whether for intricate "two-way fone systems" or just plain and fancy replacement jobs—insist on Centralab parts.

### Get the 1937 Volume Control Guide



STANDARD RADIOHM

**Centralab**

**Milwaukee, Wis.**

Division of Globe Union, Inc.

BRITISH CENTRALAB, Ltd.  
Canterbury Road, Kilburn  
London, N.W.6, England

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



# PRODUCTS AND PERSONNEL

— an export supply summary for radio and associated lines.

ABC Radio Laboratories, 3334 N. New Jersey St., Indianapolis, Ind.—antennas and accessories, short wave converters for car radios. Export manager is C. O. Peek.

Acro Tool & Die Works, 1202 W. Grand Ave., Chicago, Ill.—chassis cradles.

Aerovox Corp., 70 Washington St., Brooklyn, N. Y.—dry and wet electrolytic condensers, paper and mica condensers, including transmitting; padder condensers, motor starting and industrial oil capacitors, carbon resistors and vitreous enamel resistors. Export manager is Arthur H. Williams.

Amperite Corp., 561 Broadway, New York, N. Y.—microphones, microphone stands and Amperite regulators. Export manager is S. Ruttenberg.

Andrea Radio Corp (formerly F. A. D. Andrea), 48-20 48th Ave., Woodside, L. I., N. Y.—home sets. Export manager is John I. Whyte.

Arcturus Radio Tube Company, 720 Frelinghuysen Ave., Newark, N. J.—radio tubes. Export manager is J. Geartner.

Burstein-Applebee Co., 1012-14 McGee St., Kansas City, Mo.—home, auto and battery sets, sound equipment, parts and supplies. Export manager is L. M. Bornstein.

C. F. Cannon Company, Springwater, N.Y.—headphones.

Centralab, 900 E. Keefe Ave., Milwaukee, Wis.—volume controls, tone controls, fixed resistors, suppressors, wave-change switches and switch kits. Export manager is H. E. Osmun.

Cinaudagraph Corp., 110 Davenport St., Stamford, Conn.—speakers and parts. Export manager is Arthur Rocke, 100 Varick St., New York City.

Clarostat Mfg. Co., Inc., 285 North Sixth St., Brooklyn, N. Y.—volume and tone controls, T pads, L pads,

attenuators, ballast tubes and other type fixed resistors. Export manager is M. Simons & Son Co., 25 Warren St., New York City.

Clough-Brengle Co., 2815 W. 19th St., Chicago, Ill.—test equipment. Export manager is Robert L. Barr.

Consolidated Wire & Associated Corp., Peoria and Harrison Sts., Chicago, Ill.—antenna wire, aerials, specialties, electrolytic and by-pass condensers. Export manager is J. G. Mann.

Cornell-Dubilier Electric Corp., South Plainfield, N. J.—radio condensers, industrial and power factor correction capacitors, line filters. Export manager is L. A. DeBarros.

Cornish Wire Company, Inc., 30 Church St., New York, N. Y.—wire products, antennas and accessories. Export manager is M. Simons & Son Co., 25 Warren St., New York City.

The Crosley Radio Corp., 1329 Arlington St., Cincinnati, Ohio—home, auto and battery sets, tubes, refrigerators and other electrical appliances. Export manager is A. G. Lindsay.

Crowe Name Plate & Mfg. Co., 1749 Grace St., Chicago, Ill.—panel controls, dials and tuning devices. Export manager is Winslow Goodwin.

All the Latest Features FOR QUICK, ACCURATE SET TESTING



MODEL 1601  
DeLUXE SET TESTER  
\$45.33 IN METAL CASE

Has modern front illuminated instrument . . .

A great advance in Set Testers is achieved by Triplett's new DeLuxe Model 1601 . . . has all the latest features, including many exclusive with Triplett . . . Plug-in type Copper Oxide Rectifier . . . 25,000 ohms per volt . . . Large 4-inch square instrument with front illumination (a great aid for more accurate readings).

- D.C. Volts of 25,000 Ohms per Volt. A.C. Volts at 1,000 Ohms per Volt. Reads to 2,000 Volts A.C. and D.C. in 6 Ranges.
- Resistance Measurements to 20 Megohms. Condenser Tester to 30 Mfds.
- 50 Microamperes to 20 Amperes in 9 Ranges.
- New Single Zero Adjustment for Ohmmeter. All A.C. Operated—No Batteries Used.

Also available in attractive leatherette case with compartment with accessories. Net price \$49.33.



THE TRIPLETT ELECTRICAL INSTRUMENT CO.  
1912 Harmon Ave., Bluffton, Ohio

Please send me more information on Model 1601

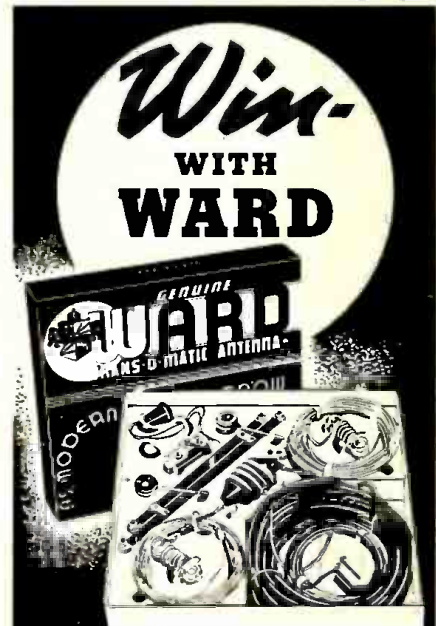
Name .....

Address .....

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



John I. Whyte is now export mgr. for Andrea Radio Corp.



## "TRANS-O-MATIC" ANTENNA KIT

This kit comes completely soldered and ready to install. Features extra heavy enameled wire, molded bakelite junction coupler, and rubber covered transmission line—in an attractive display package.

WRITE FOR CATALOG

The WARD PRODUCTS Corp.  
WARD BUILDING CLEVELAND, OHIO

Freed Manufacturing Co., 44 W. 18th St., New York, N. Y.—home and portable receiving sets. Export manager is J. D. R. Freed.

Gardiner Metal Company, 2514 West 48th Place., Chicago, Ill.—flux-filled wire solders. Export manager is Werner Troeger, 720 N. Jefferson St., Milwaukee, Wis.

General Electric Co., 1285 Boston Ave., Bridgeport, Conn., and Nela Park, Cleveland, Ohio—home, auto and battery radios, intercommunicators, test equipment, tubes and domestic appliances (includes refrigerators, washing machines, irons, fans, vacuum cleaners, sun lamps and heating devices). All export sales made by International General Electric Co., 1 River Road, Schenectady, N. Y., where R. A. Rowlands is manager of appliance department, including radio.

General Industries Co., 3537 Taylor St., Elyria, Ohio—record-playing and recording equipment. Export manager is Arthur Rocke, 100 Varick St., New York City.

General Products Co., 1801 Fannin St., Houston, Tex.—radio club chairs.

Hetro Electrical Industries, Inc., 4611-17 Ravenswood Ave., Chicago, Ill.—home sets, elec. tuners, sound systems, generators, test equip. Export manager is J. M. Muniz.

Hirsh Manufacturing Co., P. O. Box 804, Oklahoma City, Okla.—“Duo-sockets.” Export manager is Harry R. Savage.

Hygrade Sylvania Corp., 500 Fifth Ave., New York, N. Y.—tubes and incandescent lamps. Export manager is Walter A. Coogan.

Indian Products Corp., Koolroom Division, 2338 South Indiana Ave., Chicago, Ill.—air conditioners. Export manager is S. J. Molner.

International Radio Corp., 4th and William Sts., Ann Arbor, Mich.—Kadette home, battery sets and Kadette tubes. Export manager is John Bradfield, vice-president.

International Resistance Co., 401 North Broad St., Philadelphia, Pa.—resistors and volume controls. Export manager is Robert E. Keiser.

Janette Mfg. Co., 556-558 W. Monroe St., Chicago, Ill.—rotary converters, dynamotors, AC and DC motors, AC and DC generators, gasoline engine electric plants, motor generators. Export mgr. is M. Robinson.

J. F. D. Mfg. Co., 4111 Fort Hamilton Parkway, Brooklyn, N. Y.—auto radio antennas, accessories, control shafting, casing, fittings and parts; radio dial belts, bands, cords and cables; ballast tubes. Export manager is L. L. Minthorne, 116 Broad St., New York City.

Ken-Rad Tube & Lamp Corp., Owensboro, Ky.—tubes. Export manager is L. L. Minthorne, 116 Broad St., New York City.

Marconiphone, Inc., 679 Madison Ave., New York, N. Y.—home sets, phonograph-radio combinations, including automatic and portable. Export manager is B. Hills.

*Continued on page 46*



**WINCHARGER**

GENUINE  
**WINCHARGER**  
6-VOLT

**NEW**

**MODEL '38 6-volt with  
"PRESSURE CONTROL"**

**500,000**  
In all Parts of the  
World. Enjoy  
Wincharger  
"Free Electricity  
from the Wind".

A revolutionary new Wincharger that sets new standards of perfection in wind-electric design. . . Offers new simplicity of construction, increased generating efficiency, greater safety in operation, and longer service life. These were the conclusions of exhaustive "wind-tunnel" tests conducted by a prominent American University. Most important of all, the New Model '38 Wincharger has a new governing method known as "Pressure Control" which enables the genuine Wincharger to charge at a much more constant rate, and govern to such perfection that Wincharger actually turns slower, and operates as safely in 70 and 80 mile "hurricane" winds as in a 30-mile wind.

## WORLD WIDE ACCEPTANCE

*Proved Dependable the World over  
— and Advertised Everywhere*

There are *more genuine Winchargers in use* than all other makes combined! *Wherever* you travel throughout the world, genuine Winchargers are known, and they have proved *thoroughly* dependable. Yes! and they are advertised to consumers all over the world!

**WIRE or CABLE today for Distributor  
Merchandising Plan and literature in English,  
Spanish or French**

### STURDY TOWER

*Made of braced rail-steel angle-iron. Safe for housetop. Built to resist the force of a hurricane.*

**WINCHARGER CORPORATION, SIOUX CITY, IOWA, U. S. A.**

*Cable Address "Wincharger"*

**World's Largest Manufacturer of Wind-Electric Equipment**

# AMPERITE

presents

## THE ACOUSTIC COMPENSATOR

### 3 IMPORTANT USES



PUSH UP TO INCREASE HIGHS  
PUSH DOWN TO INCREASE LOWS

(1) The Acoustic Compensator enables you to lower or raise the response of the microphone by the mere flip of the finger! (2) Makes the Velocity immediately adjustable to close talking or distant pickup. (3) Immediately adjustable to any type of job or occasion.

MODELS RBHk, RBMc, with acoustic compensator. Frequency range 40 to 11,000 CPS. Output, —65 db. Switch, cable connector. 25' of cable .....\$42.00 LIST

MODELS RBHn, RBMn, without acoustic compensator. ....\$42.00 LIST

### AMPERITE CONTACT MICROPHONE



Ideal for use on all string instruments. No distortion. No string changes. Unusual high output. —40 db. Can be used on radio sets. Operates with high or low gain amplifiers. Frequency response 40 to 9000 cps.

MODEL KTH (hi-imp): KTL (200 ohms); 25' of cable .....\$22.00 LIST  
KTH or KTL with foot-operated volume control. \$30.00 LIST

### AMPERITE "HAND-I-MIKE"

Smallest velocity made...but has an output equal to larger types. —68 db. Frequency range 60 to 7500 cps. Excellent for close talking. Can be used as hand, desk or stand mike. Very rugged. MODELS HDE (hi-imp); HDL (200 ohms); with switch. \$22.00 LIST



### MODEL RAL \$22.00 LIST



A popular Amperite Velocity. Excellent for speech and music. No peaks. Flat response. Output, —68 db. Triple shielded. Shock absorber. swivel bracket. MODEL RAL (200 ohms); or MODEL RAH (hi-imp). ....\$22.00 LIST

**FREE:** Window Decal and Window Display.  
**NEW!** Special Sound Equipment Letterheads.  
Write for these sales helps, and new bulletins, now!

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

AMPERITE Velocity MICROPHONE

# EXPORTERS

McMurdo Silver, Inc., 2900 S. Michigan Blvd., Chicago, Ill.—home and communications sets. Export manager is McMurdo Silver.

Monarch Mfg. Co., 3341 Belmont Ave., Chicago, Ill.—testing equipment for manufacturers. Export manager is Carrington H. Stone.

Mueller Electric Co., 1581 E. 31st St., Cleveland, Ohio—battery and test clips, hardware and small tools. Export manager is E. H. de Coningh.

National Union Radio Corp., 570 Lexington Ave., New York, N. Y.—tubes, cathode-ray tubes, electrolytic condensers, pilot lamps, exciter lamps and photo-electric cells. Export manager is J. H. Robinson.

Norge Division, Borg-Warner Corp., 670 E. Woodbridge, Detroit, Mich.—refrigerators, washers, gas and electric ranges, commercial refrigeration, air conditioning and heating equipment. Export manager is R. W. Gifford.

D. W. Onan & Sons, 379 Royalston Ave., Minneapolis, Minn.—AC and DC generating plants. Export manager is D. W. Onan.

Pacific Radio Corp., 844 W. Adams St., Chicago, Ill.—home, auto and battery sets, dials and tuning devices. Export manager is J. M. Muniz.

Paris-Dunn Corp., Clarinda, Iowa—battery chargers for radio and light. Export manager is Diego Fernandez.

Permo Products Corp., 6415 Ravenswood Ave., Chicago, Ill.—Permo Point phonograph needles. Export manager is Sherman E. Pate.

Philco Radio & Television Corp., Tioga and C Sts., Philadelphia, Pa.—home, auto and battery receivers, intercommunicators, test equipment, tubes, batteries, power transformers, I.F. transformers, coils, volume controls, resistors, condensers, speakers,



At one of "Solomon's Pools" near Bethlehem in Palestine whirls a Hy-Tower charger by Parris-Dunn Corp.



## THE FINEST PORTABLE SOUND SYSTEM



## Lafayette 30 WATT STUDIO MODEL

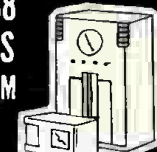


**QUALITY IN EVERY PART**  
Here it is—the portable sound system that has the entire profession agog! LAFAYETTE'S sensational new Studio Model (364-P). Experts agree it's the most efficient modern amplifier circuit on the market today.—or tomorrow. Has more scientifically advanced features than any other portable system. Provides 4 input channels (for 2 mikes). Here's good sound advice—go Lafayette for 1938!

COMPLETE  
**\$154.50**  
with Velocity Mike

There are some interesting Lafayette foreign franchises still open. Write today.

70 MODELS OF 1938 LAFAYETTE RADIOS  
PRICES RANGE FROM \$8.95



# FREE Catalog

For Complete Listing of Lafayette Sound Systems and the famous Lafayette Radio line, send today for FREE Wholesale catalog. MAIL COUPON

WHOLESALE RADIO SERVICE CO. INC.  
NEW YORK, N.Y. • CHICAGO, ILL. • ATLANTA, GA.  
100 SIXTH AVENUE • 901 W. JACKSON BLVD. • 430 W. PRICHARD ST., N.W.  
BOSTON, MASS. • BRONX, N.Y. • NEWARK, N.J. • JAMAICA, L.I.

WHOLESALE RADIO SERVICE CO., INC.  
100 SIXTH AVENUE, NEW YORK, N. Y.

Rush FREE 1938 Catalog No. 69-12M7

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

PASTE COUPON ON PENNY POST CARD

switches, dials, tuning devices, antennas and accessories. Export manager is W. S. Cranmer.

**Pioneer Gen-E-Motor Corp.**, 458 W. Superior St., Chicago, Ill.—gas chargers, wind chargers and converters. Export manager is M. Simons & Son Co., 25 Warren St., New York City.

**Precision Apparatus Corp.**, 821 E. New York Ave., Brooklyn, N. Y.—test equipment. Export manager is M. Zigman.

**Quam-Nichols Co.**, 33rd Place and Cottage Grove Ave., Chicago, Ill.—speakers and parts, antennas and accessories. Export representative is Schechter & Breuer, 1674 Broadway, New York City.

**Radio & Technical Publishing Co.**, 45 Astor Place, New York, N. Y.—trouble-finding gadgets for servicing home and auto sets, text books on radio fundamentals and servicing. Export manager is M. Schranz.

**RCA Mfg. Co.**, Camden, N. J.—radio-phonographs, electrolas and record players, Victor and Bluebird records; home, auto and battery receivers; amateur sets, antennas and accessories, broadcast transmitters, electrical transcriptions, photophone equipment, marine radio, transoceanic radio, aviation radio, police radio, microphones, sound systems and amplifiers, sound trucks, film projectors, test instruments and tubes. Radio export manager is J. M. Regottaz.

**Radiofone Corp.**, 136 West 22nd St., New York, N. Y.—intercommunicators. Export manager is Joseph S. Klein.

**Radio Amplifier Laboratories**, 59 Walker St., New York, N. Y.—sound systems and amplifiers. Foreign sales representative is Interworld Trading Corp., 315 Fifth Ave., New York City.

**Radolek Company**, 601 West Randolph St., Chicago, Ill.—receiving sets, antennas and accessories, intercommunicators, sound systems and amplifiers. Export manager is W. C. Braun, Jr.

**Raytheon Production Corp.**, 55 Chapel St., Newton, Mass.—tubes. Export manager is Ad Auriema, 116 Broad St., New York City.

**Regal Amplifier Mfg. Co.**, 14 West 17th St., New York, N. Y.—receiving sets, intercommunicators, sound systems and amplifiers. Export manager is W. Spiegel.

**John F. Rider**, publisher, 1440 Broadway, New York, N. Y.—troubleshooters' manuals, volumes on alignment, servicing, cathode-ray oscillographs, etc. Export manager is A. Rosenberg.

**H. J. Scheel**, 330 S. Wells St., Chicago, Ill.—export sales manager for Majestic Radio & Television Co., makers of home radios and battery receivers. Scheel office also handles exports for Electro Acoustics Prod-

*Continued on page 51*

**WORLD-FAMOUS LINES  
FOR OVERSEAS**

**Majestic**  
Mighty Monarch of the Air!

Automatic electric push-button receivers. 5 to 16 tubes. AC & AC-DC. Table, chairside and console. Two 6-volt battery models. Beautiful cabinetry. Wealth of sales-making features. Complete. Profitable. Sold direct, factory-to-dealer.

**Electro-Acoustic**

Subsidiary of the Magnavox Co.

Complete line of high quality public address and sound distribution equipment. Every job sells another one. Amplifiers, speakers, microphones, mobile systems, accessories, phonographs (electrically amplified) and radio-phonos combinations. Outstanding success. Chicago Century of Progress.

Correspondence invited from American manufacturers of non-competing lines.

**HARRY J. SCHEEL**

Export Sales Manager

330 South Wells St., Chicago, Ill., USA.

Majestic cable address: MAJESTICO, Chicago.  
Electro-Acoustic cable address: EAPCOMPY, Chicago.

**Living UP TO A REPUTATION!  
... NOT ON IT!**



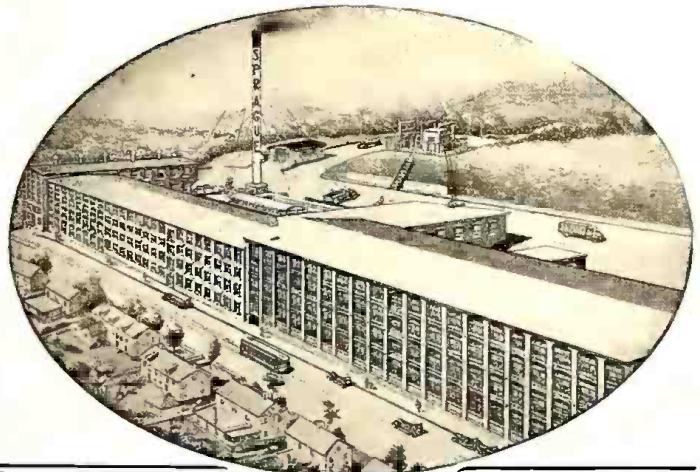
**SPRAGUE  
CONDENSERS**

Throughout the years, the name Sprague has been actively identified with the radio and electrical industries. Throughout the years, this name has stood for highest quality coupled with the utmost progressiveness of design.

Today's Sprague Condensers are no exception. Their record of performance, durability and economy with a steadily growing list of the world's largest users speaks for itself. . . . Made in a complete line for every requirement.

**SPRAGUE SPECIALTIES COMPANY, North Adams, Mass.**

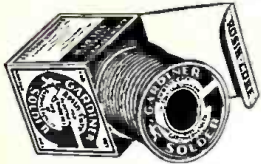
EXPORT DEPARTMENT: 238 MAIN STREET, CAMBRIDGE, MASS.  
CABLE ADDRESS — MCKIM, BOSTON





# Gardiner

FLUX-FILLED SOLDER



### RESIN-CORE SOLDER

A perfect alloy of quality tin and lead with a pure resin-flux core. For delicate electrical work where joints must be secure yet free from all corrosion. Needs only heat.

### Flux-Filled Solder for Every Purpose

Gardiner Flux-Filled Solder is made both in resin-core and acid-core, in various alloys as required and in diameters as small as gauge 19 (.042" or 1 mm.). Sells easily and in profitable volume to manufacturers, mechanics, motor car repairmen, tinsmiths, farmers, householders, electricians, radio service men, motorists and many other users.

### Attractive Packages Make Sales Easy

Gardiner Flux-Filled Solder is supplied in One, Five and Twenty-pound spools and in small coils. The One and Five-pound spools are packed in colorful, brightly varnished cartons. The coils are enclosed in small, eye-catching cans, packed in display boxes. Attractive packages increase your sales. Get your share of the profitable Gardiner Flux-Filled Solder business. Write or cable for details.

### Export Manager

**WERNER TROEGER**  
720 North Jefferson Street  
Milwaukee, Wisconsin, U.S.A.

Cable Address:  
Wertroeger, Milwaukee, Wis.

### ACID-CORE SOLDER

Makes bonds of higher tensile strength. A fast seller. Always ready for use. Needs only heat.

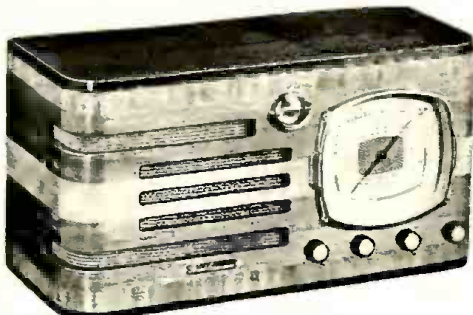


Factory in Chicago, Ill.

# Freed-Eisemann

FAMOUS SINCE BROADCASTING BEGAN

## A Quality Line at Outstanding Prices



Model 99—7 tube AC 2 band Superheterodyne set built into a hand polished walnut veneer and inlay cabinet; represents the latest engineering advances in Shortwave Radio; for Standard Broadcasts (1600 to 550 K.C.) and Shortwaves (18 to 5.5 megacycles). Has "electric eye" tuning, full A.V.C., tone control, and an indirectly lighted etched gold color dial.

Size: 17½" wide, 9¼" high, 7" deep.

Distributors and Dealers: Write for 1938 catalog and wholesale prices on complete line of sets listing from \$16.95 to \$49.95.

**FREED MANUFACTURING CO., INC.**  
44 WEST 18th STREET NEW YORK, N. Y.

# FREE WIND

The World

# OVER GIVES FREE

6VOLT  
ELECTRIC

POWER



for

## RADIO and LIGHT

From the Frigid Zones to the Equator in America, Europe, Africa, Asia, Australia, with the fully patented "DUNN GOVERNING PRINCIPLE"

## 6-VOLT HY-TOWER CHARGER



PERFECT  
PROPELLER  
CONTROL

CUSTOM BUILT FOR:  
Arvin, Crosley, Detrola, Emerson, Fada, Fairbanks-Morse, Fardson, G. E., Grunaw, Howard, Majestic, Mantala, Matarala, Muscaire, Philca, Pilat, RCA, Sears Int'l, Sentinel, Silcox, Simplex, Sonara, Spartan, Stewart-Warner, S. Carlson, Ultramar and others.

IT SLIPS THE DAMAGING EXCESS WIND

# SAFEST BEST STRONGEST



**PARRIS-DUNN CORPORATION**

World's Largest Exclusive Manufacturers of 4-Volt Wind Driven Battery Chargers

CLARINDA • IOWA • U. S. A.  
CABLE ADDRESS "PARISDUN"



## EXPORTERS—Continued

ucts Co., makers of sound systems and amplifiers, speakers, microphones, electric phonographs and phonograph-radio combinations.

Solar Manufacturing Corp., 599 Broadway, New York, N. Y.—condensers, line filters and test equipment. Export manager is A. Prodocimi.

Sprague Specialties Co., North Adams, Mass.—condensers and test equipment. Export department, 238 Main St., Cambridge, Mass. Walter McKim, mgr.

Standard Transformer Corp., 850 Blackhawk St., Chicago, Ill.—transformers and chokes, sound systems and amplifiers. Export representative is Roburn Agencies, Inc., 11 Warren St., New York City.

Star Machine Manufacturers, Inc., Hunts Point and East Bay Aves., Bronx, N. Y.—Remote controls for auto radio. Export manager is I. B. Finkel.

Superior Instruments Co., 136 Liberty St., New York, N.Y.—test equipment. Export manager is Max Steir.

Triad Manufacturing Co., Inc., Pawtucket, R. I.—tubes. Export manager is Allan Strauss, 16 W. 61st St., New York City.

Triplett Electrical Instrument Co., 122 Main St., Bluffton, Ohio—resistors and volume controls, switches, radio and general test equipment, electrical measuring instruments. Export manager is N. A. Triplett.

Tung-Sol Lamp Works, Inc., 4111 Empire State Building, New York City—tubes. Export manager is George A. Bodem.

Universal Microphone Co., Ltd., P.O. Box 299, Inglewood, Calif.—intercommunicators, microphones, record playing and recording equipment, sound systems and amplifiers. Export manager is Frazar & Co., 7 Front St., San Francisco, Calif.

Utah Radio Products Co., 820 Orleans St., Chicago, Ill.—Resistors and volume controls, sound systems and amplifiers, speakers and parts, switches, transformers and chokes, vibrators and electric tuning motors. Export manager is Donald F. McKnight.

The Ward Products Corp., 1523 E. 45th St., Cleveland, Ohio—auto and home antennas. Export manager is C. O. Brandes.

Weston Electrical Instrument Corp., 614 Frelinghuysen Ave., Newark, N. J.—electrical instruments and radio test equipment. Export manager is J. H. Purcell.

Wholesale Radio Service, Inc., 100 Sixth Ave., New York, N. Y.—home, auto, battery sets, antennas, accessories, parts, interphones, sound systems, amplifiers, microphones, tools, appliances, test equip., amateur sets. Export manager is L. M. Braun.

Wincharger Corp., Sioux City, Iowa—wind-driven battery chargers and antennas. Export manager is A. A. Stewart.

Wind Impeller Electric Works, Ellsworth, Iowa—wind electric power plants.

## Yes, There Is a Santa Claus!



QUALITY  
STANDARD  
OF THE  
RADIO  
INDUSTRY

EASY  
MONTHLY  
TERMS!  
ASK  
YOUR  
JOBBER  
OR  
WRITE  
US.

**FIFTEEN DOLLARS** from us to you! That's our Xmas gift to purchasers of our CRA oscillograph at the holiday price of \$64.50—regular value \$79.50. It's the same super-dependable, precision instrument that so long has led the field. Nothing cheapened, nothing left out! Greatly speeds up and simplifies service procedure through visual examination of every vital receiver function. You can see what you're doing and know you're right. A real Xmas gift at the new price. **\$64.50**

**SUPERIOR** features of Model 110 Signal Generator make it "tops" in performance and value. (1) Greater accuracy than any other signal generator in the service field. (2) Greater output, valuable for driving signals through receivers badly out of line. (3) Quicker, more accurate direct reading jumbo dial, with exclusive matched-band calibration. (4) Better control of signal attenuation. (5) Lower strays because of individual shielding of internal sections and double shielding over all. Easily your best buy. **\$43.50**

The **CLOUGH-BREngle CO.**

2827 W. 19th St.

Chicago, Ill.



**FREE VISUAL RADIO SERVICE COURSE WITH ANY C-B INSTRUMENT**

Learn to handle tough service jobs with ease and confidence. The C-B Visual Service Course gives you required "know how." Specially designed for service men by Midland Television School, one of America's largest, and C-B engineers. You cannot afford to fall behind by going without this valuable knowledge. Learn more that you may earn more! Ask your jobber, or write us. Time is money. Don't delay. Act today.

## "TOKFONE"—The 1938 Sensation!



**TOKFONE, Jr.**  
Master Station

Now—TOKFONE, Jr. consists of Master, Remote Station and 50 ft. of wire . . . **\$10.75** NET PRICE  
It's the biggest buy in Communication Systems. NOTHING CAN TOUCH IT!



**TOKFONE, Jr.**  
Remote Station

**GET YOUR SHARE!**

**.. CRASH THIS FERTILE MARKET!**

If you're in a position to "CASH-IN" with FAST MOVING—LOW PRICED intercommunication systems then you owe it to yourself to get in touch with REGAL—NOW!

### • Note These Features! •

TOKFONE—adaptable to meet all requirements—from 2 to 40 stations—beautifully hand-rubbed cabinets—NO PREFERENCES—NO TRICKS—No Makeshifts—All New Merchandise—Special Units if Necessary—No Quotas—No Contracts—Buy as You Need Them—Manufactured in our own factory—we stock them.

Communication between master station and any remote station in which any remote station can call the master, and the master is the only one that can call all remote stations separately, or altogether. Master comes equipped with Earphone. Works on AC-DC current. List Price \$47.50 for 1 master and 1 remote and 50 ft. wire. **\$12.95 Net**

Master to Master selective system which enables any outlying master to call any other master station; up to 18 separate stations and 9 separate and distinct conversations between station to station or any group of stations while any two or three, or more stations are talking. Are equipped with earphone, also without the use of the Talk-Listen Switch. Works on AC-DC current. List Price \$45 each. **\$12.00 Net**

Wireless communication two way station to station only without the use of wires. Ideal for the home, office, shipping department, doctors, factory or any place requiring station to station communication. Works on AC-DC current. List Price \$69.50 per pair. **\$17.95 Net**

We also Manufacture P.A. Equipment in the following sizes: 6, 12, 15, 30, 60 Watt—Amplifiers—Parts used are: Aerovox—Thordarson—I.R.C.—Parmet—Rola—Clarostat—Eby and Holyoke—Nothing but the best.

**SEND FOR CATALOG .. NOW READY!**

Licensed, By Agreement with Electrical Research Products, Inc., Under Patents Owned or Controlled By Western Electric Co. and American Telephone and Telegraph Company.

**REGAL AMPLIFIER MANUFACTURING CORP.**

14 WEST 17th STREET

Cable address  
"Ramcoamp"

NEW YORK CITY



## EXACT-DUPLICATE Replacements



from  
**A to Z**

- Precisely so, for AEROVOX has listed a matched condenser replacement for every popular set from A (Atwater-Kent) to Z (Zenith) and everything between.
- Each AEROVOX Exact-Duplicate Replacement Condenser precisely matches the initial set equipment—physically, electrically, visually.
- Such a servicing job fits right, works right, looks right. The customer is bound to be satisfied.
- And an AEROVOX Exact-Duplicate Replacement usually costs less than a corresponding batch of standard units taped together.

Ask....

your jobber—or  
write us direct—  
for copy of latest  
catalog with list-  
ing of exact dupli-  
cates.



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

# DISPLAY PLUS BOOKLETS

## MIRACLE TONE BILLBOARDS

★ A good-looking girl, listening with complete satisfaction to her radio, has appeared on a series of billboards being used by Emerson distributors throughout the country. The large signs show a "Miracle Tone Chamber" model reproduced in full colors, along with the young lady, against a black background. This stunt supplements the company's national magazine ads, local newspaper copy, and other sales helps.

## NO SQUAT SANTA

A batch of Christmas sales aids for dealers has been issued by Philco, featuring the figures of a "No Squat" Santa Claus and a Kris Kringle of yesteryear in a squatting position. Besides a life-size window display, lithographed in 11 colors, there are window streamers, shoppers' memo books, sales messages in telegram form for prospects, and a 4-page rotogravure with dealer imprint.

## FOR NOISE ELIMINATORS

★ Suitable for windows, counters or to be hung on the wall is a new display card designed to sell the line-noise eliminators of Aerovox Corp., 70 Washington St., Brooklyn, N. Y. In bright yellow and black, the card shows the electrical appliances which cause radio interference, along with a string of appropriate eliminators. Elastic bands are provided so that actual units may be fastened to the card, and actual-size illustrations of the merchandise come into view as the units are sold and removed.

## DISPLAY AND DEMONSTRATION SERVICE FOR RECORDS

★ To attract prospects and to aid the record dealer in making lively demonstrations, RCA-Victor has announced a 6 months' display service. This is built around a "Record-Player Demonstration Kit," which includes mats for local advertising, window streamers, counter and window display cards, 15 special demonstrator records, 6 packs of needles, 300 customer leaflets

and an instruction book on how to hook up record-players.

For special use at Christmas is an enormous full-color enlargement of a *Sat. Eve Post* ad showing the singer, Richard Crooks, and his family listening to a phonograph. RCA Victor has also issued a special leaflet on children's records for holiday use.

All this ties in with the fact that the firm has tripled its promotion expenditures on records. The new campaign includes feature comic strip ads, transcribed programs, dance music broadcasts in New York, the regular RCA Magic Key program on Sunday afternoons, RCA ads in 66 newspapers of 44 cities, and a series of ads in national magazines.

## CUSTOM-BUILT ANGLE IN FLOOR DISPLAY

★ A floor display which sports some new color combinations and which has an individualized message has been released by General Electric Co. The dealer's name appears in brilliant chrome letters and the only other words on the display are "presents General Electric radio," so that the custom-built look of the thing is accented.

The display is 7 ft. high and 12 ft. wide, has a new arrangement of wine-colored drapes and will show 7 radios. Table models are spotted at eye level, an armchair model goes on the floor. Colors used are dubonnet, oyster-white and chrome, and special lighting floods the Touch Tuning feature.

★ Issued by Hammarlund Mfg. Co., 424-438 W. 33rd St., New York City, is a new '38 catalog of 15 pages, with complete descriptive material and special illustrations on midget condensers, transmitting condensers, micro condensers, plug-in coils, coil shields and sockets, R.F. chokes, I.F. transformers, trimmers, padders, Super Pro receivers. All essential dimensions are given for the parts listed in the booklet.

★ Hygrade Sylvania Corp., Emporium, Pa., have issued a brand new Technical Manual. The booklet is still in pocket size, but considerable material has been added and the whole volume thoroughly edited.

*"The World's Best Value"*



# KADETTE RADIOS

INTERNATIONAL RADIO CORPORATION, ANN ARBOR, MICHIGAN, U.S.A.



Mort Duff, advertising chief at Win-charger Corp., finds it easy to promote the firm's new '38 deluxe 6-volt charger.

★ Free to those writing to Freed Transformer Co. at 100 6th Ave., New York City, is a new 1937-38 catalog listing 17 kinds of transformers, along with chokes, light dimmers, I.F. coils, PA components, etc.

★ A catalog listing a full line of test equipment ranging in dealer prices from \$4.10 to \$14.10 will be sent free to those requesting it from Superior Instruments Co., 136 Liberty St., New York City.

★ A descriptive folder and instruction manual on Hy-Tower wind chargers has been published in Spanish, along with the English edition, by Parris-Dunn Corp., Clarinda, Iowa.

★ McMurdo Silver Corp., 2900 S. Michigan Blvd., Chicago, have issued 3 new pieces of free literature. These include a general circular, a 20-page "Magic Carpet" booklet on the Master-piece VI, and an 8-page booklet on the "15-17" receiver.

★ Stancor's third edition "Hamanual" is now available from Standard Transformer Corp., 850 Blackhawk St., Chicago, Ill. In a special manner, this 40-page booklet presents 16 amateur transmitters, with circuit diagrams drawn in blueprint style. It also includes data and charts on transformers, coil construction, etc.

★ The line of stampings produced by Zierick Mfg. Corp., 385 Gerard Ave., New York, N. Y., is illustrated in a catalog, No. 14, entitled "Automatic Stamping, Wire Forms, Dies, Cadmium Plating, Nickel Plating, Hot Tinning." Stampings are shown actual size. Additional dope will be furnished promptly.

★ "Woven Fabric Radio Dial Belts" is the subject of a new booklet offered free by J. F. D. Mfg. Co., 4111 Fort Hamilton Parkway, Brooklyn, N. Y.

★ Listing a long series of items suitable for Christmas gifts, a new holiday catalog, No. 70, has been released by Wholesale Radio Service Co., 100 Sixth Ave., New York, N. Y. Its 40 pages are printed entirely in rotogravure, and illustrate such items as electric trains, chemistry sets, mineralogy sets, structural steel sets, etc. Copies are available from main office or any of 6 branches.



# SAVE MONEY

BUY DIRECT FROM THE MANUFACTURER

This is only one example of our values

HEAVY DUTY ALUMINUM BAFFLE HORNS WITH SPECIAL STEEL BACKS

For 8" Speakers	\$2.70 net	[Spun of 18 Gauge Aluminum]
" 10" "	2.94 "	
" 12" "	3.18 "	

GIANT HORNS 33" long, for use with 12" Speakers, spun of 14 gauge aluminum, useful for all outdoors—\$8.53 net.

RADIO AMPLIFIER LABORATORIES specialize in the manufacture of custom built equipment. Our complete machine shop and laboratory facilities, headed by a group of engineers and mechanics enables us to fill all your needs from a "GADGET" to an elaborate high powered multi-input rack and panel system.

MANUFACTURERS OF: Amplifiers, stands, brackets, horns, baffles, trumpets, electronic equipment, special cases, etc.

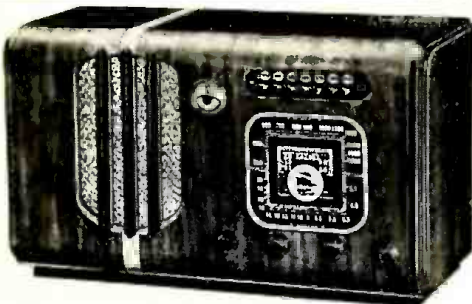
Send for Catalog.

RADIO AMPLIFIER LABORATORIES  
59 Walker Street



Now YOU TOO CAN HANDLE  
The World-Famous PACIFIC Line!

New  
Choice  
Territories  
Now  
Open!

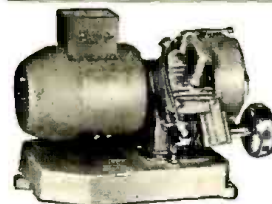


Export Requirements Are Not New To Us . . .

★ For TEN years we have made thousands of export sets under many different brands. These sets have proved very satisfactory in all foreign countries. Now, we have decided to export our receivers directly under our own PACIFIC Brand, and to establish PACIFIC Distributors in all the principal foreign countries. PACIFIC Radios are quality instruments, well constructed, competitively priced. A complete line of all types and models, with or without PUSH-BUTTON TUNING, covering all waves, all voltages, climate sealed, RCA licensed. The EXCLUSIVE AGENCY for our products presents to you a truly unusual opportunity for profit.

Export Department  
**PACIFIC RADIO CO.**  
4611 Ravenswood Ave. • Chicago, Ill., U.S.A.  
Cable Address "PARAD" Chicago

"PINCO" THE ONLY COMPLETE GAS-O-ELECTRIC POWER PLANT LINE



RED TOP COMBINATION A.C.-D.C. POWER PLANT



GOLD CROWN HEAVY DUTY POWER PLANT

TIME NOW FOR POWER PLANT SALES!

Here is an exclusive dealer-jobber line of portable electric light, power and battery-charging plants, priced for quick sale and big profit. "PINCO" combination AC-DC and DC RED TOP and GOLD CROWN heavy duty power plants are a necessity for millions of farms, homes, industrials, etc., where "city" electricity is not available. Provide instant power for lights, radios, electrical equipment and appliances. Now is the time to cash in on this waiting market. Write for literature and discounts.

One Line for Every Requirement

"PINCO"—the only complete power plant line! Full price range: 100 to 2000 watts; alternating or direct current; air or water cooled; remote control; filter and ignition shielding; push button starting.

PIONEER GEN-E-MOTOR CORPORATION  
Dept. No. R-2L, 466 West Superior Street, Chicago, Illinois

Please send me complete information on:

"RED TOP"       "GOLD CROWN"       Converters       Dynamotors

Name .....

Address .....

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

Here's the Real  
**"PROFIT"**  
 Smash of 1938



A COMPLETE LINE OF  
*Cinaudagraph*  
 PERMANENT MAGNET  
 AND ELECTRO-DYNAMIC  
*Speakers*

**REAL** news for the "PROFIT-MINDED" jobber. Cinaudagraph, one of the world's largest manufacturers of permanent magnet speakers, announces a complete line of electro-dynamics. The universal acceptance of the Cinaudagraph p.m. speaker, in addition to a progressive merchandising campaign, will make the Cinaudagraph speaker franchise a very valuable one indeed.

*Stock up now and be prepared to do a real job with*

**CINAUDAGRAPH**

Available in a complete line from 5 to 18". Descriptive catalog sent on request.

**CINAUDAGRAPH CORPORATION**

Speaker Div., STAMFORD, CONN.  
 Export Div., 100 Varick St., N. Y. C.

**DISTRIBUTORS**

★ Universal Radio Supply Co., Louisville, Ky., distributors of Ken-Rad radio tubes, held a dealer and servicemen's meeting recently at the Brown Hotel in Louisville. More than 150 dealers and servicemen attended. E. V. Kesheimer, R. W. Fields and Curtis Hammond of the commercial engineering department of Ken-Rad delivered talks.

★ At the Wilks Distributing Co., Jackson, Mich., the jobbers for Sparton announce that they have added Crawford Electric ranges and Gilbarco oil burning equipment to their lines. The firm's new personnel includes M. S. Wilkinson, president; Edna J. Wilkinson, vice-president, and F. G. Smith, secretary and treasurer.

★ After Dec. 1st, the Radio Parts Co., Inc., Madison, Wis., jobbers for Fada, will occupy larger and more centrally located quarters at 326 W. Gorham St., according to word from general manager A. W. Satterfield.

★ Tom Milligan has been added to the sales staff of Southern Radio Supply, Little Rock, Ark., jobbers who are doing a job of Pacific sets Ken-Rad and Tung Sol tubes. Milligan will work principal towns in Arkansas. Recently added lines at the company include Acrovox condensers, Thordarson transformers, Webster-Racine amplifiers, Oxford speakers and others.

★ Anchor Lite Appliance Co., the Pittsburgh, Pa., jobbers for Crosley, have opened a branch at 16th and Main Streets, Wheeling, W. Va., with M. H. Marshall in charge. According to Harold W. Goldstein, Anchor Lite general manager, the new offices will be headquarters for the new territory recently assigned to the company: 34 counties in southern Pennsylvania, northern West Virginia, western Maryland and eastern Ohio.



To sales manage the jobbing division of Meissner Mfg. Co., Walter F. Marsh.



**Now RADIO CLUB CHAIR**

The Easy Chair that performs 1000 miracles of comforts—conveniences

- ★ Completely equipped bar.
- ★ Magazine and newspaper rack.
- ★ Concealed desk or game board.
- ★ Equipped with genuine Philco Radio.
- ★ Space for telephone, electric clock, etc.



and built-in compartments for many other items

MODEL 10-A

**\$149.50**

WRITE US FOR MORE DETAILED INFORMATION—DISTRIBUTOR DISCOUNTS APPLY

**GENERAL PRODUCTS CO.**  
 1801 FANNIN ST. HOUSTON, TEXAS

**WORLD'S FINEST! WIND ELECTRIC PLANTS**

LIST PRICE  
 6 VOLT

**\$2250**

32 VOLT

**\$145**

Direct Drive

**MODERN EFFICIENT**

Outstanding 150-watt 6-volt and 650-watt 32-volt giant. Protected, beautified and air-cooled by streamlining. Metal propeller. Built of metal throughout.

Also . . .

**WORLD'S LARGEST WIND ELECTRIC POWER PLANTS!**

DIRECT DRIVE  
 NO GEARS



1200, 2400, 5200 watt and 32 and 110-volt. Automatic Controlled.

**\$305 to \$780**

Gives complete electric light and power service free from the wind for farms and ranches. Built to last a lifetime. Will charge the largest storage batteries.

Dealers write for this complete Wind Electric Line Franchise.

**WIND-IMPELLER ELECTRIC WORKS**  
 ELLSWORTH, IOWA, U.S.A.



## Chassis Cradle

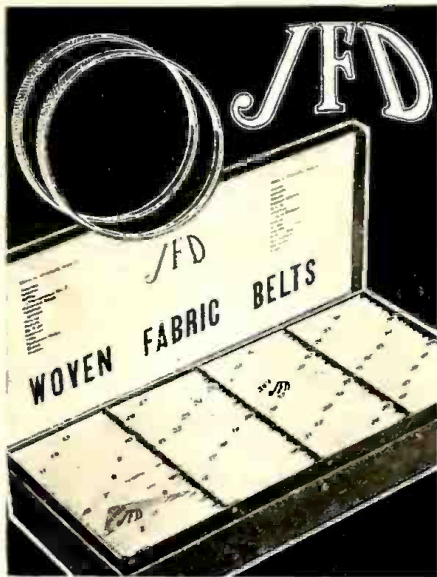
PREVENTS DAMAGE—  
HOLDS CHASSIS  
IN ANY POSITION

Only \$4.85 at your distributor

Holds any make or model radio chassis in desired position for testing, aligning, repairing, replacing parts, etc. Clamps hold chassis in vise-like grip. Prevents danger of accidental damage to coil assemblies, tubes, etc. Allows both hands free for work. Puts repair jobs on a production basis. Is very desirable for displaying radio chassis. Made of steel—cadmium plated. Order today through your distributor.

**ACRO TOOL & DIE WORKS**

1202 West Grand Ave., Chicago, Ill.



## RADIO FABRIC BELTS

More than half a million modern radio sets now in use are equipped with Woven Fabric Dial Belts. . . Every one of these, sooner or later, will require replacement and this replacement will be repeated again and again.

The Fibre Board Display Kit illustrated contains 300 assorted radio dial belts exactly the same as originally used on Zenith, Emerson, Grunow, Sparton, Crosley, R.C.A., Fada, Stromberg-Carlson, Detrola, Silvertone, (Sears, Roebuck), Airline (Montgomery Ward), and every other popular radio set manufactured.

The attractive kit will last a lifetime and should be prominently displayed by every jobber and distributor. Send for complete detailed schedule.

**J. F. D. MANUFACTURING CO.**  
4111 Ft. Hamilton Pkway, Brooklyn, N. Y.

★ On his annual visit to the U.S. is Charles E. Forrest, managing director of radio and appliance distributing houses in Sydney, Melbourne, Adelaide and Brisbane, Australia, and in Auckland, New Zealand. Mr. Forrest is again lining up products for distribution in these markets,



Charles E. Forrest, here from Australia and New Zealand.

and will consider connections with American or Canadian manufacturers who need representation in Australia or New Zealand. He will be in this country until the end of March, 1938, and is to be addressed at International Forwarding Co., 431 S. Dearborn St., Chicago, Ill.

## DISTRIBUTORS GANG UP ON WINCHARGER ORDERS

★ Following the announcement by Wincharger Corp. of a new merchandising plan which allows jobbers to offer a prompt supply of wind electric equipment to dealers, a series of orders for carload lots rolled into the Sioux City, Iowa, headquarters. Distributors got together in an attempt to cut freight costs.

According to W. W. Watts, a number of changes have been made in the wind-charging merchandise itself. Simplicity of construction is featured and other developments include:

1. The strain on the tower and on the propeller, as well as the load on the generator is lessened as the wind rate goes over 30 mi. per hour.
2. The size of the mounting feet has been doubled.
3. A greater part of the assembly process is done at the factory.
4. Shipping procedure has been simplified.
5. The tail vane never swings out of the wind.
6. Heavy metal stampings and an electro-welding process replace the use of castings.
7. The new product is hacked by exhaustive tests at the University of Michigan, where the wind tunnels and the electrical labs were used by Wincharger.

★ An "Appreciation Dinner" was given recently in New York City by the sales organization of the RCA jobbers, Bruno-New York, Inc., honoring Charles Sonnenfeld, Irving Sarnoff and Jerome Harris. Lou Roth and John West of RCA Mfg. Co. were also invited.

# ARCTURUS

Radio's finest tubes  
plus radio's fairest  
equipment deal spell  
double profit to you.  
Get the facts!

**HERE IS  
THE GREATEST  
OPPORTUNITY  
YOU'VE EVER HAD**

to obtain the **WORLD'S  
FINEST SHOP EQUIP-  
MENT** at almost no cost  
to you . . . !

**This coupon  
will bring complete  
details of the sensational  
ARCTURUS  
EQUIPMENT  
DEAL . . .**

**Mail it  
Now!**

**ARCTURUS RADIO TUBE CO.**  
Newark, N. J.

Without cost or obligation on my part,  
send details of your new equipment deal.

Name \_\_\_\_\_

Street \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_

I am a dealer  I am a serviceman

My Jabber is \_\_\_\_\_

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

*Monarch  
Signal Generators  
have been the set  
manufacterers  
yardstick for more  
than three years!*

**MODELS  
12-N  
AND 12**



- These instruments are the choice of the receiver manufacturers.
  - First to read in microvolts and with almost zero leakage.
  - Models priced from \$27.60 to \$51.00.
- Write for complete technical data.*

**Monarch MANUFACTURING CO.**  
3341 BELMONT AVE., CHICAGO, ILL.  
CABLE ADDRESS "MONMACO"



An Emerson jobber tosses a dinner—the North Coast Electric Co., Portland, Ore., is host to 20 members of the sales staff of Meier & Frank's Dept. store. Toastmaster Frank Paulson and guest speaker Chas. O. Weisser made it a lively affair. Guests included Verne Miller, North Coast president; W. A. Hodecker, Meier & Frank's radio buyer; L. Stoller, F. N. Ashworth and Don Flynn.

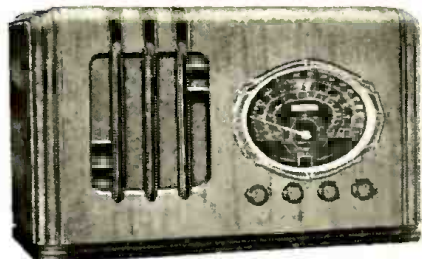
## DISTRIBUTORS

★ Shapiro Sporting Goods Co., Newburgh, N. Y., are now distributors for Roberts & Mander Quality gas and electric ranges, according to president Hyman Shapiro. Company will handle the entire Hudson Valley and also the counties of Rockland, Orange, Putnam, Sullivan and Ulster. Shapiro has planned large dealer meetings to show the line.

★ Some 350 Arvin dealers from 25 counties of the state of Michigan were recently guests of the Grand Rapids jobber, Sherwood Hall Co., Ltd., at a big banquet-business meeting. Toastmaster was R. G. Hogan, Sherwood's general manager, who presented the personnel of his firm and traced the success of the company through 20 years of handling Arvin products. G. W. Thompson, vice-president of Nobliitt-Sparks Industries, was the featured speaker, appearing with important remarks on time payment selling and the significance of proper display.

## NEW 1938 HETRO RADIO

**Finest Quality • Lowest Prices • Biggest Profits!**



**Foreign  
Distributors**

Write or CABLE  
for  
good territories  
still available

Hetro offers a complete selection of 25 Receivers, 5 to 14 tubes. Export Models for all wavelengths, all currents. Finest quality parts and workmanship . . . available with PUSH-BUTTON AUTOMATIC TUNING . . . all newest features . . . R.F. Stage on all bands. Superpowerful. Extreme Sensitivity and Selectivity . . . Write for FREE catalog and prices.

**New AUTOMATIC TUNER Available!**



Converts any Superheterodyne to a PUSH-BUTTON Automatic Tuner Model. Doubles your profits. Only 3 wires to connect. Write for details.

**HETRO ELECTRICAL INDUSTRIES, Inc.**  
4611 Ravenswood, Chicago, U. S. A. • Cable "HETRO"



*New*  
**RIDER  
BOOK**

**VIBRATOR POWER  
SUPPLIES**

*by Garstang and Rider*

It becomes increasingly important that servicemen have the information on Vibrator Supply Systems which is contained in this book. 280 Pages—Profusely Illustrated \$3.00—Hard Covers

**JOHN F. RIDER**  
Publisher  
1440 BROADWAY  
New York City

**EVERYTHING . . .  
Just as You Want it!**

Before assembling Volume VIII we asked servicemen WHAT they wanted and HOW they wanted that information arranged.

**RIDER MANUAL VOLUME VIII  
JUST OFF THE PRESS**

gives you the servicing data you need—simplified and standardized.

Included with Volume VIII is a special EXTRA section entitled, "How It Works." Covering operations peculiar to the

more complicated 1938 receivers. This is in addition to the complete information on the sets of over 100 manufacturers—1650 pages of indispensable facts—and the price is the same as last year.

**YOU NEED ALL 8  
Rider  
MANUALS**

★ More than 1,600 members of the metropolitan trade were the guests of the Wholesale Radio Equipment Co., Stewart-Warner jobber in New York, on Sunday, Dec. 5th, at the formal presentation of the new 1938 Stewart-Warner refrigerator line. This dealer gathering, which was one of the most successful ever held in the refrigerator industry, took place at the International Casino in New York, the world's largest and newest night club. Morty and Sam Salzman, the popular heads of the Wholesale Radio Equipment Co., bought out the famous night club for a period of six hours and gave a refrigerator presentation and floor show which made history in the local trade. Among the Stewart-Warner executives who were present were Frank Hiter, vice-president and general sales manager; John F. Ditzell, radio and refrigeration sales manager, and Hays MacFarland, president of the advertising agency bearing his name, in charge of the Stewart-Warner advertising program.

★ Already listed among the quota-makers in Philco's contest among distributor salesmen on 116xx models are R. J. Carter, Piedmont Hardware Co., Danville, Va.; George Seely and L. F. Hague, Casper Supply Co., Casper, Wyo.; K. E. Shire, Lofgren's, Moline, Ill.; E. C. Shire, Schmier's Radio Shop, Rock Island, Ill.; Harold Manuel, Wolfe Auto Supply, Paris, Ill.; Charles Miller and Reed Markham, Mathes Co., Fort Worth, Tex.; Hal Heaton, McKelsey, Inc., Saline, Kan.; Gregg Harris, Walther Bros., Montgomery, Ala., and T. N. Smiley, Thompson & Holmes, Sacramento, Calif.

★ The new Fairbanks-Morse 1938 line of refrigerators, featuring the famous Conservador, was presented to the New York trade at a 4-day "open-house" held the first week of Dec. at the Hotel New Yorker. Bruno-New York, Inc., Fairbanks-Morse refrigerator jobber in New York City, sponsored this very successful gathering of dealers throughout the territory. Parker Eriksen from the factory at Indianapolis spent several days at the meeting, and Henry Bear, the company's sales representative in this territory, cooperated with the jobber throughout the 4 days.

★ A. M. "Bob" Roberts, formerly a field salesman for the Crosley jobbers, Chanslor & Lyon Co., Fresno, Calif., has been recently named sales manager for the firm's northern California area. The company has named these new California dealers for Crosley: Home Appliance Shop, Reedley; Just Furniture Co., Dinuha; Ruschaupt's, Fresno, and Hanford Furniture Co., Hanford.

★ In the Sacramento and San Francisco, Calif., territory, the Stewart-Warner refrigerator line will now be distributed by Thompson & Holmes, Inc., 2701 16th St., San Francisco, according to a Chicago announcement by John Ditzell, SW refrigerator sales manager. This prominent jobbing firm is headed by J. W. Holmes, president; C. A. Sharrah, vice-pres. and general manager, and Robert E. Crane, secretary.

# A Reputation built on a tubular condenser

Small, but mighty important. Twenty-eight years of engineering experience and research are incorporated in the design and manufacture of the small C-D paper tubular condenser. No wonder they far excel, outlive and outsell all others. Described in detail in

Catalog No. 151A free on request.



## CORNELL-DUBILIER ELECTRIC CORPORATION

1022 Hamilton Boulevard, South Plainfield, New Jersey

## JANETTE ROTARY CONVERTERS

### FOR CONVERTING DIRECT TO ALTERNATING CURRENT



● Built in capacities from 35 to 3250 volt amperes —with or without all wave filters. Dynamotor construction—economical to operate—ruggedly built for years of trouble-free service—used or recommended by the largest manufacturers of sound apparatus—in use in all countries of the world—Send for prices and data.

Janette Manufacturing Company

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

BOSTON - NEW YORK - PHILADELPHIA - CLEVELAND - MILWAUKEE - LOS ANGELES  
DETROIT - SEATTLE

## The New ALLMETER for Rapid, Accurate Measurements

### 27 INSTRUMENTS IN 1

Operates on 90-130 volts—60 cycle operation

The ALLMETER, with 1,000 ohms per volt sensitivity, is a multi-purpose tester accurately measuring A.C. and D.C. volts and currents, also capacity decibels, resistance and inductance. It features:

0-15 Volts A.C.	-12 to +10 Decibels
0-150 Volts A.C.	+8 to +30 Decibels
0-750 Volts A.C.	By Interpolation
0-15 Volts D.C.	+28 to +50 Decibels
0-150 Volts D.C.	By Interpolation
0-750 Volts D.C.	Inductance:
0-15 Milliampers A.C.	5-1,000 Henries
0-150 Milliampers A.C.	V.T.V.M., 0-15 Volts A.C.
0-750 Milliampers A.C.	V.T.V.M., 0-150 Volts A.C.
0-1 Milliampers D.C.	V.T.V.M., 0-750 Volts A.C.
0-15 Milliampers D.C.	V.T.V.M., 0-15 Volts D.C.
0-150 Milliampers D.C.	V.T.V.M., 0-150 Volts D.C.
0-750 Milliampers D.C.	V.T.V.M., 0-750 Volts D.C.
Continuity Tester	
.01-50 Mfd.	
.03-500 Ohms	
500-500,000 Ohms	

**\$10.40**

for complete technical details on the ALLMETER and other SUPERIOR TEST INSTRUMENTS write for catalog RT-7.

ORDER DIRECTLY FROM THIS ADVERTISEMENT!

**SUPERIOR INSTRUMENTS COMPANY** 136 LIBERTY STREET  
Dept. RT-7 New York, N. Y.



*Again-*  
*is the Leader!*

• Streamlined to "dress up" all automobiles, WARD leads again with brilliant new aerials, featuring Mol-en-ac, a new white metal that cannot rust. WARD aerials are easy to install; fit any car, and add power to the reception of any radio.



The QUINLAN (at left) Model QR—a streamlined side cowl aerial; telescopic in two sections. Extends from 28½ to 49½ inches. Patent No. D106,487. One of the many new Ward side cowl antennae.

The STATESMAN (right) Model ST—a new Ward top aerial. Top bar extends from 21 to 35½ inches. Cowl bar is telescopic, fits all cars. No drilling in top. Patent numbers D106,048; D106,049; D106,922

WRITE FOR ILLUSTRATED CATALOG

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

## SELLING INTERCOMMUNICATORS

★ "Wireless" intercommunication systems have presented a very special sales problem. Past experience in developing such sales, according to Joseph S. Klein, franchise director of Radiofone Corporation, 136 West 22nd Street, New York City, has revealed the need of special treatment. Jobbers and dealers have discovered, to their dismay, that each system sold required "special handling." Installation problems arose, bridging was necessary, extra condensers had to be used, carrier cables had to be installed.

In short, selling the system was the least part of the problem. The real job (as well as the cost to the consumer) began *after* the systems were installed. In a majority of cases such systems required servicing to insure reasonably good performance—work done at the dealer's expense, which more often than not wiped out the profit on the sale.

"The fault," continued Mr. Klein, "all goes back to the manufacturers—who have been either manufacturers of radio receivers and who treated intercommunication simply as a side-line, or irresponsible concerns who treated intercommunication as a stepping stone to promoting stock and other financial ventures.

"The Radiofone Corporation, from the first, took cognizance of this situation and built its organization accordingly. Technicians skilled in electronics and sound engineering from this country, Hungary, Germany, France, Rumania and Canada were brought together. A modern laboratory was equipped and exhaustive research and experimentation over a long period of time ensued. Field work supplemented the laboratory.

"Ultimately a number of important discoveries were made, new principles developed and a series of wireless systems evolved which withstood every test applied to them."

Mr. Klein then described a demonstration of the multiple, selective, "Wireless" Radiofone given on Oct. 27th at the headquarters of the Company in the presence of the press, engineers and merchandisers, including representatives of Canadian engineering companies.

"During this demonstration the Radiofone multiple selective wireless system, comprising one master and five remote stations, was plugged into electrical outlets at distances varying from

# STAR AUTO RADIO CONTROLS

NEW—1938—NEW

**CONTROLS** FOR IMMEDIATE DELIVERY

THE ONLY CONTROL WITH ALL RATIOS—SELF CONTAINED

SIMPLEST OF ALL TO INSTALL

100% Universal For All Panel Openings

1938 CUSTOM MATCHED ESCUTCHEON PLATES

EDGE ILLUMINATED—GLASS DIALS



Chrysler 1938



De Soto 1938



Chevrolet 1938



Plymouth 1938



Dodge 1938

**SPECIAL OFFER FOR PHILCO DISTRIBUTORS**

SEND FOR BULLETIN 381

**STAR MACHINE MANUFACTURERS, INC.**  
1371 EAST BAY AVENUE BRONX, NEW YORK

## SELL Moderate-Cost Automatic Combinations

AVERAGE customers can afford—and get a wonderful buy in—automatic playing radio-phonographs that are equipped with General Industries record changer units. Superior reproduction. Dependable, trouble-free record changing. . . . Go after this large and still comparatively untapped market. Sell popular-priced sets with this equipment.

**Have You Made Your Tests?**

Model "L" changer unit shown above combines motor, turntable, pickup, record changer. Compact, easily installed. Changes eight 10-inch records or seven 12-inch. Other models for choice. In ordering, please specify exact voltage and frequency of current you use.

**The GENERAL INDUSTRIES CO.** 3738 Taylor Street, Elyria, Ohio





● If you want that velvety, easy, silent twist of the V. C. knob, then it's CLAROSTAT for you. ● The latest development in carbon elements, a newly designed contact shoe, and an alloy based on years of research, provide a new conception of how good a volume control can be.

### Let's Prove It!

Don't waste time on loose claims. Just try a CLAROSTAT for yourself. Meanwhile, ask your jobber or us for that new CLAROSTAT (208 page) Service Manual. It's free!

## CLAROSTAT

MANUFACTURING CO.  
Incorporated  
285 North Sixth St.  
Brooklyn, N. Y.

## Under ONE roof



## Everything in Radio

● Everything you need in radio. It's all in this new RADOLEK RADIO PROFIT GUIDE. Every repair part for every receiver. Newest radio receivers. New 1938 model public address amplifiers, outputs for 5 to 100 watts. New model public address speakers. Test instruments. Technical books. Special equipment. Leading standard brands. Every item guaranteed. It must be right or we make it right.

And everything under one roof. You get what you want promptly, and exactly what you want. Radolek's immense stock plus Radolek's efficient organization insures you fastest service. 25,000 service men depend on this service and benefit by Radolek's Radio Profit Guide. It will help you make more money.

## RADOLEK

601 W. Randolph, Chicago, Dept. D-14

Send me the 1938 Radolek Radio Profit Guide FREE.

Name .....

Address .....

Service man?  Dealer?  Experimenter?



Joseph S. Klein of Radiofone Corp., N. Y. C., goes to market with new wireless interphones.

50 to 1,000 feet on different floors of the building and from points in a building around the corner on Seventh Avenue. Both master and remote stations demonstrated their selectivity and efficiency by operating perfectly from all points."

Subsequently, on Nov. 1st of this year, Mr. Klein arranged a demonstration at the New York General Electric Supply Company with engineers and merchandisers of the company in attendance. During this test the Radiofone multiple system was once again put to every practical and engineering test to determine its efficiency.

★ Charles E. Stahl, former vice-president and general manager of the Arcturus Radio Tube Co., Newark, N. J., was elected president of the company at a board of directors meeting held Dec. 1. In this new capacity Mr. Stahl also retains the general managership. J. A. Stobbe was elected a vice-president and Jack Geartner was appointed sales manager in charge of all sales, including export.

★ David E. Bright, president of the Pioneer Gen-E-Motor Corp., Chicago, was a recent visitor to New York, calling upon manufacturers and jobbers. He only returned a few weeks ago from a very successful trip through the Southwest, where he visited the company's customers accompanied by Bob Campion and Joseph Muniot, Pioneer representatives.

★ Announcement is made by Lewis M. Crosley, vice-president and general manager of Crosley Radio Corp., that J. W. Craig has been appointed assistant to R. H. Money, chief refrigeration engineer of that company. Mr. Craig will supervise production processes and product quality control.

★ Frigidaire Division of General Motors Corp., Dayton, Ohio, reports that just as some 7,000 U.S. dealers put on display the new 1938 Frigidaire, they were supported by an advertising drive double that of any previous pre-Christmas schedule used by the company.

## UNIVERSAL MICROPHONES

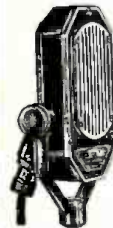
... rugged ... modern  
... dependable

### Crystal Hand Model

New hand-type for amateur, P.A., sport events, etc. Output—65 db. (Desk holder \$2.50.)

All crystal models under patent of Brush Development Co.

List Price \$22.50  
With 10 ft. Cable



### Air Velocity

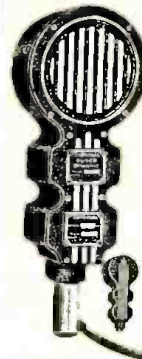
Latest in scientific development and refinement. Wide range corrugated ribbon and new high flux alnico magnets. Very latest transformer with double coils. All impedances, 1 db. from 30 to 12,000 cycles.

List Price \$44.50  
With 25 ft. cable and plug

### Crystal Stand Model

Especially made for stage or orchestra where mike should be mounted on floor or desk stand. Output—65 db. (Desk mount \$3.50.)

List Price \$22.50  
With 10 ft. Cable



### New Dynamic 100% Satisfaction or 100% Refund

Self energizing. Not affected by heat or climate. An amazing sound development. Impedances: 33 or 50 or 200 or 500 ohms; also high impedance direct to grid. Frequency response—40 - 8000 C.P.S. Output—58 db.

List Price \$44.50  
With 25 ft. Cable

### CAL-FON



List \$15.00 per Station



### Handi-Mike

Single and double button. Rugged. Damped scientifically. Gold contact faces. Single button. Output level—40 db. Double button—55 db., both incl. 6 ft. cord.

List Price \$10.00

SINGLE BUTTON

List Price \$15.00

DOUBLE BUTTON

### Ribbon Microphones

Self energizing. No polarizing voltage. Plug in and use it. Semi-directional. Distant pickup. No feedback. High impedance direct to grid, also all other impedances. Can be used on amplifiers of not less than 85 db. gain. Including 10 ft. two-conductor cable.

List Price \$22.50

List Price \$24.25

With Plug



ALSO . . . Two button panel models; several single and double button carbon models; condensers, airplane and police car models, stands and accessories. Also (Recording Division) 5 models of recording machines, discs, needles and accessories.

Microphone Division

Universal Microphone Co.  
424 Warren Lane, Inglewood, Cal.



## New "PRECISION" ELECTRONOMETER SERIES 700



A complete laboratory of compact size for thorough tube analyzing and point to point set testing incorporating 22 ranges for measurements of A.C. and D.C. voltages, current, resistance, decibel and output; paper condenser leakage tests; current leakage of electrolytic condensers and other important features. See it at your jobber.

\$49.95

FREE to owners of "PRECISION" ELECTRONOMETER 500 or 600, the latest tube chart for use with these instruments. Write for yours.

**PRECISION  
APPARATUS CORP.**  
821 EAST NEW YORK AVENUE  
BROOKLYN, NEW YORK

## TRADE FLASHES

### UTAH NAMES NEW EXECUTIVES

★ G. Hamilton Beasley, president of the Utah Radio Products Co., Chicago, announced this week that at a meeting of the board of directors held on Nov. 30th E. L. Barrett had been elected vice-president in charge of development and research engineering and William Dumke vice-president in charge of production. Mr. Beasley also announced the appointment of Oden F. Jester as general sales manager of the company; Austin Ellmore as chief engineer; H. S. Neyman as secretary, treasurer and office manager, and John Burres as purchasing agent. Mr. Burres returns after several years' absence to the position he formerly had at Utah. All of the personnel mentioned in Mr. Beasley's announcement have been identified with Utah activities for a number of years, with the exception of Mr. Jester, who assumed his new position on Dec. 6th.

However, Mr. Jester needs no introduction to the radio industry, for he has been identified with radio and allied fields for 20 years, having been sales manager of the radio division of the Stewart-Warner Corp. and an executive in other well-known organizations.

On Dec. 1st Mr. Beasley gave a dinner at the Union League Club in Chicago to all of the new Utah officers, the heads of departments and the members of the sales organization, at which Mr. Jester was presented to his new associates. Among the out-of-town guests was J. B. Price, eastern sales representative for Utah since 1930.

★ Board of Directors of RCA Mfg. Co. has named three new vice-presidents, and has increased the responsibilities of another: Henry C. Bonfig, formerly sales manager of package goods, is now commercial vice-president; Frank R. Deakins, formerly sales manager of engineering products and RCA photophone, has been elected vice-president and will continue to head the same activities; Robert Shamon, formerly vice-president in charge of manufacturing, is now vice-president and general manager; Vance C. Woodcox, who has been a sales supervisor, is now a vice-president, succeeding Mr. Bonfig as head of all package goods merchandising.

★ George H. L. Norman has been named chief engineer of Aerovox Canada, Ltd., Hamilton, Ont.

★ Milton Rosenow, head of the engraving and printing company in Chicago bearing his name, died at Methodist Hospital, Gary, Ind., on Friday, Nov. 26th. Mr. Rosenow, who was widely known throughout the radio and music industry, was returning to Chicago after attending the Fairbanks-Morse refrigerator convention at Indianapolis on Nov. 16th, when through causes unknown his automobile was overturned and he was picked up unconscious in the road. He is survived by a wife and two sons.

## New "PRECISION" SERIES 840L



AC-DC Volt-Ohm-Decibel-Milliammeter including a  
**2500 VOLT A.C. and D.C. RANGE**  
and a **1000 M.A. RANGE**  
Specifications  
+ 5 A.C.—D.C. VOLTAGE RANGES from 0 to 2500 volts at 1000 ohms per volt.  
+ 4 D.C. CURRENT RANGES from 0 to 1 amp.  
+ 5 OUTPUT RANGES from 0 to 10 meg. (provision for self-contained batteries).  
+ 3 RESISTANCE RANGES from 0 to 10 meg. (provision for self-contained batteries).  
+ 5 DECIBEL RANGES from -10 to plus 63DB

Net price less batteries and test leads.

\$19.95

Write for catalog listing complete line of "PRECISION" TEST EQUIPMENT

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APPARATUS CORP.**  
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BROOKLYN, NEW YORK

Photo shown is Type 840P . . . Net Price, \$21.95

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**ANTENNA  
SYSTEMS**

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**HOOK-UP  
WIRES**

MADE BY  
*Engineers* FOR  
*Engineers*

Write for Complete Catalog

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INCORPORATED

30 CHURCH ST., NEW YORK CITY

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The Radio Tube that  
Gives

**SATISFACTION**

TRIPLE CHECKED FOR QUALITY

Used by Leading Set  
Manufacturers and  
Preferred by Expert  
Servicemen.

A PROFITABLE LINE TO HANDLE

**TRIAD  
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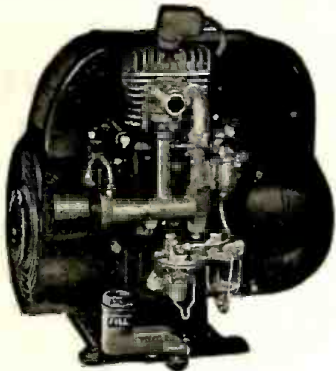
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The Quality Name in Radio Tubes

## ONAN ALTERNATING CURRENT PLANTS

operate **AC RADIO, PUBLIC ADDRESS, SOUND CAR** and **MOTION PICTURE EQUIPMENT . . . . .**



These **PLANTS** supply electricity for Domestic and Commercial places where current is not available. Operate Water System, Refrigerator, Household Appliances.

**SIZES TO SUIT EVERY PURPOSE**  
Operate on Gasoline, Gas or Distillate. Sizes 350 to 50,000 watts, \$110 and up. Also 6, 12, 32 and 110 volt. DC Models. All Models furnished complete, ready to run. Write for Details.

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586 Royalston Ave. Minneapolis, Minn.

## A REAL OPPORTUNITY

### Service Salesmen

Centrally located national distributor parts and public address equipment, requires local representatives to solicit orders from dealers and servicemen. Excellent opportunity for live wires. Must be familiar with local service trade. Liberal commissions. This is a real proposition for go-getters. Write full details, training, experience and background in trade.

Box C-1 **RADIO TODAY**  
480 Lexington Ave., New York, N.Y.



William G. Bode has been named radio division sales manager for United American Bosch.

★ Edward B. Passow has been named chief radio engineer for Fairbanks, Morse & Co., home appliance division, Indianapolis, Ind. For the past 3 years, Mr. Passow has served as assistant radio engineer for FM; previous to that time his engineering work was with such firms as Bremer-Tully, Brunswick-Balke Collender and Wells Gardner.

★ Joseph S. Klein, sales and franchise director of the Radiofone Corp., 136 West 22nd St., New York City, manufacturers of wireless intercommunication systems, is leaving for Europe on January 27th for an extended business trip. European engineers and power men are traveling from England, Sweden, France and Poland to meet Mr. Klein in London to discuss wireless intercommunication systems and arrange merchandising programs for the continent. While in Europe Mr. Klein may be reached through the American Express Co. in either London or Paris.

★ Apparatus Design Co., Little Rock, Ark., has introduced a new method of jobber sale. Under the plan, the firm will credit the distributor for what he allows on a trade-in of an old tester of Confidence make.

★ At a recent meeting of the Westchester (N.Y.) Gas & Electrical Dealers Association, a special committee was appointed to investigate the matter of group buying as a money-saving measure for members of the organization. The action was taken partly as a result of current laxity in enforcement of Feld-Crawford price regulations. Committee members are Ray Kline, White Plains; Jack Cooper, White Plains; I. Donnen, Rye; Edward Lowe, New Rochelle; Milton Brodbeck, Mt. Vernon; Chester Wagner, Yonkers; Charles Schwer, Tarrytown, and Harold Pascale, Peekskill.

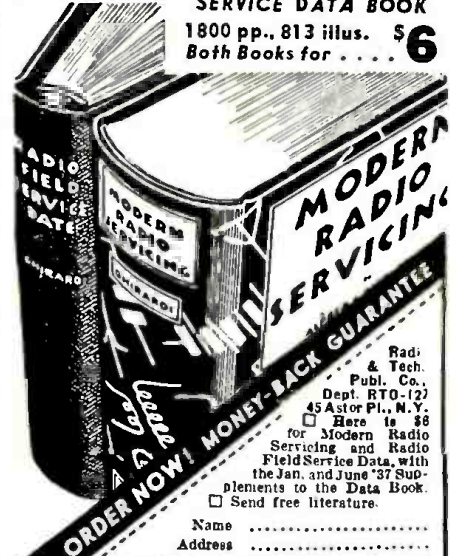
At the same meeting, the nominating committee presented nominee officers for the coming year: Jack Cooper, president; Edward Lowe, 1st vice-president; Harold Pascale, 2nd vice-president; Ray Kline, secretary, and Milton Brodbeck, treasurer.

# OVER 1500 CASE HISTORIES TO SPEED UP YOUR SERVICE WORK



Get the world's greatest collection of "Case Histories"—in Ghirardi time-saving loose-leaf **RADIO FIELD SERVICE DATA BOOK**. Ghirardi tells you exactly which part in the set is causing the trouble—and how to remedy it! No fussing, no cussing—you get straight to the seat of the trouble instantly! But that's just one feature of the Data Book. You'll also get the i-f's of over 6,000 superhets (for alignment work), 66 Car-Wiring Diagrams, Auto-Radio Installation and Ignition System Interference data for all cars, and over 25 other indispensable tables and charts for shop and job reference. This book is kept always up-to-the-minute by a regular Supplement Sheet Service. Get this handy time-saver together with Ghirardi's famous 1300-page **MODERN RADIO SERVICING**, which gives a complete and comprehensive explanation of everything about modern radio service work—latest Test Instruments (their theory, operation, construction, with diagrams, etc.), Trouble-Shooting, Repair Methods, Noise-Elimination, Auto-Radio Installation and Servicing, AVC and QAVC Circuits, Aligning Superhets, etc., etc. All "417 Essentials" of successful radio service work are explained fully—and illustrated!—in this amazing collection of practical servicing information. These 2 books give you "the whole works"—shop reference data and servicing knowledge you really have to have. Get them today—you can't lose!

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**RADIO FIELD SERVICE DATA BOOK**  
1800 pp., 813 illus. \$6  
Both Books for . . . . \$6



**Service with these "SPEED TWINS"**

They'll take you straight to the trouble in any radio set—quick as a flash!

Here's how they work:

Just take up your **Gadget** and pick out the **TRouble SYmptom** you find in the sick receiver; flip the card around—and there you'll see both the exact **TESTS** to make and the **REMEDIES**. One for **HOMe** and one for **AUTD** radios. Spot over 850 different troubles. Sent postpaid anywhere on 5-day **TRIAL** basis.

**RADIO & TECHNICAL PUBL. CO.**  
Dept. RT-0.127, 45 Astor Place, New York

**MAIL NOW! \$1 A PAIR**

# JIM QUAM Says



Specifying all the parts that go into a radio is no easy job. Conscientious radio engineers are not content with a part just because they've used it before—or because others seem to be satisfied with it. They are constantly searching for better performance.

That's the kind of fellow we like —because he likes Quam speakers. I admit he keeps us humpin' to give him something better. But that's good for us. And it's good for everyone else, too, who's looking for better speakers. They can find them here at QUAM-NICHOLS.

## QUAM-NICHOLS CO.

33rd Place & Cottage Grove CHICAGO 1674 Broadway NEW YORK



Model 60U & 700



Model 500

### SHORT WAVE CONVERTERS FOR CAR RADIOS

Can be attached to any car radio. Has on and off switch. Does not affect the reception on the standard broadcast bands. MODEL 600—covers 49, 31, 25, 20, 19 and 16 meter bands. Designed for reception of American and Foreign short wave broadcast. Especially adapted to use in tropical countries and the more remote parts of the world. Distance range 5000 to 10000 miles. A very attractive unit. List Price ..... \$24.95

MODEL 700—Long wave converter covers 135 to 410 Kc. Used in U. S. to receive government weather reports, ships at sea, etc., in cars and boats of the water front districts. Designed also for use in Europe and Asia. List Price ..... \$24.95

#### For Use of Police and Other Law Enforcement Officers

MODEL 100—Police converter with fixed condenser. Covers 1500 to 2600 kilocycles. List Price \$11.95

MODEL 200—Police converter with variable condenser and illuminated dial. Covers 1500 to 5500 kilocycles. List Price ..... \$17.95

MODEL 500—Police converter with two metal tubes, variable condenser and illuminated dial. Very sensitive. Exceptional distance range. List Price ..... \$21.95

ALL WAVE ANTENNAS—Model A—Hinge Mount telescopic, 60 in long. List Price ..... \$3.50

JOBBERS AND DEALERS WANTED

### ABC RADIO LABORATORIES

3334 N. New Jersey Street Indianapolis, Indiana, U. S. A.

## TRADE FLASHES

★ The W. P. Woodall Co., managers and operators of the direct mail services of Radio Today, have increased their facilities and have moved to larger quarters at 152 Waverly Place, New York City. The company has added equipment, increased personnel, and three times its former space to handle the steady increase in its volume of business.

★ Precision Apparatus Corp., 821 E. New York Ave., Brooklyn, N. Y., is now ready with the latest tube checker charts, including data on all the new tubes. These are available to all owners of Precision instruments. The company has recently announced that the model 500 electrovometer has been revamped, brought up to date and now called model 500A.

★ First of a series of promotional efforts to be launched in the New York area by DeWald Radio was a contest-survey among consumers on "What's Your Favorite Radio Program—and Why?" Although the stunt was a local one, entries came from the South and Middle West and the total response was tremendous. Champ letter writer was awarded a DeWald model 1200 12-tube superhet. Favorite program turned out to be Major Bowes' Amateur Hour, with Bing Crosby and Jack Benny fighting it out for second place.

★ Prize winners in the recent "Best Letter" contest sponsored by Wholesale Radio Service Co., Inc., have been announced. W. E. McLain, Marshall, Mich., won first prize of \$250; Jack E. Bannan, Oil City, Pa., took second prize of \$150 and Clinton L. Kinzey, Independence, Mo., was awarded third prize of \$100. Fifty other awards of \$10 each were awarded to those writing the next best letters on the subject, "Why I Have Found the Wholesale Radio Service Catalog Valuable." Entries came from all sections of the country. Judges were Joseph Reiss, president of Reiss Ad. Agency; Lawrence Cockaday, editor of Radio News, and Dr. O. H. Caldwell, former Federal Radio Commissioner and editor of Radio Today.

## THE HIRSH DUOSOCKET

(Patent applied for)



**NOW** makes it possible to use your electric razor, curling iron or any other appliance at the same time from the same socket as your light. Easily connected with even the smallest shades, thus eliminating unsightly cords. Ideal for homes, offices, stores, hotels, banks, factories, etc.

List Price 50c. If your JOBBER cannot supply you, send us your order direct. Some territory still open for Manufacturers Agents. Standard Discounts to the trade.

### HIRSH MANUFACTURING CO.

P. O. Box 504 Oklahoma City Oklahoma

## Look for the Name MUELLER WHEN YOU BUY YOUR CLIPS

MADE TO LAST LONGER

The Only Complete Line



8 Different Sizes • Copper • Steel • Insulated and Uninsulated

Send for FREE SAMPLES and Catalog 980

*Mueller Electric Co.*

Clip Makers for 29 Years

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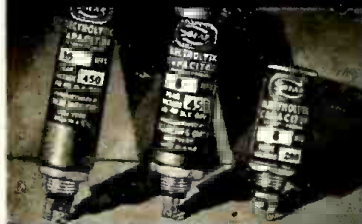
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# CONDENSERS

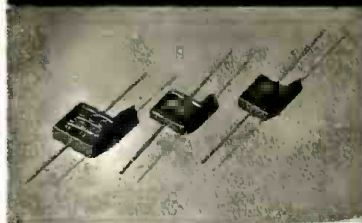
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TRIMMER

Reliable in  
**EVERY**  
climate

*Write for catalog*

**SOLAR MFG. CORP.,**  
599-601 Broadway, New York

# RADIO IN IT'S ENTIRETY



## COMPLETE STOCKS READY FOR YOU

"B-A" serves the trade with every need in radio. Complete 160-page catalog of radio receivers, public address systems, parts, supplies and equipment is now available. You will find your favorite nationally known lines represented in this big book. "B-A" prompt service will please you—orders shipped same day they are received.

**BURSTEIN-APPLEBEE CO.**  
1012-14 MCGEE ST. • KANSAS CITY, MO.

**UP-TO-DATE CATALOG  
NOW AVAILABLE**

## CANNON-BALL HEADSETS for a fast-growing market



Three million homes now have two or more radio sets—requiring headphones to eliminate conflict in the home—and millions of other sets, now in use, will be equipped.

The new demand for silent reception without disturbance to others is opening up a vast market for single and double headsets; not only in receivers now in use but in the millions that are added every year. Manufacturers are beginning to install adaptors or switches, or otherwise wire their receivers to take headphones.

In central radio, also, the trend is to headsets. And, of course, the group-hearing aid is solely a headphone proposition.

Jobbers, dealers, servicemen, installers of central radio and group-hearing aids, will find a RESPONSIVE MARKET for EFFICIENT, LIGHT WEIGHT, GOOD-LOOKING 'PHONES—a profitable market, too. We are receiving orders, large and small, from every state in the Union and many foreign countries.

### CANNON-BALL ADAPTOR

Permits using headsets on all radios. Get wiring diagram and complete details covering Cannon-Ball line.

**C. F. CANNON COMPANY**

Headset Headquarters

SPRINGWATER NEW YORK



Boake Carter, left, autographs the tag on the 10,000,000th Philco for Ray Riday, right, Philco dist. rep. in Washington, D. C., while Secretary of War Harry H. Woodring looks on. The instrument went to war veterans in the Walter Reed Hospital, Washington.

★ To house-warm the newly decorated Chicago office of Stromberg-Carlson, dealers and salesmen of the area attended a recent celebration where special speakers appeared. These included Lee McCann, radio sales manager, and Charls Low, merchandising consultant. H. T. McCraig, Chicago branch manager, and W. H. Nolan, Chicago division radio manager, were hosts to dealers.

★ The new metallic phonograph needle recently introduced by Reco-ton Corp., 178 Prince St., New York City, is further described as suitable for use with acetate records on transcriptions. The company also makes cutting needles and sapphire ones.

★ Number of sets sold by Philco this year will surpass the volume done last year, according to Sayre M. Ramsdell, the company's vice-president in charge of sales. This is because of the firm's large automobile contracts, states Mr. Ramsdell, who also reported that "dollar volume of our sales will be under the 1936 figures, while the whole industry will fall below both dollar volume and number of sets this year."

★ Ward Leonard Electric Co., Mt. Vernon, N. Y., has announced additional sales representatives to handle their radio resistors, relays and rheostats: Fred Stevens, 528 Maccabees Bldg., Detroit, Mich., for the state of Michigan; Ted Keller, 111 Morningside, Council Bluffs, Iowa, for Missouri, Kansas, Nebraska, South Dakota and Iowa, and William Carduner, 17 Warren St., New York City, for Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, Pennsylvania, New Jersey, Maryland and Delaware.

★ After Jan. 15, 1938, the Atlanta, Ga., branch of Wholesale Radio Service Co. will have new headquarters at 265 Peachtree St., where the firm has leased an entire building. The new store has been modernized, ready for demonstration salons, a big serviceman's dept., sound auditorium, etc. Irving Miller heads the Atlanta branch; Jerry Russell will continue in charge of the purchasing dept.

★ A newcomer to the Sentinel Radio Corp. family is a husky baby boy who has arrived in the family of Ed May, advertising director. The 8½ lb. chap is Mr. and Mrs. May's first.

Service men prefer Red Head Condensers. They are dependable and economical. Made in all types and sizes.



Use them on all your replacements. They can be depended upon for quality and service—and their lower price makes your dollar go farther.

## RED HEAD Capacitors

**THE CHOICE OF  
DISCRIMINATING  
SERVICEMEN**

Consolidated offers an outstanding line of aerial accessories—wire—testing equipment and antenna supplies—priced to sell—and highly profitable to the jobber.

Our unexcelled manufacturing facilities—tremendous stocks—and prompt shipping service are at your disposal. Catalog on request.

**CONSOLIDATED  
CORPORATIONS**

**RADIO SPECIALTIES  
FOR THE JOBBING TRADE**

512 Peoria Street Chicago Illinois

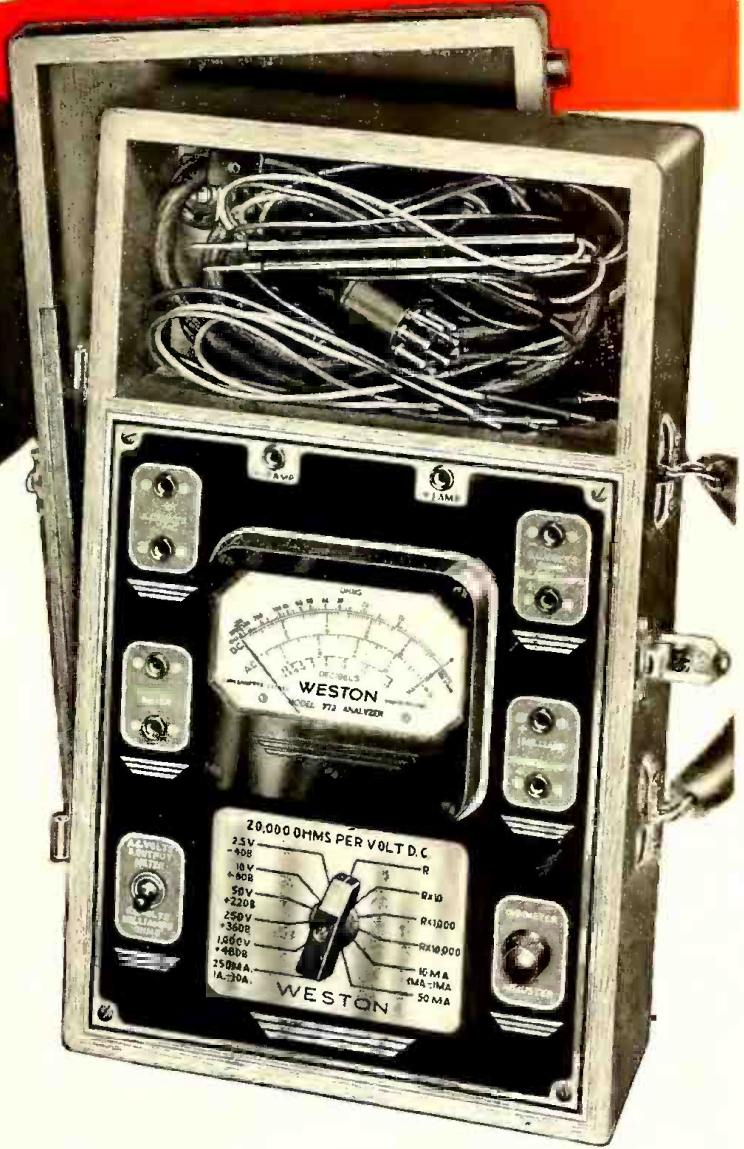
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*Standout value*

FOR '38

# THE WESTON

Model 772  
Super-Sensitive  
Analyzer



## WITH THESE ADDED FEATURES AND REFINEMENTS!

- ★ Simplified, easy-reading scale, AC readings on single AC arc
- ★ Decibel readings for sound measurement
- ★ Current ranges for auto testing
- ★ New, improved rectifier circuit . . . accuracy (WESTON guaranteed) 3% on normal frequencies
- ★ Temperature error (WESTON guaranteed) within 2° from 40°F to 110°F
- ★ 20,000 ohms-per-volt . . . big, dependable, 50 microampere WESTON Meter
- ★ Broad ranges to meet every requirement testing receivers, transmitters, television, vacuum tube and cathode ray equipment, sensitive relay circuits, etc.
- ★ Sound engineering . . . expert craftsmanship . . . highest quality parts . . . dependability for years.

Resolve, now, to start the year right with *dependable* test equipment . . . the kind of equipment that *remains* dependable and *stays* serviceable throughout the years. It will save you time and annoyance, save you money, and put more profits in your pocket. When you buy an analyzer, for example, be sure it's the WESTON 772, for no other analyzer can give you equal dependability

and lasting service. For no other analyzer has a proved WESTON Meter . . . resistors of equal precision and stability . . . perfected WESTON silver contact switches, and other materials and parts of WESTON's high quality standards. Start the year right . . . and end it with more profit . . . with WESTON 772 and other test equipment. Send the coupon for complete information.

**WESTON**  
*Radio Instruments*

Weston Electrical Instrument Corporation  
597 Frelinghuysen Avenue, Newark, N. J.  
Send complete information on WESTON Radio Instruments.

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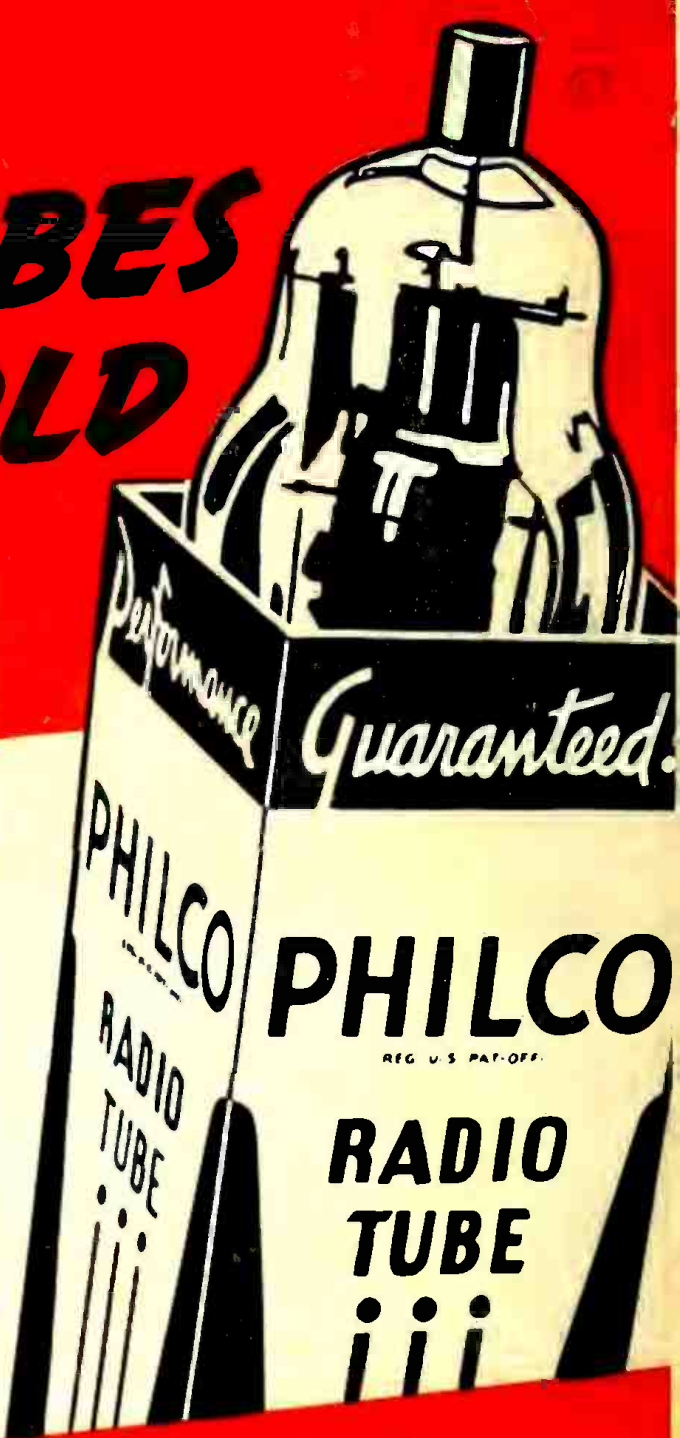
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# THE EASIEST TUBES IN THE WORLD TO SELL!

HERE'S a profit opportunity that can't be beat: 200 million tube sockets in over 34 million radios . . . with one of every four sets a Philco! Add to this the fact that every set can be improved with Philco Tubes. Now consider . . . right today millions of sets need new tubes and millions more will need them very shortly. That gives you the answer: a tremendous market for Philco Tube sales!

With more Philco tube sockets than any other . . . with bigger acceptance for the name PHILCO . . . with Philco Tubes giving greater satisfaction — is it any wonder that Philco Tubes are the easiest tubes in the world to sell?



# PHILCO TUBES