

AUTOMOBILE-RADIO NUMBER—APRIL, 1934

RADIO RETAILING

HOME ENTERTAINMENT MERCHANDISING

INCLUDING
SERVICE
AND
INSTALLATION
SECTION

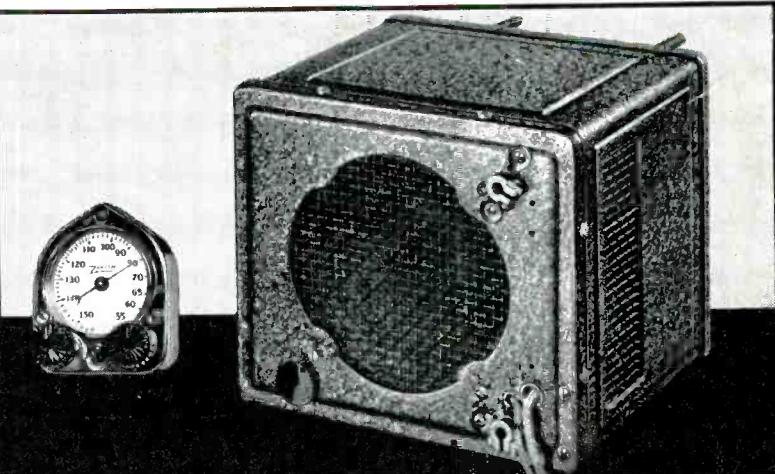
TAKE A **TIP** FROM DETROIT!

It's going **ZENITH!**

6 TUBES

\$49 95
retail/

(slightly higher west of
the Rockies), less instal-
lation, price subject to
change without notice.



The best engineers in the automobile industry have dared Zenith to make good in grueling competitive tests. And nearly every week sees startling new victories. The whole industry is talking about it! Here's the auto-radio franchise that builds good will. Write or wire us for your Zenith distributor's name.

ZENITH *Auto Radio*
THE MONEY FRANCHISE

ZENITH RADIO CORPORATION, 3620 Iron Street, Chicago, Illinois

63

YEARS

Another MILESTONE IN HORTON HISTORY

For considerably more than a year now, the Horton Auto-Safe Wringer has undergone the rigid test of actual use in American homes.

Dealers have had ample experience to appraise its worth—on the sales floor—in the homes of customers—in their records of "service" calls.

The verdict of this testing in the regular course of trade is emphatic endorsement of Auto-Safe as one of the most valuable advances in the whole history of washing machine building!

Valuable to dealers—a striking new feature which affords the most dramatic and convincing demonstration on the sales floor.

Valuable to customers—removing the hazard and fear of wringing by means of automatic safety—providing new efficiency through exclusive four-roll construction.

Again, with the initiative, genius and resources which gave America its first washing machine, Horton has forged ahead in the march of progress.



A GOOD NAME FOR 63 YEARS

RADIO RETAILING, April, 1934, Vol. 19, No. 4. 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.

Printed by The Schweinler Press, N. Y.



Proved

IN SERVICE!

*The FOUR ROLL
Auto-Safe Wringer*

A DRAMATIC sales feature—its appeal based upon amply demonstrated achievement—the Auto-Safe wringer has proved its profit value in the actual experience of Horton dealers. On no other washer is this wringer available—because its exclusive design and 4-roll construction are fully covered by patents pending.

The Auto-Safe Wringer is the outstanding feature among many exclusive values embodied in the complete Horton line of washers and ironers. Why not get the details now of the sales and profit opportunities in the Horton franchise. Ask your wholesaler—or write direct for complete information.

HORTON MANUFACTURING COMPANY
4404 Fry Street • Fort Wayne, Indiana

HORTON

ARVIN

Car Radio Sales Advantages Will Get the Business for You



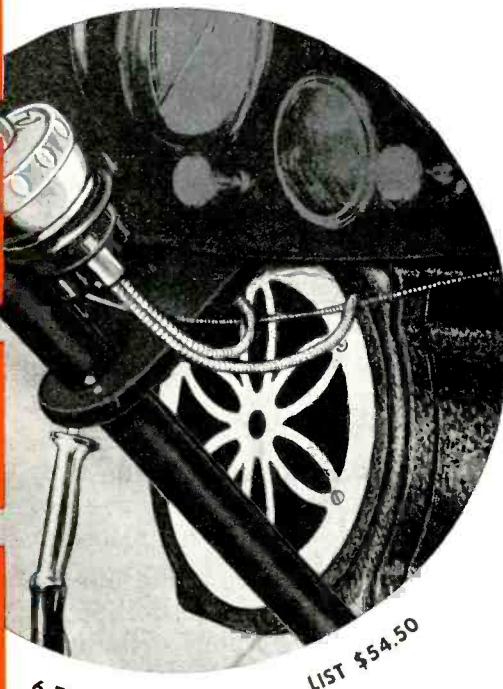
1 PERFORMANCE AND PRICES FOR ALL YOUR CAR RADIO PROSPECTS

2 FOUR FINE SETS BOTH SINGLE and DOUBLE-UNIT MODELS 5 to 9 Tubes

3 POWER, TONE and DEPENDABILITY THAT WILL MAKE SELLING EASIER

4 DISTINCTIVE FEATURES THAT CLOSE SALES and SIMPLIFY SERVICE

5 ALL BACKED BY THE BIG ARVIN ADVERTISING PROGRAM . . .

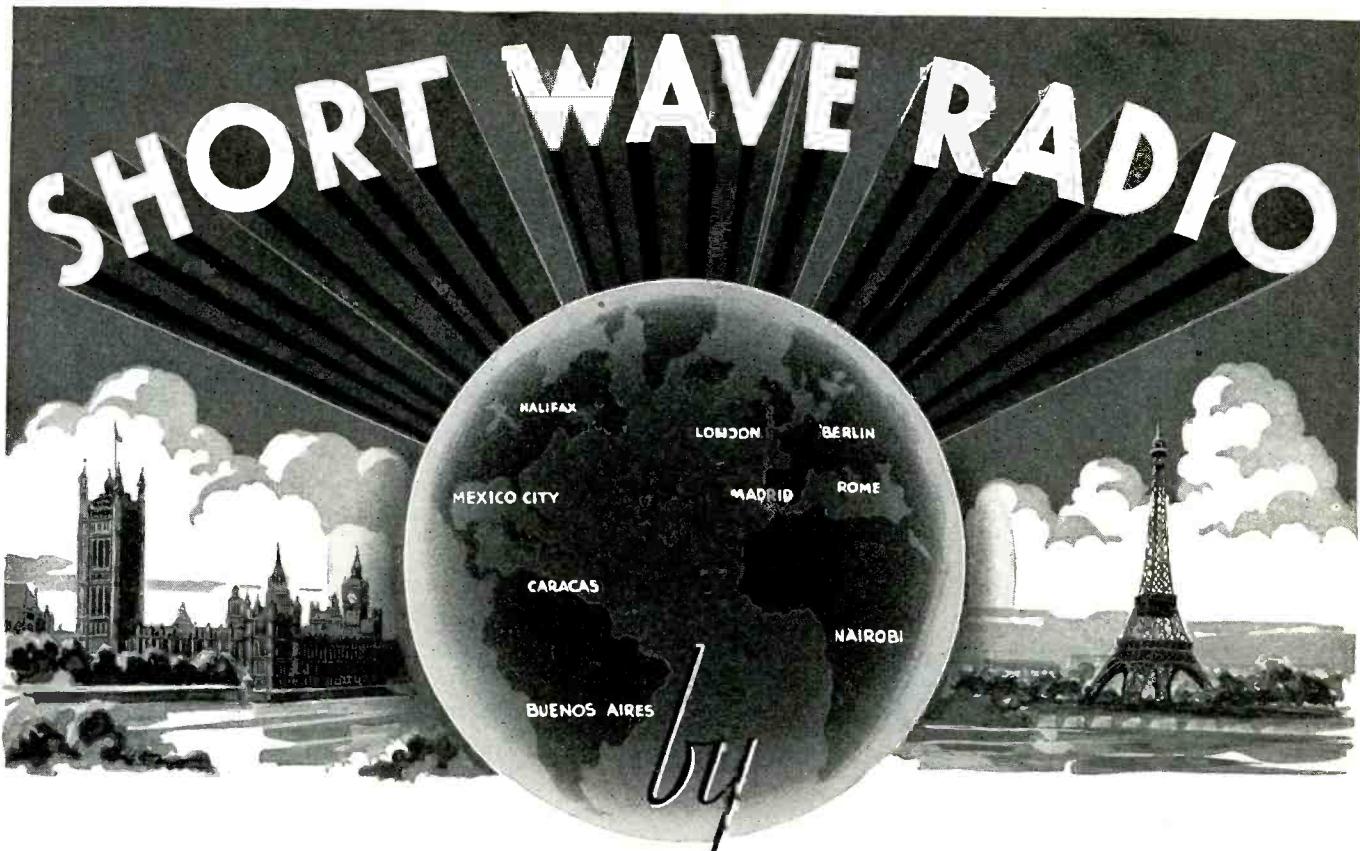


WITH the big Arvin sales building program working with you, you will be in a position to get a lion's share of the car radio business in your community this year. And it is predicted that more car radios will be sold this year than in all the years past . . . Don't wait another day to get full details of the Arvin program from your jobber. He will demonstrate what we mean when we say

the new Arvin Car Radios are super-powered—and you will understand why we say that each of the four new models represents the last word in its price class . . . And even more than that, he will go over with you the big Arvin program of advertis-

ing and merchandising, which includes magazine and newspaper advertising, billboard advertising and everything you need in the way of point-of-sale display material and other selling helps . . . The Arvin program is getting the business. Go to work with it now. Just see your jobber or write us for full information. NOBLITT-SPARKS INDUSTRIES, Inc., Columbus, Indiana.

BY THE MAKERS OF ARVIN HOT WATER CAR HEATERS



STROMBERG-CARLSON

HERE is Stromberg-Carlson's brilliant contribution to short wave reception—a radio of great power, high sensitivity, and world-wide range, that renders both domestic broadcast and short wave programs with the tone and performance always associated with Stromberg-Carlson.

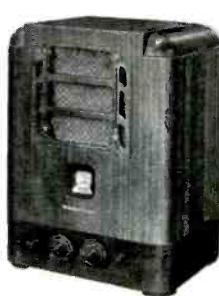
Here is . . . two complete sets of tuning coils . . . 6½ watts push-pull Class A Amplification and a large speaker . . . dual ratio tuning knobs with direct drive . . . effective automatic volume control on both short wave and standard broadcast channels . . . combined tone control and clarifier . . . bass compensation . . . a sturdy chassis, proof against trouble . . . handsome cabinets, good to look at and built to last.

These new sets will bring to your store a host of new prospects who know what Stromberg-Carlson quality means. Write for details of the new Stromberg-Carlson merchandising plan.

Stromberg-Carlson radios are priced from \$75 to \$762.50 (East of Rockies).

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

"There is nothing finer than a Stromberg-Carlson"



No. 60-L Treasure Console (above);
broadcast and short wave channels.
Selectorlite Dial. Price, East of Rockies
\$95.00

No. 60-T Treasure Chest Radio (at left);
broadcast and short wave channels.
Selectorlite Dial. Price, East of Rockies
\$75.00



Stromberg-Carlson

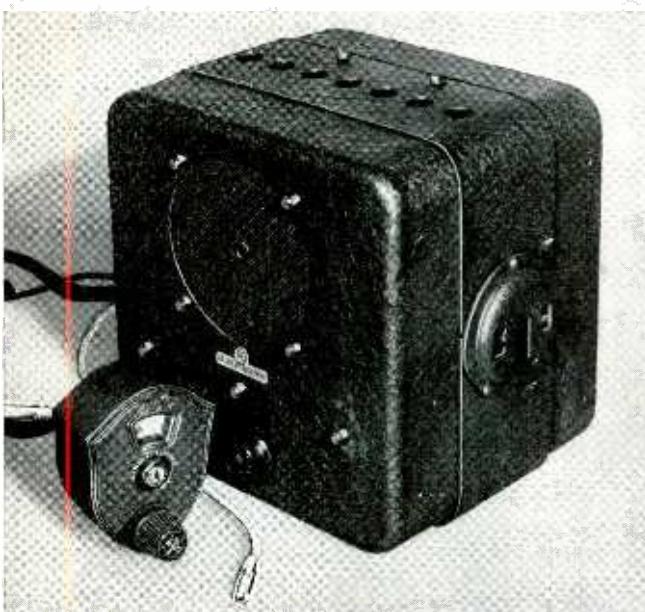
MAKERS OF VOICE TRANSMISSION AND VOICE RECEIPTION APPARATUS FOR MORE THAN FORTY YEARS

1894



1934

Now...two new General Electric Auto Radio models...



MODEL C-41—Four-tube set combining 7-tube performance with low battery drain. Full, brilliant tone even in high registers. Automatic noise suppression that cuts out weak, indistinct signals. Factory-sealed vibrator (guaranteed for 90 days) replaces rectifier tube. Increased output gives ample volume. Broader range—gets more daytime programs. Automatic volume control. Two-point tone control. Illuminated dial. Easily installed—only one mounting stud required. Fits all cars. Furnished complete with suppressors and capacitor. Retails at \$47.50



MODEL B-52—Portable set with all features common to Model C-41. A 5-tube super-heterodyne that operates on car battery or 110-volt A.C. On the road, it may be shifted all around the car—used as an arm rest in either front or back seat where it is removed from the engine noises that tend to cloud reception. Two simple plug-in connections—one for the car and the other for home, hotel or summer cottage. Dimensions: 6½ inches high, 7½ inches wide, 17½ inches deep. Brown stream-line case—crackle finish. Airplane-type illuminated dial. Retails at \$69.50

perfected...road tested...packed with profit

HERE'S the sweetest kind of a setup for the auto radio dealer—

At the opening of an auto radio buying season sure to smash all records, General Electric introduces two new auto radio models of pre-tested excellence:

Model B-52—A *portable* set, which operates either on car battery or 110-volt A.C. A smartly stream-lined set that provides entertainment wherever you go—on the road or indoors. Packed with novel selling features . . . news . . . a leader that excites curiosity—brings 'em in.

Model C-41—The standard set. Priced for the mass market . . . but quality-built to give dependable performance—home reception on boulevard and highway.

These sets are loaded with modern refinements. And you know they're *right* when installed. Because—

They've been *road-tested*—their performance checked against every condition that may be encountered on a cross-country trip or a ride around town.

Customer-satisfaction is assured—beyond question. Installation has been simplified. And the new G-E installation-service plan is a valuable feature of the

"Now is the time to buy."

General Electric dealer franchise.

These two new G-E Auto Radio models are being backed by a dramatic advertising campaign in national magazines and newspapers. Full pages—in color and black-and-white.

For full details, ask your General Electric distributor. Or write the General Electric Company, Section R-364, Merchandise Dept., Bridgeport, Conn.

Prices slightly higher in West, Mid-West and South. Subject to change without notice.



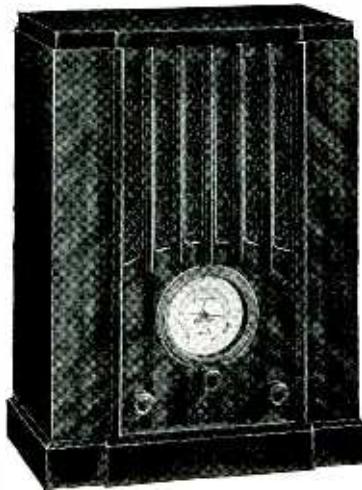
GENERAL  **ELECTRIC**
ROAD-TESTED *Auto Radio*

Concentrate on the line

Emerson



ROUND-THE-WORLD



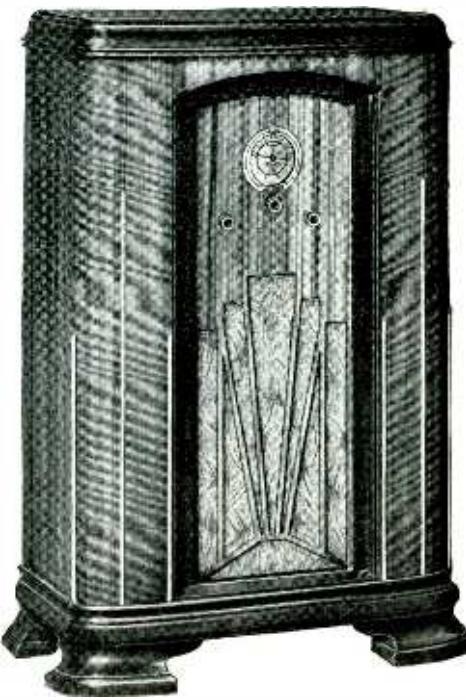
Model 39
List price

\$39.50

A "Round-the-World" model—table upright—for foreign short-wave and regular broadcast—in the price range of single-purpose sets. Clear-vision airplane-type dial. Upper half controls regular broadcast band—1500 to 550 kilocycles. Lower half controls short-wave band of 18.5 to 55 meters. Right-hand knob switches instantly from broadcast to short-wave, and illuminates portion of dial in use. Five-tube reflexed superheterodynes with automatic volume control to counteract fading on short-waves.

Model 59, Console, not illustrated, \$59.50.

ALL-WAVE



Model 770
List price

\$89.50

True ALL-WAVE Range: 15 to 550 meters. Foreign stations, police, plane, ship, amateur calls, and regular broadcast. Seven-tube superheterodyne with 12-inch dynamic speaker and automatic volume control, cabined in a masterpiece of restrained modern styling . . . and sensationally priced!



Emerson

"WORLD'S BIGGEST SELLING

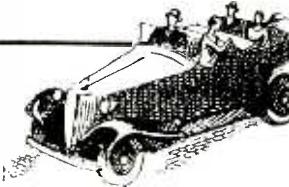
EMERSON RADIO AND PHONOGRAPH CORPORATION

that sells EASIEST . . !

People have money to spend for radios—now! More than at any time in three years. But they're hard-boiled about spending it. You've got to have what they *want*—at the price they *want* to pay—or they go elsewhere. That's why you *need* Emerson. It's the fastest-growing line in radio, because it's the line that *sells* fastest on dealers' floors!

Study the typical Emerson models shown here. There's *true* ALL-WAVE, in a graceful console, to get buying action from prospects you thought were hopeless! There's "Round-the-World" performance in the price range of single-purpose sets. There's Auto-Radio in two sizes to fit every car and convince any doubtful buyer. There's a dozen models of the "World's Biggest Selling Little Radios" to match the taste and needs of every purchaser. And there's more profit for *you* . . . in concentrating your efforts on Emerson—where *results* come easier! Phone your Emerson jobber today, or wire direct.

Emerson



AUTO-RADIO



Model 965, List price \$39.95
Complete with Tubes and Suppressors

Six-tube superheterodyne, dynamic speaker, A. V. C., completely shielded, two-hole mounting, air-plane type remote control on steering column.

Model 667, List price \$59.50
(not illustrated) Complete with Tubes and Suppressors
Seven-tube superheterodyne, with separate unit speaker to allow any installation arrangement car-owner prefers.



Model 375
List price
\$42.50



Model 26
List price
\$26.95



Model 31-AW
List price
\$29.95



Model 415
List price
\$15.95

Exquisite table model with disappearing sliding doors. AC-DC. Six-tube "super."

Long-and-short wave range in an all-round table set for AC current.

AC-DC compact, long-and-short wave range, in striking modern styling.

"World's Biggest Selling Little Radio." AC-DC compact. Completely self-contained.

Radio

LITTLE RADIO™

111 EIGHTH AVENUE, NEW YORK CITY

15 GREAT MODELS
\$15.95 TO \$89.50

Styled to get buying *action* from every class of radio purchaser.

5 Leaders in World-Wide

GLOBE TROTTER MODEL 121

A popular price long and short wave receiver. Six tubes. Full-vision airplane dial, tone control, automatic volume control, 6-inch dynamic speaker. *List price, with RCA \$58.50 Radiotrons . . .*

GLOBE TROTTER MODEL 221

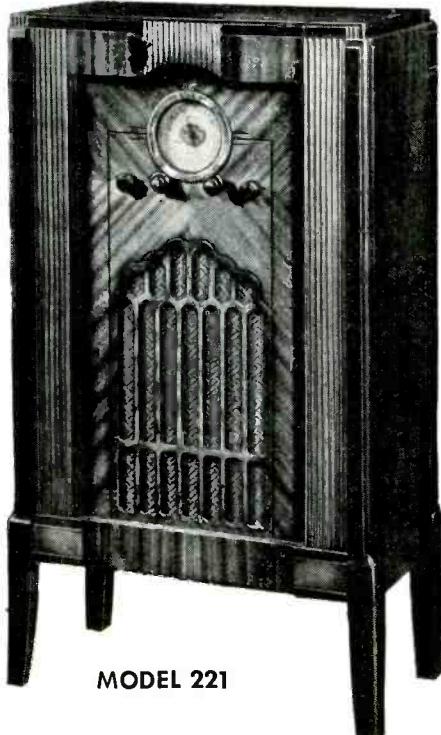
A new, 6-tube long and short wave console. Full-vision airplane dial, all other RCA Victor features. *List price, including RCA Radio- \$79.50 trons, only . . .*

GLOBE TROTTER DUO MODEL 321

An all-electric phonograph (Long Playing or Standard Records); a superb 6-tube long and short wave radio; a handsome cabinet. Excellent sensitivity, record reproduction and outstanding tone-quality. *With RCA \$139.50 Radiotrons, list only*

NEW RCA VICTOR WORLD-WIDE SETS THAT REALLY MEET THE MARKET...RIGHT IN PRICE, RIGHT IN WORKMANSHIP, RIGHT IN PERFORMANCE!

MODEL 121



MODEL 221



DUO MODEL 321

RCA VICTOR

Radios FROM RCA VICTOR

THEY said it couldn't be done...sell radio sets in summer. But last year RCA Victor—with a great line of instruments and the right kind of promotion—did it!

Now, RCA Victor is going to do it again! This year it's World-Wide Radios that are going to be big summer sellers! Here are a few numbers (look

them over) that meet every requirement of beauty, skill and pocketbook . . . the best all-wave radios engineering can produce and money can buy. See your RCA Victor distributor today—and get all set for spring and summer extra sales . . . on the latest big time sellers—Globe Trotter Radios! RCA Victor Company, Inc., Camden, New Jersey.

All prices (F. O. B. Camden) subject to change without notice



GLOBE TROTTER MODEL 240 An eight-tube superheterodyne long and short wave receiver. Beautiful walnut-veneered cabinet. Automatic volume control, tone control, large dynamic speaker. List price, with **\$128.75** *RCA Radiotrons*

GLOBE TROTTER MODEL 140 International long and short waves. Airplane dial, automatic volume control, tone control, 10" dynamic speaker. List price, with **\$92.50** *RCA Radiotrons*



RCA VICTOR COMPANY, INC., Camden, N. J.
"RADIO HEADQUARTERS" *A Radio Corporation of America Subsidiary*

Here Is News!

Out of dollar depressions and radio revolutions, Fada emerges sound, cheerful, aggressive and with a forward-looking message for the trade

- In the immediate future there will be announced a number of new items true to the high tradition of FADA standards.
- The full FADA line will have unusual profit possibilities for the wide-awake dealer. It will be backed by a four-square manufacturing and sales policy and supported by national and local advertising.
- A number of models, both table and console are real short wave sets . . . the larger sets reach down to 13 metres—630 more 10 kilocycle channels than are covered by many short wave receivers that go only to 18 metres.
- Included in the new line will be an advanced battery-operated receiver with a true short wave band, giving more than 1200 hours performance on a single air cell.
- Your profits are in a radio that's "there today"—and still there tomorrow. FADA has always been progressive-minded, never production-mad.

Watch for detailed coming announcement of the new Fadas

FADA
Radio

FADA RADIO AND ELECTRIC CORPORATION, LONG ISLAND CITY, N.Y.

1920 . . . SINCE BROADCASTING BEGAN . . . 1934

MORE THAN CONSIGNMENT

MANY FEATURES MAKE THE RCA RADIO TUBE
AGENCY PLAN A VALUABLE FRANCHISE

- ★ When the manufacturer of the fastest selling brand of any type of merchandise—the product which already occupies first place in dealer and consumer acceptance—adopts an agency plan of distribution, that plan has a value greatly in excess of the consignment feature alone. It must be valued first of all for the merchandising advantages already associated with the leading product. ¶ To use an illustration from another field, suppose you were to choose between an agency for Eastman Kodak Film and a consignment proposition on XYZ Film. Undoubtedly you or any other dealer would choose Kodak—the product that already enjoys a quality reputation and public demand. ¶ Similarly, the agency for RCA Radio Tubes should not be confused with "just another consignment proposition." In contrast with other consigned radio tubes, RCA Radio Tubes—Radiotron and Cunningham—have long been established as the leaders in quality and in sales. These incalculable advantages continue under the Agency Plan. Thus, consignment is not the feature, but rather one attractive addition to a long list of attractive features. ¶ In adopting the Agency Plan the Cunningham-Radiotron organization places itself in a position to establish sound business-building policies and can therefore protect good dealers from the few who, through price cutting, would destroy market stability and consumer confidence. ¶ In the operation of this new plan of selling, I personally pledge that it will be administered fairly in the interests of the public, the dealer and the distributor. I earnestly solicit your support for our common good.



PRESIDENT, RCA RADIOTRON CO., INC.

PROTECTED

The primary object of the RCA Radio Tube Agency Plan is to assure the orderly distribution of our product in the interest of the public, the dealer and the distributor. ¶ More retailers handle the RCA Cunningham-Radiotron brand than any other make. With such widespread distribution and outstanding consumer demand, some dealers have used the brand as a "Price Loss Leader." This demoralizing practice has caused loss of profit to RCA Radio Tube accounts. It is counter to present trends and to the spirit of NRA codes. ¶ Under the Agency Plan, no longer will it be possible for merchants to use the famous Cunningham-Radiotron brand as a "Price Loss Leader." The Agency Plan gives us control over our product. The list price becomes the sale price. This means protected profits for you. ¶ **BETTER DISTRIBUTION—NOT MORE DISTRIBUTION.** The RCA Radio Tube Agency Plan has been developed, not as a means of getting additional outlets, but of obtaining orderly distribution in your interest and that of our mutual customers. All RCA Radio Tube Agents will be carefully selected. Better distribution—not more distribution—is the keynote of this Agency Program. With fewer dealers handling our product, there will be a larger volume of business for those who remain. You can build your tube business on a quality and service basis with the knowledge that the retail prices on RCA Cunningham-Radiotron Radio Tubes will not be cut by your competitors. ¶ **ADEQUATE STOCK WITHOUT INVESTMENT.** As an RCA Radio Tube Agent you will be able to carry an adequate



RADIO

★ ★ ★ ★ ★

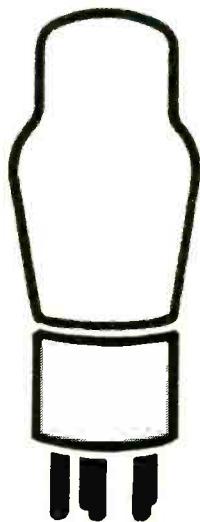
PROFITS ★ ★

stock without investment. You pay for the merchandise as you sell it—not before. **¶ COMPLETE PRICE PROTECTION.** You will have a tube stock adequate to take care of the needs of your customers, and yet the fear of over-buying is removed. No slow moving or dead stock can cut your profit margins. If certain types fail to sell, we, the manufacturer, will have to take them back into our stock. You will have complete inventory protection against price declines. And you will have no insurance and no transportation (except for local cartage) to pay.

¶ A VALUABLE FRANCHISE. As an agent for RCA Radio Tubes you are a "participant" in the business of the leading tube manufacturer—the leader in research, engineering and manufacturing, the leader in advertising, the leader in consumer demand, the leader in developing workable sales aids and plans. **¶ ATTRACTIVE COMPENSATION SCHEDULES.**

Attractive compensation schedules are provided. Because you will be able to get the full list price for our product, your total profit will be increased.

QUALIFICATION BASIS ANNUAL SALES IN UNITS	BASIC RATE	FOR PROMPT PAYMENT	EQUIVALENT
Under 1,000	37%	5%	40.15
1,000-2,500	38%	5%	41.1
2,500-5,000	39%	5%	42.05
5,000-10,000	40%	5%	43.
Over 10,000	41%	5%	43.95



TUBES



Compare

★ A S S E T S ★

PROTECTION AGAINST UNFAIR TRADE
PRACTICES ——————

ADEQUATE STOCK WITHOUT INVESTMENT
INCREASED VOLUME ——————

INVENTORY PRICE PROTECTION ——————

NO LOSSES FROM DEAD STOCK ——————

TRANSPORTATION PAID ——————

CONSUMER DEMAND ——————

CONSISTENT ADVERTISING FOR 18 YEARS

\$11,000,000 INVESTED IN ADVERTISING ——————

MORE ADVERTISING SUPPORT THAN ALL
OTHER BRANDS COMBINED ——————

MERCHANDISING HELPS ——————

RESEARCH LEADERSHIP ——————

ENGINEERING LEADERSHIP ——————

MANUFACTURING LEADERSHIP ——————

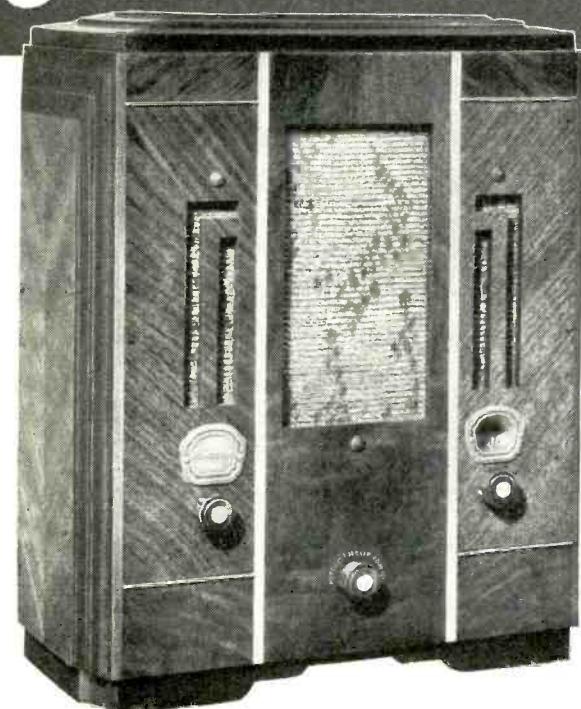
DIRECT ASSOCIATION WITH THE MANU-
FACTURER ——————

ASSURED PROFITS ——————



RADIO
TUBE
AGENCY
PLAN

ATWATER KENT RADIO

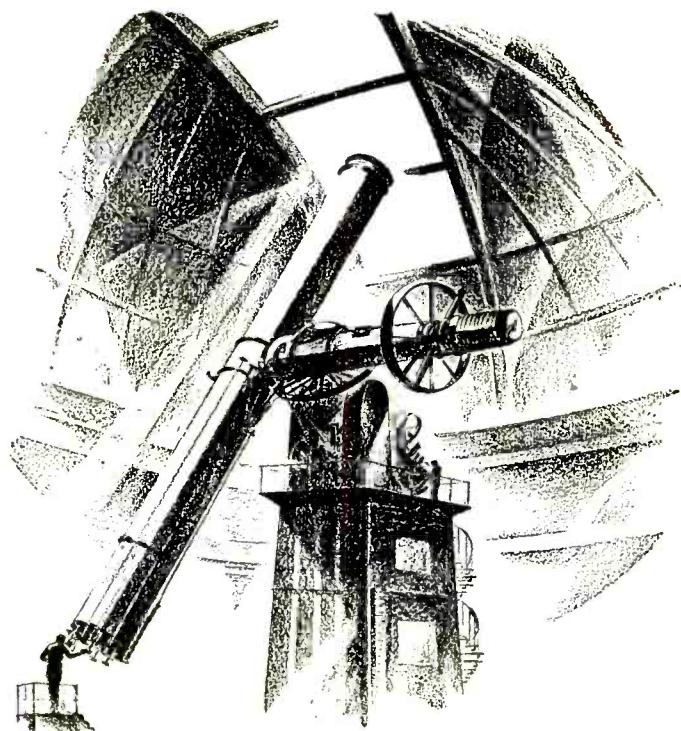


Weeks of testing have proved it a dramatic success. Production starts immediately. Place your orders today for Atwater Kent model 185-A. Range 5.5 megacycles to 15.5 megacycles—and 540 to 1700 kilocycles. Hears all important European short wave channels—and standard broadcast. Five tubes—ALL working to FULL capacity on all tuning ranges. Tone control, automatic volume control, 3-gang condenser, highly sensitive and selective. 8-inch electro-dynamic speaker. 2-point range switch. Glorious tone, ample volume. Order from your distributor today.

Announces STANDARD BROADCAST AND EUROPEAN SHORT WAVE RECEIVER

at **\$39⁹⁰**
Model
185-A F. O. B.
Philadelphia

Prices subject to change without notice



VISION

● For centuries, man looked upward to the stars for new worlds of knowledge. Today radio science offers a realm of research equally broad and rich!

Engineers of the Hygrade Sylvania Corporation hold a leading position in the exploration of this new field. Hygrade Sylvania first pioneered in the development of the new and more efficient 6.3 volt tubes. And recently, this company established a complete new plant for similar development work in the allied fields of broadcasting and electronics.

There is an important reason for this progressiveness. The men who own the major portion of Hygrade Sylvania's stock

are all active in the management. Their sole interest is the welfare of their company and its associates. They strive to meet today's needs with the finest tubes that can be made . . . and to anticipate tomorrow's new conditions.

Set manufacturers are invited to write for engineering consultation on circuit and design problems. The facilities of Hygrade Sylvania are placed at your disposal without cost or obligation. Sylvania engineers stand ready always to cooperate in the manufacturer's own plant or in Hygrade Sylvania's complete Circuit Laboratories. Hygrade Sylvania Corporation, Emporium, Penna.



Sylvania

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



THE SET-TESTED RADIO TUBE

© 1934, H. S. C.



F.M. AUDIOLA.

TO STRENGTH *IS* _{added} STRENGTH

Audiola becomes Fairbanks-Morse subsidiary

"The Audiola Radio Company has become a Fairbanks-Morse subsidiary"—the word flashes through the world of radio. Dealers and distributors from experience, welcome a union of strong factors upon which *they* can in turn build with confidence their business futures.

Strong foundation-members make strong structures. Audiola brings a radio knowledge and experience that began with the pioneering days of 1921. To the trade and consumer alike Audiola became "Known for its Tone." In all the hectic days of the industry this company maintained its one objective—the making of fine radios. The financial affairs of the company were so arranged that temptations of inflated markets and the hazards of deflation days could not deter it from this single pursuit, distract its attention, nor imperil its dealers.

To this strength, Fairbanks-Morse now brings gigantic, additional resources of engineering, manufacturing and financial strength. As one of the world's leading engineering and manufacturing organizations, it places back of Audiola the solid guarantee of its own "F.M" trademark. Its strength of 104 years of business integrity has now become a strength in the radio industry. This union of strong factors is already manifest in the addition of Electric Refrigerators and Washing Machines to the radio line.

An industry whose dealers have seen many changes—*too* many changes—will welcome this new stability. They will join their efforts with an organization that is willing and has the capacity to build a *sound* radio business for them.

Address the AUDIOLA RADIO COMPANY

430 South Green St., Chicago, Ill.

Cable Address Audiorad, CHICAGO

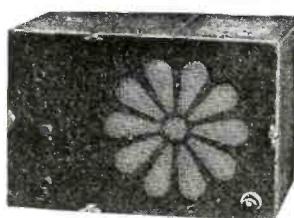
Phone Monroe 1535-1536

**—to create a
strong product**

Every car owner can afford Audiola Model "B-6." Six latest type tubes. Sensitivity less than 1-microvolt, absolute. Automatic volume control. Class "A" amplification giving full 3-watt output. An illuminated airplane dial with novel lock feature. Jensen built-in speaker. Built to sell quickly and serve faithfully.

The exclusive Audiola feature of no spark plug suppressors—of course. Nothing to interfere with ignition—nothing to impair car efficiency.

**SIX TUBE
\$ 39.95
NO SUPPRESSORS!**



AUDIOLA



**THERE'S NOTHING NEW ABOUT
CONSIGNMENT SELLING
AS FAR AS TUNG-SOL
IS CONCERNED ★ ★ ★**

★ ★ ★ AN ACCOUNT OF STEWARDSHIP
★ ★ ★ A RECORD OF SERVICE

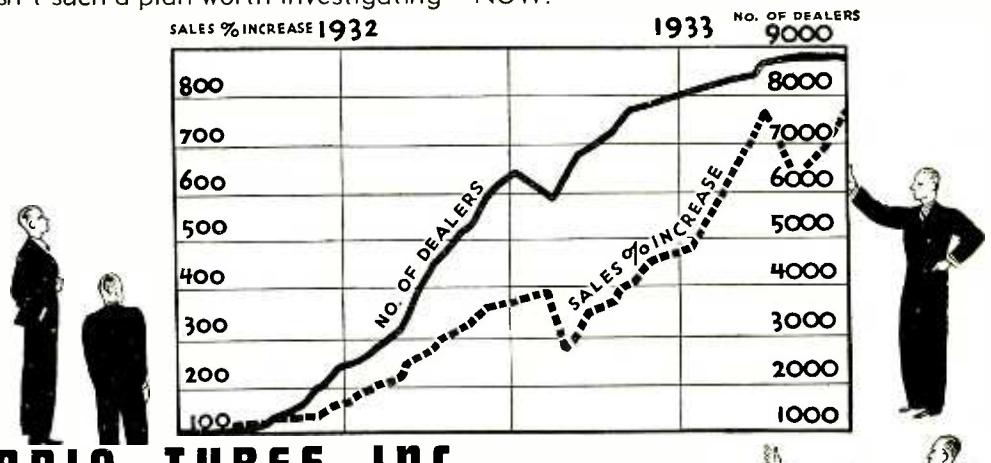
Two years ago TUNG-SOL perfected the policy of merchandising radio tubes on a consignment basis.

Today, more than 9,000 TUNG-SOL retailers and wholesalers will agree that they are just about two years ahead of competition in consignment experience—and that this experience is a valuable asset to them in promoting profits.

To build a successful retail organization the size of TUNG-SOL'S, the sales plan must be right. To maintain retail prices, protect profit margins, insure full stocks of all items, and at the same time avoid high retailer investment and obsolescence is no small achievement. Yet these objectives have been attained and maintained in the TUNG-SOL CONSIGNMENT-SELLING PLAN over a period when they were particularly needed.

TUNG-SOL is happy to throw this spotlight on a successful record of cooperative service to its wholesalers and retailers and to commend them on their foresight for having chosen the TUNG-SOL sales plan as their road to profits.

The difference between the TUNG-SOL Plan and others lies in the fact that TUNG-SOL CONSIGNMENT-SELLING has been tried and proved over a period of two years and found definitely profitable. In the perfected TUNG-SOL Consignment Plan, the wholesaler is protected by an exclusive territorial franchise which eliminates any chance of abuses, profitless competition and any tendency on the part of retailers to resort to price cutting. Isn't such a plan worth investigating—NOW?



TUNG-SOL RADIO TUBES INC.

95 EIGHTH AVENUE, NEWARK, NEW JERSEY



Showing growth in
dealer acceptance of
TUNG-SOL Consign-
ment-Selling;



RADIO RETAILING

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Manager

W. W. MacDONALD
Associate Editor

HARRY PHILLIPS
Art Director

PAUL WOOTON
Washington

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APRIL

1 9 3 4

1. WHERE MEN ARE MEN → Carrying National Union's message to the Texans. V. Hamilton, district manager, and H. A. Hutchins, general sales manager, hit the hinterland. Giddap, Napoleon, it looks like rain!

2. OH MR. ALLEN! → The old Professor of Bedlam College in the clutches of the college widow again. Fred Allen ponders a point of etiquette put by Portland Hoffa.

3. WARING AND GANG → A popular program is Fred Waring's Ford Hour, Columbia chain Sunday and Thursday nights. Here's Babs Ryan and her "brothers" en route for a Prom date. Fred waves adieu.

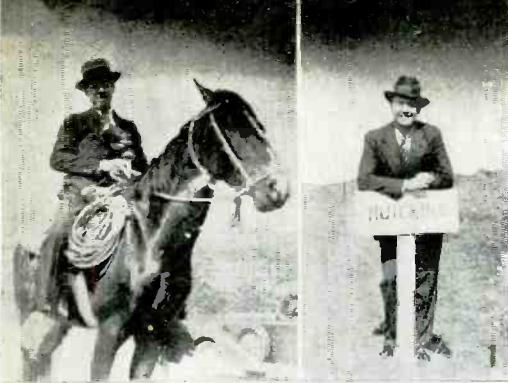
4. MONEY IN PA → Enterprising Alabama dealer tells about it—in this issue.

5. STEPPING OUT → Howard Briggs, gen. mgr. of the Howard Radio Company, and his ad. manager, Burton Browne, doing the hay-foot, strawfoot.

6. TELEVOTES → Dr. Nevil Hopkins and his "Televotes" detector. Now the listener can talk back to the studio, claims Dr. Hopkins—providing the station is equipped with the necessary high speed recording instruments. Will give sponsor an accurate check on the size and temper of its public. "Televotes" has three buttons—present, yes and no. Plugs into the light socket and costs but a few dollars.

7. VIA REFLECTOR ANTENNA → Chilean mining engineers getting W2XAF, General Electric's short wave transmitter, Schenectady. Ideal reception is reported due, it's claimed, to the use of a reflector antenna on the sending end—pointed south for Admiral Byrd's benefit.

8. PALL BEARERS? → Not exactly, although these iron-hatted men are all set to lay away a record year for Erskine-Healy, Rochester, N. Y.



FAIR TRADE PRACTICE CODE FEATURE

Final Revision of Wholesalers Code Makes Document "Even More Acceptable"—Approval Due This Month

It now is up to the administration at Washington. The Radio Wholesalers Code, in its final form, awaits but the approval of General Johnson and President Roosevelt. It then will become a part of the law of the land. Those features which met pronounced disapproval have been eliminated, including the schedule of discounts proviso—clauses (b) and (c), Section 2, ARTICLE IV.

In addition to the provisions for territorial administration by District Agencies to be selected from the ranks of local distributors, the final code, at the instigation of the Government, will contain the following noteworthy provision—ARTICLE III, Section 2, Clause (d)—The Code Authorities shall be empowered:

"To appoint a Trade Practice Committee which shall meet with the Trade Practice Committees appointed under such other Codes as may be related to the Trade, except other Supplemental Codes governing the several divisions of the Distributing Trade, for the purpose of formulating *fair trade practices to govern the relationships between production and distribution employers* under this Supplemental Code and under such others to the end that such fair trade practices may be proposed to the Administration as amendments to this Supplemental Code and such other Codes."

This means that the RWA code is empowered to operate vertically as well as being solely restricted to jobbing practices. It provides a cooperative vehicle for all branches of the radio industry—manufacturer, jobber and dealer—"to the end that such fair trade practices may be proposed to the Administration . . ." This special clause is the

second government conceived, revolutionary step in trade relationships which developed as the result of the mutual attitude of helpfulness between the radio jobbers code committee and Administrator Alexander.

Howard Moves Plant to Chicago

The Howard Radio Company is moving its factory from South Haven, Mich., to 1731 Belmont Ave., Chicago. This marks the return to the Windy City of one of its oldest radio manufacturers, who opened shop there eleven years ago under the guiding hand of A. A. Howard, a founder of RMA.



Jeanie Lang and Her A K

Every woman will enjoy her kitchen work more if she has a radio nearby, says diminutive Jeanie Lang, discovered by Paul Whiteman in Hollywood and now a popular network artist

RCA ANNOUNCES TUBE AGENCY PLAN—CLAIMS 15 ADVANTAGES

Will Franchise Cunningham-Radiotron Dealers

Effective April 2, RCA Radiotron and Cunningham tubes will be consigned to selected, franchised dealers through established Radio Corporation distributors. This innovative policy is announced by president Elmer T. Cunningham in a brochure titled, "RCA Radio Tube Agency Plan." It is presented as an additional advantage rather than a dominating one. Details of the bookkeeping, new discount schedules and other operating features of this plan will be released shortly. Dealer "agents" will be given a suitable identification sign and other publicity material.

Better distribution, protection against competitive stores featuring "loss leaders," price maintenance and conservation of dealer working capital are some of the inducements offered under this new arrangement.

"The chief factor in the decision of the RCA Radiotron Company to adopt the Agency Plan," reads the booklet, "is the sincere wish of its executives to work with the dealers and distributors whose loyalty and efforts have made possible the Company's position of leadership—to protect them against the demoralized selling that has mushroomed into a serious menace."

RCA's consignment plan, it is understood, will operate in principle similar to that which has been in effect for many years in the lamp industry in that a sliding scale of discounts, based upon a

contractual agreement with respect to volume, will apply. The dealer invests no money in stock. Should he find himself in an overstocked condition it will be RCA's responsibility either to sell this excess merchandise or take it back.

Under the RCA Agency Plan its tubes on dealers' shelves are, at all times, the property of the consigner. Inventory values are at all times adjustable to whatever new scale of prices may be put into effect. "There is no reason to expect," states the announcement, "that there will not be future price reductions—particularly in the higher priced types for which a renewal demand will come."

Another feature of this plan is that all tube transportation costs, save local cartage, will be borne either by the jobber or the manufacturer.

GRIGSBY-GRUNOW ASSETS TO BE SOLD, APRIL 16

By order of the United States District court, Frank M. McKey, receiver in bankruptcy, will offer for sale, as a whole or in parcels, the entire assets of Grigsby-Grunow Company in Room 1201, 100 West Monroe Street, Chicago, Ill., April 16 at ten o'clock in the forenoon. These assets include real estate and buildings, interests in subsidiary companies, accounts and notes receivable, good will and patents as well as all machinery, raw materials and finished products.

The present situation is complicated by



J. A. Proctor, President of Fada

J. A. Proctor, of Boston, has been elected chairman of the Board and president of the reorganized Fada Radio & Electric Corp., Long Island City, N. Y. Mr. Proctor has had a notable career as a pioneer in the wireless field, culminating in the presidency of the Wireless Specialty Company. When this concern merged with RCA he became president of the RCA Victor Company of Massachusetts.

Mr. Proctor is the holder of many radio communication patents.

the conflicting claims of creditors and bondholders, the court and the receiver. It is expected, however, that these interests will have been reconciled before the 16th.

Last year Majestic numbered among its assets 56 live jobbers and some 7,000 dealers. While many of these field representatives have made other affiliations, there still remains a fair possibility of reestablishing this concern—and the name Majestic, for years a powerful factor in the radio industry—on a going basis.

It is the hope of the many friends of this concern, and of the well-wishers of the radio industry at large, that it will be purchased outright and in its entirety. Any piecemeal purchases, by more or less irresponsible buyers, would, it is felt, create disturbing influences. It also is hoped

that it will be possible to continue the Columbia Phonograph Company, a subsidiary, in its present form.

One Out of Five Have It

Radio men have been aware that new car buyers are specifying "equipped with sound effects." Here is a bit of definite information on the subject: Recent figures reveal that the percentage of Hudson-Terraplane automobiles provided with custom built radio sets (ZENITH) is very much on the increase. During the past 60 days one out of every five Hudson or Terraplane cars had a radio installed at time of delivery. Three months ago the figure was one in ten.

city. We may change our schedules, even change our method of transmission frequently in the course of our experiments, so any commercial equipment introduced here would probably suffer rapid obsolescence. Of course experimenters are welcome to our test programs. But there will be no immediate attempt to give them anything like a sustaining program service.

Q: How much would it cost an experimenter to "look in" at your test programs? What would he need?

A: Somewhere between \$35 and \$75. All that is needed is a shortwave receiver that will tune to W9XAG or W9XAF and the simple "pen" accessory, which consists of a synchronous motor, shaft, gears and the ink-applying pen itself. The pen may be compared with the working parts of a dynamic speaker, the cone being removed and a stylus to contact the paper substituted.

Q: Where can the experimenter get such an accessory?

A: Nowhere at present, to my knowledge. Our immediate concern is not commercialization of the idea. The transmission method may be changed entirely before we get through. This militates against mass production of receiving equipment.

Q: How many lines per inch does the "pen" draw?

A: About 40. We will probably confine our type transmissions to 12 pt. [half again

MILWAUKEE JOURNAL BEGINS FACSIMILE BROADCASTS THIS MONTH

Daily Experimental Programs to be Transmitted on Shortwaves

Only—No Immediate Effort to Commercialize Service

Milwaukee, Wis.—The *Milwaukee Journal*, owner of radio station WTMJ and shortwave transmitters W9XAG (1,000 watts on 1652 kc.) and W9XAF (500 watts between 40 and 60 mc.) is to begin transmission of experimental facsimile programs early in April when installation in the Hotel Schroeder of especial equipment designed by John V. L. Hogan, New York engineer, is completed. Test programs are to be put on the air over the two available shortwave channels (not over WTMJ) and will run three hours daily.

No immediate attempt will be made to secure sponsors for the programs, nor will set manufacturers be encouraged to enter the Milwaukee market with accessory "pens," according to Walter Damm, recently interviewed by a *Radio Retailing* editor. Mr. Damm is chairman of the NAB Television and Facsimile Committee, promotion manager of the *Journal* and manager of its stations. "The *Journal* was one of the first newspapers in the United States to associate itself with broadcasting," said Mr. Damm, "and quickly proved that the new service need not conflict with the interests of a publisher. Now it wishes to investigate facsimile, which may also be a useful supplementary field."

Continuing the interview, *Retailing's* editor asked Mr. Damm:

Q: How large a "picture" can you transmit and how long does it take?

A: Our equipment will scan at the rate of 3½ inches in width by 3½ inches in length per minute. Should a width of 7 inches be later considered desirable we can handle it by reducing speed to 1½ inches of length per minute.

Q: Have you heard that a certain eastern experimental laboratory has already transmitted the full first page of a newspaper hundreds of miles to a ship at sea?

A: Yes, I've seen pictures of the transmitted page but have not seen the equipment. It sounds very interesting. But the equipment is apparently not available even for experimental purposes. And I haven't heard how expensive or elaborate it is or how long the transmission required.

Q: Do you use some special kind of a transmitter?

A: No, just a regular "sound" transmitter. A scanning device which uses a moving spot of light and a photocell is simply substituted for the usual microphone. We can send pictures and type from photographic film or pick it up direct by a reflection method.

Q: How much area will you cover?

A: We don't know until the stations get under way. Certainly greater Milwaukee will get the service under all but the most severe atmospheric conditions. Shortwave sound stations of our power are heard over tremendous distances. Picture possibilities will depend upon the amount of distortion introduced by atmospherics.

Q: Are you going to run advertising paid for by sponsors?

A: We haven't considered it, won't until we have proved to our own satisfaction that facsimile is technically practicable, that there is a consumer demand for it. Our primary purpose right now is simply to find out for ourselves just how good it is.

Q: Are you going to encourage set manufacturers to sell "pens" in Milwaukee?

A: On the contrary, we are going to discourage it. Our programs will be picked up primarily by three test receivers maintained by ourselves at several points in the

NEW ORLNS	88
NEW YORK	84
NORFOLK	100
OKLA CITY	99
OMAHA	96
PHILA	90
PHOENIX	106
PITTSBURG	82
RALEIGH	98

3½ by 3½ inch facsimile section of stock market report transmitted by "Milwaukee Journal" in preliminary tests. Time: 1 minute.



Showing line drawing detail now available.

as large as the type in which this interview is printed] or larger at first.

Q: Are you going to start out with spot news?

A: As I said before, our first programs will be purely experimental, not designed to render a news or any other kind of a commercial service. We may put out stock-market and weather reports, recipes and other material of a tabular nature which lends itself to a narrow strip and warrants recording.

Q: Do you anticipate an important future news service via the facsimile method?

A: Facsimile will probably be an important supplementary news medium some day. But at present it is too slow even to print much spot news. I doubt if it could supplant the newspaper, feel that the two will eventually serve different purposes. Complete newspaper service via facsimile does not seem to me to be either desirable on the part of the consumer nor economically practicable from the standpoint of the publisher."

FAIRBANKS-MORSE BUYS AUDIOLA

Will Enter Radio, Refrigeration and Washer Field

CHICAGO, April 2—Through an arrangement just completed, the Audiola Radio Company of this city becomes a wholly owned subsidiary corporation of Fairbanks, Morse and Company. The acquisition of this pioneer radio organization by Fairbanks-Morse means an expansion of Audiola, not only in its radio activities but in the manufacture and sale of electric refrigerators and washing machines.

Mortimer Frankel, who will remain with Audiola as general manager, made the following statement to our western editor: "Audiola welcomes this new association with Fairbanks, Morse and Company. It opens to us financial, scientific and manufacturing facilities of practically limitless extent. Although Audiola is a pioneer in radio, this relationship with a concern as old and as strong as our parent company should make for stability in the industry."

In addition to this move, on the part of Fairbanks, there is the possibility



MORTIMER FRANKEL

General Manager of Audiola, now a Fairbanks-Morse subsidiary

that it may also acquire additional manufacturing facilities, fully equipped and ideally suited to whatever ambitious plans may be in the making.

Don't Over Sell All-Wave Says Emerson's President

Many dealers already are courting trouble by improperly presenting the all-wave set, declares President Ben Abrams, of the Emerson Radio and Phonograph Corporation, New York.

"The idea of multiple-wave-range, in itself," Mr. Abrams explains, "gives radio men the most effective instrument yet devised to induce owners of three to six year old sets to replace with a modern one. But this sales tool must be intelligently and truthfully handled or the trade will find itself burdened with comebacks, unreasonable demands and delayed payments. The prospect should be told all the limitations of short wave reception.

"And there is not the slightest need to misrepresent. The thrill and fun of short-wave comes from this very element of chance, suspense and surprise. Sell short-wave as an exciting opportunity to reach out into the unknown for a new experience—not as the prime function of the set.

"This being the case, the purchaser should not be asked an excessive 'premium' for this added feature," concludes Emerson's president. "In other words, a plus price so high as to lead the prospect to expect the impossible—and the salesman to promise it."

George Ball Joins General Household Utilities Co.

George Ball, wealthy manufacturer of the Ball Mason jar, Muncie, Indiana, has been elected to the newly created position of chairman of the executive committee of the General Household Utilities Company, Chicago. This action follows the retirement of J. Clarke Coit, formerly chairman of the board of directors of this

concern. This later title has, it is understood, been abolished.

Mr. Ball, also a director of the Nickel Plate railroad, has increased his holdings of General Household stock as has president William Grunow, its largest stockholder and active head of this company.

Mr. Coit, before his connection with General Household, was president of the U. S. Radio & Television Corporation.

In the capacity of special contact man. Carl D. Boyd, prominent in radio since 1923, now is associated with General Household Utilities Corporation, Chicago. Mr. Boyd, in conjunction with Walter Dyer, will contact public utilities and department stores in the interest of the Grunow lines.

Grunow refrigerator sales promotion "Caravans" have just concluded the hold-

ing of forty dealer meetings throughout the United States. "They broke all records for attendance and orders placed," says vice-president H. C. Bonfig. "Production for March will be double that of February. We have orders on hand for 30,000 refrigerators. Have added, during the past few weeks, over 1,000 new dealers."

JOBBER APPOINTMENTS

ZENITH. For the St. Louis territory, the Electric Lamp & Supply Company; for Toledo, the V. J. McGranahan Distributing Company, formerly the Toledo Majestic Company. Zenith's distributor at Milwaukee is the John Pritzlaff Hardware Company. Its radio division is being operated as a specialty department in charge of C. W. Hamilton. Five specialty men cover 53 counties in Wisconsin and the Upper Peninsula. Well known to Michigan dealers is Zenith's new jobber, J. A. White Distributing Company, Grand Rapids, John A. White, president.

CURTIS. The Curtis Condenser Corp., 3601 West 140th Street, Cleveland, Ohio, will be represented in the New York area by David M. Kasson and Associates, 159 Fifth Avenue, and in the New England states by W. B. Pray Sales Company, Boston, Mass.

RCA VICTOR. R. S. Proudfoot Company will represent RCA Victor in Nebraska, western Iowa and the southern part of South Dakota. Headquarters are in Omaha, with branch office in Lincoln, Neb.

WURLITZER. Has appointed Malone & Moles, Sioux City, Iowa; E. Garnich & Sons, Ashland, Wis., and Hub Cycle and Radio Company, Grand Rapids, Mich., as distributors for Wurlitzer Mohawk Duozone refrigerators.

GIRARD-HOPKINS. Condenser manufacturer in Oakland, Calif., has appointed J. A. McCaffry, Detroit, as its representative to cover Michigan and the city of Toledo, Ohio. The Edwards Sales Co., Cleveland, will cover Ohio with the exception of Toledo.

Radio Distributor Takes On Washers for New England States



Impressed by present opportunities in the washing machine field, Howe and Company, of Boston, large radio wholesalers, has taken on the Horton line of washers and ironers for the New England states. Lee R. Howe is the individual owner and operator of this concern—the man of thoughtful mien beneath the iron hat. Mr. Howe regards this move as a logical development. This scene was taken in the spacious show room of this company at 841 Boylston Street. In addition to its wholesale business, Howe and Co. own a number of retail stores, operated in the name of the local manager.

RETURN TO QUALITY SPEAKERS

Larger Reproducers, With Higher Fidelity Characteristics and Better Power-Handling Predicted by Thomas White

We finally are approaching a return to more capable loud speakers. I look for the greater popularity of larger speakers, for the same purpose that they now are being used and also for the wider employment of speakers with better fidelity characteristics and better power handling qualities. These are the opinions of Thomas A. White, sales manager for the Jensen Radio Manufacturing Company, Chicago, in a special interview with the managing editor of *Radio Retailing*, March sixteenth.

"It appears to me," Mr. White continued, "that there will be substantially more six inch speakers made and used in 1934 than



Tom White, Sales Manager, Jensen

five inch. This was not the case in 1933. I expect to see a good many radio receivers using 10 and 12 inch speakers. These were rarely used last year except in the highest priced sets. Any prophecy of trend in loud speaker design which does not include the thought that high fidelity receivers will become an actuality would be amiss, in my opinion.

"There undoubtedly will be some application of wide range sound to radio receivers during the balance of this year. There is hardly a question but what, eventually, all sets above the low price class will be wide-range sound equipped. In fact this seems to me to be the one great improvement in radio receiving design to which we may look forward."

Annual Philco Cruise

The annual May Convention for Philco radio distributors will be held aboard the new turbo-electric liner "Queen of Bermuda," leaving New York on Tuesday, May 15, bound for Bermuda and Nassau, according to an announcement just released by Sayre M. Ramsdell, manager of sales promotion of the Philco Radio & Television Corp. The entire liner will be oc-

cupied by the 600 distributors and salesmen from all over the country who will attend.

The cruise ship will leave Pier 95, New York at 12 noon. Wednesday will be spent at sea, allowing Thursday at Bermuda. Friday will give the distributors another day at sea with Saturday spent at Nassau. On Sunday the "Queen of Bermuda" will point her prow homeward, arriving back in New York about 9 a.m. Tuesday morning.

Cruise For N. Y. Philco Dealers

The Philco Radio & Television Corp. of N. Y., is making plans for a 1934 retailer's cruise to Nassau, Bahamas and Havana on the Ward liner "Morro Castle," which leaves at 4 p.m., Friday, May 25 and returns to New York on Saturday, June 2.

Thus Thomas A. O'Loughlin continues Philco's "sea-going" convention idea, which is rapidly becoming an institution.

200 Stations Will Broadcast World's Fair Programs

More music and high class entertainment will be broadcast from the World's Fair in Chicago in 1934 than last year. Actual broadcasts will start six weeks before the official opening day. NBC, CBS, WLS and WGN will maintain offices on the grounds.

Fine orchestral music, originating at the fair, will be broadcast regularly over the various networks, coast-to-coast. One of the features will be the Ford Motor Co.'s symphonic orchestra which will play daily in the band shell to be erected as a part of that company's \$1,500,000 exhibit. Fifteen weekly



Will He Broadcast the Games?

Powel Crosley, Jr., (right) radio manufacturer and sportsman, in jovial mood as he greets Larry MacPhail, Reds general manager, following Crosley's acquiring controlling interest and presidency of the Cincinnati National League Base Ball Club.

programs, coast-to-coast, are now carrying the announcement, "This program comes from Chicago, the World's Fair City for 1934."

Under the vast hook-up some 200 stations will broadcast World's Fair programs. Thirty pickup locations on the grounds will be pressed into service. To accomplish this more than 500 miles of wire is required to connect these with the central "patchboard" in the Administration building.

Buy Assets of Transformer Corporation

The good will, trade name and assets of the Transformer Corporation of America, Chicago, have been bought by Michael Tauber & Co., in collaboration with Harry Wolper of the Lewol Mfg. Co., RCA licensee manufacturer of radio sets, both of Chicago.

No definite plans have been announced about the use of the trade name, Clarion, but it is expected it will be kept alive as it is well known throughout the trade and in the export market.

They Head Three Wurlitzer Engineering Activities



C. F. Beeler

Who will take charge of the design and installation of air-conditioning apparatus for the Rudolph Wurlitzer Mfg. Co., N. Tonawanda, N. Y. Already a recognized authority in this field.



C. N. Deverall

Has been with Wurlitzer since 1920. Now heads refrigeration engineering. Factory designer and musician. Also pinch hits as technical lecturer at Wurlitzer sales and service conventions.



Vernon MacNabb

He's responsible for the engineering of Lyric radios. Also in charge of Auto-Radio Division. Hails from Stevens Institute, Westinghouse and Atwater Kent. Professor and writer.

NEW AUTO-RADIO DISTRIBUTION PLAN TRIED OUT IN CLEVELAND



Jack Potts (left) and sales manager E. R. Brunk detect a touch of spring in the air—and the advent of auto-radio business

CLEVELAND—For more than a year Jack Potts, proprietor of the Auto Radio Sales Company, 3133 Carnegie Avenue, this city, has been trying out a new auto-radio distribution plan, says it is working out advantageously for himself, the factory whose product he distributes and for cooperating automotive, radio and electrical appliance dealers.

Potts' organization, which has installed more than 500 car sets (300 in 1933), believes his retailers of:

Time Payment Financing
Installations
Service
Stock Handling and
Advertising

Asked by *Radio Retailing* the reasons behind this unique plan Potts stated: "Auto-radio distribution has, in my estimation, been held back chiefly by the inability of non-specializing outlets (to whom auto-radio is a sideline) to secure enough volume to justify the expense of the rather special mechanical and financial requirements of this business. And, of almost equal importance, incalculable harm has been done by inexperienced installation men, whose unsatisfactory work injures public acceptance.

"My plan not only makes it profitable and easy for the average retailer to sell auto-radio, irrespective of volume, but assures us that all installations will be correctly made. I believe that ours may well be the auto-radio distribution plan of the future."

Dealer Setup Fifty-five per cent of Potts' retail accounts are automobile showrooms (with a sprinkling of accessory stores); 45 per cent are radio and electrical appliance shops. Sales volume splits proportionately.

E. R. Brunk, sales manager, contacts the trade, says

Jack Potts Makes Dealers "Commission Agents" — Handles All Financing, Service, Stock and Advertising — Most Retail Accounts Carry Samples Only

one of the city's largest department stores is becoming interested in the proposition.

Stock Dealers of both types are urged to buy a floor sample and to install a set in at least one demonstration car. They are discouraged from buying stock other than for demonstration and display purposes. Several have, however, sold initially from circulars, without having any stock whatever on hand. When a few sales have been closed by such accounts Brunk bears down on them, induces them to stock samples.

Several accounts have voluntarily stocked a sample of each "Audiola" model . . . the \$49.50, the \$54.50 and the \$69.50 . . . but retailers are not pressured to do so.

Potts maintains two demonstration cars of his own and dealers who are not so equipped are urged to make use of them. The trade frequently "closes" in the Carnegie Avenue store.

Installation Potts discourages his dealers from making their own installations by doing this work for them at cost. He charges \$2 per job, including one year free service, claims that he breaks even on this basis. All customers are sent to him. Sets are taken out of his stock, dealers' samples are not disturbed.

The organization employs from 1 to 5 mechanical installation men, depending upon the season, maintains drive-in garage facilities. A skilled technician supervises the work of the mechanical men, handles all necessary service.

Potts has about \$50 invested in special wrenches alone, has at least this amount tied up in special drills. In addition, his technician has a complete kit of test meters and analyzing equipment.

Ninety per cent of the installations, he reports, go into cars with factory-installed antennas. So the \$2 rate covers all cars, including antenna installations where these are required. Very few are, so the policy is kept uniform.

The average installation takes $\frac{3}{4}$ hour.

Finance When dealers sell a set for cash they collect from the consumer, send the customer to Potts for installation. A set is taken from the distributor's stock, installed. The dealer later receives a bill for merchandise and labor. Sixty per cent of the sets sold in 1933 went out on a cash basis as the upper-bracket buyer predominated. Time sales are expected to increase as consumer confidence is restored by improved business conditions and people in the middle and lower earning brackets buy.

When a dealer sells on time all papers are filled out in Potts' office, the dealer having nothing whatever to



Show room of the Auto Radio Sales Co., Cleveland. Who says motor car radio displays can't be made attractive?

do with the financing details. The "Sun" Finance Company works exclusively with Potts on all accounts, charging 3 per cent interest.

This company requires no chattel mortgage on the car, takes care of collections, accepts weekly or monthly payments. The dealer receives a check the instant a sale is completed for the full amount due him less 20 per cent reserve which is turned over to him when all payments are completed. The finance company handles repossessions—of which there have been remarkably few. The dealer is advised when payments are skipped, checks with the customer to protect his reserve.

Service Potts takes care of all service for one year at his own expense. It is included in the \$2 installation charge. Good installations, made by his own men, have reduced the necessity for service to an almost negligible factor.

Advertising Potts does all the local advertising

. . . his dealers do none, other than maintaining store selling displays.

Auto Radio Sales runs from 2 to 4 inches of space in two Cleveland papers 4 times a week. This is designed to bring prospects into his store for direct sale (10 per cent of Potts' volume is done by his own retail department) but he is careful to issue a check to his dealers if they in any way are responsible for the business.

The "ads" are worded in such a manner that they popularize the trade-name of the company's set. This reflects to the benefit of dealers who maintain store signs on the product.

Discounts The average dealer discount on auto-radio is about 40 per cent . . . but the dealer must carry his own stock, do his own installing, financing and servicing. Potts' discount varies between 35 per cent and 38 per cent, relieves his trade of details.

Potts is an old automotive man. For years he worked as service manager for several different local car agencies, later "graduating" to car sales. He has been in the auto-radio business, on his own, 4½ years, claims to be the oldest exclusive dealer in Cleveland.

"What do you see in the future for auto-radio?"

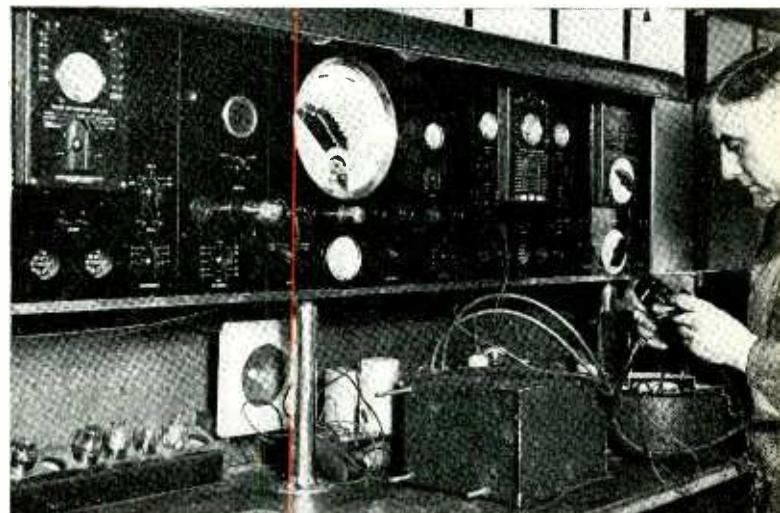
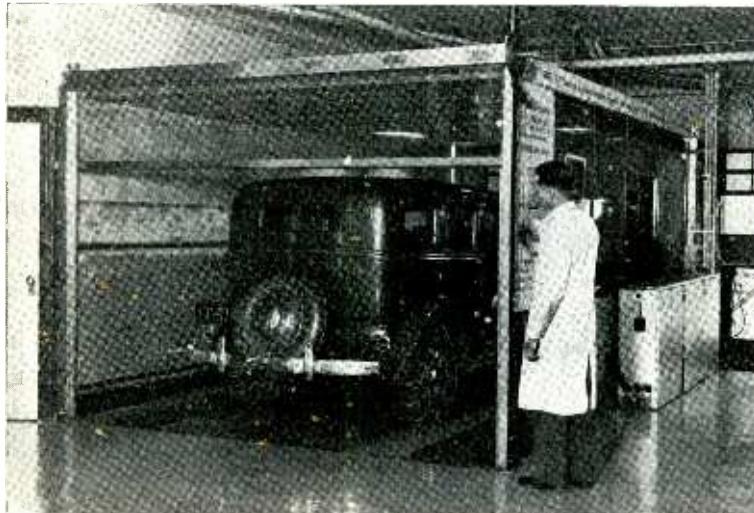
"I expect this to be a 'bumper' year. Radio in a car is no longer a novelty. People now know that it is a practical, proven service."

"I feel, also, that the day of the 'curb-stoner' is over. The public now realizes that auto-radio installation is a job for an experienced, specializing organization."

"Automobile salesrooms have an undoubted advantage when it comes to selling sets to buyers of new cars. But many of our retail radio accounts are doing an appreciable amount of this business too. And we look to the retail radio store to do a job for us among owners of used cars . . . a field which has been scarcely scratched."

"Some day, and I think it will be soon, used car owners . . . who see sets successfully operating in new cars owned by their friends . . . will buy. Our future volume depends very much upon what radio retailers do with the used car market."

DURHAM BUILDS COPPER SCREEN "RADIO CAGE" FOR AUTOMOBILES



Valued as a prestige and publicity builder as well as for its technical merit, is the copper screened "radio cage" constructed by the employees of the P. J. Durham Company, Inc., New York City. In this room, entirely protected from outside electrical interference, motor car radio installations are given the final once-over. Even the floor

is shielded, the screen being imbedded in the concrete. A brass tubing framework supports this "room" and the entire structure is grounded.

The cage contains an elaborate assemblage of testing instruments. The installation of this cage has materially increased the auto-radio business of this concern.

Outstanding AUTO-RADIO JOB



Part of an ad by George's featuring the individual ability of its technicians

This firm finances its own paper. It secures it, as stated, by a mortgage on the car. And it enforces payments through its own collectors. But George's features the service it renders more than the terms offered. It is of interest, right here, that every large auto-radio operation so far observed by *Radio Retailing* cites as the reason for its success, superior, drive-in, installation and service facilities. For example: George's Radio Company maintains a stock of \$1,500 in auto-set parts alone. The customer doesn't have to wait when a replacement part is needed. Again: the shop foreman, himself, takes a two mile drive in every car in which a radio has been installed—a road test before the job is cleared.

Practically all of the well-known makes of car radios are handled by this Washington concern. Mr. Wasserman does not use outside salesmen—but his floor force, he boasts, is second to none in knowledge of product and

in sales ability. Proof of this, and of the selling power of the right kind of physical equipment set-up, is found in the fact that Wasserman did a lively business with car owners right through the winter months.

George's Radio Company now operates three establishments. Each store or shop specializes, however, in a radio activity suited to its location and facilities. The Pennsylvania Avenue place features service for home sets; the 14th Street shop services the automobile receivers only; while the F Street store sells only.

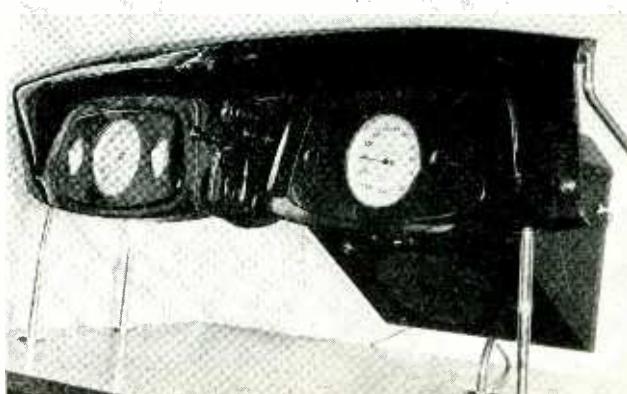
3,000 A-R Sets in Four Months

Distributors who may still regard automobile radio as small fry business should consider the following statement from Adolph Ullman, New England jobber. "During the past season, of about four months, we sold close to 3,000 car radio sets (Motorola). There were two models in the line. The \$75 outfit far outsold the cheaper job."



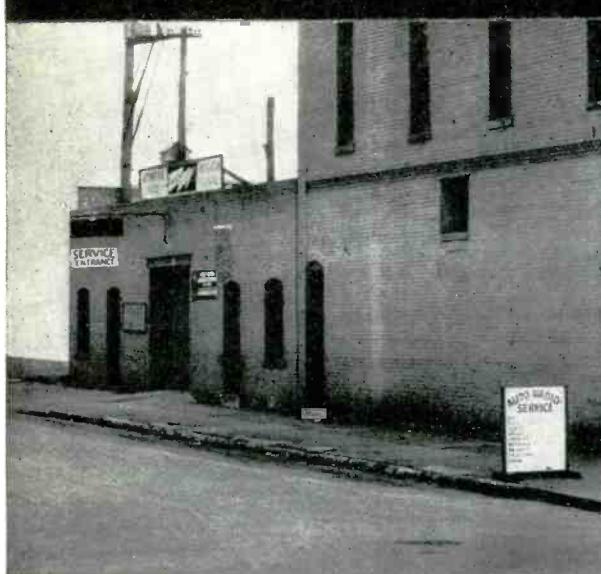
THIRD MOVE ♦ New quarters of the Electric Supply Co., "down by the Lake," Oakland, Calif. This being the third time in 11 years that Ed. N. Watkins has found it necessary to rehouse his expanding radio business. "Ham Headquarters" also pushes auto-radio, has modern installation facilities and a comfortable waiting room where clients may linger while their cars go radio. An expert upholsterer is on hand to take care of aerial jobs.

Watkins held open house and served an old fashioned Dutch lunch on the opening day, March 10.



FORD DASH ♦ What the well-dressed Ford dash looks like. Of course its embellished with a radio set. Note the open-face dial to match speedometer and the built in tuning panel

UP-TO-THE-MINUTE



Here's an installation and radio service shop as modern as the day after tomorrow. Note the attractive windows, the sidewalk sign, which names the makes of car radios serviced—and the "drive-in" entrance for automobiles.

But let's step inside . . .

THE Donaldson Radio Company, Inc., Kansas City, Mo., started out in 1921 as a retail sales and service organization. Wholesaling gradually replaced retail activities, until late in 1929. Then came the third transition—to specialized service.

The newer angles of a business frequently are the more profitable, states C. W. Donaldson. "So we began to specialize in the installation and servicing of car sets."

Since 1930 two moves have been necessary—both to acquire more space.

Getting A-R Service Business

People interested in radio for their automobile are the kind who are attracted by an up-to-date shop, likewise radio and auto dealers, claims Mr. Donaldson. "We have such an establishment—every facility for handling automobile traffic. Hence all three types of prospects give us their installation and service business. We refer leads for sets to dealers."

Here are other reasons why Donaldson gets the business:

Office records carefully kept. Service charges itemized.

Has a 90-day maintenance guarantee. Keeps the car owner satisfied.

Advertises over the radio, in classified columns of newspapers and in the telephone directory. "But by far the most valuable asset is our personal acquaintance with radio dealers and the automobile trade. We're constantly out with some new idea, a dialer for the telephone or a folder with photos of our shop. In this folder I tell the story of a trip through the Donaldson establishment, somewhat along the lines of the captions which accompany these four pictures."



In this clean and commodious room customers may wait in comfort while the set is being installed. Auto sets are displayed to help the prospect decide what he wants. These extra sets are used also for replacements or for emergency delivery service to dealers.

We pass through the double doors to the . . .



SERVICE DEPARTMENT—With its full complement of modern testing instruments. Space here for two cars. Now up the ramp to . . .
THE CAR SHOP—Facilities for working on 12 cars without crowding. Around the walls are five work benches. Note the portable "handy man."



The EDITORIAL VIEWPOINT

MAKE HAY

THE pioneering period is over. The public likes automobile radio—wants it. During the next six months there will be purchased more sets for cars than during any prior period . . . and possibly more than for any similar period in the future. In other words 1934 bids fair to be auto-radio's banner year.

Why may this be so? Car radio still is a novelty—with all the lure that goes with newness but no longer is it an untried experiment. Prospects outnumber owners ten to one. The product is right, in performance and in price. Distribution and servicing facilities are now widespread. And the buying urge is with the country once again.

And so we say: Make hay while the sun shines.



GIVE ALLWAVE A CHANCE

WE have just completed a trade swing through five states and say with conviction: This is going to be an "allwave" year.

But, to make the most of this trend, we emphatically recommend that the retailer endeavor to sell a special, noise-reducing antenna installation with *every* set designed to operate below the broadcast band.

These are our reasons:

1. A high percentage of such sets have little chance of rendering complete satisfaction without a special antenna.

2. This accessory will provide a legitimate opportunity to increase the profit margin on each allwave sale.

Noise-reducing antenna systems permit the operation of shortwave sets where long, ordinary aerials and lead-ins pick up a prohibitive amount of racket generated by electrical devices, ignition systems of passing automobiles and other nearby disturbances. And most of these special antennas provide the receiver with signals materially

stronger than those delivered by the garden variety of collector. Several makes of shortwave antenna systems also reduce noise in the broadcast band.

Reduce the number of allwave set "rebounds" and increase profits by selling a noise-reducing antenna *installation* with every allwave receiver. Do your customer a favor as well as yourself.



THE SMALL SET'S PLACE IN THE PICTURE

FROM the day the first midget receiver popped its head over the western horizon *Radio Retailing* has maintained that this development could not be stifled; that the little set would serve many useful purposes. During the depression its popularity kept many a dealer in business. Last year the public purchased two and a quarter million midgets or 326,000 in excess of 1932—retail value over \$60,000,000.

With changing economic conditions and the return of greater income per family, the question again arises: How should the dealer merchandise midgets?

There are many markets for small receivers—business which will be lost to the retailer who does not know how to feature *both* the console and the midget or when to concentrate his efforts on the latter instrument. This is particularly true during the spring and summer seasons—when auxiliary radio, for camp and cottage, is the order of the day.

Always sell the prospect the very best set for his requirements that he can afford. Certainly! But, if you would conduct a well-balanced sales operation, remember also these points:

The majority of prospects have definite radio requirements in mind. The dealer must ascertain what type of set the customer really should have and the limitations of his buying power. In many instances where a midget is asked for it is be-

cause that is exactly what the prospect wants—and should be sold. Either he cannot afford a larger radio or he needs a small set for auxiliary use.

The dealer who under-displays a part of his line may lose business to a competitor.

There's net profit in a \$25 item—providing selling, delivery and servicing costs are proportionately reduced.

Terms on sets in the low-priced brackets should be cash, or collectable within a comparatively short period. Credit risks never should be taken.

Intelligently merchandised, the midget should mean plus volume. Its special uses are many; its market a broad one.

•

"PLUS" RECEPTION FOR EVERY MODEL

BROADCAST reception *plus* other wave length service, will be the talk of the trade this fall. Let's promote it forcefully.

Why has "knee-action" swept the country? Because the entire automobile industry got behind it. Such a policy guarantees public acceptance—immediately and without reservations.

Spontaneous, cooperative promotion of the latest development in set design should be adopted by the radio industry. If *every* model, other than the low-priced midget, has at least one *extra* wave band feature, price increases will be fully justified and dealers will have a uniform and convincing sales story.

We offer for consideration the incorporation of *plus* reception in every console model in every line.

•

ALLWAVE IN THE WEST

IT'S easy to pick up Europe in New Hampshire—but how about the Iowa dial twister? We find that while foreign signals come in less regularly in the middle west most owners of good short wave equipment can get satisfactory reception from quite a number of the popular stations abroad—if they use a proper antenna system.

Allwave is the biggest single feature in the home set business this year. Play it up... but by all means SELL A SW ANTENNA WITH EVERY SW SET. They go together.

KEEP IT IN THE FAMILY

OVER 700,000 radio sets for motor cars were sold last year—an amazing increase over 1932 and the highlight news item of 1933. This year we'll top the million mark.

Radio manufacturers will get this business. But will their faithful and indispensable ally, the radio dealers, profit in like degree? Or will the set makers forget past favors and overplay the automotive outlets in the case of radio for cars already on the road?

The experienced radio merchant and the radio serviceman by background, training and by right should be given the "breaks." The radio retail trade has demonstrated its fitness to receive first consideration whenever an equal choice of agencies arises. Keep auto-radio in the family.

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SUPER TONE QUALITY

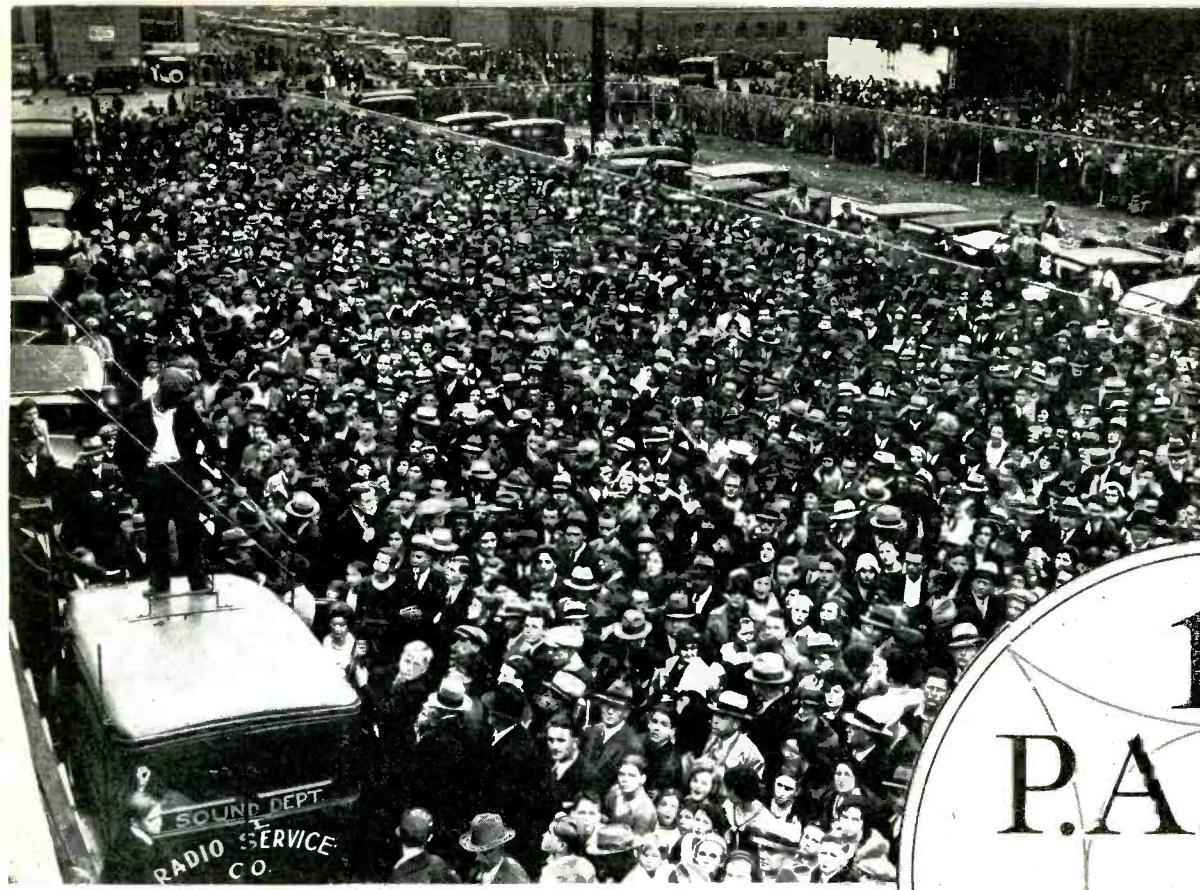
IT'S a grand idea. Technically sound. Everybody's working on it. It's needed. But, to get it going commercially, the entire industry must get behind "high fidelity" and give it a simultaneous push. It's a cooperative, promotional idea. How about it, RMA?

•

A Strange Creature Appears on the Horizon



Permission New York Herald Tribune



When Roosevelt
Stopped in Birmingham

10 P.A. Jobs a Month

WHEN Alabama needs a sound car or amplifying job done Dick Thomas, Birmingham, Ala., generally gets the business. Public address now has become by far the most profitable activity of the Radio Service Company. Thomas averages ten contracts a month.

What are the P. A. opportunities if a man has the right equipment? In population and cash resources Alabama is far from being the leading state in the union, yet here's some of the business Thomas booked within the past two years:

President Roosevelt's campaign address from rear end of train.

City auditorium and outside overflow meeting when Secretary of Agriculture spoke.

Battery of loud speakers at municipal airport for anniversary celebration.

Sound trucks for political candidates. Made the round of the state for all three parties—at \$50 for a single day or \$150 per week, plus expenses. Stages a ballyhoo parade in the morning, with circus music effects. "There's no secret to getting this type of business," says Thomas. "Politicians want results—noise. For instance, one chap wasn't going over so big in the provinces. He agreed to let me make a trip with him. The sound truck created just the effect he wanted. People poured out of their houses—and Jones entered the town in triumph, like Caesar, returned from the Wars."

When soliciting business Mr. Thomas carries visual proof of past successes: photographs of crowds, letters of recommendation, etc. Where a personal interview is not possible this material, together with a rate card, is mailed the prospect.

Also obtains business through working agreement with the local broadcasters. When a big meeting is scheduled the station manager is advised and given every assistance if he wishes to put it on the air. The station manager gets a 15 per cent commission if instrumental in securing the P. A. job for Radio Service.

Other events for which Mr. Thomas supplies sound

HECHT BROTHERS





The wide publicity a dealer gets through his public address work is a large part of the value of such an activity

equipment include sales, sporting events, county fairs, ballyhoo for picture shows and amplification for orchestras at night clubs.

Besides this type of business he looks after the service of a number of centralized radio panels in schools, country clubs, hotels and other public buildings in the state. He also has three theatres on his list. If any amplifier gets out of order he can make a substitution, repair the defective equipment and reinstall it at the most convenient time.

CULTIVATE THE AMATEUR

Critical judge of quality, potential aid in promotion work, experimenter, trouble-shooter and keen enthusiast—the amateur is and can be of marked aid to the dealer. In sales work alone, amateurs compose a controlling factor not to be neglected. Recommendations, testimonials, favorable advice and personal sales assistance mean mounting sales totals.

The amateur occupies a peculiarly influential posi-

tion in that an ordinary listener, knowing that the amateur accomplishes what seem to be miracles with radio apparatus, is quite ready to accept his word as to the good points of a given set.

Nearly every listener within two blocks of an amateur station knows of that station's presence and will feel like making a speaking acquaintance with the operator when in the mood for a purchase. A bit of advice in such a case may swing the prospect to a certain make of set.

Sales depend on the securing of prospects' names and addresses. Because he is ready to talk radio with everyone he meets, the amateur often gains information which would aid the dealer. A brief talk with a friendly amateur may develop several sales leads or may lay the foundation for future tips.

Particularly in the field of promotion, publicity, stunts and campaigns is the assistance of the amateur valuable; no listener is entirely free from curiosity concerning transmission of radio messages and programs. Any stunt based on familiarizing the listener with transmitting conditions should bring in prospects.

MODERNIZE IN BLACK AND CHROMIUM

Faith in the future of radio and a true appreciation of the appropriate prompted Hecht Brothers, Baltimore, to redesign its radio department. The results have more than justified the effort.

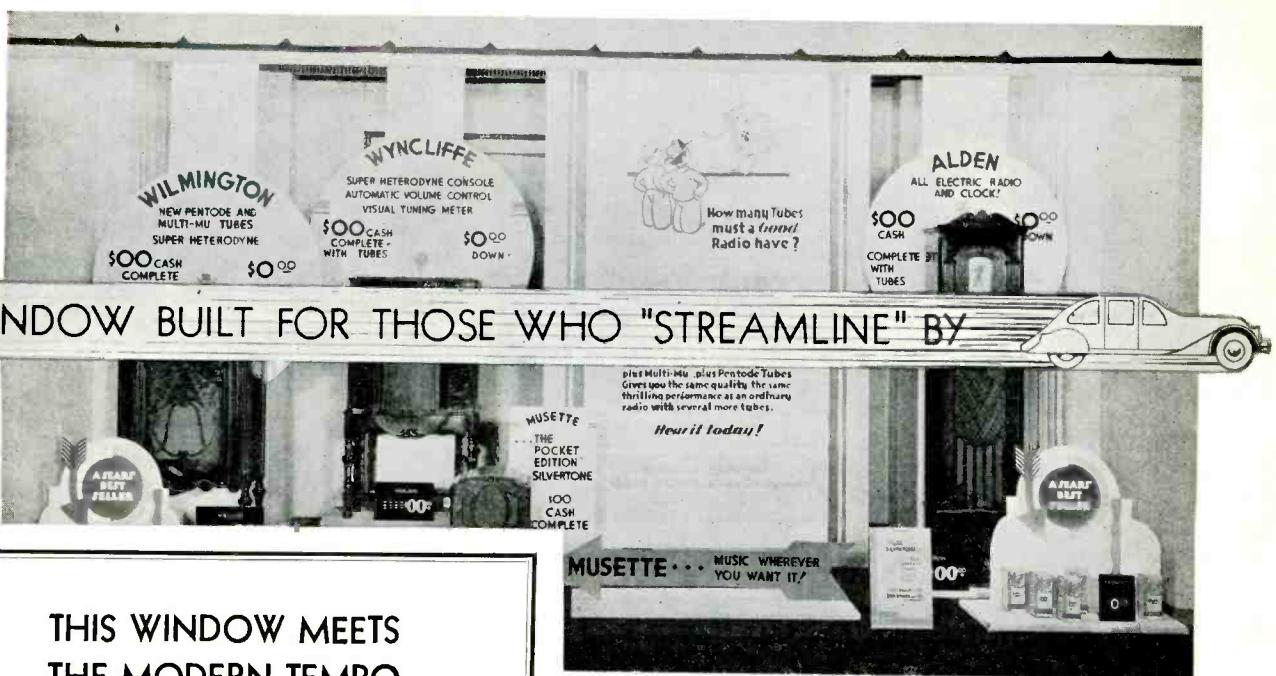
Black and chromium are the motifs used by Manager

Joseph Hoffman. Note the elevated platforms, the modernistic furniture and ornamentations. Also the tube display in the center of the right-hand grouping of consoles.

This is an excellent example of the dignified display of sets. The buying urge must prove irresistible.



HIGH VISIBILITY



THIS WINDOW MEETS THE MODERN TEMPO

- A minimum of merchandise. Too many items confuse the asphalt clientage.
- The sets and the sales story are "spot-lighted." Any dealer can make 40-in. plaques like these.
- Line of greatest visibility has been raised to a point two-thirds from the floor. Note use of platforms and absence of litter on floor.
- A big and startling poster effect to clinch the story. This one is made of crash, with black felt lettering. The striping is green felt, also the big arrow. Experiment with crash and colored felts—very effective.
- Note how "best sellers" are featured.

Learn About 1934 Trim Requirements from Sears' Expert Display Director

any type of radio or electrical product. Can be kept clean and are light in weight. Other effects can be had with an assortment of crash-covered plateaux, cubes, full rounds, red arrows, felt letters, striping, circles and shelves.

In posters, copy has been boiled down—always with the motorist in mind. Observe the relative sizes of the lettering.

There's a motor car to every 4.64 persons. The world is rolling past your store. Keep your ear to the highway these days—and trim windows accordingly.

Mr. James realizes that the average show window is a failure when it comes to catching the eye of the macadamized clientele. A merchant must keep his ear to the highway these days, he says, and then apply what he

BIFOCAL displays—that pedestrians can comprehend and passing motorists and those on street cars can "get" as they go by! That's the 1934 "streamline" idea back of Sears, Roebuck and Company's new series of radio windows. They were evolved by L. S. James, national display director for this corporation.

He ascertained that 85 per cent of the people who pass Sears windows are in motor or street cars—whiz by at 20 miles an hour. Hence the need for a new type of simple, direct, *high visibility* windows. In a dozen turns of the car wheels the story must be told. In this window it is! There's a magnetic pull toward the store parking space. The motorist learns *what, how much and why* in a twinkling.

And now a word about the mechanics of such a trim. Takes less than an hour to install. The "props" are interchangeable and may be used many times and in all sorts of attractive combinations. Simplified backgrounds of crash panels and felt appliques will harmonize with

MARIETTA RADIO SUPPLY CO.

PHONE 1677

AUTHORIZED DEALERS FOR
ZENITH, STROMBERG-CARLSON & AUTOMOBILE RADIO
KELVINATOR ELECTRIC REFRIGERATION

EXPERT SERVICE ON ALL MAKES OF RADIOS

Please have your service man call and repair our Radio. Make of
Radio..... Battery..... Electric.....
REMARKS: NAME.....
ADDRESS.....
TELEPHONE.....
BEST TIME TO CALL.....

"—WITH EXCELLENT

"This return service card, that we designed and mail to customers, has produced excellent results. It costs us but two cents to receive a written re-

hears to his windows. Even in windows crowded with merchandise there must be a dominant note or certain "spotlighted" focal points. This result may be obtained by elevating the chief item or items, by vivid, individual, background pieces as well as by the use of light.

ROAD SOLICITATIONS

ROAD solicitations will sell many automobile radio receivers this year, as in the past. Here's a thought: Equip your demonstrator with an extra speaker—facing out the rear end. Also provide a hand microphone and a convenient cut-in switch.

Drive along *in front* of a leisurely paced, likely-looking prospect's car and cut in the mike with a personal message which runs about like this: "You've just been listening to a broadcast program from Cleveland, reproduced through the very latest and best automobile radio set on the market. What did you think of it? Wasn't the tone pleasing? And did you notice how clear and strong the music sounded? How about a set for your car? You'll be surprised at its low cost. Would you like to talk it over? Or to have our address for some future call? Toot your horn and we'll stop."

Sid Barry, by dint of many personal calls on every automobile man in the Bronx, New York City, has lined up many car dealers—or car salesmen—on a commission basis. Leaving a supply of printed matter and a few display pieces is not enough for Mr. Barry. Each sub-agent has been thoroughly trained in the sales talks which go with the lines this firm handles. Furthermore, if an auto concern is directly the cause of selling 12 outfits it gets, without cost, a demonstrator board.

The installations are made by Barry & Cortley—the dealer simply driving the newly sold automobile around to the Grand Concourse headquarters of this concern for the hour or two needed to do the job. The customer cost of the average installation is \$7.50.

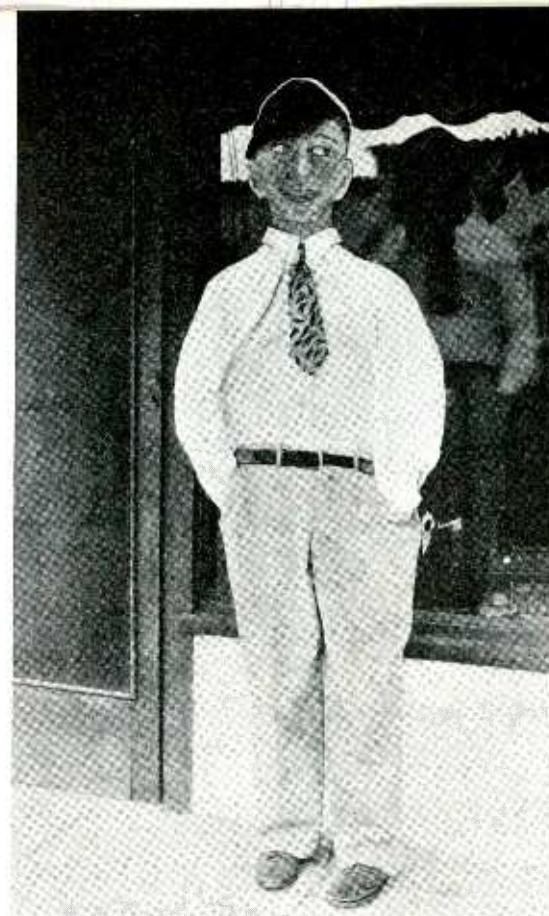
And last, but not least, in the B&C picture is its tribute to the value of subscribing to a license plate information service. In most communities will be found a



RESULTS FROM SAME"

quest for service. Thought your readers might be interested.

MARIETTA RADIO SUPPLY CO.
Marietta, Ohio



NOT SUCH A DUMB DUMMY

LLOUD speakers, out front, fail as demonstrators of tone quality. Their function is to attract attention. Pico Radio Shop, Los Angeles, faces this fact frankly. So Emil Minder constructed a man-height dummy—with a speaker behind its shirt. In the evening the transparent glass eyes are illuminated.

"It individualizes our shop," Minder explains. "Our friends tell their friends, 'Pico's is the store with the man out front that talks and sings.' Further, this stunt saves our good sets from wind and rain and from the marauding of mischievous boys."

company who, for a monthly fee (\$10 in this instance) will supply its subscribers with a weekly record of all new car purchasers, in a given territory, and with the names and addresses, as well, of all transfer sales. The value of such a list of prime prospects for radio equipment is obvious.

Then, again, voluntary but timid prospects may stop to enquire about the proposition—either pulling up in front of the store or alongside the road demonstrator. The alert salesman jots down the license plate number. Later he phones the auto registration company and gets the full details.

"It is surprising how many of these cases can be sold when personally followed up at the prospect's own home," concludes Mr. Barry.

• • •

According to the estimates of a number of the leading car makers, telegraphed to *Radio Retailing*, at least 20 per cent of all 1934 pleasure automobiles will be equipped at the factory with a radio receiver. This includes those models having radio as a standard accessory or new cars for which a set is specified at the time purchased from the auto dealer.

AUTO-RADIO



Trade Name	Model	List Price	Dimensions	Chassis	Speaker	Remote Control	Separate Speaker	Eliminator (Type)	Tubes	Battery Drain
American Television and Radio Co., 1916 University Ave., St. Paul, Minn.										
ATR	61	\$35.00	10 $\frac{1}{4}$ x8 $\frac{1}{2}$ x5 $\frac{1}{4}$	.....	.....	No	No	Vibrator	2-39,36,85,89,84	5.5
Atwater Kent Mfg. Co., Philadelphia, Pa.										
Atwater Kent	666	\$49.90	12x6 $\frac{1}{2}$ x6 $\frac{1}{2}$	.....	.....	Yes	No	Vibrator	84, 2-6D6, 6A7, 41, 85	6
Atwater Kent	816	59.50	12x6 $\frac{1}{2}$ x6 $\frac{1}{2}$	.....	.....	Yes	No	Vibrator	2-6D6, 6A7, 85, 2-41	5
Atwater Kent	926	64.50	12x6 $\frac{1}{2}$ x6 $\frac{1}{2}$	.....	.....	Yes	No	Rotating	2-6D6, 6A7, 85, 2-41	6
Atwater Kent	936	68.50	12x6 $\frac{1}{2}$ x6 $\frac{1}{2}$	8 $\frac{1}{2}$ " diam.	.....	Yes	Yes	Rotating	2-6D6, 6A7, 85, 2-41	6
audiola Radio Co., 430 So. Green St., Chicago, Ill.										
Audiola	345	\$39.95	10x7x7	5"	diam.	Yes	No	Vibrator	6D6, 6A7, 75, 41, 84	5.2
Audiola	346	54.95	10x7x7	6"	diam.	Yes	No	Vibrator	2-6D6, 6A7, 75, 41, 84	5.5
Audiola	347	69.95	10x7x7	8"	diam.	Yes	Yes	Vibrator	2-6D6, 6A7, 85, 2-41, 84	5.8
Autocrat Radio Co., 3855 N. Hamilton Ave., Chicago, Ill.										
Autocrat	5	\$39.95	8 $\frac{1}{2}$ x7x2 $\frac{1}{4}$	.....	.....	Yes	No	Vibrator	6A7, 6D6, 6B7, 42, 84	4
Automatic Radio Mfg. Co., 112 Canal St., Boston, Mass.										
Automaster	4	\$23.95	6x6x3	.....	.....	.....	.....	Vibrator	77, 2-78, 41	4.5
Automaster	5	34.95	6x6x3	.....	.....	.....	.....	Vibrator	77, 2-78, 84, 41	4.5
Tom Thumb	4	23.95	.....	.....	.....	.....	.....	Vibrator	77, 2-78, 41	4.5
Tom Thumb	5	34.95	.....	.....	.....	.....	.....	Vibrator	77, 2-78, 84, 41	4.5
Auto-Matic	5	39.95	6x7x8	.....	.....	Yes	.....	Vibrator	75, 78, 6A7, 41, 84	5
Auto-Matic	6	47.50	6x7x8	.....	.....	Yes	.....	Vibrator	75, 2-78, 6A7, 41, 84	5.25
Deluxe	6	69.50	6x7x8	.....	.....	Yes	.....	Rotating	75, 2-78, 6A7, 2-41, 6D6	6
Belmont Radio Corp., 1257 Fullerton Ave., Chicago, Ill.										
Belmont	670	\$39.50	9 $\frac{1}{2}$ x7x6 $\frac{1}{16}$	.....	.....	Yes	No	Vibrator	6D6, 6C6, 78, 75, 42, 84	5.9
Calvert Motors Associates, Ltd., 210 So. Hanover St., Baltimore, Md.										
Mobilette	A40B	\$27.95	5 $\frac{1}{2}$ x4 $\frac{1}{2}$ x5 $\frac{1}{2}$	7 $\frac{1}{2}$ x7 $\frac{1}{2}$ x4 $\frac{1}{2}$	.....	No	Yes	B-batteries	2-78, 77, 41	...
Mobilette	A50E	33.95	5 $\frac{1}{2}$ x4 $\frac{1}{2}$ x5 $\frac{1}{2}$	7 $\frac{1}{2}$ x7 $\frac{1}{2}$ x4 $\frac{1}{2}$	.....	No	Yes	Vibrator	2-78, 77, 41, 84	...
Autophone	A60E	38.95	9 $\frac{1}{2}$ x7 $\frac{1}{2}$ x6 $\frac{1}{16}$	.....	.....	Yes	No	Vibrator	6A7, 78, 85, 37, 41, 84	...
Colonial Radio Corp., 420 Lexington Ave., New York, N. Y.										
Colonial	164	\$54.95	9 $\frac{1}{2}$ x7x7	6"	diam.	Yes	No	Vibrator	2-78, 6A7, 6B7, 41, 84	...
Colonial	150	39.95	9 $\frac{1}{2}$ x6 $\frac{1}{2}$ x6 $\frac{1}{2}$	6 $\frac{1}{2}$ " diam.	.....	Yes	No	Vibrator	6A7, 78, 75, 41, 84	...
Colonial	182	69.50	9 $\frac{1}{2}$ x7 $\frac{1}{2}$ x7	6 $\frac{1}{2}$ " diam.	.....	Yes	Yes	Rotating	78, 6A7, 6F7, 6B7, 2-41	...
Crosley Radio Corp., Cincinnati, Ohio										
Crosley	103	\$44.50	10 $\frac{1}{2}$ x7 $\frac{1}{2}$ x7 $\frac{1}{2}$	.....	.....	Yes	No	Vibrator	3-78, 6B7, 41	5
Emerson Radio & Phonograph Corp., 111 Eighth Ave., New York, N. Y.										
Emerson	667	\$59.50	6x6x7	6x6x7	5 $\frac{1}{2}$ " diam.	Yes	Yes	Vibrator	2-78, 6A7, 6B7, 2-41, 84	6
Emerson	965	39.95	5x9x6	5x9x6	5 $\frac{1}{2}$ " diam.	Yes	No	Vibrator	2-78, 6A7, 75, 41, 84	5.5
Fada Radio and Electric Co., Long Island City, N. Y.										
Fada	161	.....	10 $\frac{1}{2}$ x8 $\frac{1}{16}$ x7 $\frac{1}{2}$	.....	.....	Yes	No	Vibrator	2-78, 6A7, 6B7, 41, 84	6
Freed Television & Radio Corp., 22-19 Wilbur Ave., Long Island City, N. Y.										
Freed-Eisemann	A10	.....	7x7x13	.....	.....	Yes	No	Vibrator	2-78, 6A7, 75, 76, 12A5, 84, 6Z4	4.5
Galvin Mfg. Co., 847 W. Harrison St., Chicago, Ill.										
Motorola	Dual 6	\$49.50	8x8x7	8x8x7	.....	Yes	No	Vibrator	42, 77, 2-78, 75, 84	5
Motorola	Twin 8	64.50	8x8x7	8x8x7	.....	Yes	Yes	Vibrator	2-6A4, 77, 2-78, 37, 85, 84	6
Motorola	34	39.95	10 $\frac{1}{2}$ x6x5	10 $\frac{1}{2}$ x6x5	.....	Yes	No	Vibrator	42, 77, 2-78, 75, 84	5
Garod Radio Corp., 34 East 12th St., New York City										
Garod	G6	\$49.50	9 $\frac{1}{2}$ x8 $\frac{1}{2}$ x6 $\frac{1}{2}$	9 $\frac{1}{2}$ x8 $\frac{1}{2}$ x6 $\frac{1}{2}$	.....	Yes	No	Vibrator	2-78, 6A7, 75, 41, 84	4 $\frac{1}{2}$
General Electric Co., Bridgeport, Conn.										
General Electric	C41	\$47.50	8 $\frac{1}{2}$ x8 $\frac{1}{2}$ x7	8 $\frac{1}{2}$ x8 $\frac{1}{2}$ x7	.....	Yes	No	Vibrator	78, 6A7, 6B7, 41	5.7
General Electric	B52 (Car-Home)	69.50	6 $\frac{1}{2}$ x7 $\frac{1}{2}$ x17 $\frac{1}{2}$	6 $\frac{1}{2}$ x7 $\frac{1}{2}$ x17 $\frac{1}{2}$	.....	No	No	Vibrator	IV, 78, 6A7, 6B7, 41	5.7
Halson Radio Mfg. Co., 45 Lispenard St., New York, N. Y.										
Roadmaster	.....	\$49.50	10 $\frac{1}{2}$ x7 $\frac{1}{2}$ x7 $\frac{1}{2}$	10 $\frac{1}{2}$ x7 $\frac{1}{2}$ x7 $\frac{1}{2}$	.....	Yes	No	Vibrator	2-44, 6A7, 75, 84, 42	6.5
Howard Radio Co., 1731 Belmont Ave., Chicago, Ill.										
Howard	.....	\$47.50	9 $\frac{1}{2}$ x7 $\frac{1}{2}$	9 $\frac{1}{2}$ x7 $\frac{1}{2}$	.....	Yes	No	Vibrator	42, CD6, 6C6, 78, 75, 84	....
International Radio Corp., Ann Arbor, Mich.										
Kadette	K60	.....	9x7 $\frac{1}{2}$ x7	9x7 $\frac{1}{2}$ x7	.....	Yes	No	.....	2-66, 6F7, 75, 46, 84	....
Karadio Corp., 2600 Delaware St., S.E., Minneapolis, Minn.										
Super Six Whirl	56	\$52.50	9" ¹ / ₂ " diam.†	9" ¹ / ₂ " diam.†	6" diam.	Yes	No	Vibrator	77, 78, 6F7, 75, 2-41	4.75
Sheriff's*	....	54.50	9" ¹ / ₂ " diam.†	9" ¹ / ₂ " diam.†	6" diam.	Yes	No	Vibrator	77, 78, 6F7, 75, 2-41	4.75
Police	....	54.50	9" ¹ / ₂ " diam.†	9" ¹ / ₂ " diam.†	6" diam.	Yes	No	Vibrator	77, 2-78, 75, 41	4.5
*Broadcast and police bands. †Round shaped set.										
Larkin Co. Inc., Buffalo, N. Y.										
.....	90	\$34.50	9 $\frac{1}{2}$ x6 $\frac{1}{2}$ x4 $\frac{1}{2}$	4 $\frac{1}{2}$ x7x7	.....	No	Yes	Vibrator	2-41, 2-78, 85, 77	5.5

Trade Name	Model	List Price	Dimensions	Chassis	Speaker	Remote Control	Separate Speaker	Eliminator (Type)	Tubes	Battery Drain
Laurehk Radio Mfg. Co., Adrian, Mich. Car-uso	AE79	\$54.50	11x6½x6½	.....	.....	Yes	Yes	Vibrator	41, 79, 2-78, 6A7, 6B7	2
Lewol Mfg. Corp., 844 W. Adams St., Chicago, Ill. Lewol	12A	\$59.50	11½x6½x7	.....	.....	Yes	No	Rotating	2-78, 6A7, 85, 41, 79	6
Mission Bell Radio Mfg. Co. Inc., 1455 Venice Blvd., Los Angeles, Calif.	11	\$49.50	9½x7½x6½	5" diam.	.....	Yes	No	Vibrator	2-78, 77, 75, 84, 42	5.25
	12	64.50	9½x7½x6½	5" diam.	.....	Yes	Yes	Vibrator	2-78, 77, 75, 84, 42	5.25
	14	39.50	9½x7½x6½	5" diam.	.....	Yes	No	Vibrator	78, 77, 75, 42, 84	5
Noblitt Sparks Industries, Inc., Columbus, Ind. Arvin	15	\$39.95	9½x7½x5	.....	.....	No	No	Vibrator	78, 6A7, 6B7, 41, 84	5
	25	54.50	8½x8x9	.....	.....	Yes	No	Vibrator	2-78, 6A7, 6B7, 41, 84	5.5
	35	69.50	11½x6½x6	8½" diam.	.....	Yes	Yes	Vibrator	78, 77, 6B7, 37, 79, 2-41, 84	8.5
	45	110.00	11½x6½x6	10½" diam.	.....	Yes	Yes	Vibrator	2-78, 77, 37, 2-75, 2-41, 84	9
Philco Radio & Television Corp., Philadelphia, Pa. Philco Transitone	10	\$55.00	10½x7½x7½	.....	.....	Yes	No	Vibrator	2-44, 6A7, 75, 84, 42	6.5
	11	39.95	10½x7½x7½	.....	.....	Yes	No	Vibrator	36, 42, 44, 75, 77, 84	6.4
	800	75.00	10½x7½x7½	.....	.....	Yes	No	Vibrator	6A7, 37, 75, 79, 84, 2-44	7.6
Pierce-Airo Inc., 510 Sixth Ave., New York City DeWald	52	.....	.....	.....	.....	Yes	No	Vibrator	84, 89, 37, 85, 2-36	5.2
	61X	.....	.....	.....	.....	Yes	No	Vibrator	6A7, 78, 85, 37, 41, 84	5
	640	.....	9½x7x7	.....	.....	Yes	No	Vibrator	2-66, 6F7, 41, 84, 75	5.5
Radio Chassis Mfg. Co., 34 E. 12th St., New York City RCI	V6	\$49.50	9½x8½x6½	.....	.....	Yes	No	Vibrator	2-78, 6A7, 75, 41, 84	4.5
RCA-Victor Co., Inc., Camden, N. J. RCA-Victor	M105	\$47.50	8½x8½x7½	.....	.....	Yes	No	Vibrator	41, 78, 6A7, 6B7	5.5
	Portette	69.50	6½x7½x17½	.....	.....	No	No	Vibrator	1V, 78, 6A7, 6B7, 41	5.7
Republic Industries, Ashland, Ohio CR6	.....	\$49.90	10½x6x7½	.....	.....	Yes	No	Vibrator	.....	5
Sentinel Radio Corp., 2222 Diversey Parkway, Chicago, Ill. Sentinel	602	\$52.50	.....	6" diam.	.....	Yes	No	.....	.....	...
Silver Marshall Mfg. Co., 417 No. State St., Chicago, Ill. Air Flight	J	\$54.50	.....	.....	.....	Yes	No	Vibrator	6Z4, 75, 2-6E7, 6A7	5
	K	89.50	.....	.....	.....	Yes	Yes	Vibrator	6C6, 2-6D6, 37, 89, Wunderlich	5
Simplex Radio Co., Sandusky, Ohio Simplex	T	\$42.50	6x8½x6	5x2½	.....	Yes	No	Vibrator	2-78, 75, 6A7, 84	4.5
Sparks-Withington Co., Jackson, Mich. Sparton	36	\$69.50	9½x7½x5½	7½x7½x4	.....	Yes	Yes	Vibrator	79, 85, 89, 2-78, 36, 37	6
	33	59.50	9½x7½x5½	7½x7½x4	.....	Yes	Yes	Vibrator	84, 85, 41, 36, 2-39	5
	333	39.95	9½x7½x6½	6" diam.	.....	Yes	No	Vibrator	84, 75, 41, 78, 6F7	5.5
	33A	55.00	9½x7½x5½	9½" diam. x 4	.....	Yes	Yes	Vibrator	84, 75, 41, 2-78, 36	5.5
	Sparton Police S.W. 43	105.00	6½x7½x11½	8½x4	.....	Yes	Yes	Rotating	3-39, 36, 37, 38	4.5
Stewart-Warner Corp., 1836 Diversey Blvd., Chicago, Ill. Stewart-Warner	1122	\$39.95	5x6½x9	.....	.....	Yes	No	Vibrator	78, 6A7, 75, 41, 84	5
	1171	.....	7½x7½x10½	.....	.....	Yes	No	Vibrator	2-78, 6A7, 75, 42, 84	6
Stromberg-Carlson Tel. Mfg. Co., Rochester, N. Y. Stromberg-Carlson	33A	\$79.50	8½x8½x5½	9½x9¾x4½	.....	Yes	Yes	Vibrator	78, 6A7, 6B7, 37, 2-41	5.5
United American Bosch Corp., Springfield, Mass. American Bosch	45	.....	9½x8½x7½	.....	.....	Yes	No	Vibrator	2-77, 78, 75, 41	6
	79	.....	11½x7x6½	.....	.....	Yes	No	Vibrator	2-77, 78, 75, 42, 84	6.3
United Motors Service, Inc., 3044 W. Grand Blvd., Detroit Mich. 4037	4038	\$47.50 67.50	.....	.....	.....	Yes	No	Vibrator	2-78, 6F7, 75, 41	5
	.....	.....	.....	.....	.....	Yes	Yes	Vibrator	2-78, 6F7, 85, 2-41	6
Wells-Gardner Co., 2701 No. Kildare Ave., Chicago, Ill. Wells-Gardner	26U	\$54.50	10x6½x7	.....	.....	Yes	No	Vibrator	75, 77, 2-78, 41, 84	5.8
	25ZL	59.50	10x6½x7	.....	.....	Yes	No	Rotating	75, 77, 2-78, 41	5.8
Wholesale Radio Service, 100 Sixth Ave., New York, N. Y. Lafayette	L23	\$60.00	12x5½x6½	.....	.....	Yes	No	Vibrator	2-78, 77, 75, 41, 84	4.85
Wilcox Gay Corp., Charlotte, Mich. 4B6	.....	\$49.90	10½x6½x6½	5x2½x2½	.....	Yes	No	Vibrator	2-78, 84, 41, 75, 6A7	5
Wurlitzer, Rudolph, Mfg. Co., N. Tonawanda, N. Y. Wurlitzer-Lyric	460	\$59.50	11x7x5½	6" diam.	.....	Yes	No	Vibrator	3-66, 6B7, 41, 6Z4 or 84	...
Zenith Radio Corp., 3620 Iron St., Chicago, Ill. Zenith	462	\$49.95	8½x8½x9	.....	.....	Yes	No	Vibrator	6C6, 6F7, 6Z4, 6D6, 75, 42	6

Photos by Galloway



Merchandising



VICTOR MUSICAL MASTER-PIECE albums and Columbia Masterworks sets, for which there is a steadily mounting demand, are both approaching the 200 mark. Each of these companies has recently inaugurated a series of domestic recording ventures. Heretofore, local lists have been bolstered considerably by the almost exclusive prevalence of re-pressings of European engravures. The fact that both Victor and Columbia have seen fit to place microphones before native organizations and artists such as the Boston Symphony Orchestra, the Minneapolis Symphony Orchestra, Lawrence Tibbett, George Copeland, Richard Crooks and others, portends an enterprising outlook for recorded serious music. Especially well do recent releases tie-up with radio publicity and the sort of broadcast music which is drawing wide public attention everywhere today.

April's publications supply a vivid cross-section of musical tastes. In the Red Seal list, the outstanding items include *Háry János* suite and excerpts from *Schwanda*, played by the Minneapolis Symphony Orchestra under the direction of Eugene Ormandy making its début on Victor records. Broadcast favorites, these instrumentalists from Minnesota have concocted some exuberant readings, recorded with the utmost clarity and warranting praise. *Háry János* (set No. M-197) is modern music, colorful and enchanting. For special demonstration of High Fidelity reproduction, by all means play the fourth and sixth parts in which the brilliant scoring is projected with amazing clarity. Read the accompanying booklet of programme notes for the essence of the Munchausen-like history of the Hungarian national figure around whom this music by Zoltan Kodály is built. Do not be frightened away by

these strange sounding Magyar names. Music is a universal language—listen to this delightful fairy tale given an elaborate tonal setting and you'll have no difficulty passing along your enthusiasm for the interesting march-like rhythms to your customers.

Schwanda, the Bagpipe Player, was produced at the Met several seasons ago. Record No. 7958 gives an instrumental interlude (polka and fugue) from this scintillating and popular Bohemian opera by Weinberger. Two American music dramas garnered considerable publicity and plaudits through Lucky Strike broadcasts. You can cash in on this sumptuous airing by displaying in your windows the record by Lawrence Tibbett of arias from Gruenberg's *Emperor Jones* and Hansen's *Merry Mount* (No. 7959).

Columbia has a set this month of particular timely interest: Roy Harris' *Symphony 1933*, first performed last January by the Boston Symphony Orchestra under Serge Koussevitsky, who directs the recording here, made February 2, 1934, in Carnegie Hall (set No. 191). Harris is a young musical Lochivar from Oklahoma whose work has drawn much publicity this season and it is being shouted around that here at last is a native "white hope" in the field of important music. His type of composition is as rugged as Plymouth Rock and, while "modern" nevertheless it has most of the ingredients necessary for popularity. Recommend this unusual set to your youthful clients.

This company also avails itself of the present trend in operatic taste by publishing a complete recording of Massenet's *Manon* (which went over the Lucky Strike network, March 31). Sung in French by artists of L'Opéra-Comique, Paris, this authentic version, on 18 twelve-inch discs, is bound to interest a large number of opera devotees.

Eduardo Bianco, the Tango King, and His Famous Argentine Orchestra, make their American record début under the Brunswick label. Featuring such exotic instruments as the "bandoneons" this band will provide domestic tango enthusiasts with the real thing as developed under the Equator. Heretofore Bianco records have been a specialty of imported disc shops. Brunswick's releases will make his music, favored by Gotham night club aristocracy, available to the country at large.

Radio Retailing Selects

THE HITS FOR APRIL

VICTOR

★★★**As Long As I Live**—(from "Cotton Club Parade")
★★★**Ill Wind**—(from "Cotton Club Parade")
Played by Eddie Duchin and his Orchestra (No. 24579).

★★★**Japanese Sandman**—

★★★**Tiger Rag**—
Played by Ray Noble and his Orchestra (No. 24577).

★★★**Lazy Rhapsody**—

★★★**Winter Interlude**—
Played by Harry Sosnik and his Edgewater Beach Hotel Orchestra (No. 24572).

Who Walks In When I Walk Out
—Vocal
Goopy Geer—Vocal
Ramona and her Grand Piano (No. 24561).

BRUNSWICK

★★★**Should I Be Sweet?**—(from the Paramount Picture "Take a Chance")

★★★**I Like the Likes of You**—(from "Ziegfeld Follies")
Played by Victor Young and his Orchestra (No. 6779).

★★★**Evocation**—Tango

★★★**Rodriguez Pena**—Tango
Played by Eduardo Bianco and his Famous Argentine Orchestra (No. 6782).

★★★**Jungle Fever**—(from the MGM picture "Operator 13")—Vocal

★★★**I Found a New Baby**—Vocal
Sung by the Mills Brothers (Four Boys and a Guitar) (No. 6785).

COLUMBIA

★★★**Emaline**—

★★★**Georgia Jubilee**—
Played by Benny Goodman and his Orchestra (No. 2907D).

★★★**The Spanish in My Eyes**—Rumba
Played by Enrique Madriguera and his Orchestra.

★★★**Another Perfect Day Has Passed**—Waltz
Played by George Olsen and his Orchestra (No. 2899D).

★★★**The Great American Tourist**—Vocal
Sing-Sing Isn't Prison Any More

—Vocal
Exclusive Songs by the Yacht Club Boys (2908D).

Ill Wind is another *Stormy Weather*, and the coupling packs a lot of "swing." Both done in Duchin's most scintillating manner. This disc will become without doubt the "hit of the month."

Should I Be Sweet is another piece with "swing." The cajoling refrain complements Vic Young's suave and persuasive orchestration. Feature this disc too.

Emaline is already tremendously favored; Benny Goodman's hot clarinet advances this item to the front rank of those records which simply must be heard.



Business Follies of 1934

FOLLY NO. 3



GET THESE NEW VICTOR RELEASES:

- 24579 *Ill Wind*—Fox Trot (From "Cotton Club Parade")
As Long As I Live—Fox Trot (From "Cotton Club Parade") Eddy Duchin and his Orchestra
- 24580 *Without That Certain Thing*—Fox Trot
You Oughta Be In Pictures (From Columbia film "New York Town") Rudy Vallee and his Connecticut Yankees
- 24574 *Sun Spots*—One-step
The Bouncing Ball—One-step Paul Whiteman and his Orchestra
- 7957 *Pleasure Dome of Kublai Khan*—Part 1
Pleasure Dome of Kublai Khan—Part 2 Eugene Ormandy and the Minneapolis Symphony Orch.



**"I should tie up
MY MONEY
in records!"**

Which shows he's a back number! More and more turn-tables are being bought every day . . . and business with the new Victor records has shot up 100%! Better get in on it.

IT hasn't taken the public long to find out about the new Victor records—not even as long as we thought it would! One reason—more people are in the market for records in 1934, because more turn-tables are being bought today than in the past few years.

There's no longer any question of "sinking your money down a well" with phonograph records. Record sales are 100% greater than last year, 300% greater than when the depression hit bottom. Live dealers have thrown out the old, slipshod methods that used to be in vogue; they are learning how really to merchandise records—and what a help the new crispness and new definition in Victor records gives them!

Through higher fidelity Victor gets a new sweetness and purity of tone never before achieved in *any* kind of reproduction. Make this reopened market yours; find out, too, how you can cash in on the new Blue Birds, fastest selling low-priced records. Fill out the coupon below and we'll give you the whole story!

RCA VICTOR CO., INC., A Radio Corporation of America Subsidiary.

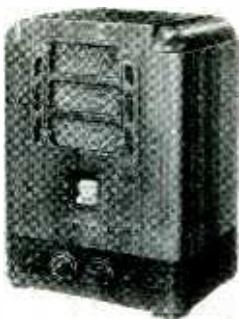
IT PAYS TO SELL
Victor Records



RCA VICTOR CO., Inc., Camden, N. J.
I want to get in on the new increase in sales of Victor records. Please send me complete details of your proposition

Name _____
Address _____ RR _____

STROMBERG ANNOUNCES TABLE MODEL



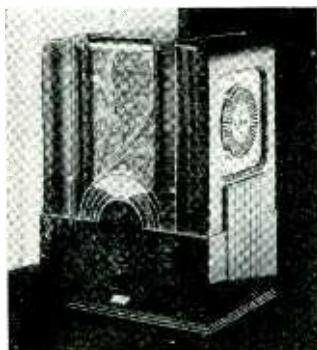
Stromberg Carlson's first midget, the "Treasure Chest," is an all wave receiver



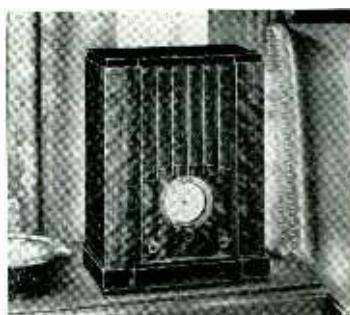
Installation of the new dual purpose radio of RCA-Victor and GE in the rear seat of the car



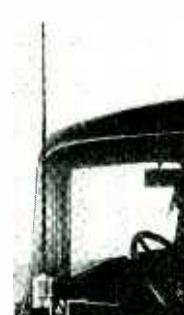
The same set, when used in home, will harmonize with most any interior



The "Tune-O-Stat" mechanism of Majestic's automatic tuning set is located on the side



A graceful double-end pointer is used on Emerson's Model 39 all wave table set



Tobe Deutschemann's "Radio Rod" aerial

General Electric and RCA-Victor Bring Out Double Purpose Radio for Auto and Home . . . Automatic Tuning (Majestic) Here Again . . . Emerson's Dual Light Dial . . . The Stroboscope . . . Robophone

WHEN Stromberg Carlson brings out a *midget*, that's news. It is a good sized set, of course, with 8½ inch speaker and utilizes 220 sq.ft. of baffle area. Especial care has been taken to make it quiet on both the standard (540-1,570) and shortwave bands (5,500-15,500) and a combined tone control and clarifier aids in eliminating or reducing atmospheric noises. Push pull A amplification with an undistorted output of 6½ watts yields ample volume for any occasion. "Selectorlite" dial for simpler tuning. \$75. For customers who insist (!) on a console—same chassis—Stromberg has taken care of the situation with a good looking full size cabinet. \$95.

Both GE and RCA-Victor have developed an *auto-home* set which should have what is commonly called "popular appeal" if inquiries at this office can be considered a yard stick. Easy to change from one to the other and attractive enough not to look like a "bull in a china store" when taken into the home. Should be just the thing for travelers, as they can just unhitch it and take it right into the \$1 per person overnight bungalow or camp. Makes a nice arm rest, too, for the driver or even the back seat driver. If you're interested in the technical details, it is a 5 tube super, using 1V,78,6A7, 6B7,41. Carries a list of \$69.50.

Automatic tuning has again bobbed up. This time in Majestic's table model with the mechanism on the side. The tuning periods are broken down into convenient 15 minute intervals—a total of 48—so that quarter, half and full hour programs can be tuned in and shut off right on the dot. A choice of ten stations, automatically changing from one

to the other, is possible with a definite setting of four selective stations at one time. A really handy gadget, practical and easy to operate.

The tricky dial on Emerson's Model 39 is attracting attention. It is divided into two parts, the upper half being calibrated in kilocycles for the broadcast band and the lower half in meters for shortwaves. As each is used, that half lights up.

If you want a non-directional auto-radio aerial, look into Tobe Deutschemann's "radio rod." Goes outside the car by the windshield and can be adjusted from 2 to 8 feet in height. Same type as originally designed for radio interference locating instruments.

For those who are so inquisitive they must know just how fast their turntables are running, we suggest they get a "Stroboscope." Applicable to both 33½ and 78 r.p.m.

In closing, let us say if you'd like to put in a pair of scales which wobble a delightful sales talk every time a customer drops in the necessary penny for his weight, let us know. We'll tell you where the "Robophone" talking scale may be purchased.

Howard "Explorer" All-Wave Set

The 19-tube "Explorer" console of the Howard Radio Co., South Haven, Mich., covers from 140 to 22,000 kc. It has the airplane tuning panel making it possible to tune the short-wave stations entirely by sight. It also employs a new type station indicator for broadcast band with Neon light which travels with the pointer of the clock-type dial and lights only when a station is tuned in.

A 24 lb. Jensen ortho-dynamic speaker and a separate 9-tube audio amplifier are used for better tone. This audio amplifier employs 4-2A5, and 3-56. The balance of the tubes include 3-56, 83V, 3-58, 2-57, 2-2A7 and 2B7.

The cabinet is the same as used in the previous Model W6.—*Radio Retailing*, April, 1934.

Arlab Speaker

Many new magnetic and dynamic speakers have been added to the line of the Arlab Mfg. Co., Inc., 1250 N. Paulina St., Chicago.

The new line consists of a midget 5 in. dynamic unit, \$3.50; 6 in. dynamic unit, \$4; de luxe 6 in. dynamic, \$4.50; 8½ in. dynamic, \$6.50; 11 in. p.a. and radio dynamic speaker, \$10 and \$12.50; 14 in. dynamic for p.a. and theatre work, \$22 and \$40; a special trumpet unit, \$16; 8½ in. dynamic auto radio speaker, \$5 and \$7.50 and three magnetics, \$2.50, \$3.50 and \$4.50.

This company maintains a repair and service department handling all types and makes of speakers.—*Radio Retailing*, April, 1934.



Colonial Auto-Radios

Three "Tri-Conditioned" auto-radios—built to withstand variables in cold, heat and humidity—have been brought out for the new season by the Colonial Radio Corp., 420 Lexington Ave., New York City.

Model 164 is a 6 tube superhet, single unit type with airplane dial. \$54.95.

Model 150, also a single unit job, has 4 tubes in a compact case. One hole mounting. Remote control, airplane dial. \$39.95.

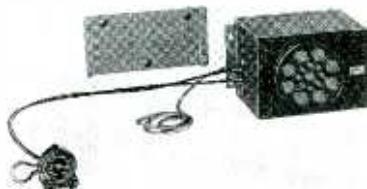
Model 182 is a two unit radio with separate 8 in. speaker. Six tubes, Genemotor, remote control, airplane dial. \$69.50.—*Radio Retailing*, April, 1934.

Zenith 462 Auto Radio

A new auto radio, Model 462, may now be obtained from the Zenith Radio Corp., 3620 Iron St., Chicago, Ill. It is a 6-tube all-electric with full size dynamic speaker. The airplane dial type control may be attached to the steering column. The speaker and chassis are in one container. \$49.95.—*Radio Retailing*, April, 1934.

Fada Auto-Radio

A single unit motor car set is now ready at the plant of the Fada Radio and Electric Co., Long Island City, N. Y. Known as Model 161, this set uses 2-78, 6A7, 6B7, 41 and 84. A vibrator type eliminator is incorporated. Size: 10 $\frac{1}{2}$ x8 $\frac{1}{2}$ x7 $\frac{1}{2}$ in.—*Radio Retailing*, April, 1934.



Atwater Kent Auto Radios

Models 926 and 936 auto radios of the Atwater Kent Mfg. Co., Philadelphia, Pa., are 6-tube superheterodynes with illuminated airplane type dial and steering column control. Both employ the new dynamotor power supply system and when in full operation require only about half the current necessary to operate the old style sets, the release states. They are mechanically the same. Model 926 has the speaker installed in the cabinet and Model 936 has a larger speaker unit which may be located at any convenient point. The former is \$64.50 and the latter \$68.50 complete with tubes and installation equipment.

Model 816 has the same tube line up and uses a self rectifying vibrator. \$59.50.

Model 666 uses an 84, 2-66, 6A7, 41 and 85. The eliminator is of the primary vibrator type. \$49.90.—*Radio Retailing*, April, 1934.

SPRING MODEL AUTO-RADOS



Philco Model 11 Auto Radio

Listing at \$39.95, the new Model 11 auto radio of the Philco Radio & Television Corp., Philadelphia, Pa. is a single unit radio, with steering column control. The tube line up consists of a 36, 77, 44, 75, 42 and 84. Avc is incorporated and the speaker and vibrator are readily removable for inspection and test. The price of \$39.95 includes ignition suppression equipment and is the price installed to car aerial.—*Radio Retailing*, April, 1934.



Kadette Auto-Radio

The first Kadette auto-radio is now ready at the factory of the International Radio Corp., Ann Arbor, Mich. It is a 6 tube all-electric (2-66, 6F7, 75, 46, 84) of the single unit type. Unique universal mounting with chassis in drawer allows complete removal while in operation. All units are individually mounted affording exceptional accessibility. Remote control with airplane type dial.—*Radio Retailing*, April, 1934.

RCA Victor Auto Radio M-105

A 4-tube superheterodyne with, it is said, power equivalent to many seven tube sets, is being marketed by the RCA Victor Co., Camden, N. J. Equipped with a sealed-in vibrator type tubeless B-eliminator, a.v.c. and a control unit that can be mounted in various positions on steering shaft or dash and a flexible drive shaft.

The chassis which can be mounted by a single bolt measures 8 $\frac{1}{4}$ in. wide by 8 $\frac{1}{4}$ in. high by 7 $\frac{1}{2}$ in. deep. Current consumption 5.5 amp. The tubes used are 41, 78, 6A7 and 6B7. It is sold complete with six spark plug suppressors, one distributor suppressor and one each generator and ammeter capacitor. The list price is \$47.50.—*Radio Retailing*, April, 1934.

Motorola Auto-Radios

The 1934 line of auto-radios of the Galvin Mfg. Corp., 847 W. Harrison St., Chicago, consists of:

The "Twin 8"—8 tubes and 8 in. speaker—listing at \$64.50. Push-pull amplification is incorporated in the superhet circuit.

The "Dual 6" is an all-in-one set with 6 in. speaker. Superhet circuit, Eliminode system, all electric. \$49.50.

The airplane type dial control of these two sets can be mounted on the left or right side of the steering column, on the panel or in the panel.—*Radio Retailing*, April, 1934.

Lynch Noise-Free Auto Radio Antenna

The noise-free antenna system for auto-radios offered by the Lynch Radio Laboratories, Inc., 51 Vesey St., New York City, may be installed in any car in a few minutes without removing upholstery and mutilating the car interior. One type fits all cars.

The antenna is placed as far as possible from the motor itself and therefore the shield effect of the firewall protects the antenna from picking up ignition noise directly from the ignition wires.

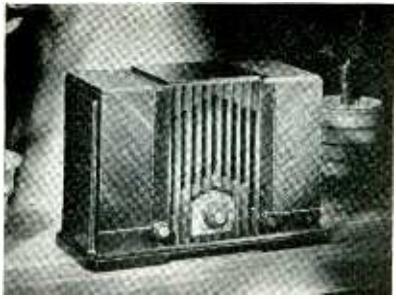
A pair of matching transformers are then used between the antenna itself and the receiver. These transformers are coupled together by a thoroughly shielded, low loss transmission line grounded at various places along the chassis.—*Radio Retailing*, April, 1934.



GE Model C-41 Auto-Radio

The new GE auto-radio for bulkhead mounting, Model C-41, retains all the features of the older receiver and in addition offers several improvements. These improvements include avc, rubber cushioning bumpers between receiver case and bulkhead, and a readily detachable vibrator power supply.

This set is a 4 tube superhet with built-in dynamic speaker and remote control unit. Mounts to bulkhead by means on one bolt. \$47.50. Made by the General Electric Co., Bridgeport, Conn.—*Radio Retailing*, April, 1934.



Philco Battery Sets

A new battery-operated all-wave receiver is announced by the Philco Radio & Television Corp., Philadelphia, Pa. This set, Model 34, is furnished in two cabinet styles, Baby Grand and Lowboy.

The tuning range is from 530-22,000 kc., divided into four wave bands.

The set is provided with a heavy duty combination B and C dry battery and, at the purchaser's option, with either a heavy duty new type dry A battery or a heavy duty storage A battery.

Other features are high output class B audio amplification, permanent field dynamic speaker, seven tubes, and ballast lamp to give automatic regulation of filament voltage.

The baby grand is \$69.50 and the lowboy \$89.50.—*Radio Retailing*, April, 1934.

Kadette All-Wave Sets

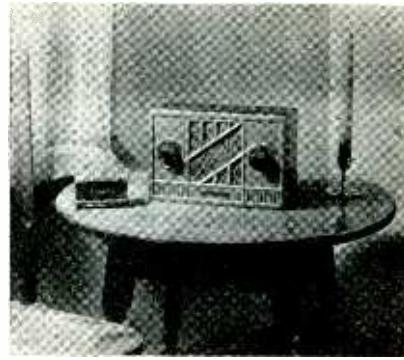
The all-wave feature is now being built into the Kadette radios made by the International Radio Corp., Ann Arbor, Mich.

Model D-11 is no larger than the 1933 Kadette. It tunes from 18-55 meters and from 170-555 meters. The cabinet is patterned largely after the well known Century of Progress model. Five tubes ac-dc.

Model D-12 is designed around the same chassis. It is more classic in appearance, following traditional Colonial design.

Model D-14 is considerably larger in size and is of the upright type. The speaker is a 6½ in. dynamic.

Another new model is the CM for the broadcast band only. The Model A Kadette is being continued.—*Radio Retailing*, April, 1934.



General Electric Radios

Five new models have just been released by the General Electric Co., Bridgeport, Conn.

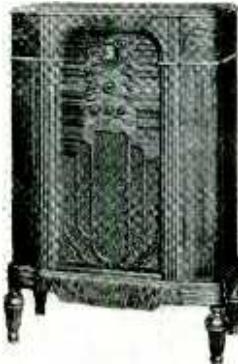
Model M-63 is a table type superheterodyne with extended tuning range of from 1500 to 2800 kc.

Model C-30 is a battery radio in a metal cabinet finished in deep maroon and gold. It measures 9½x6¾x5½ in. A 6-volt storage battery and three 45-volt B batteries are required.

Model M-40 is a low-priced "personal" radio for a.c. or d.c. It is a t.r.f. set with magnetic speaker and comes in a steel cabinet with bronze finish.

Model M-49 is a table type radio-phonograph combination. The cabinet is no larger than the average table model. Tuning range 1500 to 3500 kc. Plays 10 and 12-in. records. Cover is removable.

The Model M-128 is a de luxe phonograph combination composed of a 12-tube superheterodyne set and automatic record changer. Tuning range 540 to 2800 kc. The console cabinet is Renaissance in character.—*Radio Retailing*, April, 1934.



National Union's Majestic Type Tubes

Nineteen tubes which may be used to replace the Majestic spray shield tubes have been announced by the National Union Radio Corp., 400 Madison Ave., New York City. In place of spray shielding, these tubes utilize the National Union form-fitting shields which are equipped with a special chassis grounding strip attached to the shield and designed to make shield and tube a unit. These types can thus be used in exactly the same way as spray-shielded types.

The following tube types are available: 24-S, 27-S, 35-S, 51-S, 55-S, 56-S, 57-S, 57-AS, 58-S, 58-AS, 85-AS, 2A7-S, 6A7-S, 6B7-S, 6C7, 6D7, 6E7, 6F7-S and 6Y5.—*Radio Retailing*, April, 1934.

Paper-Wound Condensers

To replace electrolytics, the Girard-Hopkins Co., 1437 23rd Ave., Oakland, Calif., has brought out a line of paper-wound condensers. They are rated at a working voltage of 600 volts, d.c., are small in size with self supporting lead wires which are securely anchored through a center bar or core and will not loosen or break off. These condensers are wound of aluminum foil and linen tissue and are Halowax impregnated.—*Radio Retailing*, April, 1934.

Sentinel 5721 All-Wave Set



Designed to tune in the better foreign and American short wave stations as well as the broadcast band and some police calls, the new Model 5721 of the Sentinel Radio Corp., 2222 Diversery Parkway, Chicago, comes in an upright table cabinet. The tuning range covers 18.5 to 57 and 175-555 meters.

An illuminated airplane type dial, calibrated in kilocycles and megacycles, facilitates tuning on all bands. Tubes utilized are: 2A7, 58, 2A6, 2A5, 80. \$29.95.—*Radio Retailing*, April, 1934.

Jefferson Replacement Transformers

Replacement and manufacturers' style transformers, including types for every radio requirement, are now ready at the plant of the Jefferson Electric Co. Bellwood, Ill.

Audio input, output, filament, microphone, line and power transformers, as well as a complete line of chokes, radio fuses and fuse blocks, make up a complete and popularly priced line.—*Radio Retailing*, April, 1934.

Webster Amplifier

The Webster Co., 3825 W. Lake St., Chicago, Ill., announces a new three-stage, 10-watt microphone and phonograph amplifier. It provides microphone current, has dual control and is completely enclosed.—*Radio Retailing*, April, 1934.



Birnbach All-Wave Antenna

With the increasing popularity of short-wave reception, the doublet system consisting of an antenna divided in the center by an insulator, and having a transmission line connected with each section, which in turn terminates into a coupling device, has become almost a necessity. This coupling device permits the termination of the transmission line in such a manner that the antenna is not grounded.

Such an antenna system can be obtained from the Birnbach Radio Co., Inc., 145 Hudson St., New York City. Equally good for home or auto radios. List price is \$3.75.—*Radio Retailing*, April, 1934.

Reliance Variable Condensers

The Reliance Die & Stamping Co., 1260 Clybourn Ave., Chicago, Ill., manufacturer of variable condensers since the single section days of '21, announces a new line of variable condensers available in 2, 3 and 4 section units of various capacities including 370 and 420 mmfd. for t.r.f. and cut rotor sections for intermediate frequencies of 175 and 456 kc. in superheterodynes. The constructional design is a distinct departure from the conventional, resulting in unusual mechanical strength, the manufacturer claims.—*Radio Retailing*, April, 1934.

DAY TESTS FOR SUPER POWER

CINCINNATI, March 19.—With night testing of its giant new 500,000-watt transmitter now virtually complete, the Crosley Radio Corporation has been granted authority by the Federal Radio Commission to embark on a series of day-time tests. At the conclusion of these final tests application will be made with the Commission for permission to operate this Gargantuan transmitter, on WLW's regular day and night schedule.

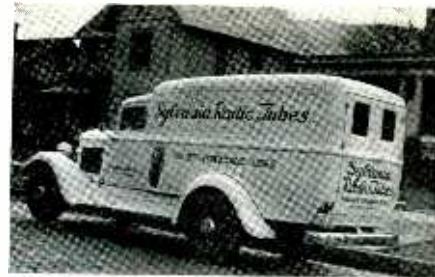
Exhaustive tests conducted almost nightly between 1:00 and 6:00 a.m. during the past two months have found the new transmitter equipment meeting all the extremely rigorous requirements originally set forth as to its performance. Actual operation thus far has definitely established a number of facts which—although predicted by engineers responsible for the design of the new 500 kw. transmitter—existed in the past only in theoretical supposition.

For example, it has been proved that a 500 kw. station, with its tremendous 2,000,000-watts undistorted peak of modulation, can be built so that in actual service it will modulate fully 100 per cent; that is, provide the greatest possible program signal on its carrier wave. That an exceptionally high quality can be obtained is established through the fact that its frequency characteristics are essentially flat within two decibels) from 30 to 10,000 cycles—a range extending from slightly

below the lowest note to twice above the highest note on a piano keyboard—and that its audio harmonics are of negligible quantity being below 10 per cent, a quality rarely found even in the most modern transmitters.

Numerous field strength measurements made throughout the country and careful analysis of reports confirm almost exactly the predicted service of this Goliath of the air. The ten-fold increase in power over WLW's present 50,000-watts has increased that station's signal strength at all points approximately 325 per cent while increasing its secondary service area by about 1,000 per cent. In thus raising the signal level to within the limits of automatic volume control provided in modern receiving sets, fading has been materially reduced and even entirely eliminated in many localities. Satisfactory reception in many sections where static and interference have in the past made such reception impossible has been reported.

"These reports together with our own careful scientific tests, under the direction of Joseph Chambers, WLW technical supervisor, prove that the use of this added power interferes in no way with the listener's enjoyment of broadcasts from other stations," declares Powel Crosley, pointing out that the accuracy with which the new transmitter is maintained on its assigned frequency of 700 kc. prevents any interference with other stations.



Modern "Covered Wagon"

The radio trade now has its "Covered Wagon" hitting the trails from coast to coast. The new Sylvania display car is visiting various cities for the purpose of educating dealers and service men in the profitable merchandising of tubes, as well as staging special sales campaigns in behalf of local radio merchants. This traveling sales office is in charge of C. J. McLean. His white dog rides with him on the driver's seat.

\$154,000,000 FOR FARMERS

Nebraska and Iowa farmers have had more than \$154,000,000 dumped into their front yard. It was dumped by Herbert Daniel, manager of the R. F. C. at Omaha who signed the orders for the 45-cent Federal corn loan to farmers. This revolutionary financing move occurred so suddenly that not one local merchant in fifty, realized what it was all about or made plans for cashing in on it.

Other states are sharing in the distribution of this corn loan money. In Illinois, also 47 counties of Minnesota, 35 counties in South Dakota and parts of Indiana and Kansas.

How the farmers of the great corn belt do need radio sets and B-batteries. A recent survey indicated that 40 per cent of the radio sets on the farms in the great corn belt had been out of use for the past year and a half, due to inability of the farmers to keep them in repair or to buy batteries. Already the business in B-batteries has taken a great spurt. Inquiries are coming to the wholesalers for complete battery sets. Will the radio dealers press this advantage?

1,000,000 British Made Receivers Sold Last Year, Value \$70,460,000

1934 will be another good year for British manufacturers of radio sets, according to the *Wireless & Gramophone Trader*. Sales of British-made sets last year reached the million mark and were valued at a total figure of £14,092,000 (\$70,460,000) despite the fact that fewer new licenses were taken out in 1933 than the year before.

The rising popularity of the power line operated instrument is shown by the fact that 523,000 of this type of instrument were sold, and its average price has steadily fallen from \$120 in 1929 to \$75 last year. Battery sets totaled \$376,000.

Radio-gramophones, it is revealed, are increasing in public favor, 67,700 having been manufactured in England last year. Sales of British radio apparatus, including valves and components, reached the impressive total of \$112,500,000.

Kidding the Public

If you're sentimental (sobs and tears)

pack it away in moth balls...but don't cheat yourself of modern radio entertainment.

The greatest show on earth is on the skyways nightly. An inexpensive modern radio set is your permanent pass of admission. Your dealer will tell you how easy it is to buy now

Southern California Edison Company Ltd.

WHEN you get tired of fiddling with your set

SHH! DO YOU HEAR SOMETHING? NO, DEAR, THAT'S THE CHILDREN NEXT DOOR!

...drop in at your dealer's and see the many astonishing improvements radio has developed since your set was new. No less surprising are today's low prices for sets of superlative performance.

Southern California Edison Company Ltd.

When a radio set develops a bad disposition

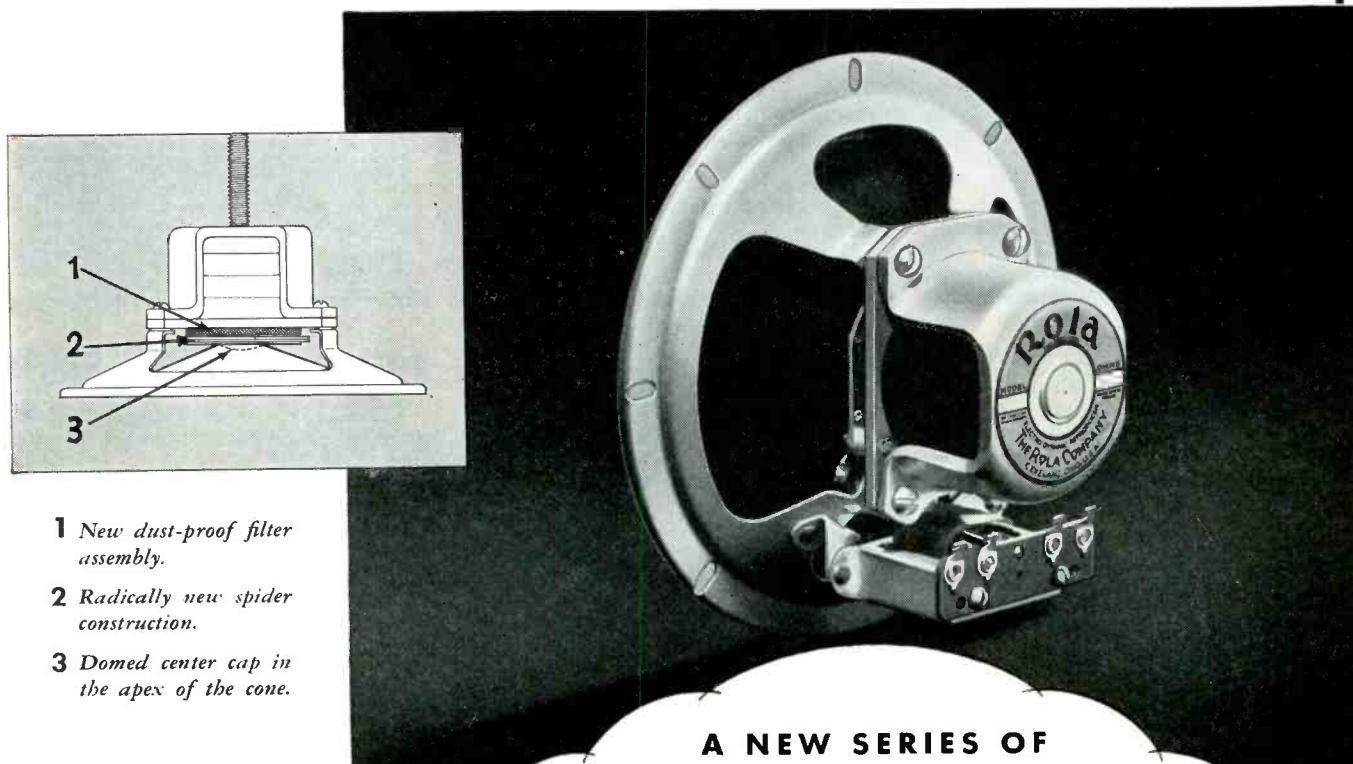
"PLEASE!"

...don't waste time trying to make it behave. Your dealer will take your old-fashioned set in on one of the latest style 1934 models. Performance that will delight you. Prices to cheer about. Drop in and see for yourself today.

Southern California Edison Company Ltd.

Antique finish may be elegant on the exterior of a radio, but ancient works inside the cabinet are something else. Dealers welcome any means to make the public conscious of that fact because it means more sales. Hence, when Southern California Edison Co., Ltd., which does not itself sell radios, came to the aid of the party with a series of humorous, clever ads, kidding the public about old radio sets, dealers were cheered. The utility provides them with enlarged proofs of the ads, without company signature, to use as window stickers.

Announcing



A NEW SERIES OF
TROUBLE PROOF ELECTRO-DYNAMIC
SPEAKERS FOR AUTOMOBILE
RECEIVERS

NEWLY designed, and featuring a new construction that will be found only in speakers of ROLA manufacture, this new series of electrodynamic loud speakers brings unprecedented reproduction and trouble-free performance within the realm of automobile receivers.

The domed center cap, radically new spider construction and novel acoustic filter assembly, protect the magnetic air-gap . . . the vital part of

a loud speaker, against the entrance of metallic particles, dust and other foreign substances. The voice coil is fully protected. Its free movement is unrestricted.

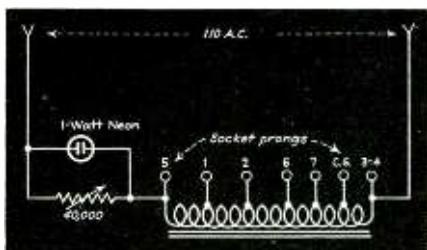
These new speakers are rugged and highly sensitive...they will build sales for automobile set makers who use them in 1934 and are worthy of your closest consideration. Write today for sample units, sizes and dimensions. Full details on request.

THE ROLA COMPANY
 2530 SUPERIOR AVENUE • CLEVELAND, OHIO, U.S.A.

Manufacturers of all types of speakers for automobile, portable and console Radio sets . . . and high power speakers for public address systems.

SERVICE AND INSTALLATION SECTION

CIRCUITS of the MONTH



Short-Checker Uses Tapped Choke

Perhaps the most common method of detecting inter-element shorts in vacuum tubes employs a neon indicator which obtains "striking" voltage from the 110 volt a.c. line through a resistance, the taps of which are connected to the various pins of the suspected "bottle." Should a short be present between two elements this, obviously, shorts out part of the series resistance, applying sufficient potential to the lamp to cause it to strike.

Only part of the series resistance is removed by most inter-element shorts, it will be noted, the rest remaining in the circuit. Thus not much voltage change is produced by a short, particularly if it is of the high-resistance variety.

Dayrad improves on this system in new tube-checker models. A tapped inductance is substituted for the more customary series resistor and the 40,000 ohm potentiometer shunting the neon lamp adjusted so that it receives slightly less voltage than that necessary to strike it when the full choke reactance is in the circuit. Inter-element shorts, however, reduce the reactance very nearly to zero (just as a shorted turn in a transformer ruins its characteristics) and supply plenty of striking voltage.

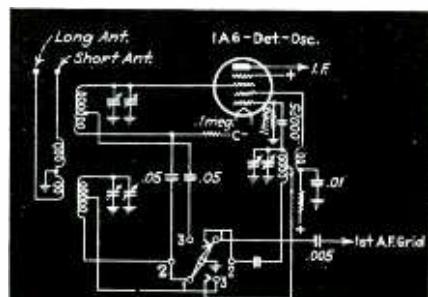
The system is sufficiently sensitive to strike the lamp even on extremely high-resistance shorts.

Combination Range And Tone Control Switch

A combination frequency range and tone control switch is used in A-K's bat-

ter models 165Q and 525Q. When the switch is in position 1 (arbitrarily numbered) the entire detector input coil, band-pass coil and oscillator grid coil is used, tuning to broadcast frequencies, and a .005 mfd. condenser is connected from first a.f. grid to ground. This gives a "mellow" tone.

Rotation of the switch to position 2 removes the tone control condenser. The circuit remains otherwise unchanged. Rotation of the switch to position 3 cuts out part of each of the three coils, permitting operation in the police bands. The tone control condenser is not used.



"Double 37" Rectifiers

The DeWald 54 (Pierce-Airo) uses two 37's, with grids and plates tied together, in parallel for a.c.-d.c. rectification. Other tubes are: 39 r.f. amplifier, 36 detector and 38 pentode final amplifier.

2A5's or 42's As Push-Pull Triodes

2A5 or 42 power pentodes may be used in triode push-pull circuits with good results, according to RCA. The following tables give essential data for such operation:

OVERBIASED AMPLIFIER (CLASS AB)

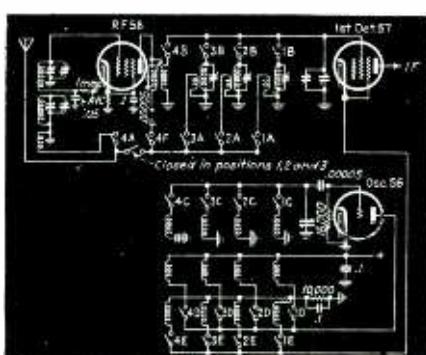
Driver tube: Type 42 or type 2A5; plate volts 250; grid volts 20 (screens tied to plates).

	<i>Fixed Bias</i>	<i>Fixed Bias</i>
Driver plate load.....	24,600 ohms	25,200 ohms
Interstage trans. ratio (primary to secondary)	1.6 to 1	1.14 to 1
Transformer efficiency.....	84.5%	65%
Peak grid voltage on output tubes (per grid).....	63.5	82.15
Peak power input to grids of output tubes.....	366 mw.	300 mw.
Plate to plate load.....	8000 ohms	8000 ohms
Power output (5% dist.).....	18.4 watts	14.8 watts
Self-biasing resistor.....		730 ohms
(CLASS A)		
Plate voltage.....		250 max.
Control grid voltage.....		-20
Plate current.....		31 ma.
Mutual conductance.....		2300 ohms.
Plate resistance.....		2700 ohms.
Load resistance.....		3000 ohms.
Power output.....		650 mw.

Fixed (battery or equivalent) bias, with which maximum power output may be obtained, is especially recommended. Semi-fixed bias conditions will permit the delivery of somewhat more than self-bias, somewhat less than fixed.

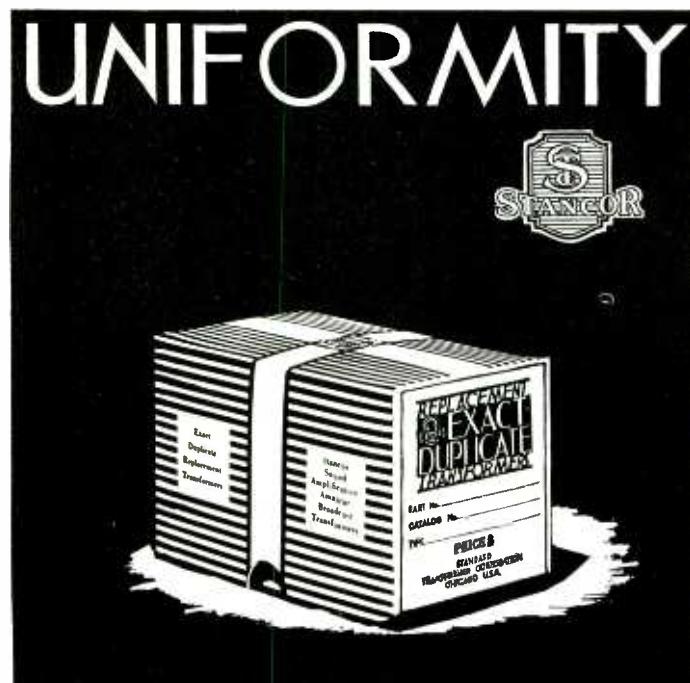
"Allwave" Set's R. F. Stage Cuts Out On Shortwaves

Pilot's 8-tube model L-8 "Dragon" superhet uses a tuned r.f. stage and band-pass selector on broadcast, cuts this stage out on shortwaves. The set has 23 separate coil windings (exclusive



of i.f.) and 22 band-control switch points. To save you a severe headache we have puzzled out the operation of these. Here's the dope:

Switch-points 1B, 2B, 3B and 4B control the first detector input coils, with their associated trimmer condensers. A first-detector main tuning condenser.



QUALITY... RANGE... MERCHANDISING... DISCOUNTS *and now* PACKAGING

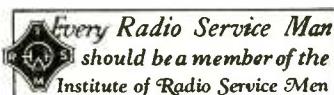
The new uniform packaging of all STANCOR Replacement Transformers is still another step in establishing complete uniformity in every detail of STANCOR Products.

To you, this new packaging plan provides further identification of the units . . . visual assurance that you are getting what you ask for . . . protection against substitution.

And further, this new package, planned for many months, is still another proof of the progressiveness of STANCOR . . . of the fact that STANCOR products are uniform . . . that sales policies are unvarying . . . that STANCOR is a line to be relied upon to provide you with anything for the job you have to perform and that it will be the best obtainable.

We thought well enough of STANCOR products to put them in a distinctive dress . . . to make them stand out

Membership in this organization is recommended by STANCOR.



in front . . . to tell the world they were good —and to make good that claim. Your confidence is well placed when you pick your replacement transformers by this new Black and Yellow container.

And, by the way, have you registered your name for your copy of the new 1934 96-Page Catalog of STANCOR EXACT-DUPLICATE Replacement, Universal, Amateur and Sound Amplification Transformers? If you haven't, better do so now.

(IF POSSIBLE USE YOUR LETTERHEAD INSTEAD OF COUPON)

Send me the new STANCOR 1934 96 Page Catalog of EXACT-DUPLICATE Replacement, Universal and Amateur Broadcast and Sound Amplification Transformers, FREE.

NAME

CITY STATE

STREET

I am an independent service man

I work for

STANDARD TRANSFORMER CORPORATION

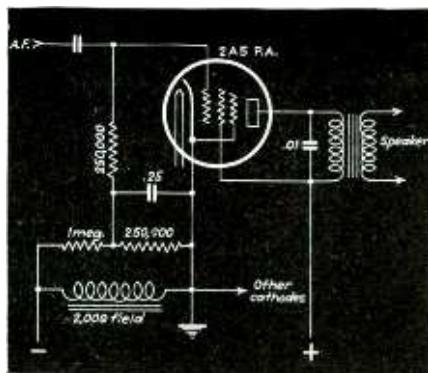
852 Blackhawk Street

Chicago, Ill.

with its own trimmer, remains permanently in the circuit regardless of the band selected. Switch-points 1A, 2A and 3A cut in primaries for the respective shortwave first-detector input coils. The antenna, it will be noted, is connected to these primaries by an unmarked switch when listening on shortwaves. (4A connects the antenna to the r.f. stage primary circuit for broadcast operation, the unmarked switch opening in this position to disconnect the antenna from the shortwave coil primaries. 4F grounds the long lead to the shortwave primaries to prevent feedback difficulties.)

Switch-points 1C, 2C, 3C and 4C select the proper oscillator grid coil. Switch-points 1D, 2D, 3D and 4D select the proper oscillator plate coil. Switch-points 1E, 2E, 3E and 4E select coils which permit the proper coupling between oscillator and first-detector on each band.

The points are, of course, ganged.



be incorporated in complete allwave models but may be sold separately.

SEVERAL INTERESTING REPORTS concerning 2A3's have come to hand. The tubes, apparently, are not coming through very uniform and servicemen have great difficulty in securing a good enough match to limit hum. Input transformers should probably be equipped with split secondaries and bias control for the individual tubes if this is the case. Several big users of the "bottle" do this . . . we have heretofore wondered why.

DON'T KID YOURSELF ABOUT "super-quality." It's not as far off as many imagine. Nearly every a.f. engineer, and a good many of the r.f. boys, are playing around with it and something is certain to break before many moons. Saw an amplifier and tuner designed to work together for higher fidelity just before this chatter was written and it was well along in the final stages of development. The amplifier was "down" only 3 d.b. at 10,000 cycles, the tuner down only 2 at 7,000. Noise is apparently proving troublesome. The tuner had a switch which enabled its response to be cut off at 3,500 . . . used separate sets of i.f. coils for high-fidelity and for high-selectivity. The politics of channel assignment is holding up super quality more than technical problems.

Field-Drop Used As Bias

A new Audiola five-tuber using a 2A7, 58, 2A6, 2A5 and 80 uses a power tube biasing system which seems to be coming into use in smaller receivers. Bias for the 2A5 is obtained by utilizing a portion of the voltage drop across the field, connected in the negative lead. A tap is taken from a resistance network connected across the field.

"AUDIO FREQUENCY"

A FLOCK OF NEW TEST OSCILLATORS designed to provide fundamental frequencies right on down through the shortwave spectrum are in the immediate offing. Your inquiring reporter (whose business it is to keep you up to date) discerns signs of such instruments in several well known laboratories where the midnight oil is being burned . . . principally in ironing out shielding difficulties. Harmonic rigs are ok where the serviceman sees only two or three high-frequency tuners a month, it seems, but are too slow on the trigger when he has to handle the many allwave models now flooding the market.

WHILE ON THE SUBJECT OF shortwaves your official "wiser-upper" ventures an opinion that what this game needs is a good beat-frequency oscillator in every allwave set to ease tuning difficulties. It's much simpler to find dx that "squeals" . . . as every "ham" knows. A certain eastern "loft" manufacturer is putting out such a gadget as an accessory and should make a few honest pennies. And several of the deluxe allwavers incorporate local beat systems with good results.

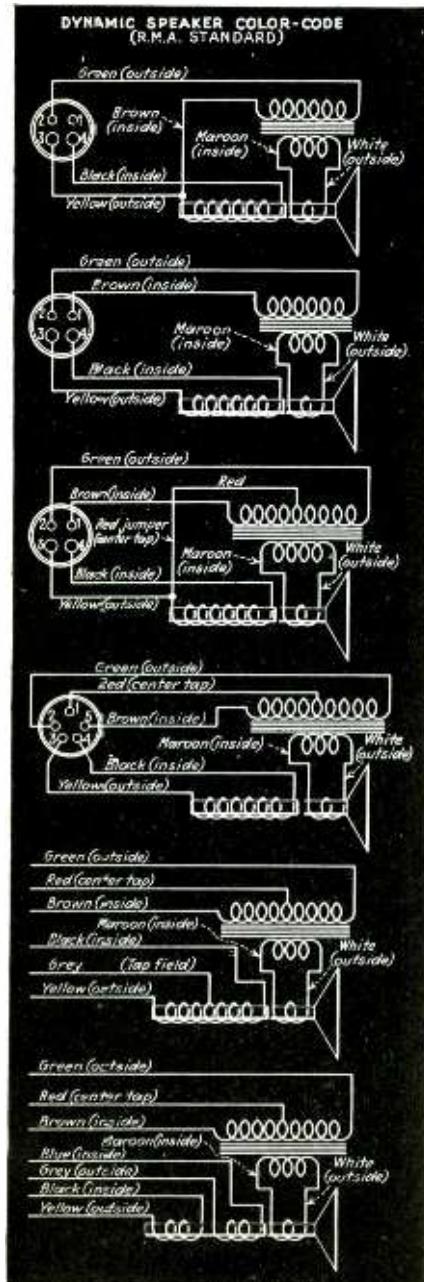
ARE SHORTWAVE CONVERTERS through? The answer is no. Saw a peach of a new allwave job on the production lines of a new entry into the shortwave field the other day and, lo and behold, it was a converter . . . and worked swell. The circuit uses separate coils for each band and goes a step farther than most designs, grounding both ends of the coil next higher in wavelength than the one actually in use to eliminate any possibility of resonant dead-spots. The instrument's dial uses four pilot lights, one for each band, switching them on and off instead of mechanically moving the scale. The converter, we understand, will not only

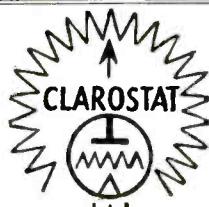
THE ROTATING DEVICE PEOPLE are about to give auto-radio vibrator producers a run for their money. Watch for motor-generator B-supply units in higher-priced models of several popular lines this season. Price and size have been the chief factors limiting competition. Both are now being whipped into line.

WE'VE BEEN WORRIED ABOUT the possible effect of WLW's super-power signal on existing a.v.c. systems. There's nothing to it we are informed by an engineer who claims to have tested right in the shadow of the Cincinnati sky-wires. Most a.v.c. systems "take hold" only when the signal input is fairly high, he explains, and all the stronger signal does is make them go to work a little quicker . . . improving rather than injuring a.v.c. action. It'll probably be another story for sets that are shy on selectivity, however.

A GUY OUT IN THE MIDDLE west who does nothing but sell replacement speaker cones is building up a nice business. We live and learn!

THERE'S BEEN A LOT OF TALK about building combination broadcast and longwave receivers to permit the farmer to pick up weather reports broadcast on these low frequencies by airports, etc. Checked up with a couple of set makers who should be well informed and they all came back with the same question: "Have you ever listened to those reports?" They're all mixed up with dope on altitude and wind velocity so complicated that it takes a Lindbergh to discover what it's all about." Looks "sour" until we get special consumer-worded services on these bands. Any diverging opinions?





Founded
in 1920



Standard Initial Equipment on Majestic since 1925 . . . and on 26 other makes



Clarostat Line
Ballast Re-
placements for
27 makes, 81
models.

There is a healthy profit in handling Clarostat Line Ballasts, for they are STANDARD initial equipment with a host of nationally known makes of sets. All standard types carried in stock. Special and export types also available.

The Clarostat lines include Volume and Tone Controls; Line Ballast; Automatic Line Voltage Regulators; Flexible Pig-tail Resistors; Center-tap Resistors; L, T and H Pads; Series Mixers, etc., etc.

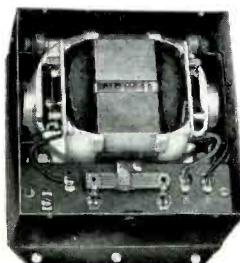
Ballast and Volume Control Replacement Guide upon Request

Clarostat Manufacturing Co., Inc.

285 North 6th Street, Brooklyn, N. Y.

Replace Faulty Auto-Radio "B" Packs

PIONEER Gen-E-Motors for Sound Amplifiers



amplifier manufacturers for sound truck and other installations where A. C. power is not available.

Let PIONEER engineers help solve your problems. Write, giving full details of your power needs, and you will receive complete power data without obligation.

PIONEER D. C. to A. C. Converters

110 volts A. C. for operating radio receivers, sound amplifiers, and electric appliances may be secured from 6, 12, 32, or 110 volt D. C. sources with the new PIONEER Converters.

Heavy duty design with conservative ratings—yet offered at remarkably low prices. Write for price list today!

High voltage
D. C. for sound
amplifiers may
be obtained from
6, 12, 32, and
110 volt D. C.
power sources
with these
PIONEER
Gen-E-Motors.
Used by leading

with this NEW Pioneer Model JW Gen-E-Motor

Here at last is a complete solution of all auto-radio "B" power troubles. The new PIONEER Model JW Gen-E-Motor replaces vibrator type power units on all popular auto-radio receivers.

It is so compact, measuring only $4\frac{1}{8}$ " high x $5\frac{1}{2}$ " wide x $2\frac{7}{8}$ " deep, that installation may be made within the auto-radio housing in the space vacated by removal of the vibrator unit.

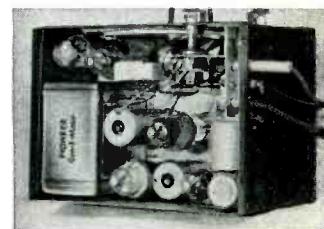
Installation is extremely simple. Only three connections and the Gen-E-Motor is ready to bring noise-free, dependable power.

No adjustments, no lubrication, no servicing to cut your profits. Guaranteed ONE YEAR!

The Model JW-25 Gen-E-Motor delivers 225 volts at 50 m.a. with only 3.8 amps. battery drain. The Model JW-50 delivers 250 volts at 50 m.a. with a battery drain of 4.2 amps.

List price only \$13.00

ALSO—new compact models, complete with filter, measure only $5\frac{1}{8}$ " x $5\frac{1}{8}$ " x $2\frac{1}{2}$ ". Write for price list.



**The leading 1934
auto radios are
PIONEER
Gen-E-Motor
Equipped!**

Write for full information—today!

Pioneer Gen-E-Motor Corp.,

464 W. Superior St., Chicago, Ill.

Send full information about the new PIONEER Replacement Gen-E-Motor and net prices to servicemen.

Name.....

Address.....

My Jobber is.....

A Practical Tube Voltmeter

By WOLCOTT M. SMITH

SINCE the advent of a.g.c. in commercial receivers it has become increasingly difficult for the service man to find troubles which do not render the set entirely inoperative but only reduce its efficiency. A test instrument which draws little or no power is needed to permit gain measurements through the set at succeeding stages and to measure the a.g.c. voltages without upsetting set operation.

The use of a tube voltmeter for such work not only saves time and labor but also is more accurate than other methods since tests are made under actual operating conditions with parts carrying their normal power. D.c. measurements can be made without drawing any power whatsoever.

With proper construction, not necessarily costly, radio and audio frequency measurements can be made with as little loss as will obtain through 10 or 20 megohms.

With such a meter it is an easy matter to run through an entire set, checking the output at each successive stage until one is found which does not produce the proper gain. Thus a defective trans-

trol grid bias, the percent accuracy of readings taken with this type meter remains nearly constant over its entire scale. The input limit of the device is reached only when the changes in meter reading with input increases are too small to be useful, as shown by the curves of Fig. 2.

By the application of the a.g.c. voltage developed by the diode to the control grid of the amplifier in this way the upper input limit is greatly extended without amplifier grid current flow so that a.c. can be read up to over 25-volts input, at which time plate current changes begin to become too small to be usefully read. On the high-input scale connection, however, this effect does not occur until the input is run to 75 volts or so, although considerably more power is consumed.

In spite of the wide range permissible with this tube voltmeter circuit design, no reduction is made in peak or low-input sensitivity. As shown by the curves of Fig. 2, the sensitivity in m.a. change per volt is far better at low inputs than at high, so that small voltage readings can be accurately made.

When reading d.c. the jumper between terminals 3 and 4 is removed so that no current need be drawn from the circuit under test. The upper limit on d.c. is about 125 volts, and the m.a. sensitivity per volt input is nearly constant over this range.

Parts Values

The choke-load system used in the amplifier plate circuit can consist of a number of miscellaneous chokes, most of which will be available around service shops. Parts from old power units are convenient. In fact the writer built up his own copy of this instrument around the power unit of an old "Balkeit" receiver. The unit was used to supply all tube voltages needed to operate the voltmeter as well as to house the parts.

A group of three r.f. chokes was made up to cover the entire range of r.f. likely to be encountered. The first, RFC₁, was a small space-wound single-layer coil of about 60- to 80-turns on a $\frac{1}{2}$ -in. form. The second, RFC₂, was a larger close-wound single-layer coil of

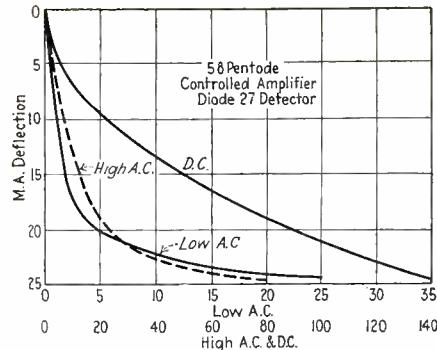


Fig. 2—Voltage range possibilities

about 400 turns on a $\frac{1}{2}$ -in. form. This was followed by a large universal-wound choke of about 80 millihenries. Three audio chokes were used. The ideal inductance for a.f. use would be 1000 henries, but the arrangement used here has been found entirely satisfactory.

The quarter-megohm resistor across the choke system, shown as R₄ in Fig. 1, helps to smooth out tendencies towards frequency discrimination. The first a.f. choke was a small 1-henry job out of a rebuilt receiver. The second a.f. choke, AFC₂, was a 10-henry filter choke, and the third, AFC₃, was the good secondary of a defunct high-inductance input p.p. transformer.

None of the parts values are critical, but they must be good enough to stay put after installation. The condenser and resistor values can vary 50% from the values given in Fig. 1, without spoiling the operation of the meter. The condensers must be good ones, preferably mica or at least of 600-volt rating if of paper. The resistors must have at least a half-watt rating, preferably of the protected and reinforced carbon type.

Auto-checking Circuit

For lack of a better name the circuit of Fig. 3 is called an auto-checking device. It permits a check on each voltage tested immediately upon taking the reading without direct calibration of the meter so that line-voltage and other variations do not need to be taken into account.

This is done by setting S_{w2} to the type voltage to be read, reading the unknown on the tube voltmeter with S_{w1} set first at "test" and then throw to "check," after which the potentiometer R_s is varied until the meter M in the controlled tube plate circuit has the

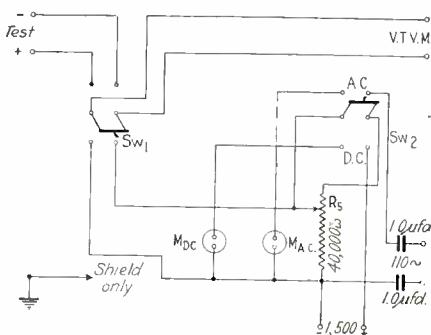


Fig. 3—Auto-checking circuit

The Circuit

former, leaky coupling condenser, open a.g.c. by-pass, or an improperly operated tube is readily located.

Before going further into the use of such a meter, let us look into the construction of the instrument to be described. It differs decidedly from previous circuit arrangements.

The Circuit

Fig. 1 shows the schematic for a two-tube arrangement in which the first tube is a variable-mu controlled tube (i.e.—an a.g.c. controlled amplifier) with a choke load in its plate circuit. The amplifier output is capacitively coupled to a diode rectifier whose output is used solely to control the amplifier tube, variations in the amplifier's plate current being recorded on the meter M.

Since the plate current decrease in variable-mu tubes is approximately logarithmic with linear increase in con-

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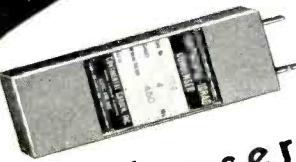
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same deflection as when the unknown voltage was tested. The voltage given by Mdc or Mac, as the case may be, is the voltage tested.

The cost of this addition to the original outfit is small and the increased accuracy provided is useful in research work, or if one wishes to be highly accurate when servicing.

For the average service shop a reasonably accurate (5% or so) calibration curve will do. The checking circuit must be well shielded and the capacity of shield to the "test" and "output" circuits must be kept small. It is preferable that the shield float, with the circuit of the device ungrounded. A separate ground terminal should be provided for the shield.

Shielding

Not only must the meter circuit be enclosed in a metal shield, but the input and output circuits of the amplifier tube must be shielded from each other. Lack of proper shielding here results in amplifier oscillation with the input terminals open.

Shielding can best be accomplished by placing the amplifier tube horizontally using a vertical shield externally across the tube to coincide with the internal shield at the base of the dome. This will effectively separate the unit into two compartments, one each for the input and output.

The circuit of this meter, power unit and all, should float in the shield. That is, there should be no electrical connection between the meter circuit and the shield except that which may occur in use, when the meter shield, auto-check shield, and the grounded portion of the circuit under test are all connected together.

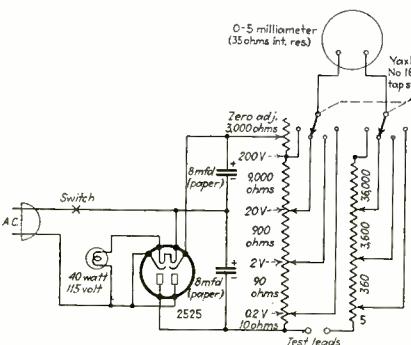
Exact mechanical details are necessarily left to the individual constructor, since the materials at hand will vary widely. The important points to be watched are shielding, capacity losses, and plate chokes. Each must be sufficiently satisfactory to insure good operation although none of them are in any way critical.

The use of a series screen feed shown by R_s in Fig. 1 is helpful because it increases the range without decreasing the peak sensitivity and it is cheaper than a voltage divider.

A.C. Powered Ohmmeter

By M. T. Greer

The accompanying diagram shows the circuit of an ohmmeter that I have been



Radio Retailing, April, 1934

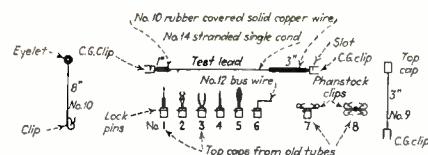
using for the past six months with excellent results. Using a 5 mil. meter with 35 ohms internal resistance it is possible to measure from 1 ohm to 2 megohms, in four ranges. A more sensitive meter and more taps on the switch would extend this range but it would probably be necessary to use a special switch with less contact resistance.

Tap 1 reads from 1 to 2,000 ohms. Tap 2 reads from 10 to 20,000 ohms. Tap 3 reads from 100 to 200,000 ohms. And tap 4 reads from 1,000 ohms to 2 megohms. The resistor values used in my particular instrument will not apply if a different meter is used, or if the applied voltage is materially different. They are approximations. I used adjustable resistors, setting these to give full-scale indications with the test-prods shorted. Four individual resistors are necessary as the adjustments are too critical to attempt with a single resistor.

The 40 watt, 115 volt lamp makes a perfect dropping resistor for the heater of the rectifier and, by placing it behind a jewel on the panel, serves as a pilot. The 25Z5 is, obviously, connected as a voltage-doubler. By using paper condensers I avoided further filtering. No ripple current reading is noted.

The potentiometer in the position shown easily corrects for line voltage variation between 100 and 125 volts. It is equally effective on all taps. By accurately adjusting the 200-20-2 and 0.2 volt taps and meter multipliers only one scale marking is necessary. The other ranges are multiples.

Care must be taken that no ground or electrical connection is made to the set under test.



for prods is rigid and well insulated. The lock-pins are small pieces of No. 18 solid wire pushed through a hole drilled in the top caps and then soldered. A small slot is cut in the control grid clips to accommodate these pins.

Rewiring Crosley AC7 for 2 Volt Battery Tubes

By Fred P. Steinmetz

The following suggestions will be found useful when rewiring the Crosley AC7 for 2 volt, battery type tubes: Parallel the filament wiring. Bring out battery leads as follows: Detector type 30, 45 volts plate; First a.f. 30, first and second r.f. 30's, 90 volts; Final a.f. 31, 135 volts; First a.f., 4½ volts C; final a.f. 9 volts C. Include a dropping resistor in the positive filament lead.

In the original circuit the first r.f. stage uses two tubes in push-pull. Rewire these in parallel. Connect the two halves of the input coil in this stage together at the midpoint tap. Include a 1 mfd. bypass condenser from center tap of the first r.f. stage plate coil to ground. Connect two 250,000 ohm resistors in series across the input coil of the second r.f. stage and ground the midpoint between them. Connect a small balancing condenser from the second r.f. tube plate to ground.

To improve volume control (in the detector circuit) fasten the tickler coil in a stationary position, close to the grid coil, and connect a 15,000 ohm variable resistor directly across the tickler. Connect a 1,000-000 ohm variable resistor in series with a .01 mfd. condenser between plus 45 and the plate of the final 31, using this as a tone control.

Interchangeable Tips For Test Leads

By Al Beers

An extremely flexible set of test leads with interchangeable tips of all varieties may be made of parts salvaged from old tubes, batteries and odds and ends usually found around the shop.

Control grid top caps from old tubes are used, along with control grid clips, to obtain the interchangeable feature. Number 1 tip is from a phone, number 2 is a battery clip, number 3 a lug, number 4 a darning needle, number 5 a banana plug, number 6 a piece of No. 12 bus wire. (This type lead enables test leads to be inserted in tip jacks in horizontal positions, also to connect to clips in line with these instead of at right angles.)

Number 7 is a double clip from an old wet B-battery. It works well when substituting parts.

Number 8 is two double clips soldered together with top cap soldered as shown. This enables 4 connections to the one point. Number 9 is simply a control grid extension to enable control grid stud on an analyzer plug to be easily connected. Number 10 is used for substitution work in the field and enables fast temporary repair jobs. I carry half a dozen of these.

The number 10 wire used in test leads

"Doublet" S-W Antenna

By M. G. Boguslawski

A "doublet" or "zep" antenna works well on shortwaves if collectors of the proper length are used. I have erected systems which reduced noise as much as 50 per cent and at the same time gave from 25 to 40 per cent better signal strength.

Try putting up a 50, 70, 100 or 200 ft. length of No. 12 solid enameled copper wire with a good, long insulator breaking the collector exactly in the center. Use at least three good insulators in series at the ends and erect the wire as high and clear as possible. Connect one lead of a No. 19 solid weatherproofed twisted pair to each half of the collector at the center insulator and bring the twisted conductor (any reasonable length) down to the antenna and ground posts of the receiver.

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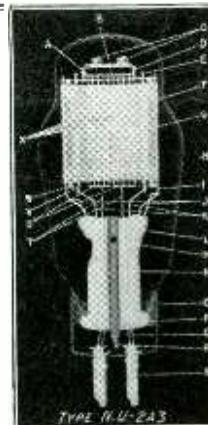
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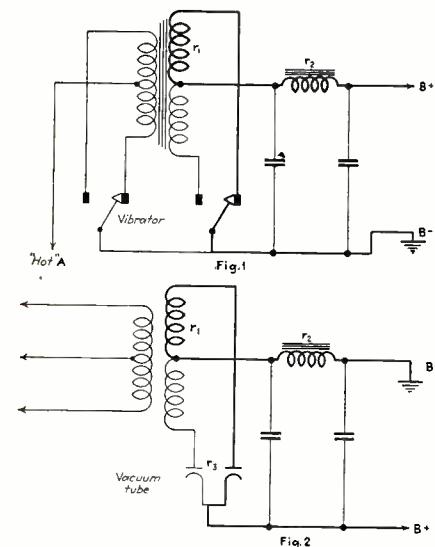
4-34

blocks or impedance matching transformers, hence is particularly well adapted to sets having grounded primaries, such as the RCA 121-140, AK and Philco.

Testing Auto-Radio Power Units

By Irving Seidman

When looking for a short circuit in the plate supply or any auxiliary circuit of an auto-radio using a self-rectifying vibrator be sure to slip a piece of paper



or other insulating material between the closed contacts of the vibrator. Otherwise you may have the delightful experience of checking all the way through the circuit only to find that the "short" is caused, quite normally, by the closed contacts of the rectifying vibrator contacts across the transformer secondary. (Fig. 1.)

A test across the output of the filter circuit will show only a few hundred ohms resistance in such cases, which immediately arouses suspicion concerning the condition of the condensers. In the case of new vibrators for the B40 GE and equivalent it may be necessary to unsolder the leads from the vibrator as these units are now sealed.

In circuits utilizing a vacuum tube rectifier (Fig. 2) the internal resistance of the tube presents an infinitely high resistance between plus and minus at the source of high voltage and may be disregarded.

Stray Capacity Tool For Balancing Condensers, Coils

By Irby B. Chamberl

A handy "stray capacity" tool which enables the serviceman to quickly determine whether or not sets need re-aligning may be easily made. Secure a bakelite or hard-rubber rod, eight inches in length, and saw a half-inch deep slot in one end. Cut a

piece of brass condenser plate into a circle the size of a half-dollar and slide this disc into the slot, holding it in place by riveting through a hole drilled in the rod and disc.

On the other end of the rod glue a circular piece of bakelite the size of a quarter. This simply glues flat to the end of the rod, forming a base, and is at right angles to the brass disc. Now glue to this a brass disc having a slightly smaller diameter and another bakelite disc the size of a quarter. The brass disc should now be between two insulating bakelite discs.

To use the single brass disc end put it alongside the plates of a variable tuning condenser. If, when moving it close, a stronger signal is obtained this indicates a need for more condenser capacity. Tighten the aligning condenser screw or bend the end plate closer to the stator. If moving the disc close to the condenser reduces volume this indicates too low a gang section capacity. If little change is noted the condenser is probably aligned correctly, or nearly so.

The three layer disc may be lowered into coils without fear of shorting them and, also, indicates the need for aligning, depending upon the effect of the stray capacity on signal strength.

TRICKS of the TRADE

AIRLINE 62-22. Distortion and overloading on locals, receives dx ok, a.v.c. plate voltage somewhat high when first turned on . . . Look for open circuited resistor between oscillator and r.f. screens to plate of a.v.c. tube, also look for open in "localizer." It sometimes lets go on the cathode side of the control. The divider should be 4,300 ohms overall, tapped at 1,100. Tests should be made to cathode instead of from suspected point to ground. Fading, intermittent reception . . . Check for open cathode bypass condenser in i.f. stage.

AIRLINE 62-97, 62-99. Blown .1 mfd. condensers in plate circuit of 58's . . . Some sets left factory with 200 volt units. These should be replaced with condensers having a 400 volt rating.

AK 80, 82, 83, 84, 85. Intermittent whistle near 700 kc. . . Replace resistor from grid of 27 oscillator to ground with 50,000 ohms.

A-K 612. Distortion on low volume, clear on high volume . . . Due to an open volume control in most cases. Excessive sensitivity (some people object to interference from "honky-tonk" dx) . . . Substitute an 80 for the 83 feeding r.f. stages. Lowering of voltages in this manner does not affect locals.

APEX 8A, 10. Distortion, after set has played for about 30 minutes, 47 grid gets red . . . Caused by open 47 filament center-tap. Usually it is just an intermittent open. Sudden increase in volume, or decrease, when nearby light is turned on . . . Generally caused by an open .5 mfd. condenser connected between r.f. cathode and grid return of r.f. and i.f. coils. Replace with 400 volt unit

BOSCH 28, 29. Set completely dead, all voltages normal . . . Check rubber covered wire from antenna variometer to volume control. It sometimes shorts to chassis when passing through drilled holes.

BREMER TULLY S81, S82. Oscillation, by-pass condensers test ok . . . Unsolder two leads from local dx switch at the antenna loading coil and remove bakelite mounting strip supporting this coil. Next unsolder the two fine wires from the coil at the terminal lugs, reverse their connections to the lugs and re-solder.

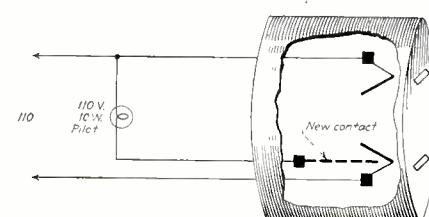
BRUNSWICK 16. No reception, voltages normal . . . Oscillator screen resistor has probably changed value and the tube won't oscillate. Replace with 5,000 ohm $\frac{1}{2}$ watt unit. The original was a $\frac{1}{4}$ watt size. Distortion, voltages below normal . . . Check same resistor for abnormally low value, practically shorting screen to ground. Inadequate volume . . . Try changing the screen bleeder resistor from 14,000 to 10,000 or 7,500 ohms. Fading or abrupt inter-

Outlet Pilot

By D. G. Erickson

A 20 cent, external mounting wall outlet to which one extra contact has been added makes a swell pilot light indicator for soldering irons and other appliances.

Install an extra contact beneath one of the regular blades as shown by the dotted line, mounting it in such a manner that the regular blade touches it whenever a plug is inserted in the outlet. Connect a 110 volt, 10 watt pilot as shown and the lamp will light whenever the outlet is in use.



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ruption of reception, voltages normal . . . Check 10 mmf. coupling condenser between r.f. tube and first detector. This is mounted on bottom of one of the turret condensers with a machine screw. The screw loosens and causes trouble.

CHEVROLET. Intermittent spark noise, not traceable to faulty suppression . . . After a year or so in use, especially in 1931 and 1932 models, the beading along the top pulls away where the side beading connects with the beading across the front. Electrically make a good connection between the open ends with a piece of copper braid and ground to the top of the door post on each side of the car. This should be tried when noise disappears with the antenna disconnected, dome light is cut loose and antenna shield is well grounded to the instrument panel bolt.

CONTRIBUTORS. When writing up "Tricks of the Trade" for submission to us (we pay for all published items, of course) please include the intermediate frequency of the set . . . if you know it. We think it will be handy to have the i.f. printed right in each future item for handy reference. Like the idea? P.S.: How about shooting in more auto-radio items, gang? Are you holding out on us?

CROSLEY 170. Repeated burning out of 80 rectifier . . . Cause is electrolytic condenser, part 29097, which shorts and then cleans itself. Replace it.

CROSLEY 58, 59. Hum, not traceable to filter trouble . . . Replace 1 megohm resistor in 47 grid circuit, connecting to high-voltage secondary tap.

EMERSON T, TS. Improper detector 24 plate and 47 plate current . . . Replace coupling condenser, grid to plate, with .01. Noisy tuning . . . Bend up contact springs on rotor or attach pigtail to chassis, not to end plates. Failure of TS to oscillate on shortwaves . . . Attach lead to grid of 24 and bend in place near or around coil mounted on back of 24 shield. Adjust until oscillation occurs uniformly across dial.

FADA RA. Weak reception, voltages ok . . . Try another 56 oscillator, no matter how high the old one tests. Noisy volume control . . . Try a new 56 in the first a.f. socket before replacing control. Continuous "static" . . . Cut out primary of push-pull transformer and couple with 25,000 or 50,000 ohm resistor and .01 condenser from plate of 56 to grid of 47. If customer likes a nice rain-barrel tone use .1 mfd.

KOLSTER K43. Excessive hum, filter ok . . . Look for defective 250,000 ohm (orange) resistor between one terminal of first a.f. transformer secondary and center-tap of hum adjustor control.

MAJESTIC 66. No reception, voltages ok . . . Look for open grid return condensers across the 300,000 ohm a.v.c. resistors (marked C1 and C2 on manufacturer's diagram). These are the small

tubular type of .03 mfd. condensers found hanging across the first two r.f. coils. They open, due to vibration. Excessive current drain, vibrator works erratically . . . Change "Globar" resistor across vibrator transformer secondary. Testing B voltage . . . Bottom cover need not be removed. Simply put plus end of meter to the i.f. trimmer condenser terminal on top of set. Reception ok with cover off, distorted with cover, especially on low volume . . . Tap metal spider of speaker lightly downward, re-centering cone. New sets sometimes come through bad as they are tested at the factory with the cover off and then packed. Set alive from grid of 6C7 only, dead from preceding tubes . . . Look for open second i.f. transformer secondary. Squeals and oscillation on lower wavelengths, from about 1,100 kc. up . . . Change 6A7. The tube defect will not show up in a checker.

PHILCO 112X. Slight, continuous whistle . . . Move plate wires away from compensating condenser.

PHILCO 70. Howl or microphonics when tone control is in left counter-clockwise position . . . Inspect .00025 mfd. phone condenser connected to plate of second detector. It has a yellow dot on one side and frequently opens or changes value.

PHILCO 54. Hum . . . Eliminate grounds to chassis, generally at network of a.v.c. resistors or grid lead of 75 tube.

PHILCO 89. Dead . . . Usually grounded compensator at back right hand side of set. Remove and insulate.

PHILCO 16. R.f. dead; i.f. ok . . . Generally caused by ground of wire from first section of condenser gang being pulled too tight against chassis. Dead, no i.f. . . . Checking from grid cap of 77 tube in right hand front corner, audio squeal showing a.f. ok, i.f. transformer first facing front of chassis grounded high voltage lead (black wire). This does not affect audio. Sometimes the compensators in top of i.f. can ground to can. Scale dead from 11 to 26 mc . . . Replace condenser from lug 1 on bottom of wave switch to ground marked with orange and yellow dots with one of the lug type (value 700 mmfd.). This is due to poor connection internally in pigtail condenser, which stops oscillation. Hum in early series . . . Due to a.c. switch juniper from switch through terminal lug mounted on condenser at back of set. Use shielded wire, grounding the shield.

RCA M30. Faulty control of volume . . . Usually caused by change in resistance of carbon unit located in remote control box. The correct value is 70,000 ohms. Check the volume control resistance before installing the carbon unit as its value may have changed, necessitating some compensating difference in the fixed unit. The control should check at 50,000 ohms. Use a slide resistor to determine the correct total resistance.

RCA R7. (WEST. WR10, GE S22) Rubber friction roller of dial wears out . . . Remove tuning dial by loosening its two setscrews and remove roller from shaft. Cut off a piece of rubber tape, not friction tape, 8 $\frac{1}{2}$ inches long and $\frac{1}{2}$ inch wide and wrap it tightly around the shaft, in the position of the old roller, layer over layer. The tape will form a new roller.

SIMPLEX MIDGET. Oscillation, immediately upon connection of antenna . . . Remove the 350 ohm resistor in series with B and ground. Ground B minus. Place 350 ohm resistor in series with cathode of 2A5.

SPARTON 40. No a.v.c. action . . . Try replacing a.v.c. 37 first. If this does not cure trouble check the 160 ohm resistor connected to r.f. cathodes, chokes and ground.

SPARTON 930. Fading and cutting out . . . Replace detector plate choke coil.

STEWART - WARNER 110. Loud crackle when set is first turned on (early production models) . . . Don't look for death and destruction in the powerpack. The noise is normal, emanates from electrolytic condenser film breakdown on high starting voltages and the film quickly reforms.

STROMBERG-CARLSON 25, 26. Set starts and stops playing . . . Look for loose wire in tuning condenser compartment. Usually still in place but not well soldered. Also check 100,000 ohm fixed resistor in series with center lug of volume control. This sometimes loosens and shorts to ground.

WESTINGHOUSE WR5 (Graybar 800, GE H31). To snap up sensitivity . . . Remove shield from first intermediate frequency transformer.

ZENITH 750. Set inoperative, i.f. tube grids heat red hot . . . Look for shorted i.f. transformer. This is caused very often by the leads of one winding touching those of the other side of the winding.

ZENITH 50 Series. To simulate a.v.c. . . . In re-setting the automatic tuning levers first throw the antenna trimming control to the extreme left and leave it there. Tune the weakest station of the selection as sharply as possible and set the volume control until the volume is barely audible, about one or two db. Leave the volume control alone from then on. In setting each of the other stations, detune them so that the volume is the same as it was on the weakest station and lock the lever at this point. In this way, as each lever is pressed all stations come in with equal volume, the volume equalizing being done by the lever automatically detuning the correct amount. Do not try this on supers of a later series as serious distortion will result. In the tuned r.f. sets the selectivity is not so great as to cause appreciable distortion.

IMPROVED DOOR LATCH
Opens at a touch when hands are full—closes easily and firmly. Sure in action.

EGG BASKET
Sixteen egg capacity. Saves breakage and shows how many eggs you have on hand.

BUTTER AND CHEESE RACK
Convenient for keeping packages of butter and cheese at the right temperature.

EASY SLIDING ICE TRAYS
A tray of cubes slide out easily. A new type tray shelf makes this possible.

IT'S NORGE
**all along
the line**

**Dealer forces organized
under Norge leadership
for another big year in
Rollator Refrigeration**

NORGE never stands still. Dealerships today are more valuable than ever because the Norge is a bigger profit-maker than ever. It has everything that other refrigerators have ...and in addition...it has Rollator Refrigeration...the great outstanding cold-making mechanism, easily demonstrated to customers by means of a cut-away Rollator...it

convinces...and once known, a Norge is sold. Norge retail sales records prove it by repeatedly leading in new business competition. Rollator Refrigeration gives you a powerful sales lever...and it is found only in the Norge.

Investigate...the Norge invites comparison. A Norge franchise will be your merchandising triumph.

Norge is a natural seller...it offers big profits. This is a Norge year with new high sales records mounting from the great cooperative plans for Norge dealers. Investigate Norge before you take on any line. Write, phone or wire.

NORGE CORPORATION
Division of Borg-Warner Corporation
606-670 E. Woodbridge St., Detroit, Mich.

NORGE ROLLATOR REFRIGERATION · ELECTRIC WASHERS · BROILATOR STOVES · AEROLATOR AIR CONDITIONERS

THE ROLLATOR • Smooth, easy rolling power instead of the hurried back-and-forth action of the ordinary refrigerator mechanism. Result—more cooling power for the current used and a mechanism that actually improves with use. Only Norge has the Rollator.



NORGE
Rollator refrigeration



AUTO RADIO MYSTERY *solved by the* POLICE!



*There are more
AMERICAN-BOSCH
Police Car Radios in
use than any other make*

*You'll find the same
dependability in the new 1934*

WHICH car-radio is most reliable? That's the great radio mystery. Ask the police. They dare not take chances. For police cars operate twenty-four hours a day and—police cars must not fail.

More American-Bosch Police Car-Radios are in use by state and city police than any other make. That's the greatest selling message in car-radio this year! Because this sweeping verdict takes all the mystery out of car-radio. It clears up all the confusion of conflicting claims and counter claims. It liberates dealer and public from the burden of testing, examining, analyzing the technical superiorities of one radio over another. The police have done it already—more thoroughly and more convincingly than any dealer alone could do it.

For 1934, American-Bosch introduces two new, greater Vibro-Power Car-Radios. Better looking! Better performing! With police car reliability! The easiest-to-sell car-radios on the market; because the make which so many police departments demand for greatest reliability, is the make your customers want for most dependable car-radio enjoyment! Write or wire for full information.

UNITED AMERICAN BOSCH CORPORATION
SPRINGFIELD, MASS. . . . NEW YORK, CHICAGO, DETROIT

AMERICAN-BOSCH VIBRO-POWER CAR-RADIOS

DEMONSTRATING
A REVOLUTIONARY
ADVANCE IN
TONE QUALITY

Model 79-6 tube, 10 tube performance
Model 45-5 tube, 9 tube performance

INTRODUCING
THE PRINCIPLE
OF "ANCHORED
CONSTRUCTION"

"They're Easy To Sell

WHEN THEY SEE IT!"



. . and the 1934
Leonard Selling Plan
BRINGS THEM IN
to see it



NRA Get your prospects and your salesmen together on your showroom floor, with your product in front of them—and you have the best possible setup for easy, profitable refrigeration sales.

That is the idea behind Leonard's 1934 Selling Plan. It is designed to short-cut the selling process—to bring *interested prospects*, in large numbers, into the stores of Leonard dealers—to save much of the time ordinarily spent in hunting out these buyers. And it is doing exactly that, in hundreds of Leonard territories to-day.

"They're easy to sell when they see it" is doubly true of the New Leonard—the *complete* refrigerator. Its

beauty attracts women instantly. It tells its own story of quality, roominess and ice capacity better than any words or pictures. It has a score of great new convenience features that make it mighty easy to sign on the dotted line. There are 11 models (5 all-porcelain), plug-in merchandise, covering 98½% of the household refrigerator market.

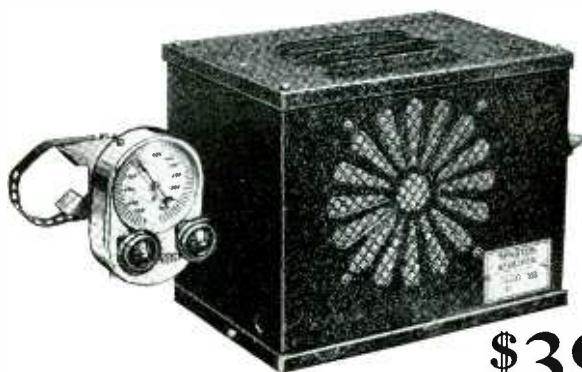
You will find the Leonard Selling Plan as attractive as the Leonard merchandise—this new, tested, proven plan that sets the stage for more sales in less time. It will pay you to investigate both. Just write or wire for information. LEONARD REFRIGERATOR COMPANY, 14259 Plymouth Road, Detroit, Michigan, and London, Ontario, Canada.



(650)

LEONARD THE COMPLETE REFRIGERATOR

PROFITS 12 months in the year

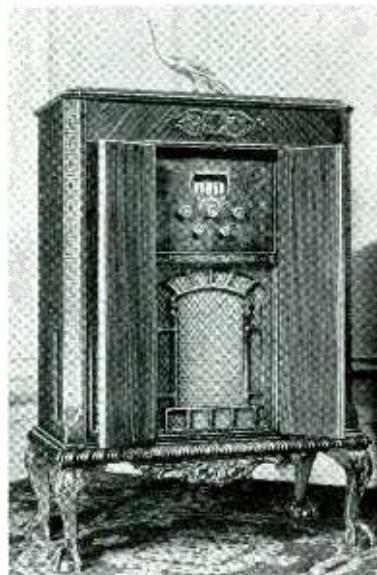


\$39.95

F.O.B. Jackson, Mich.
Tax Paid

Sparton Auto Radio Model 333

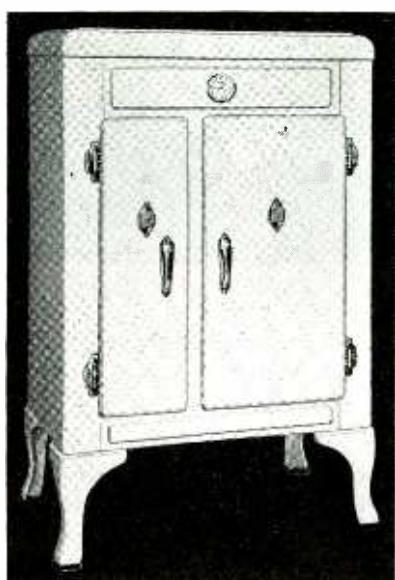
A wonderful new Sparton for your biggest radio market this spring and summer. A superheterodyne of extreme selectivity with full dynamic speaker specially constructed for low power consumption; air-plane type dial; remote control, steering column mounting. At this price, it is the outstanding value on the market.



13-Tube Sparton Triolian Model 76

Broadcast band and multi-wave short-wave band
530 to 1500 kilocycles—1.5 to 24 megacycle
(530 to 200 meters—200 to 12.5 meters)

Sparton engineers again have scored a brilliant triumph. The Sparton Triolian with its history making three dimension tone is sensational both to the science of radio and the science of tone. Its beautiful Chippendale cabinet contains three speakers with 135 square inches of sound recording speaker surface. Hear this outstanding Sparton instrument which represents the greatest advance yet made in radio reception.



Sparton Electric Refrigerator Model 884

Sparton refrigerators for 1934 introduce a revolutionary sales feature—the Sparton Antifrost clock. While the family sleeps this watchdog of electric bills does its defrosting job and in the morning Sparton is ready for the day's work. No trouble, no thought, no worry. This important feature eliminates frosty coils, gives greater efficiency and cuts operating costs. A gleaming, white, high lustre finish makes Sparton more beautiful than ever. Sell a known product, a product backed by a sound merchandising plan, backed by a reliable manufacturer. Write for details.

SPARTON
THE SPARKS-WITHINGTON COMPANY
(Established 1900)
JACKSON, MICHIGAN, U. S. A.

THE SPARKS-WITHINGTON COMPANY, JACKSON, MICHIGAN

Please send me, without obligation, complete information and prices on:

— Sparton Auto and Domestic Radios — Sparton Refrigeration

Name

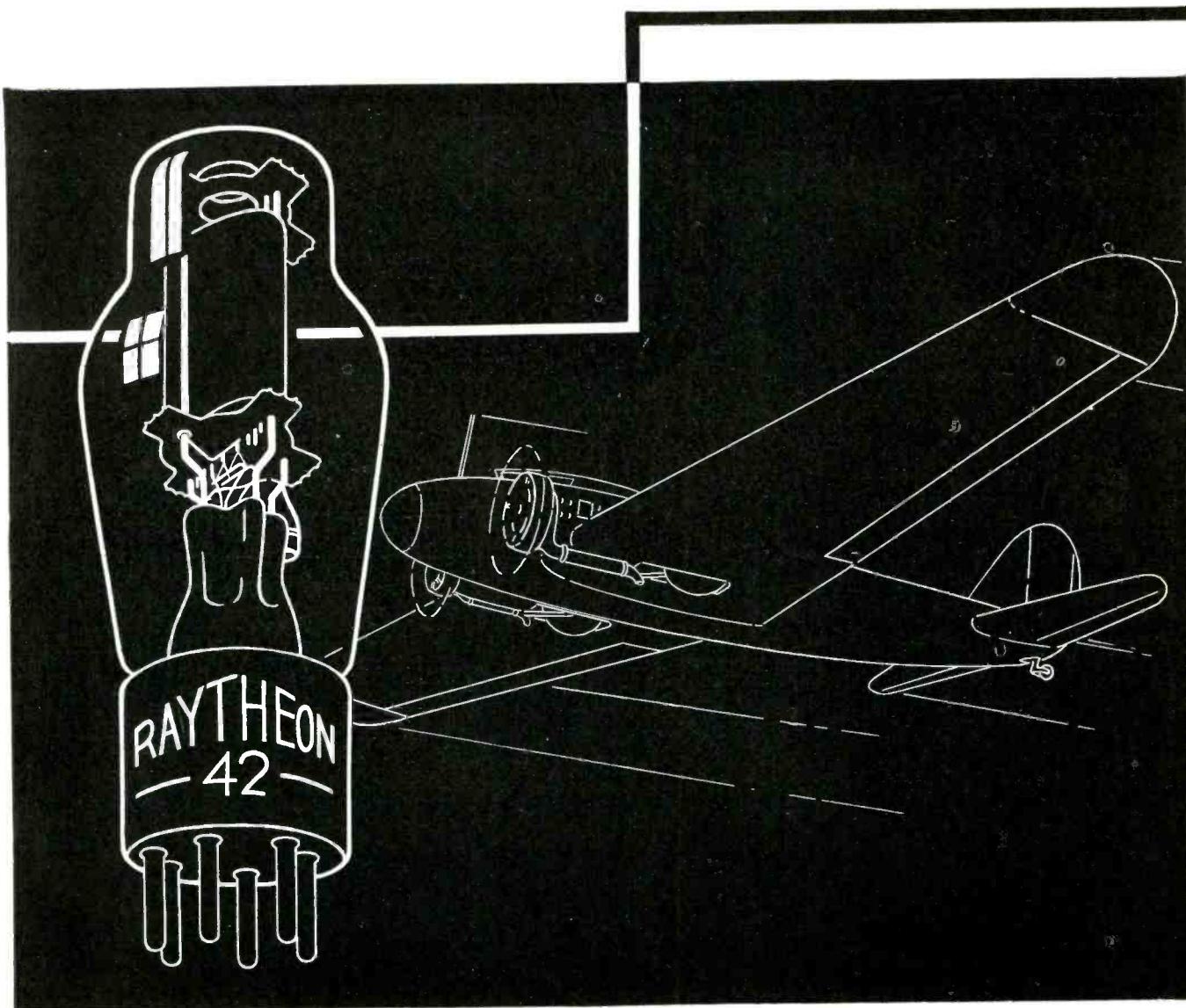
Address

City

State

(865)

THE SKY-WAYS—AND RADIO



You undoubtedly know the importance of radio reception along the sky-ways. The country's greatest air-lines depend on it. It is the traffic system of the air.

Weather reports . . . storm movements . . . these must be flashed to the pilot with utmost assurance of his receiving them clearly and distinctly. It is with good reason — the result of scientific investigation and long experience — that the majority of air-travel is made safe with Raytheon 4-pillar Tubes.

In the Raytheon laboratories at Newton, Massachusetts, the precision radio tubes to be used on these planes are assembled. Yet no special manufacture

distinguishes them . . . no special department is devoted to their assembly and testing . . . no special tests are applied specifically to them.

They are the very same tubes used by police departments, by polar expeditions, in auto radios, and by millions of set owners all over the country.

For this reason, you can recommend Raytheon 4-pillar Radio Tubes to your customers with confidence — and make from them a sound profit for yourself. For the same fairness reflected in their manufacture is reflected in their sale and distribution. It is a Raytheon principle that it should be.



RAYTHEON 4-PILLAR RADIO TUBES

RAYTHEON PRODUCTION CORPORATION

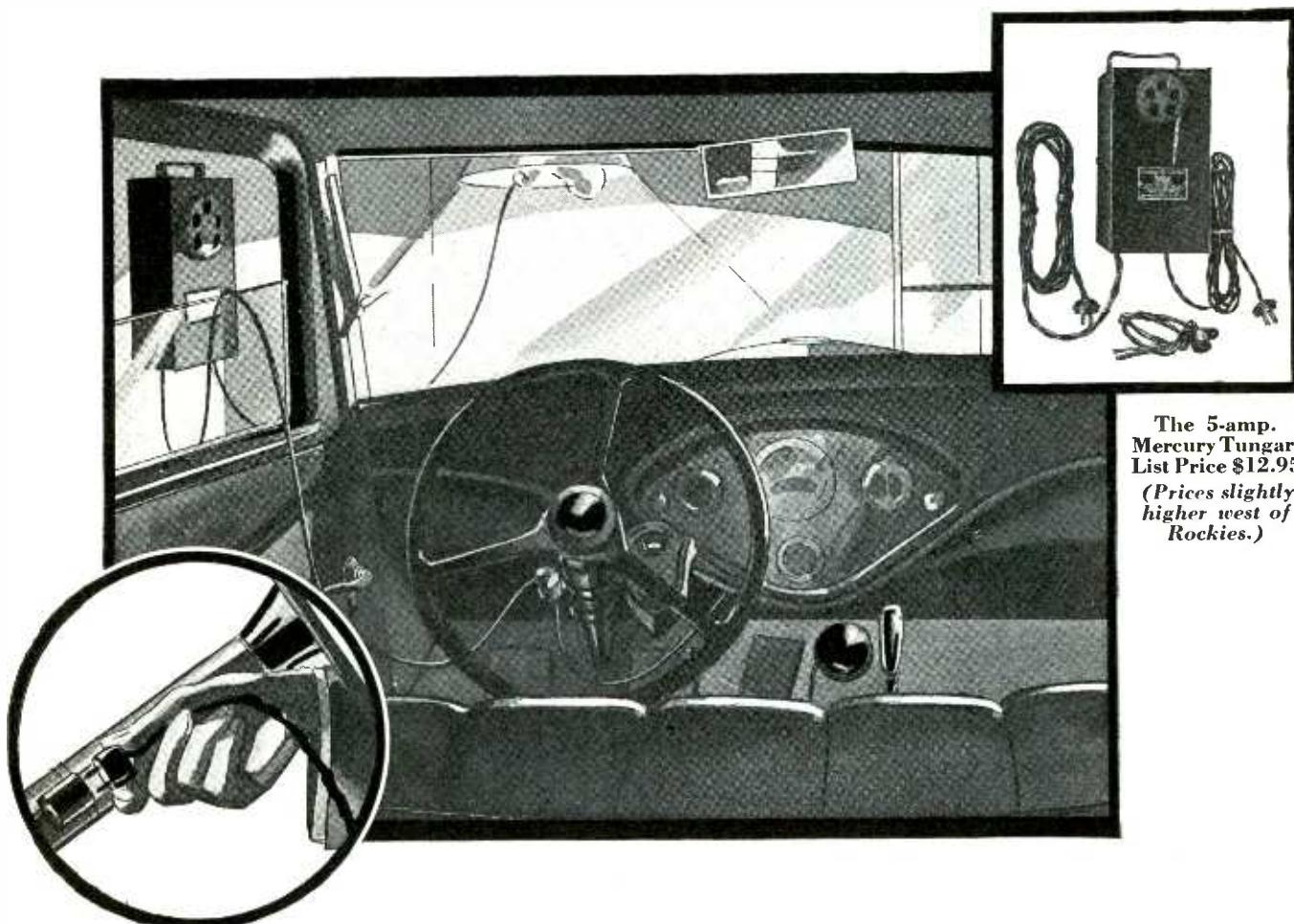
30 East 42nd Street
New York City

55 Chapel Street
Newton, Mass.

445 Lake Shore Drive
Chicago

555 Howard Street
San Francisco

G-E TUNGAR ELIMINATES AUTO RADIO BATTERY TROUBLES



The 5-amp.
Mercury Tungar.
List Price \$12.95
(Prices slightly
higher west of
Rockies.)

Tungar is not a new name to the Radio Trade. It played a large part in the storage-battery days of Radio. Now Tungar introduces the 5-amp. Home Battery Charger. Use this new Tungar to assure protection of fully charged batteries on all Auto Radio installations.

You know that Auto Radios alone won't run-down car-batteries . . . but that it's the total of all the present-day accessories. Your customers don't realize that. The last thing they bought was an Auto Radio . . . now the battery is dead. Complaints pour in . . . the Auto Radio is blamed. But — if you eliminate the Customer's rundown battery, you eliminate this trouble. You can guarantee fully-charged car-batteries and better Auto Radio performance to every owner or prospective owner of an Auto Radio.

The 5-amp. Mercury Tungar operates in the home garage . . . plugs into any A-c. outlet. Wiring accessories furnished permit easy connection of Charger to battery through a

special outlet . . . no messy floor-boards to handle. For just a few cents, the Tungar operates safely all night. Batteries are given a noticeable boost. They are protected from power failure. Sell this Tungar to eliminate run-down batteries and to maintain the good performance of your Auto Radios. It is easy to install. The price is low. The 5-amp. Mercury Tungar, complete with wiring accessories, lists for \$12.95. (Prices slightly higher west of Rockies) For complete information, see your nearest G-E Merchandise Distributor, or mail the coupon below.

Section A-364, Merchandise Department,
General Electric Co., Bridgeport, Conn.
Please send me complete information on
the new 5-amp. Mercury Tungar.
Name.....
Address.....
City.....

GENERAL ELECTRIC

AUTOMOTIVE PRODUCTS

MERCHANDISE DEPARTMENT, GENERAL ELECTRIC COMPANY, BRIDGEPORT, CONNECTICUT

My boss asked me to write this ad and tell how good Arcturus Tubes are. There are so many reasons I don't know where to begin.

You've been deluged with "best this" and "best that." You don't know who or what to believe. So that's out.

Many radio tubes today are "pretty good." But, as a reliable dealer or service-man you want to sell a tube that you can safely and irrevocably recommend. Your customers know soon enough if you don't give them the best (excuse that word).

To help you decide this matter for yourself, I'm referring you to this chart for comparison. Check it carefully—and then decide what tube you will handle and push—if you do not already have Arcturus. Fair?



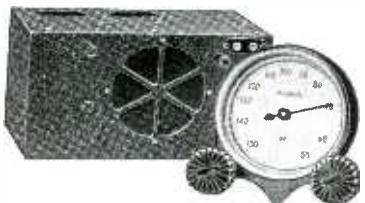
	ARCTURUS	OTHERS
What Manufacturer pioneered most of the fundamental developments in a.c. tubes?	✓ (6 out of the 7)	
What tube is used by the major number of set manufacturers?	✓ (43% of all in U. S.)	
What tube is used exclusively in one of the best radio sets?	✓ (Scott All-Wave)	
What tube is consistently sold at list price; full share of profit to you?	✓ (Several others, too)	
What tube has worldwide acceptance?	✓ (Sold in 78 foreign countries)	
What tube is regarded as the quality standard of the industry?	✓ (Ask any radio engineer)	
What manufacturer has an inflexible dealer sales policy?	✓ (One price only)	✓ (A few others)

ARCTURUS RADIO TUBE COMPANY, NEWARK, N. J.

ARCTURUS

RADIO TUBES

NEW \$39⁹⁵ MOTOROLA AUTO RADIO



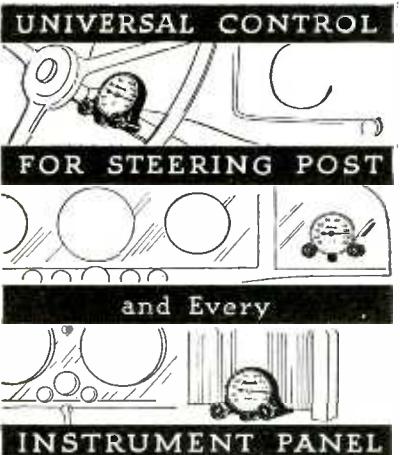
MOTOROLA MODEL "34"

6 TUBES—COMPACT
A Better Low Priced
Single Unit Auto Radio

All-Electric \$39⁹⁵
Superhet.
Easy to Install
and Service.
List Complete
\$41.95 Denver West



NEW UNIVERSAL CONTROL
Mounts In or On Panel, or on Steering Post.
Finger-Tip Tone Regulator on Controls;
Indirect Illuminated Airplane Dial;



**FULL LINE
OF NEW MODELS
FULL PROFIT
Customer Satisfaction**

A combination hard to beat. Improved design brings new simplicity to auto radio. Easy-to-See Features mean Quicker Sales. 3 New Models in Every Price Range with FULL PROFIT FOR YOU!

5-Years Specializing in Auto Radio
Manufacture STANDS BACK OF IT.

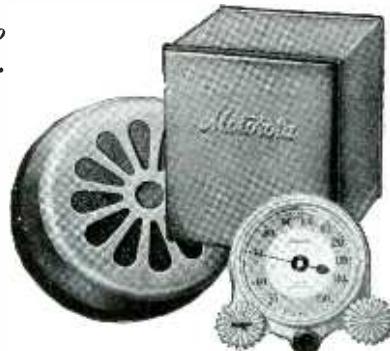


Motorola Dual⁶"
6 TUBES—6" SPEAKER

All-in-One Model. Supreme Performance in a Single Unit Auto Radio.

\$49⁵⁰

Installs in Every Make Car
Super Power—Greater Distance—Finer Tone



Motorola Twin⁸"
8 TUBES—8" SPEAKER

Ultra-Luxe Model. The Finest Auto Radio Money Can Buy.

\$64⁵⁰

Motorola
Super Power Auto Radio

WIRE-WRITE

FOR FULL INFORMATION

Galvin Mfg. Corporation

847 W. Harrison St. Chicago.

Quick Turnover

PROPERLY merchandised, your stock of radio tubes and your investment in them should turn over many times each year.

But this is possible only with the highest quality tubes upon which you can stake your reputation.

Ken-Rad Radio Tubes are built according to the most rigid manufacturing and engineering standards. They are worthy of your utmost confidence. Write for details.

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:

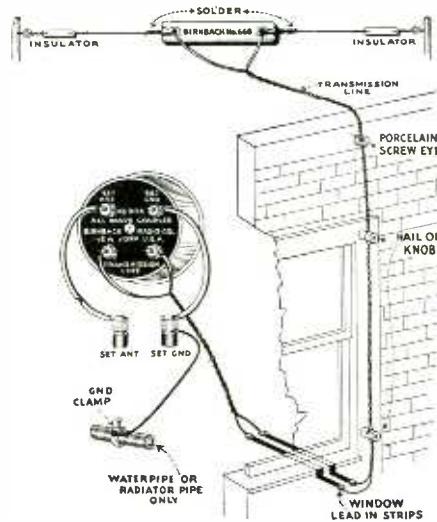
- Rotary Converters.
- Auto-B-Power (B-eliminator for auto-radio).
- Gas Engine Generators.

Name
Address
City State

Below: Gas engine-operated JANETTE 110-volt, 60-cycle generator. Capacities: 300 to 3000 watts. Ideal for sound-trucks, amplifiers, P.A. systems, etc.



BIRNBACH All-Wave ANTENNA Means Better Set Operation and EXTRA DEALER PROFITS



INCREASES signal strength and clarity—especially on new all-wave sets—reduces noise. Kit includes doublet antenna with transmission line to an all-wave coupler. Ideal for reception of both broadcast and short waves. Easily erected. List price \$3.75, complete with all parts and instructions. Write Dept. RR-4 for complete data on Birnbach Products, which include complete aerial wire, lead-ins, lead-in strips, insulators, ground clamps and aerial kits.

BIRNBACH RADIO CO., INC., 145 Hudson St., N. Y. C.

A.C. ELECTRIC GENERATING PLANTS

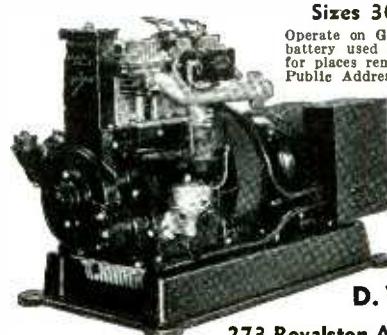
ONAN ALTERNATING CURRENT ELECTRIC PLANTS furnish the same current as city service—110 volt, 60 cycle, A.C. Operate Radios, Water Systems, Refrigerators, all household appliances.

Sizes 300 to 50,000 Watts

Operate on Gasoline, Gas or Distillate. No battery used except to start engine. Ideal for places remote from electric service. For Public Address, Sound Amplifications, Portable Lighting and Standby Equipment.

Also a complete line of
D.C. Models.

Some Dealer's Territory
Available.



D. W. ONAN & SONS

273 Royalston Ave., Minneapolis, Minn.

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

The Season's Smartest AUTO RADIO

Another
**Big Quality
BELMONT
Product**
 6-Tube Superheterodyne



for Sales Volume and Big Profits

All things point to a big season for Belmont dealers! Belmont radios are selling! Belmont dealers are profiting! Belmont owners are lauding their quality! There is no question of Belmont success. Good business dictates that you get behind it.

The Belmont Auto Radio display featured



BELMONT

here is doing a big sales job. It gets attention. Demonstration closes sales.

Auto Radio Model 670 lists **\$39.50** complete with matched tubes and all accessories, less installation.

With people spending money for radios now, we say play safe and feature Belmont. The complete Belmont line includes 20 different models. Prices range from **\$14.95** to **\$89.50**.

Write and let us give you complete details—delay will cost you sales.

BELMONT RADIO CORPORATION

1257 FULLERTON AVE., CHICAGO, ILL.

CABLE ADDRESS: BELRAD CHICAGO

Manufacturers of High Grade Radio Receiving Sets Since 1925



BELMONT All Wave Sets

Belmont Foreign, short wave and regular broadcast band sets are getting immediate acceptance because they perform so satisfactorily.

The unit featured here is our 7-tube Superheterodyne Model 775-T. Complete with matched tubes—list price **\$52.50**. It's a fast seller!

FOR THE SERVICE MAN WHO MUST KEEP UP-TO-DATE

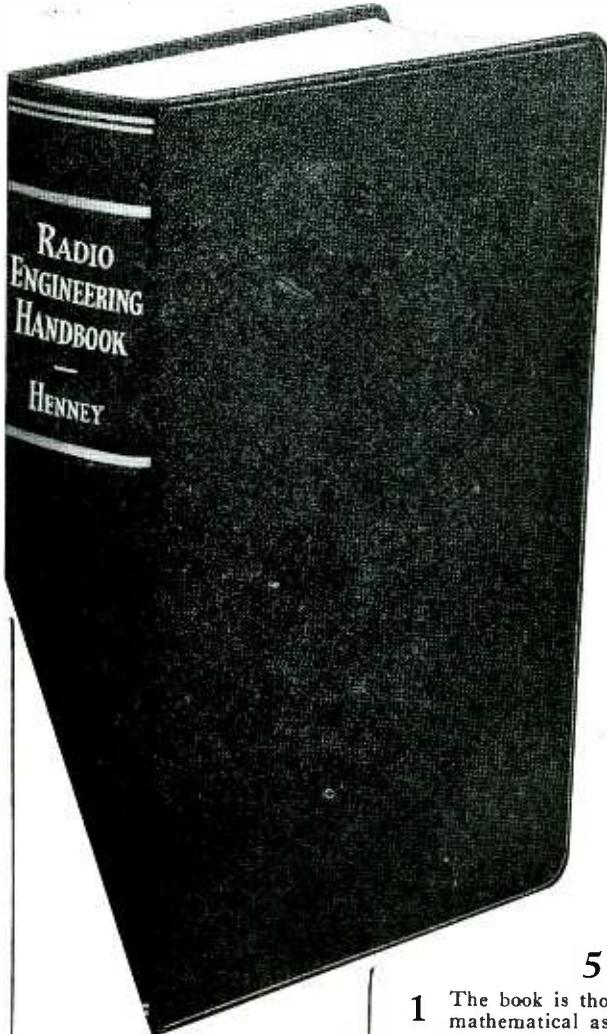


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a comprehensive, and authoritative handbook of radio principles, and circuit practice

Henney's RADIO ENGINEERING HANDBOOK

Prepared by a staff of 22 specialists

*Editor-in-Chief, KEITH HENNEY, Associate Editor, Electronics
Author, Principles of Radio*

583 pages, 4½x7, 507 illustrations, \$5.00

NEVER has the radio art moved so fast. Never has it been so important for the service man to keep abreast of this art. Introduction of new circuits and tubes has completely changed the tactics a technician must employ. Receivers are built on circuits never heard of two years—one year ago. The service man must keep up-to-date.

This radio book does just that—it equips the reader for present-day practice. It is more than a handy compendium of formulas, curves, characteristics, graphs, tables, etc.; it is a complete treatise on modern radio engineering practice.

5 important features of this book

- 1 The book is thoroughly technical, it has hundreds of circuit diagrams, and is not so mathematical as to be unreadable or impractical. It emphasizes design; not pictures of apparatus.
- 2 Every section has been written by an expert, chosen for his knowledge of the subject. In many cases the authors are daily engaged in the design, manufacture or operation of the apparatus they describe.
- 3 The scope is broad, it covers fundamentals but is not a text book, it is a workman's book in which all manner of practical information is put in usable form. Material found in no other book will be found here in concise form.
- 4 It is up to the minute. It discusses class B amplifiers, variable-mu tubes, composition resistors, design of scratch filters, tone control circuits, tank circuits, transmission lines, copper-oxide meters, vacuum tube voltmeters, timing axes for cathode ray tubes, magnetrons, dynatrons, autodynes, compensating audio amplifiers, aircraft radio, television and facsimile, etc., etc.
- 5 The book is convenient in size—another proof that it is made for the practical man. It's 583 pages, 507 illustrations, many tables and "short-cuts" are in such form that little time will be required to find the desired information.

See it 10 days on approval

Every technician interested in his job, whether in designing, manufacturing, or servicing radio equipment of any nature should see this book describing circuits in use today, or soon to be widely used.

McGRAW-HILL FREE EXAMINATION COUPON

McGraw-Hill Book Company, Inc., 330 West 42nd St., New York, N. Y.
Send me Henney's Radio Engineering Handbook for 10 days' examination on approval. In 10 days I will send \$5.00, plus a few cents for postage and delivery, or return book postpaid. (We pay postage on orders accompanied by remittance.)

Name.....

Address..... Position.....

City and State..... Company FRR-4-34
(Books sent on approval in U. S. and Canada only).

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 1 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

ACTUAL TROUBLES

IN COMMERCIAL RADIO RECEIVERS

By Bertram M. Freed

If you are a serviceman this book can be as valuable to you as your set analyzer. It points out those faults that the analyzer cannot detect. Over 500 model sets treated. A compilation from thousands of actual records on which the author, with the cooperation of several service organizations throughout the country, spent many months of work.



**FREE TRIAL
SEND NO MONEY**

Examine this book for ten days! If you decide to keep it, send us \$1—if not please return.

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For Rent
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Labor Bureaus
Machinery Wanted
Partners Wanted
Patent Attorneys
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Plants for Sale
Positions Vacant
Positions Wanted
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Proposals
Receivers Sales
Representatives Wanted
Salesmen Wanted
Second Hand Equipment
For Sale For Rent
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Specialties
Tutoring
Miscellaneous For Sale. For
Rent and Wanted

Address

Departmental Advertising Staff
McGraw-Hill Publications
330 West 42d Street, New York

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.

RADIO ENGINEERING,

broadcasting, aviation and police radio, servicing, marine radio, telegraphy and telephony. Morse telegraphy and railway accounting taught thoroughly. Engineering course of nine months duration equivalent to three years of college radio work. School established 1874. All expenses low. Catalog free. Dodge's Institute, Earl St., Valparaiso, Ind.

FREE 1934 WHOLESALE RADIO CATALOG

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

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.

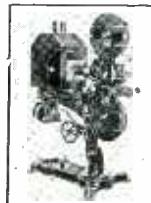
GREBE RADIO SALES & SERVICE CO.
137-28 Jamaica Ave., Jamaica, N. Y.
(Owner former Gen. Fact. Mgr. of
A. H. Grebe & Co., Inc.)

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.

Easily Sold—Easily Serviced Motion Picture Sound Today's Best Bet



Write for Our New Illustrated Catalogue

S. O. S. CORPORATION

Dept. R.R.2, 1600 Broadway, New York, U. S. A.
EXPORT: 120 Liberty St., New York
Cable Address: "SOSOUND" New York, All Codes.

POSITION VACANT

WANTED: First class radio service man by a reliable music store in Northeastern Pennsylvania. Must be fully qualified in all wave chassis. Write, stating age, experience and salary expected; include photograph. P-189, Radio Retailing, 330 West 42d St., New York City.

Agents Wanted

A few territories open for agents having a following in the Radio Replacement Parts Jobbing Trade.

MORRILL & MORRILL
30 Church Street, New York, N. Y.

Manufacturer's Representatives Wanted

A few territories open for representatives having a following in the Radio Replacement Parts Jobbing Trade. The fastest selling line of Exact Duplicate Replacements in the Market.

FEDERAL ENGINEERING CO.
286 Mercer St., New York

ATTENTION RADIO MANUFACTURERS!

French importer, financially responsible, desires connection with manufacturer of long and short wave radio sets. Excellent location in France. Write J. B. M. c/o

CARL ASTHEIMER
6132 Vernon Ave., Chicago, Ill.

SERVICEMEN!



**REDUCE THE
HIGH COST OF
KEEPING
UP-TO-DATE**

Here in one inexpensive 28-lesson post-graduate course — the only one prepared exclusively for active servicemen — Sprayberry gives ALL the dope on modern radio servicing. Covers every detail: Testing, Repairing (AVC, short wave, all wave, auto radio, P.A., etc.); Parts Testing and Troubleshooting — also tubes, modernizing set analyzers and selling. No "fluff" mathematics or costly bindings — just a practical, how-to-do-it course that will save hours of reading in scattered sources. Only \$10 for course alone or \$15 with personal instruction and answers to questions by Mr. Sprayberry. Money back guarantee. Write for FREE details!

INSURE YOUR FUTURE

As in any line of endeavor, there are too many servicemen. And, also as in any other line, most of them are trudging along in the great army of mediocrity. Enduring success comes to those who look ahead — who insure themselves of a lion's share of the business by being prepared to handle it better than the other fellow.

Don't wait. Get this course now. Study this Summer — be prepared to forge ahead this fall!

F. L. SPRAYBERRY

132 Bryant St., N.W., Washington, D. C.

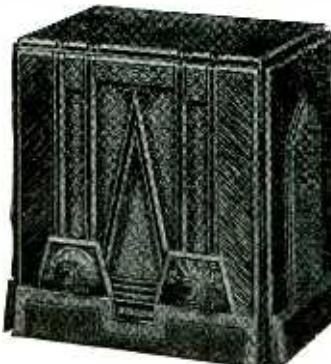
SHORT WAVES and LONG PROFITS

FOREIGN Broadcasts Creates Nation-Wide Interest

You must make an important decision. Will you feature high priced sets, available only to the wealthy? Will you sell "cheap" sets that lose you customers? Or will you tie up with the finest group of low priced "long-short" receivers now being offered in the American market? The sooner you learn about these astoundingly efficient and beautiful DeWald sets—and the opportunity they provide for immediate volume sales—the sooner you'll be ready to meet and beat your competition. Write or wire for distributor's proposition.



MODEL 811R—8-tube super-heterodyne A.C. Covering entire broadcast, intermediate and foreign bands.



MODEL 440—4-tube hi-gain universal. The biggest value ever packed into a midget radio set.

MODEL 570—5-tube super-heterodyne A.C. Covering foreign and broadcast bands.

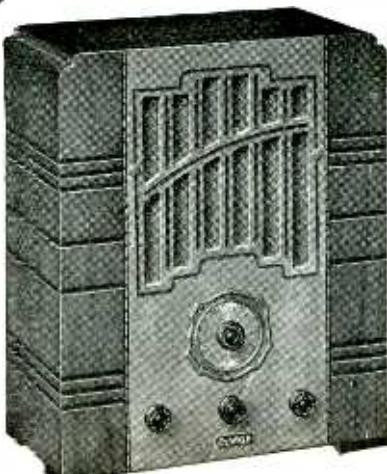
DEWALD RADIOS

MAKERS OF FINE
RADIO RECEIVERS
SINCE 1921

Products of
**PIERCE-AIRO,
Inc.**

Not connected with the Pierce Arrow Motor Car Company

520 Sixth Avenue
New York



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MCGRAW-HILL PUBLISHING COMPANY, INC., 330 West 42d Street, New York, N. Y. Branch offices: 520 North Michigan Ave., Chicago; 883 Mission St., San Francisco; Aldwych House, Aldwych, London, W. C. 2; Washington; Philadelphia; Cleveland; Detroit; St. Louis; Boston; Greenville, S. C.; James H. McGraw, Chairman of the Board; Malcolm Muir, President; James H. McGraw, Jr., Vice-President and Treasurer; Mason Britton, Vice-President; H. C. Parmelee, Vice-President; Harold W. McGraw, Vice-President; B. R. Putnam, Secretary. Member A.B.P. Member A.B.C. Printed in U. S. A.

Printed by The Schweinler Press, N. Y.

CROSLEY

Sweeps Country With

Streamline Beauty



\$99.50

MODEL EA-35

This Crosley Shelvador has a NET capacity of 3.5 cubic feet with a shelf area of 7.5 square feet. It is equipped with two 21-cube ice trays—42 cubes in all. It incorporates all of the Shelvador Series features described to the right. Dimensions: 48¹/₁₆" high, 23³/₈" wide, 24⁷/₁₆" deep.

ALL MODELS HAVE AUTOMATICALLY ILLUMINATED INTERIOR



Model E-13

4.3 cu. ft. NET capacity,
9.15 sq. ft. shelf area,
2 ice trays—42 cubes—
one double depth tray.

\$135.00

Model E-70

7 cu. ft. NET capacity,
14.9 sq. ft. shelf area,
4 ice trays—84 cubes—
one double depth tray.

\$185.00

IN THE NEW SERIES

**... plus greatly increased
"usable" storage capacity**

ALL of the new Crosley models—both Shelvador Series and Tri-Shelvador Series—feature the now famous Shelvador. When the Shelvador—an exclusive and patented Crosley feature—was first presented to the American housewife over a year ago, it created the greatest sensation in the history of home electric refrigeration.

Increases "Usable" Capacity About 50%

Shelvador increases the "usable" food storage space about 50%. It provides a definite place for small items. As an example: in the Shelvador, an orange occupies exactly the space that an orange should—not the space of a bottle of milk.

Now Comes "Streamline Beauty"

All of these new Crosley Shelvador and Tri-Shelvador models are *streamlined*. They fulfill the dream of every woman for a refrigerator that does justice to her home, her kitchen, and can be a daily source of pride—can be "lived with" as well ten years from now as today.

Compare These Features

First comes Shelvador, then the ventilated front, automatically illuminated interior, no-stop defrosting control (defrosts while refrigerator is operating), chromium plated stamped brass hardware of modern design, thorough insulation throughout (including door), round cornered porcelain interior, white lacquer exterior with black trimming, ample tray capacity for quick freezing of ice cubes.

ADDS THREE ADDITIONAL EXCLUSIVE FEATURES TO THE FAMOUS SHELVADOR

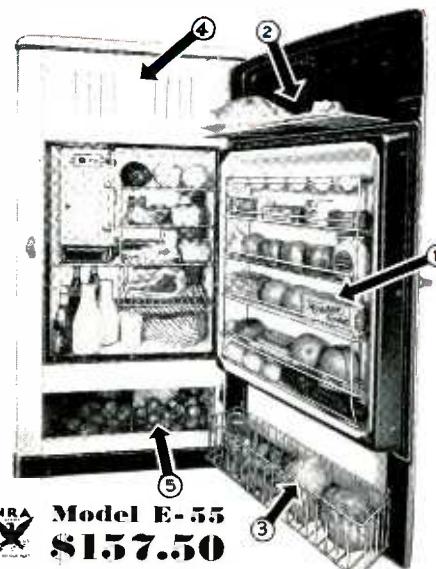
IN addition to all of the outstanding features of the Crosley Shelvador Series described above, the Crosley Tri-Shelvador Series incorporates three additional features never before combined in a home electric refrigerator.

1—THE SHELVATRAY . . . When you want what is behind the chicken, merely drop Shelves to a horizontal position, place the chicken on it and get what you are after. Shelfatray (patent pending), an exclusive Crosley feature, saves both steps and stoops.

2—THE SHELVABASKET . . . Handy for greens, carrots, cabbages, canned goods and the like. Another exclusive Crosley feature. Swings with the door. Shelfabasket is not refrigerated. (Patent pending.)

3—THE STORABIN . . . A place for potatoes, onions and other bulky items. Exclusive with the Tri-Shelvador. Storabin is not refrigerated. (Patent pending.) In addition to these, the Tri-Shelvador models are equipped with a self-closing porcelain door to the freezing chamber. Model E-55 Tri-Shelvador (right) has 5.5 cu. ft. NET capacity, 11.6 sq. ft. shelf area, 3 ice trays—63 cubes—one double depth tray. You must see the new Crosley Shelvador and Tri-Shelvador electric refrigerators to appreciate fully the advancement in refrigerator design, convenience and performance that they represent. See your Crosley distributor—ask him to show you both series—make every comparison that occurs to you—your good judgment will then dictate which electric refrigerator to handle. *All models available in full porcelain at slight extra cost.*

Western prices slightly higher



Model E-55
\$157.50

The Crosley Radio Corporation - Cincinnati

Pioneer Manufacturers of Radio Receiving Sets

POWEL CROSLEY, Jr., President

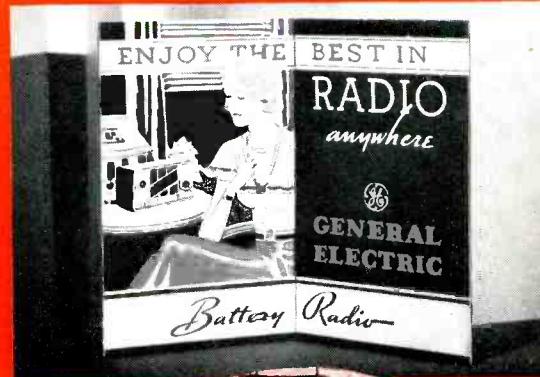
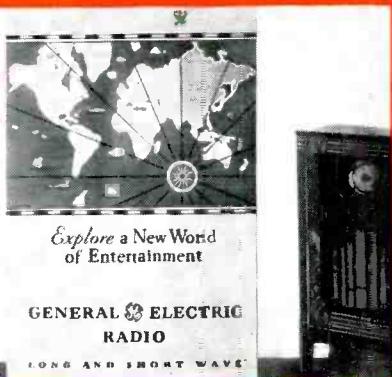
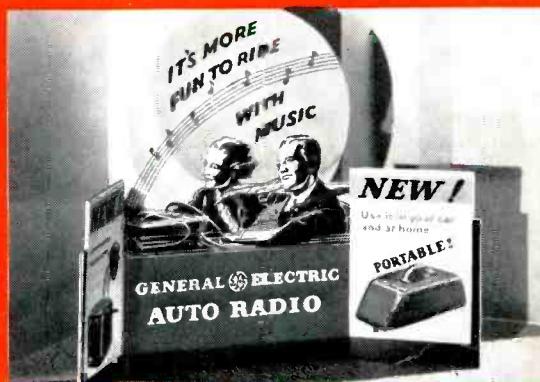
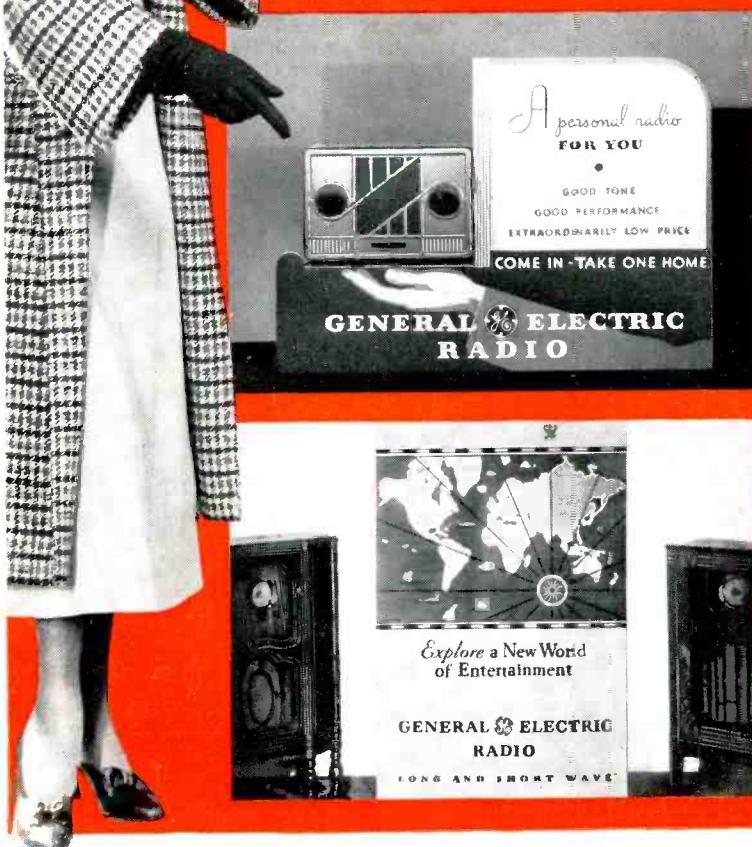
Home of "the Nation's Station"—WLW

ALL PRICES INCLUDE DELIVERY..INSTALLATION..ONE YEAR FREE SERVICE

TAMAQUA PA

SALES COUNSEL FROM THE CUSTOMER . . . NO. 2

"These smart displays tell me where to buy a G-E RADIO!"



GENERAL ELECTRIC'S national advertising enters millions of homes month after month. It creates the desire to see, hear and buy G-E Radios—standard, all-wave, battery, auto radios.

But where to buy? G-E radio displays in dealers' windows tie-in with this national advertising. They tell people where to buy. Prospects be-

come customers—profits mount. Get your share of this business. Set up the catchy displays now. General Electric has displays available for all types of radio sets advertised.

For further information, see your G-E distributor, or write the General Electric Company, Section R-364, Merchandise Department, Bridgeport, Connecticut.

MODEL K-85—the new G-E All-wave Console, Retails at \$126.75. The All-wave Table Model Retails at \$92.50... All prices F. O. B. Slightly higher in West, Mid-West and South. Subject to change without notice...

"Now is the time to buy"



GENERAL ELECTRIC RADIO