

JULY, 1934

INCLUDING
SERVICE
AND
INSTALLATION
SECTION

RADIO RETAILING

McGraw-Hill Publishing Company, Inc.

25 Cents per Copy

NOW RAYTHEON FORGES AHEAD

1st PRODUCT

Raytheon 4-Pillar Tubes are without parallel in the industry. So sturdy are they that today 60% of the licensed radio set manufacturers use them as initial equipment—80% of police sets are Raytheon equipped.



Part of a new window display

2nd PROFIT

800 authorized distributors and more than 20,000 dealers are making full list PROFITS on Raytheon 4-Pillar Tubes — because their construction is different.

3rd PROMOTION

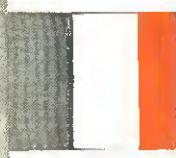
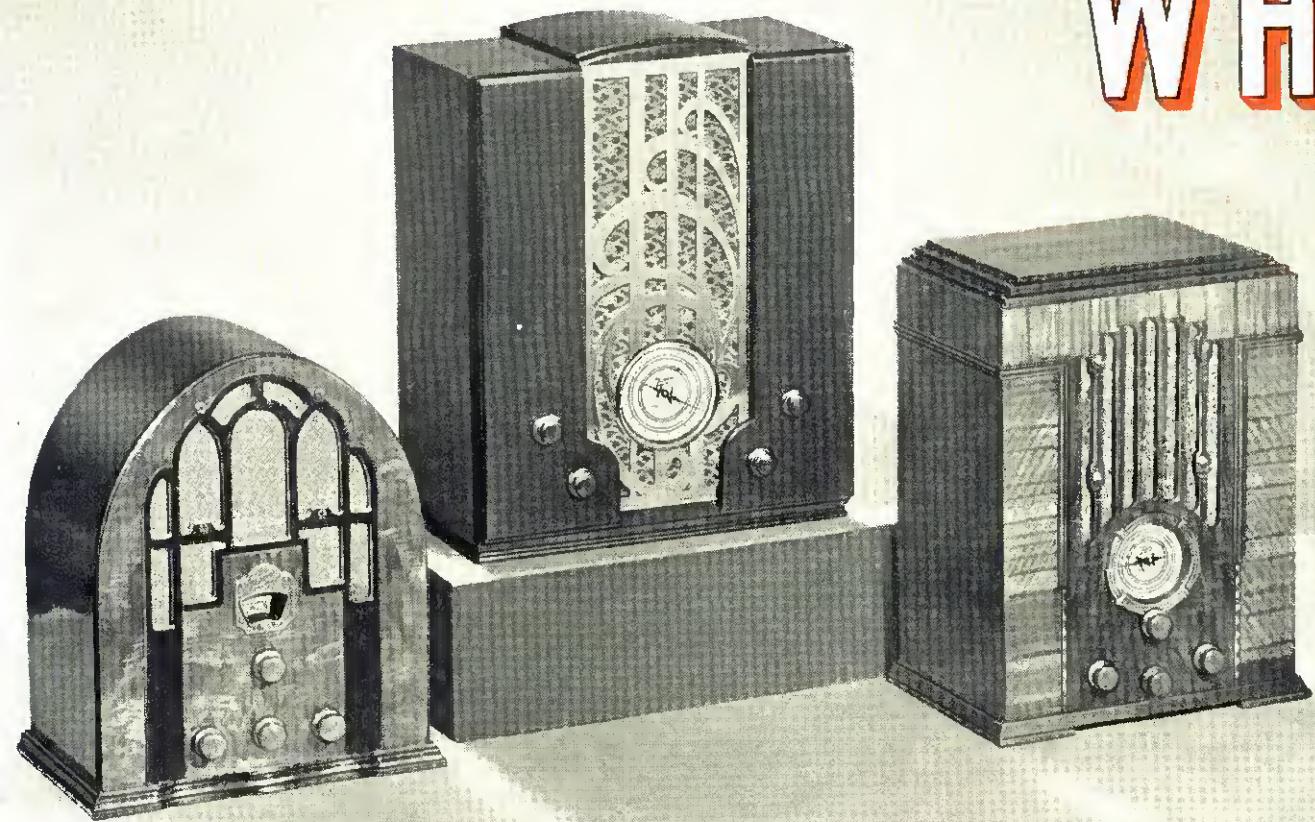
Raytheon distributors and dealers have found selling easy because more than \$3,000,000 has been spent on advertising Raytheon 4-Pillar tubes.

But the Promotion is being accelerated NOW! New display material and selling ideas are ready for Raytheon dealers and jobbers. Watch for complete announcements.

Remember:—Raytheon 4-Pillar Tubes mean Product, Profit and Promotion.

RAYTHEON PRODUCTION CORPORATION
New York, N. Y. San Francisco, Cal. Chicago, Ill.
Newton, Mass.

"WHIPS"



VOUS VENEZ D'ENTENDRE
RADIO COLONIAL
PONTOIS, FRANCE
BONNE NUIT,
AMÉRIQUE

THIS IS GSC,
DAVENTRY
CHEERIO, GOODNIGHT

DIES IST STATION DJA,
BERLIN.
GUTE NACHT

BOSTON . . . Able to listen very clearly to FRANCE, GERMANY and SPAIN . . . excellent reception between 7:30 and 8:00 P. M.

DALLAS . . . Listened in on a conversation with BUENOS AIRES and LITTLE AMERICA . . .

MANCHESTER, N. H.
... Tuned in on GBS, DAVENTRY, ENGLAND until they signed off with chimes from Big Ben . . .

reception we ever have listened to I do not believe you ever have given us a radio that operates as well . . .

ZENITH
announces
its new 1935 line of
LONG DISTANCE
RADIOS

... Then tuned in on EAQ of MADRID . . . held DJA, ZESEN, GERMANY, for one hour . . . This is the finest short wave

... Judge by selecting volume, accuracy of automatic volume control, ease or smoothness of general reception

CLEVELAND . . . I will just tell you that it works 100% . . . sacrifice nothing by having short wave on the set . . .

MILWAUKEE . . . We can say without reservation that this is one of the best, if not the very best, in its class.

MANCHESTER . . . After a five day test we can report that they are out-performing everything we have had up against them.

THE TOUGH SPOTS™

...in world wide reception!

Upper—left to right
MODEL 805—ZENITH
LONG DISTANCE RADIO
1 tube midget. 15½" high, 12¾" wide, 8½" deep. Price \$29.95.

MODEL 829—ZENITH
LONG DISTANCE RADIO
1 tube midget. 18½" high, 15" wide, 8" deep. Price \$69.95.

MODEL 808—ZENITH
LONG DISTANCE RADIO
5 tube midget. 16½" high, 12" wide, 8½" deep. Price \$49.95.

Lower—left to right
MODEL 850—ZENITH
LONG DISTANCE RADIO
5 tube console (no legs). 36" high, 22" wide, 12½" deep. Price \$59.95.

MODEL 870—ZENITH
LONG DISTANCE RADIO
7 tube console (6 legged). 39" high, 21" wide, 12" deep. Price \$79.95.

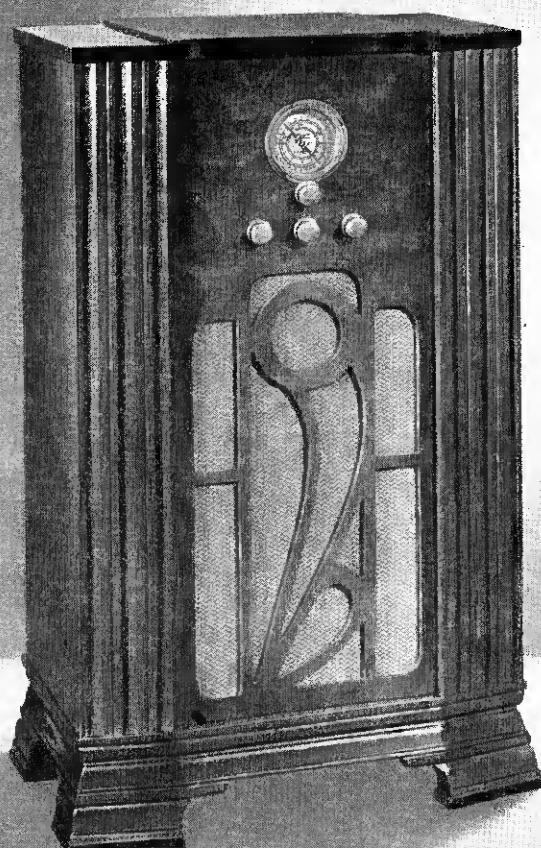
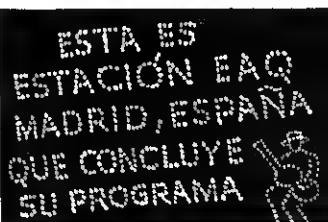
Prices slightly higher on west coast . . . subject to change without notice.

You've always been convinced *in your own mind* that Zenith reception was superior . . . way and above all other radios at anywhere near the price! Now that difference is so apparent that you can *demonstrate it* . . . by *ear* . . . by any showroom display demonstration! Zenith for 1935 . . . *a new line of Long Distance Radios* . . . proves beyond argument that here is the *superlative* in both European short wave and standard reception today!

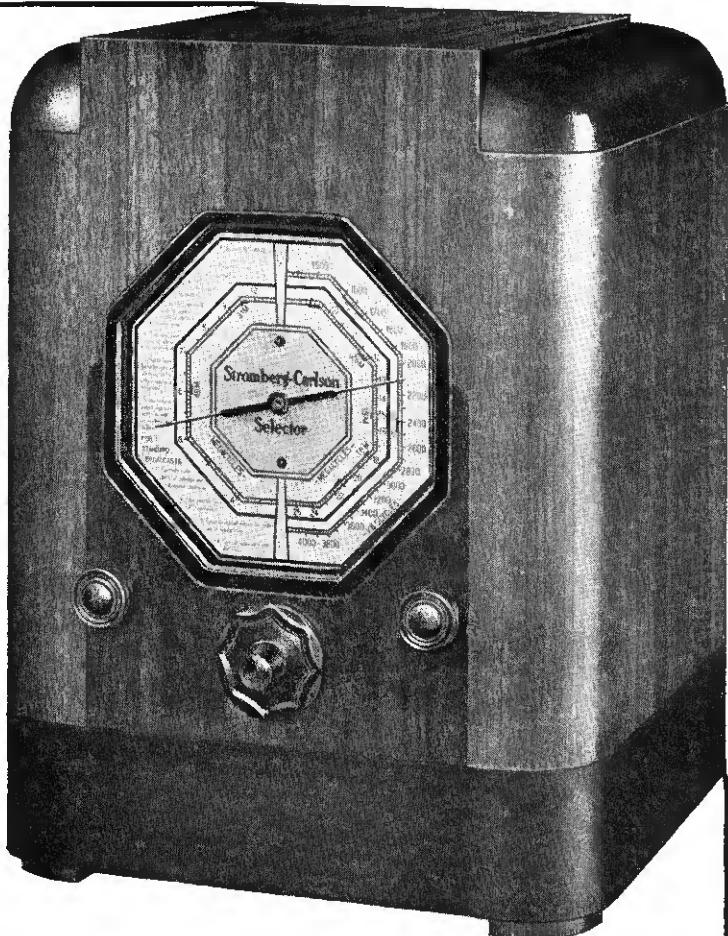
This sparkling, clear-cut and far-reaching radio will provide you with the greatest *demonstration* your showroom ever had!

Handsome cabinets in *popular modern styles* . . . nothing faddish or extreme. Exquisitely *clear reception* that makes the usual short wave reception colorless and flat! The new Zenith has been tested under every conceivable adverse condition . . . it has WHIPPED THE TOUGH SPOTS OF RADIO RECEPTION all over the country! Where other sets are feeble or uncertain Zenith comes in clear and brilliant. Hear these new Zenith models . . . get a thrill out of *real world-wide reception!*

ZENITH RADIO CORPORATION
3620 Iron Street, Chicago, Illinois



MAKES ANY Standard Wave Radio ALL-WAVE



-----  *the № 69 Short Wave Selector* 

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

No. 69 Short Wave Selector. Used with a standard wave radio makes available high quality reception on short waves 1500 to 25,000 kc. including the 49, 31, 25, 19 and 16 meter bands and down to 12 meters. This includes the recent extension of the standard broadcast band between 1500 and 1600 kc. Selectorite Dial illuminates automatically only the portion of dial in use. 4 tubes. Only 14 $\frac{1}{2}$ " high. Can be completely installed in a few minutes. Walnut finish. Price, East of Rockies, \$69.50.

HERE is a new development making it possible to hear short wave programs from all over the world on a standard wave radio. This little Selector—a tuning mechanism with 4 tubes—adds complete short wave coverage from 1500 kc. to 25,000 kc. (200 meters to 12 meters). It can be installed in a few moments. Requires no change in the standard wave radio.

Here are summer sales. For, short wave foreign programs are becoming more popular every day; short wave reception of regular American broadcasts are practically free from natural static; short wave broadcasts from great distances are possible throughout daylight hours. *When you sell All-Wave radio by adding a No. 69 Selector to a good standard wave radio, you are furnishing—better standard wave performance—better short wave performance, and—better All-Wave performance—than from any All-Wave combination radio.*

Here is a *real* Short Wave Selector—the outfit to sell former buyers of good standard wave radios; those who are now paying for standard wave radios, and to sell with the standard wave radios you have in stock.

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



Stromberg-Carlson

1894

MAKERS OF VOICE TRANSMISSION AND VOICE RECEPTION APPARATUS FOR MORE THAN FORTY YEARS



1934

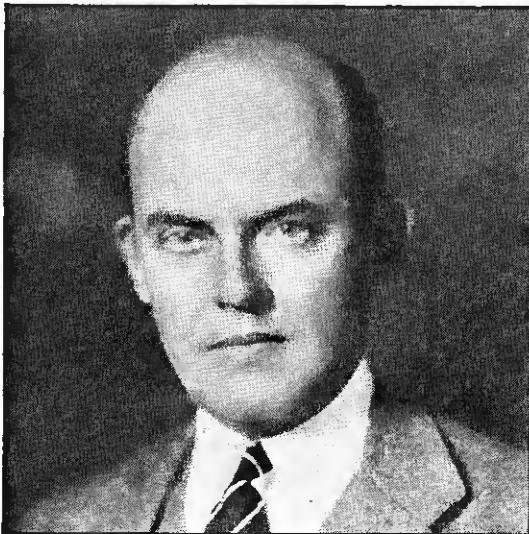
RADIO RETAILING, July, 1934. Vol. 29, No. 1. Published monthly, price 25c. a copy. Subscription rates—United States and Central and South American countries, \$2.00 a year. Canada, including duty, \$2.50 a year. All other countries \$3.00 a year or 12 shillings. Entered as second-class matter April 10, 1925, at Post Office at New York, N. Y., under the Act of March 3rd, 1879. Printed in U. S. A. Cable address "McGrawhill, New York." Member of A.B.P. Member of A.B.C. Copyright 1934 by McGraw-Hill Publishing Co., Inc., 330 West 42d Street, New York, N. Y.

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Perhaps your customer doesn't care
that we pioneered 6 out of the 7 fundamental
developments in a. c. tubes
that we have world-wide acceptance
that our product is recognized as standard
among engineers
that we can factually claim many distinctions
in the tube industry
But your customer does want
the service that only an ARCTURUS TUBE gives.
Need more be said?

STEWART-WARNER



JOSEPH E. OTIS, JR.
President, The Stewart-Warner Corporation



FRANK A. HITER
Gen. Sales Mgr., The Stewart-Warner Corporation

OTIS and HITER Records

—and What They Mean to Your SUCCESS as a Radio Dealer

1 ALEMITE Distributor Organization

Under the direction of Joseph E. Otis, Jr., and Frank A. Hiter, the Alemite distributor and dealer organization has maintained for many years an outstanding reputation as one of the most successful and consistently profitable distributing organizations in the United States. Profitable not merely to the Alemite Corporation, but to each and every member of the organization—from the biggest distributor to the smallest way-side service station.

Sound management and selling policies carried this organization through two major depressions, to constantly increasing sales and profits for everybody concerned. As a crowning touch to years of aggressive progress, Alemite was able to announce this year that 99% of 1934 cars are *factory-equipped* with their newest development—the Alemite Hydraulic Lubrication System. Thus the market is constantly being made wider and more profitable for Alemite distributors and dealers, under Otis and Hiter management, by proven methods they have learned—not from mahogany desk theories—but from long, practical experience on the "firing line."

2 STEWART-WARNER REFRIGERATORS

Because of their outstanding success with Alemite, Otis and Hiter were appointed to direct the parent company—Stewart-Warner. To an organization long famous for the technical excellence of its products, they added new, aggressive selling policies.

The first product to benefit from this happy combination was the New-Type Stewart-Warner Home Refrigerator. In one sensational year it jumped from nothing to a commanding position in the refrigeration industry. Once again Otis and Hiter had gathered around them a distributor and dealer organization bound to succeed because they knew they could depend on fair dealing, fine merchandise, full profits, and financial stability, from the management back of them. Stewart-Warner's refrigerator plant is now working day and night. Dealers and distributors are reaping a rich harvest of profits on "The Easiest-to-Sell Refrigerator Ever Made"—thanks to management that thoroughly understands retail conditions and problems—and shapes its policies always to give the dealer his well deserved share of the success he plays such a large part in making.

3 And now the new Stewart-Warner RADIO

You may have the opportunity to share in another—and perhaps the greatest—Otis and Hiter success, if you can qualify. Right now the new Stewart-Warner management is bringing together an organization of the most able, aggressive dealers and distributors in the radio field. They are being selected carefully. From years of successful direction of distributor organizations, Otis and Hiter know the type of dealer who will fit into their kind of hard-hitting merchandising plans and make himself plenty of money. *If you are that type of dealer, here is the biggest news you have ever had in business!*

All the great resources and manufacturing facilities of Stewart-Warner are back of a new line of radios for 1934-35 that will give the public the first real, sensible reason for replacing old sets since A-C tubes replaced batteries! It will have every important selling-point of competitive lines—but in addition will offer an amazing new exclusive improvement that will make sales, even to present radio-owners, as fast as it is demonstrated! Dealer appointments are now being made. Investigate.

The New STEWART

DOES IT AGAIN!

Announcing a great NEW Achievement
that makes EVERYBODY your prospect!

This is advance notice of a sensational new Stewart-Warner program about to be launched under Otis and Hiter management—on a line of radios for 1934-35 that will set a new pace for retail radio sales. *You will find it easier to sell this new Stewart-Warner line than to sell against it.* Watch for announcement of complete details. Alert dealers will get a jump on competition that will put them 'way out in front in sales and profits for a long time to come.

What You Ought to Know About the Line You Sell

COMMON sense and past experience both demand that the first question you should ask yourself about the line you are going to feature is—"What's back of the product?" What is the record of the company? What are its policies? Do the people at the head of the company understand your problems? Will they judge your territory and your potential sales fairly and intelligently—so that meeting unreasonable quotas won't eat up all your profits?

Is the manufacturer financially sound? After you have spent years of your life building up a following on their merchandise, will you be able to (1) continue to get that merchandise (2) with quality always at least equal to competition?

Back of the new Stewart-Warner Radio is a management personnel which should be of greatest importance to you, as assurance on these two vital points. J. E. Otis, Jr., and F. A. Hiter have proved many times that they know the way to success, and that distributor and dealer organizations associated with them always participate fully in such success.

Too many companies have been built up solely for their own profit at the expense of hard-working dealers. Investigate the successful merchandising histories of Otis and Hiter and you will find that in every case the story has been one of cooperation, of success shared with distributors and dealers.

The same powerful manufacturing and selling resources that made a sensational success of Stewart-Warner refrigerators in one short year are now back of the new Stewart-Warner radio. Dealers and distributors who "get in on the ground floor" will participate in the rapid progress and profits that are always the results of Otis and Hiter management and sales-strategy.

A significant example of the aggressive policy back of Stewart-Warner radios, is the addition of Dr. C. M. Blackburn to Stewart-Warner's engineering staff—in charge of radio designing and manufacturing. Dr. Blackburn is well-known in the radio industry for his uncanny foresight into exactly what the public wants, and his unfailing ability to give it to them, with highest technical qualities at prices to sell fast.

This year will definitely mark the beginning of a Stewart-Warner march to leadership in radio. For the first time, you will be able to sell a really practical line of all-wave radios—so simple to operate that any child can tune in even the hardest-to-get broadcasts—at popular prices!

You will be wise to investigate full details of this new line—which will be announced any day now—before putting yourself in a position that might prevent your profiting from this exceptional opportunity.

*Write..Wire
or phone us direct*
Get the full story of this great
NEW LINE
BEFORE MAKING STOCK
COMMITMENTS!

STEWART-WARNER CORPORATION
1853 DIVERSEY PARKWAY CHICAGO, ILLINOIS



WARNER Radio

Something up

THE new 1935 American-Bosch Round-the-World Radios presented here are a miracle of technical perfection.

Into them have been built engineering developments combined in no other sets anywhere at any price.

Every set in the line has a new superior type of continuous tone control and a superior performance for which radio engineers everywhere have hitherto labored in vain.

Every set in the line is built on the new American-Bosch principle of Anchored Construction!

The Multi-Wave Selector, a patented exclusive American-Bosch feature on the all-wave models, makes round the world tuning a simple matter at last, because only one wave-band at a time is visible.

The audio quality in Model 480D is, we believe, the best ever heard on any radio set at any price. *The ability of this set to tune in foreign stations is superior to that of any standard set on the market!*

Two models—Nos. 460R and 480D—introduce Right-Angle Tuning, a basic new principle in radio design and beauty!

But even that is not the whole story! Not by any means! We have something up our sleeves! It is the most sensational sales plan ever put behind round the world radio! The big selling idea the radio trade has been waiting for! A plan that will reach every radio home; create replacement business for radio dealers as never before!

A bold claim? Judge for yourself! Write or wire for new broadside, "Your Ship's Coming In," which outlines in detail the plan that will make the folks right in your neighborhood want a new 1935 radio, an all-wave radio, a new American-Bosch Round-the-World Radio!

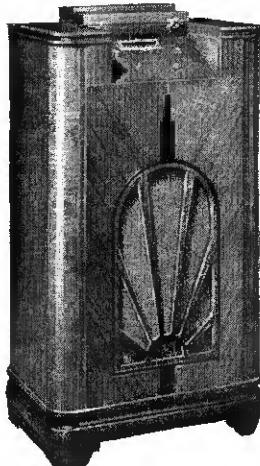
UNITED AMERICAN BOSCH CORPORATION
SPRINGFIELD, MASS. NEW YORK CHICAGO DETROIT
American-Bosch Radio is licensed under patents and applications of R. C. A.



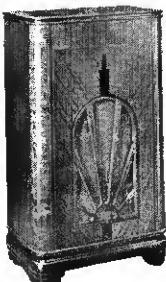
MODEL 480D—10 tube, 12-tube-performance. All-wave superheterodyne console radio de luxe. Range from 540 to 22,500 Kilocycles. Shown at left with lid closed. Multi-wave selector; dial shifts for each of 4 wave bands. Full automatic volume control. 18 Watts output. 4-gang condenser. New superior continuous type tone control. Superior audio quality. Cabinet includes exclusive Right-Angle Tuning, the comfort angle for tuning radio comfortably. \$149.50

NEW 1935 AMERICAN-

our Sleeve!



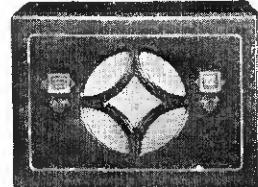
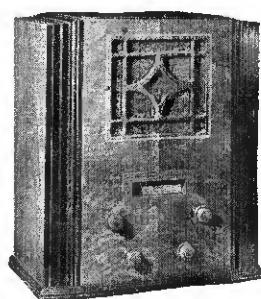
MODEL 460R—7 tube, 9-tube performance. All wave superheterodyne console radio. Range from 540 to 21,000 Kilocycles. Shown at right with lid closed \$94.50



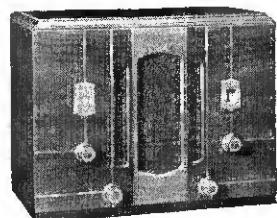
MODEL 460A—7 tube, 9-tube-performance. All wave superheterodyne console radio. Range from 540 to 21,000 Kilocycles \$69.50



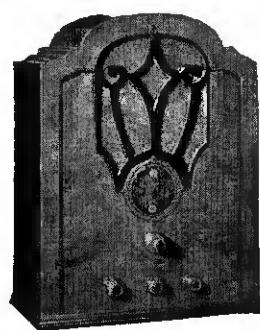
MODEL 460B—7 tube, 9-tube-performance. All wave superheterodyne console radio. Range from 540 to 21,000 Kilocycles \$67.50



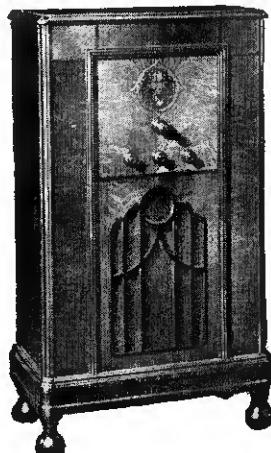
MODEL 402—5 tube, 8-tube-performance. Dual Wave Personal radio. For AC-DC operation. Range 540 to 1750 Kilocycles. Generous volume. \$29.95



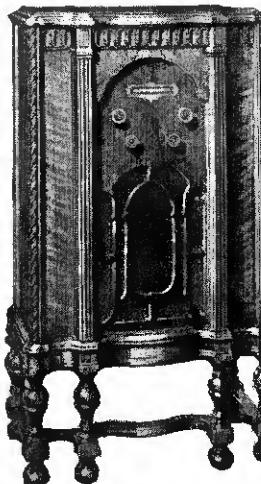
MODEL 420—5 tube, 8-tube-performance. Dual Wave Personal radio for AC operation. Range 540 to 3600 Kilocycles with special focus on police calls \$39.95



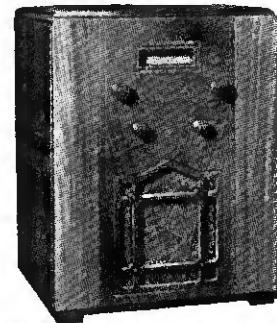
MODEL 440T—6 tube, 9-tube-performance. Standard and short wave superheterodyne console radio. Range 540 to 1600 Kilocycles and short wave from 5600 to 15,500 Kilocycles \$54.50



MODEL 440C—6 tube, 9-tube-performance. Standard and short wave superheterodyne console radio. Range 540 to 1600 Kilocycles and short wave from 5600 to 15,500 Kilocycles \$69.50



MODEL 376S (left above)—5 tube, improved battery superheterodyne console radio for use with Air Cell, Dry Cell or 2 volt storage battery. Range 540 to 1600 Kilocycles \$59.95

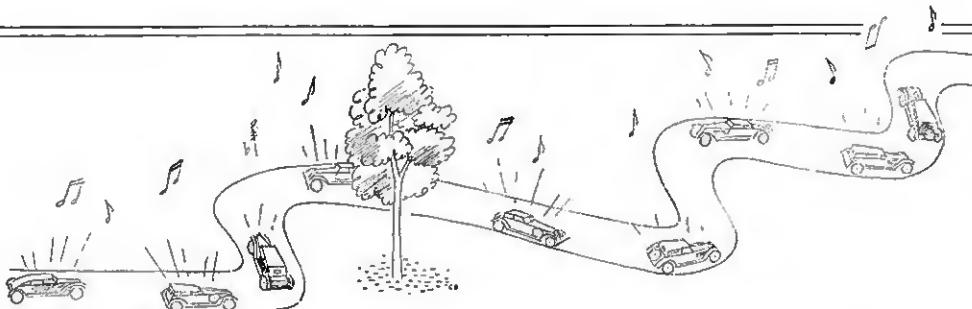


MODEL 376BT (right above)—Same chassis as above in console cabinet. Provides space for batteries within the cabinet \$32.95

BOSCH *Round-the-World* **RADIO**

IN JULY AND AUGUST

Auto Radio sales "get hot"



Say "Hello" to profitable sales by featuring the complete line of new G-E Auto Radio models!

WITH four new G-E Auto Radio models, ranging in price from \$39.50 to \$69.50, you can satisfy every customer.

The line includes a sensational *portable* set for car and home . . . a *de luxe* model that surpasses even G.E.'s previous best . . . a 6-tube receiver that's an outstanding performer . . . and a popular-priced 4-tube set packed with improvements.

Four quality sets—road-tested and guaranteed. Easily and quickly installed on any make of car. Backed by impressive magazine and newspaper advertising.

They sold fast in the spring. They'll sell even faster during the vacation months of July and August. And they pay a full margin of profit.

And bid "Good-bye" to service woe by following the new G-E Approved Installation Station Plan!

NOW, from coast to coast, G-E Approved Installation Stations are handling installation and service for G-E Auto Radio Dealers who do not wish to do this work themselves.

In these stations, G-E Auto Radios are installed by experts . . . serviced *free* for 90 days . . . satisfactory performance guaranteed by a signed certificate.

Thus, dealers are freed from service troubles of the past and can concentrate profitably on sales.

The charges for this service are moderate . . . and General Electric and the G-E Distributor pay a part of them.

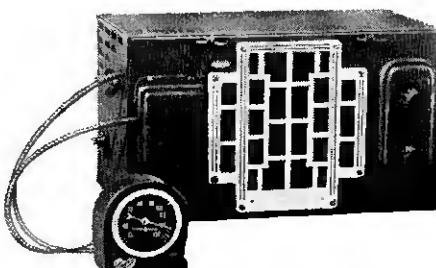
Dealers: Ask your G-E Distributor for details of the new G-E Auto Radio line . . . about the G-E Approved Installation Station Plan. Or write General Electric Co., Section R-367, Mdse. Dept., Bridgeport, Conn.

"Now is the time to buy!"

GENERAL ELECTRIC Auto Radio

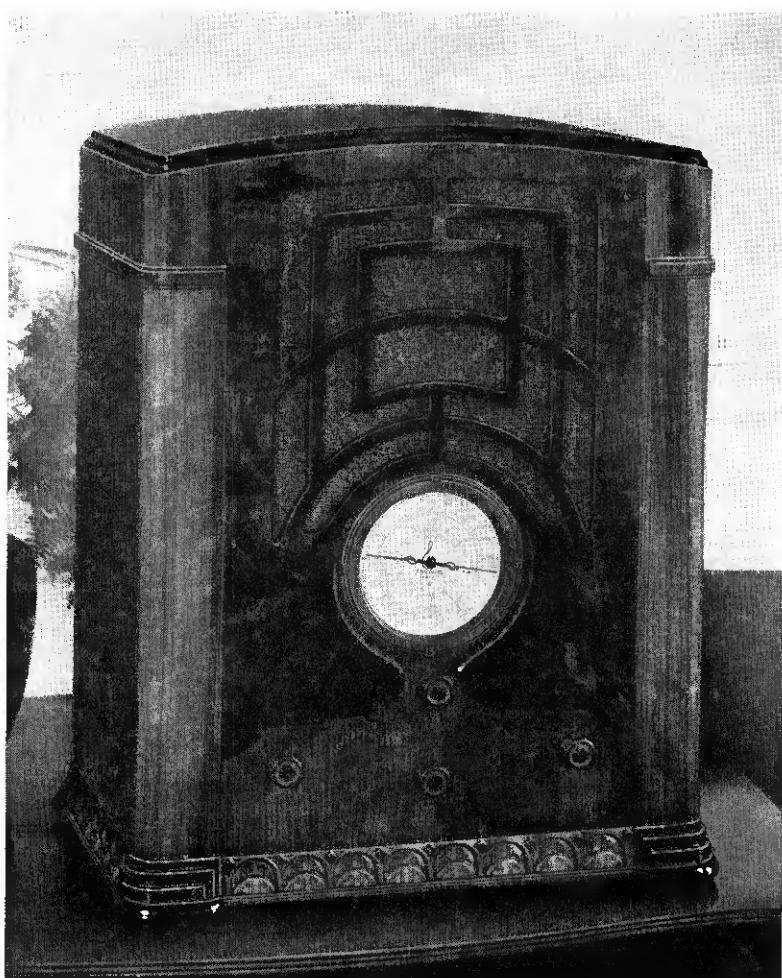


Model B-52 (Left)—G-E Portable Auto Radio. 5-tube superheterodyne that operates on car battery or 110-volt, 60-cycle A. C. Full, brilliant tone, particularly in higher registers. Low battery drain. Factory-sealed vibrator. High output and sensitivity. Airplane-type illuminated dial. Dimensions: 6½ in. high, 7½ in. wide, 17½ in. deep. Brown streamline case—crackle finish.



Model C-61 (Right)—G-E De Luxe Auto Radio. A 6-tube superheterodyne housed in a smartly designed case with chromium grille. Remarkable performance at all car speeds. Greater volume—improved tone. Illuminated airplane-type dial. Smooth tuning. Full range tone control. Automatic volume control. One-bolt universal mounting. Fits all cars.

Emerson Radio Rises to Greater Heights!



True
ALL-WAVE
Table Harmadius

13 to 550 Meters

Four illuminated tuning bands on aeroplane type dial

Emerson Model 71.
7-tube AC superhetero-
dyne. List price, com-
plete with RCA Radio-
trons

\$69.50

*Building on the Uninterrupted Prosperity of Emerson Distributors and Dealers—a
New and Still More Profitable Proposition is in the Making*

FROM the justly earned reputation of "World's Biggest Selling Little Radios," Emerson moves on to even greater achievements . . . New styles to enrapture a more critical public . . . finer engineering to encompass the entire world's broadcasts . . . vast facilities to produce and insure more for the purchaser's dollar . . . sales promotion, advertising, publicity and other cooperation of a dynamically modern and business building character . . .

These are the high spots of Emerson's 1935 proposition . . . they promise much, but they will deliver more. They present jobber and special dealer opportunities which are decidedly worth while considering before making any other commitments. Advance information on the line—prices, discounts and jobber territories—is now available. Write, wire or telephone and either an Emerson representative will call or reply will be sent direct.

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



NEW HORIZONS

● The outstanding navigator is the one who not only charts the current day's run, but also looks ahead to the problems of tomorrow. He becomes familiar with new horizons before they come in view!

In manufacturing modern radio tubes, constant study of the "new horizons" is even more important. It was such far-seeing research work that led to the development of the efficient 6.3 volt tubes that made possible modern automobile radios!

Hygrade Sylvania pioneered in this development . . . and later, in perfecting the 6.3 volt group of tubes for general use. Engineers of this company hold a leading position in the ad-

vancement of radio and tube design.

These same scientists stand ready always to assist set manufacturers in solving circuit and design problems. Acting with many leading manufacturers, they have contributed much to present-day radio reception.

Dealers and jobbers who carry Sylvania Tubes also realize important advantages from the cooperation of a company like Hygrade Sylvania. They have the guarantee of highest quality tubes, fair price policies, strong sales help, and a stable "partner" in their business. Write for further information regarding sales or technical consultation. Hygrade Sylvania Corporation, Emporium, Pennsylvania.



Sylvania

(Reg. U. S. Pat. Off.)



THE SIDE TESTED RADIO TUBE

© 1933, H. S. C



If you want to put new life into your radio business, we suggest that you obtain complete information on the new Westinghouse radio line from the nearest Westinghouse distributor.

All-wave sets! Dual-wave sets! Compacts! Table models! Consoles! Auto sets! Westinghouse, the oldest name in radio, provides a complete line that will sell . . . and that will make a substantial profit for you. See them, listen to

them perform, look at the popular prices, and you'll agree that here is a line of sets that will appeal to your customers . . . and will be a money-maker for you.

Westinghouse provides you with a set for every customer's needs, without great investment in inventory.

For complete information, mail the coupon. Or better still, wire or phone the nearest Westinghouse distributor for full details.

Westinghouse Radios

SEND THIS COUPON FOR
COMPLETE DETAILS ➤

Westinghouse, Room 201, 150 Varick Street, New York.
Please send me complete information on the new Westinghouse Radio Line.

Name.....

Address..... City.....

EVERY HOUSE NEEDS WESTINGHOUSE

Radio Owners are demanding TUNG-SOL Tubes

93% of the Tung-Sol Tubes sold by our 9000 partners go to replace tubes of other makes

The truth is that Tung-Sol Tone-Flow Tubes are not made to meet price-cutting competition, but to render the finest possible service.

They are built with hair-line precision and scientific accuracy that insures longer life, quieter performance, higher sensitivity and greater uniformity.

That is why they stay sold and that is why 93% of all Tung-Sol Tone-Flow Tubes sold by our 9000 retail partners go to replace tubes of other makes!

Do you want replacement business?

The Tung-Sol Time-proven Protection Plan

- 1** Insures an adequate stock without investment on your part.
- 2** Insures the full profit merited by merchants who build business on the firm foundation of quality merchandise.
- 3** Insures protection from cut-throat competition.
- 4** Insures elbow-room for all by selling only to selected retailers.
- 5** Eliminates cut-rate gyp-shop and mail-order competition.
- 6** Protects against loss due to price declines and obsolescence.

Write in at once for the full details of the Tung-Sol Protection Plan



MADE BY THE MAKERS
OF TUNG-SOL AUTOLAMP
BULBS

TUNG-SOL

Tone-flow radio Tubes

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

T166

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

RADIO RETAILING

O. H. CALDWELL, Editor

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Managing Editor *Associate Editor* *Assistant Editor* *Art Director* *Manager* *Washington*

VOL. 20

JULY
1 9 3 4

NO. 1

NEWS and VIEWS

AVERAGE SALE UP

Dealers contacted on our recent ramble through New England report that there has been a definite increase in the average unit sale these last few months. Midgets and relatively inexpensive consolettes still represent the bulk of the volume, but more and more consoles are being moved. Improved demand for better stuff has been particularly marked since February.

Digging into the books of several stores we found that the new crop of console buyers were generally people who purchased fairly high-priced jobs 5 or 6 years ago. They are, it seems, now beginning to drift in for replacements and, of course, nothing but a quality console will fill the bill.

We figure that the average dealer's unit sale should show a rise of about 8 per cent when the year's books are closed. Will yours?

the wide interest in allwave; an intelligent approach to capturing those extensive battery and replacement markets and, lastly, the solidification of the wholesaling structure.

NEW LINES EARLY

Manufacturers and distributors are throwing their sales conventions about a month earlier this season. As we go to press many companies already have flashed their wares in hotel ballrooms or aboard ship.

This presages early production of complete new lines. Should increased buying power manifest itself as the summer draws to a close, and all the signs point that way, the retailer will get away to a flying start.

Immediate formulation of fall campaign plans is the obvious course. Prospect lists may be gathered and classified, advertising planned, manpower recruited and trained. Then there'll be no need to take time out from the serious business of selling later.

BUSINESS BAROMETER

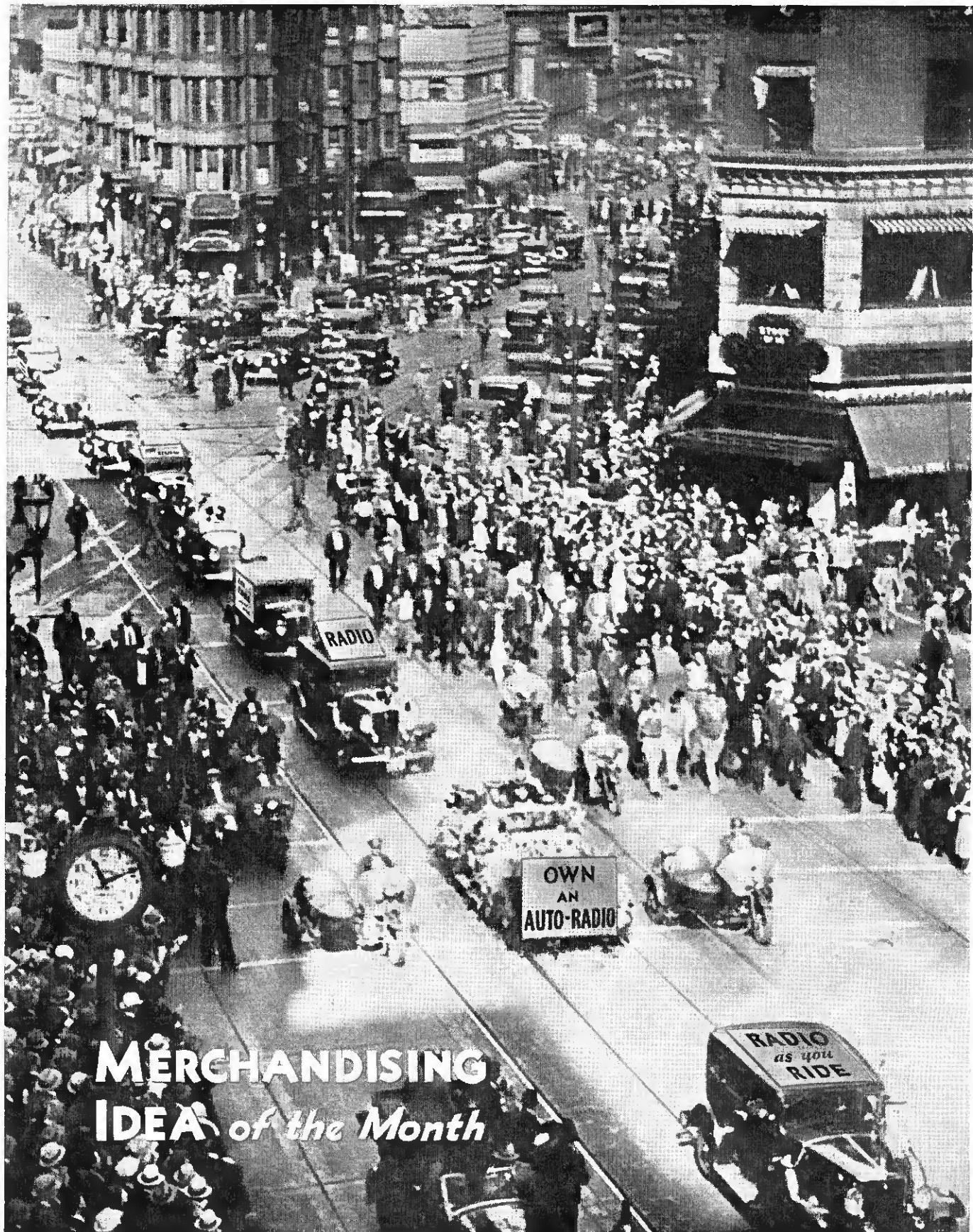
Radio sales, for the first quarter, 1934, were well ahead of corresponding period for prior year—holding exceptionally good throughout April—according to telegraphic replies just received by *Radio Retailing*. May witnessed the to-be-expected sharp slump with demand now marking time.

Of especial significance, with respect to the better business outlook everywhere reported, is the announced renewal of highly aggressive, sales-garnering policies on the part of four large, well-known radio set manufacturers who, last year, were shadow-boxing. Also the actual establishment of an industry sales-promotion "Bureau" (endorsed and actively supported by our largest executives) for national cooperative campaigns;

SIMPLIFY TUBE PRICES

A highlight of the wholesalers' convention was the meeting of the tube jobbers under the chairmanship of Maurice Despres, of New York. Urging the simplification of the present manifold scale of list prices on tubes, Mr. Despres pointed out that there now are over 40 different retail prices, many of which differ by a five cent variation only. Less than a dozen list prices would, it was agreed, cover all types of tubes if they were reclassified. Furthermore, such a move would result in slightly increasing the average price.

AUTO-RADIO



P A R A D E

Here's the hottest auto-radio promotion idea we've encountered. . . . A Cooperative Parade. Inexpensive, simple and yet effective, it has been suggested to several retail associations and already has been given a whirl in Cleveland, Ohio and Rochester, N. Y., with highly successful results.

To put the stunt in motion dealers, servicemen and wholesalers interested in sales or installation get together, decide on date, time and route, then secure a permit from the city fathers. Each cooperating outlet agrees to enter a radio-equipped car, complete with driver and gas. And each car is provided with signs boosting "Radio As You Ride," simultaneously advertising the sponsor's name, address and pet brand. Dutch treat on the expense. Everybody pays his way.

When "der tag" arrives the entire string of cars rolls down Main Street, all receivers playing the same program. The display stops 'em with motion, color and sound. Circulars are passed out to the crowd at traffic stops. Local papers publicize the event. The publicity helps sell auto-radio . . . and everything else cooperating stores carry.

HIGH-FIDELITY NO "CRUTCH"

The high-fidelity idea is spreading rapidly. One manufacturer is already out with such a receiver, several more are planning early introduction of similar models, and it appears certain that when fall rolls around super-quality designs will be an important merchandising factor.

That the wide tonal range idea has intrigued the broadcasters also is seen in the activities of station WTMJ, Milwaukee—now revamping its transmitter to key up to this latest development (see news item in this issue).

As an industry-dominating force high-fidelity will probably play second-fiddle to allwave for the remainder of the year. For the allwave feature is still gathering momentum and manufacturers are tooled up for it. In 1935 high-fidelity should lead allwave a merry race for supremacy. Eventually the two features may merge.

High-fidelity will require genuine salesmanship. It will not sell itself, is no mechanical crutch for sales-slack dealers. For, unlike many relatively minor improvements popularized in the past, it does not stand out like a lighthouse on demonstration despite its unquestioned greater importance. Quality is always more difficult to sell than flashy convenience.

Pride of ownership, possession of an instrument capable of virtually perfect realism of reproduction, constitutes the best sales approach. Higher lists justify added selling pressure. There should be sufficient mar-

gin for trade-ins, something the dealer has sadly needed for some time. There will be more net profit per sale. Such merchandise is worth extra effort.

There is one danger. Certain manufacturers, anxious to cash in and either unwilling or unable to design a truly faithful receiver, may quickly announce cheap imitations which are not high-fidelity receivers at all. Should this occur consumer acceptance of high-fidelity as a major improvement sufficiently important to warrant replacement may be delayed. The most promising design advance since electrification would be given a black-eye. It is hoped that the industry will not even temporarily derail a product which can eventually restore to the trade much of its former profit.

NEXT YEAR—A TRADE SHOW

Functioning strictly as business sessions, the RMA-RWA conventions at Chicago last month were eminently successful. More constructive steps for the betterment of radio were taken than at any other affair of this nature.

But the demand for a "Trade Show" still persists; was voiced frequently at the Stevens by jobbers and manufacturers who felt that a convention devoted exclusively to business meetings falls short of its complete objective. An opportunity to compare the new product offerings of all manufacturers, under one roof, should be a feature of future gatherings, "even if some of the new lines have been previously announced." To hold the greatest interest of the greatest number the entire trade should be permitted to participate in an eye as well as an ear feast.

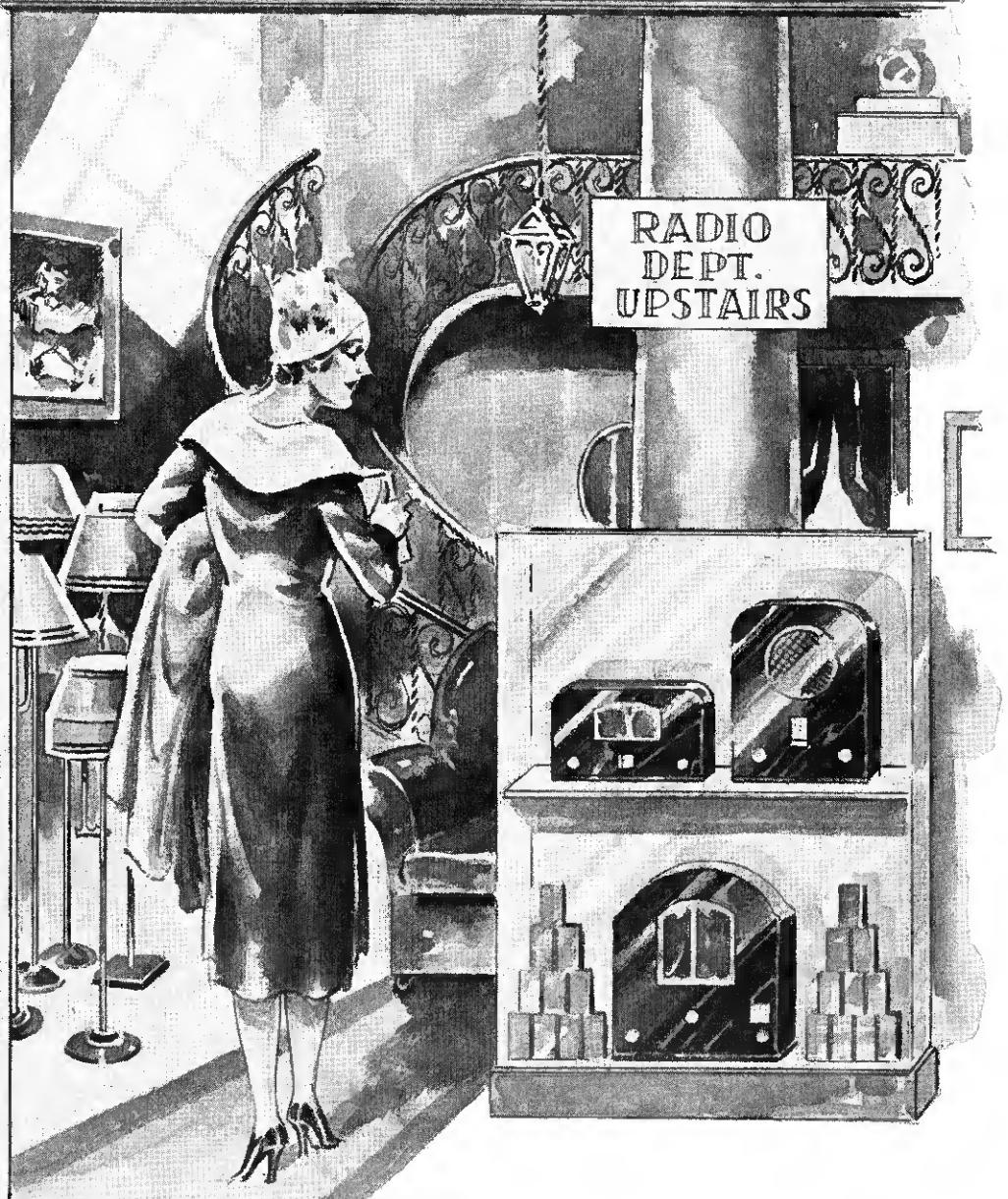
WHAT IS A DEALER?

Cause for worry, when the parts distributors got together at Chicago, was found in the fact that the RWA Code excluded servicers and licensed amateurs from the benefits of a trade discount. Opinion was practically unanimous that both these growing groups be granted proper discounts.

This situation was taken care of, to the satisfaction of the tube, mail order and local parts jobbers, with the passage of a resolution that the following supplementary clause be added to Article II, (d)—defining the term "dealer." ". . . operating as a retailer of radio apparatus selling direct to the ultimate consumer or an individual or firm which conducts a radio service and repair business carrying a stock of radio vacuum tubes and parts for resale to the ultimate consumer as a part of such radio service and repair business; or any licensed amateur operator."

BERT BLASS

Poughkeepsie, New York



R A D I O

is 50% of Mitchell Furniture's volume from September through December. It brings in many new accounts.

tells What It Takes

*for a
Furniture Store
to make the most of radio*

RADIO can be either very good or very bad for a furniture business. It all depends upon the dealer's method of handling, according to Bert Blass, department manager for Mitchell Furniture, Poughkeepsie, N. Y.

Radio has a natural appeal far stronger than purely utilitarian items. Thus it increases store traffic, aids a strictly inside-selling operation. Service, on the other hand, is more exacting and requires careful control if it is not to jeopardize consumer relations, the furniture store's chief asset.

Here are three rules to which Blass closely adheres, enabling him to account for 50 per cent of the Mitchell volume during September, October, November and December, 20 per cent of the company's annual sales:

1. Handle at least one line with genuine "bring-'em-in" appeal.
2. Sell radio conservatively. Don't promise too much.
3. Render good service at the lowest possible cost.

A "natural" is essential, according to Blass, in order to bring the consumer in, exposing him to sets of other makes and also to the various items of furniture. Store traffic is aided by such a line which is at least a partial substitute for outside selling. He follows consumer demands closely, takes on any line which is repeatedly asked for. Other makes are, of course, stocked and volume is by no means monopolized by the leader. Over-diversification is avoided, however, as experience has proven that the consumer frequently evinces a desire to hear them all, has difficulty in deciding between them.

Conservative selling, the direct opposite of "pressure promises," keeps the consumer satisfied. It is better, according to Blass, to promise little and deliver much. For the consumer who thinks he has been oversold by the radio department is lost to others, which obviously cuts off repeat business upon which the store relies for much of its profit. A good reputation is a furniture store's chief asset.

Good service is vital. The store promises 90 days' free service but frequently extends this period where it seems advisable in view of the consumer's regular patronage of other departments. Blass has repeatedly urged Mitchell to extend the free-service period to one year, contending that such service is often given anyway, particularly to time-payment buyers, and that the store might just as well cash in on it when advertising



*Radio brings them in.
Then they buy furniture*

and selling. The policy has not been adopted to date, however, probably because it is felt that the local trade might resent it. Blass "cracks down" only on those customers who abuse his liberal service policy and then only when this is absolutely necessary to avoid prohibitive servicing costs.

There are other rules which have proven to be good business, most of them designed to preserve the consumer's good will and so insure repeat purchases in other departments. This objective is continually kept in mind and might be said to be a company "fetish." The store does not cut prices, for example. Bargain sales are avoided not because the concern has any "Pollyanna" scruples but because it believes price cutting to be bad for its business. When a price is cut on an item previously sold to a large number of the firm's customers these people naturally feel that they have been "gypped." They don't come back to the store for furniture.

Mitchell Furniture has been in business for 20 years, in radio since 1925. It maintains a list of about 3,000 active furniture accounts in normal times and attributes many new accounts to the radio department. About 85 per cent of the radio business is on time-payments. The average sale at the moment is \$60. Refrigerators, washers and other electrical appliances are stocked but achieve less volume than radio.

No outside selling is done. During the "season" the radio department takes quarter-page ads daily in morning and evening papers. The set display is on the second floor but a glass display case directly before the main floor entrance is given over to midgets to aid the department. Blass does most of the selling while one serviceman handles repair work. Two of the 4 "downstairs" furniture salesmen frequently sell radio, however.

*Project for the National, All-Industry Promotion
of Radio Becomes an Actuality at All-Day Meeting
of Joint Committee in New York, June 26
Receives Approval of RMA and RWA at Convention*

By the Trade

Features of the
COOPERATIVE PLAN
to Increase the Sale of Radio Products

1. The Adoption of an Industry Slogan

To be used in all advertisements and broadcasts and to appear on campaign literature and display materials

2. Industry Broadcasts

Special programs, special announcements, including International presentations

3. Supporting Advertisements in the Newspapers

Directing attention to these broadcasts sponsored by the Radio Industry

4. Magazine Advertisements

To supply a background for the other publicity campaigns of the Bureau and to further call attention to special programs

5. Essay or Other Contests

As an effective attention-getting feature. To be promoted primarily through the broadcast stations

6. Six Dealer Campaigns

Backed up by a plan book of working instructions, by ample display pieces and other organized, sales-building assistance from Bureau headquarters. RWA Code administrators will help

DISCUSED for years and stimulated by the "workout" experiences of the 1933 campaign to promote the sale of sets and accessories through cooperative action, a broader plan for a consistent, adequately financed, all-industry selling job has become a reality. Meeting at the Yale Club, New York City, June 26, a special committee of three manufacturers and three distributors, appointed at the Chicago Convention, voted to go ahead with the "Five Point Plan." A pamphlet will be printed describing this entire project and signed contracts from all radio manufacturers will be secured.

Those concerns signing this contract will agree to supervise the collection of a small "promotion" fee per set from their respective distributing organizations and to subscribe likewise to a central fund for the promotion of a greater public interest in modern radio equipment.

A presentation of such a nationwide, cooperative sales promotion project was made before the Board of Directors of the Radio Manufacturers Association by Benjamin Gross, spokesman for the Radio Wholesalers Association, in April. Again, at Chicago, June 11, the wholesalers urged that immediate steps be taken to set up the machinery to operate such a plan. At the June national conventions it received the unanimous endorsement, in principle, by the Directors of each association as well as by the memberships assembled at the Stevens. The Five Point Plan, therefore, is distinctly *by the Trade —for the Trade*.

The Plan contemplates the organizing of a "Bureau for the Advancement of Radio," as the functioning body. The RMA-RWA supervising committee, working

•
For the



MEN AT WORK

Seven busy executives perfect plans for the industry's "Five-Point Sales Plan." Left to right: Powel Crosley, Jr., Crosley Radio; David M. Trilling, Trilling & Montague; Judge John W. Van Allen; Francis E. Stern, Stern & Co.; Benjamin Gross, Gross Sales; James W. Skinner, Philco; W. S. Symington, Colonial.

Trade

all day at the Yale Club, consisted of: Powel Crosley, James M. Skinner and W. S. Symington. Those representing the jobbers are: David M. Trilling, president of the RWA, Benjamin Gross and Francis Stern.

Later, there will be added to this group three representative retailers, and four more manufacturers.

The project takes its preliminary name, "Five Point Plan," from the fact that five groups will be expected to contribute to, and will participate in, the Plan, to wit: radio dealers, radio wholesalers, radio manufacturers, the broadcasters and power utilities.

What It Is Proposed to Do

The Plan contemplates that the Board of Administration will raise the necessary funds and hire a manager for the accomplishment of the following objectives:

- (1) Promoting of all advancements made in current radio receivers.
- (2) Creating a public consciousness of the inadequacy of old sets and revive the idea of the thrill of modern radio.
- (3) Stressing the fact that the value received from a modern radio is far greater than from a similar investment in any other home device. Radio is too readily taken for granted—it must be resold.
- (4) Capitalizing the fact that radio has been responsible for our present political consciousness.

The chief mediums used will be:

- (a) National broadcasts of special programs and announcements.

(b) National and local advertising and publicity.

(c) National dealer sales campaigns, locally conducted.

Restoration of Trade Activities

Quoting from the copy prepared at New York and now in process of being printed, the underlying purpose of the plan "is to restore the morale of the trade in radio, in order that its investment be maintained. This involves stimulating the enthusiasm of distributors and dealers to place radio in its rightful position to compete for the consumer dollar . . . Individual manufacturers cannot perform this function adequately for the good of the industry as a whole."

Now, it is felt, such an ambitious plan can be made to work. For the first time in the history of the industry the entire trade is geared to go. Under the Radio Wholesaling Code over 50 distribution centers are organized under the leadership of more than 300 of the ablest radio men in the business. Through these channels will the distribution of promotion and display materials, the directing and training of dealers and their salesmen and other necessary tasks be accomplished.

Specifically, six intensive sales drives per year are under consideration, in addition to consistent publicity throughout the year. The tentative campaigns scheduled are: Labor Day (Sept. 1-8); Progress Week (Oct. 6-13); Election Period (Oct. 27 to Nov. 6); Holiday Season (Dec. 1-24); National Radio Birthday Week (Feb. 12-22) and A-R Week (May 25 to June 1).

National publicity would be obtained by newspaper and magazine advertising, through an "Essay Contest" (Please turn to page 44)

BATTERY RADIOS

Going Like Greased Pigs

in Iowa

*Faber Hardware,
Greenfield, sells nine a
month without demon-
strations*



Supper dishes done, the school-teacher who boards at the Brayheme farm, 10 miles out of

WHEN country schools were due to close this spring one teacher examined her pupils in arithmetic. She was surprised to observe that one little girl turned in her paper signed "Mae West." "Why, Clarinda," exclaimed the teacher, "what's the idea of signing Mae West on your arithmetic paper?" "I done 'em wrong," replied the child.

That will give you an idea of how fast they are on the pickup around Greenfield, Iowa, a town of 1,837 in the southwest part of the state. The younger generation in Adair County thinks that listening to cross talk on the telephone is sport only for grandma. They want radio, movies, automobile rides. Consequently when government corn and hog money got into the farm belt among the first business to feel its effect was the battery radio department of the Faber Hardware Company.

"This business has been virtually a windfall to us," says N. L. Shirk, who is in charge of radio with the store. "Since last September, when we first



Up front in the store, on top of a case of paint, N. L. Shirk placed a set, ready to operate. Farmers come in for supplies, twirl the dials and buy



town, prepares to enjoy an evening dialing the family's new battery-powered midget radio set

stocked battery radios, farm people have been dropping in and buying. Our sets have averaged \$60 to \$65, nearly all midgets. With this we get about \$12.50 for batteries. All our sales have been for cash (Atwater Kent and Crosley)."

No advertising is done and no demonstrations are given. Up in front of the store, on the top of a case of paint, is a battery model ready to operate. Farmers coming in can twirl the dials to suit themselves. Saturday night sees the most visitors to the store from the country. They are as surprised at the robust dynamic speaker tone of the battery set as city people were back in 1927.

The new battery sets, which rival electrified models for performance and are frequently much quieter, are particularly attractive to rural customers who have been struggling along with antiquated equipment in the belief that there was no better.

DYNAMIC RECEPTION A REVELATION

"Most of the radios in use in the country today are unbelievably antique," said Mr. Shirk. "It is a revelation to farmers to come face to face with first-class reception. This rural market is coming so easy that we know there must be a lot of business ahead for radio. We're going to plug it."

Farmer Jack Brayheme, living ten miles north of Greenfield, was one customer called on by *Radio Retailing*. "You have no idea how good it sounds to have the radio going in the house," declared Mrs. Brayheme. "Necessity for stock market prices and weather reports put our radio in the investment class, and we're not sorry we spent our first government money for one. Reception is just as good as I have ever heard in town and the way neighbors flock over to our dining room to listen indicates that people are radio hungry around here."

More Store Traffic

WHAT this business needs is more store traffic. Getting people to come in and look around is my greatest problem. I haven't completely solved it but, believe you me, I'm trying. It's too expensive to go out after them." So says Bert Wilde, Kingston, N. Y., dealer who has sold \$19,850 worth of radio and appliances and \$10,150 worth of automobile tires since January.

When Bert installs a set, or delivers a washer or refrigerator, he takes along an electric clock, hangs it up on the customer's wall. He tells them that it is theirs if they come to the store at any time with a lead that eventually results in a sale. Then he takes it down and away. So tantalizing is the brief glimpse of the clock that many customers soon come in and buy it.

A large part of the business is in automobile tires and "flat" fixing. The three "fixers" are trained to talk radio to every automobilist, while repairs are in progress. A midget is continually playing out in the shop. Wilde has sold a slew of \$49.50 jobs in just this way.

He's going to supplement his tire repair business with a gasoline pump. "It won't make money for me," he admits, "but it will bring more people to the door. And when they get there it is up to me to sell them merchandise. Not every dealer is equipped to sell tires and gas, but if I didn't have these items I would most certainly have something else in the line of a service commodity."

Wilde started in the tire business in 1927 with \$3,000. He did a \$45,000 business that year. Radio was added in 1928 and has been an important part of the business ever since. Refrigeration and other appliances came later. "The lines dovetail beautifully," he affirms. "Radio sells from September to June. February is a relatively dead month and is utilized to lay plans for the year, get records and prospect lists in shape. Refrigeration and appliances start pulling in March. And tires take hold in April, continuing through October. Oil burners may be added this fall to supplement radio sales."

Bert has kept his feet on the ground from the very beginning, refusing to overexpand. "I've watched them come and go," he says. "In 1928 a local furniture dealer ran me ragged by selling for \$1 down. He's out. Late the same year my next-door competition started offering ridiculous trade-in allowances. I gladly turned prospects who insisted on exorbitant trades over to him. I 'killed him with kindness.' In 1929 one of the industry's leaders tried to 'pressure' me into buying a carload of sets, offered me the exclusive sales rights for the town of Kingston. I gracefully declined and a competitor staged a carload parade the very next week. He lasted just one year."

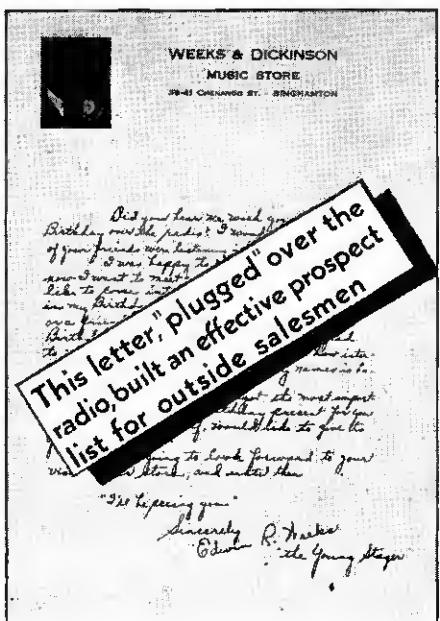
One

"SALES IDEA" pages are a regular feature of "Radio Retailing." Usually the individual items which make up these monthly collections of short, practical hints are gleaned from stores scattered far and wide over the country. Rarely does one outlet develop enough variety in its merchandising methods to warrant complete monopoly of the space.

The organization of Weeks & Dickinson, Binghamton, N. Y., music dealer, is the exception. So fertile has been the mind of its president, Edwin R. Weeks, ably assisted by radio and appliance department manager Howard K. Colburn, that we feel there is every justification for devoting the entire "spread" this month to this firm's business-building activities.

Five of the most successful follow:

BIRTHDAY CLUB DEVELOPS LEADS The store broadcasts for half an hour daily over a local radio station, from 12 to 12:30, when children and their mothers are apt to be listening. During this broadcast the announcer reads the names of children



EDWIN R. WEEKS

of the Weeks & Dickinson music store, Binghamton, N. Y. (and president of the Nat'l Ass'n of Music Merchants) is a never-failing source of business-building suggestions

who are celebrating a birthday, suggests that others about to celebrate send in their names and addresses for similar readings.

About 30 names a week are received and announced. Immediately after announcement of a name the store mails a personalized letter to the child, expressing the hope that the announcement was heard and inviting the subject to come to the store, together with the mother or a relative, to see the list of names entered on the birthday rolls. A present is offered, for delivery at the store.

When the child comes in it signs the birthday book in order to receive the present—a harmonica which costs the store 8c—the following information is also obtained: Father's name and occu-

Man's

pation, make of radio owned, make of piano owned, make of refrigerator, make of washer. The child is also asked if "mother has been talking about any new appliance." The birthday book thus makes an excellent list of prospects, who will at least afford a Weeks & Dickinson salesman a decent reception.

LOW COST MUSIC LESSONS
SELL MERCHANDISE Another prospect-getting stunt which works well is the store's low-cost music lesson offer.

Handbills are distributed throughout the city advertising 9 complete music lessons for the beginner on any instrument, at \$1.85 for the complete series. Lessons must be taken at the store at specified times and when enrollments are taken complete information concerning the family's appliances is obtained. Fully 900 beginners have enrolled during the last 6 months and the information gleaned from them has been distinctly helpful to field salesmen.

In order to play any instrument it is obvious that more than 9 weeks of instruction is necessary. Music teachers are thus quite willing to come to the store for group instruction at low rates of compensation because they know many pupils can be induced to continue at substantially higher rates for individual training. Instruments are fur-

WEEKS & DICKINSON

39 Chenango Street, Binghamton 114½ Washington Avenue, Endicott

SALES IDEAS

nished free by the store but cannot be taken out. Many pupils naturally purchase their own instruments to practice.

The company also makes it possible for advanced pupils to broadcast on its regular periods when they have become sufficiently proficient. Thus there is a radio tie-in which induces pupils to urge their families to purchase a good set so that the programs can be heard.

FULL-TIME "MUSICAL SURVEYOR" PAYS The store employs a woman who does nothing but call house to house on a "musical survey." She averages 50 interviews daily, does not mention the firm name but asks: Number of children in family? Musical instrument studied? Teacher's name? Make of instruments owned? Age? Make of radio, refrigerator, electric washer owned?

The information obtained from this constant surveying produces business enough to justify the expense.

THREE DAY EXCHANGE PLAN BOOSTS SALES, CUTS COSTS Prior to 1932 the store, like many others, offered radios on free trial, waiving cash payment until ultimate acceptance of the merchandise. It is estimated that 50 per cent of all prospects availed themselves of this privilege and statistics show that only 60 per cent were eventually sold, the remaining 40 per cent being lost to competition. Thus home demonstration costs averaged \$7.

Today the concern uses a three day "exchange" plan which enables it to sell 90 per cent of all "trial" buyers, with consequent increase in volume and reduction of average demonstration costs. Prospects who request home demonstration are induced to pay the complete cash price of the set selected, or to execute a contract and leave a down payment. The salesman agrees to substitute other sets in the event that the first does not give complete satisfaction but does not promise to refund.

Where a prospect resists payment before trial it is pointed out, first, that a concern as old and well established as Weeks & Dickinson obviously must render satisfaction in order to remain in business and, second, that owing to the company's widely diversified stock of various radio makes and models it can supply a radio which will harmonize



How the store tied in with its city's recent "50 Years of Progress" celebration

with furnishings and work well if anybody in town can. This occasionally fails to close but Colburn feels that when it does it would be difficult, if not impossible, to satisfy the customer anyway.

The records indicate that it is only necessary to demonstrate a second set in 5 per cent of all exchange contract sales. Requests for third set demonstrations are avoided by leaving the first set in the home when delivering the second, installing an antenna changeover switch so that the two may be rapidly compared. The psychological effect of direct comparison leads most customers to a choice between set 1 and 2. Other sets are forgotten during the competition. Occasionally it is necessary to refund the customer's money in order to preserve cordial relations and Weeks & Dickinson does not hesitate to do this where a low unit price does not justify repeat demonstrations.

When a customer purchasing on time avails himself of the three day exchange privilege credit is investigated before the set is delivered. If it proves satisfactory the receiver is installed but the signed contract is not put through the books until the demonstration closes the transaction. The customer receives no written guarantee of exchange.

THE CREDIT MAN DOES THE CLOSING The critical moment in most sales occurs when the salesman

asks the prospect for the order. Weeks & Dickinson avoid this by employing an interesting artifice. The floor salesman demonstrates several receivers, determines what set the prospect likes best which is, at the same time, suited to his purse. Then he waits until the prospect asks: "How much do I have to pay down?" This is taken as a definite indication that the prospect intends to buy and the stock answer is: "Step right this way and our credit manager will explain all about terms."

The prospect is conducted to the rear of the store, where the credit manager is established in a small, completely enclosed office furnished with a desk, files and two chairs. The salesman makes the necessary introduction and leaves. The credit man immediately hauls out a contract form, proceeds to ask for the required information, filling in the blank. He then passes the completed blank to the customer for signature, deliberately "assuming" that the man is ready to buy. Neither salesman nor credit man actually ask for the order and as a net result this delicate point is avoided. Many prospects who would ordinarily evince a desire to shop around sign up rather than balk after the transaction is obviously so far along.

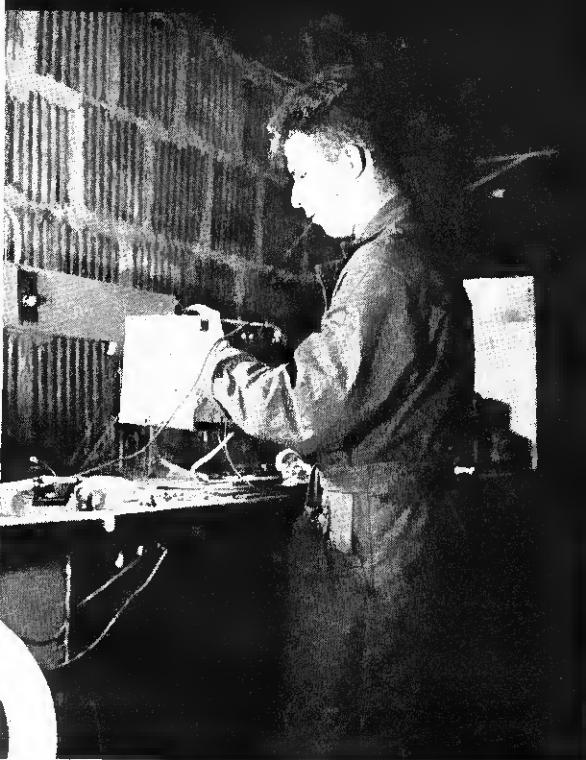
Trade references are not called for until after the signature is obtained. The credit man asks for them more in the nature of an afterthought, thus avoiding another critical point.

1

COMPLAINT INSURANCE, Maurice McCullough calls this motor analyzer. No installation is made if the car's electrical system is not up to par. Thus trouble is avoided later.

**2**

BOUNCING THE SET five inches onto the wooden bench-top while it is playing, prior to installation, shows up loose parts and faulty joints. Rough, but no more so than the road



8

Fine

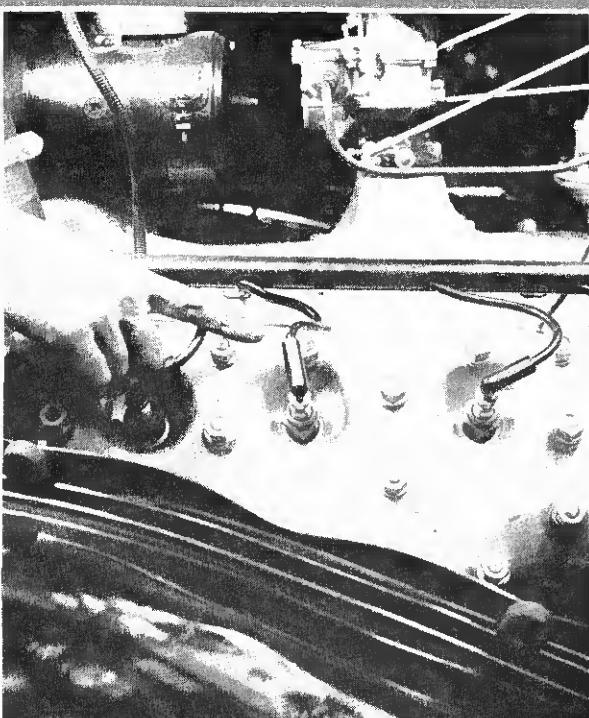
of Auto-Radio

**6**

THAT EXTRA INCH COUNTS, says the shop foreman, who tacks the antenna screen to the under side of the wood bows, then folds it up tight against the roof fabric

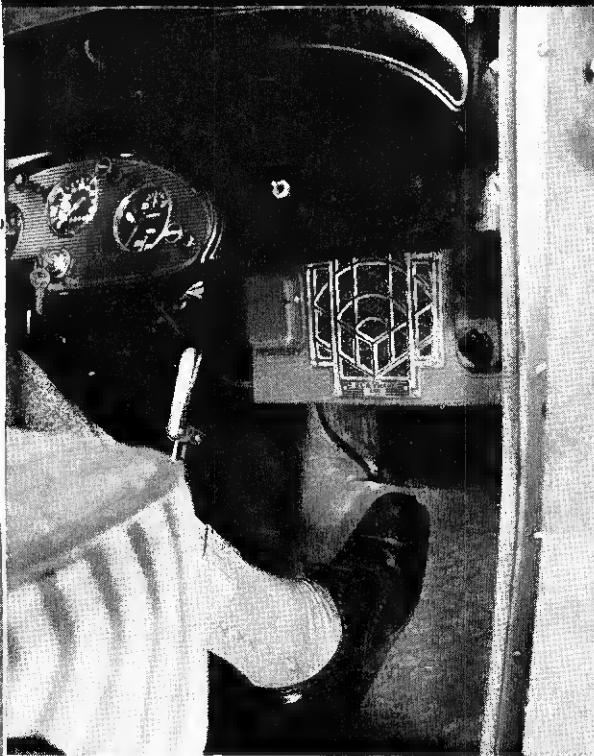
7

TOO CLOSE FOR COMFORT, this suppressor, even if it is a fully insulated type. The outer end, and the lead, should be well away from the motor bolt to avoid arcing



3

A MAN'S FOOT is twelve inches long. So the chassis should be mounted as high as possible. The less it shows the better the customer likes it. And leave room for a heater



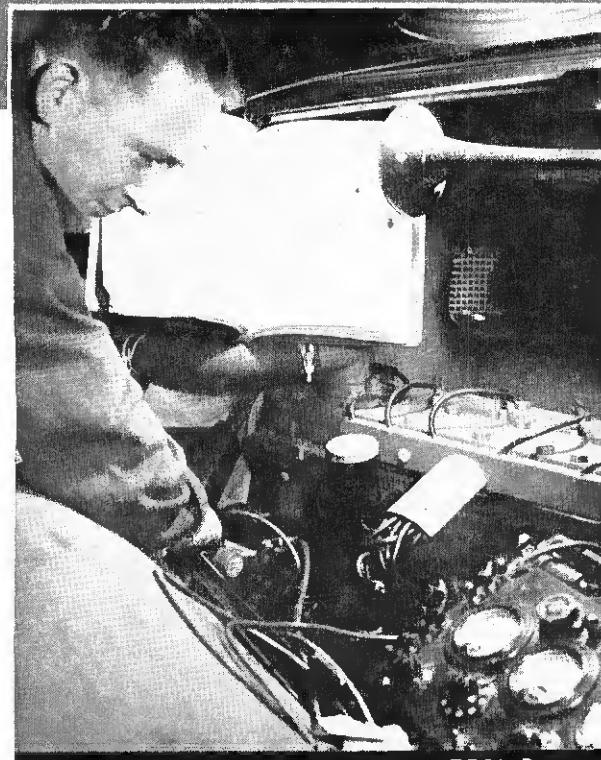
4

OUT IN THE CLEAR is the place for the control-head. This position avoids jamming the ignition lock, doesn't obstruct the driver's view of his instrument panel



Points

Installation



8

CAREFUL OF THAT GENERATOR! Better look up its maximum in the manual before advancing the rate, then check it with a high-grade ammeter, not the car's

5

AWAY FROM THE HASH is the antenna-lead when carried under the mat, up the rear post of the door. It is shielded to the front of the seat, protected with loom from there on



As Practiced by
Mac-Adams Auto & Radio Co.
New York

WHAT THE TRADE

RADIO MANUFACTURERS SUBMIT OWN CODE TO GENERAL JOHNSON

Seek to Withdraw from National Electrical Manufacturers Association

A NEW Code of Fair Competition for the radio manufacturing industry was submitted, June 19, to the National Recovery Administration at Washington, D. C. This action followed close on the heels of the unanimous endorsement of the provisions of this Code by the members of RMA, at its Chicago Convention, June 13. Withdrawal of radio receiver, television, electronic tube (all types), parts, cabinet, accessory and related manufacturers from the NEMA Code is provided for upon approval of the new, separate radio code.

Self-government and permanence of the radio industry and the RMA are the basic objectives of this new code. It was drafted to meet the special needs and independent administration of the radio industry.

Proposals for a 40-hour week for factory labor, with a minimum wage of 40 cents per hour for male help, are the principal labor provisions. The Code also includes many fair trade practice provisions, industrial relations policies, a clause for open price filing. It sets up a separate code authority, selected from the ranks of radio men, for its enforcement.

The RMA code committee is headed by Captain William Sparks, of Jackson, Michigan. Other members are: James M. Skinner, Philadelphia; A. S. Wells, Chicago; S. W. Muldowny, New York (chairman of the RMA Tube Division and present code supervisory agency for tubes) and Arthur Moss, also of New York. Mr. Moss is chairman of the RMA Parts, Cabinet and Accessory Division. An ex-officio associate is Arthur T. Murray, of Springfield, Mass., chairman of the RMA Set Di-

vision and present code supervisory agency for receiving sets. Great credit goes to these gentlemen, who labored long and earnestly at Chicago, in order that the finished code might be submitted at the membership meeting for final ratification.

Changes in Officers and Directors

Leslie F. Muter, of Chicago, was elected president of the RMA for the ensuing year.

The new vice-presidents of the RMA are Arthur T. Murray, of Springfield, Mass., now NRA Code Supervisory Agency for receiving sets; S. W. Muldowny, of New York, NRA Code Supervisory Agency for tubes; Arthur Moss, of New York, and Richard A. O'Connor, of Fort Wayne, Ind. They also are respectively the chairmen of the RMA Set, Tube, Parts, Cabinet and Accessory and Amplifier and Sound Equipment Divisions.

New members elected to the RMA Board of Directors are Benjamin Abrams, of New York; W. R. G. Baker, of Camden, N. J., and Paul V. Galvin, of Chicago, newly elected by the RMA Set Division;



No Dull Boy

"All work and no play . . .", but you know the rest of the proverb, of course. C. B. Clendenin, Pacific coast manager for National Carbon, keeps the cobwebs out of the grey-matter with an occasional fling at the links

Ben G. Erskine, of New York, and J. C. Warner, of Harrison, N. J., newly elected from the RMA Tube Division, and N. P. Bloom, of Louisville, Ky., newly elected from the RMA Parts, Cabinet and Accessory Division.

Directors Arthur Moss, Arthur T. Murray, Richard A. O'Connor, James M. Skinner and Capt. William Sparks were re-elected. Retiring directors include E. T. Cunningham, LeRoi J. Williams, J. Clarke Coit, George Lewis and G. K. Throckmorton.

Industry Golf Hits New High

Following the convention, 78 radio men put in a day of golf at the Calumet Country Club, Chicago—the largest number ever to attend a RMA golf tournament.

Golfing now has become a recognized part of every well-conducted radio meet. The "Radio Industries Golf Club" has a full complement of 24 officers or committee members. Paul Klugh is this year's president; A. S. Wells, vice-president; H. W. Simpson, treasurer, and O. M. Holen, secretary.

Auto-Radio Parades in Cleveland and Rochester

Members of the Institute of Radio Service Men in Cleveland and Rochester, co-operating with automobile and radio dealers and distributors, conducted successful auto-radio parades on May 26 and 29 (See page 14). The Cleveland parade,



Popular broadcasts or news features on the air provide countless opportunities for tying-in with inexpensive window trims. They're timely, hence packed full of "stop 'em" power.

Here's an excellent example of how to say it with photographs. These may be obtained in profusion by writing to the broadcasters or program sponsors.

The above trim was installed by the Boston Department Store, Chicago. Shortwave or allwave themes are sure-fire hits right now.

IS TALKING ABOUT

more than half a mile long, accompanied by special broadcast material from WGAR, has resulted in increased interest in the product.

The Rochester parade, in which more than 150 cars participated, crossed and recrossed the business center several times, received special programs from WHAM and WHEC. Cars were decorated with placards calling attention to the benefits to be derived from auto-radio. Dealers report increased sales as a result of this promotional stunt.

Radiotron Dealers In Midst of "Anchors Aweigh" Contest

Since July 1, RCA-Radiotron tube dealers have been competing for \$15,000 in prizes offered by this manufacturer for nine 20-word statements concerning the advantages of its recently inaugurated consignment sales plan. \$675 goes to winning dealers in each of the 12 national districts each week, \$25 for the first prize, \$15 for the second and \$10 for the third. In addition the 12 district prize winners are eligible for a \$75 weekly national award.

Messages are sent to the company on specially prepared cards mailed weekly to all authorized dealers. These provide space for weekly tube notations. All dealers selling more than 100 tubes weekly, whether they win cash awards or not, receive pig-skin wallets, with their initials engraved thereon simply by submitting 5 messages. Dealers selling less than 100 tubes weekly and submitting 5 messages receive automatic pencils.

Delta Joins Raytheon

The Delta Manufacturing Company, formerly of Cambridge, Mass., makers of Acme-Delta transformers and power equipment for radio amateurs, high voltage rectifiers and other power conversion equipment, has joined the Raytheon Manufacturing Company. The activities of the combined companies will be carried on under the name of Raytheon Manufacturing Company, Electrical Equipment Division, in a newly acquired plant at 190 Willow Street, Waltham, Mass.

The Raytheon Production Corporation, Raytheon Tube Division, continues as before with its manufacturing plant at Chapel Street, Newton, Mass.

WTMJ Rebuilt for Wide Band

The *Milwaukee Journal*, Milwaukee, Wis., recognizing the coming importance of "high fidelity," has completely revamped the transmitting equipment of its station WTMJ.

"All the new apparatus is of the wide band type," writes Manager Walter J. Damm, "from microphones to amplifiers. Already we have received many favorable comments. As you know, the Commission has granted us a license to transmit high fidelity in the ultra-high frequencies, and we will also use it in connection with our facsimile transmission on 1614 kc."

WHOLESALERS THANK GEN. JOHNSON FOR PART NRA HAS PLAYED IN INSPIRING SALES PLANS

Telegram Typifies Many Accomplishments of Three Busy Days at Chicago

The following telegram, dispatched Tuesday evening, June 12, to Gen. Hugh S. Johnson by the Radio Wholesalers Association, summarizes the spirit and the activities of last month's convention of this body:

"As the result of many months of effort on the part of the radio industry there has come about the development of an industrial promotion plan. This plan embraces weekly broadcasting events and other publicity to arouse public consciousness of the development of radio art to its present high state of efficiency. We give credit to the NRA for the inspiration we have individually received in the creation of a specific Radio Wholesaling Code, as the stimulus which started this cooperative movement.

"The direct result of this coordinated cooperation among members of the trade will be increased public buying of radio apparatus, both in the new sets and in modernizing their present equipment, thereby stimulating employment, increasing payrolls and putting into circulation dormant capital. Please accept this telegram as a testimonial to the work of recovery which the Administration is bringing through the National Recovery Act."

Every session of the wholesalers, at the Stevens, was well attended. Strictly busi-

ness was the order of the entire three days. The Tube Committee, Maurice Depres presiding, recommended supplements to the existing RWA Code further defining the scope of the term "dealer," the definition of the various types (quality) of tubes and the appointing of a Tube Committee.

The Parts and Accessories Jobbers, under the chairmanship of W. C. Braun, resolved to support the RWA and subscribe to its Code, suggesting the creation of a special division within the RWA.

Tuesday afternoon was devoted to a discussion of the Code. Benjamin Gross pointed out six features of this radio wholesalers' "bible," any one of which would amply repay the cost to the individual jobber for membership in his national organization.

Wednesday was taken up by discussions of the "Five Point" plan for selling more radio products (see feature article in this issue) and to the election of officers.

New Officers and Directors

The following are the new officers and directors of the Radio Wholesalers Association:

David M. Trilling, president; Benjamin Gross, E. A. Wildermuth, Brooklyn, N. Y.; A. H. Meyer, San Francisco; A. A. Schneiderhahn, Des Moines, and Francis Stern, Hartford, Conn., vice-presidents.

Harry Alter will be secretary for the ensuing year, while Charles B. Mason, Jr., Chicago Talking Machine Co., will be treasurer. H. G. Erstrom was reelected to the post of executive vice-president in charge of the Chicago office.

The new directors are: Laurence Lucker, Minneapolis; R. F. McGee, Seattle; R. J. Brown, Bridgeport, Conn.; W. C. Braun, Chicago; Paul Felden, New Orleans; Harry Lever, Atlanta; Raymond Rosen, Philadelphia; Francis Stern, Hartford and J. G. Suor, Kansas City.

Annual dues for membership in the RWA were voted reduced to a maximum of \$50 per year and running as low as \$10 for a small jobber whose business per year is less than \$15,000.

Create Nine New District Agencies

Meeting June 13, the RWA Code Authority officially created nine new District Agencies located in the following cities: Harrisburg, Jacksonville, Minneapolis, St. Louis, Scranton, Tampa, Fort Worth, Dallas, Houston, and Reading (Pa.).

Temporary chairmen, to call meetings of the jobbing trade in their respective localities for the purpose of electing local District Agencies to administer the RWA Code, were appointed for 12 other trading areas.



DAVID M. TRILLING
1934-35 President,
Radio Wholesalers Assoc.

Mr. Trilling is the senior partner of the firm of Trilling & Montague, Philadelphia. He has long been active in promoting the broader aspects of radio affairs, including the drafting of the RMA Code and of the present plan for an all-industry, nationwide series of publicity campaigns

THIS YEAR MARKS TURNING POINT

Declares RMA'S New President

The decision of the Radio Manufacturers Association to submit to Washington a Code of its own is but one indication of the spirit of initiative which was present at the Chicago Convention. We enter the second decade of RMA's existence definitely as a self-governing industry, with our own special problems clearly recognized and with every prospect that many of those things which, in the past, have retarded our growth are about to be solved.

I welcome this opportunity to direct the attention of the entire trade to the fact that, at the joint conventions of RMA and the Radio Wholesalers Association, held last month, both bodies endorsed unanimously a splendid plan for "selling" radio—the new sets and new program features—to the public through united action and nationwide publicity campaigns. It is proposed to create an adequate fund for this purpose and to direct its expenditure through a special Bureau whose membership will embrace all branches of the radio industry.

This is an excellent idea and one which, I feel certain, will be supported by a large majority of RMA's membership. It should receive the active participation of every radio dealer and distributor.

Lending substance to this new salesmanship is the further fact that the radio industry now has genuinely better types of receivers with which to capture new markets and resell present set owners. I refer not only to the popularity of "all-wave" but to the interesting possibilities for wide-band reception which, quite recently, has emerged from the laboratory and become a matter of commercial announcement.

The outlook is most hopeful. Radio business this coming year will, to a great extent, be what we ourselves make it. As president of the Radio Manufacturers Association I will exert every effort, not only on behalf of my own organization, but to create a united industry . . . organized to meet the new conditions and to turn them to mutual advantage.



LESLIE F. MUTER

President, Radio Manufacturers Assn.

A Chicagoan, young, aggressive, was elected to direct the destinies of the RMA for the next 12 months. Leslie Muter is president of the parts manufacturing concern which bears his name. He has been vice-president, treasurer and, for several years, a director of RMA. At present he is a member of the NRA Code Supervisory Agency for Radio Parts and Accessories

Paul Klugh Resigns as General Manager of Zenith

The resignation of Paul B. Klugh as vice-president and general manager of the Zenith Radio Corporation, Chicago, was announced July 5. Mr. Klugh will continue as a director and retain his large stock interest in the company but will now devote his attention to several projects in which he and Eugene F. McDonald, Jr., president of Zenith, are jointly interested.

The following officers were elected by the board of directors: president and general manager, Eugene F. McDonald, Jr.; executive vice-president and treasurer, Hugh Robertson; vice-president in charge of sales, E. A. Tracey; secretary, Arthur Freese.

Shortwave Listeners Beware

In view of the increasing sales of shortwave receivers the Federal Radio Commission calls attention to the Radio Act of 1927 whereby heavy penalties are provided for violations of the secrecy of certain types of radio messages. Section 27 of this Act prohibits listeners-in from



E. A. Tracey

Advanced to the position of vice-president in charge of Sales with Zenith

divulging in any manner radio communications intercepted between licensed commercial stations, police calls, ship to ship or shore communications, etc. The punishment may be a fine of not more than \$5,000 or imprisonment.

Congress already has given serious consideration to a bill providing that no person shall use or possess any shortwave radio receiving set without a permit. Radio dealers, for their own protection and the good of the industry, should take pains to explain this Radio Act to all their customers.

Highest Wooden Tower in World

The highest wood tower in the world has just been completed at Muehlacker, Germany, for radio broadcasting. It is 190 meters in height (about 625 feet) and has on the top an antenna ring weighing 1,320 pounds, 10 feet in diameter. This ring is said to guarantee fading-free reception within a circumference of 130 kilometers.

Since Feb. 1, the German government has been broadcasting special programs for foreign countries. These programs are broadcasted from the Zeesen station.

New Antenna Concern

The new Technical Appliance Corp., Long Island City, N. Y., formerly the General Talkie Equipment Corp., announces a policy of marketing exclusively through jobbers its line of "H-F" (high fidelity) antenna equipment. This company is licensed by Amy, Aceves and King. Each member of the personnel of this company has been in radio business over a decade. Carl Goudy is president, H. H. Brown, secretary, and Ben Noden, treasurer. William J. Gaynor, who for many years has been contacting retailers, is sales manager.

"I'M BULLISH ON RADIO—OUTLOOK BEST IN THREE YEARS"

Many Jobbers Attend AK Convention at Atlantic City—
Greet New Line and Policies with Enthusiasm

A. ATWATER KENT

A full quota of Atwater Kent distributors gathered at Atlantic City, June 28, and greeted with marked enthusiasm Mr. Kent's declaration that economic conditions, in his opinion, are well on the upturn and that he proposes to back his faith in radio's future by a most energetic campaign for business this coming season.

"I am shaping my business affairs to conform with the optimism that I feel," said Mr. Kent. "I propose to go after radio business aggressively, spending more money in advertising and promotion than we did last year."

No less spontaneous was the applause which greeted the "self-introduction" of some 20 different models, housed in ten different cabinet designs. At the suggestion of A. Atwater Kent, Jr., each model, through its own loud speaker, told its own story and extolled its own merits.

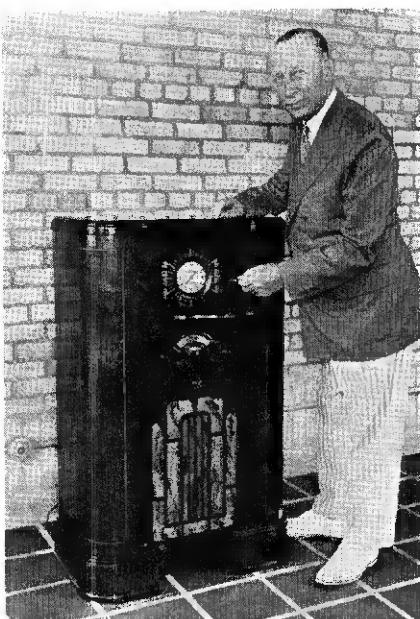
Friday was devoted to the details of advertising policies, quotas, terms and prices.

David Bauer, advertising manager, presented an array of new display pieces which, it was agreed, far surpassed anything heretofore available. Second only in importance to these matters was the announcement that A-K will resume, on a coast-to-coast hook-up, its popular Atwater Kent Hour beginning this September (see also "DIALINGS" in this issue).

The banquet, with all that flows with it, Thursday night and the two special shows were entertainment features *de luxe*. Ray Bolger, Broadway's musical comedy dance star, was master of ceremonies.

Bosch Convention July 17

The annual distributors meeting of the United American Bosch Corporation will be held at the Waldorf-Astoria, New York City, Tuesday, July 17. The program includes a dinner that evening and a tour of NBC's broadcasting plant.



Mr. Kent demonstrates the operation of his new Model 511W "Tune-O-Matic" at the convention at the Hotel Ambassador, Atlantic City, June 28.

GRUNOW GOES INTO FULL PRODUCTION ON EIGHT NEW RADIO SETS

Holds Highly Successful Distributor Convention at Marion, Ind., and Chicago

General Household Utilities Company, Chicago, William Grunow, president, geared up to capture its full share of the radio business when, June 17, it transported two train-loads of distributors and their salesmen to Marion, Ind., and let them see with their own eyes the "wheels go round." In this impressive plant (formerly that of the U. S. Radio & Television) your correspondent viewed many assembly lines of 1935 radios, carrying eight new Grunow models to final tests and the shipping department—see NEW MERCANDISE department, this issue, for specifications. Outstanding was the introduction of

"Beacon Signal" tuning for foreign stations.

No less a personage than the Governor of Indiana addressed the visitors "under the big top," where lunch was served to 700. This pilgrimage also rated a special "Grunow Edition" of the Marion Chronicle Tribune.

Tuesday, June 19, was devoted to a tour of the Chicago refrigerator plant and to a business meeting at the Lake Shore Athletic Club. Highlight addresses were delivered by Vice-President Bonfig, Advertising Manager Wanamaker and "Pep Promotion Performer" Jimmie Davin.

Zenith Convention July 16

Zenith jobbers will meet at the Edgewater Beach Hotel, Chicago, to view the new Zenith models on July 16. The three days of business sessions will be highlighted with a banquet Tuesday night and a yachting party the following day on Com. E. F. McDonald's cruiser, *Mizpah*.

The convention concludes Wednesday with a final talk by Vice-president E. A. Tracey.

Current quarter sales, Stewart-Warner Corporation are running 140 per cent ahead of last year, according to Joseph E. Otis, Jr., president.

"Grunow Specials, Limited. All Aboard for Marion, Indiana."



D - I - A - L - I - N - G - S

"The name 'Audiola' has now been absorbed by the recently organized Fairbanks-Morse Home Appliances, Inc., a wholly owned subsidiary of the Fairbanks-Morse Company. From now on all sets manufactured by my former concern, The Audiola Radio Company, will carry the trade name, 'Fairbanks-Morse.'

"These new sets will be sold entirely through jobber-dealer channels. We have already signed up many substantial distributors, who will handle not only the Fairbanks-Morse receivers, but washers, refrigerators and other electrical appliances bearing this same well-known name."

MORTIMER FRANKEL, General Manager
Fairbanks-Morse Home Appliances, Inc.

* * *

"Atwater Kent is going on the air again. We will revive the 'Atwater Kent Hour' beginning early in the fall. It is scheduled for an extensive NBC nationwide network, early every Sunday evening, beginning the fore part of September (Loud applause from A-K's jobbers).

Roy DURSTINE, at Atlantic City
Pres., Batten, Barton, Durstine & Osborn

* * *

The three Hygrade-Sylvania plants are in the very heart of the east's vacation country, we are informed by an interesting little company bulletin entitled: "Be Our Guest." In it the trade is invited to drop in at Emporium, Pa., Salem, Mass., and Clifton, N. J., plants, enticingly pictured scenic points. Here's real old Northern hospitality for you!

* * *

"The advent of allwave banishes the conception that you can measure the dollar value of a radio set by the number of tubes it contains."

HENRY BONFIG, Sales Manager
General Household Utilities Company

* * *

"Farmers' incomes have increased 51 per cent; living costs but 17 per cent. And the market for battery sets is tremendous—with a heavy majority of all counties in the United States showing more unwired homes than those served by the power companies."

JACK SPANGLER
National Carbon Company

* * *

PAUL WARE, early radio pioneer, is chief engineer of the Emerson Radio and Phonograph Corporation. Will concentrate on research and development work. Mr. Ware, it will be recalled, was responsible for the "Ware Neutrodyne" receiver and played a large part in the application of the shielding principle to household sets.

* * *

Walter B. Pitkin, author of the popular book "Life Begins at Forty" (a McGraw-Hill book, we're proud to say) starts a series of broadcasts over the WABC-Columbia network Thursday, July 12 from 8:15 to 8:30 P.M., EDST, on current

events. Listeners eat up programs of this kind and Pitkin is certain to attract a following in short order.

* * *

Triumph Manufacturing Company is a newcomer in the testing equipment field. Offices and plant at 4017 W. Lake St., Chicago. J. J. McCarthy is general manager, R. E. MacGregor, sales manager and E. J. Doyle, chief engineer. Thoroughly experienced in the business, all three gentlemen, even if the firm name is nice and shiny.

* * *

Raytheon threw a 3-day sales conference at its New York office late in June, announced that it was the second largest producer of tubes under one nationally advertised trademark this year. E. S. Riedel, general sales manager, says his products are used by 60 per cent of the licensed set makers as standard equipment.

* * *

IRSM's last eastern convention went over with a bang (we were there and know). So the Servicemen are planning a second annual affair at the Hotel Pennsylvania, New York, October 19-21. It will include lecture sessions, exhibits and joint meetings with committees from other branches of the industry.

* * *

DAVID E. KOPP now represents Ken-Rad's interests throughout the New England States.

* * *

"We are glad to join the Radio Wholesalers Association to contribute our share to the upbuilding of sound practices in radio distribution."

R. J. BROWN
General Electric Supply Corp.
Bridgeport, Conn.

* * *

Which means that every GE radio jobber (factory-controlled) has joined RWA.

* * *

And that goes for GRAYBAR also . . . whose entire outfit joined this accredited national radio association (RWA), June 12.

* * *

Sylvania's "profit-insuring" merchandising policy is hitting the ball, states Field Supervisor Charles G. Pyle. This plan aims to provide reasonable profits for all concerned by encouraging the observance of full list prices.

* * *

H. A. HUTCHINS, GSM for National Union Radio Corp., reports "remarkable success" in the operation of National's "Time-Discount-Bonus Plan." The idea is to allow an equitable profit for dealers and jobbers who operate a "sound, forward-looking business over which they are complete masters."

* * *

Who says the tube makers aren't trying to uphold list prices?

New York is to have another National Electrical and Radio Exposition. The Madison Square Garden Corporation is sponsoring it, September 19 to 29, designating Joseph Bernhart as general manager. On June 30 a total of 103 exhibit spaces had been sold, more than were booked when the 1933 exhibit closed despite the fact that this year's opening is still several months away. The Electrical Association of New York backs up the Garden in the conduct of the show. Look up "Radio Retailing's" booth when you go.

* * *

POWEL CROSLEY, Cincinnati, Ohio, pioneer in the broadcasting and set manufacturing businesses, has accepted the chairmanship of the committee on local arrangements for the NAB Convention to be held at the Netherland-Plaza Hotel, Cincinnati, Ohio, September 16, 17, 18 and 19.

* * *

Announcement has just been made that the Thompson & Holmes organization has completed arrangements to distribute the Emerson line of home and auto radios for the entire part of northern California as well as western Nevada and southern Oregon.

* * *

Max Hegleman of Capital City Distributing, Albany, is bragging with good reason about a four-carload order for Gibson refrigerators just placed with him by Breslau Brothers, furniture dealers operating in Albany, Schenectady, Glens Falls and Saratoga. Good work, Max.

* * *

T. R. STERCK joins the Westinghouse Electric Supply Company as sales promotion manager. Reports to H. M. Gansman and will specialize on WE's new line of radio sets

* * *

PHILCO, last month, started its "bigger and better" newspaper campaign—scheduled to cover at least 150 cities and to run throughout next winter.

* * *

HARRY ALTER, chairman Membership Committee, RWA, reports that every non-member at the Convention joined up with the Radio Wholesalers Association before leaving Chicago.

* * *

The appointment of FRANCIS C. TRIMBLE as assistant to the president of the International Resistance Company, Philadelphia, has been announced.

* * *

Entire success in RMA's effort to secure reduction in railroad rates on tube shipments has been secured. This lower rate now applies to the entire country.

* * *

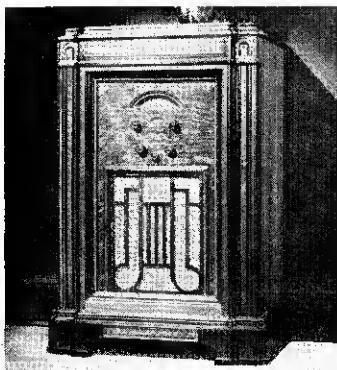
ROBERT MACLELLAN has joined the sales department of the Zenith Radio Corporation. Will confine his duties, for the present, to the southern tier.

* * *

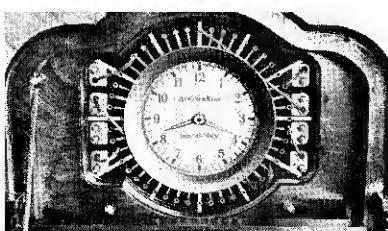
There are 140 police broadcasting stations now in active operation in the United States. Also 643 domestic broadcast stations of which 23 are on 50,000 watts or over.

Conventions Feature New Merchandise

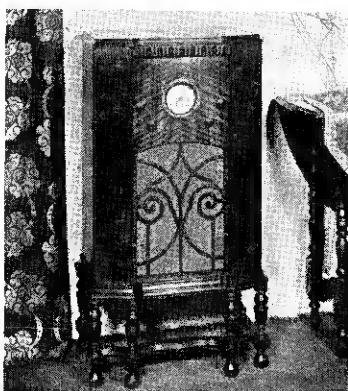
A-K, Grunow, Zenith, American Bosch Show Wares



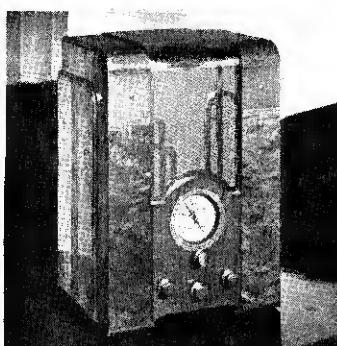
Atwater Kent Models 112S



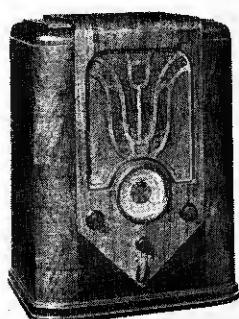
Close up of A-K automatic tuning system



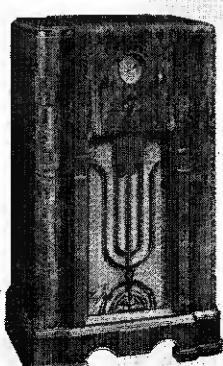
Zenith Model 870



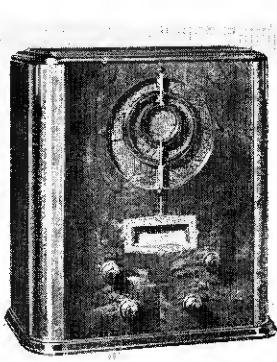
Zenith Model 809



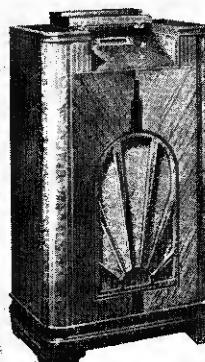
Grunow Model 750



Grunow Model 1151



American Bosch Model 460A



American Bosch Model 480D

CONVENTIONS, conventions, conventions. They're announcing the bona fide lines earlier this year. Manufacturer's shindigs have kept us hopping all over the map, giving new models the once-over. Hit Marion, Ind., for *Grunow's* get-together. Found the General Household boys fired with enthusiasm about "Signal Beacon" tuning incorporated in allwave jobs. Its virtually impossible to pass over even a weak dx signal when using the beat oscillator device.

There are nine sets in the line this season. Models 750 (\$75), 751 and 752 (\$99.50) are 7-tubers tuning from 550 k.c. to 21.7 mc. The first is a table type, the other two consoles. Each has provision for doublet antenna connection. Range switch automatically switches antenna connection for maximum efficiency on each frequency range. Number 1151 (\$139.50) is an 11-tuber, also allwave. Model 651 (\$69.50) is a 6-tube lowboy, tunes from 500 to 4,000 kc. As a table model (\$54.50). Model 450 is a 4-tube upright midget (\$27.50) covering up to 4,000 kc. Model 1101 is a true remote control radio with Si-tec-trol. Covers police calls. 550 (\$32.95) is an a.c.-d.c. compact with 5 tubes, 550 to 1,712 kc. A dual-purpose aerial is also available.

Atwater Kent's Atlantic City invitation lured us. A "Tune-O-Matic" (511 W) model that does everything but put out the cat, automatically grabbed off most of the limelight. Incorporated in an 11-tube superhet equipped with a high-fidelity tone-control this jack-and-clock system permits pre-selection of a full-evening's programs. Turns on, tunes from station to station and finally turns off (\$190).

The line further includes model 318K (\$89.90), an 8-tube lowboy good from 540 kc. to 22.5 mc.; model 112S, a 12-tube, high-fidelity floor-type console (\$180) of the allwave variety. Model 145 is a 5-tube upright table model for both foreign and local broadcasting (\$39.90). 447, also allwave is an upright midget (\$74.50). Model 559 (\$119.50) is a high-fidelity, allwave receiver. 994, which includes police-calls (\$22.50) has an oversize speaker despite its small dimensions. And 206 is a 6-tube set (\$49.90) which covers foreign, police, and amateur channels in three steps.

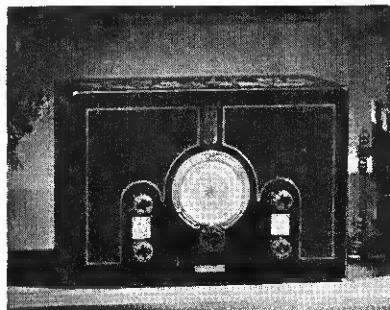
Battery operated and 32 and 110-volt d.c. models (some shortwave and allwave models included) were also shown.

Zenith was responsible for the next jolt to our expense-account. Headed for Chicago to see this outfit parade four new midgets and two new consoles. Model 805, a cathedral-type midget (\$29.95), uses 5 tubes and is a dual-wave job. Numbers 808 and 809 (\$49.95 and \$54.95) are upright table sets with airplane dials covering three bands. The difference in price is in cabinet refinements. 829 and 870 are respectively table and console sets (\$69.95 and \$79.95), each using 7-tubes and covering three wavebands. The 850, also a standard and shortwave type, (\$59.95) completes the setup for the year.

A breathing spell, for which we are truly grateful, was provided by *Bosch*, conveniently throwing its convention right here in little old New York just as we close. The Springfield concern is featuring two five tube personal sets (Models 402 and 420) with 8 tube performance and bringing in police calls. Model 402 for ac-dc has a range of 540-1750 kc. Model 420 for a.c. covers 540-3600 kc. Model 480D is a 10 tube all wave deluxe console (540-22,500 kc.). Models 460R, 460B and 460 A are 7 tube consoles which will bring in everything between 540 and 21,000 kc. (2047 communications channels). Models 440T and 440C are 6 tube jobs for standard and shortwave reception. 550-1600 kc. and 5600 to 15,500 kc.—the most useful group of foreign stations. Right angle tuning, pioneered by American Bosch last season—is built into Models 480D and 460R. For homes without electricity, two air cell receivers were shown. They are not limited to either dry cell or air cell use but may also be used with a wet type 2 volt storage battery simply by removing the ballast tube. Model 376S is a console and 376BT is a consolet.

Design features uniformly popular enough at these four showings to denote a trend were provision for doublet antenna connection on the set and a switch for connecting antenna at maximum efficiency on each frequency range. Also the prevalence of multi-band facilities even in the smaller models. The furniture this year is still conservative—semi-moderne.





Remler Auto Radio with Short Wave

The increased popularity of short wave in home radios indicates an unmistakable trend which will undoubtedly create a demand for short wave automobile sets.

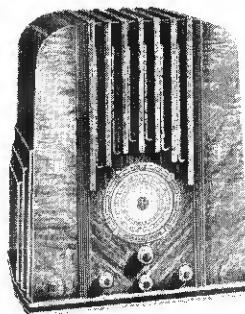
The Remler Co., Ltd., 2101 Bryant Street, San Francisco, Calif., anticipating this demand announces a new six-tube receiver with complete coverage of long, intermediate and short wave bands down to 45 meters.

This set has 6-in. electro dynamic speaker and uses six tubes. Has full vision airplane type illuminated dial, a.v.c., continuous tone control, and is mounted by a single bolt. Six cylinder suppressors, one distributor suppressor, shielded antenna lead and one condenser for generator are supplied. The list price is \$34.90.—*Radio Retailing*, July, 1934.

Kadette Shortwave Radio

As predicted several months ago, an auxiliary set for shortwaves is now available. It is offered by the International Radio Corp., Ann Arbor, Mich., and was designed especially for the many homes that now own a straight radio and do not wish to buy a dual or all-wave model. It is a "real" set—not a converter—and uses 5 tubes in the superhet circuit. Can be used on a.c. or d.c. Tunes 18-200 meters including European, South American and foreign bands as well as police calls, amateur and experimental stations and airplane calls.

Comes in a black ebony finish cabinet with slate panel effect. 13 $\frac{1}{2}$ x 9 $\frac{1}{2}$ x 7 $\frac{1}{2}$ in. \$29.75. Same as above but with standard broadcast band (1520-550 kc.) and foreign band (18-55 meters), \$34.50.—*Radio Retailing*, July, 1934.



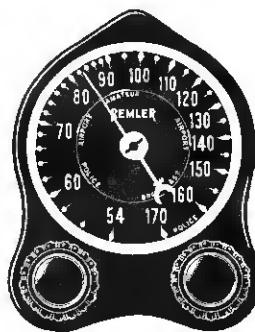
Fairbanks-Morse Model 7014

Fairbanks-Morse Radios

Carrying the trade name "Fairbanks-Morse" a new line of radios is offered by the Fairbanks-Morse Home Appliances, Inc., 430 S. Green St., Chicago, Ill., which absorbed Audiola a few months ago.

With 5 tube chassis the following sets are offered: Model 5212 table radio, 85-560 meter band, \$34.95; Model 5241 console, same tuning range, \$49.95; Model 5312, table set, 15-50 and 200-500 meters, \$39.95; Model 5341 console, same tuning range, \$54.95.

Two 7-tube, 4-band, 15-560 meter, all wave receivers are also offered. Table Model 7014 is \$69.50 and console Model 7040 is \$89.50.—*Radio Retailing*, July, 1934.



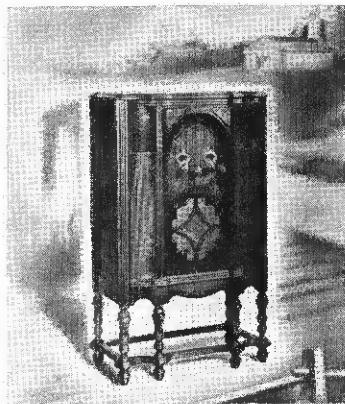
GE Auto-Radios

A high-output six tube model and a deluxe model employing 6 tubes with tubeless power supply have been brought out by the General Electric Co., Bridgeport, Conn., as additions to its line of auto-radios. New superhet circuits are employed in both sets. Particular attention has been given to the design of the audio channels and to the a.v.c.

Model C61, deluxe model, is provided with a 41 as a driver and a 79 for the twin-push (Class B) amplification. \$59.95.

Model C60 has a 41 for the final (Class A) audio stage. \$52.50.

Both sets have airplane type dial and are contained in attractive cabinets 7 $\frac{1}{2}$ x 12 $\frac{1}{2}$ x 7 $\frac{1}{2}$ in., with diagonal covers hinged in the rear to afford easy access. May be installed by means of either one-bolt or universal mounting. Complete kit for the suppression of ignition, generator and car-switch noises is included.—*Radio Retailing*, July, 1934.

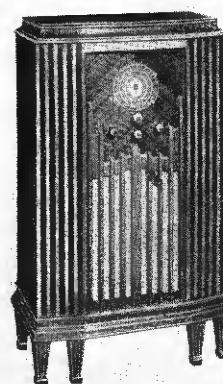


RCA Victor 32-Volt Radio

To meet the growing demand for a receiver for operation from 32-volt d.c. farm lighting systems the RCA Victor Co., Inc., Camden, N. J., has introduced Model 223, a 6-tube superheterodyne console. In addition to the six tubes in the radio circuit, Model 223 is supplied with an Amperite 5-16 voltage regulator to compensate for fluctuation in input voltage. No batteries are necessary.

The instrument is of two-unit construction, consisting of receiver chassis and power supply unit, each mounted on individual bases. This set covers from 540 to 1500 kc. and, by means of a switch, from 1500 to 2800 kc.

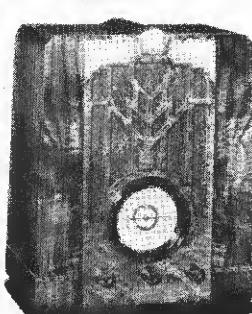
In the power supply unit a thoroughly shielded and shock-protected special vibrator is used. Two capacitors and one spark-plug suppressor for use on the 32-volt plant are included as standard equipment. \$99.50.—*Radio Retailing*, July, 1934.



Fairbanks-Morse Model 7040

Frigidaire Chest Type Refrigerator

Introduction of a small electric refrigerator of the chest type has been announced by the Frigidaire Corp., Dayton, Ohio. It is a radical departure from conventional design models in that the doors open upward rather than from the front outward. From the point of size, design and utility, it is believed this unit will reach an entirely different and new market. It has 2 cu.ft. food storage capacity, one large ice tray freezing 2 lb. of cubes. The mechanical unit is the 1/20 h.p. hermetically sealed compressor introduced by Frigidaire in 1933. \$77.50 plus freight.—*Radio Retailing*, July, 1934.



Belmont Model 675

Belmont Radios

Illustrated is Model 675, being made by the Belmont Radio Corp., 1257 Fullerton Ave., Chicago. It is a 6-tube superheterodyne with standard broadcast band from 540 to 1720 kc. and the short wave band running from 17.5 to 55 meters.

Model 675 is a standard wave receiver with 5 tubes in a superheterodyne circuit. The modernistic cabinet is 18 $\frac{1}{2}$ in. high by 11 $\frac{1}{2}$ in. wide, with airplane type full vision illuminated dial.—*Radio Retailing*, July, 1934.

Kelvinator "Electric Chest"

Four potential markets for the newly introduced small, lift-lid electric refrigerator of the Kelvinator Corp., Detroit, Mich., are homes where price is a prime consideration, homes desiring an auxiliary cabinet, summer cottages and roadside stands requiring a limited amount of refrigeration. The chest is 36 in. high by 27 $\frac{1}{2}$ in. deep x 19 in. and incorporates the standard Kelvinator mechanical equipment. Has removable basket for fruit, temperature selector, two freezing trays. Shelf area, 4.3 sq.ft.; net volume 2.00 cu.ft. \$77.50 plus freight.—*Radio Retailing*, July, 1934.

Freed Eisemann Portable for Marine Use

Specially designed for use on small boats where either 6 volts or 32 volts of electric power are available the Freed Radio & Television Corp., Long Island City, N. Y., announces its Model 432 marine type set. It is an extremely compact set measuring only 9½x12x6 in. and weighing 14 lb. It is a 5-tube superheterodyne. A small motor generator for supplying 250 volts to the plates of the tubes is built in as an integral part of the set. Covered with a waterproof duPont fabrikoid and lists at \$59.50.—*Radio Retailing*, July, 1934.



Howard "Highwayman" Auto Radio

"Highwayman" auto radio of the Howard Radio Corp., 1731 Belmont Ave., Chicago, Ill., is a 6-tube superheterodyne using a 6D6, 6C6, 78, 75, 42 and 84. It is of single unit construction with an easily replaceable vibrator unit of the plug-in type. \$44.50.—*Radio Retailing*, July, 1934.

Readrite Tube Tester

Recently, the Readrite Meter Works, Bluffton, Ohio, announced the development of two new tube testers: No. 421, a counter tube tester, and No. 422, a portable tube tester.

Both instruments incorporate a 3½ in. Triplet precision meter, which has a shaded two-color scale. The condition of the tube—either good or poor—is indicated in English. At the left of the upper panel is a bar knob rheostat to control line voltage. Another bar knob, at the right, is the selector switch. A line voltage control a.c. meter is incorporated as well as provision for testing cathode and grid leakages and shorts. A simple push button provides two-plate current readings for determining the worth and conductance of all types of tubes. The portable model with oak cover measures 10¾x9½x6½ in.—*Radio Retailing*, July, 1934.

Electronic Auto Radio Replacement Vibrators

A complete line of full wave replacement vibrators for auto radios is offered by the Electronic Laboratories, Inc., 122 West New York St., Indianapolis, Ind. These vibrators will replace the present vibrators in 55 makes and models of auto radios including AK, Audiola, Arvin, Hudson Terraplane, Majestic, Motorola, Philco, Sparton, Stewart Warner, United Motors, Zenith, etc.—*Radio Retailing*, July, 1934.



Halson Model 620

Halson Radios

Fourteen radios comprise the "Step Up" line of the Halson Radio Mfg. Corp., 120 East 16th Street, New York City, so called because the sets step up in price from \$22.50 to \$39.50 in \$5 and \$10 jumps, giving the dealer a set in each price range.

There are a.c., ac-de, dual wave and all wave models in the series in both table and console cabinets.

Illustrated is Model 620, a 6 tube ac-de set covering 17-55 and 170-550 meters, \$44.50.—*Radio Retailing*, July, 1934.

Stancor Electric Fans

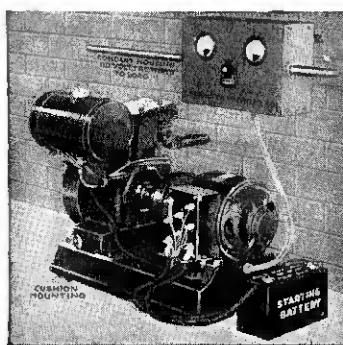
8 and 10 in. electric fans of the oscillating and non-oscillating types are offered by the Standard Transformer Corp., 850 Blackhawk St., Chicago, Ill.

These fans come in ice-green crackle finish with bright blades and guards. The 8-in. fans are \$4.85 and the 10-in. fans, \$6.50.—*Radio Retailing*, July, 1934.

Kato A.C. Light Plants

A new a.c. light plant has been added to the line of 110 volt a.c. plants of the Kato Engineering Co., Mankato, Minn. It is known as model 11AX and has a capacity of 450 watts. It can be made self cranking by simply connecting on starting batteries (standard size auto type). Direct current to excite speaker fields may be taken from d.c. terminals provided. Remote control may be attached in a few minutes if desired. A new type of rubber cushion mounting and a special muffler have reduced mechanical noise. \$158.

The complete Kato line range in size from 300 to 5,000 watts capacity.—*Radio Retailing*, July, 1934.



Non-Shrinkable Wood Putty

A new wood putty has been announced by the Las-Stik Mfg. Co., Hamilton, Ohio.

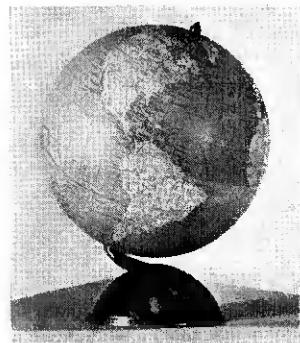
The principal claim made by the manufacturer is that Las-Stik wood putty will not shrink or pull away from the surrounding wood. It is made from real wood and a new synthetic resin.

This putty may be colored with special Las-Stik wood colors which are sold in three shades. Any tone or pastel shade may be produced by proper mixing. In addition it comes in common wood finishes such as natural, mahogany, light oak, etc.—*Radio Retailing*, July, 1934.

World Globe with Shortwave Stations

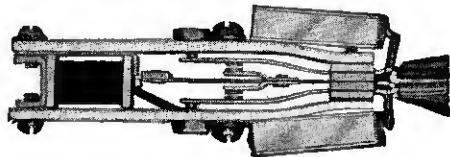
Of particular interest to shortwave fans is the world globe made by Replogle Globes, Inc., and obtainable from C. E. Brookes, 1107 Broadway, New York City. Shortwave stations throughout the world are indicated by call letters.

It comes in two sizes: the 7-in. globe is \$1 and the 12-in. globe, \$5.—*Radio Retailing*, July, 1934.



Radiart Replacement Vibrators for Auto-Radios

Radiart's vibrators for auto-radios are now available as exact duplicate replacements for all popular sets, such as AK, Arvin, Bosch, Chevrolet, Crosley, Ford-Majestic, GE, Majestic, Motorola, Philco, RCA-Victor, Stewart Warner, United Motors, Zenith and many others. Prices range from \$4.50 to \$9. Radiart Corp., 13229 Shaw Ave., Cleveland, Ohio.—*Radio Retailing*, July, 1934.



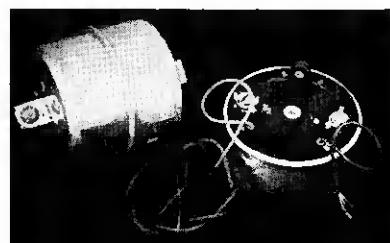
Continental Suppressor Equipment

Continental Carbon Co., Inc., 13900 Lorain Ave., Cleveland, Ohio, offers a complete line of auto radio noise suppression equipment, including auto-filter condensers, capacity and inductance auto-filter units, spark plug suppressors and suppressor kits.—*Radio Retailing*, July, 1934.

"High Fidelity" All Wave Antenna System

A single antenna can function efficiently on either broadcast or shortwave signals with the new "H-F" system of the Technical Appliance Corp., 27-26 Jackson Ave., Long Island City, N. Y. This system has special advantages in connection with all-wave receivers. Just as the allwave set has a coil changing switch, this antenna system has a switching system which changes the impedance of the antenna to suit the "band" that is being tuned, giving the advantages of two antennas.

By including the coupling and switching unit in the allwave receiver with the switch operated from the shaft of the set wave changing switch, the aerial system can be automatically changed.—*Radio Retailing*, July, 1934.



"...this, folks, is a Stancor Exact-Duplicate Transformer"



now, more than ever before

As the radio industry has come along through the years since the passing of the battery set and the all-electric, plugged-in-to-the electric light socket receiving set became a reality, many new developments and refinements in even that have occurred.

During those first years of feverish manufacture of "all-electric" sets . . . when the new principle of securing power was being developed even as the country was being literally flooded with the new receivers, greater tolerances were embodied in every unit . . . overly generous, extravagantly margined parts were employed . . . price was practically no object and there was still much to be learned.

Now . . . today, cost of manufacture is vital . . . the developments and experiences of those past years are at the finger tips of designers and engineers . . .

tolerances are finer . . . balances are measured infinitely closer.

Now . . . more than ever before exact-duplicate replacement parts are essential in this phase of servicing. Approximations of original specifications are risky . . . "salvage" stocks are gambles—games in which you should not, dare not stake your reputation and the future of your business in your community.

So, when we have insisted in these messages to you that there is no substitute for a STANCOR EXACT - DUPLICATE Replacement Transformer in servicing

to renew the original performance of your customers' sets through transformer replacement, we have only been repeating a stark, unbiased fact.

For, STANCOR EXACT-DUPLICATE Replacement Transformers are the exact electrical and physical likeness of the original, made to the same specifications, carried in stock by distributors all over the United States, Canada and our Island possessions . . . as handy to you as your telephone. No re-wiring or re-drilling . . . a workmanlike appearing installation and assurance of the satisfaction of your customer.

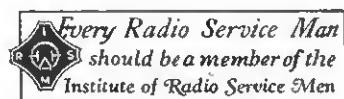
If you have not received the 1934 STANCOR catalog "A Complete Replacement Transformer Service" by all means give us the opportunity of sending it to you. You need it, now more than ever before.

**REPLACEMENT
EXACT
DUPLICATE
TRANSFORMERS**

STANDARD TRANSFORMER CORPORATION

852 Blackhawk Street

Chicago, Ill.



SERVICE SECTION

Conducted by
W. MacDonald

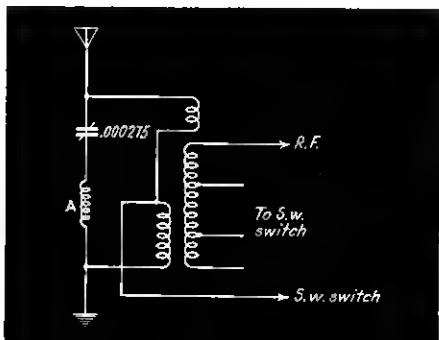
Including
Installation Data

CIRCUITS of the MONTH

Code Rejector

Several of the recently designed all-wave receivers suffer from code interference, racket broadcast by stations operating near the intermediate frequency apparently breaking through the pre-selector circuits. Parallel traps placed in the antenna circuit are frequently used to reduce such interference. Zenith's model 825 employs still another method, a series arrangement of a .000275 condenser and inductance between antenna and ground.

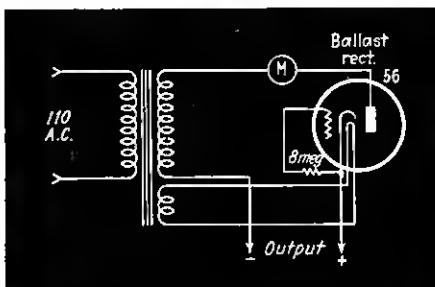
Tuned to 485 kc., this series circuit presents an extremely low resistance path to signals in this vicinity, shorting them to ground. At the same time, resistance to signals operating on desired frequencies is comparatively high and so little loss is introduced.



Ballast-Rectifier

J-M-P's "Chekatube" tester has a clever ballast-rectifier circuit which limits current to safe values without introducing appreciable change in applied voltage, permitting safe English Reading instrument design.

The cathode and plate of a 56 are hooked up in the usual manner to provide half-wave rectification but, unlike conventional circuits, the grid is tied to cathode through an 8 megohm resistor. As current drain rises the "floating" grid accumulates electrons. A small current thus flows through the resistor between grid and cathode, applying a bias voltage and so reducing the flow of rectified current.



2 Volt, .06 Amp. Pilot

Philco has licked the dial-light problem in battery model 34, holding filament drain within safe limits irrespective of "A" battery type employed, by using a special 2 volt, .06 ampere bulb. It is 14 by $\frac{1}{2}$ inches overall.

"De-Coupling" Switch, Two Antennas

Here is the long angled-ior Stromberg 69 shortwave "selector" or converter circuit, available "as is" or built into the 68 allwave job equipped with newly-designed iron-cored i.f. coils. (Predicted in RR43Apr). Skipping conventional features in approved "Circuits of the Month" style, let's pick out new ideas and see what makes 'em tick.

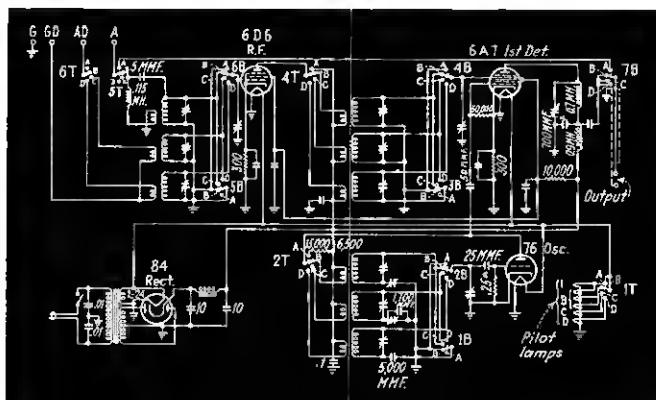
Starting at the binding posts in the upper-left we note that there is provision for both a regular broadcast antenna and for a doublet. The first is permanently connected to "A" while the second hooks up across "AD" and "GD". When the gang-switch is set in position "A" the long antenna is con-

nected directly to the input post of the broadcast job (not shown), converter tube grids are grounded and plate coils shorted out. The converter oscillator plate voltage is simultaneously reduced. This is the broadcast band position and the converter is inoperative.

With the gang-switch in position "B" the doublet is still open-circuited but converter grid and plate coils go to work. This is, obviously, the band just below broadcast. In positions "C" and "D" the broadcast antenna is disconnected and the doublet goes into action on high-frequency signals. The antenna coil primary is, please note, ungrounded. And if you will carefully examine the function of switch-decks 5B, 3B and 1B you will see that these ground both ends of the grid-coil next higher in wavelength to the one actually in use. This is an important and novel feature as it completely avoids possibility of deadspots due to resonance of adjacent coils.

Better go over the switch-deck functions again to fully understand them. 5T (in conjunction with 7B) accomplishes input switching from converter to broadcast chassis. 6T operates the doublet. Switches 6B, 4B and 2B handle grid-coil changes. 4T and 2T juggle plate coils. And 5B, 3B and 1B are the "de-coupling" units.

The 76 oscillator output is introduced into the 6A7 via a 50 muf. condenser and one of the detector grids which permits electron-coupling. The selector unit tunes from the high-frequency end of the b.c. band, where the regular chassis quits, to 25,000 kc. and is entirely self-powered.

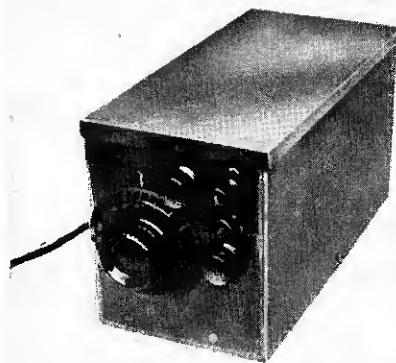


AN ALLWAVE OSCILLATOR

Device tunes from 13 to 3,500 meters, operates on a.c. or d.c.

By EDGAR MESSING

The F. W. Sickles Company



The Finished Job—It is 6 in. wide, 10 long and 6 high. The box is copper. Frequency control dial at left, output control on top. Switch just below output binding-posts. White dot at bottom is screw that fits into tapped flange for mounting

THE unit to be described is considerably more than the usual service oscillator. It was originally intended as a laboratory instrument, for designing allwave receivers. A number of simplified models have been made and sold to radio set manufacturers. Its design is the result of four years intensive work on allwave receivers whose construction required a good, variable signal source.

The unit is simple to construct and outside of the box and tubes should not cost two-and-a-half dollars. It can be used on a.c. or d.c., is switch operated to cover from 13 meters continuously up to 3500, and has an output signal control that is definite and can be approximately calibrated in microvolts. The output control works even on the highest frequency band and has negligible effect on the

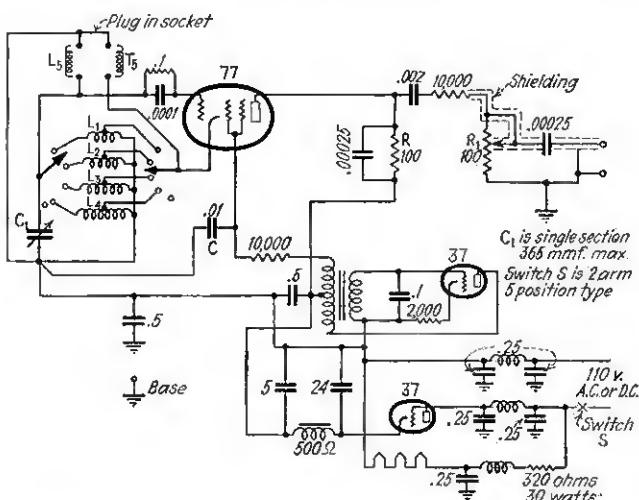


Fig. 1—
Complete
wiring
diagram

This business of putting the large coil always in shunt has the advantage of eliminating any possibility of dead spots on other bands due to resonance in the large coil. The condenser C_1 being always across the fifth band coil tunes it far from the operating frequencies of the higher frequency bands when they are working. If space permits it is good practice to use a shorting switch as shown in Fig. 2 to prevent any possibility of dead spots on the other bands due to resonance in other coils.

In the fifth position the lowest operating frequency is 150 kc. This coil is of the plug-in type so that another coil covering down to 70 kc. can be substituted. Inability to get a six position switch was the reason why the very low frequency coil was not permanently built in.

So much for the oscillator grid circuit. The plate circuit receives its d.c. voltage through a 100 ohm resistor. This resistor also has an r.f. voltage built up across it which is brought to the output terminals through a condenser resistance network. The function of the condenser across R_1 is to produce a frequency attenuation effect so as to lessen the strength of the oscillator harmonics. The ten thousand ohm resistor is large enough to effectively isolate the adjusting control R_1 from the plate circuit and at the same time limit the voltage to the output control. The .002 condenser keeps the plate voltage off the control. The .00025 in series with the

frequency. This is an extremely useful feature.

Figure 1 shows the circuit. Three tubes are employed—a thirty seven as a.f. oscillator, another as rectifier, and a 77 as the r.f. oscillator. The power supply is very similar to those used in the miniature midget four-tube sets that were so popular last year.

Circuit

The oscillator is of the so-called electron-coupled type with the cathode, control grid, and screen acting as the oscillator elements and the plate being the means of coupling to the generated signal. The suppressor is tied to the screen and both, so far as r.f. is concerned, are at ground potential through condenser C . This means that the plate is near a ground potential oscillator element, is shielded from the frequency controlling units in the grid circuit and, therefore, any variation in the output circuit has little effect on the oscillator. The oscillating circuit proper is of the

Hartley type with the grid coil tap to provide feedback.

This type of oscillator is not new and has been described in a number of periodicals. It has good frequency stability but its biggest advantage is that output circuit variations have little effect on the oscillator proper.

The grid circuit contains a grid leak condenser combination of standard design, a single section 365 mmf. condenser and a number of tapped coils. These coils are small and are mounted in one shield can as the coil detail drawing shows. They are mounted at right angles so that the possibility of coupling between them is lessened. The switch operates to select the grid coil desired and simultaneously the tap on the coil.

The fifth band coils, it will be noted, are always in shunt with the other coils. However, since they are relatively large inductances they do not affect the operation on the four higher bands and only come into the picture when the switch is in the fifth position and the smaller coil circuits are opened.

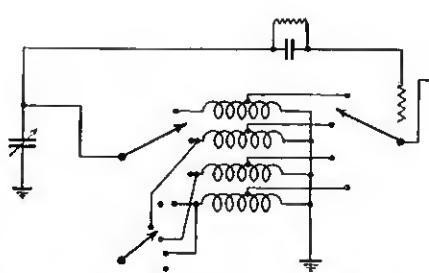


Fig. 2 —Optional shorting switch

"hot" output post acts as a dummy antenna so that the receiver under test may be connected directly to the oscillator output terminals and aligned.

The output control, a 100 ohm potentiometer, should preferably be of the logarithmic type having a resistance of 25 ohms at 50% rotation. This serves to spread out the action of the control at the low output points. A standard 100 ohm unit will, of course, work satisfactorily.

Modulation

The oscillator is modulated in a somewhat novel manner in the screen circuit which here is the oscillator anode circuit. A push-pull transformer—any old type—has its untapped winding serving as the oscillator tank coil while the tapped secondary has one section acting as the tickler. The other serves as the pickup winding and introduces the audio component into the supply circuit of the r.f. oscillator. The ten thousand ohm resistor in series with the 77's screen prevents the .01 condenser from loading the audio pickup coil too heavily.

The whole secret of getting a good pure tone from the audio oscillator is to take out most of the iron from the transformer and use a large condenser across the grid coil. In this oscillator, as in most of the others that were built, the laminations were all removed and restacked in the form of the letter E and the coil placed over the center leg. A piece of wood was put over the ends of the legs of the E to replace the iron that had been removed and the old bracket was used for mounting. The tone was adjusted by varying the condenser across the grid coil—the value for the particular transformer was .1 mfd. Condenser C and the 10,000 ohm resistor also control the note but should not be varied materially from the values given because they also control the percentage of modulation.

The rectifier section uses a 37 half-wave rectifier which is well able to take care of the small load, a filter section consisting of a small choke such as used in the a.c.-d.c. sets and two condensers. It will be noted that one section of the filter condenser is rated at 24 mfds. This value may seem unusually high but is one of the secrets of successful operation of the oscillator on the 15 meter band. On the highest-frequency band even a small amount of voltage variation is instantly apparent in the form of hum modulation. A good choke, the best possible, should be used but its resistance should not exceed 500 ohms. The condensers voltage rating need be only 150 d.c. operating.

All filaments are connected in series in the usual way with the r.f. oscillator tube's being nearest ground. A series dropping resistor may be of the line cord built-in type or a separate wire wound unit. If it is a separate unit it should be placed so that it can be well ventilated and preferably somewhere outside of the r.f. oscillator section.

Base Layout

Fig. 3 shows the base layout. The base itself can be made of aluminum or steel 6 by 12 inch. Bend a 1 inch flange

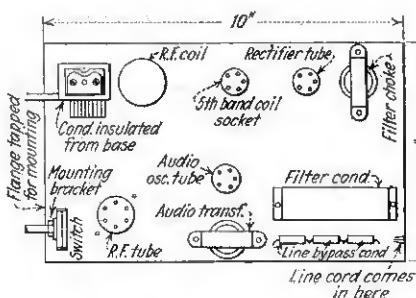


Fig. 3 — Base layout

at each end so that the base is 6x10x1 inch high.

The layout shows all parts except the volume control and the input filter chokes. The chokes were mounted on the under side of the base where the line bypass condensers are shown at the upper right hand corner. The output control was mounted on the front of the box and the leads to it soldered

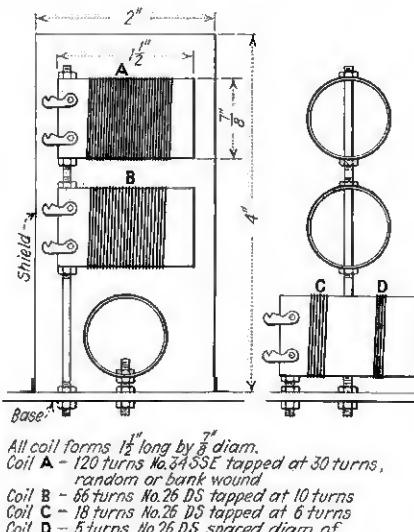


Fig. 4 — Coil details

after the base was in the box. The switch was mounted to a simple right angle bracket fastened to the base.

The r.f. coil, condenser and switch should be grouped as closely as practicable and each unit should be shielded as completely as possible.

From the diagram it will be noticed that the base is not used as the ground connection. Rather a separate low side

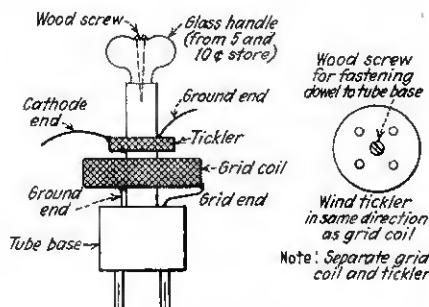


Fig. 5 — Plug-ins for low frequencies

is established and this connected to the base proper through a condenser. The purpose of this is to keep the base off the power line. When wiring bring all r.f. low side connections to one point, keep all r.f. connections to the switch, tube, etc., as short as possible. Put the grid condenser and leak in the line between the top of the tubing condenser and the grid of the tube. Shield the output plate lead thoroughly and make the lead from the output control to the output binding post as short as possible.

Coils

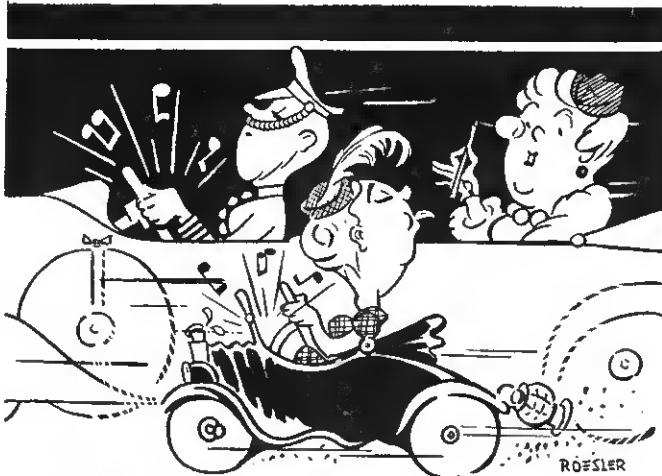
The coils, of course, are a most important point. They cannot be built too well. Fig. 4 gives the details of construction. The intermediate frequency coil is somewhat harder to make; perhaps the simplest way would be to take one of the r.f. coils as used in a 456 kc. transformer and add about thirty turns. Alongside this coil and within an eighth inch of it wind the tickler—about seventy turns random wound. The size wire is not important—any size from 30 D.S.C. to 38 D.S.C. can be used. The exact size of the grid coil will have to be adjusted. It should be such that when the tuning condenser is set at minimum the signal will fall just within the broadcast band. See Fig. 5.

For the lowest frequency band a coil from a 175 kc. transformer can be used, this time probably without change. Again wind the tickler alongside, using about 100 turns.

Calibration is easiest accomplished by comparison with a known oscillator. The next best way is by tuning in the signals on a calibrated all-wave set.

The broadcast section can be calibrated with the help of the usual broadcast receiver by tuning in various stations and beating the oscillator against the station. The intermediate and long wave bands are calibrated by using a calibrated receiver, setting the oscillator at one position and noting by means of the receiver the frequencies at which the harmonics come in. For example, if the oscillator is set at some frequency on the intermediate band and signals on the broadcast band are picked up at 600 kc., 800 kc., 1,000 kc. and 1,200 kc. then the setting of the oscillator is 200 kc. It is advisable to pick up at least three harmonics for one or two positions on each band. Other positions on each band can be found from one harmonic and an estimate based on the points established by picking up three harmonics. A t.r.f. set should be used as the calibrated broadcast receiver.

A short wave receiver is required for calibrating the higher frequency ranges. The receiver can be calibrated by using harmonics of the oscillator on the broadcast band which has been calibrated. The procedure would be to calibrate the receiver on the band just below the broadcast by using the harmonics of the oscillator on the 1,500-550 kc. band, then finding the settings on the next higher oscillator band to correspond with the now calibrated receiver for this band. The procedure would be repeated for the other bands always using the known harmonics from the next lowest frequency band to calibrate the receiver then turning the oscillator switch to give fundamentals on the band.



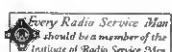
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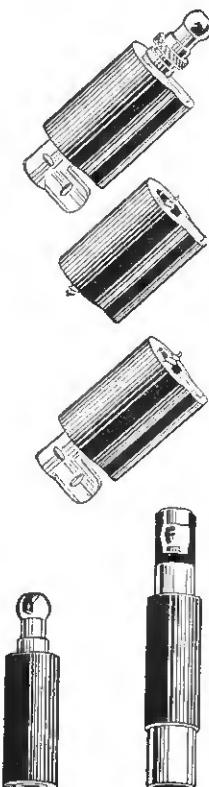
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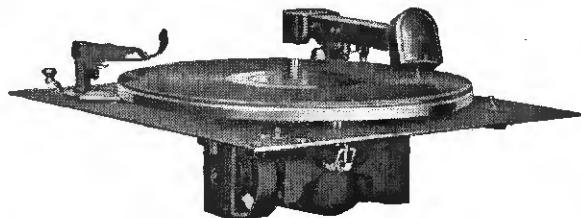
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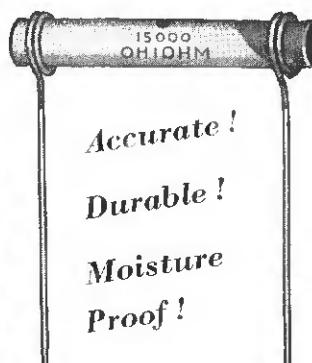
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Type	USE	Eb	Ep or Plate Coup. Res.	Eg	Ip	Is and/or Screen Volts	Bias. Res.	Rating (Watts)
1A6	Pent. Conv.....	183 138	180 135	— 3 — 3	.....	.....	500 500	1
2A3	Pr. Amp. (1)..... P-P (2).....	295 362	250 300	— 45 — 62	60 40x2	.....	750 800	3 5
2A5	Pr. Amp. 1.....	266	250	— 16.5	34	6.5	400	1
2A6	Res. Coup. Volt. Amp. Imp. Coup.....	{ 250 180 135 252	(0.25~) (0.25~) (0.25~) 250	— 1.35 — 1.30 — 1.10 — 2	0.4 0.24 0.09 0.8	.....	3,500 5,000 11,000 2,500	1 1 1 1
2A7	Sup. Conv.....	250 150 100	250 150 100	— 1.5 — 1.5 — 3	.....	.....	300 150 150	1 1 1
2B7	Volt Amp. Pent... (RF) (IF)	{ 250 250 180 100	250 250 180 100	— 3 — 3 — 3 — 3	9.0 6.0 3.4 5.8	2.3(125v) 1.5(100v) 0.9(75v) 1.7(100v)	250 400 750 400	1 1 1 1
	Volt Amp. Pent... A.F.	{ 180 135 100	(0.25) (0.25) (0.25)	— 2.10 — 1.95 — 2.15	0.45 0.30 0.23	0.15(25v) 0.10(20v) 0.0(20v)	4,000 5,000 10,000	1 1 1
6A4	Pwr. Amp Pent... Single..... P-P.....	{ 180 165 135 100 180 165 135 100	180 165 135 100 180 165 135 100	— 12 — 11 — 9 — 6.5	22 20 14 9	3.9 3.5 2.5 1.6	500 500 500 600 250 250 250 300	1 1 1 1 1 1 1 1
6A7	Sup. Conv.....	250 150	250 150	— 1.5 — 1.5	.....	.....	300 150	1 1
6B7	Volt Amp. Pent... (RF) (IF)	{ 250 250 180 100	250 250 180 100	— 3 — 3 — 3 — 3	9.0 6.0 3.4 5.8	2.3(125v) 1.5(100v) 0.9(75v) 1.7(100v)	250 400 750 400	1 1 1 1
	Volt Amp. Pent... A.F.	{ 180 135 100	(0.25) (0.25) (0.25)	— 2.10 — 1.95 — 2.15	0.45 0.30 0.23	0.15(25v) 0.10(20v) 0.0(20v)	4,000 5,000 10,000	1 1 1
6C6	Biased Det..... Amp..... Amp. Res. Coup...	{ 250 250 250 250 250 180 135 100	(0.5~) (0.25~) (0.5~) (0.25~) (0.25~) (0.25) (0.25) (0.25)	— 4.3 — 3.86 — 1.7 — 1.95 — 3 — 2.0 — 1.30 — 1.25 — 1.05	..... ..... ..... ..... ..... 0.5(100v) 0.12(30) 0.08(25) 0.08(20)	(100v) (100v) (33v) (50v)	10,000 4,000 8,000 3,000 1,250 2,500 3,500 3,500	1 1 1 1 1 1 1 1
6D6	Amp..... Superhet. Mix....	253 260	250 250	— 3 — 10	8.2 3.0	2.0(100v) 0.5(100v)	300 3,000	1 1
6F7	Superhet Conv... Diode Det. & Pent. A.F. Amp.	{ P 260 T 260 60,000	250 (300,000)	— 10 (0.1~)	2.8 2.4	0.6(100v)	1,750	1
'01A	Amp..... Biased Det.....	{ 145 95 150 100	135 90 135 90	— 9 — 4.5 — 13.5 — 7.5	3 2.5 0.2 0.2	..... ..... 65,000 40,000	3,000 2,000 65,000 40,000	1 1 1 1
'10	Class A Amp.....	{ 465 380 270	425 350 250	— 39 — 31 — 22	18 16 10	.....	2,000 2,000 2,250	1 1 1
11	Amp..... (WD11) (WX12) Biased Det.....	{ 145 95 155 100	135 90 135 90	— 10.5 — 4.5 — 18 — 10	3 2.5 0.2 0.2	.....	3,500 2,000 75,000 50,000	1 1 1 1
12-A	Class A Amp..... Biased Det.....	{ 195 145 95 200 150	180 135 90 180 135	— 13.5 — 9 — 4.5 — 20 — 15	7.7 6.2 5.0 0.2 0.2	..... ..... 1,000 100,000 65,000	2,000 1,500 1,000 100,000 65,000	1 1 1 1 1
20	Pr. Amp.....	155 105	135 90	— 22.5 — 16.5	6.5 3	.....	3,500 6,000	1 1
'22	Amp RE.....	135 135	135 135	— 1.5 — 1.5	3.7 1.7	1.3(67.5v) 0.6(45v)	300 600	1 1
'24	Amp..... Biased Det.....	{ 250 180 275	250 180 (250,000)	— 3 — 3 — 5	4 4 0.1	1.7(90v) 1.7(90v) 0.05(45v)	500 500 30,000	1 1 1

Eg (Continued on next page)

$$\text{Self-bias resistance} = \frac{\text{Eg}}{\text{Ic}}$$

For push-pull operation use $\frac{1}{2} R$ and double the wattage rating
Eb is required supply voltage = Ep + Eg; Ep is Plate-cathode voltage; Eg is Grid-bias

TRICKS of the TRADE

AIRLINE AUTO RADIO. Interference in late models not due to ignition trouble . . . See if rubber grommet is used over the station selector drive cable to hold it securely in place. If so try removing this rubber bushing and building the space up with $\frac{1}{4}$ in. shielding to provide better ground.

AK 55, 60. Distortion at low volume . . . Replace both 27 bias resistors, replace 750 ohm resistor biasing the 45's. It is yellow-white and may be found on top of wire wound resistor.

ARBORPHONE 45. Most common grief is breakage of leads to tickler coil in plate circuit of 27 detector . . . Replace with best grade flexible wire, bending coil as close to r.f. coil as possible without causing oscillation. Next most troublesome is corrosion at terminals or opens in grid resistances . . . Replace with 600 ohm flexible pigtail types, or with 400 to 500 ohm units for greater sensitivity. R.f. coil grid return wires to chassis frequently loosen . . . These are lugs under coil mounting screws and can be taken apart, tightened and reassembled but for permanent repair put a common ground to each coil and connect to ground post. Hum . . . Ninety-per cent is caused by interaction between 80 and 27 detector . . . Insert a thin piece of metal about 3 inches square behind license plate in front of rectifier. Bias condenser at right of 80 socket is bolted in place and bolts often loosen . . . Usually not noticed by ordinary inspection so tighten and touch with solder. The connection panel right above this bias condenser and resistor causes trouble too . . . If the set fades look for a bad contact between the soldering lugs and rivet head and if found re-solder with a hot iron. Lack of sensitivity at high frequency end of dial . . . Take 30 turns off the outside winding of the antenna coupling coil wound on the wooden spool. This will reduce low frequency end volume somewhat. Replace the 27 with a 56 for real improvement in overall results. Gray Electric of Springfield, Ohio, has replacement parts.

CROSLEY 168 (Dual Seven). Excessive noise . . . Generally traceable to the action of the a.v.c. section of the second 2A6 detector. In the original circuit a.v.c. action causes loud roaring or rushing when tuned away from a

Weston scores again!

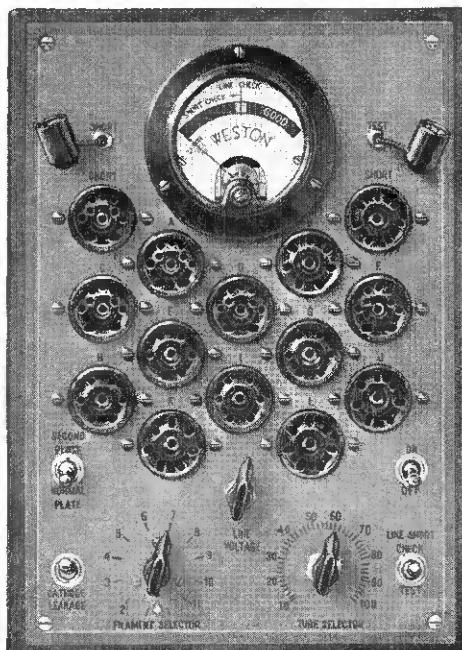
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7. Short check for 4, 5, 6 and 7 prong tubes.
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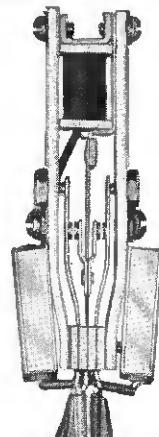
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Type	USE	Eb	Ep or Plate Coup. Res.	Eg	Ip	Is and/or Screen Volts	Bias Res.	Rating (Watts)		
(Continued from page 39)										
26	Amp.....	195 145 95	180 135 90	— 14.5 — 10 — 7	6.2 5.5 2.9	..... ..... .....	2,500 2,000 2,500	1/2	
27	Amp.....	270 195 145 95	250 180 135 90	— 21 — 13.5 — 9 — 6	5.2 5.0 4.5 2.7	..... ..... ..... .....	4,000 2,500 2,000 2,250	1/2	
	Biased Det.....	310 280	275 250	— 33 — 30	0.2 0.2	..... .....	150,000 150,000	1/2	
30	Amp.....	195 145 95	180 135 90	— 13.5 — 9 — 4.5	3.1 3.0 2.5	..... ..... .....	4,000 3,000 2,000	1/2	
	Biased Det.....	200 150 100	180 135 90	— 18 — 13.5 — 9	0.2 0.2 0.2	..... ..... .....	75,000 65,000 40,000	1/2	
31	Pwr. Amp.....	210 155	180 135	— 30 — 22.5	12.3 8.0	..... .....	2,500 2,500	1/2	
32	Amp.....	180 135 180 135	180 135 (250,000) (100,000)	— 3 — 3 — 1.0 — 6	1.7 1.7 0.25 0.2	0.4(67.5v) 0.4(67.5v) 0.1(30v) 0.05	1,500 1,500 3,000 25,000	1/2		
	Biased Det.....	180 135	(100,000)	— 4.5	0.2	0.05	20,000	1/2		
33	Pwr. Amp. Pent..	150	135	— 13.5	14.5	3.0	750	1		
34	RF Amp.....	180 135 67.5	180 135 67.5	— 3 — 3 — 3	2.8 2.8 2.7	1.0(67.5v) 1.0(67.5v) 1.1(67.5v)	850 850 850	1/2		
	Superhet. Mix....	185 140 72.5	180 135 67.5	— 5 — 5 — 5	1.8 1.8 1.7	1.0(67.5v) 1.0(67.5v) 1.1(67.5v)	2,000 2,000 2,000	1/2		
35	RF Amp.....	250 180 250	250 180 250	— 3 — 3 — 7	6.5 6.3 3.7	2.5(90v) 2.5(90v) 2.5(90v)	350 350 1,250	1/2		
36	Amp.....	250 180 135 100	..... ..... ..... .....	— 3 — 3 — 1.5 — 1.5	3.2 3.1 2.8 1.8	0.4(90v) 0.4(90v) 0.4(67.5v) 0.4(55v)	850 850 500 750	1/2	
37	Amp.....	270 195 145 95 280 200 150 100	250 180 135 90 250 180 135 90	— 18 — 13.5 — 9 — 6 — 28 — 20 — 15 — 10	7.5 4.3 4.1 2.5 0.2 0.2 0.2 0.2	..... ..... ..... ..... ..... ..... ..... .....	2,500 3,000 2,500 2,500 100,000 100,000 75,000 50,000	1/2	
	Biased Det.....	38	Pwr. Amp. Pent..	275 200 150 110	250 180 135 100	— 25 — 18 — 13.5 — 9	22 14 9 7	3.8 2.4 1.5 1.2	1,000 1,000 1,250 1,250	1
39	Amp.....	253 183 93 257 187 97	250 180 90 250 180 90	— 3 — 3 — 3 — 7 — 7 — 7	5.8 5.8 5.6 2.5 2.4 2.4	1.4(90v) 1.4(90v) 1.6(90v) 1.0(90v) 1.0(90v) 1.0(90v)	400 400 400 2,000 2,000 2,000	1/2		
	Superhet Mix....	40	Amp.....	180 135	(250,000) (250,000)	— 3 — 1.5	0.18 0.18	15,000 10,000	1/2
	Biased Det.....	41	Pwr. Amp. Pent..	180 193 145 107	(250,000) (250,000) (250,000)	— 4.5 — 3	0.08 0.07	50,000 40,000	1/2
42	Pwr. Amp. Pent..	268 180 145 107	250 180 135 100	— 18 — 13.5 — 10 — 7	32 18.5 12.5 9.0	5.5 3.0 2.2 1.6	500 600 600 600	1	1	
43	Pwr. Amp. Pent..	155 110	135 95	— 20 — 15	34 20	7 4	500 600	1	1	
44	Amp.....	253 183 93 257 187 97	250 180 90 250 180 90	— 3 — 3 — 3 — 7 — 7 — 7	5.8 5.8 5.6 2.5 2.4 2.4	1.4(90v) 1.4(90v) 1.6(90v) 1.0(90v) 1.0(90v) 1.0(90v)	400 400 400 2,000 2,000 2,000	1/2		
	Superhet. Mix....	45	Pwr. Amp.....	331 300 211	275 250 180	— 56 — 50 — 31.5	36 34 31	1,555 1,500 1,000	5 2 2
46	Class A Driver....	283	250	— 33	22	1,500	1		
47	Pwr. Amp. Pent..	266.5	250	— 16.5	31	6	450	1		
48	Pwr. Amp. Tet.....	147 115	125 95	— 22.5 — 20	50 48	9(100v) 9(95v)	400 350	2 2		
49	Pwr. Amp. Class A Tri.....	155	135	— 20	5.7	3,500	1		

(Continued on next page)

signal, sometimes so severe that it is difficult to tune in even a local. Remove the 300,000 ohm half watt resistor between the i.f. trimmer and the 8mfd. cathode biasing condenser and insert a 100,000 ohm one watt resistor from the i.f. trimmer directly to ground. The roar will disappear and the set will, in fact, be almost completely silent between stations. (I.f. 181.5 Kc.)

CROSLEY 170. Background hiss over entire dial . . . Shunt 300,000 ohm resistor from second i.f. primary to chassis. Weak signals, voltages and tubes check ok . . . Look for broken connections on grid cap lead of 1st r.f. 58. Break is hard to find as it is covered with tape.

EMERSON T-S. Oscillation on both long and shortwaves . . . Bend red wire located between speaker and tuning condensers toward speaker. Insufficient sensitivity . . . Bend same wire toward condensers.

GM CAR SETS. Motorboating, or steady whistle, in Buick, Oldsmobile, Pontiac, Chevrolet or United Motors sets of 1934 . . . Generally due to breaking of an r.f. cathode bypass condenser lead. Look for largest condenser of cluster of three, jammed between lid and the other two.

GRUNOW 701, 801, 901. Interference from airport signals . . . Insert 262 kc. i.f. coil primary or secondary shunted by trimmer in series with antenna, tune until undesirable signal is trapped out.

MAJESTIC 381. When it is necessary to replace 50,000 ohm resistor located on and across filter condensers use a 25,000 ohm unit for improved performance. These sets can also be improved by installing a pilot light socket behind the transparent dial, using a 110 volt bulb.

MAJESTIC 400, 411, 413. If necessary to replace .05 condenser across line use a .1 size for better results.

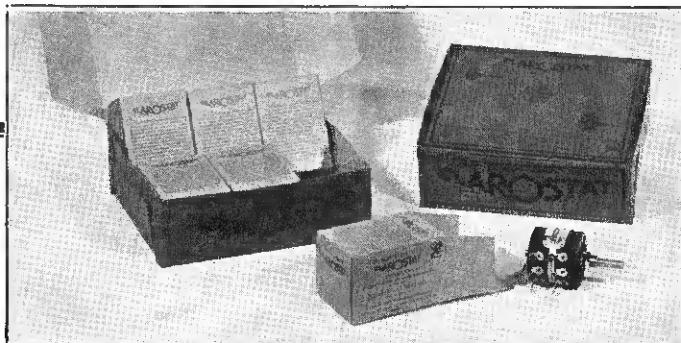
MOTOROLA (Early Models). Continual breakage or shorting of 201A's and 112's . . . Wind a few layers of tape around top of tubes to take up vibration jar which causes trouble.

MOTOROLA 88. Failure to oscillate over part of range . . . Try several new tubes in critical autodyne detector-oscillator circuit. If this fails to remedy trouble try 4,500 ohm cathode resistor, or resolder all oscillator circuit connections, including coil wires to terminal lugs and connecting leads.

PHILCO TRANSITONE 5. Oscillation and distortion . . . Generally due to defective by-pass condenser between secondary of antenna coil and ground. Replace with .05. No volume . . . Check for defective by-pass between secondary of second i.f. transformer and one ter-

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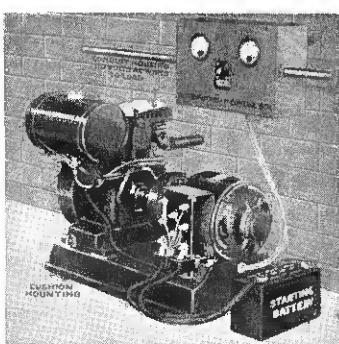
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How to Reach All Your Prospects

When a man gets beyond selling to the people of his town, he must carry word to his buyers by some outside force, greater than himself. He displays his products and tells his story to the hundreds of interested people who otherwise would never know of him or of his product.

In your field, one magazine is read from coast to coast, by all who sell radio and radio products. Its name is **RADIO RETAILING** and it reaches all your prospects.

RADIO RETAILING

330 West 42nd Street
New York, N. Y.

Type	USE	E _b	E _p or Plate Coup. Res.	E _g	I _p	I _s and/or Screen Volts	Bias. Res.	Rating Res. (Watts)
Continued from page 41								
50	Pwr. Amp.....	534	450	— 84	55	.....	1,500	5
		470	400	— 70	55	.....	1,250	5
		413	350	— 63	45	.....	1,500	5
		354	300	— 54	35	.....	1,500	2
53	Pwr. Amp. Class A Tri.	300	294	— 6	7	.....	850	.....
		255	250	— 5	6	.....	850	.....
55	Amp. (Trans.Coup.)	270	250	— 20	8	.....	2,500	.....
		193	180	— 13.5	6	.....	2,250	.....
		145	135	— 10.5	3.7	.....	2,500	.....
	Amp. (Res. Coup.)	180	(250,000)	— 7.0	0.47	.....	15,000	.....
		135	(250,000)	— 7.0	0.31	.....	20,000	.....
		100	(250,000)	— 5.0	0.23	.....	20,000	.....
56	Amp... Biased Det.....	263	250	— 13.5	5	.....	2,500	.....
		270	250	— 20	0.2	.....	100,000	.....
57	Biased. Det.....	250	(0.25 ~)	— 4.3	.....	(100v)	10,000	.....
		250	(0.25 ~)	— 3.86	.....	(100v)	4,000	.....
		250	(0.25 ~)	— 1.7	.....	(33v)	8,000	.....
	Amp.....	253	250	— 1.95	.....	(50v)	3,000	.....
	Amp. (Res. Coup.)	180	(0.25)	— 3	2.0	0.5(100)	1,250	.....
		135	(0.25)	— 1.30	0.38	0.12(30)	2,500	.....
		100	(0.25)	— 1.25	0.25	0.08(25)	3,500	.....
		100	(0.25)	— 1.05	0.23	0.08(20)	3,500	.....
58	Amp..... Superhet Mix....	253	250	— 3	8.2	2.0(100v)	300	.....
		260	250	— 10	3.0	0.5(100v)	3,000	.....
59	Amp. Class A Tri.. Amp. Class A Pent.	278	250	— 28	26	.....	1,000	1
		250	— 18	35	9	(250v)	400	1
71A	Pwr. Amp.....	220	180	— 40.5	20	.....	2,000	1
		162	135	— 27	17.3	.....	1,500	1
		106	90	— 16.5	10	.....	1,500	1
75	Res. Coup. Volt.. Amp.....	250	(0.25 ~)	— 1.35	0.4	.....	3,500	.....
		180	(0.25 ~)	— 1.30	0.24	.....	5,000	.....
		135	(0.25 ~)	— 1.10	0.09	.....	11,000	.....
	Imp. Coup.....	252	250	— 2	0.8	.....	2,500	.....
77	Amp.....	253	250	— 3	2.3	0.6(100v)	1,000	.....
		101	100	— 1.5	1.7	0.4(60v)	750	.....
	Biased Det.....	250	(0.50 ~)	— 4.3	.....	(100v)	10,000	.....
		250	(0.25 ~)	— 1.95	.....	(50v)	3,000	.....
		250	(0.25 ~)	— 1.95	.....	(36v)	12,500	.....
78	Amp.....	253	250	— 3	10.5	3.0(125v)	250	.....
		253	250	— 3	7.0	2.0(100v)	300	.....
		183	180	— 3	4.0	1.0(75v)	600	.....
		93	90	— 3	5.4	1.5(90v)	450	.....
79	Class A Tri.....	250	(250,000)	— 1.5	0.5	.....	3,000	1
85	Amp.(Trans. Coup.)	270	250	— 20	8	.....	2,500	1
		193	180	— 13.5	6	.....	2,250	1
		145	135	— 10.5	3.7	.....	2,500	1
	Amp. (Res. Coup.)	180	(250,000)	— 7.0	0.47	.....	15,000	.....
		135	(250,000)	— 7.0	0.31	.....	20,000	.....
		100	(250,000)	— 5.0	0.23	.....	20,000	.....
89	Amp. Class A ... Tri.	281	250	— 31	32	.....	1,000	2
		202	180	— 22.5	20	.....	1,250	1
		180	160	— 20	17	.....	1,250	1
		275	250	— 25	32	5.5	750	2
	Amp. Class A ... Pent.	198	180	— 18	20	3.0	750	1
		148	135	— 13.5	14	2.2	850	1
		110	100	— 10	9.5	1.6	1,000	1
99	Amp..... Biased Det.....	94	90	— 4.5	2.5	.....	2,000	1
		100	90	— 10.5	0.2	.....	50,000	1
841	Amp.....	1,000	(250,000)	— 9	2.2	.....	4,000	1
		425	(250,000)	— 6	0.7	.....	8,000	1
842	Pwr. Amp.....	525	425	— 100	28	.....	3,500	5
		422	350	— 72	34	.....	2,000	5
864	Amp.....	144	135	— 9	3.5	.....	2,500	1
		94	90	— 4.5	2.9	.....	1,500	1
	Biased Det.....	150	135	— 15	0.2	.....	75,000	1
		100	90	— 10.5	0.2	.....	50,000	1

terminal of volume control. It is directly beneath the 75 socket. Replace with .05.

PIERCE - ARROW. The factory has made a change in lead-in placement . . . It is now carried down the left-hand door windlace to a point just under the instrument board, the excess being coiled and tucked back of the kick pad.

PHILCO 19, 89. Cutting in and out . . . See if screws holding stator plates are loose. Shifting of dial readings . . . Tighten screws in oscillator condenser stator. Repeat several times.

PHILCO 10. Setting dial correctly without loosening dial shaft screws and re-setting . . . Insert matchstick in hole on back of dial assembly. This disengages teeth of dial wheel so that the condensers may be turned without moving the dial.

RADIOLA 41. Fuses blow when set is turned on . . . Replace rectifier stacks. Intermittent hum . . . Temporarily short plus B to minus with set in operation by touching screwdriver momentarily. Repeat several times.

RADIOLA 7, GRAYBAR 8. Low voltage at all sockets . . . Look for shorted 100,000 ohm (white and brown) resistor beneath terminal strip or for shorted by-pass across output transformer secondary, easily found by tracing two leads from condenser can (black and red). Replace, if shorted, with 0.5, 450 volt unit.

RADIOLA 62. Blown fuses . . . Usually caused by shorting of 4 mike condenser across output of disc rectifier in the field supply unit. Test for possible damage to rectifying unit. Speaker field output voltage should be approximately 105.

RCA M34. Poor tone, low speaker output . . . Try removing trimmer adjustment opening plate on bottom of case to relieve back-pressure, if necessary drill row of 6 or 8 half-inch holes in center of top of case. Poor sensitivity, a.v.c. and noise-suppressing action . . . See that 375 mmfd. condenser bypassing hot heater prong to chassis in power converter is connected directly from hot heater prong of first r.f. 78. Next replace 270 ohm, 6A7 first detector and oscillator cathode resistor with an 80 ohm, ½ watt unit, also replace 400,000 ohm resistor in series with arm of volume control with 300,000 ohm, ½ watt unit. If desired, a still greater improvement in pep can be made by replacing the 89 output pentode with a 41. To do this change the small 6-pin socket to a medium 6-pin type and replace the 1,000 ohm cathode resistor with a 500 ohm, 2 watt unit, or with a 480 ohm unit if one is available. It is also possible to replace the original input transformer, which has a 1 to 1 ratio, with a 1 to 2. RCA's interstage transformer No. 6732 is excellent.

RCA M34, GE M40. Set plays at half-volume and volume control is inoperative . . . Look for open i.f. coil winding. Sometimes wire appears to be soldered when only insulation is stuck to lug.

RCA M34. Irregular and muffled reception . . . See if particles worn from vibrator points have fused into bakelite insulating strip against which points rest and if so clean strip thoroughly with file.

SILVER 30B. Crackling noise while tuning . . . See if pilot light socket shorts intermittently to chassis.

SPARTON 931. Intermittent reception, hum, fading, low volume . . . Usually traceable to defective .6 ohm balancing control located between 182B power tubes. Develops higher resistance (6 or 7 ohms). This cuts filament current. Replace or leave out.

Next Month—

More circuit diagrams of "1934 Ignition Systems." Don't miss them. With those published in June they constitute a complete set.

New Things Of Special Interest To Servicemen

Core Solder

Marketed on spools, wound and packed in display boxes for selling at retail, the new core solders of the Berry Solder Co., Inc., 19 Rector St., New York City, are known as "Leek-Pru" solders and are offered in both acid and rosin core.

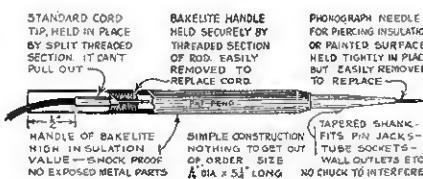
The chief advantage of these core solders is that the flux is in the core and this flux, the company states, contains no liquid, paste or other form of binder and thus does not sputter or form vapor when heat is applied.—*Radio Retailing*, July, 1934.



Johnson 5-Meter Antenna

A high-efficiency antenna for 5-meter transmission and reception has been announced by the E. F. Johnson Co., Waseca, Minn. The efficiency of the unit is said to be approximately 3 decibels above that of a simple current-fed antenna due to accurate impedance matching secured through a properly designed quarter-wave line section which also serves as a support.

This antenna is designed for convenient installation either at a fixed station or under a variety of conditions encountered in portable work. It can be quickly set up and dismantled and weighs 1½ lb. net. Two models are available with either low-loss glazed porcelain or Mycalex insulation, listing at \$6.50 and \$9.50, respectively.—*Radio Retailing*, July, 1934.



Test Prod

The "Ideal Test Prod" manufactured by the Maywood Radio-Electric Mfg. Co., 3533 East Slauson Ave., Maywood, Calif., permits the use of tinsel cord without soldering, the standard cord tip being held securely by the split threaded section as shown in the cut. The phonograph needle is secured in such a way that it does not defeat some other use of the prod as does a chuck. The needle is sweated in with solder so that a new one can be substituted in a few seconds.

Furnished with or without 5-ft. cord and with either spade clips or phone tips. The price complete with cords, \$1.50 per pair; without cords, \$1.25 per pair.—*Radio Retailing*, July, 1934.

enough for use in practically all radio circuits and have 1½ in. tinned wire leads instead of mounting lugs, as have the Candohms supplied set manufacturers as standard equipment.

The 1 watt type is 1 in. long and made in a range of values from 100 ohms to 25,000 ohms. The 2½ watt type runs from 30,000 to 50,000 ohms. The 10 watt type is 1½ in. long and is made in from 5 to 25,000 ohms.—*Radio Retailing*, July, 1934.



Belden All Wave Aerial Kit and Resistance Cord

A new aerial kit, especially arranged for use with all wave receivers is announced by the Belden Mfg. Co., 4639 W. Van Buren St., Chicago. This kit includes two 50 ft. coils of 7x20 Beldeneamel aerial wire, 75 ft. of specially twisted, duplex weather-proofed lead-in wire, 2 lightning arrestors, 2 lead-in strips and other necessary material. The twisted lead-in wire may be purchased separately in 100 and 500 ft. coils.

A radio power supply cord which incorporates a line cord with a voltage drop resistor is also announced. Made with three resistances for all a.c. or d.c. radios using this kind of power supply.—*Radio Retailing*, July, 1934.

Candohm Replacement Resistors

The Muter Co., 1255 S. Michigan Ave., Chicago, makers of Candohm wire wound resistors for set manufacturers, announces a new line of units designed especially for the serviceman. These units are small

By the Trade — For the Trade (Continued from page 19)

and in other ways previously cited. Inasmuch as broadcasting provides the life blood of the radio industry, it is but logical that this publicity medium will be used to the utmost. The entire scheme will utilize the air channels of communication constantly. All other publicity will direct attention to new and interesting programs. Conversely, the newspaper and magazine advertisements will call attention to broadcasting features.

Ways are now being studied to bring to the American listener, over domestic stations, some of the more outstanding foreign programs. Announcements, accompanying such broadcasts, will call attention to the short-wave feature of modern sets as a means of further enjoying European and South American stations.

How It Will Be Financed

Naturally, the success of such an ambitious undertaking will hinge largely on the amount of money available to make the wheels go 'round. This angle of the plan has been given first consideration. It is proposed to levy a very modest assessment on each set sold. This tax will be distributed equitably on the manufacturer, distributor and dealer; the first-named party to assume the collection and bookkeeping duties.

Quoting a member of the committee: "It will come as a pleasant surprise when it is realized that this cost, per set, will be a matter of nickels or dimes only—

postage stamp money. Yet the aggregate, plus other sources of revenue, should run close to a million dollars annually."

Get Behind It

These, in brief, are the developments of this plan for a united industry series of sales measures which long have been needed and which bid fair to be on their way to a successful conclusion. *Radio Retailing*, in its last issue, outlined the fundamentals of such action and has frequently advocated that measures of this nature be taken. It will continue to lend every editorial support to this project. Too much credit cannot be given to the Radio Wholesalers Association for its initiative and persistence in formulating the groundwork of the "Five Point Plan" and in "selling" it to the other branches of the radio industry.

As usual, this magazine will keep its readers well informed with respect to the monthly progress of the Plan and the actions of its committees and the Bureau.

But much will depend upon the cooperation and personal efforts of every individual dealer, jobber and manufacturer in the industry. We urge that every radio man in the country give this plan a sympathetic, open-minded reception. Get behind it! It is the best proposition to help you make money in radio and to reestablish radio in the public mind on the plane of importance it merits, yet devised.

SOON!

big news from Sparton!

A New and Sensational Radio Line with Important Developments in Styling and Engineering

Radio buyers want more distance, more scope, greater program variety. Sparton gives it to them.

Radio dealers want new styling, improved engineering—faster moving, more profitable merchandise. Sparton gives it to them.

Just a hint! There will be three new types—two combining regular broadcast band with short wave reception, giving sensational all-wave reception in all price classes.

Smaller models of the broadcast band and short wave sets will reach down from 55 meters to 19 meters, which spans fully 700 more channels than last year's models, except all-wave sets. Larger models encompass the entire American, foreign, amateur, aircraft and police broadcast fields.

All-wave models will span wave lengths down to approximately 15 meters.

Think of the advantages these new sets will give you! They will be made in both table and console models; will be attractive; will sell. You can get the business that's available with them. Find out all about them. Don't wait. Mail the coupon below for information.

SPARTON

THE SPARKS-WITHINGTON CO.

(Established 1900)

Jackson, Michigan

U. S. A.

SPARTON OF CANADA, LIMITED

London, Ontario

MAIL THIS COUPON TODAY

THE SPARKS-WITHINGTON COMPANY,
JACKSON, MICHIGAN, U. S. A.

Send me information about the coming new line
of Sparton Radios.

Name _____

Address _____

City _____ State _____

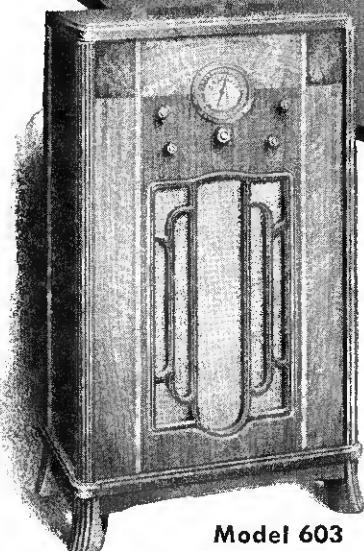
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COLONIAL

presents..

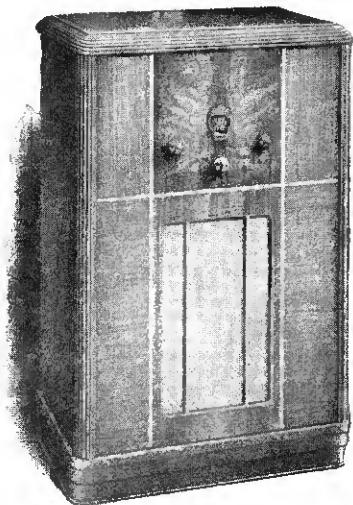


A DISTINGUISHED
NEW LINE FOR 1935



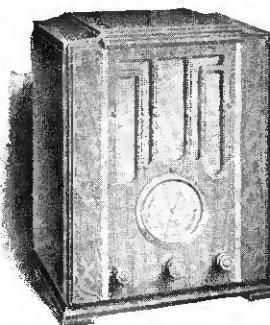
Model 603

Six-tube AC superheterodyne American and Foreign. Full vision illuminated aeroplane dial. 8-inch dynamic speaker.



Model 600-A

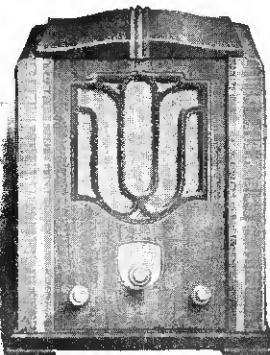
Six-tube superheterodyne broadcast and intermediate short wave. 2500 to 540 kilocycles. Illuminated dial. 8-inch dynamic speaker.



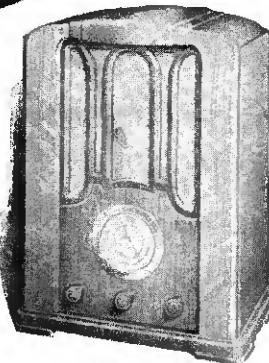
Model 652

Five-tube superheterodyne American and Foreign. Full vision illuminated aeroplane dial. 6-inch dynamic speaker.

Battery Model 659
American and Foreign
Same cabinet as Model 652. Six tubes.

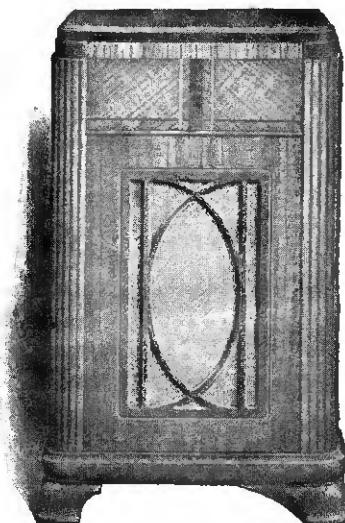


Model 653
Five-tube AC superheterodyne, 1750 to 540 kilocycles, 6-inch dynamic speaker.



Model 656

Six-tube AC superheterodyne ALL-WAVE—3-band. Full vision illuminated aeroplane dial. 6-inch dynamic speaker.



Model 605

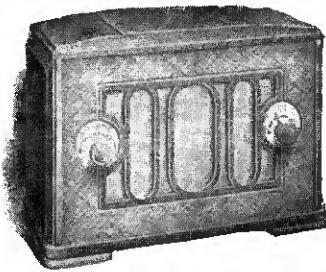
Six-tube superheterodyne ALL-WAVE—3-band. Sloping panel concealed by swinging door. Full vision illuminated aeroplane dial. 8-inch dynamic speaker.

Plus a Complete Line of
COLONIAL AUTO RADIO
Particulars on Request

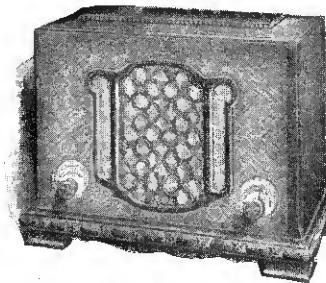
COLONIAL RADIO CORPORATION, BUFFALO, N. Y.

AMERICAN AND FOREIGN RECEPTION

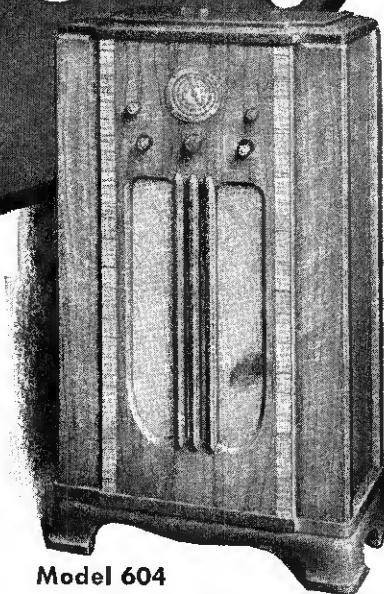
No Additional Cost!

**Model 655**

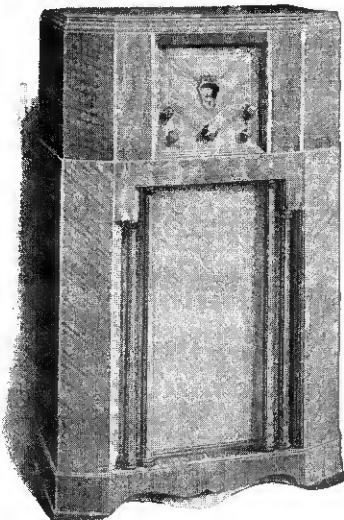
Six-tube AC superheterodyne American and Foreign. Illuminated dials. Dynamic speaker.

**Model 658**

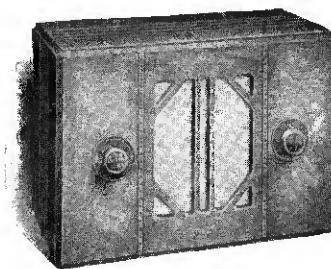
Six-tube AC superheterodyne American and Foreign. Illuminated full vision dials. 6-inch dynamic speaker.

**Model 604**

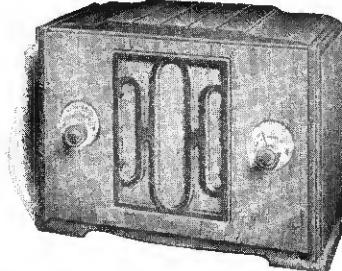
Eight-tube superheterodyne ALL-WAVE—4-band. Full vision illuminated acroplane dial. 8-inch dynamic speaker.

**Model 601**

Ten-tube superheterodyne Broadcast and Intermediate short wave to 70 meters. Illuminated dial. 12-inch dynamic speaker.

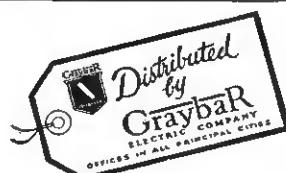
**Model 654**

Five-tube AC-DC superheterodyne Broadcast only. Operates on kilocycle range of 1750 to 540.

**Model 657**

Five-tube AC-DC superheterodyne American and Foreign. Illuminated dials. Dynamic speaker.

Model 651
Five-tube AC—same general construction as Model 657.



Write or Wire for Prices and Discounts

A complete Colonial broadside, giving all essential dealer information, is now available. Write or wire your nearest Graybar Branch for prices and discounts, or address Headquarters: GRAYBAR ELECTRIC COMPANY, Inc., 420 Lexington Avenue, New York, N. Y.

COLONIAL RADIO CORPORATION, BUFFALO, N. Y.

BURGESS offers*

You More REPEAT Sales

**Thousands of Owners
of Battery Operated Sets
Now Have Money. They're
Saying ...**

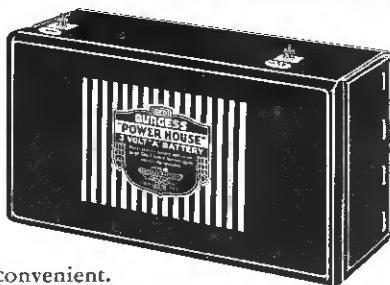
**"Sure we'll
spend it - but
we want our
Money's Worth"**



★ Sell the BURGESS Power House

Retailing at only \$3.20, the BURGESS Power House provides owners of 2-volt battery operated sets with dependable, economical "A" power. Sales features are: 100% Dry. No water or acids to worry about. Ready for instant use. Compact, convenient.

Weighs only 14 pounds. Provides 400 hours or more of "A" power at less than 1¢ an hour! Easy to sell. Easy to use. Your customers get their "money's worth" and more.



★ the BURGESS Super "B"

The finest "B" Batteries made. Famous for their greater capacity and longer life, BURGESS Radio Batteries have been taken to the North and South Poles, down the Amazon, through interior Africa. Their dependability is known the world over! Satisfied users come back to you for more.



★ BURGESS Flashlight Batteries

BURGESS UNI-CELS are packed in handsome, "self-service" counter display-vendors which speed up flashlight battery turnover. One piece, seamless zinc cans, plus CHROME electrolyte give BURGESS UNI-CELS longer life and assure dependable service. You will find flashlight owners like to trade at stores that sell black and white striped UNI-CELS.



★ A BURGESS Battery for Every Purpose and Every Purse

BURGESS offers you a battery for every purpose, to meet every competition. Standardize on BURGESS Radio, Flashlight and Ignition Batteries and enjoy more repeat sales and profit from customers who come back to you because they get their money's worth.

BURGESS BATTERY COMPANY, FREEPORT, ILLINOIS

ARKAY Radio

Manufacturers of
MIDGETS, AUTOMOBILE, CONSOLE
AND SPECIAL RADIOS

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R. K. RADIO LABORATORIES, INC.

6312 Northwest Highway

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Chicago, Ill., U. S. A.

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The Fit Still Survive

Did you ever compare the classified section of the 'phone book with the directory of the year before? It's an interesting if somewhat disheartening pastime. You find every year that some merchants have fallen by the wayside. The causes are usually bad management and poor merchandise.

Fortunately each trade has antidotes for business disaster and failure. Not the least of these antidotes are the business magazines of each trade. The editorial pages tell a merchant how to manage his business profitably—the advertising pages help a man buy good merchandise.

Try *Radio Retailing* as a prescription. Use its pages as a cure for failure, as a stimulant to business survival.

Radio Retailing

ENGINEERING BRAINS DON'T MAKE SUCCESS

Success in the radio products business calls for more than production ability. Success means sales. And securing sales, as anyone knows, is a question first of reaching your prospects. Who are your buyers? Are they retailers—radio dealers, department stores, furniture stores? Or do they sell auto-radio? Or do you sell chiefly through the radio serviceman?

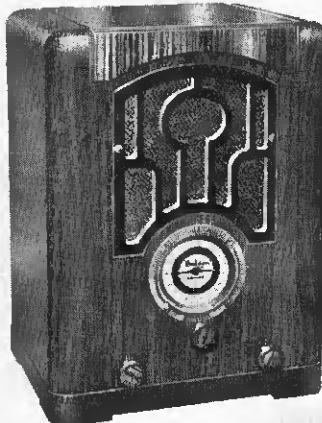
No matter which of these groups sells your product, remember that the men in it read **RADIO RETAILING**. This magazine has helped bring success to manufacturers you know. It can give you the same help. Write to

RADIO RETAILING

330 West 42nd Street

New York, N. Y.

**Step-Up your profits with the HALSON
Step-Up LINE**



69.50

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**1935
Advanced
All-Wave Sets
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**Jobber & Dealer Helps
Long Profit Fast Selling Line**

LICENSED UNDER R.C.A., HAZELTINE & LATOUR PATENTS
CABLE ADDRESS: HALSONRADIO

HALSON RADIO MANUFACTURING CO.

120 EAST 16TH ST., N.Y. CITY
WRITE OR WIRE FOR DETAILS—JOBBERS. SOME TERRITORIES STILL OPEN

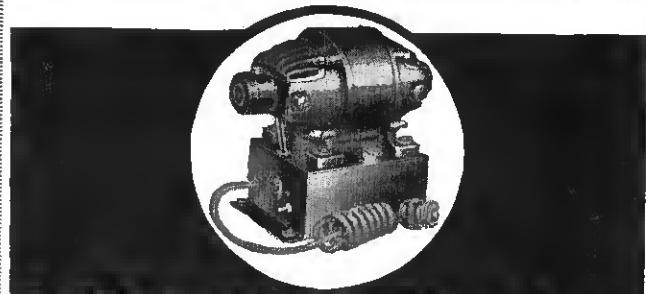
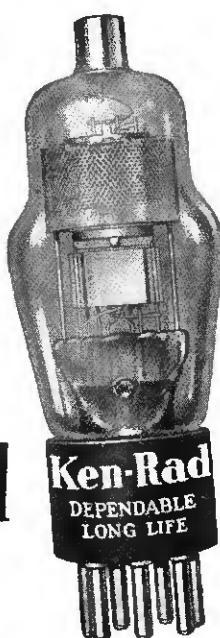
Profitable Business

A QUALITY product plus a merchandising plan that brings in customers means profit for the dealer. This is the basis on which Ken-Rad operates.

Ken-Rad Radio Tubes, noted for their dependability and long life, are in demand. Write for our free booklet, "Facts about Ken-Rad."

Ken-Rad
Radio Tubes
DEPENDABLE LONG LIFE

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



JANETTE ROTARY CONVERTERS

For Farms—Ships
—City Apartments
—Automobiles

Wherever the current supply is D.C. use JANETTE Rotary Converters to operate your AC receivers.

JANETTE Converters are filtered to give radio results as good as, or better than, those obtained with central station AC. Built to outlast the radio set.

Available in 15 sizes. Capacities from 20 to 2500 watts. Input voltages of 6, 12, 32, 115 or 230 volts. Standard machines deliver 110 volts, 60 cycles AC.

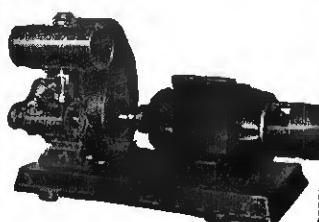
MAIL COUPON FOR DETAILS

JANETTE MFG. CO.
555 W. Monroe St.
Chicago, Ill.

Gentlemen: Please send prices and details on your:

- Rotary Converters.
- Auto-B-Power (B-eliminator for auto-radio).
- Gas Engine Generators.

Name
Address
City State



PROOF

WE think Radio Retailing is good and point with pardonable pride to the hundreds of glowing testimonials received from enthusiastic readers each month. They prove that radio men everywhere like the clean-cut, ready-to-use ideas brought to them in Radio Retailing.

Radio Retailing offers you practical, business-getting help each month. Ideas that will increase your radio sales and simplify service problems for an investment of only \$1 a year.

*Read what a few subscribers say about Radio Retailing
—then join them by sending in the coupon below.*

"Radio Retailing has been an indispensable aid in helping me set up a business of my own and to keep it running properly. Your 'Service and Installation Section' is especially interesting, making it one of the best radio magazines published."

COMET RADIO SERVICE,
Arlington, Mass.

"In your June issue on 1934 ignition systems, you are really going to town. It is by far the best dope you have put out. It is worth the three year price alone."

TRI STATE BROADCASTING SYSTEM
Shreveport, La.

". . . I find the price of a year's subscription is more than repaid in just one issue. It certainly is a great magazine for the dealer and service man. Of course I subscribe to several other radio magazines, but if I had the choice of only one it would be Radio Retailing."

ROGER H. HERTEL
Clay Center, Nebr.

"I am very much pleased with Radio Retailing and the excellent material contained therein. I have tried several of your sales plans, all of which proved successful."

WALTER FRICKES
Shippensburg, Pa.

"Permit us to commend you upon your excellent Service Section. It is our opinion that this part of your magazine offers more real information of value to the service man than any other magazine dealing exclusively with service problems."

GUILFORD RADIO SERVICE CO.
High Point, N. C.

"I would not miss a copy of Radio Retailing for twice the price of a year's subscription."

GEORGE R. SMITH
Linn Creek, Mo.

"Keep up the good work on 'Tricks of the Trade'. That section has saved me many an hour of pondering and studying on one particular trouble."

RADIO SERVICE CO.
Huron, S. D.

"Your magazine has been many times a help to me not only in the radio business but in other selling. It keeps me up to date and left no old models on my hands. I enjoy reading it."

FRANCIS A. MOONEY
Woodstock, Vt.

Special Subscription Prices

The price of Radio Retailing in the U. S. and Poss. is \$1 a year CASH WITH ORDER ONLY. In Canada: \$1.50 a year (including tax, payable in Can. or U. S. funds). In all other countries: \$3 a year. Payment must accompany all orders.

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

*This offer saves you half, .
as regular rate is \$2 a year.*

Attached is \$1. Enter my subscription to *Radio Retailing* for one year (12 issues) at the special *half-price* rate. Start with August number.

Firm Name Indiv. Name

Street City State

Nature of Business.....

Offer void after Sept. 1, 1934

**PAYMENT MUST
ACCOMPANY THIS COUPON.**

SEARCHLIGHT SECTION

EMPLOYMENT and BUSINESS OPPORTUNITIES—SURPLUS STOCKS—DISCONTINUED MODELS

UNDISPLAYED—RATE PER WORD:
Positions Wanted (full or part-time salaried employment only), 10 cents a word, minimum \$2.00 an insertion, payable in advance.
(See II on Box Numbers.)

Positions Vacant and all other classifications, 15 cents a word, minimum charge \$3.00.
Proposals, 40 cents a line an insertion.

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

DISPLAYED—RATE PER INCH:
1 inch \$7.50
2 to 3 inches 7.25 an inch
4 to 7 inches 7.00 an inch
Rates for larger spaces, or yearly rates, on request.
An advertising inch is measured vertically on one column, 3 columns—30 inches—to a page.

Radio Retailing

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Factory Management and
Maintenance
Food Industries
Metal and Mineral Markets
Power
Product Engineering
Radio Retailing
Textile World
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or all of these publications,
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Departmental Advertising Staff
McGraw-Hill Publications
330 W. 42d St., New York City

SPECIAL NOTICE:

To the Radio Industry

Advertising in connection with legitimate offers of surplus stocks and discontinued models of radio merchandise is acceptable in this section of "Radio Retailing."

Extreme care will be exercised by the publishers to prevent the use of advertising in the Searchlight Section to encourage price cutting on current models of merchandise or equipment. Nor will advertising which invites violation of the dealer's contract with the manufacturer be acceptable.

All merchandise offered in the Searchlight Section must be accurately and fully described and must be available on order.

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

PAYS FOR ITSELF

A CHUCKLER more than pays for itself on the very first job! The REPAIR-PRICER feature, of this compiled cross-indexed radio trouble-chart, is based on a \$1.50 hourly labor charge plus list-priced replacement parts. You may believe you do not need a Chuckler to isolate quickly the specific faults causing specific radio complaints; but, you MUST have a Chuckler to know accurately WHAT TO CHARGE. Do this: On your next service call show the set owner the really profitable price Chuckler publishes for the necessary repair. You will be surprised at the ease with which you get that job, and gratified with the professional fee you secure. A Chuckler inspires confidence! Eliminate guess-work in WHAT IS WRONG and WHAT TO CHARGE. Send \$1.00 NOW for yours, postpaid.

FREED'S RADIO CO. (Dept. E)
5053 Baltimore Ave. Philadelphia, Pa.

THE TECHNICAL MAN SELLS HIS SERVICES

BY EDWARD HURST

New 230-page book describes successful analytical methods of job-getting. Written by manufacturing executive after 18 years' avocation helping technical students to get jobs. Demonstrates methods with actual case records covering wide variety of engineering occupations. Send \$2.00; 10 days' examination.

Money refunded if not satisfied

McGRAW-HILL BOOK CO., INC.
330 W. 42d St., New York City

AGENTS SELLING TO REPLACEMENT PARTS JOBBERS

A few territories open on our high-grade line of Condensers (paper and electrolytic) and Resistors (carbonized and wire-wound).

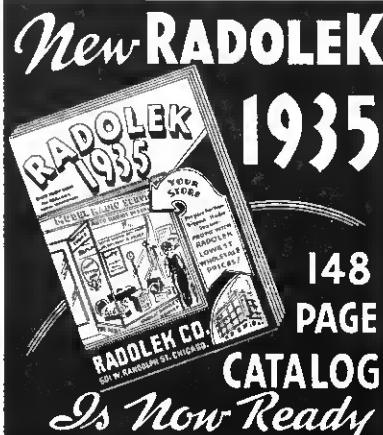
Write for proposition.
MORRILL & MORRILL,
30 Church St., New York, N. Y.

DEALERS and SERVICE MEN
Genuine Grebe factory made parts in stock for all model Grebe receivers manufactured prior to 1933. Power Transformers for sets using from 4 to 12 tubes. Also audio transformers and filter chokes. Write for descriptive data and parts price list.

GREBE RADIO SALES & SERVICE CO.
137-28 Jamaica Ave., Jamaica, N. Y.
Owner former Gen. Fact. Mgr. of
A. H. Grebe & Co., Inc.

FREE 1934 WHOLESALE RADIO CATALOG

Radio Replacement Parts, Sets, Tubes and Electrical Appliances at great savings.
WHOLESALE MERCHANTISERS, Inc.
624 Broadway, - - New York City



- Listing Over 6000 Parts, Testing Instruments, Tools, Amplifiers, Sets and Tubes.
- Over 200 Diagrams! A Complete Volume Control Guide. A New Modern Tube Index With Bias Resistor Values. Transformer Replacement Data.
- Many New Devices! Exclusive Radolek Inventions in Kit and Complete Form.
- Power Amplifiers! Assembled or in Kit Form with all accessories.
- Lowest Prices! High Quality at the Lowest Prices You Have Ever Seen for First-Class Merchandise.
- If You've Changed Your Address Since Receiving Our 1933 Catalog, or if you have not received a catalog from Radolek recently—send us your business card or letterhead immediately! Our Catalog is Strictly Wholesale for Members of the Trade Only.

The RADOLEK Co.
Dept. R.R., 601 West Randolph St.
Chicago, Illinois.

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PIONEERS IN SHORT WAVE RADIO

PILOT
ALL-WAVE

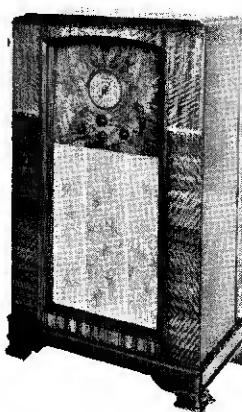
**PILOT
RADIO**

**WORLD-WIDE
RADIO**

You are selling the best known all-wave radio in the world—when you sell PILOT! PILOT all-wave receivers were used by licensed amateurs in every country long before international broadcasting became known to the public. PILOT all-wave performance has become a world-wide standard of excellence in radio reception.

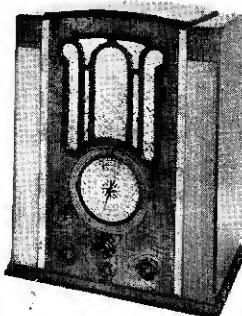
PILOT "63"

Ultra modern 6-tube All-Wave Superheterodyne 16-550 Meters (18,800 to 545KC) with RF pre-amplification increasing sensitivity and selectivity. Two-speed compass dial, 10:1 ratio for fast tuning 80:1 ratio for micrometer Short Wave tuning, illuminated triple scale shows meters and KC's simultaneously on All-Wave bands. AVC. Diode detection, Class "A" power pentode output stage. Phonograph jack. Tone control for reducing treble tones. Eight-inch full-range electro-dynamic speaker.



PILOT "C63" CONSOLE

A magnificent semi-moderne console in richly lustrous, grained, genuine tropical woods containing the same splendid six-tube Superheterodyne chassis as Pilot No. 63. Harmonizing with either period or modern furniture this new Pilot Console is a "sight-seller." Advantage has been taken of the generous baffle area afforded by this glorious cabinet to use a full range 10" electro-dynamic speaker. For other specifications read description of No. 63



PILOT "53"

Ultra-Modern 5-Tube All-Wave Superheterodyne 16-550 Meters (18,800-545KC) Advanced pre-selector circuit coupled to heterodyne stage increases channel selectivity.

Selective ratio (10:1 or 80:1) illuminated vernier dial, permits fast tuning on national broadcasting and micrometer tuning on international, police or airplane bands. AVC, Diode detector, Class "A" power pentode output stage — phonograph jack — tone control for reducing treble tones and static. Semi-moderne acoustically designed cabinet. Constructed of beautiful veneers and containing full range, six-inch electro-dynamic speaker.

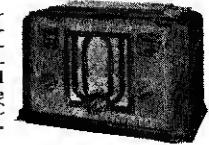


PILOT "DRAGON"

8-Tube All-Wave Superheterodyne 14 to 550 meters on one tuning dial. One tuning control. Automatic inter-channel noise suppressor-noise level control — AVC — tone-control — acoustic type cabinet — nine coil circuit — sealed catacomb construction — forty-six point wave-band selector switch — 125 pure silver switch contacts — spot-light tuning indicator — phonograph jack — headphone jack for around the world logging. Also made for DC.

PILOT "93"

15-Tube Superheterodyne (18-52 and 180-550 meters). Operates on AC or DC current. Illuminated vernier dial — single tuning control — AVC — walnut-finished in-aid cabinet.



PILOT performance enables you to make world wide short-wave reception demonstrations that stimulate sales!
(Ask your jobber about the new PILOT line)

PILOT RADIO CORPORATION

37-06—36th Street, Long Island City, New York
(Cable Address PIOTRADIO New York).

An amazing new **CROSLEY INVENTION**



As easy to get under the Crosley Canopy as to get into an ordinary bed — and what a difference!

THE COOLREST (Patents Pending)

Only \$150⁰⁰
DELIVERED

Western Price Slightly Higher

Electrically air conditioned compartment fits over bed to bring comfortable, healthful sleep on nights as hot as the steaming jungle. A New Market—Ready, Wide Open—including Homes, Hotels, Hospitals . . . wherever there are people who need or like refreshing sleep on hot, sticky nights.

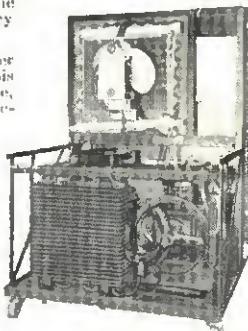
Now nearly everybody can afford to sleep in cool, air conditioned comfort on hot, sticky nights. The Crosley Coolrest air conditions only the bed compartment and this at a cost of but a few cents for each hot night. The original cost is only a small fraction of that of an air conditioning unit for the entire room that can give no more comfort if as much. In the Coolrest, Crosley has placed what was once the rare luxury of the rich within the means of the masses . . . giving you a mass market and a mass profit.

In most of the states summer nights are HOT and muggy. Average people cannot afford to escape to the North Woods. Electrical air conditioning for the bed-room is far beyond their reach. So they toss and turn, swimming in perspiration.

In the Coolrest, Crosley gives you the answer to the question: "Is there no escape from this awful heat?" This inexpensive, attractive, quiet, and amazingly efficient device electrically air conditions the sleeping compartment over the bed. It not only cools, but also removes excess moisture from the atmosphere, re-circulating and purifying the air so that it is actually as cool, fresh, and pure as that of the North Woods.

For Hotels and Hospitals

Few hotels have air conditioned rooms. Hotels will buy the Crosley Coolrest for renting to guests who want comfort on hot nights. The hotels might charge, say, a dollar extra each day the Coolrest is used. In a season it will largely pay for itself. And what an advertising advantage for the hotel—and you!



The unit is as quiet as a small electric fan . . . It is famous for trouble-free performance.

"Air conditioned sleeping compartments by means of the Crosley Coolrest Air Conditioned Bed Canopy!"

And hospitals—doctors agree that physical comfort has a lot to do with recovery. Every hospital ought to have a number of Coolrests for patients who need them in hot weather. This is a market easily sold—for here the Coolrest will be a self-paying proposition.

Package Sale—No Installation Problem

Any householder can put up the Crosley Coolrest in a few minutes. The air conditioning unit is housed in a handsome cabinet of rare woods and the canopy is suspended from fixtures attached to the cabinet. When making the bed, the whole unit is simply rolled away and then pushed back to the bed.

Easily Demonstrated

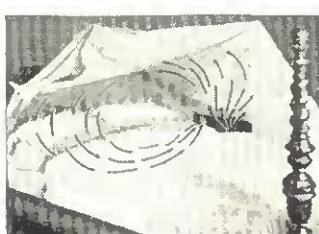
Display a Crosley Coolrest on your floor or in your window. Have it set up and working. Invite your customer to go inside and lie down for a few moments and to note the refreshing coolness and purity of the air. Demonstrate how it may be controlled while lying down; how canopy may be pushed away and pulled back as easily as one throws a blanket aside or pulls it up. Then sell it as a package, as you would a Crosley Radio or Sheldvad Electric Refrigerator. This is a rare opportunity for you to get in on a ground floor proposition. See your Crosley distributor.



Should the Crosley Coolrest not be needed you can fling back the canopy as easily as throwing a blanket aside.



The Coolrest Air Conditioned Bed Canopy does not interfere with making bed. Just flip the canopy back and push the entire unit away.



Cool, purified, and dehydrated air enters gently and quickly, circulates throughout the bed compartment, and is withdrawn through rectangular opening at left.

The Crosley Radio Corporation - Cincinnati

(Pioneer Manufacturers of Radio Receiving Sets)

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

POWEL CROSLEY, Jr., President

CINCINNATI

"Tell me about the features when I come in to buy!"

FEATUR^ES! Every radio buyer is interested in them. And G-E Radio has them—in abundance.

Point out these features—one by one. Don't slide over them—stress them.

Demonstrate G-E's superior tone—the tone that "won the tone tests."

Call attention to the superb cabinet work . . . the smart styling . . . the fine precision workmanship in each and every part.

Explain, in detail, the many points of engineering perfection—tone equalizers, automatic lo-tone compensator, dual automatic volume control, twin-push amplification, "color radio," noise silencer, vernier tuning.

These, and many others, are the features that make G-E Radios outstanding, respected, preferred . . . the reasons why dealers make more sales and more money when they display and push the General Electric Radio line.

See your nearest G-E Distributor. Or write General Electric Company, Section E-367, Merchandise Department, Bridgeport, Conn.



"Now is the time to buy!"



Brilliant tone, always the outstanding feature of G-E Radio, proved by country-wide Tone Tests. Above, a tone test held on the "Berengaria"



The airplane dial is distinctive. Appealing to prospects because of its visibility and convenience in tuning due to a high-ratio vernier.



For the first time, enjoyable foreign reception on short wave—founded on years of G-E pioneering.

GENERAL ELECTRIC RADIO