

OCTOBER, 1934

RADIO RETAILING

INCLUDING
SERVICE
AND
INSTALLATION
SECTION

HOME ENTERTAINMENT MERCHANDISING



And now... the SEALED CARTON CRUSADE

Always the leader in sales, RCA Radio Tubes during the past six months have enjoyed an increase in popularity among the 30,000 Authorized Agents handling them that is truly amazing. Indeed, the feeling has become widespread that RCA Radio Tubes are the only tubes to handle for a substantial, steady, protected volume of compensation.

Unquestionably this feeling has come about as the result of the adoption of the RCA Radio Tube Agency Plan, and the steps the RCA Radiotron Company has since taken to reinforce it. Here are a few of the advantages that make Agents enthusiastic:

- Agency Plan Features:**
- Adequate stock without investment.
 - Assured profits.
 - Protection against unfair trade practices.
 - Complete inventory price protection.
 - Protection against losses from dead stock.

Steps Taken to Protect Compensation

1. Agent-owned stock bought back by RCA Radiotron Company. This enabled the Company to assure every Agent of equal opportunity from a price standpoint.
2. List price reduction... putting Agents in a better position competitively and setting the stage for more sales of complete complements of RCA Tubes.
3. Withdrawal by Company of RCA Tubes not in Sealed Cartons—enabling every Agent to take full advantage of the merchandising features of this superb packaging advance.

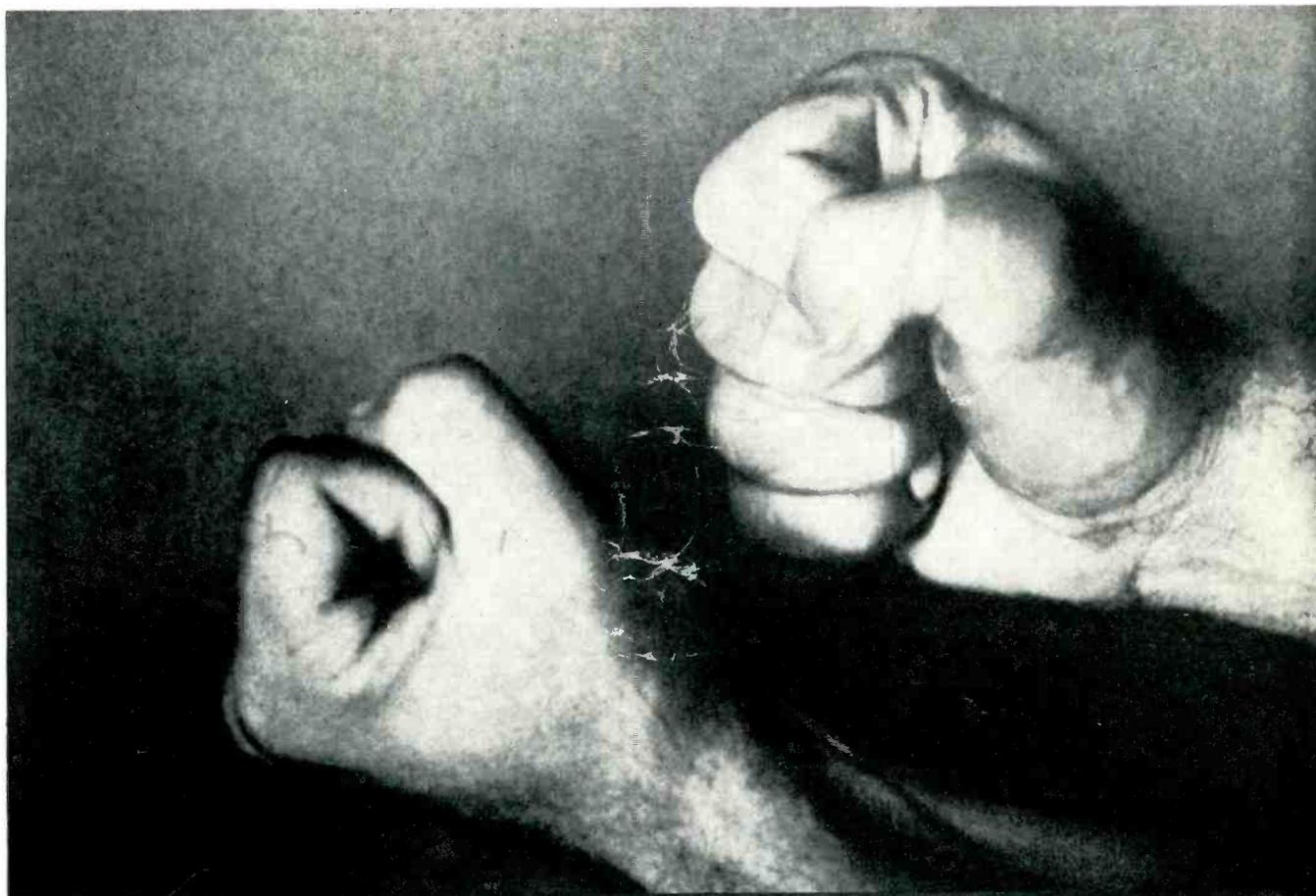
And now..

THE SEALED CARTON CRUSADE, backed by the most powerful concentration of advertising in radio tube history, and spelling the doom of that profit thief and arch enemy of all honest dealers—the Used Tube Racketeer.

RCA Radiotron Company, Inc.

A RADIO CORPORATION OF AMERICA SUBSIDIARY

Camden, New Jersey



Two-fisted leadership

Frigidaire has never believed in half-way measures and never will.

That's why General Motors has spent millions of dollars in research that Frigidaire may continue to be known as the leading product of its kind. That's why millions of dollars have been invested in new plants and equipment—that each Frigidaire may be as nearly perfect as it can be made. That's why the vast purchasing power and the engineering skill of General Motors have been called upon to make Frigidaire, in every sense, a true General Motors value.

As a result, Frigidaire today enjoys a

reputation that is clearly reflected in Frigidaire sales. Aggressive in its policy of product improvement—aggressive in its advertising and merchandising methods—Frigidaire has steadily strengthened its position in the industry while company after company has come into the business and gone out again.

Frigidaire's two-fisted leadership—in quality—in value—and in sales—has won the approval of the foremost retail outlets of the industry. These dealers have found that Frigidaire is the electric refrigerator that sells easily and stays sold—the electric refrigerator that brings real profits.

Frigidaire's sales program for 1935 is being formulated now.

It will be the most comprehensive in the company's history. It will embody new ideas and plans of the greatest importance to every man interested in the profits to be made from the sale of electric refrigerators.

If you, too, like General Motors, have "an eye to the future—an ear to the ground," it will pay you to get all the facts about Frigidaire's 1935 sales program. Write to Frigidaire Corporation, Subsidiary of General Motors Corporation, Dayton, Ohio.

Frigidaire

A PRODUCT OF GENERAL MOTORS

THE WORLD'S MOST POPULAR ELECTRIC REFRIGERATOR

RADIO RETAILING. October, 1934. Vol. 20, No. 4. Published monthly, price 25c. 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.

Zenith Dealers now can

DEMONSTRATE

*Their Most
Enthusiastic Claims*



For the First Time in History . . . One Radio Definitely Superior to All Others!

"I never used a receiver which gave me a greater thrill!" . . . "this receiver represents the best value in a radio receiver that has ever appeared on the market" . . . "I played it against a 12-tube set of another make—and discovered it would get every station clearly that the \$200 machine would pull in" . . . "has licked all competition in its price class around here" . . . "it is almost unbelievable that a small set like this will perform so well" . . .

● No other radio ever has done for the dealer what the Zenith is doing today!

Zenith Long Distance Radio is out-performing and out-distancing all its competitors . . . in all price divisions! And Zenith's own dealers and distributors are the most enthusiastic backers of this remarkable series. Why? They're doing the testing themselves . . . they *know* what Zenith can do!

Here are *facts* from nation-wide dealer tests:

1. Zenith is outclassing many competitors with *twice* the number of

tubes, sold at double the Zenith price!

2. Zenith is getting greater distance and logging more stations abroad than any *other radio* in the same price range.

3. Zenith is whipping "tough spot" reception areas all over the country . . . bringing in stations never logged before!

When you sell Zenith you sell *superior merchandise* . . . an unbeatable combination when tied with Zenith's nation-wide newspaper and magazine campaign. (See Time, October 1, page 29.)

Are you interested? Then write at once about the Zenith franchise!



ZENITH RADIO CORPORATION, CHICAGO, ILL.

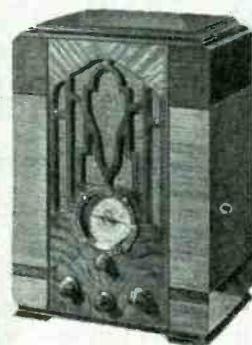
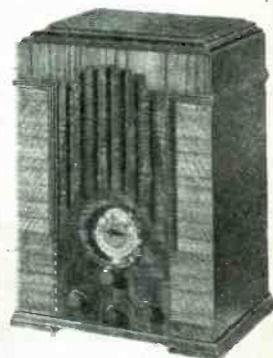
Dealers everywhere are reporting phenomenal results with Zenith Long Distance Radio . . . logging dozens of "impossible" foreign stations . . . getting volume and clarity far beyond larger competitors.

ZENITH MODEL 808

Triple Filtering

● Six tube superheterodyne, all-wave with three wave bands. Six inch speaker. Airplane dial.

\$49⁹⁵



ZENITH MODEL 807

Triple Filtering

● Five tube superheterodyne. Six inch speaker. Airplane dial.

\$39⁹⁵

ZENITH MODEL 861

Triple Filtering

● Six tube superheterodyne, all-wave. Twelve inch dynamic speaker. Airplane dial.

\$79⁹⁵

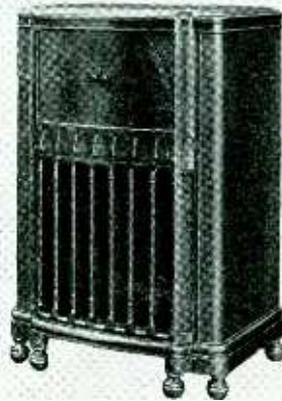


Prices subject to change without notice. All prices slightly higher west of Rockies.

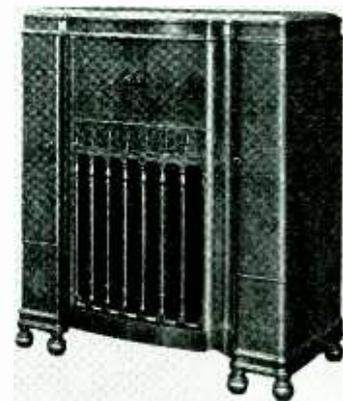
Newest Additions to the Stromberg-Carlson Line



No. 70 ALL-WAVE



No. 72 ALL-WAVE



No. 74 ALL-WAVE

The finest reproducers of speech and music ever made available to the public.

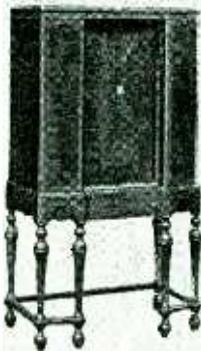
Here is High Fidelity that extends beyond the present-day conception of high fidelity and does it with unequalled uniformity of sound output. This is made possible by Stromberg-Carlson's use of Two Speakers — Bass and Treble — of large Dynamic range, fed through a dividing network; an Acoustical Labyrinth (patent applied for) that (a) eliminates cabinet cavity resonances, (b) extends the bass frequency

range, (c) enables the bass speaker to reproduce large volume bass tones without distortion and that (d) projects the sounds from the front of the cabinet only; Sound Spreading Vanes; Broad Speaker Opening in the cabinet front for wide angle sound diffusion; all combine to give highest perfection of tone. Remote Control by Te-lek-tor may be added.

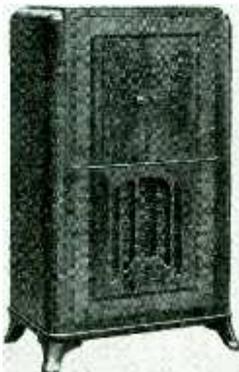
STROMBERG-CARLSON TEL. MFG. CO.
ROCHESTER, N. Y.

SHORT WAVE - BROADCAST RADIOS

STROMBERG-CARLSON RADIOS



No. 60-H

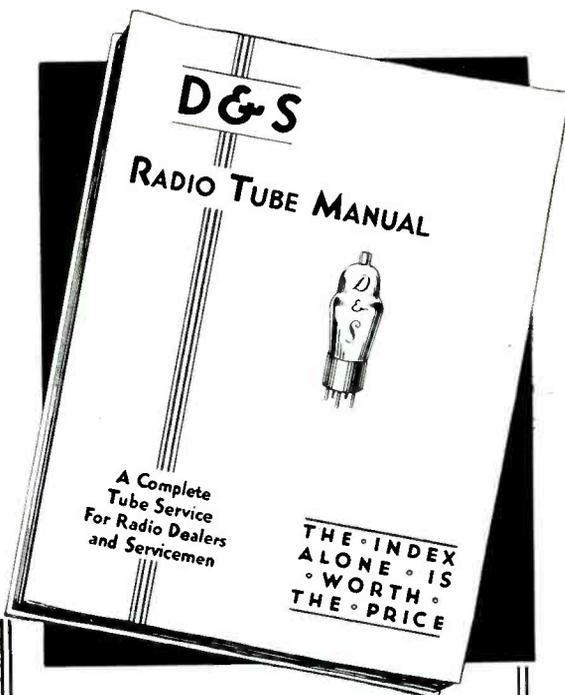


No. 60-PR

FEATURES	SHORT-WAVE BROADCAST				ALL-WAVE				STANDARD WAVE TOUCH TUNING			STANDARD WAVE				33-A	69		
	60-T	60-L	60-H	60-PR	68	68-H	70	72	74	55	56	56-R	49	59	51			52	54
TUNING RANGES IN KILOCYCLES	540-1570 5500-15500	540-1570 5500-15500	540-1570 5500-15500	540-1570 5500-15500	540-1570 23,000	540-1570 23,000	550-1570 23,000	550-1570 23,000	550-1570 23,000	540-1570 1500									
FOREIGN RECEPTION	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes										
NO. OF WAVE RANGES	2	2	2	2	4	4	4	4	4	1	1	1	1	1	1	1	1	1	
POLICE, AIRCRAFT, AMATEUR					Yes	Yes	Yes	Yes	Yes										
SELECTORITE DIAL	2 Ranges	2 Ranges	2 Ranges	2 Ranges	4 Ranges	4 Ranges	4 Ranges	4 Ranges	4 Ranges										
METER TUNING					Yes	Yes	Yes	Yes	Yes				Yes	Yes	Yes	Yes	Yes	Yes	
TOUCH TUNING										Yes	Yes	Yes							
AUTOMATIC VOLUME CONTROL	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
LOW LEVEL BASS COMPENSATION							Yes	Yes	Yes				Yes	Yes	Yes	Yes	Yes	Yes	
BASS COMPENSATION	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
CLARIFIER (TUNE CONTROL)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
PRE-SELECTION STAGE ON SHORT WAVES	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes										
UNDISTORTED OUTPUT IN WATTS	6 1/2	6 1/2	6 1/2	6 1/2	15	15	15	15	30	6 1/2	6 1/2	6 1/2	15	15	15	15	15	3	
CLASS A AMPLIFICATION	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
SPEAKERS-STROMBERG-CARLSON	8 1/2"	8 1/2"	10 1/2"	10 1/2"	10 1/2"	10 1/2"	Two	Two	Two	10 1/2"	10 1/2"	10 1/2"	10 1/2"	10 1/2"	10 1/2"	10 1/2"	10 1/2"	8 1/2"	
HIGH FIDELITY							Yes	Yes	Yes										
NUMBER OF TUBES	7	7	7	7	10	10	15	15	15	8	8	8	11	11	11	12	12	6	
REMOTE CONTROL										Yes		Yes							
TE-LEK-TOR (REMOTE CONTROL SYSTEM) OPTION							Yes	Yes	Yes										
CABINET & FINISH	Table Walnut	Console Walnut	Highboy Walnut	Console Walnut	Console Walnut	Highboy Walnut	Console Walnut	Console Walnut	Console Walnut	Two-Piece Walnut	Console Walnut	Console Walnut	Console Walnut	Console Walnut	Console Walnut	Console Walnut	Auto Radio		
AUTOMATIC PHONOGRAPH				Yes				Yes	Yes						Yes		Yes		
PRICE (EAST OF ROCKIES) \$	75.00	95.00	135.00	250.00	175.00	225.00	465.00	725.00	950.00	148.50	168.50	188.50	230.00	275.00	460.00	385.00	685.00	79.50	69.50

The Short Wave Selector Makes Any Standard Wave Radio All-Wave. Same Tuning Features as No. 68. All-Wave. 4 Tubes. Table Model, Walnut Finish.

THERE IS NOTHING FINER THAN A STROMBERG-CARLSON



D&S RADIO TUBE MANUAL

Greatest Dollar Value Ever Offered Radio Dealer

Compiled by Frank Dunnigan, Radio Engineer with many years of practical experience in Radio Service work. Assisted by leading Tube manufacturers, prominent dealers and service men. Many months of research and study, accurate and close checking have made the D&S Radio Tube Manual the highest authority on characteristics, etc., extant. Equally valuable for beginner or expert, service man or salesman. Introductory special price, postpaid **\$1.00**

Tells How to Substitute and Interchange Tubes

Goes into matter of substituting very thoroughly. Covers the substitution not only of Tubes of one type interchangeable in the same socket, for a tube of different designation made by another company—but also deals with the substitution of late Tubes for Tubes so obsolete they can not be obtained any more. Gives complete instruction for any socket, circuit or other change necessary.

Base connections and schematic diagrams given for every type of receiving Tube ever produced. Bottom view socket connections.

Always Up to Date

D&S Manual consists of nearly 200 pages 8½ x 11" in size. Looseleaf binder form. Can be added to and kept up to date as new Tubes are released.

Manuals Shipped Promptly Same Day Orders Are Received

Distributors Wanted—Write

Seattle Distributor says: "First hundred we purchased from you are practically gone. Manuals sold far beyond our expectations. One of our salesmen reports he sold 45 manuals out of 48 calls."

(Signed) GEORGE SHEPHARD; Buyer
F. B. Connelly & Co., Seattle

D&S PUBLISHING CO., INC.
P. O. Box 183, Spokane, Wash.

"When you can't find it elsewhere, look in the D&S Manual"

When Customers Call on You for OBSOLETE TUBES

Do You Lose Sales—or

do you do — as hundreds of dealers on the Pacific Coast have been doing for months — turn to the D & S Radio Tube Manual, find the correct replacement tubes in a jiffy — and make from two to four honest dollars extra for yourself?

One Tube Sale Pays for Manual

Subsequent sales are pure velvet. Remember also, when you lose a sale to replace an obsolete tube, you lose the confidence of the customer . . . and his future business.

D & S Radio Tube Manual

Knows All, Lists All, Tells All About
Radio Tubes

Nothing like it ever published for the Radio Dealer, and his service department. Contains COMPLETE information on 237 Receiving Type Tubes — from most obsolete to the newest. Indexes and cross-indexes THREE TIMES as many types of Tubes as any other manual. Gives replacement information on nearly 100 obsolete Tubes not listed in any other manual anywhere. Absolutely impartial. Does not boost the sale of any make of Tube. In the D&S Radio Tube Manual you get all the information in ONE book. No frantic hunting through old files. No need to keep the customer waiting — the D&S Manual speeds up service.

Special Introductory Price—\$1 Prepaid
30-Day Money-Back Guarantee

Send a Dollar Bill Today—Use Coupon

D&S Publishing Co., Inc.

P.O. Box 183, Spokane, Washington

Herewith \$1.00 to pay for a D&S Tube Manual, which I can return to you in thirty days if not satisfactory.

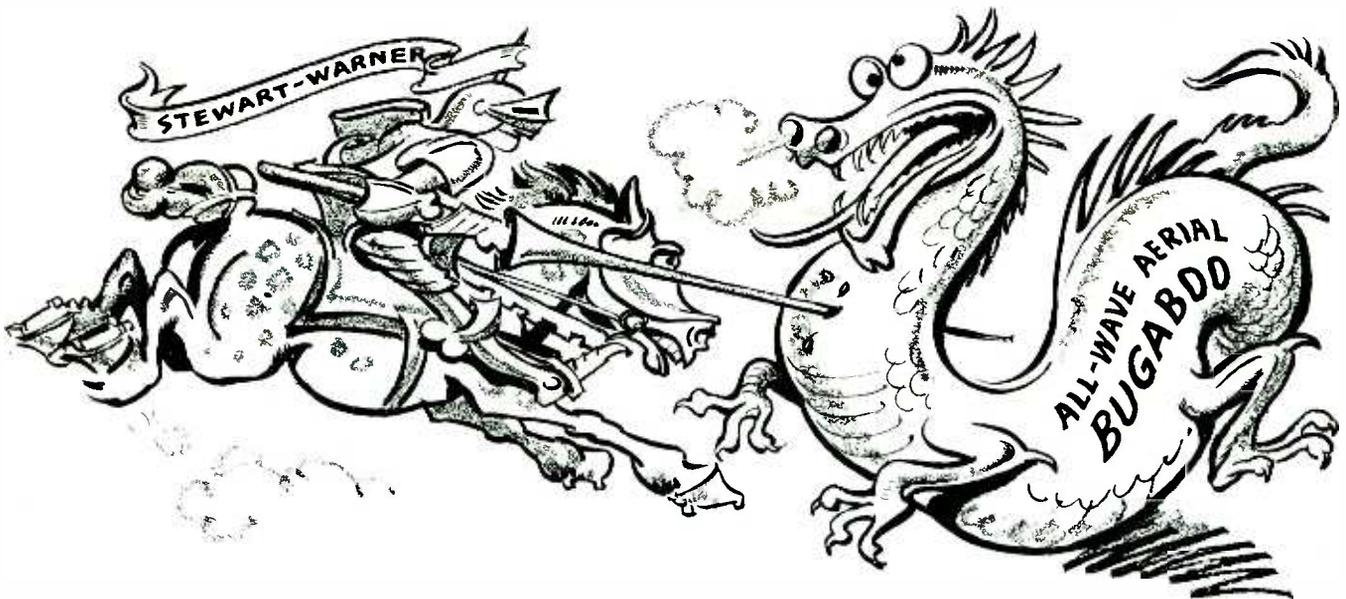
Name.....

Street.....

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

Please check: () Dealer () Service Man

STEWART-WARNER Licks ANOTHER Sales-Resistance



NO ELABORATE AERIAL KIT...

is needed with STEWART-WARNER All-Wave Sets!

A Few of the Reasons Why
"IT'S EASIER TO SELL STEWART-WARNER RADIO, THAN TO SELL AGAINST IT"

1. An outstanding *exclusive* selling feature—The "MAGIC DIAL" that makes foreign stations as easy to tune accurately as local.
2. A simplified line, giving you coverage of all popular price ranges with *minimum stock*. This speeds up turnover, adds profits.
3. Style and beauty of cabinet designs never surpassed at any price.
4. Popular prices. Round-the-World radios to retail from \$39.50. Wide-range standard wave from \$24.50. New-type auto radio with amazing "home-set tone"—\$49.50.
5. Financial stability. No fear of STEWART-WARNER ever becoming an "orphan line."
6. Sales and merchandising management strategy famous for making dealers and distributors more successful. Powerful enough to ride out two major depressions without a scratch.
7. Many special refinements, selling features. "No Elaborate All-Wave Aerial Kit Needed" is one of these. Every sales resistance has been met—and kicked in the pants.

SAVES BUYER \$3⁵⁰ TO \$10⁰⁰

EVERY smart merchandiser knows that in the long run he makes the most money by selling greater satisfaction at lower cost.

Efficiency of STEWART-WARNER engineering, developed from more than three years' extra experience as the pioneers in all-wave radio, now eliminates the need for an elaborate all-wave Aerial Kit. All the expensive parts formerly necessary in an efficient all-wave aerial installation are now *built into* STEWART-WARNER Sets. All you need to add, for the finest installation, is a few cents worth of wire and low-cost insulators. Thus you offer a cash saving of \$3.50 to \$10.00 to STEWART-WARNER buyers—yet this saving actually *proves superior technical quality and engineering efficiency*.

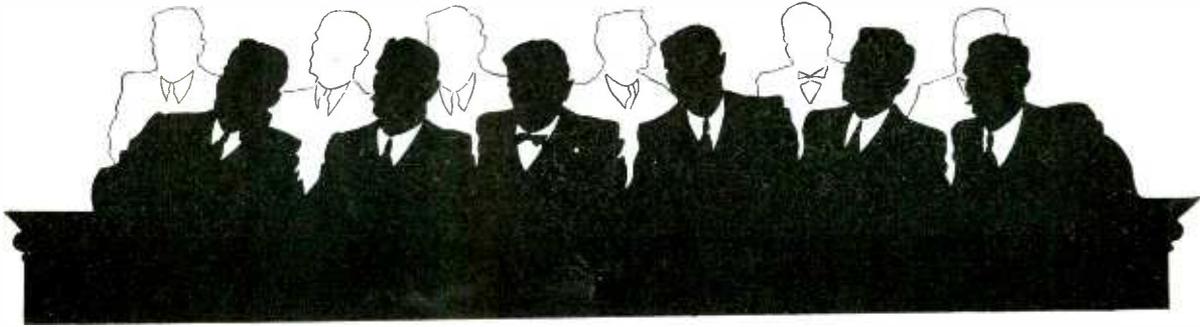
And you'll get no costly kick-backs from customers failing to get the performance you promised, on account of inadequate aerial equipment. The STEWART-WARNER Doublet Antenna Input System is built in . . . laboratory-designed for maximum performance possible under existing local conditions. Dealers all over the country are finding this a powerful argument selling more STEWART-WARNERS. Get in touch with your STEWART-WARNER distributor pronto, and get in the money.

STEWART-WARNER CORPORATION
 1853 Diversey Parkway Chicago, Illinois

STEWART-WARNER

"Magic Dial" ROUND-THE-WORLD RADIO





A Critical Jury

If you were to make a survey of the millions of set owners using Arcturus Tubes . . .

if you were to poll the thousands of service technicians . . .

if you were to consult the nation's leading radio engineers . . .

You'd get one unanimous verdict—"Arcturus" stands for quality in tubes!

Such universal acclaim is attributed to several facts:

1. Arcturus pioneered 6 of the 7 fundamental developments in a. c. tubes
2. Arcturus has consistently upheld high quality standards
3. Arcturus Tubes have long-life records never approached by any other tube.



Decision! Arcturus merits your use and sale.

ARCTURUS RADIO TUBE COMPANY, NEWARK, N. J.

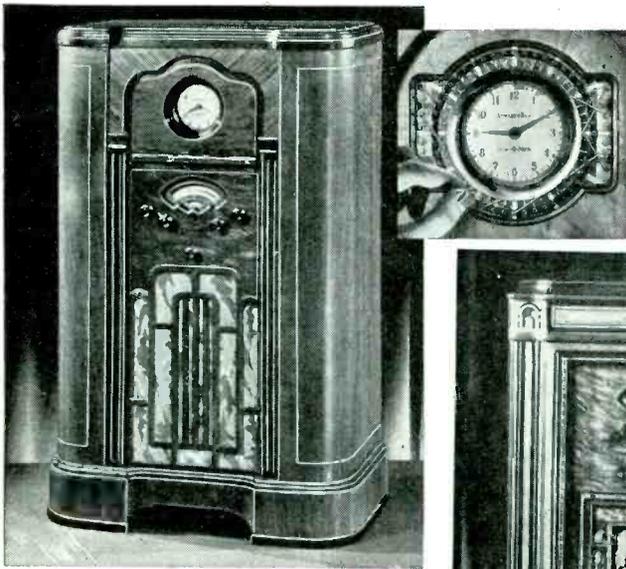
ARCTURUS

R A D I O T U B E S

ATWATER

all the features of

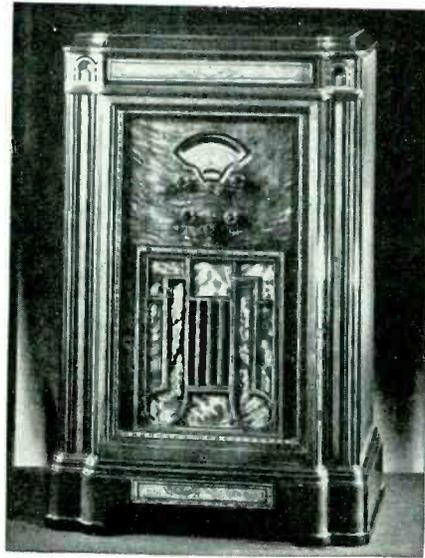
Check the features of Atwater Kent Radios against any other line. Check Atwater Kent against all of them combined. It's the ONE line with EVERY proved improvement



TUNE-O-MATIC—Model 511W—starts itself, tunes itself, stops itself automatically—a marvelous new idea in radio—tunes in a number of selected programs over a 12-hour period with one setting. Contains an electric clock of excellent quality. Foreign and American broadcast receiver—11-tube superheterodyne with 12 tuned circuits. Shadow tuning for use on manual control. It is the sensation of 1935 progress. **\$240.00** f. o. b. factory.



THIS is a great year in radio—and it's getting greater every day for dealers who know how to tell their customers about the **INTERESTING** new features of 1935 radio progress . . . world-wave reception, selective



ALL WAVE—Model 112S. We know of no other radio *at any price* that matches the performance of this 12-tube Atwater Kent. 10-kilocycle selectivity over entire tuning range—15 watts output—4 tuning bands—540 kilocycles to 18 megacycles—bass compensation—true high fidelity reproduction. **\$180.00** f. o. b. factory.



ALL WAVE—Model 559N—9-tube superheterodyne, 11 tuned circuits—range from 540 kilocycles to 18 megacycles in 4 bands, 6-section gang condenser, 2-speed tuning 6 to 1 and 60 to 1 ratios, 11-inch speaker, 4-position tone control has usual low medium and high tone pitches with *high* selectivity and 4th with *low* selectivity and high *faithful* tone reproduction. **\$135.00** f.o.b. factory.



ALL WAVE—Model 447—7-tube superheterodyne, 9 tuned circuits. 4 tuning bands include complete world-wide reception, from 540 kilocycles to 22.5 megacycles. 4-point tone control, 8-inch electro-dynamic speaker, illuminated shadow tuning. Top quality at lowest price. **\$79.90** f.o.b. factory.

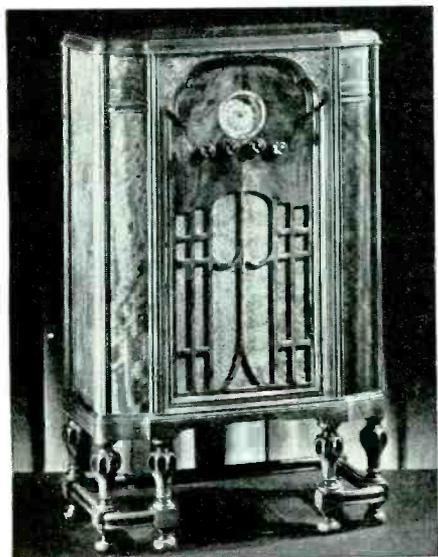
The Season's

KENT offers 1935 RADIO

illumination of airplane dials, sliding 4-band panel behind full-vision dials to show only the tuning band in use, shadow tuning signals to show peak point for each station, improved automatic volume control, improved superheterodyne circuit with added tuning circuits that come into use automatically, 2-speed tuning, doublet antenna posts with automatic switching, self-tuning Tune-O-Matic Radio, and true high-fidelity reproduction. Most 1935 radios have SOME of these features... ONE radio has them ALL. That radio is ATWATER KENT.

ATWATER KENT MANUFACTURING COMPANY • A. Atwater Kent, President • PHILADELPHIA, PA.
(Prices subject to change without notice.)

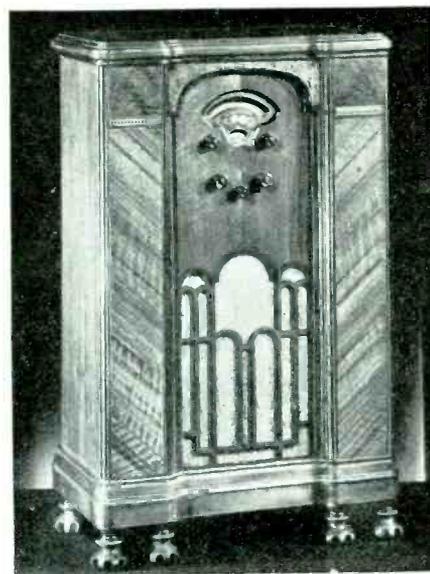
BACK ON THE AIR—coast to coast network. Every Monday evening at 8:30, Eastern Standard Time, over the Columbia network—your customers are hearing the Atwater Kent Radio Hour—Joseph Pasternack's orchestra and the great artists of our age ONCE AGAIN.



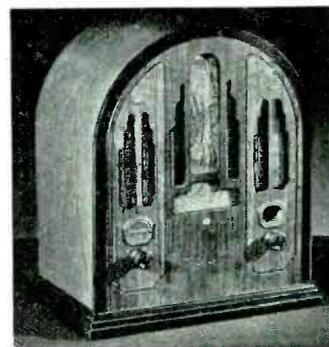
SHORT WAVE and STANDARD BROADCAST—Model 325E—offers the thrill of foreign broadcasting plus everything that is broadcast in America, with a rich, truthful tone. 5-tube superheterodyne with 6 tuned circuits and 3 separate tuning ranges—2-speed tuning—11-inch electrodynamic speaker, automatic volume control, tone control, attractive cabinet. **\$54.90** f. o. b. factory.



SHORT WAVE and BROADCAST Model 206—6-tube superheterodyne, 7 tuned circuits, 3 tuning bands cover foreign short-wave, all police, airplane and amateur channels as well as all American broadcasting—2-speed tuning—8-inch speaker. Highly selective yet extremely quiet in operation. **\$49.90** f.o.b. factory.



ALL WAVE—Model 318K—8-tube superheterodyne with 9 tuned circuits—complete world-wide range from 540 kilocycles to 22.5 megacycles—in 4 separate tuning bands—2-speed tuning, approximately 6 to 1 and 60 to 1 ratios—shadow tuning—6 watts undistorted output—11-inch electrodynamic speaker. Beautiful lowboy cabinet of choice veneers and matched woods with excellent acoustical properties. **\$94.90** f.o.b. factory.



STANDARD BROADCAST—Model 944—4-tube superheterodyne—large speaker—undistorted output of 2 watts—tuning range from 540 to 1720 kilocycles. Sensitivity may be varied. Vernier tuning. Police calls. **\$22.50** f. o. b. factory.

Leading Line

Quality and Performance **FIRST**

Read what this Retail Tung-Sol Partner says:

"We are glad to say that out of about \$150 worth of Tung-Sol tubes that we sold since our contract with you began that we have not had a tube returned by a single customer. We think this is a wonderful record".

And what this Consumer has to say:

"We still have the first set of Tung-Sol Tone-Flow Tubes you sent us last year and they still work as well as on the first day. Practically everyone up here uses Tung-Sol now, as, due to the long distance which separates us from the Broadcasting in Buenos Aires we need first class tubes for good results. . . . Radio for us is a godsend, so far from the big cities, and Tung-Sol Tubes have made our radio better and, above all surer".

These are but two of the scores of letters we are constantly receiving from both sellers and users of Tung-Sol Tone-Flow Radio Tubes proving Tung-Sol performance.

NO WONDER that 93% of all Tung-Sol Tone-Flow radio tubes sold last year went to replace tubes of other makes!

NO WONDER that Tung-Sol Tone-Flow radio tube sales increased more than 150% last year as against a gain of only 32.7% for the entire industry during the same period!



MADE BY THE MAKERS
OF TUNG-SOL AUTOLAMP
BULBS

Send for complete details of the Tung-Sol time-tested Consignment Plan

TUNG-SOL

Tone-flow radio Tubes

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

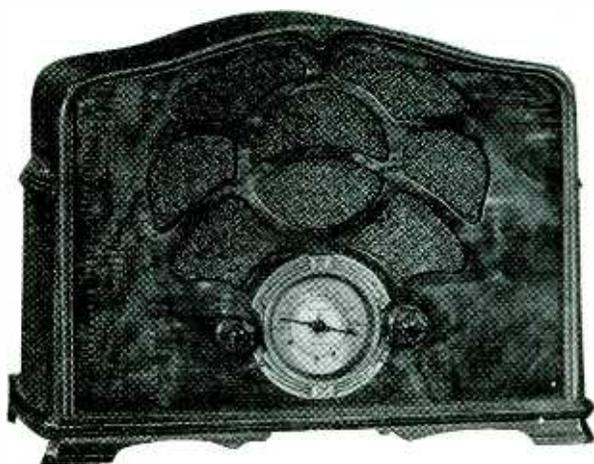
Form T179

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

FOUR of the Eloquent REASONS WHY *Emerson Radio*

IS HAVING TO DOUBLE LAST YEAR'S PRODUCTION

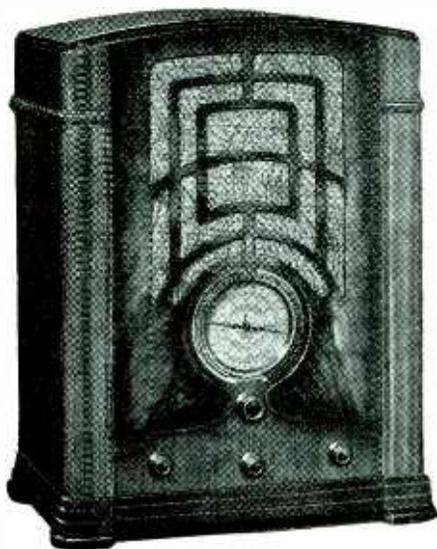
Almost overnight EVERY ONE of EMERSON'S nine new 1935 Models jumped to retail stardom. Our huge production facilities had to be still further increased. And shortly—within two weeks—the present necessity of budgeting shipments will be overcome. While maintaining the highest quality standards, Emerson will be in a position to meet all requirements of distributors and dealers.



Model 38. Round-the-World 6-tube AC-DC superheterodyne. 170 to 555 meters and 19.3 to 55.5 meters. "Duo-Lite" band switching circuit 12 1/2 in. wide. With RCA Radiotrons. List price **\$39.50**

Model 32. Long and Short Wave 5-tube AC-DC superheterodyne. 100 to 550 meters. Recessed illuminated dual volume control and tuning assembly. Dynamic speaker. Walnut cabinet 11 1/2 in. wide. With RCA Radiotrons. List price, **\$33.00**

There are
NINE Emerson Sets
at \$19.95 to \$99.50

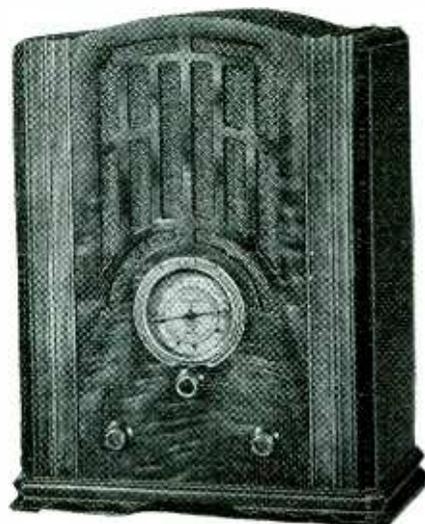


Model 71. ALL-WAVE 7-tube superheterodyne. 13 to 555 meters. "Quadro-Lite" band switching circuit. Three-gang condenser. 8-inch dynamic speaker. Walnut cabinet 21 in. high. With RCA Radiotrons. List price,

\$69.50

Model 45. Round-the-World. 6-tube AC superheterodyne. 170 to 555 meters and 19 to 55.5 meters. "Duo-Lite" band switching circuit. Phonograph pick-up jack. Walnut cabinet 16 1/2 in. high. With RCA Radiotrons. List price,

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With a perfectly "balanced" line—priced, profited and promoted right, EMERSON distributors and dealers are enjoying advantages offered by no other radio proposition. For details address

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INTERNATIONALLY



ACCEPTED!

RAYTHEON 4-pillar Radio Tubes literally cover the four corners of the earth. They are conspicuous in more than forty countries. In many of them Raytheon Tubes are standard. Sixty per cent of the American licensed set manufacturers use them. Most of the police radios and commercial air lines in the United States are equipped with them.

Such acclaim can only be the result of proved superiority. Tube users know the extraordinary merits of the 4-pillar and other construction features of Raytheon Tubes—both from actual experience with them and as a result of many years of persistent advertising and other promotional activities. Raytheon acceptance is instant, widespread—and invariably Raytheons are the preferred tubes under any careful investigation or comparison.

All these are reasons why Raytheon 4-pillar Radio Tubes are easy to sell. Twenty thousand dealers and eight hundred authorized distributors have found them so. You, too, can make a

success with them. Effective new sales-making material is available now. The peak season is at hand. . . . Now is the time to take on—and push—Raytheon 4-pillar Radio Tubes.

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More than 95 minute pieces of wire, metal and chemicals are processed with microscopic accuracy into the assemblage of Raytheon 4-pillar Tubes—giving to them an unrivaled uniformity of characteristics. 4-pillar element support gives them a matchless sturdiness that defies jolts and vibration and makes Raytheons outstanding favorites, particularly where rough usage is likely and where dependability and long life are vital factors. The only radio tube with this distinctive feature—4-pillar construction!

RAYTHEON
TRADE-MARK
4-PILLAR RADIO TUBES

THERE'S

Proof

OF PROFIT *in*

KINGSTON

PERFORMANCE

● **World Wide Reception**

In the big "sales push" of the present season a Kingston demonstration closes hesitating prospects... makes profitable sales... because Kingston performance adds genuine entertainment value to the lure of DX tuning for foreign broadcasts.

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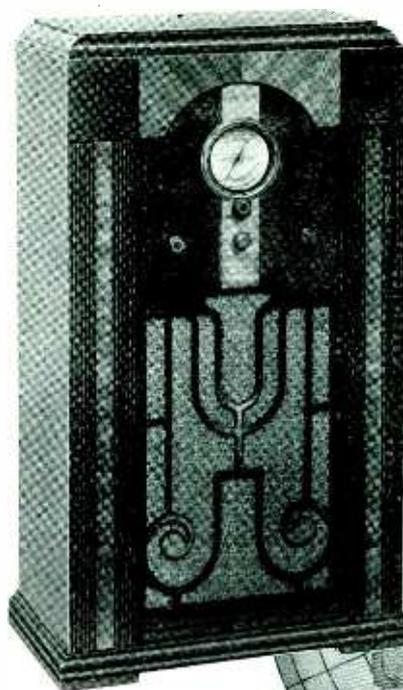
There's proof of profit in Kingston performance. Write now for complete information about the Kingston proposition—without obligation.

KINGSTON RADIO CO., INC., KOKOMO, IND.

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KINGSTON
Standard and Short Wave
R E C E I V E R S



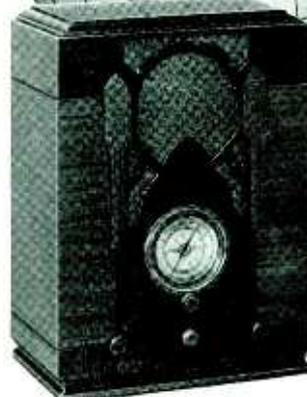
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Seven tube AC Superheterodyne, high frequency amplifier stage, seven tuned circuits, American and Foreign broadcasts. Attractive modern console, hand rubbed, 36½" high, 21½" wide, 11½" deep. Price **\$79.50**



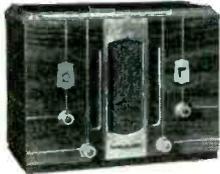
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Attractive table model employing same chassis as 700B Console, 19½" high, 14" wide, 8¾" deep. Price **\$64.50**



Three additional table styles and one additional console complete the Kingston 6-model line.

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



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



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



MODEL 402 — 5 tube, 8-tube-performance. AC-DC. Range 540 to 1750 Kilocycles. Generous volume.



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

Outstanding merchandise plus outstanding merchandising program . . . set new high for American-Bosch Radio Sales

At the mid-season mark, we are pleased and gratified to report the largest production and sale of American-Bosch Radios in over 5 years—the largest in fact, since "the good old days". This success is the result of one of those situations where everything is clicking—cabinets—radio performance—merchandising plans.

For example the 1935 line of American-Bosch Round-the-World Radio embodies Right-Angle Tuning, the basic new principle in radio design introduced by American-Bosch . . . the Multi-Wave Selector, which makes Round-the-World Tuning a simple matter at last . . . Anchored Construction, which insures uninterrupted quality of performance . . . a new type of continuous tone control which guarantees finer reception.

We're "telling the world" about these new 1935 American-Bosch Round-the-World Radios in a series of thrilling, sensational coast-to-coast broadcasts. Every Sunday, over a WJZ-NBC hookup reaching 85% of the radio set owners of America, a famous explorer is the guest of the American-Bosch Radio Explorers Club. Vilhjalmur Stefansson, Martin Johnson, Theodore Roosevelt, Jr., Roy Chapman Andrews, etc., are appearing through special arrangement with the American Museum of Natural History, to dramatize the thrill of exploring in foreign countries via American-Bosch Round-the-World radio. *An absolutely original radio merchandising tie-up is enabling us to furnish live leads to American-Bosch dealers. Write or wire for full information.*

UNITED AMERICAN BOSCH CORPORATION
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CAPTAIN JAMES P. BARKER, famous sea captain who has sailed around Cape Horn 41 times in windjammers, conducts the American-Bosch Radio Explorers Club. Listen in Sunday afternoons WJZ-NBC

AMERICAN-BOSCH *Round-the-World* RADIO

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VOL. 20

OCTOBER

NO. 4

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NEWS and VIEWS

A FRIEND AT COURT

The appointment of Arthur D. Whiteside as a member of the National Industrial Recovery Board should be hailed with delight by every radio wholesaler. Mr. Whiteside, who is the president of Dun & Bradstreet, Inc., became thoroughly familiar with the provisions of the Radio Wholesalers Code in his former capacity as Code Administrator. Furthermore, his business background has been such as to provide a sympathetic understanding of the problems of the jobber.

CLEANING UP THE ETHER

Radio dealers and the public will be the principal beneficiaries of the new movement to reduce radio interference, which has been started by the engineering division of the Radio Manufacturers Association and which will be carried on in cooperation with other trade and industry groups.

The plan calls for the wide-spread clean-up of all forms of radio interference, from whatever source, and includes attention to the radio noise which infests *the short-wave bands*, as well as the broadcasting spectrum. Such short-wave interference from automobile ignition systems, as well as from electrical devices, has become especially important with the increase in short-wave listening.

It is proposed to attack these evils at their source, and to bring about correction of design of offending apparatus so that equipment will be originally built interference-free. With automobile ignitions properly shielded and electrical machinery designed with a decent consideration for those listening in near it, a long step will have been taken to free the ether of its radio racket. Too often the service man is called in on the scene too late to do much good without involving some

innocent party in great expense. This new plan contemplates that all *builders, installers and users* of interference-producing apparatus will be furnished engineering advice as to how to prevent needless emissions from cluttering up the ether. And apparatus that meets the non-interference specifications will then have an additional and important selling point!

Every radio dealer and service man will wish god-speed to these volunteers who are undertaking to clean up the Augean stable of the ether highways. May the effects of their labors soon be felt.

DOWN, DOWN, DOWN

A certain manufacturer has dumped 60,000 resistors in the Chicago area at prices perilously near the 1-cent level. Competition is, of course, concerned but is rapidly becoming reconciled to this sort of thing.

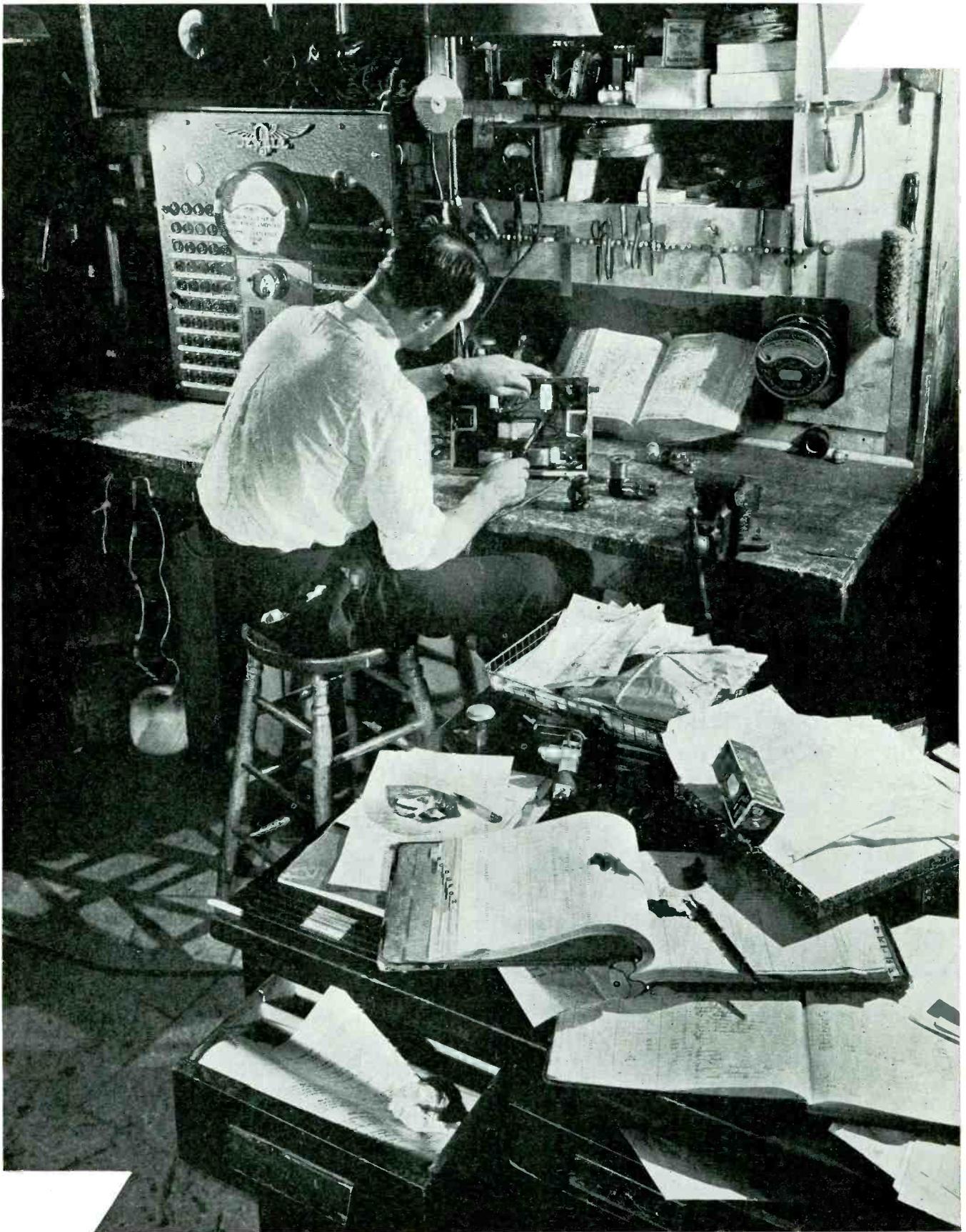
One maker of resistors claims that the only way that such competition can be combated is to bring out new, improved merchandise and take it out of the "price-first" class, has practiced what he preaches by introducing a completely protected resistor which can "take it."

COOPERATION BRINGS CASH

A group of parts manufacturers have gotten together to the extent of jointly sponsoring an all-wave receiver kit. This is the true cooperative spirit and it looks as though it will be good business for all.

The set has been popularized through the use of well-done explanatory "newspaper" and magazine articles for the "fans." Dealers, particularly those in and around New York and Chicago, report good consumer response.

SERVICEMAN or



BUSINESSMAN?

This man owns an independent service shop . . . **H**e is a GOOD serviceman, up on theory, experienced in practical repairs . . . **H**is customers like his work . . . **T**hey patronize him, again and again . . . **S**o his should be an INCREASINGLY PROFITABLE business . . . **B**ut it ISN'T A BUSINESS AT ALL, judged by modern standards. **E**ach year it becomes LESS of a business . . . **F**or service is barely returning this man a living wage . . . **H**is "business," as he likes to call it, does not return sufficient gross profit to permit replacement of steadily depreciating instruments and the essential automobile . . . **E**ven worse, it NEVER IMPROVES ITS CASH POSITION . . . **T**his man is a SERVICEMAN, not a businessman . . . **H**e might just as well DIG IN A DITCH so far as his future is concerned . . . **W**hy? **B**ecause he pays too much attention to his BENCH, not enough to his DESK. **T**he ink-blot on his books is significant . . . **N**ow technical proficiency is highly desirable, the foundation upon which any service operation must be built, and "Radio Retailing" does not belittle such knowledge . . . **B**ut it is our opinion that survival of this independent serviceman now depends entirely upon the adoption of sound BUSINESS methods . . . **H**e must learn to sell his labor more intelligently. **A**nd, of even greater importance, HE MUST STUDY HIS COSTS . . . **O**nly with such knowledge can billings be made to cover operating expenses and improve cash position . . . **M**ERE VOLUME WILL NOT DO IT . . . **C**areful study of costs, we are convinced, is the most promising course open to this man . . . **F**or no one but a complete moron will deliberately sell below cost, BE COMPETITION WHAT IT MAY . . . **T**his man must learn to be a BUSINESSMAN first, a serviceman second.

LOW-PRESSURE OVERDONE

Selling tactics, like a pendulum, swing back and forth from one extreme to the other. At present we appear to be near the conservative end of the cycle. Dealers have given costly high-pressure methods the cold-shoulder, are striving to do a more modest business at a profit. Many have "holed-up" altogether, do little or no outside selling. Crews seem nearly extinct.

Low-pressure is a welcome change from past doorbell excesses. Certainly outside selling was overdone, the dealer often losing sight of mounting overhead in his helter-skelter scramble for volume. But even low-pressure can be carried too far. And when it does the retailer fails to sweeten his books with new blood, stagnates in his own narrow puddle of old accounts.

The radio dealer is entering an era in which he simply must expand his circle of influence. This requires a certain amount of promotion, perhaps even cold-canvass. It should be possible to strike a compromise between high-pressure and low-pressure without swinging all the way back to the costly methods of the gay "twenties."

MORE HEADROOM

"A little introspection will show that the tube industry itself has passed up one of the most important factors for tube replacement business. I refer to the difficulty of taking out and replacing tubes in many types of sets. The public is rapidly becoming educated to the fact that they should have their radio tubes inspected at frequent intervals. But it will not call a service man just to have tubes tested—though set owners will take them to dealer's stores. But they cannot do this if it is impossible for them to take the tubes out of the set.

"Anyone who has tried to get tubes out of some of the midgets or automobile sets, or worse still, tried to put seven prong tubes back into such sets, knows what I am talking about. It seems to me that the tube industry could well afford the time and money to work on the design of circuits for radio sets so as to preserve space, yet give good performance and still make the tubes readily accessible and easily taken out and replaced whenever the occasion warrants it."

H. A. HUTCHINS, *General Sales Manager*
National Union Radio Corporation
New York, N. Y.

This Is No Time For "Absentee Management"

says J. J. Furer
Stamford, Conn. dealer

ONCE-UPON-A-TIME there were two radio stores, in Stamford, Connecticut. Their operations were like two peas in a pod insofar as gross sales, overhead and personnel were concerned. Even the locations, class of clientele, tallied.

Yet one broke even over twelve months while the other made \$6,000 net. The latter was the Furer Music Shop. And, according to J. J. Furer, his "edge" can be attributed solely to close personal control. The competitor suffered from "absentee management."

Furer contends that there are certain phases of a retail business which can be handled satisfactorily only by the boss, especially in these times of slim volume, when slight leaks mean the difference between profit and loss. For example:

1. Buying . . . Furer is constantly on the lookout for buys on standard brands. These, he claims, are often particularly profitable. He recalls a certain purchase of a popular model with which a New York jobber was overloaded. This was offered at the regular discount plus an additional ten, exclusively to Furer. He bought the stock, sold some for cash at a slight cut and the



The premium department is in the rear of the shop, so that people must pass the radio display, records and pianos to get to it.



Operation of a Kirkman-Colgate-Borden premium station injects new blood into the Furer radio business, building store traffic. Furer himself passes out many of the premiums as this affords an opportunity to ferret out prospects.

majority at full list but for long terms. No one but the "boss" could handle such buys without disrupting the local market.

2. Overhead . . . Minimizing of operating costs is another subject which fully warrants the owner's close attention. Furer cut his rent in half last year, further reduced his selling costs by cutting out expensive outside sales effort. Operation of a Kirkman-Colgate-Borden "premium" station in the back of the store helps increase store traffic, bringing in from 300 to 3000 people per year. Records bring in an additional 25 people weekly. And sheet music brings in 50 more.

Should purchasing power remain down much longer Furer says he will further cut overhead by moving from his \$2100 store to a \$600 shop having less space but an equally good location. He will operate with just one serviceman; a man who owns his own truck, pay him well and so avoid the expense of car maintenance, insurance, etc. He believes that volume could be kept nearly up to the present level on such a basis.

3. Servicemen . . . The service department, according to Furer, is one of the worst sources of leaks in the average store. He insists upon getting his money's worth out of servicemen, pays them well, works them NRA hours and expects results. He takes them into his confidence concerning weekly sales. This keeps them on their toes as he makes it plain that the security of their jobs depends entirely upon the condition of the business.

The men are expected to go out and make calls on old customers when shop work is slack. Fooling around with shortwave sets in "spare time" is expressly prohibited. Most technicians, according to Furer, are prone to do this.

The shop charges \$1.50 minimum for calls and gets it.



Records bring in about 25 people weekly. Sheet music adds 50 more and is more valuable as a traffic builder than as merchandise. The "salesman" is Mr. Morehead, Furer's aggressive partner.

due to the Furer reputation. New sets carry 90-day unconditional guarantees and 1 year of free labor. Paid service calls and tube sales make the department profitable, however. Furer estimates that it nets him \$3,000 in a good year, covers the cost of free service and a good slice of the overhead. Service billings represent about 20 per cent of total sales.

4. Credits . . . No need to emphasize the importance of this phase of business. Furer finances all his own time sales and is particularly strict about his accounts. Only "boosters and bank presidents" receive free home demonstrations. Others must make a down payment of from \$5 to \$10 for the privilege of selecting a set in their own home. This eliminates the chisellers and, according to Furer, is worthwhile despite the undoubted loss of some business.

Furer has been in the music business in Stamford for 17 years. He is an old Victor and piano man. 1933 sales totaled \$40,000; 80 per cent radio and the balance "Easy" washers. The store has 4,000 active accounts, phones 40 or 50 of these occasionally, mails circulars once in a while. It "coasts" on its reputation, injects new blood into the lists by utilizing the premium, record and sheet-music store traffic.

Record sales average \$1.25 per customer, incidentally; are best when college students are home in town. Sheet music goes for 35 cents straight, is profitable when items purchased at 18c. can be moved in quantity . . . which happens only infrequently.

Furer regularly marks merchandise more than 3 months old down 1/3 when taking inventory. "I don't kid myself about the value of stock," he states, "and when it starts to 'jell' move it at the best possible price. My stock right now is worth about \$7,500."

Do You Half-Use Your Testers?

Instruments should be made to sell as well as to render service

By Floyd Fausett
Chief Engineer, Supreme Instruments Corp.

IF YOU are using your test instruments merely to service you are only *half* using them. For good equipment, properly dramatized, is the best sales tool possessed by the repairman.

Here are some tips on the use of testers as *sales* implements:

1. Treat your instruments with the care a truly delicate and valuable device deserves . . . especially when in the home of a customer. Make a visible point of care. Don't slam them around. Saves you money too.

2. Keep the instrument cases looking new and well cared-for by frequent applications of *brown* shoe polish and elbow grease, (brown for either brown or black cases, wood, leather, leatherette or Bakelite). This camouflages scratches and eliminates finger marks.

3. Clean dirt from the meter glass regularly. People look at the meter closely and a layer of dust is not very pleasing.

4. Set the stage for your work in the home. Make a visible effort to get good light on your instruments. Move a floor lamp if necessary . . . and do it ostentatiously.

5. When possible interpret to the consumer the story told by the instruments. There is an especially fine opportunity to do this when checking tubes.

6. Follow up instrument tests by filling out printed diagnosis forms. A written "bill of health" is in itself an excellent indication for the consumer that you are careful and trustworthy in your work. It also speeds up estimates. The back of the form may well carry space for the final work estimate.

Do these things and you will have less difficulty convincing the customer that your estimates are fair.

USES THE LOGIC OF MATHEMATICS

When a prospect hedges on buying a new set to replace his old one, George Revere, Caldwell, N. J., states the dollars angle of the case. Here's the way it adds up:

Allowance on old radio	\$15*
Probable cost of replacing worn out tubes in old set—if it is not traded in	8
Estimated saving on servicing charges and replacement parts	10
Loss of trade-in value if old set is retained until it becomes entirely obsolete	15
<hr/>	
Total saving if new set is purchased now .	\$48

*Or whatever the price may be.

"This argument also helps me switch prospects from cheaper to higher-priced sets because of the larger allowance I am able to set down on the better models," says Mr. Revere.

Consider the Lowly Harmonica

It Brings in the Boys—And Sells Sets to Their Parents

“UNTIL May, this year, we’ve fought shy of musical instruments. Figured they called for too much technical knowledge. As for the little harmonica, well, it seemed like a toy to us. This spring, however, a young boy, accompanied by his father, entered our store and gave me a new slant on the direct and indirect sales possibilities of this humble instrument.” The speaker was M. Lewis, general sales manager for Hurvin’s, leading radio dealer in Jamaica, N. Y.

“‘You mean to say you haven’t any harmonicas like the ones Borrah Minevitch plays at the Valencia?’ he asked, somewhat amazed. The lad then explained how he had been practicing on the harmonica, how he had gone to see Minevitch and his Rascals twice at the theatre, and how he tuned in whenever Minevitch was on the air. And while the boy had been talking the father had been browsing around among the radio sets.

“‘Come here, Sonny,’ the father suddenly exclaimed. ‘Here is the very set your mother has been talking about.’ The boy examined the radio and agreed with his father. Both returned the next day, with the lad’s mother, and purchased the radio.

“‘See,’ said the boy as he was leaving, ‘If you had harmonicas Dad would have bought me one for my birthday. Lots of kids in my neighborhood play and we’re thinking of forming a harmonica orchestra.’”

Then and there Mr. Lewis decided to stock harmonicas

and see about a window display. That night he called at the theatre to see Minevitch, who gladly provided him with the necessary pictures (see illustration) and promised to see that his jobber would supply a stock of instruments and other window trim material. Most musical instrument wholesalers are in a position to do likewise.

“Within an hour after the window display was completed,” Mr. Lewis said, “we sold our first harmonica to a boy living at the other end of the town. He was a Minevitch fan and had passed the store by chance. Later he sent several of his pals to the store for harmonicas. During the following week at least 20 boys, most of them accompanied by one or both of their parents, came into the store to see about harmonicas. That was another angle I hadn’t seen before we stocked them. We spend thousands of dollars every year in various forms of advertising to attract the grown-ups and now we’re accomplishing the desired results through juvenile interest in harmonicas.

“For a month we kept an accurate record of every harmonica inquiry, of every sale, and of every harmonica prospect or purchaser who bought a radio or other articles, plus the information concerning what had attracted the customer, where he lived and his past radio experience. The results were highly satisfactory and we now display harmonicas as conspicuously as other instruments.

“A boy, as practically everybody knows,” Mr. Lewis

Why Tube Prices Have Been Lowered



An interview

with

E. T. CUNNINGHAM

President, RCA Radiotron Co.

FOREWORD: Because of the many dealers and servicemen who expressed themselves as against the August 1 announcements by tube manufacturers of further reductions in the list prices of many tube types, "Radio Retailing"

presented this view of the picture in its August, 1934, issue.

There is, however, much that can be said in justification of this move. "Radio Retailing" now publishes, therefore, the following interview which its managing editor had recently with Elmer T. Cunningham, president of RCA Victor, Inc., and of RCA Radiotron Company:

“THE recent reductions in the list prices of certain tube types were necessary for the stabilization of retailing practices and were designed to produce greater total profits for the dealer and service man,” declared Mr. Cunningham, when interviewed at Camden, N. J.

“To get down to cases: Many of the newer types of tubes had passed out of the experimental stage, development costs had been absorbed and these tubes were in process of quantity manufacture with all of its attending economies. Original prices, therefore, were out of line. There must be reason-



This window, tying in with the local appearance of Borrah Minevitch and his Rascals, sold hundreds of harmonicas for Hurvin's—and led to the sale of over a dozen sets

continued, "is more inclined than his parents are to ramble around town, hence the boy living some distance from our immediate neighborhood is more likely to pass our store than the older members of his family. So if we can sell him a harmonica, plus the personality and service of our establishment, he is likely to relay the good news to his pals and family.

"We got to thinking about the matter and wondered

what would have happened if Minevitch and his Harmonica Rascals hadn't been playing at the Valencia Theatre. To settle this question we staged the same window display in our Hempstead store, as Minevitch never had played Hempstead. In proportion to the population of Jamaica, our Hempstead store did practically as well. The harmonica players in Hempstead knew Minevitch through his broadcasts and newspaper ads."

able relation between factory costs of a product and its ultimate selling price to the consumer, with proper consideration of distribution costs. The consumer should not be called upon to pay an exorbitant price for what he buys. This is true even if he will willingly pay more than a just mark-up. A short-sighted policy never profits anyone.

"Equally important to my mind is the protection of the smaller dealer and of the serviceman against price cutters or others able to buy on a lower cost basis. Whenever a manufacturer assumes the obligation of establishing list prices, namely, the recommended consumer price, he assumes an obligation to the consumer and to his trade to see that those lists fairly reflect competitive selling prices for the same grade of product. The manufacturer that sells tubes at extremely long discounts based on Radiotron lists is really using that way of selling tubes at a low net cost with the dealer determining his own mark-up, and in most cases that mark-up means less profit than RCA Radiotron provides for its dealers. The only practical manner in which the RCA Radiotron dealer can be protected is by having our

recommended list prices fairly reflect costs of production.

"Another important consideration is that lower consumer prices always expand the total market and create a more stable market with a better ultimate profit to all concerned. Lower costs enable dealers to urge replacement of worn out tubes before such tubes really stop operating.

"Lower list prices also make it good business and easier selling for a dealer in many instances to effect the sale of a complete complement of tubes. All of this increases the total volume of sales and therefore total profit. The dealer is interested in his total dollars profit and it has been my constant experience that the total dollar profit comes from a substantial volume of business at a reasonable percentage profit.

"May I point out that prices have not been reduced on many of the older types of tubes.

"Another angle. On the lower price midget sets the cost of replacing five tubes was so high in proportion to the original cost of the set that the customer mistrusted the in-

(Please turn to page 22)



Note the extra, magnetic, speaker—upper left. “Controlled” distribution of modulated volume is an essential requirement of commercial installations. Lou Kornfield, West Hempstead, L. I., also controls the type of entertainment he wants his customers to hear. Has a schedule of programs sponsored by the makers of products he sells posted near the set

Sell Sets at

A big market for Radio and Many Other Retail Programs Build Sales

IN his desire to capture every bit of home business is the radio dealer overlooking another good bet? How about that next door brother-merchant who sells drugs, groceries and other radio sponsored products? You rub elbows with these prospects every day, men who could—and do—make a paying proposition out of a properly installed radio in their store; at the “point of sale” of the products they merchandise.

These store sets are used in many ways. They attract traffic, they are tuned in on programs sponsored by a concern whose products the retailer stocks. Placed in front of the store, or over the doorway, they broadcast sporting events and other feature news. And, in connection with a public address system, the larger stores announce special sales and other pertinent messages to their customers. Don't overlook P. A. when selling stores.

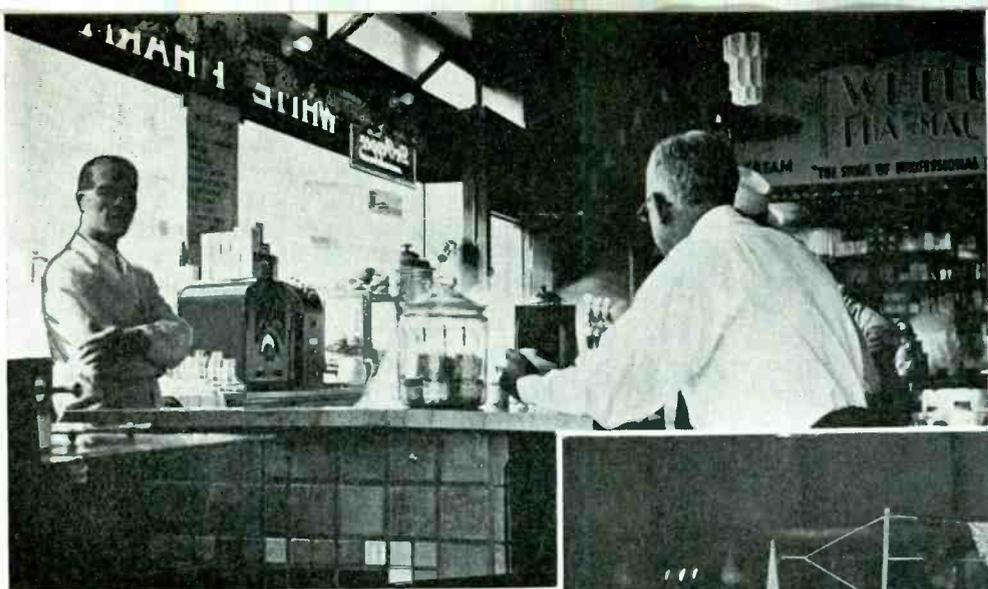
The number of such prospects may be realized by a perusal of the following list of retailers—who can use radio to advantage—obtained from the U. S. Census of Distribution:

Confectionary stores ...	61,000	Wearing apparel	115,500
Delicatessen stores	11,500	Furniture stores	41,000
Fruit and Vegetables ...	23,400	Eating places	135,000
Food retailers	357,000	Hardware stores	26,000

Bakeries	12,500	Farmers' supplies	20,000
General stores	109,000	Cigar stores	33,500
Department stores	4,300	Drug stores	59,000
Dry Goods	25,000	Florists	9,800
Variety (5 & 10 to \$1) .	12,400	Gift shops (toys, novel-	
Auto accessories	19,000	ties, cameras)	6,700
Filling stations	125,000	Jewelry stores	19,600
Garages (repair)	61,000	Sporting goods	2,700

Serving this vast army of retailers are the broadcasters. Their programs tell the story of advertised products to half a billion listeners—and should be heard in the stores themselves, where these products are offered for sale.

Last year there was spent for air time approximately \$70,000,000. Of this amount drug manufacturers contributed \$15,000,000; food products concerns \$18,000,-



Ben White, Austin, Texas, believes radio a valuable aid in pushing fountain sales. When the former owner of this store took his radio with him, the many protests of patrons who wanted music with their meals resulted in the installation of this set

Counter displays and radio window trims—tied in with the programs to be heard within the store and featuring the products advertised and the artists involved—are another reason for “radio at point of sale”



“Point of Purchase”

in Stores . . . Drug, Grocery Establishments Find Sponsored for the Products They Carry

000 and tobacco products companies \$5,500,000—another indication of the importance of having facilities to get these messages over to the consumer “at point of sale.”

Druggists Are Using Radio

Do radio dealers realize the extent to which radio in the retail store is being boosted, as a business builder, by the trade papers serving these industries? We didn't, until we got into this subject last month.

Take the drug trade. Its leading weekly, *Drug Topics* (circulation 60,000) runs a full page each issue promoting radio in drug stores. It lists 110 chain programs which are on the air every week sponsored by pharmaceutical concerns.

Here is what druggists think about a radio set over the prescription counter:

“Radio music has been attracting customers to my store for five years,” states Lou Kornfield, proprietor of the Stratford Chemists, West Hempstead, Long Island. “When we first put the set in, other merchandisers in the neighborhood said we were crazy but they soon learned that the idea was drawing customers and many of them now have sets in their own stores. The best programs are sponsored by drug manufacturers. That’s a break we overlooked when we first hooked up the set but these programs increase counter sales.”

Norman Frank, proprietor of the Irwin Drug Store, Philadelphia, keeps a radio receiver in his prescription department for the sole purpose of keeping up on the programs advertising drug store products.

“Every evening we broadcast the baseball scores from the front of our store. We are now in our fourth year of radio advertising and wouldn't give it up for a great deal,” writes Lincoln Pharmacy, New Bedford, Mass.

And from Tampa, Florida, “Despite the fact that the customers of the Lafayette Pharmacy were invited to tune the store's set as they pleased, drug programs were rarely tuned out. Whenever possible we make a special

display of products being advertised on the air," writes S. L. Perkins, proprietor, to *Drug Topics*.

There is another angle to the desirability of radio in a retail store, the window trim tie in. For example: From Seattle, Washington, comes this item—"Retail druggists here are rushing to take advantage of a radio window display devised by local station KOMO, who has circularized every drug store offering to cooperate in preparing this trim. It ties up both local and national programs of sponsored drug products."

And Grocery Stores, Too

But let's see what the grocery stores think about radio. Station CKLW recently tried an experimental installation of especially designed radio equipment in eight Atlantic & Pacific stores through the Detroit area. Without exception store managers reported an increase in the demand for the products of the sponsored programs at the "point of sale" of from 10 to 25 per cent. A competitor observed this interest, insisted on a similar installation. Note what this competitor, the Sfire Stores, Birmingham, Michigan, has to say:

"We operate a number of grocery stores in this territory. Some months ago we installed a multi-speaker, low noise level, radio system in one of them. Patronage showed a perceptible increase. Radio entertainment pleased both clerks and customers and the demand for food products whose brand names were heard frequently, on the sponsored program schedule we used, showed a discernible increase."

And here is a statement by I. S. Randall, general sales manager of Frosted Foods Sales Corporation, New York. "Since radio made its debut I have been in close contact with retail grocery stores. It is my observation that beyond a shadow of doubt the installation and use of the radio receiver in a retail store of the Class B, C or D type will unquestionably draw customers into that store."

A Receptive Market

It is more than apparent, therefore, that there's a receptive market for radio in stores. While the number of prospects in your town may be limited, there's more than the profit in the actual installation to consider. You can persuade the store owner to let you place your own advertising card under the set. He will also be glad to have you install a "radio products" trim in his window. There is a wealth of material available for this purpose. Practically every sponsor of a nationally known food or drug product has a special radio window trim available—free on request. The Columbia Broadcasting System, New York City, will supply you with three dynamic photographic panels for your own use or for you to offer as a lure to a prospective customer. The National Broadcasting Company, Radio City, New York City, is also prepared to help. Write its Sales Promotion Department.

A Multi-Speaker Opportunity

The experience of the Essex Broadcasters, Inc., Detroit, Mich. (CKLW), shows, however, that for other than very small stores a multiple speaker installation is desirable. Here is a chance to sell extra speakers and to get a special installation fee. It is advisable that the set be not run at a high noise level. In other words the customer must not have to shout his or her orders to the clerk. Neither must the program distract attention from the regular store routine. This desirable low noise level, in stores over 30 feet long, may be obtained by the

proper placement of two or more magnetic speakers.

Store proprietors should also be instructed to make up a schedule of programs especially suited to their business and to have such programs tuned in as a part of the regular routine of one of the clerks. Radio, in stores, should be a "controlled" operation for best results.

Cunningham Justifies Lower Lists

(Continued from page 19)

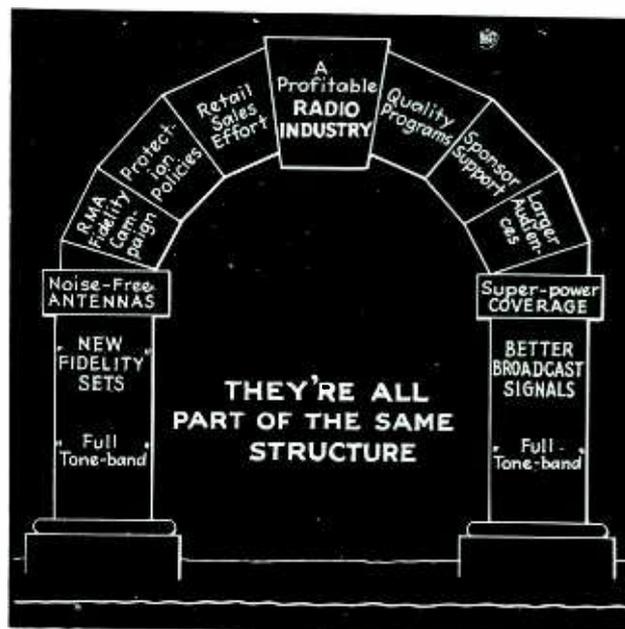
tegrity of the service man and many times complained about the high charge for tubes. This situation has been corrected."

It was then pointed out to Mr. Cunningham that many dealers and service men stated that the customer objected to a charge for overhead expenses—apart from labor—which constitute a considerable part of every service call; that these costs, therefore, must be covered by income from the sales of replacement parts, of which tubes constitute by far the major item and concerning which the customer willingly pays the asking price. When lists are lower total money profit on the individual sale is directly affected.

Mr. Cunningham replied: "Practically every other service industry renders, and receives, a proper charge for all expenses incurred when a service job is performed. This practice should be adopted by radio men. They should not expect tubes to carry this burden. A little courage by service men should take care of this situation."

"Practically our entire thinking behind this recent decision to reduce the price of certain 'out of line' tubes was influenced by the many requests we have received from dealers for protection against price cutters and for an opportunity to make a larger total profit from the tube end of their business. I am firmly convinced that the course we have pursued is the best way to accomplish this end and that it will so prove out. I might add that our decision to institute the consignment plan for tubes was also largely motivated by this necessity for protecting the ethical dealer against unfair practices which could not be legally controlled by the manufacturer, due to the Sherman Act, in any other manner."

Mr. Cunningham then stated that RCA is about to launch a new and extensive national advertising campaign whose main purpose will be to warn the consumer that there are unscrupulous dealers and service men who are reselling worn tubes, representing them to be brand new.



Dividends or Dynamite



AN ELECTRIC refrigerator for \$72.50! Will these new "lift top" models mean profit or loss for the average retailer located beyond the confines of Government-financed Tennessee Valley?

First announced by GE in June, responding to a demand invitation from the Tennessee Valley Authority for an electric refrigerator to retail for not more than \$80, this type now is manufactured by half-a-dozen concerns and is available to frugal housewives everywhere.

Dealer reactions vary from downright alarm to mild praise. While it yet is too early to obtain case histories covering a sufficient volume of business to determine whether this \$72-77 box carries dynamite or dividends in its 2 cu.ft. chest these facts already are apparent:

1. The lift top refrigerator has opened up two entirely new markets for electric refrigeration; lower strata incomes and special purpose requirements.

2. If sold *only* for these purposes it means added volume, maybe profit. But if loose advertising, unwise display and weak-kneed salesmanship are permitted to confuse the picture then the public will be handed a new and lower conception of refrigerator values and the dealer's real refrigerator business will suffer accordingly.

As we have remarked, this new refrigerator is on trial. The manufacturers themselves tell us that they haven't, as yet, sufficient field evidence to make possible the formulation of opinions or sales policies for the guidance of dealers.

In the absence of dealer dope on this jittery subject, *Radio Retailing* offers a few suggestions of its own.

WHERE TO SELL IT

The following are "safe" prospects for this 2 cu.ft. box: Families with incomes under \$1,200 per annum . . . Very small families . . . small or low-rental apartments . . . homes costing less than \$4,000 . . . camps and cottages . . . drug stores . . . doctors and dentists' offices . . . business offices . . . barber shops . . . beauty parlors . . . clubs. Also "two-car" families for secondary use—as an accessory refrigerator in butlers' pantries, for the storing of beverages; for use

in the game room, sick chamber or nursery. Remember that this model may readily be wheeled about, it will be hailed as a welcome convenience for lawn parties or outdoor terraces. Hotels may be persuaded to buy a half-a-dozen of these Lilliputians for temporary service in guest rooms. Private parties and sample rooms also need just such a device, according to Westinghouse in its house magazine *Cold Selling Talk*. Then again,

some well-to-do prospects may find two of these models better suited to their space and storage requirements than one larger box.

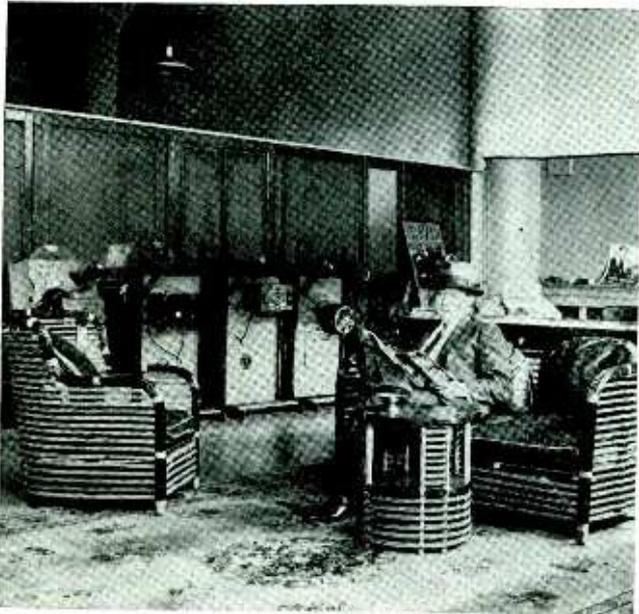
NEVER SELL IT—

Never sell the "compact" where a larger size is needed or where the prospect can afford a better refrigerator. Such sales are bound to result in a dissatisfied customer and a leaner bank balance. And, in advertising this model, never create the impression that adequate refrigeration for all-round family use may be had for less than \$80. Don't build up sales resistance by illustrating a larger model in your ad and running in bold-face type adjacent thereto the price of this two-foot type. This new number must be sold for just exactly what it is. Its special purposes should be stressed rather than its availability for large-family use.

Dealers so far interviewed agreed that as a "come in" attraction this little box is clicking. To date, however, it has not been a big seller. There are two reasons for this: First, as a special purpose proposition these new markets will not discover themselves. Salesmen must fare forth, contact these doctors, camp owners and small income groups. This job remains to be done. Second, the type of well-to-do prospect who buys refrigeration for winter use is not interested in this model.

The real test will come, therefore, in the spring, when the hand-to-mouth buyers of food, as well as of household appliances, start shopping. As the head of the electrical goods department of Hudson's, Detroit, points out, the poorer classes, while frequently rich in children, buy food in day-to-day quantities. For such, next April, this little refrigerator will be a godsend.

Follow These Tips for NEW



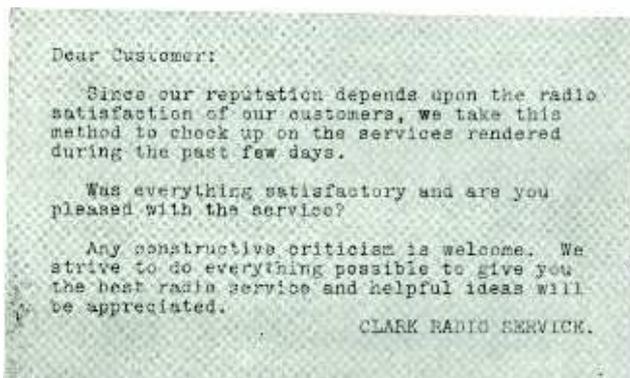
WHILE YOU WAIT

EVEN a dark, uninviting garage may be equipped with a bright, attractive waiting room where customers may be comfortable while auto-radio installations are in progress.

Here is a good example of what may be done with such quarters. The dealer has built a low partition across the front of the building, painted the concrete floor gray, laid down a bright colored rug and provided red and tan wicker furniture which further enhances the appearance of his waiting room.

Magazines are a necessary fixture, of course, and auto-radio display stands placed all around the room are useful as well as ornamental. They permit quick comparison of various makes and models. The sets are hooked up and facilitate comparative demonstrations.

DOUBLE PURPOSE RETURN CARD



"This post card is mailed the customer a week after date of sale," writes the Clark Radio Service Company, Granville, Ohio. "It serves a double purpose, eliminates kickbacks and registers our interest in our new customers' installation."

"AUTHORITY" CLOSES SALES

"Let the authority close them," is the advice of Herb Names, Well's Broadway Music Store, Denver, Colo.

"That's what we do when we find the closing is beginning to get gummed up; we call in the 'authority' on the sale. Who is this chap? It's any other salesman who happens to be idle at the time.

"We say to the prospect, when he puts up a tough question and the going is getting difficult, 'Just a moment. I would like to call Mr. Blank, who is an authority on radios. I am sure he can satisfactorily answer your question.' Of course we could answer the question ourselves but this is a piece of flattery to which the prospect readily responds. Now he is getting attention.

"Once Mr. Blank has been consulted he may take the quiet air of authority to which he is entitled—and it never fails to smooth out the sale considerably. Then, too, it is much easier to sell a prospect when he or she is being subject to the concentration of two salesmen," Names concludes.

TELEPHONE TECHNIQUE



Spare store hours should never be wasted. The telephone canvass, of course, is the answer. But there's a right and a wrong way to approach cold prospects, via wire.

The right way: 1. An agreeable voice and a thorough knowledge of the line and all its talking points. 2. A definite reason for phoning, such as the offer of a premium, a limited time special inducement or price or a free testing proposition. 3. Play down the buying angle—the object is to arrange for an appointment or get the prospect into the store. 4. Avoid stock phrases. Be natural. Let the prospect do some of the talking. 5. Do not call just before meal times. 6. Be patient. Be sincere.

"Q AND A" MAN UPS SALES 35%

Lord's Radio Salon, Los Angeles, keeps a "Question and Answer" man standing just outside its store during business hours—sells radios right out of the window.

"This idea has given us a 35 per cent increase in sales

BUSINESS

and doesn't cost a dime," explains manager L. J. Schutty. One out of every three set sales now start from this source. "We found that people would not come inside the store to ask questions about their sets and so we put a man out on the sidewalk. A great many sales start just by the process of having people come in to find out about their tubes or set. That is why many stores offer to test tubes free."

Salesmen take turns at the "Q and A" job. No man stands outside longer than two hours at a time, due to the monotony of the job. Just inside the foyer a radio is playing on a decorative box which also holds pamphlets. The salesman stands quietly beside the box, making no attempt to engage window shoppers in conversation.

Once a question is asked, however, the door has been opened. The salesman answers the question, then endeavors to ascertain the prospect's name or to get him inside the store. In 50 per cent of the cases where a question is asked, it is possible to further interest the prospect. All sales are not immediate but a large percentage are put down on the "hot" list and develop into sales later.

OLDEST SHOP—NEWEST CAR



Ray Southstone, Inglewood, Calif., believes in the business pulling power of a smartly turned out service wagon. Fr'instance: On one occasion, when parked in front of a customer's house, this car attracted such favorable attention that three neighbors sought Mr. Southstone and requested that he also give their sets the once over. Total time: four hours. Gross billings, \$35.

"I am constantly getting bids for work, based solely on the confidence which this rig inspires in total strangers," he states.

Ray's truck is trimmed with nickel and lettered in gold leaf, outlined in red. He keeps his testing equipment just as spick and span as his service car.

COLLECTION OF SERVICE FEES

Lennon Radio Service, Lumberton, N. C., contributes the following collection idea. This concern writes:

"Enclosed please find our invoice and service record forms. We are submitting these to you as a method



DISPLAYS DEFECTIVE PARTS

"When you tell a customer that the condenser in his set is defective, he may believe you or he may not, for he has little conception of how it is made or what might cause it to break down," explained Roy K. Tate, of Tate's Radio Shop, Inglewood, Calif., when questioned concerning his display of defective parts on his counter and mounted on panels.

"With this display I can explain the construction of the condenser and why it may go bad. I also put defective parts in a contrivance I have made and show the difference between the operation of a poor one and a good one. I let the customer discern, by watching the tiny sparks that progress through the condenser, just what electrical leakage is."

Tate also displays defective transformers on his rack and other delicate parts. Also groupings of defective tubes according to types. The entire display is designed for educational purposes. "Defectives" thus are made to become "effectives."

of collecting for service that really works, and hope it will help other service men.

"As you will notice the clause at the bottom of our invoice is in reality a chattel mortgage on the set. We either collect cash when the job is delivered or ask that the owner of the radio sign this agreement to pay within 30 days. We find that anyone honest enough to pay their bills is willing to protect us legally. We have had 100 per cent results with this method so far. When the customer signs on the dotted line there is no further trouble about collection. Incidentally, this mortgage is an "air tight" proposition in North Carolina if it has to be taken to the courts, but we have not had to experience this undesirable method of collection so far."

Total	\$ 7.45
<small>Note: All service, parts and tubes used in this job, guaranteed 90 days from date of this record. All charges standard Radio manufacturers cash service fees.</small>	
<small>The title to said radio is and shall be and remain in the payee named herein until said Repair Bill is paid in full, which shall be in 30 days from above date. If default is made in the payment herein set out, this note shall immediately become due and payable in full, and the said payee is empowered to repossess and sell said radio either at private or public auction sale and apply the proceeds to payment of this note, interest and other charges. Each party hereto severally waives right of homestead and personal property exemption.</small>	
Signed	<i>Mrs. Vincent Brown</i>



THE NEW YORK EXPOSITION

Radio Dominates Main Floor—Exhibitors Point to Need for Different Type of Show Next Year

THE second annual National Electrical and Radio Exposition, Sept. 19-29 at Madison Square Garden, New York City, was well supported by the manufacturer members of the radio industry—many reporting high dealer and public interest. Radio dominated the main floor. Without exception, the radio exhibitors (28 in all) extended themselves to make their booths attractive. Likewise the general decorative treatment provided a beautiful setting.

But bright lights, beauty and the display of the latest in radio and electrical appliances are not enough in these sophisticated days. Attendance was not up to last year. Future shows, it was felt, must have a major "headline" attraction on the main floor. "What could be more appropriate," said one exhibitor, "than an array of all the latest 'marvels' of radio and of the almost human things that now can be performed by the electronic tube."

The Public is Buying

That the consumer is definitely in the market for the new sets this year was amply confirmed by the buying interest manifested at the Garden. The public wants foreign reception, and the 1933 receivers, with their preponderance of large, open face dials, registered the fact that a new kind of radio has outdated the sets of yesteryear.

The new merchandise exhibited at the Show was fully presented in the September "Specifications" number of *Radio Retailing*. Additional, novelty, receivers displayed are described in the NEW MERCHANDISE department of this issue.

"Advances in the electrical arts during the past year, as shown at the Garden, have been so marked," declared Ralph Neumuller, managing director of the Electrical Association of New York, "that replacement markets of large extent have been created for refrigeration and radio. Another factor that should stimulate buying is the recent broadening of the scope of the National Housing Act," concluded Mr. Neumuller, summarizing the value of the New York Exposition.

Philco, Crosley, RCA-Victor Stage Banquets at Waldorf

The set makers have gone Waldorf-Astoria! Indicative of the return of confidence throughout the industry is the fact that the best is none too good for the radio trade these days.

Philco started it with a demonstration of its "high fidelity" receiver before an audience of music lovers, Sept. 12, in the

Grand Ball Room of the Waldorf. Miss Lucrezia Bori was the guest artist.

The following week witnessed a testimonial dinner to Powel Crosley, Jr., tendered by his many eastern friends—also at the Waldorf.

Four days later, Sept. 24, the Grand Ball Room of the same hostelry again witnessed a monster gathering of radio men. Over 1,000 dealers and distributors of the RCA-Victor Co. paid tribute to Messrs. David Sarnoff and E. T. Cunningham. The former is president of the Radio Corporation of America. The latter heads the RCA-Victor and RCA-Radiotron Companies of Camden, N. J.

"Micro-wave Facsimile Gateway to Television," Says Sarnoff

Facsimile radio was heralded as the gateway to television by Mr. Sarnoff, in his far-seeing address to the RCA dealers at the Waldorf. Micro-waves, measured in inches, will constitute the medium to revolutionary developments now rapidly approaching commercial realization at the RCA laboratories in Camden, he stated. Apparatus first will be installed for inter-city projection of pictures and letters at high speed. "When this speed is increased we will have practical television—which, I predict, will come well within your day and in which you, as merchants, will share. If we can send sixteen pictures a second we have television, and with the new facsimile system that will be a simple matter."

RADIO SHOWS

MILWAUKEE

OCT. 15-20

Eleventh annual Radio Show, at the Auditorium. Michael Ert chairman of the show committee. Frank Greusel chairman of the convention committee

NEW YORK

OCT. 19-21

The National Convention and Exhibit of the Radio Service Industry. Will be held at the Hotel Pennsylvania

No Trade Show in 1935

There will be no radio industry trade show in 1935, according to a decision made by the RMA Board of Directors at its meeting in New York, Sept. 12. The former annual RMA trade show was discon-

tinued in 1933 because of the sharp reduction in sales during the months immediately preceding the trade show. The RMA Board decided for this reason not to plan a 1935 trade show. The question of holding public shows under RMA sponsorship or auspices was continued for further consideration at the next RMA Board meeting.

RadoleK Appointed Philco Parts and Tube Distributor

The RadoleK Company, Chicago, Ill., received its official appointment as distributor for all Philco replacement parts and tubes at a glorified "fish fry" at the Palmer House, September 28. The presentation address was made by S. L. Capell, Philco divisional manager.

"RadoleK is blazing a new trail in parts distribution by making a place in the industry for the legitimate service man," said W. C. Braun, president of this concern, replying to Mr. Capell's remarks.

National Union Claims Title

National Union Radio Corp. lays claim to the title "largest individual purchaser of service equipment in the world." States that more than 30,000 pieces of service-dealer equipment have flowed through its organization to radio service-dealers. This equipment includes tube testers, set analyzers, oscillators, servicing tool kits and radio service manuals.

"Explorers Club" a Hit



ROY CHAPMAN ANDREWS

The weekly radio program, sponsored by the United American Bosch Corp., is proving a spectacular success, according to nationwide reports. Goes on the air every Sunday at 5:30 E.S.T. over network of NBC stations. Captain James Barker, eminent sea captain, presides—as Commander of the Bosch Explorers Club. And each week the American Museum of Natural History invites a famous explorer to relate his adventures.

Already such celebrities as Roy Chapman Andrews (above), Martin Johnson and Vilhjalmur Stefansson have been guest speakers.

Radio Retailing, October, 1934

ATWATER KENT TO MANUFACTURE DOMESTIC ELECTRIC REFRIGERATORS

Complete Line in Distinctive Cabinet Stylings Soon Available

The Atwater Kent Manufacturing Company, Philadelphia, Pa., heretofore engaged in the manufacture of radios exclusively, will also make and market under its own name a complete line of domestic electric refrigerators. First shipments of the new refrigerators will go forward to distributors within a few weeks, according to Mr. A. Atwater Kent.

"We have been actively interested in the development of electric refrigeration for a number of years and our engineering laboratory has kept abreast of the advances made in it but we have deferred entrance into the refrigerator market until general business conditions improved," Mr. Kent stated. "We are now ready to begin manufacture of a quality product that will compete with the best refrigerators on the market."

The announcement confirmed rumors that have been circulating in the radio and refrigeration trades for months. It is understood that the AK refrigerator will be introduced in four conventional sizes, possibly one or two new ones. The

cabinet styling is also said to be distinctive. Complete description of the product, however, will not be announced until first shipments are under way to distributors.

It is generally reported that design plans will include an all-porcelain freezing unit; automatic defrosting; 12-point cold control, with special light duty position and a thermostatic expansion valve operative under heavy duty conditions; seamless one-piece porcelain interior; removable shelving and non-rattle shelf supports and triple sealed insulation. The inside of the door is expected to carry a special six-rack shelving arrangement for the storage of foods most often used in the average household.

The refrigerator has been completely designed in the Atwater Kent engineering laboratories. The company's extensive modern plant at Philadelphia, covering 32 acres will afford ample facilities for all manufacturing operations.

Company officials state that most of the AK distributors already have made application to handle the new refrigerator.

RMA Adopts a New Plan to Reduce Radio Interference

A comprehensive plan to reduce radio interference was launched by the RMA at a meeting, Sept. 12, in New York City. In the public interest, as well as that of the radio industry, a broad centralized movement to reduce electrical interference with radio reception was recommended by the RMA Engineering Division and approved by the RMA Board. Dr. W. R. G. Baker of Camden, N. J., is chairman of this division.

An "Interference Conference" of leading radio engineers will be held by the RMA next November in Rochester coincident with the fall meeting of the Institute of Radio Engineers and detailed plans made for the institution of efforts to reduce radio interference.

Rochester IRSM Convenes

The Institute of Radio Service Men's Rochester Section staged a three-day convention and trade show at the Hotel Seneca, September 16, 17 and 18, presenting a schedule of speakers at least equal to that of any meeting *Radio Retailing* (Associate Editor MacDonald managed our booth) has attended in recent years.

Mayor Stanton of Rochester addressed the opening meeting. L. C. Holland, RCA-Radiotron, discussed recent tube developments. P. G. Andres talked about P. R. Mallory's new volume controls. K. A. Hathaway, of the Institute's Chicago office, outlining future plans. George Driscoll, of WHAM, described that station's high-power rig. Arthur H. Lynch told about his new all-wave noise-reducing antenna system. John Miller, of Weston, gave the lowdown on instrument design. J. C. Hoover, consulting engineer for Hickok,

discussed instrument use. John F. Rider, of "Manual" fame, gave the boys a straight-from-the-shoulder talk on operating costs. Walter R. Jones, of Hygrade-Sylvania, talked tubes. Jerry Golten, of Stewart-Warner, discussed his company's new sets, and was particularly interesting on noiseless antennas.

Weston Modernization Service

The Weston Electrical Instrument Corporation, Newark, N. J., announces a complete factory rebuild service on all Weston and Jewell tube checkers. Complete details on each modernization can be had by writing to the service department of the company and giving the model or pattern number of the instrument. This rebuild service also includes the modification of all Weston and Jewell analyzers.

New Manual Lists 237 Tubes

Quite frequently the radio dealer is confronted with the vexing problem of replacing an obsolete tube. Where to find the correct information as to what modern tube to substitute has been the difficulty. This and many other radio service problems have been solved by Frank Dunnigan, radio engineer and practical service man, in the D&S Radio Tube Manual, which lists 237 tubes, modern and ancient, and tells which of the new types successfully replaces the old. The information is carefully indexed and cross-indexed in handy, usable form.

May be obtained from the D&S Publishing Company, Spokane, Wash.

The Dixie Maytag Corporation of Nashville has been appointed RCA-Victor radio distributor for Middle and East Tennessee territory.

What The Laboratories Are Doing With TELEVISION

TELEVISION experiments are steadily progressing in a number of laboratories, some of these maintained by leading radio makers. Important advances have been made in mechanical and electrical design. There are, however, still a number of "bugs" to be eliminated before commercial introduction becomes practicable. And economic problems related to the art, most troublesome of which are the financing of station construction and the underwriting of program costs are far from solution.

Certain it is that the radio industry is determined to introduce television when the time is ripe and not before. And the barriers, technical and financial, yet to be surmounted seem sufficiently high to baffle any immediate hurdler. *Radio Retailing*, nevertheless, feels that the following brief survey of the work going on in various laboratories will be of genuine interest.

The PECK TELEVISION CORPORATION, of New York, uses for reception a modified form of Kerr-cell and a system of mirrored lenses which project the light beam from the cell to the viewing screen. One six-volt, 21-candle-power automobile headlight lamp serves as the light source, produces sufficiently brilliant pictures due to the efficiency of the optical system.

Transmission is accomplished from standard-size movie film, a 1,440-r.p.m. motor moving the film forward at the rate of 24 frames per second without the use of gears. Horizontal scanning is accomplished by means of a disc containing 20 cast glass lenses, each mirrored on its rear surface. The light source is placed within a unique collecting lens which di-



Peck's 120 cast glass lenses and Nicol prisms

rects into a beam 83½ per cent of the total light available from the filament. This beam strikes the lens disc, rotated by a synchronous motor, and is reflected by the lenses through the moving film to the photocell. 120 line transmission is used, but this rate may be increased by speeding up the scanning wheel.

The receiver also uses a modified Kerr-cell as a light wave. Light from an auto headlamp is polarized by passage through a Nicol prism and then passed to the cell. The amount of light passing through the cell is controlled by the voltage applied across its plates. Hence by applying the amplified television signal to the cell light varies with the signal. The modulated beam from the cell is directed to a disc containing 120 glass castings, which is rotated synchronously with the disc of the transmitter. These castings, mirrored on the back, reflect almost all the light to a viewing screen. By means of 3° angular displacements between adjacent mirror-lenses the beam is directed to the screen in scanning sequence.

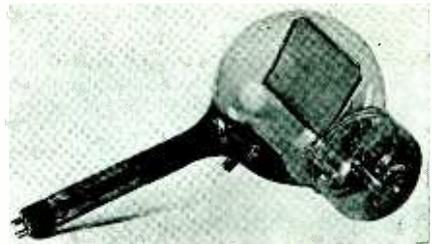
Another system using the Kerr-cell is being developed by WILLIAM H. PRIESS, also of New York. The subject is scanned by a spot of light reflected from a light source by means of a specially mounted mirror. This mirror is so arranged that it can vibrate about two axes at right angles to one another. It vibrates about its vertical axis at the scanning frequency (about 5,000 cycles per second) and simultaneously about its horizontal axis at the picture frequency (24 cycles per second).

The excitation at these two frequencies is supplied magnetically by small oscillators. The scanning motion is sinusoidal in character—that is, the spot moves slowly at the ends of its path and fast in the center. Despite this fact the light field, as viewed by the eye, is uniform. Because of the sinusoidal scanning velocity, however, the system will not produce signals which are interchangeable with those of the cathode-ray systems in which the scanning velocity is substantially constant.

In the receiver a modulated light-beam from a Kerr-cell falls on a mirror mounted in identical fashion with that of the transmitter, tuned to the same periods of mechanical resonance. The excitation of the scanning and picture frequencies is supplied at the receiver by energy filtered from the television signal, which contains synchronizing impulses. These impulses may be of very low power; a 15° solid angle of light can be obtained from the scanner with power inputs of ½ watt for the picture scanning frequency and .05 watt for the picture frequency.

RCA-VICTOR's Professor Zworykin is further perfecting his "Iconoscope," a device of great value due to its faculty of storing light falling on each element of the picture from one scanning period to the next, thereby greatly increasing the available output. Details of the system, to which we have nothing new to add, appeared in the August, 1933, issue of *Radio Retailing*.

PHILO T. FARNSWORTH, of Philadelphia, has developed a cathode-ray scanner of unusual design, tentatively named "image dissector." Its construction is based upon the use of a flat metal plate having a uniform photosensitive surface, the plate being placed at one end of an evacuated



Zworykin's "Iconoscope" tube

glass bulb. At the other end of the tube is a metallic surface which acts as an anode. The scene to be televised is focussed by means of a camera lens on the photosensitive plate. Under the influence of the light each point on the plate emits electrons, the number emitted being proportional to the intensity of each light spot. Thus the optical picture is transformed into a picture in electrons.

These are attracted to the positive anode, focussed by external magnetic fields. By means of two additional magnetic fields the entire electron image is moved bodily past a small, square aperture. This aperture, leading to another section of the tube, receives the electrons in the correct scanning succession, at 240 lines per picture, scanned line after line until the scene is completely covered. At the other side of the aperture is an electron-multiplier (described in *Radio Retailing* for September, 1934) which multiplies the electron stream about 1,000 times. The output is fed to the modulator circuit of a high-frequency transmitter.

The receiver makes use of a cathode-ray tube, called in this instance an "oscilite."

Then there are several other major exponents of cathode-ray television, chief among these being PHILCO. Tubes of this type used in television experiments differ from the ordinary cathode-ray type used for lab. work in that there are several auxiliary controls for the electron stream. There is, for example, usually an external magnetic field which causes the electron beam to be deflected from its path to the fluorescent screen in a horizontal direction for scanning and another field which moves each completed picture "frame" forward.

The basic principle of television receivers of this type has been widely publicized and is no doubt familiar to most of our technically inclined readers. Minor improvements in the system have been made in the past few months, but differ so widely from laboratory to laboratory that no detailed story is obtainable.

Radio is Part of Car When Installed With Lock Washers

A recent court decision in Buffalo, New York, ruled that when an auto-radio is installed with lock washers it becomes a part of the car. This decision was rendered in a case where an automobile dealer repossessed a new auto in which a radio had been placed. The car owner claimed the set should revert to him but the dealer claimed it had become a part of the car. The decision hinged on whether it was put on with lock washers. As it was not, the radio was returned.

Independent Code Operation for RMA Approved by Board

Arrangements negotiated by the RMA Code Committee with the National Industrial Advisory Board and the NRA for independent code operation for the radio manufacturing industry were approved by the RMA Board of Directors Sept. 12. Captain William Sparks, chairman of the RMA code committee, and Bond Geddes, general manager of RMA, presented an agreement reached between the Radio Manufacturers Association and the National Electrical Manufacturers Association in recent conference with the National Industrial Board, providing for an independent code status and code authority for the radio industry. The details, now being worked out as we go to press, still remain undecided. Whether the tube and parts makers will be included in the RMA Code and to just what extent NEMA will exercise control and the provisions of the NEMA Code apply to radio manufacturers, still is a matter for future decisions.

Emerson Launches AC-DC Set on Returnable Basis

"Put it to a 'side-by-side' test with any a.c.-d.c. long and short wave set selling at any price. If it doesn't out-perform and out-value everything on the market, return your shipment at our expense." This innovative distributor and dealer proposition just announced by the Emerson Radio & Phonograph Corp., New York City, applies to its new a.c.-d.c. compact, Model 32. The practical working out of such a broad policy will be watched with interest by the trade, in the opinion of Benjamin Abrams, president of this concern.

Mr. Abrams states that the initial supply of this receiver sold out in one day in all stores where this make-good policy was tried.

Stern, Hartford, Appointed Grunow Distributor

Stern & Co., Inc., Hartford, Conn., announces its appointment as distributor for Grunow radios and refrigerators for the states of Connecticut and Vermont, four western counties in Massachusetts, and Westerly, R. I. Bennington County, Vt., and Berkshire County, Mass., will be contacted in conjunction with the Morris Distributing Co.

Francis Stern, president of the concern, states that he will continue his representation of the Zenith Radio Corp. "We feel," says Mr. Stern, president of this concern, "that the lines do not conflict and that together they offer a complete service for every purpose and requirement."

A dealer meeting and banquet at the Hotel Bond, Hartford, Oct. 1, was the occasion for launching the Grunow line in this New England territory under its new distributorship.

E. H. McCarthy Joins Adler

E. H. McCarthy becomes vice-president and general manager of the Adler Mfg. Company, Louisville, Ky. "This is a

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

It's COLONEL MUTER now. RMA's president, Leslie F. Muter, has been commissioned as such by Governor Ruby Laffoon, of Kentucky. Mr. Muter—pardon my southern accent—Colonel Muter, received his new title August 16.

The Fairbanks-Morse Mexico City distributor finds this new line of radios so "hot" that it called up by long distance telephone for additional rush shipments the other day.

Atwater Kent Manufacturing Co. announces the reinstatement of its sales promotion department. George Lyons has been selected to head this activity. Mr. Lyons was formerly divisional sales manager with this same outfit and is well equipped to serve its distributors.

During "Show Week" the Triad Mfg. Co., Pawtucket, R. I., announced the appointment of Edward R. Fiske as general sales manager. Mr. Fiske has been prominently identified with several tube concerns and also has functioned as a dis-

tributor of sets and of Triad tubes. His more recent connection has been as general sales manager of the Ansley Radio Corp.

Viking Products Corp., 300 West 42nd Street, New York City, has been granted distributorship rights for the Metropolitan area by the Howard Radio Co., Chicago. This concern also represents Westinghouse.

Sidney Gatty has been appointed direct Factory Representative in the New York area for the Simplex Radio Co., Sandusky, Ohio. Office will be located at 1133 Broadway, New York.

Ben S. Rothenstein Co. and Albee Radio Products Corp. announce removal of their office and sample rooms to 1028 So. Olive St., Los Angeles.

A. S. DeVeau has opened an office at 235 Ninth Street, San Francisco, from which headquarters he will represent six well-known concerns located in the East.

major step in our plans for promoting the wider sale of Adler-Royal furniture," states president N. P. Bloom.

Mr. McCarthy formerly was associated with a number of leading radio concerns including Columbia, Majestic and Sylva-

Linxweiler Joins May Corp.

Carl J. Linxweiler, formerly of Dayton, Ohio, has joined the organization of the May Radio & Refrigeration Corporation, New York, in the capacity of export manager. Mr. Linxweiler served in similar capacity with General Motors Radio Corp. and, until this recent move, was president of the Franklin Radio Corporation, Dayton, Ohio.

Linxweiler brings to his new connection

a practical experience in the retail and jobbing end of the radio business as well as an enviable reputation as a pioneer commercial operator. He is a graduate of Ohio State University.

Stamford Servicemen Organize

Stamford, Conn., servicemen have organized with the avowed purpose of inducing the State Legislature to sponsor licensing. The group gave a banquet at the Piccadilly Restaurant on September 10 and was addressed by Jones, of RCA-Victor; Eckstein, of G-E; Phil Boyce, president of the Greater Bridgeport Servicemen's Association, and W. MacDonald, *Radio Retailing* editor. V. A. Hendrickson, of 101 Atlantic St., is secretary.

Among Radio's Sterling Golfers



Snapped at the RMA golf tournament, Chicago, resting (from left to right): John Million, Ted Lewis, Ray Sparrow, Pete Jensen, Arnold Braun, Bill Atkinson, Pete Pierson, Harry Simpson, Hugh Eby and Homer Capehart

A RACK

of

RADIO FAN MAGAZINES



WILL
HELP
YOUR
RADIO SALES

THERE are many monthly and weekly radio periodicals edited primarily for the listener. These magazines and program sheets are doing a fine job in building interest in broadcasts and in radio personalities.

Many dealers have found that it is good business to sell or distribute free these radio "booster" publications. Dealers should know what these are and where they may be obtained. In many instances it will be found that they can be used advantageously to sustain listener interest, to help listeners dial intelligently and to dramatize the programs.

There are two broad classifications. The weekly program sheets and the monthly magazines. The weeklies print the programs available in the section of the country they serve and are sold on news stands as well as by subscription. The monthlies are patterned along the lines of the popular movie magazines with life stories of the stars, interviews, action photos taken during broadcasts, intimate snaps taken away from the studio, fashions. They are enlivened with lots of pictures, humor, news. They appeal to the inveterate listener and also create converts among the disinterested.

Apropos of the relationship which these "user" magazines bear to the commercial side of radio are the remarks of Curtis Mitchell, editor of *Radio Stars*. He says:

"The time is coming when radio men must fight both for business and for the integrity of their industry. When that

day arrives, radio will find, already made for its own purpose, a powerful weapon in the form of this radio fan magazine group. It is a weapon that they, as yet, have not recognized with more than passing interest. This is because the whole field has been developed within the last two years. As we become more powerful the true strength of our group, in influencing public opinion, will become better appreciated."

Following are the radio publications serving the listener:

RADIO STARS

Dell Publishing Co. Inc., 149 Madison Ave., New York City. Monthly. Single copies, 10c. \$1.20 a year.

RADIOLAND

Fawcett Publications, Inc., 52 Vanderbilt Ave., New York City. Monthly. 10c. a copy. \$1 a year.

RADIO MIRROR

Syndicate Magazine Corp., 1926 Broadway, New York City. Monthly. 10c. single copy. \$1.20 a year.

TOWER RADIO

Tower Magazines, Inc., 55 Fifth Ave., New York City. Monthly. 10c. a copy. \$1.20 a year.

RADEX (Radio Index)

Radex Press, Inc., Hanna Bldg., Cleveland, Ohio. Monthly. 25c. a copy. \$1.75 a year.

List of foreign and domestic stations, shortwave programs, chain program guide, news.

RADIO GUIDE

423 Plymouth Court, Chicago, Ill. Weekly program guide. Geographical editions. 5c. a copy. \$2 a year.

RADIO DIAL

Radio Dial Publishing Co., 22 E. 12th St., Cincinnati, Ohio. Weekly. 5c. a copy. \$1 for six months.

BROADCAST WEEKLY

James H. Barry Co., 1114 Mission St., San Francisco, Calif. Weekly. Pacific Coast only. 10c. \$1.50 a year.

"RCA VICTOR IS SELLING

12 to 1"

says Steinert

608,000,000
national ads in RCA Victor's tremendous advertising campaign will continue to "bring them in!" Full pages and double pages in color are running in these great magazines:

Saturday Evening Post, Literary Digest, Collier's, American, Liberty, Cosmopolitan, National Geographic, Time, Woman's Home Companion, Redbook.

These and ads in 116 newspapers in 103 cities are telling the "Magic Brain" story to your prospects.

STEINERT PIANO COMPANY

DIANOS • ELECTRIC REFRIGERATION • RADIOS

STEINERT BUILDING

495 WESTMINSTER ST. PROVIDENCE, R. I.

September 26, 1934.

Mr. Harry Tracy, Sales Manager,
Ballou, Johnson & Nichols Co.,
128 Dorrance Street,
Providence, R. I.

Dear Mr. Tracy:

A few weeks ago we started to sell the new RCA Victor line. Of course the Steinert Piano Company have been loyal Victor dealers since the inception of the old Victrola. Then when they first started to build Victor Radios, of course we sold them. All through these years we have been waiting for Victor to come through with the outstanding radio set in the industry.

I want to tell you that I firmly believe the day has come.

The new line is beyond our fondest expectations and is without doubt the best performing and finest looking ever built by anyone.

The "Magic Brain" idea is a natural. In my opinion, it's the outstanding radio advertising idea of the year. I'm glad to learn that the company is running so large an advertising campaign on it. It is certainly bringing people into our store.

Recently I took a 143 home. Can you believe that an old radio merchant could get a thrill out of a radio? I did. In fact, I have already bought one for my own personal use, and I am going to tell you, it had to be good.

RCA Victor should dominate the radio field this year. If it does not, it will not be the fault of the radio set, it will be the fault of the radio jobbers and dealers. Our sales since the new RCA Victor has come out, and we carry four lines, have been about twelve RCA Victors to one of any other make.

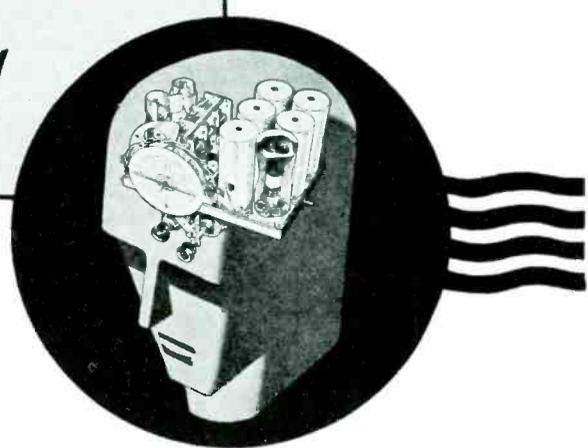
Wishing you every success in the world, we are

Sincerely yours,

STEINERT PIANO COMPANY

H. C. Fay
MANAGER

ACF:LD



The Magic Brain Brings Them In!

Mr. Fay is not alone in his opinion that the "Magic Brain idea is a natural." Dealers, across the country, agree with him.

Buyers' everywhere, are seeing RCA Victor's advertising and are going to RCA Victor dealers' stores for Magic Brain Radio.



RCA VICTOR

RCA VICTOR COMPANY, INC., ONE UNIT OF RADIO CORPORATION OF AMERICA . . . THE WORLD'S LARGEST RADIO ORGANIZATION
Other Units: National Broadcasting Co., Inc. . . R.C.A. Communications, Inc. . . RCA Radiotron Co., Inc. . . Radiomarine Corporation of America

NEW MERCHANTISE



Lang "Tone-Flow" Radio

In designing the cabinet of its new "Tone-Flow" radio, the Lang Radio Corp., 3611 14th Ave., Brooklyn, N. Y., had in mind the acoustical qualities of the properly designed orchestra pit, or better still, the open air bandstand. The speaker of this instrument is in a similar position in the sound chamber as the orchestra in the bandstand. It lays flat on the floor of the cabinet, pointing upwards, with the sounding board shaped like the shell of the bandstand. The lower part of the cabinet is open, with three decorative pilasters across the front. The sound from the speaker thus is thrown upwards and out, giving greater fidelity.

This Model L70 is an all wave set, four bands, from 540-1550, 1450-4000, 3900-10000 and 9000-25000 kc. It features a beat frequency oscillator which allows for positive tuning and code reception.

The list price will be around \$124.50.—*Radio Retailing*, October, 1934.

International "Kadette Jewel"

One of the most original of the season's innovations comes from the International Radio Corp., Ann Arbor, Mich., in the form of its compact radio, the "Kadette Jewel."

The name is descriptive of the jewel-like cases, which are made of bakelite and plas-kon in a wide variety of colors. The grille insets, reproducing semi-precious stones such as jade and amethyst, further accentuate the jewel idea.

The set measures 7½x5½ in. and contains a three tube circuit. Weight 3½ lb.

To save space and weight the type 12A7 combination audio output and rectifier tube is used (first employed in Kadette's pocket size radio). Operates on a.c. or d.c.—*Radio Retailing*, October, 1934.



Improved Air Cell Battery

"Ventilated" electrodes, which expose greater areas to the air and so withstand the heavier current drain imposed by some of the new all-wave receivers, are announced by National Carbon Co., 30 E. 42nd St., New York, as its latest improvement in the Air Cell A-battery. Known as No. SA-600 special, it permits a current drain of 750 ma. as against the 650 ma. capacity of the standard battery. Price is the same as the standard.—*Radio Retailing*, October, 1934.

"Pla-Pal" Radio

Something new on the radio horizon is the "Pla-Pal" table set combining beauty, utility and novelty. This set has three concealed compartments—one on either side for glasses and bottles, and one at the top for playing cards, 100 poker chips and a set of dice. All equipment supplied by the manufacturer.

The four tube (6C6, 43, 78, 25Z5) chassis operates on either a.c. or d.c. Can be furnished for 32 volt. or battery operation at no extra cost. Covers full broadcast range and police and amateur calls up to 1725 kc. Size 14½x6x9½ in. \$34.95.

"Pla-Pal" is the perfect entertainer. Small enough to carry anywhere yet large enough to hold a full evening's entertainment. Available from the Reliable Sales Co., 758 W. Jackson Blvd., Chicago.—*Radio Retailing*, October, 1934.



Stromberg-Carlson Combinations

Following through on the trend towards radio-phonograph combinations, the Stromberg-Carlson Tel. Mfg. Co., Rochester, N. Y., had on display three high fidelity, all-wave models (520-23,000 kc.).

Model 70 comes in a dark burl walnut cabinet resting on six legs. Swinging doors are provided over the control panel. 42½x33½x19 in. 13 tubes \$465.

Model 72 has automatic phonograph with both the radio controls and phonograph mechanism concealed behind swinging doors. Shifts and plays 15 records of any make, 10 or 12 in., or both mixed, 33½ or 78 rpm. 47½x34½x23½ in. 13 tubes. \$725.

Model 74 is a super-power instrument (30 watts) employing a treble speaker with double "Acoustical Labyrinths." Space provided for filing record albums. Same phonograph mechanism as Model 72. 15 tubes \$950.—*Radio Retailing*, October, 1934.

Extension Speaker Kit

An extension speaker kit for either outdoor or indoor use can be obtained from the Unit Reproducers Mfg. Co., 999 E. Main St., Rochester, N. Y. It lists for 98c. complete. With this equipment additional speakers can be installed easily and quickly in any room in the house.

This company also makes an auto-radio extension speaker kit so that an extra speaker can be attached to the auto radio set and used at some distance from the car. \$2.75.

Two "Hydro" magnetic speakers, chassis only, can also be obtained from Unit Reproducers. The 6-in. chassis is \$3.40 and the 8-in. size, \$3.95. Three cabinet models are also available listing at \$5.90, \$6.30 and \$8.75.

Several types of "Hydro" pick-ups may also be obtained in high or low impedance and in black crackle or statuary bronze finish.—*Radio Retailing*, October, 1934.



"Lazy-Tone" Bed-Lamp Radio

Hardly larger than a book and with an efficient reading light built in, the "Lazy-Tone" bed-lamp radio of the Western Radio Mfg. Co., 3044 W. Main St., Alhambra, Calif., is the latest entry in the field of unique sets. It is a five tube superhet using a 2A7, 58, 2A6, 2A5 and 80. While designed especially for use over the headboard of the bed it can also be used anywhere in the home. Popularly priced.—*Radio Retailing*, October, 1934.

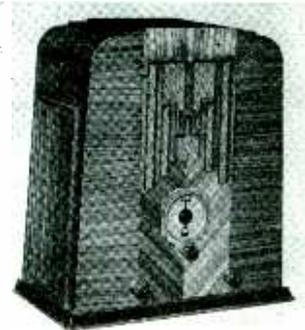
Sentinel Radios

The newest additions to the line of the Sentinel Radio Corp., 2222 Diversey Blvd., Chicago, are Models 6315, 7741 and 5721, all table sets.

Model 6315 is a 6 tube set (2A7, 2-58, 2A6, 2A5, 80). Covers from 540-24,000 kc. \$59.50.

Model 7741 takes a 1C6, 34, 2-30, 32, 33 and 6-1. 535-16,000 kc. Battery operated. \$49.50.

Model 5721 employs a 2A7, 58, 2A6, 2A5, 80. Wave length range extends from 1715-535 kc. and 5200-16,000 kc. \$29.95.—*Radio Retailing*, October, 1934.



Janette Rotary Converter

Especially designed for radio operation, a new rotary converter is now ready at the plant of the Janette Mfg. Co., 555 W. Monroe St., Chicago. Another Janette specialty is a gas-engine-driven a.c. and d.c. generating set for the operation of radios, amplifiers, sound truck equipment and public address systems.—*Radio Retailing*, October, 1934.

Crystalline Crackle Paint

For refinishing old auto-radios, speakers and testing equipment, the Campbell Radio Specialties, 2781-R-6 Packard Rd., Ann Arbor, Mich., offer a crystalline crackle paint, only one coat of which is necessary to obtain the proper effect. 75c. a can.—*Radio Retailing*, October, 1934.

Emerson Radios

Eight new 1935 models—embracing every type of American and round-the-world reception with a different price range in each group—are announced for the fall season by the Emerson Radio and Phonograph Co., 111 Eighth Ave., New York City.

There are five a.c. models which list from \$22.50 to \$99.50 and three a.c.-d.c. models listing from \$17.50 to \$39.50. These include compacts, midgets and consoles. In addition to these there is to be a battery set which will be presented shortly and another console, circuit yet unannounced.

Among the features of the new line are the "duo-lite" and "quadrolite" band illuminations of aeroplane dials. This ingenious arrangement automatically lights the various sectors as they are selected by the operator. All cabinets are semi-conservative in style, avoiding extreme modernism.

As we go to press, Emerson has just brought out still another set, Model 32. This is a 5-tube, a.c.-d.c. superhet for short or long waves bringing in police, amateur and airplane broadcasts. \$33.—*Radio Retailing*, October, 1934.



Emerson Model 45

Magnavox Speakers

Two new dynamics have been introduced by the Magnavox Co., Ft. Wayne, Ind. Model 166 fills the need for a low price speaker in the 6 in. size with improved performance as to fidelity and sensitivity. Model 132, a 12 in. dynamic, supplies the need for a large speaker of high quality at a reasonable price.—*Radio Retailing*, October, 1934.

Hartman Converter

In order to use a small home radio in the car, the Hartman Electrical Mfg. Co., Mansfield, Ohio, has brought out a converter which transforms the battery current to 110 volt, full wave alternating current—delivering 60 watts, sufficient for complete current requirements of a portable set. It is easy to install, space being available on nearly every make of car on the back of the bulkhead under the engine hood. A convenient control switch is furnished with brackets for mounting on the steering column. The wiring is simple. A second receptacle is furnished for plugging in aerial and ground wires. When installed it is ready for instant use, at any time, whether the engine is running or not. The dimensions are 6½ x 5½ x 3 in.—*Radio Retailing*, October, 1934.

Amperite Velocity Microphone

A velocity (ribbon) microphone with a frequency response 42 to 10,000 c.p.s., output 40 decibels, output impedance 50 to 200 ohms (other values if requested) may be obtained from the Amperite Corp., 561 Broadway, New York City.

Model RA-1 is especially designed for public address work and Model RAE is for studio use. The former lists at \$25 and the latter \$35, factory assembled and tested. In kit form the list price is \$15. Transformers extra.

Amperite also makes a condenser microphone listing at \$10. In kit form the price is \$8.—*Radio Retailing*, October, 1934.



Howard Model D15

Howard Line

The line "band spread" radios of the Howard Radio Co., 1731 Belmont Ave., Chicago, for 1935 consists of the following: Models D-16 and D-15, console and table model respectively, each taking 8 tubes and covering from 540-25,000 kc. \$99.50 and \$79.50.

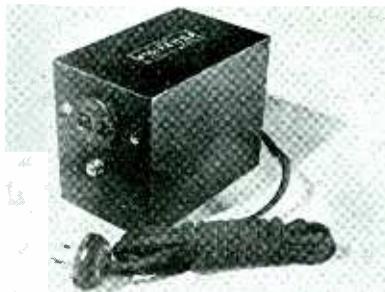
Model F-17 is a 12 tube with three unit chassis . . . 7 tube tuner covering the broadcast band and every shortwave band, 5 tube amplifier and 12 in. Jensen concert speaker. \$149.50.

Model W-6 is the 19 tube "grand" model. It tunes from 140-25,000 kc. \$295.

Models F-18 and W-18 are combinations with Capehart automatic record changer, playing ten 10 in. or 12 in. records on both sides. F-18 with 12 tube chassis, \$650; W-18 with 19 tube chassis, \$795.

In addition there are four table models (one upright and three compacts) ranging in price from \$24.50 to \$39.95. Some are straight broadcast sets, some get police calls and some will bring in the foreign shortwave band from 15-55 meters.

There is also a 5 and a 6 tube auto set. \$34.50 and \$44.50, respectively.—*Radio Retailing*, October, 1934.



All-Wave Line Noise Filter

An all-wave line noise filter capable of eliminating noises in the shortwave band quite as well as the broadcast band is announced by the Technical Appliance Corp., 27-26 Jackson Ave., Long Island City, N. Y. This device connects between electric socket or receptacle and the attachment plug of the set. Or, if preferred, may connect between any electric appliance causing interference and its power line. Housed in a neat compact metal case. Handles up to 250 watts.—*Radio Retailing*, October, 1934.

Rola Speakers

Two new speakers have just been announced by the Rola Co., 2530 Superior Ave., Cleveland, Ohio.

Model K-12 is a 12 in. speaker designed to meet the ever increasing requirement for fidelity reproduction and power handling capacity.

Model F-6-B is a completely redesigned 8 in. unit engineered to meet a price demand. Economical but capable of filling the most exacting requirements.—*Radio Retailing*, October, 1934.

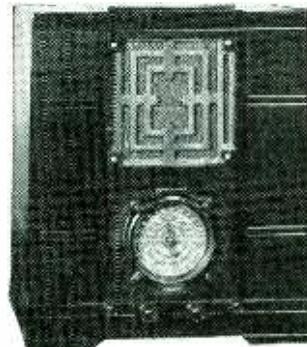
Alden Shortwave Parts

A complete line of shortwave parts carrying the name Na-Ald Victron Parts may be obtained from the Alden Products Co., 715 Center St., Brockton, Mass.—*Radio Retailing*, October, 1934.

Simplex Model W All-Wave Set

A world-wide, all-wave receiver, Model W, has been placed on the market by the Simplex Radio Co., Sandusky, Ohio.

It covers from 13-20,000 meters—five bands: ultra short, short, medium, broadcast and long. The circuit employs 8 tubes. The illustrated de luxe model lists at \$54.50. Standard Gothic table set, \$52.50. Chassis, tubes and speaker only, \$48.50.—*Radio Retailing*, October, 1934.



A-K Doublet Antenna

A new doublet antenna kit recently perfected by the engineers of the Atwater Kent Manufacturing Co., Philadelphia, Pa., has been placed on the market. This antenna kit is a simple doublet with a parallel transmission line. To permit the use of this antenna with all-wave and short-wave receivers equipped with a regular single antenna connection, a special transformer has been developed. The transformer is provided with a changeover switch allowing a doublet antenna to be used as a regular single antenna when the regular broadcast band of the receiver is being tuned.—*Radio Retailing*, October, 1934.

Lynch All-Wave Antenna Kits

Two new all-wave antenna kits are announced by Arthur H. Lynch, Inc., 227 Fulton St., New York City. They are designed to give greatest volume on the broadcast as well as the shortwave bands and revolutionary engineering has been incorporated to assure reduction of local interference so as to take advantage of the new Hi-Fidelity receivers.—*Radio Retailing*, October, 1934.



ATR D.C.-A.C. Inverter

The American Television & Radio Co., 128 East 10th St., St. Paul, Minn., is manufacturing d.c.-a.c. inverters for operating standard 110 volt a.c. radios, fans, etc. from 6-volt storage batteries, 32-volt farm plants and 110 volts d.c. systems. The overall dimensions are 7 x 7 x 3½ in. Net weight 14 lb. List price \$18.50.—*Radio Retailing*, October, 1934.

A full page of New Merchandise, of especial interest to service men, will be found on Page 51.

Merchandising



KEEPING DISC STOCK WITHIN BOUNDS

THE perplexing riddle of keeping disc stocks within bounds is one which perpetually confronts the average dealer in phonograph records. Especially so because lately the monthly lists teem with a large variety of recordings, calculated to mystify all but the most ardent disc specialists. The knack of trimming stocks to a minimum, yet maintaining a varied and adequate supply of current hits and hardy perennials, hasn't been mastered by a large number of dealers, as many interviews by this writer have attested. Stock control, the bogy-man of the disc business, has been broached before in these columns; but a few more words, in these days of phonograph rejuvenation, won't be amiss. A system which appears to solve this problem for everyone presents itself, and is here reproduced with the hope that many readers will see quickly its manifold possibilities.

Keep a Record on a Record

First of all, it is not necessary to stock records you know you have little call for, or items which are mysterious to your own particular trade and sales force as well. It is not necessary—as a number of dealers still believe—to carry a complete catalogue of any one

company, many items in which are apt to turn over as little as one or two times annually. If a disc does not go out of its envelope at least once every two months it isn't worth bothering with. When studying the advance lists—a thing every alert dealer should do—concentrate on the items you know you can sell.

Now the best and surest manner of ascertaining future demand lies in knowing precisely how records of a similar nature or classification have previously sold. Keep a record of quantities ordered and received, *with dates*, on the margin of the plain, heavy-paper stock envelopes of your numerically filed discs.

The illustration demonstrates this simple and expedient manner of penciling informative data in the most obvious and appropriate place. When your stock of a number is exhausted, as signified by an empty stock envelope (the last danger signal), you need only to look at the record jotted down of previous orderings to determine the quantity most desirable. If the notes thereon show a constant sale, it is an easy matter to determine the number you should reorder. If the last date indicated shows that the record has

been slow in turning over, cut it out of your stock. If you restock the item, pencil in the date of order—this will show that the disc is on order while it is out of stock—and put the empty envelope in a special bin: for those awaiting refilling. When the disc arrives and is being placed in numerical file, check this date also.

This method does away completely with filing cards and numerical catalogue checkings which are not only a lot more trouble but are apt to be mislaid or cursorily entered. The method requires minimum effort and assures instantaneous information regarding the sales value of every disc on your shelves.

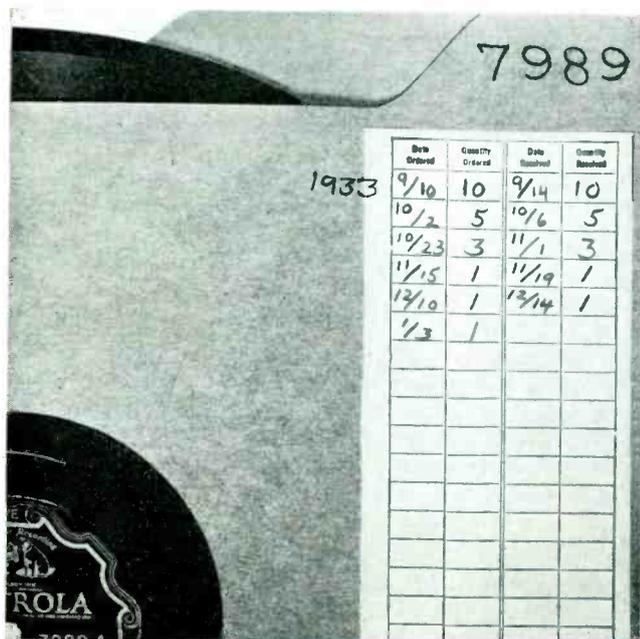
Another application is when ordering new items, check back through your stock to see how old discs of a similar nature moved. When a new Lawrence Tibbett or Eddy Duchin disc appears, for example, look up inventory jottings on the envelopes of formerly released discs by these artists, and order the new ones in the quantities these old marks recommend.

Victor's New Catalog

Victor's first catalog since 1932 may be calculated to stimulate record business tremendously. It is a pleasure to report that this edition definitely reverts to the pre-depression era of the phonograph and is by far the most comprehensive work of its kind yet issued in this country.

The widely-known Red Seal section (omitted in the 1932 edition) has been replaced. Other handy features of cross-indexing will be useful not only to the salesperson but to the record-buying public at large.

The catalog is priced at 25 cents. Dealers should mail a letter to every customer and music lover in their territory announcing this publication. The replies will aid in reconstructing your mailing lists and should mean record sales as everyone interested in discs will respond to this announcement. The quarter obtained will amply cover mailing expenses as well as the initial cost to the dealer, which is 10 cents per copy.



If you keep a record on a record like this, you aren't likely to overstock a slow mover. Also, you'll never be out of stock on a number that has made the best seller column.

**BOOST
YOUR RECORD
BUSINESS WITH
THIS new
Duo Jr**

\$16.50
LIST
and it's sweeping
the country!



*Transforms any modern AC radio
into a fine electric phonograph . . .*



- Get these new Victor releases**
- 24721—The Drunkard Song—Fox Trot
(There's a Tavern in the Town)
(From the stage show "The Drunkard")
 - Lost in a Fog—Fox Trot—Rudy Vallee
and his Connecticut Yankees
 - 36131—Park Avenue Fantasy
Deep Purple—Paul Whiteman and his
Orchestra
 - 24724—It's All Forgotten Now—Fox Trot
Lady of Madrid—Paso Doble
Ray Noble and his Orchestra
 - 24708—Then I'll Be Tired of You—Fox Trot
Have a Little Dream on Me—Fox Trot
(From "Second Casino de Paree
Revue")
"Fats" Waller and his Rhythm

HERE'S the answer to your problem of selling more phonograph records: the new Duo Jr., created by RCA Victor engineers to make record customers where none were before!

It's made to sell for only \$16.50 . . . and every sale means not only a quick profit for you, but it opens up a new market for phonograph records. It gives people what before they could only get in a high priced combination set: recorded music played with all the rich fullness of tone of today's radio reproduction. The quality of tone is dependent only on the radio set itself. Play the new Victor "Higher Fidelity" Records on a Duo Jr. Let people find out that the new Victor Records have a new crispness and definition . . . a pure richness in tone never before achieved in any kind of reproduction. Fill out the coupon below . . . get all the details of this new sales opportunity . . . also how you can cash in on the new Blue Birds, fastest selling low priced records.

Handles 10" or 12" Records



"Duo Jr." is neat, compact, size 5" high, 8" wide and 10 3/4" long. Beautiful walnut finished chest.



IT PAYS TO SELL

Victor Records

THEY'RE "HIGHER FIDELITY"



RCA VICTOR COMPANY, INC., Camden, N. J.
I want to get in on this new sales opportunity—let me know all about the new Duo Jr., and be sure to send me a complete list of the latest Victor Records.

Name _____
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Radio Instruments



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Send bulletin on Weston Radio Instruments.

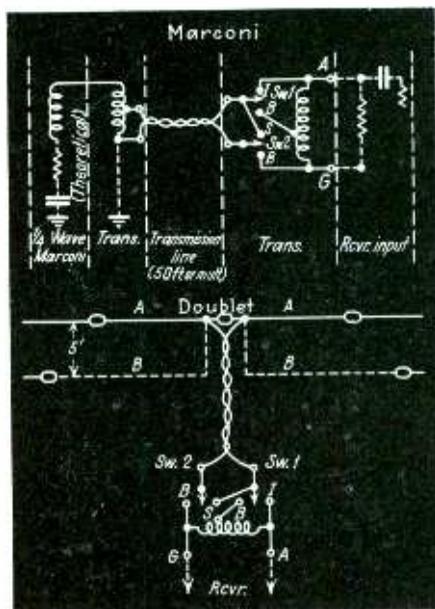
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Address _____
City and State _____

SERVICE SECTION

Conducted by
W. MacDonald

Including
Installation Data

CIRCUITS of the MONTH



Allwave Antenna System Uses Doublet or Marconi Top

R. L. Haskins and R. T. Perron of Tobe Deutschmann's commercial engineering department very kindly supply the following technical analysis of the new "Filterizer" allwave antenna kit. This system is particularly interesting for its ability to reduce transmission line noise pickup on all but the highest frequency bands when used with either a doublet (or double-doublet) or simple Marconi top. This latter type of collector is often the only possible solution in confined areas.

The first diagram is an equivalent analytical breakdown of the system used with a Marconi top; antenna transformer connected to one end. In this system ground (indicated in dotted lines as capacity and resistance of top to ground) is an integral part of the open oscillatory, or antenna, circuit. Approximately 75 ft. of wire is recommended. The antenna transformer is tapped, providing auto-transformer step-up to the line and also a suitable terminus impedance.

At the lower end of the line a coil which matches the impedance of the average all-

wave receiver is provided. The full coil remains across the set's input at all times. However, by selecting the proper taps it can also be matched to the line for best results on each particular frequency band. For example: With switches Sw. 1 and Sw. 2 set on B-B the lower part of the coil is shunted across the line, matching of line impedance and auto-transformer stepup being accomplished right at the test. Set at I-B frequencies between 1,500 and 6,000 kc. are best received. In this case auto-transformer action occurs between the top transformer and the bottom transformer, but not in the lower transformer itself. Set at I-S the receiver functions best between 6,000 and 15,000 kc., but, inasmuch as both legs of the transmission line are joined, the system functions as an ordinary "L" type, without noise-reducing properties. Impedance matching and auto-transformer stepup is, however, retained.

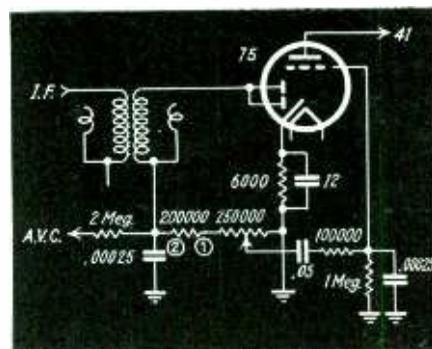
When used with a doublet top the system discards the top transformer and uses only the lower. Double-doublet tops may be used as shown at "B." The following lengths for each doublet half are recommended for "A," or "B," in the lower diagram: 49 meters, 38.2 ft.; 31 meters, 24.2 ft.; 26 meters, 20.25 ft.; 19 meters, 14.85 ft. Switch data is the same as noted under "Marconi" top.

Messrs. Haskins and Perron point out that the use of a line filter having special r.f. properties, such as is supplied with the kit, is usually desirable for full noise-reducing benefit.

Simple Sensitivity Control

Montgomery-Ward's 6U Series (Wells-Gardner) uses a new "wrinkle" in sensitivity controls. With the circuit hooked up as diagrammed only that portion of audio voltage developed by the diode second detector across the 250,000-ohm volume control is available for application to the 1st audio grid. Voltage appearing across the 200,000-ohm fixed series resistor is not used.

When maximum sensitivity is desired terminals 1 and 2 are shorted together with a jumper (on the connection strip), cutting out the fixed resistor entirely and



applying full audio voltage to the volume control. Inasmuch as the fixed resistor also develops a.v.c. voltage inclusion of the jumper reduces a.v.c. range.

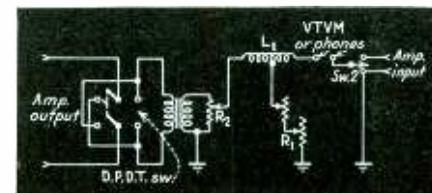
Some suppressor action is obtained by using a 6,000-ohm resistor in the 75's cathode lead. Signal voltage must rise high enough to overcome the high fixed bias sufficiently to permit rectification by the diode.

Note the use of open-ended windings for i.f. transformer tuning. The first i.f. transformer (not shown) is tuned by capacitors.

Distortion Analyzer Measures Harmonic Content of A.F. Amplifiers

Wireless Egert's Model 509 distortion analyzer, used in conjunction with a calibrated vacuum-tube volt meter, permits the checking of percentage harmonic content present in an a.f. amplifier.

The function of the instrument is the elimination of the fundamental audio frequency by means of a "phase-bucking" arrangement so that the amplitude of the remaining signal, or harmonic distortion, may be measured. This is done by feed-

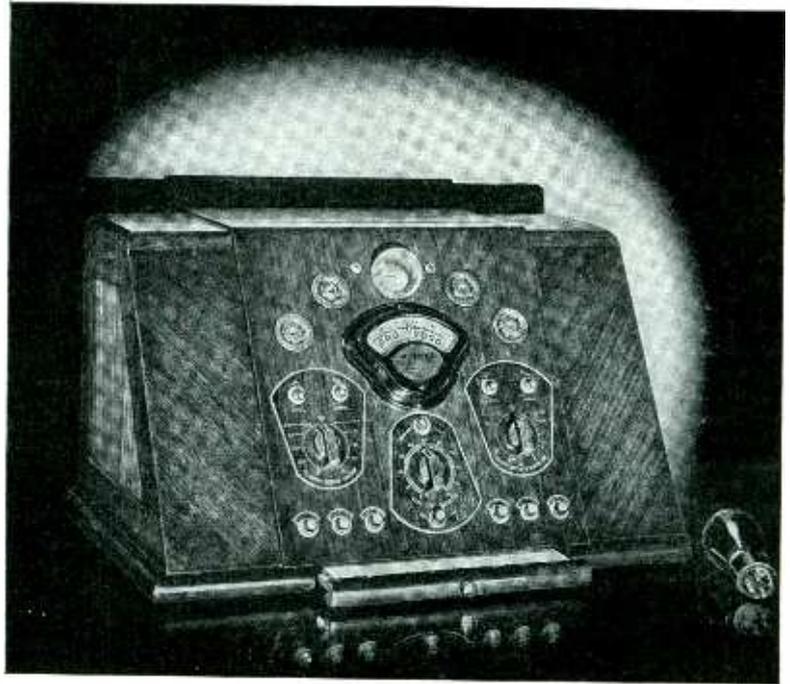


How would you like to buy a star tube salesman permanently for \$39.⁹⁵?

That's just what you get in the new Supreme Neonized Tube Tester 85-C, according to the experience of tube merchants. It looks like it belongs in a radio store. It pulls the shoppers over to the tube counter — and sells them on its uncanny facility for ferreting out the most elusive tube complaints, brings them back for their tube replacements, and makes them enthusiastic boosters of your methods.

SUPREME NEONIZED TUBE TESTER MODEL 85-C

Dealers net Cash Wholesale Price **\$39.⁹⁵**



Think, how many tube sales have been missed because inadequate tube testers gave noisy, faulty tubes a clean bill of health, even when both you and the radio owners knew something was wrong. Now you can make your customers happy over better reception and thrill yourself with new tube sales, giving the tubes a virtual X-ray—with the new SUPREME NEONIZED TUBE TESTER.

It not only gives the quality "Good" or "Bad" report on the efficient Supreme 5" full-vised meter, but flashes a vivid neon signal between the elements where short circuits and leakages are hiding out. Put this star tube salesman in your tube department, now, and get a full season's bigger tube business. Don't be misled by other neon signals in tube testers —get the authentic, established Supreme Neonized double tester—85-C, from your nearest jobber.

A Supremely fine Radio Analyzer at a moderate price

The new Supreme 333 De Luxe Radio Analyzer is a finely constructed, superbly engineered portable testing laboratory. Check it with analyzers in the \$60 class and then realize its low price. First analyzer with exclusive circuit for compensating effects of temperature and other variations of the full-wave rectifier unit. First, with multi-range capacity measuring facilities for both paper and electrolytic capacitors. FREE REFERENCE POINT SYSTEM OF ANALYSIS. Supreme 5" full vision meter. A de luxe analyzer in every detail. Ask your jobber to let you sell yourself on this super instrument value.

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- Model 333, Standard, Analyzer **\$29.95**



SUPREME 333 De Luxe Analyzer Dealers Net Cash Wholesale Price **\$39.95**

SERVICE SECTION

ing the input signal supplied to the amplifier under test to one side of the analyzer (marked "amp. input") and feeding the output signal of the same amplifier to the other side of the analyzer (marked "amp. output").

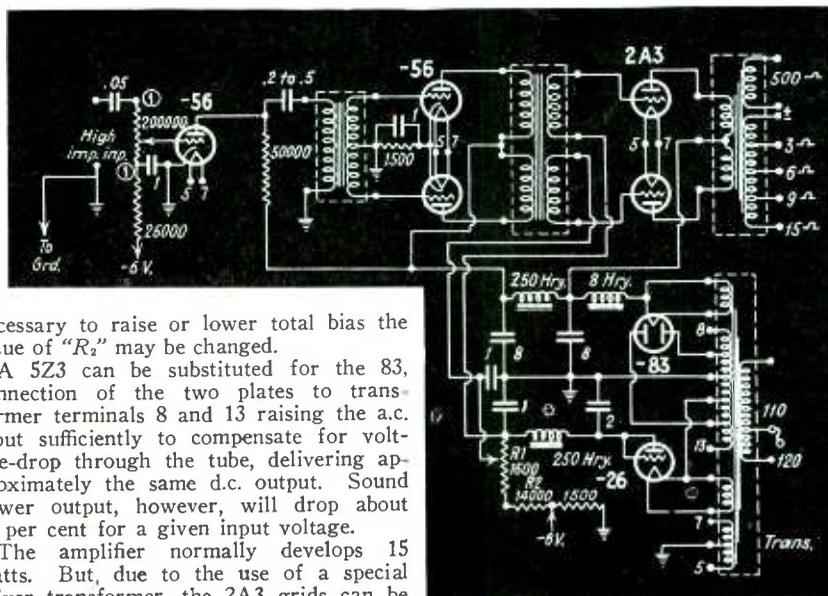
The d.p.d.t. switch is placed in the position which applies both input and output signals to the v.t.v.m. in phase, R_2 being adjusted so that input and output amplitudes are equal at the meter. The d.p.d.t. switch is then thrown, reversing the phase of the output signal. Inasmuch as most amplifiers alter phasing somewhat themselves a further adjustment (course and vernier resistors R_1 operating in conjunction with impedance L_1) is used to throw the output signal exactly 180 degrees out of phase with the input. The d.p.d.t. switch, in other words, permits phase reversal, while R_1 and L_1 provide an additional 90 degrees "lag" adjustment, the objective being a complete 180-phase rotation.

When phase reversal has been accomplished input and output amplitudes are again adjusted to equality. Under these conditions the fundamental of the output signal is bucked-out and only harmonic content remains to be read at the v.t.v.m.

Three-Stage Amplifier Has Fixed-Bias in First and Third

We have this year described two or three amplifiers using fixed-bias on the final 2A3's. Now our good friend, A. A. Flick of Jefferson Electric, designs a three-stage job which not only has fixed-bias for the final triodes (with provision for matching plate current), but fixed-bias for the first 56 as well. The second stage, using push-pull 56's, is self-biased.

Fixed-bias for the first and third stages is delivered by a 26-connected as a half-wave rectifier. One 2A3 receives grid voltage, through its own half of the split-secondary transformer, direct from the pack. The other is fed from the variable 1,500-ohm divider resistor " R_1 ." If it is



necessary to raise or lower total bias the value of " R_1 " may be changed.

A 5Z3 can be substituted for the 83, connection of the two plates to transformer terminals 8 and 13 raising the a.c. input sufficiently to compensate for voltage-drop through the tube, delivering approximately the same d.c. output. Sound power output, however, will drop about 20 per cent for a given input voltage.

The amplifier normally develops 15 watts. But, due to the use of a special driver transformer, the 2A3 grids can be

driven positive, raising the "sock" to 25 watts, with only moderate distortion. This power takes care of short-time peaks encountered in sound work, is not recommended for continuous operation.

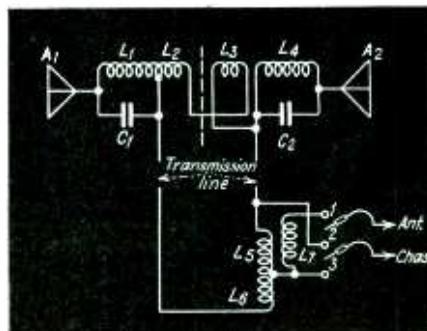
Allwave Doublet Automatically Matches Incoming Frequency

One of the most interesting allwave, noise-reducing antenna design ideas that has come down the pike is incorporated in Arthur Lynch's "Hi-Fi" system, which shoots at solution of a troublesome aerial problem.

It is common knowledge that a doublet short enough to resonate in the short-wave spectrum, which is desirable in order to secure high gain, is much too short to do a job at broadcast frequencies. This has led doublet coupler designers to include switches which convert doublet and downleads into the garden-variety of "T" type collector when operating on broadcast.

Unfortunately, when this is done noise-reducing properties fly out the window. Hi-Fi strives to solve the problem automatically, without sacrificing noise-reduction in the broadcast band. The system, in its most convenient form, uses a 41-ft. doublet and a 70-ohm transmission line. Briefly, here is how it works:

Coils L_1 and L_4 have a high impedance at high frequencies, while condensers C_1 and C_2 have low impedance. Thus, at shortwaves, the condensers virtually short out the coils, signals passing through C_1 and C_2 to the transmission lines, the system operating very much like an ordinary doublet connected directly to the lines without any trick couplers. Coils L_2 and L_3 , it will be noted, are in series between the two halves of the doublet, directly across the dividing insulator. Because L_3 is reversed, however, the two coils buck, practically canceling out, and do not load the top. They do terminate the upper end of the transmission line nicely and complete a continuous transmission line "loop"



which aids cancellation of downlead noise pickup.

At broadcast frequencies the impedance of C_1 and C_2 is high by comparison with that of L_1 and L_4 and the coils virtually short out the condensers. L_1 and L_4 are thus effectively in series between the doublet halves and load the top so that it resonates up among the broadcasters. In between the broadcast band and the most popular shortwave channels condensers and coils function together, more or less splitting the work and giving the system a suitably flat characteristic.

Now let's consider the lower half of the system, at the set end of the transmission line.

The line is terminated in a coil, L_5 and L_6 , which approximately matches its impedance. Noise picked up by the system cancels out at the mid-tap, which is usually grounded to the chassis. Sets having low impedance input circuits, are connected across 2 and 3, L_5 providing a suitable match. Sets having high-impedance inputs are connected across 1 and 3, secondary L_7 providing impedance matching between line and set plus some transformer gain.

2 Volt Pentagrid Oscillates Up to 20 Mc.

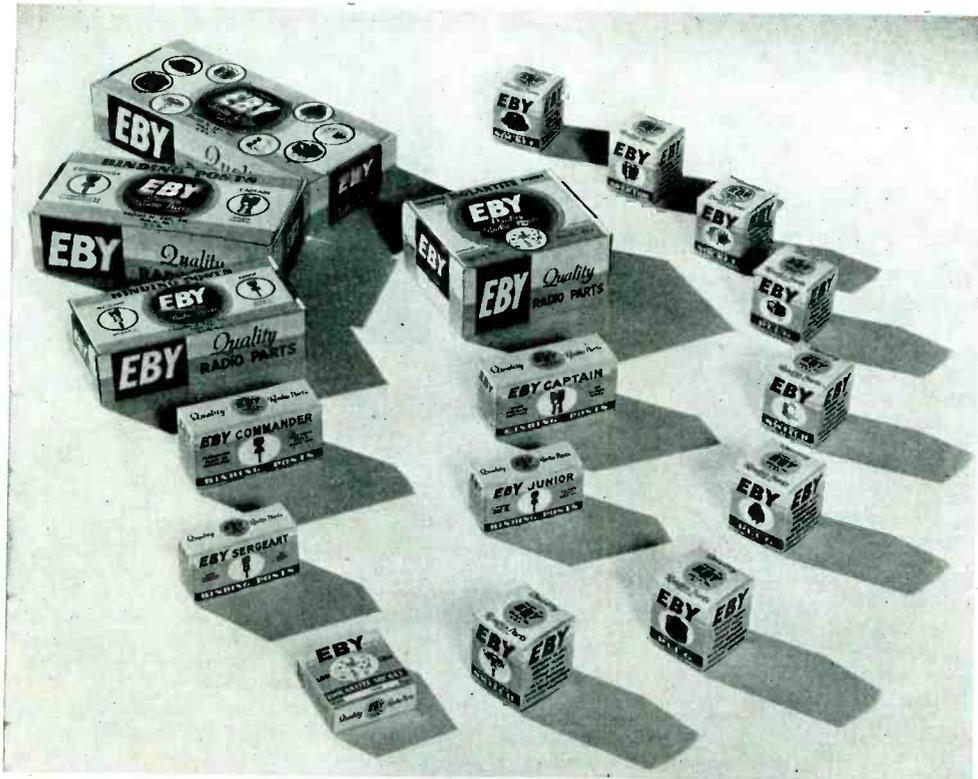
Some months ago "Circuits of the Month" noted that the 1A6 pentagrid converter's oscillator section refused to "note" above 10 mc. unless paralleled by a triode. The new 1C6 oscillates as high as 20 mc. all by its lonesome, having higher mutual conductance.

The tube draws more filament current, 0.12 amperes to be exact. Its requirements, using 180 volts on the plate, are: Screen volts, 67.5; oscillator plate, applied through 20,000-ohm resistor, 180 volts; control grid bias, minus 3; oscillator grid resistor, 50,000 ohms; plate current, 1.5 mils; screen current, 2 mils; oscillator plate current, 3.3 mils; oscillator grid current, 0.2 mil. Total cathode current, 7 mils.

Double 25Z5's

Empire obtains plenty of "juice" to operate its new 8-tube universal Model 480 by using two 25Z5's as half-wave rectifiers. One tube, with two plates and cathodes hooked together, supplies d.c. through a 200-ohm choke to all tubes. The other, its elements likewise paralleled, feeds the speaker field.

NEW!



With the new EBY Packaged Line you can have a complete, compact and authoritative small parts department.

Your customers know EBY. They have been buying Quality Parts by this name for over 15 years. And all this time they have been getting outstanding products and reliable service.

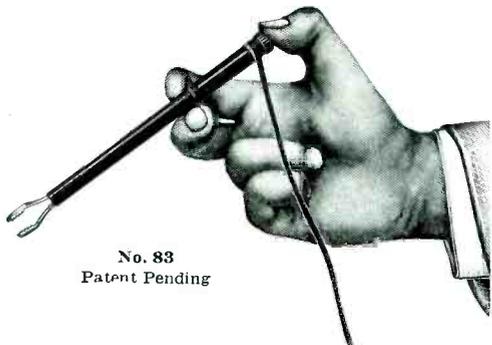
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The EBY Line has been broadened and packaged for your protection and profit. Your jobber now has a complete stock.

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THE SNAPPER



No. 83
Patent Pending

A New "TRIPLE THREAT" Radio Tool

The long tube is of insulating material and is fitted with spring contact jaws on the far end. The jaws are operated by a push of the thumb on the near-end.

IT MAY BE USED AS

1. A "Deep Sea" Electric Test Clip—Test contacts may be made with ease, deep in the recesses of a radio chassis with no danger of short circuits. You can reach spots you never thought of reaching before without tearing down the whole chassis.
2. An Electric Contact Prod—The clip jaws may be used to make quick prod contacts. Or better still—clip one Snapper on the ground circuit and prod with another.
3. A Retriever—Use the Snapper to pick up small screws and nuts or other odds and ends that may accidentally be dropped into inaccessible places.

SEND
\$1.00
For Two
Snappers
1 Red
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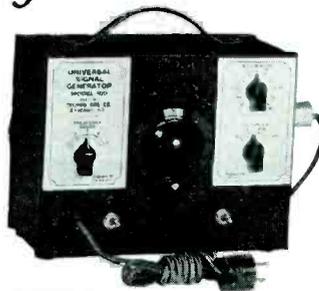
MUELLER ELECTRIC CO.
1581 E. 31st St., Cleveland, Ohio

I enclose \$... for which please send ... Snappers @ 50c. each net, postpaid. (List 75c.)

Name
Address

Triumph UNIVERSAL SIGNAL GENERATOR

All Wave—All Purpose



Model No. 100 Signal Generator.
Complete to dealers and service men
\$38.75 net.

Shown at the right, Model 300 Multirange Meter. One switch—All scales—Cord and plug polarized—Ohms from 0.5 to 10 meg—No range adjustments—Only one mil drain—Compensate battery wear—No confusing terminals—A.C. separately calibrated—Rugged construction—Battery life 8 to 10 times increased. Measures A.C., D.C., volts, current, resistance, output. \$19.95 net.

Reads sensitivity in approximate microvolts — Complete attenuation at all frequencies—All wave vernier tuning from 100 K.C. to 10,000 K.C. fundamentals—Separate 400 cycle available—Individually hand calibrated — Fully A.C. operated not A.C. - D.C. — Modulated 40% at 400 cycles—Output of 500,000 microvolts to zero — Portable — Stable.



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Send for this valuable book of practical job test procedure—Over 20 important radio tests fully explained. Shows how each test is made. Sent free if you include your letterhead or business card.

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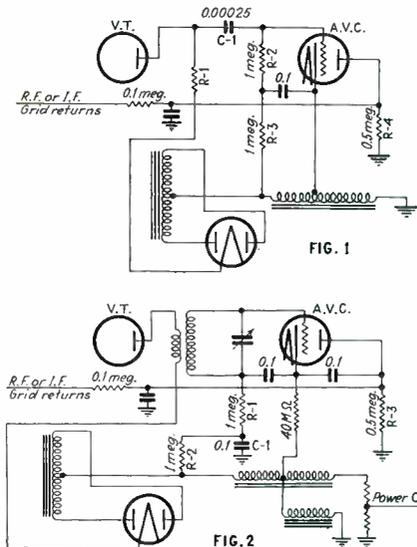
SHOP SHORTCUTS

Trouble in the A.V.C.

By Walter H. Neiman

In sets having a separate a.v.c. tube I have occasionally found a type of trouble which can prove perplexing to one not familiar with it. A condenser develops a leak which is numerically greater than 5

trouble in a different form. Figure 2 will explain. In this case C-1 developed a slight leak. As the ground is positive relative to the transformer center tap, current flowed through C-1 and R-2. The voltage drop across R-2, being fed through R-1 to the a.v.c. tube grid, increased the a.v.c. tube plate current and, as in the other illustration, stopped all reception.



megohms, and yet which is sufficient to stop all reception! Obviously, routine testing would not detect such a small leak.

I find it good practice to first remove the a.v.c. tube from sets with low or no reception. If reception is immediately restored thereby and again ceases when the hot a.v.c. tube is replaced, the trouble has been localized to the a.v.c. system.

In figure 1 the r.f. or i.f. signal from v.t. is passed through C-1 to the grid of the a.v.c. tube. As the signal increases, the a.v.c. tube plate current increases, and a larger voltage drop appears across R-4. This increases the bias of the r.f. or i.f. and reduces the signal strength at the a.v.c. tube grid to almost its former value.

Now, if C-1 springs ever so slight a leak, the positive v.t. plate voltage will be fed to the grid of the a.v.c. tube and current will flow through C-1, R-2 and R-3. Assuming the resistance of R-1 to be negligible, the voltage at the v.t. plate to be 200 volts positive relative to the transformer center tap and the C-1 leak to be 8 megohms. 20 volts will appear across R-2 and the same across R-3, making a total of 40 volts from a.v.c. grid to transformer center tap. If the a.v.c. cathode to grid bias was 5 volts (grid negative) the cathode to grid bias will now be approximately 35 volts (grid positive) and the increased a.v.c. tube plate current will increase the r.f. and i.f. bias sufficiently to stop all reception. And that is exactly what happens.

The other day I ran across the same

Repair of Carbon Microphones

By E. F. Staunton

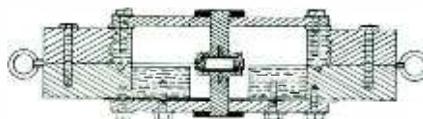
Carbon microphones frequently lose their sensitivity after several months of use and must be repaired to perform satisfactorily. There are no secrets about such a microphone and therefore no reason why a careful serviceman cannot make his own repairs.

The two most common causes of trouble are burned granules, caused by excessive current-flow, and loss of sensitivity caused by the formation of a film on the granules due to the evaporation of moisture. In either case the evidence is lowered sensitivity, rise in background noise and low or unbalanced current.

Conventional construction of a two-button microphone is illustrated in the cross-section drawing. To open the assembly remove the screws holding the bridge which supports the button on the face of the microphone. Be careful to lift the bridge from the button (don't slide it off) and retain the granules in the felt-rimmed cup on the face of the button. Then remove the back button, likewise exercising care to retain all the granules.

A clean saucer will serve as a holder for the carbon while the buttons are washed in ether or carbon tetrachloride. The face of the buttons should be polished with a silk cloth. Then the granules should be examined with a magnifying glass and any which have gray, charred spots are discarded.

Granules to replace the discarded grains should then be purchased. Size 60 is OK for rough service mikes employed for voice only, size 80 for general, all-around use and size 100 where high quality is desired



and the microphone is fully protected against vibration. The hiss level will be slightly higher with the finer grains.

If the diaphragm is dented or scratched it should be replaced with one obtained from the manufacturer. If in good condition it should be carefully cleaned by lightly brushing the gold-plated center spot with carbon tetrachloride applied on a camel's hair artist's brush. Hold the mi-

V.C. STATISTICS

Yaxley engineers report that out of 3,000 set models made in the last 10 years 1,966 can be handled with 10 replacement volume controls.

No. Models	V.C. Value
613.....	500,000
353.....	10,000
250.....	50,000
182.....	100,000
124.....	15,000
112.....	25,000
103.....	20,000
98.....	200,000
66.....	1,000,000
65.....	3,000

crophone between your eye and a bright light. If any holes have been burned in the diaphragm it must be replaced.

Before repacking the microphone examine the felt retaining rings, handling them with small tweezers, as perspiration from your hands will cause leakage and hissing if brought in contact with the felt. Large felt corn-plaster pads are often successfully used when original felts are worn. The adhesive is shaved off with a razor.

When ready for assembly, divide the granules into two equal groups, as closely balanced as your eye can judge. Place the felt ring on the back of the diaphragm and pour in half the carbon granules. (As nearly the same quantity as originally used in the cups should be the aim.) Carefully bring the back button against the felt. Tip the microphone over and assemble the front button in the same manner. If your work has been done properly an ohmmeter will show approximately the same resistance for both buttons with the microphone held in its normal vertical operating position.

A piece of cellophane should be used around the microphone when it is operated in the open air or close to the announcer, whose moist breath may lower its sensitivity.

Removing Iron Filings From Speaker Gaps

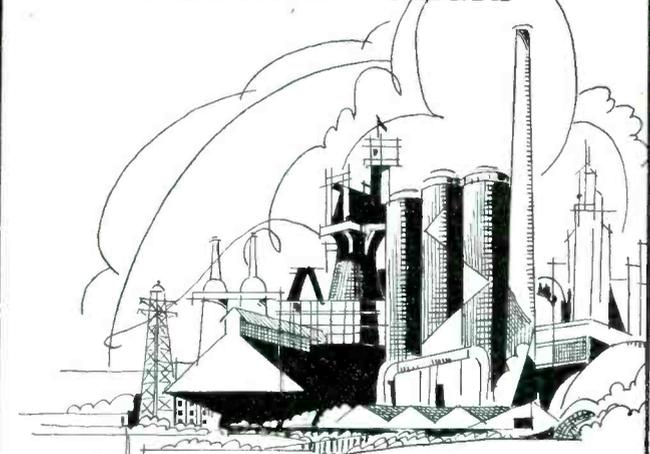
By William Toth

Dynamic speakers which produce rasping tones often have iron filings in the air-gap between the pole and the voice coil. The usual method of removing these is to apply compressed air but in many cases this does not do a job.

Loosen the screws holding down the diaphragm ring and remove the diaphragm. Take a pipe cleaner and apply paste on its end. Rub the pasty end around the pole surface and it will snare all filings.

After they are removed take another cleaner and remove the paste. Then apply with a brush or another cleaner lacquer or bronzing liquid to the pole. This will give it a smooth coating, preventing the

CORNELL-DUBILIER CONDENSERS



are preferred by
those who demand

UNIFORMITY



"Can't take chances . . . must have uniformity in the parts that make up our sets, and that goes double for condensers," declare quality set manufacturers. That's why these experienced executives STANDARDIZE on the C-D line.



"We depend on uniformity," this serviceman says. "Good business is built on good performance after servicing a set, and that means using uniform parts . . . put me down for C-D's . . . they're uniform."



This engineer . . . "When I request a .00005 mica sample I have to be sure that I can get ten thousand just like it in production. -||- on my plans, generally means C-D in the specs."



"It's good to know that when you put a couple of C-D's in your x-mitter," says this ham, "they're going to do the job right. Alike as two peas, and boy . . . do they stand up."

Your inquiries are appreciated—
write attention of engineering
division

CORNELL-DUBILIER CORPORATION

4399 BRONX BOULEVARD • NEW YORK

All Wave Oscillator



Model 450. 50 K.C.-20,000 K.C.

This unit is recognized as the best test oscillator equipment and is accepted as the standard in comparing competitive makes.

Fundamental frequencies are generated from 50 K.C. to 20,000 K.C. (6000 meters to 15 meters) without the use of harmonics. All frequency bands are individually calibrated by highly accurate test equipment, the actual calibration points being accurate within less than one-half of one per cent. The calibration curves are drawn on specially prepared paper and are entirely unlike conventional charts. Any frequency may be easily located by simply setting the special celluloid indicator to the desired frequency and reading the proper dial setting directly on the engraved scale. The calibration curves are mounted in metal holders and are protected by a celluloid cover.

This is an exclusive Miller development, which will no doubt be copied, as have other Miller developments. Those familiar with our products will recall we were the original manufacturers to incorporate variable modulation, completely variable frequency range, high L. C. oscillator circuits, and complete A.C. operation, in medium priced oscillators. These features are now being incorporated in other units now appearing on the market.

Excellent stability is obtained by the use of high "Q" coils, high L. C. ratios, and electron coupling in the oscillator circuit. Modulation is accomplished by the use of a separate tube serving as the audio oscillator. Modulation percentage is completely variable, as is the R. F. output. External leakage due to R. F. magnetic fields are reduced to a medium by employing shielded coils. A.C. line filter, and complete shielding of the entire unit. The front panel is chrome plated, while the case is attractively finished in black crackle. Both the chassis and case are heavily copper plated before finishing, further reducing the leakage by the better shielding effect. The unit is, of course, completely A.C. operated. Complete, ready for use.

List Price, \$47.50. Dealer's Net Price, \$28.50
No. 450—Oscillator. Shipping wght. 16 lbs. Size 8"x9"x6 1/4" deep.
J. W. Miller Co., 5917 S. Main St., Los Angeles, Calif.

BULLETIN NO. 106

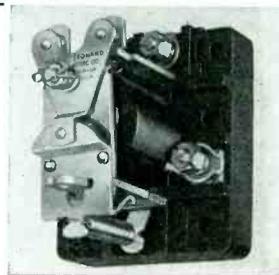
Describes the Ward Leonard Remote Control Relays with their various contact combinations.

BULLETIN NO. 507B

Is about Ward Leonard Underload and Overload Relays for tube protection.

BULLETIN NO. 507A

On the subject of Ward Leonard Vitrohm Resistors. You should know them.



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SERVICE SECTION

iron filings from clinging to the metal in future. If, at a later date, filings should accumulate despite the lacquer they can be removed from the protected surface simply by blowing into the gap.

When finished, it is of course necessary to center up the voice coil before replacing the diaphragm.

Split End-Plate Condenser Aligning Tool

By Irby B. Chambler

A bakelite rod about six inches in length with a half inch slot sawed in one end, the slotted end being filed down to a screw-driver point, makes an excellent aligning tool for split-end plate condenser alignment.

Slip the slotted end of the tool over the end plate (being narrow it will fit between rotor and stator) and twist to give the desired capacity change.

The rod is also useful in testing for leaky filter and by-pass terminals. Slip the slot over the terminal, close to the condenser, and twist. A poor connection will be instantly shown up. Use a good grade of bakelite to minimize body capacity effects.

Condensers As Vibrator-Type Eliminator No-Load Protectors

By Morris Chernow

A number of vibrator-type eliminators use no-load protective devices across the output to guard against filter condenser injury by starting surges. "Globar" resistors and relays are commonly used.

When protective devices go haywire and a replacement unit is not easily available condensers can be used for temporary, and sometimes permanent, repair.

Most of the transient surge voltage is due to harmonics generated by the interrupter. Therefore the logical thing to do is to place across the output a condenser resonant to the most bothersome harmonics, while presenting little load to the fundamental.

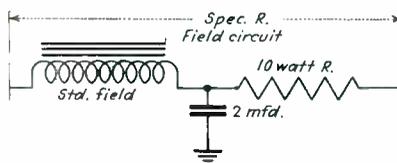
In Majestic sets, for example, the vibrator frequency is 70 cycles. The 7th harmonic and the ninth harmonic (490 and 630) are most troublesome. Try a .02 condenser across the output in this set.

Standard Fields in Special Circuits

By S. Bend

Standard dynamic speakers are usually supplied with field resistances of 500, 1000, 1500, 2000, 2500 or 3000 ohms. When replacing the speaker of a set which does not employ one of these standards it is necessary to maintain the same value of resistance in the circuit.

Select a standard speaker with a field having lower resistance than the one originally employed in the set. Insert a 10-watt resistor equal to the difference in value between new and old speaker fields



in series. Connect a 2 mfd. condenser from the junction between standard coil and resistor and opposite leg of the filter system.

Superhet I.F. Frequencies

Analysis of 1188 superheterodyne receivers now in use indicates that:

- 68% use 175 kc.
- 7% use 262 kc.
- 5% use 130 kc.
- 4% use 456 kc.
- 6% use 177½, 181½, 172½ or 465 kc.
- 9% range from 115 to 480 kc.
- 1% (converters) peak in the broadcast band.

This "dope" should be useful not only in buying or building test oscillators but in selecting i.f. transformer stocks. It also, possibly, indicates a need for replacement transformers with sufficient tuning range to include 115-135, 171-182, 250-270 and 445-485 kc. These should preferably be as small as possible and available with primary and secondary tuned, primary alone tuned and secondary alone tuned.

This would permit 12 i.f. replacement transformers to cover almost all existing requirements.

Permanent "Dial Cord Breakage" Repair

By George R. Campbell

People who have had to replace dial cords over and over again due to break-

"Acorn" Tube



In hand: Final form of RCA's "acorn" triode type 955, a good amplifier, detector or oscillator up to 600 mc. Heater volts, 6.3; current, 0.16 amps. Plate voltage, 180; current 4.5 mls. Grid-bias, minus 5. Mutual, 2,000 mhos. Mu, 25. Plate resistance, 12,500 ohms.

In insert: "Blown up" photo of experimental model, pictured and described in "Radio Retailing" for August, 1933. That was news!

age are sick of this continual trouble. I cure it once and for all in the S-M 30, King 218, Silvertone 109, S-M 712 and many others by installing a flexible cable such as those used in auto-radios and discarding the original system.

Obtain a 21 inch length of cable complete with housing and with a "Crowe" or equivalent connector fasten one end of the cable to the condenser shaft.

Now remove the knob shaft and replace its shaft with a long extension piece which will run clean through the set from front panel to back, permitting it to project out behind the chassis slightly.

Connect the free end of the flexible shaft to this projecting shaft and the job is done.

If desired, a 6 to 1 gear can be used and, in this case, the cable terminal is attached to the small cog, rather than directly to the condenser shaft, the tuning dial being connected to the large cog. Be sure and grease the cable before installation.

Remote control jobs can be handled in the same manner, using a longer cable.

Suppression, in Cars Using Current Regulating Devices

By Irving Seideman

Many of the new cars use some sort of a current-regulating device. The simplest form is generally a resistor in the generator field circuit, manually cut in or out by a switch which controls some part of the battery load, as in the Chevrolet. The generator in this car has a resistor at the light switch on the dash and the usual two-terminal relay mounted on the housing. There is also an additional terminal, which is one end of the field winding, connected to the resistor.

A condenser should be run from this field terminal to ground to aid suppression of generator and possibly ignition noise. The usual condenser is connected from the generator side of the relay to ground.

In cars utilizing automatic current regulation by means of a relay a condenser may *not* be connected from the end of the field winding to ground as a capacity at this point will cause pitting and burning of the regulating relay points. This type of system may be recognized by the large relay case mounted on the generator housing, having three or four terminals protruding. Two of these terminals have wires connected which disappear into the generator housing. One is the field wire and the other is the only one which should be bypassed to ground.

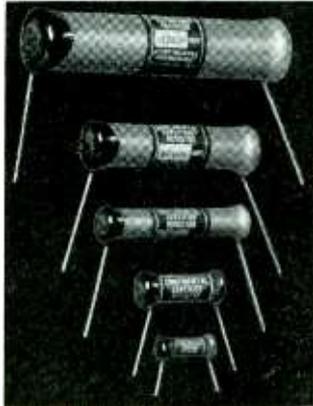
If in doubt as to which it is remove the band around the generator and trace it to the main brush. Or remove the relay cover and determine which is the lead connected to the generator cutout relay. This is the correct lead.

(Please turn to page 47)

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now stepped
up still higher



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New low prices just announced on CONTINENTAL Molded CARBORITE Resistors make them the outstanding value of the replacement parts field.

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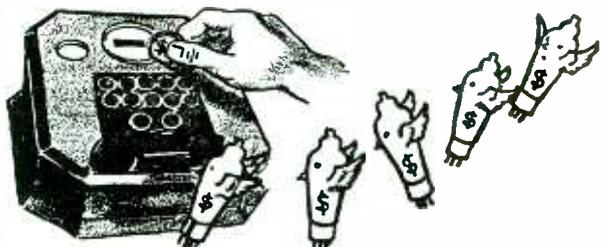
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Tests all types of tubes. Direct reading. Red BAD and Green GOOD scale. Large meter. Line voltage regulation. All short tests. Cathode leakage test. Individual tests on diodes and full wave rectifiers. Any future requirements simple to provide. No confusion or complications . . . no calculations. And *no impairment of tube values*. With only four sockets for every type of tube, you secure a true test of good and bad condition, including the slightest leakages under actual tube operation. 60 cycle 100-130 volts.



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For the convenience of servicemen, portable cases can be supplied. The Master Unit No. 1210 may be used either in the oak case above for counter tube testing, or in a portable case for servicing, as required. There are three other Triplett Master Units, all of equal dimensions, for every servicing purpose.

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Triplett Electrical Instrument Co.
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97 MAIN STREET BLUFFTON, OHIO, U. S. A.

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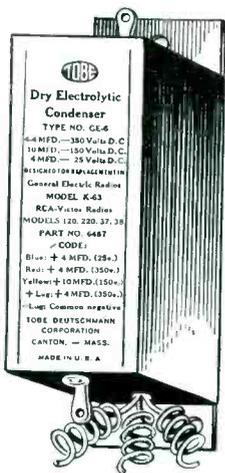
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110 VOLT
60 CYCLE
MODEL -- \$ **11** 40
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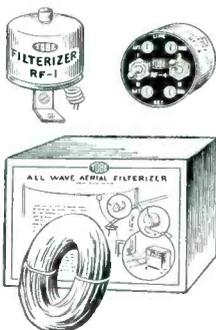
Designed by pioneer specialists in
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OUTSTANDING FEATURES:

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3. Ample noise reduction.
4. Rugged weather-proof materials.
5. Two models—\$4.95 and \$6.95.

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MODEL "K"

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Requires small cabinet space for mounting.

REMARKABLY SIMPLE

No intricate working parts to get out of order.

SELF-CONTAINED

Shipped complete ready to place in cabinet.

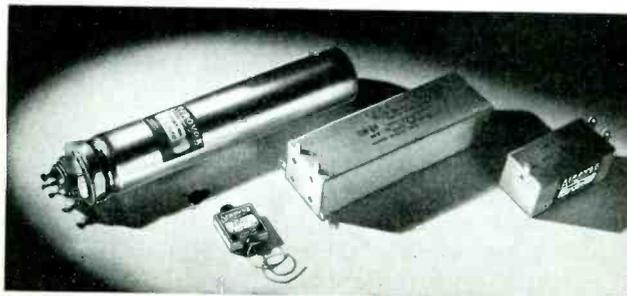
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SERVICE SECTION

TRICKS of the TRADE

AK 812. Bad tone and blocking when volume is turned up 500,000 ohm potentiometer connected to diode plate 2 of second detector has changed value to about 1 megohm. Shunt with fixed resistor to restore value to normal. Balancing double-spot tuning trimmer, fourth on 5 gang unit Set for minimum signal with oscillator running at 1400 and set dial at 1240.

AK 84. Weak reception on strong locals, voltages and current ok See if excess wax from field coil has worked into armature, freezing voice coil.

EMERSON 26. Complete or partially distorted output, intermittent distortion or whistling . . . Defective 15,000 ohm, ½ watt resistor dropping screen voltage of 57 second detector. Replace with 1 watt unit. (I.F. 456 kc.)

FORD-MAJESTIC. Set performs ok on bench, but when lid is pressed down, in car, cuts in and out while riding Put paper discs in top of tube caps so that these cannot short to shields.

KOLSTER 42. Weak signals with volume full on, voltages and tubes ok Replace leaking grid condenser in detector circuit with .0025 mf.

LYRIC S7. Blare, muffled reception Replace 250,000-ohm resistor in 47-pentode circuit and ¼-mfd. condenser in plate of screen-grid circuit.

LYRIC K69. Muffled tone, low volume. . . . Check 1-mfd. condenser in detector circuit, one of two next to filter block. If shorted replace both, as second usually causes trouble later. Weak reception, tone ok Check for partial short in screen-grid condenser.

MAJESTIC 310A. Lack of sensitivity . . . Try placing 20,000 or 30,000 ohm resistor across grid return of i.f. transformer to ground. Cutting in and out . . . Look for high resistance connection between poorly cleaned enameled voice-coil wire and leads.

MAJESTIC 300 SERIES. Weak signals, heard only at critical point of volume control . . . Condenser can marked C and D houses two capacitors, C17 a .1 mfd. and C24, a .25 mfd. A leak of one or more megs from C17 to ground or to C24 causes trouble. Ordinary ohmmeters will not detect it. Cut both leads coming out from holes in can marked C and D and connect a good .1 mfd. unit externally in its place. For solution of other troubles in this series check each ½ watt carbon resistor for more than 25 per cent change in value. (I.F. 175 kc.)

MAJESTIC 70. Holding dial shaft from turning while replacing cable . . . Fasten one end of the new cable to its spindle and wind it until the dial is tight against its stop. To hold it there, while the other end of the cable is being adjusted, clamp a small Stillson wrench to the tuning shaft on the outside of the chassis and brace the wrench handle against the volume control shaft.

MAJESTIC 400 SERIES. Low volume despite satisfactory r.f. pickup . . . Check for open speaker field coil, a common failure. No signal from first 57A detector-oscillator, i.f. and other tubes alive . . . Test for grounded i.f. transformer. There should be no reading from control grid of i.f. 58A to transformer can. If there is remove coil from can, wrap with fish paper and replace. Set completely dead from grid of the 43 output tube . . . Nine times out of ten the C-bias resistor in cathode circuit is open. Replace with 700 ohms. Pronounced hum . . . Look for shorted electrolytic across 43 bias resistor.

33 OLDSMOBILE. Noise pickup, after standard suppression is completed . . . Run shielded antenna down left front door post to floor and under mat to set, shield high-tension and battery supply wires and coil. Keep control cables away from ignition coil and use a battery supply filter condenser and dome light filter.

PHILCO 86. Low hissing which persists even with known-to-be-good tubes . . . Often caused by defective first audio transformer. Don't rely on tests. Substitute new unit.

PHILCO 76. Hum starts about 15 minutes after set is turned on, then all reception stops . . . Look at r.f. coils. Wire comes loose on form and drops on soldering lugs at bottom coils, shorting primary to secondary. Loosen wire with thinner and push back in place, then cement.

RCA 60. Noisy reception Look for bad r.f. plate choke in r.f. transformer assembly.

RCA 100. To operate with a.c. line as aerial Connect 85 mh. r.f. choke from antenna post on coil to chassis. Connect .01 mfd. condenser from one side of a.c. line to chassis. If no 85 mh. choke is available a 2,000-ohm resistor works nearly as well.

RCA R37. Gradual loss of volume . . . Control grid lead to 2B7 is rubber-covered wire, shielded. It passes close to bleeder resistors and heat sometimes melts rubber, permitting short to shield. Rewire with cotton insulated wire. (I.F. 175 kc.)

SILVERTONE field-coil resistance data:

	Number	Ohms
King-made Silvertone	90	2500
	94	2500
	95	2500
	100	2500
	111	750-750
	111B	750-750
Colonial No.	36	9000
	41	1450
	41C	1450
	38	9000
	41	1450
	42	1450
	39	2500
	49	2500
	41P	9000
	36P	9000
	37	1450
	37	1450
	47	1450
	47	1450
	47	1450
	47	1450
46	2500	
44	2500	
44	2500	
44	2500	
44	2500	
44	2500	
41	1450	
42	1450	
50	1450	
48	1450	

SPARTON 61, 62. Distortion, not due to bad tubes or incorrect voltages Check 5 mfd. section of filter condenser. It is across the speaker field and tapped filter choke and is equipped with a yellow lead coming out of the block.

SPARTON 71, 71B, 72, 78, 478. Noisy reception Several connections to chassis are made via rivetted lugs holding tube shields and sockets. Solder these in place.

SPARTON 333. Intermittent or noisy reception . . . Frequently caused by breaking of stator connections underneath condensers. Replace such leads with stranded push-back wire. (I.F. 456 kc.)

STEWART-WARNER R116. Set gets off calibration and loses power on lower end of dial . . . Trimmers on gang are soldered, poor connections develop here. Look for opens or high-resistance, resolder and balance.

WURLITZER SA120. Dead or weak or motorboating when inter-station silencer is turned to extreme left Look for trouble in one of three 5 mfd., 50-volt condensers. It is often best to replace all three with new units having higher voltage rating.

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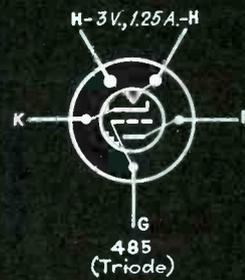
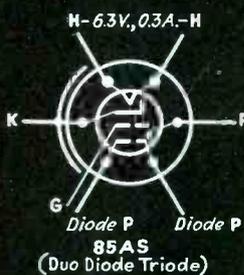
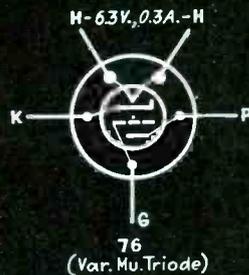
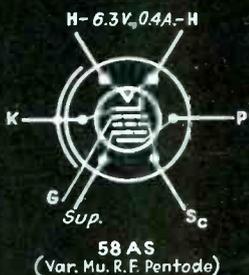
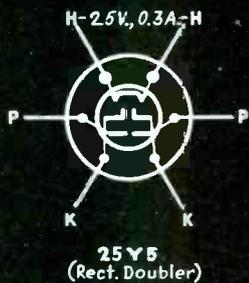
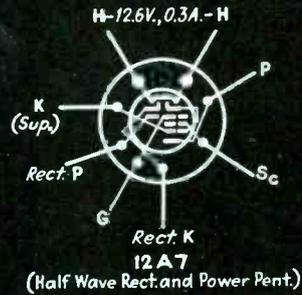
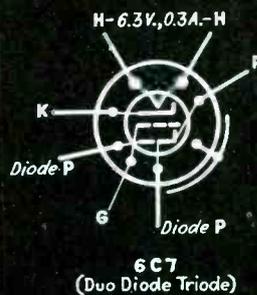
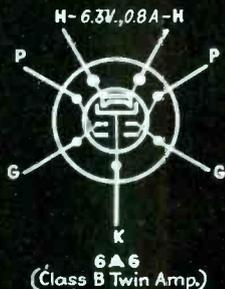
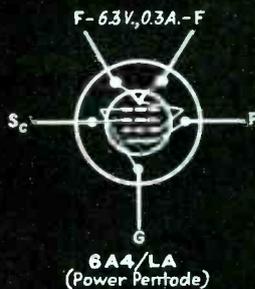
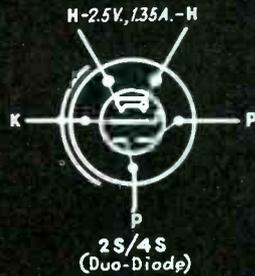
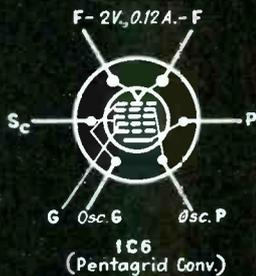
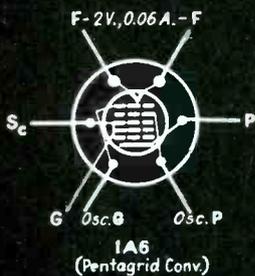
Chicago, Ill.

Send your latest price sheet showing new low prices on PIONEER Converters and the complete Gen-E-Motor line.

Name Address

Tube Socket Connections

(Seen from below)



Another RADIO RETAILING "Black and White"
Chart to Help You In Circuit Analysis

the ANTENNA

makes or breaks the set . . .



- PLAIN ANTENNA KITS
- PLAIN DOUBLET
- MATCHED IMPEDANCE
- VARIABLE IMPEDANCE

. . . every type of aerial equipment needed to service the new ALL-WAVE sets with their complex static problems, is ready for dealers and service men in the stocks of this well known company . . . also the technical information you need. Remember, the ANTENNA is NEWS again! Equip yourself to do a 100% job for every customer. We'll help you.

CORNISH WIRE CO.

30 Church Street, New York, N. Y.

CANDOHMS

STANDARD EQUIPMENT IN LEADING SETS

WIRE WOUND RESISTORS



TEN MILLION IN USE

Send Today for New Complete Catalog and Free Resistance Calculation Tables

THE MUTER COMPANY

1255 South Michigan Ave., Chicago



WET AND DRY ELECTROLYTIC PAPER AND MICA CONDENSERS

RECOGNIZED FOR SUPERIOR QUALITY IN ALL CLIMATES THE WORLD OVER

SOLD BY LEADING JOBBERS EVERYWHERE

SOLAR MFG. CORP. 599 BROADWAY NEW YORK

BEST BY TEST!
ASK FOR CATALOG OF EXTREMELY COMPACT TYPES HANDY FOR SERVICE

RIDER'S MANUAL VOLUME V

READY ON NOVEMBER 20th



VOLUME V FACTS

1200 Pages (Index not counted) Products of more than 100 Manufacturers

No Duplication Right up to the Minute Separate 60 Page Index (covering Volumes I, II, III, IV, V)

Price \$7.50, Postpaid

NONE BETTER

No manuals are "just as good" as Rider's Manuals, which lead all others by a tremendous margin. Rider's five volumes contain more than 5200 pages—more manufacturers—more receivers—more service data than all other manuals.

- Volume I—1000 Pages \$7.50
- Volume II—800 Pages \$6.50
- Volume III—1180 Pages \$7.50
- Volume IV—1060 Pages \$7.50
- Volume V—1200 Pages \$7.50

MONEYBACK GUARANTEE

You can't go wrong with a RIDER Manual



MAIL THIS COUPON TODAY

John F. Rider, Publisher, 1440 Broadway, New York City

Herewith find \$7.50. Send me Rider's Volume V, postpaid, as soon as it is published. Put my name on your list to receive "Successful Servicing," your FREE house-organ.

Name
Address



ALL WAVE OSCILLATOR Free!

DIRECT READING ON FUNDAMENTALS . . . not Harmonics . . . Full Frequency Coverage . . . Range 14 to 3000 meters. (100 to 21,600 K. C.) . . . Absolute Attenuation at Highest Frequencies . . . Frequency Stability Assured . . . Extreme Accuracy . . . Dial Permits Accurate Readings to 1-10th of 1% . . . Compact . . . Approved by National Union Engineers . . . an Absolute Necessity for Modern All Wave Set Servicing . . . FREE with National Union tube purchases. Small deposit. Get Details!

SERVICE DEALERS! Let National Union help you to greater profits through (1) FREE SHOP EQUIPMENT: Testers, Analyzers, Manuals, and Service Tools given with National Union tube purchases. (2) SERVICE AIDS: Charts, Data information at no cost. (3) SUPERIOR QUALITY: Strict adherence to closer manufacturing limits gives National Union tubes consistent superiority. (4) TEN CENT HIGHER LIST PRICES: Highest profit margin on all tube sales. (5) MAINTAINED LIST: No fear of customer ill will caused by seeing tubes in cut price stores. No service dealer can afford not to tie up with the National Union program for service profits.

Clay Millican, Independence, Kansas says: "National Union . . . a reliable company . . . a fine tube...working for interest of the serviceman"

NATIONAL UNION RADIO CORPORATION OF N. Y. 400 MADISON AVE., NEW YORK CITY.

L. E. Conner, Seattle, Wash. declares: "We are proud to be associated with a firm whose policies are right and who build a good product . . . We thank National Union for helping our service department acquire it's present degree of efficiency . . ."

Tell me more about
Name.....
Street.....
City..... State.....



R 10-34

NEW EQUIPMENT OF SPECIAL INTEREST TO SERVICEMEN



Universal Signal Generator

An all-wave, all purpose universal signal generator can be obtained from the Triumph Mfg. Co., 4017 W. Lake St., Chicago, Ill. Some of the high points of this instrument are: 4-step ladder attenuator, modulated or unmodulated r.f. output (100 to 10,000 kc.); 400 cycle a.f. separately available; portable-a.c. self powered. \$38.75 net complete with tubes, f.o.b. factory. This is the first of a complete line of service test equipment Triumph has designed. Soon to be released are a capacitor resistor indicator, short wave antenna system, all purpose multimeter, vacuum tube voltmeter, tube tester with a new principle, impedance bridge and a service audio oscillator.—*Radio Retailing*, October, 1934.

the wide variety of intermediate frequencies now in use, engineers of the Clough-Brengle Co., 1134 W. Austin Ave., Chicago, have developed a new combination radio frequency and audio frequency signal generator. The r.f. output on fundamental signals only, is continuously variable without skips from 50 kc. to 30 m.c. (6,000 to 10 meters).

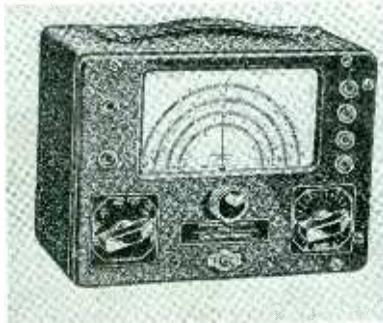
This new Model OC is completely operated from a.c. or d.c. line. The full frequency range is covered without the use of harmonics. The price, complete with three tubes, is \$29.94 net.—*Radio Retailing*, October, 1934.



All Wave Oscillator

Direct reading on fundamentals, full frequency coverage, absolute attenuation at highest frequencies, these are some of the features of the all-wave oscillator made by Wireless Egert Engineering, Inc., 179 Varick St., New York City. This instrument carries a dealer's price of \$29.50 complete with tubes, batteries and test cord.

Wireless Egert also offers many other electrical instruments including a battery-operated signal generator, a.c.-d.c. operated amateur band monitor, non-inductive logarithmic attenuator, beat frequency oscillator, standard signal generator, distortion analyzer, 1000 cycle oscillator, 5-point filter system, vacuum tube voltmeter, logarithmic vacuum tube voltmeter, a.c. operated direct dial calibrated beat frequency oscillator, battery operated beat frequency oscillator and an a.c. operated high level beat frequency oscillator.—*Radio Retailing*, October, 1934.



Burton-Webber All-Wave Test Oscillator

A brand new item of interest to servicemen is the all-wave test oscillator, Model 10, of the Earl Webber Co., successor to the Burton Webber Co., 1743 Daily News Plaza, Chicago, Ill.

The unit's full vision direct reading dial permits speedy, accurate settings without reference to graphs or tables. Eight arcs provide a scale length of approximately 47 in. covering from 90 kc. to 25 mc., all on fundamental frequencies.

Auto-radios may be tested "right at the curb" without lengthy extension cords; farm radios, a.c. or d.c. current supply, present no difficulties. \$29.50.—*Radio Retailing*, October, 1934.



"Snapper" Radio Tool

A radio tool for use in testing and experimental work by radio servicemen and amateurs is being made by the Mueller Electric Co., 1583 East 31st St., Cleveland, Ohio. It may be used as a "deep sea" electric test clip, an electric contact prod and as a retriever to pick up small screws, etc., that may accidentally drop into inaccessible places. The long tube is made of insulating material and is fitted with spring contact jaws on the far end. The jaws are operated by a push of the thumb on the near end. The cord or wire test lead is quickly and easily connected under the insulated knob binding post. The list price is 75 cents.—*Radio Retailing*, October, 1934.



Supreme Model 85 Portable Tube Checker

A 5 in. fan type meter with 26 1/2% longer scale than is possible with the standard 3 in. meter is incorporated in the Model 85 portable tube checker of the Supreme Instruments Corp., Greenwood, Miss. Only four sockets are used for both short and leakage tests and quality tests. The meter is of the direct reading type. This tester comes in a quartered oak case with the top on slip hinges. Price \$39.95 net to dealer.

Also available as a counter model. Same price.—*Radio Retailing*, October, 1934.



Morrill Six-Range Precision Multiplier

The Model A six-range precision multiplier of Morrill and Morrill, 30 Church St., New York City, allows accurate voltage measurements over many ranges at low cost when used in conjunction with an 0-1 milliammeter. This combination gives voltage measurements from 0.1 volt to 1000 volts d.c. or a.c. at 1000 ohms per volt in six ranges: 5-10-50-100-500-1000 volts. As the multiplier is non-capacitative and non-inductive it introduces no appreciable error into a.c. voltage measurements up to 50,000 cycles due to frequency effect. The price is \$9 net.—*Radio Retailing*, October, 1934.



All-Wave Test Oscillator and Audio Signal Generator

To afford rapid and accurate servicing of all-wave and short-wave receivers, as well as all superheterodynes employing

Aerovox Auto-Radio Vibrator Replacement Condenser

To take care of condenser replacements in auto-radio vibrators, a line of tiny units specifically designed for this purpose is announced by the Aerovox Corp., 70 Washington St., Brooklyn, N. Y. These replacement units comprise oil-impregnated, oil-filled, pure linen paper sections in hermetically sealed metal containers, with mounting lug and pigtail lead. Available in several standard capacities.—*Radio Retailing*, October, 1934.

THESE VALUABLE DEALER HELPS for the Asking

"Radio Retailing's" Handy Form Makes Ordering Easy

For your convenience "Radio Retailing" provides this digest of current dealer help material and makes it easy for you to order—on one blank—your selection of printed matter or display pieces desired. Please circle, on the coupon below, *only* those numbers you really will use.

SETS

- 1.—A special Ripley "Believe It or Not" book, to get customers to come to the store, is now offered by GENERAL HOUSEHOLD Utilities.
- 2.—RCA VICTOR is featuring a booklet called, "Shortwave, Worldwide Radio Tours." Includes a large map of the world, with location, call letters and frequencies of foreign stations. Generously illustrated.
- 3.—ATWATER KENT offers two broadsides this month: a consumer piece and a dealer "sell up" talk.
- 4.—PHILCO is out with a radio log. Can be used as a premium offer or "come on" in newspaper or direct mail campaign.
- 5.—Answers to those frequent questions about reception conditions have been answered by the COLUMBIA BROADCASTING Systems. Why programs fade, causes of distortion and "mushing" what is "high fidelity" and the low down on wide band transmission are covered.
- 6.—ZENITH has an outstanding brochure for retail salesmen. Just off the press, it is titled, "World Renowned Personalities."
- 7.—A "hit" with dealers is STEWART-WARNER'S new "Merchandise Presentation Book." In full colors, for dealer to customer dramatization of the complete line. Also photos of S-W's store rental displays.
- 8.—SPARTON has a four-color folder on its Triolian model that's good. Also effective folder for consumer on entire line.

9.—A promotional folder, featuring the new band spread development of the HOWARD Radio Co., is ready for those who circle this number on the coupon.

10.—EMERSON Radio & Phonograph Corp. is working on a special traveling display, ready by the time you get this issue. In addition, has a broadside the inside page of which may be used for wall or window display. Circling this number also will bring sample of new display card and envelope stuffers.

TUBES

- 12.—A tube type classification chart, to hang on the wall, is NATIONAL UNION'S current bid for attention. This outfit also supplies radio repair and guarantee forms—and a radio tube base connection finder.
- 13.—ARCTURUS offers a chart of tube characteristics; also its "Star" booklet for consumer use.
- 14.—New bulletin now available from GOAT Radio Tube Parts, Inc. Covers form fitting tube shields. Well illustrated.
- 15.—RADIOTRON-CUNNINGHAM "Short-Wave World-Wide Radio Tours" should sell tubes. See No. 2 for contents.
- 16.—HYGRADE-SYLVANIA writes that its 56-page booklet, "Service Hints" is more popular than ever. Still time to get yours—if you circle this number below.

17.—For SYLVANIA'S "Technical Manual" there is a charge of ten cents, and worth it.

PARTS AND ACCESSORIES

- 18.—SOLAR Mfg. Corp. has issued a service catalog, No. 5-S, on its electrolytic, paper and mica condensers.
- 19.—A profusely illustrated catalog has just been released by A. M. FLECTHEIM. Presents its extensive line of replacement parts with detailed descriptions.
- 20.—ATLAS Resistor Co. announces a new, 8-page, catalog covering its line of wire-wound tubular resistors.
- 21.—Our 1935 abridged catalog of con-

densers and resistors is just off the press, states AEROVOX Corporation.

22.—CLAROSTAT has produced a 12-page replacement guide for volume controls and resistors.

23.—To help dealers ascertain quickly the type of "Electronic" auto-radio vibrator for each car set, ELECTRONIC Laboratories publishes a handy replacement guide.

24.—A replacement volume control manual, circuits, volume, tone, suppressor, filament and hum controls, all makes of sets, is the brain child of the YAXLEY Mfg. Co.

25.—A service and replacement manual covering its eliminators, Elkonodes, vibrators, by types with service data and circuits, is ready for mailing by P. R. MALLORY.

26.—OHMITE has revised its No. 5 catalog on special resistors. The new edition has 16 pages, several on engineering data. Also offers an "Amateur Handbook"—a guide to the use of resistors in amateur receivers and transmitters.

27.—POLYMET Mfg. Corp. announces its 1935 condenser and resistor catalog. Lots of technical information in this one.

28.—Service Engineering Bulletin 101 on auto radio noise suppression, discussing sources and radiated interference, is ready, states CONTINENTAL Carbon.

29.—TOBE Deutschmann offers Engineering Bulletin MHL-834 on its radio noise and fault locator equipment.

30.—The MUTER Company recently issued a catalog on its resistors, switches, voltage dividers. Includes a voltage chart.

31.—Distributors will be interested in the new catalog by CONSOLIDATED WIRE. Covers antennas of every type, filters and many other subjects. All about radio wire.

DISPLAYS

32.—ARCTURUS window display unit consists of a large center piece—a map of the skies—and three side pieces. Also two window streamers.

33.—UNITED AMERICAN BOSCH is going places with its "Explorer's Club." Elaborate series of display pieces and literature tying in with its nation-wide weekly broadcasts. Bosch dealers shouldn't miss this unique advertising. Gets the parents thru the kids.

34.—For a shortwave window, GRUNOW has a large poster that features Lieut. Comm. Schnell—the first to communicate across the Atlantic on shortwave. Convincing and attention-compelling in its black and white contrasts.

35.—All display pieces needed to make a real "stopper" in an allwave trim may be had by circling this number—if you sell McMURDO SILVER sets.

36.—WESTINGHOUSE is offering 24 striking and colorful display pieces. Clever cartoons tell convincing sales stories. New pieces come every month—if you tie up with this window and store service.

CIRCLE . . . SIGN . . . CLIP . . . AND MAIL

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
33	34	35	36												

RADIO RETAILING

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

Please see that I receive "Dealer Help" material from those concerns whose numbers I have circled.

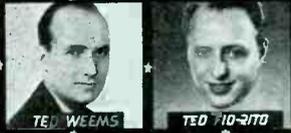
.....
COMPANY:

.....
STREET ADDRESS

CITY

STATE

EVERY ARTIST AN *Artist*



BRUNSWICK

always presenting

THE NATION'S *Select* ENTERTAINERS

offers

Grace Moore

GLAMOROUS SINGING STAR
OF SCREEN * RADIO * OPERA

.. in an enchanting record..

SINGING HER SONG HITS
FROM THE COLUMBIA PICTURE
"ONE NIGHT OF LOVE"

6994 { *One Night of Love*
Ciribiribi

ACCOMPANIED BY THE METROPOLITAN OPERA HOUSE CHORUS AND
ORCHESTRA UNDER THE PERSONAL DIRECTION OF WILFRED PELLETIER



Brunswick Record Corporation

Executive Offices 1776 Broadway—NEW YORK CITY * BRANCHES • New York • Chicago • New Orleans • Dallas • San Francisco • Los Angeles



TO THE
10,000
RADIO DEALERS
who are receiving their
samples of the
SENSATIONAL
KADETTE
Jewel
Sales Demonstration
Packages now being mailed

A NEW TYPE OF RADIO... ...INTRODUCED IN A NEW WAY

Kadette Distributors Rendering Unique Service to Dealers

Right Now—this month Kadette jobbers are sending to 10,000 dealers samples of the new Kadette Jewel radio. Also an illustrated announcement of the entire International Kadette Line. This is new in radio merchandising. There is no "High Pressure" salesmanship here. You are permitted to look over the 1935 Kadette, taking your own time.

Let Kadette Speak for Itself

When you open your Demonstration Package don't stop at admiring its amazing beauty. Put the Kadette Jewel to every reception test you can think of and you will marvel at its performance. Take it apart and see the simplest, cleanest, most rugged chassis ever designed. You'll then know why Kadette alone can offer their famous "One year-one dollar" service guarantee.

DEALERS—If you have not received your Kadette Jewel sample or received notice of its shipment, get in touch immediately with your jobber. In territories not now served by Kadette Jobbers, the factory will upon request mail you your demonstration package at full discount, C. O. D., transportation prepaid.



Complete Merchandising and Dealer Help Service

Don't fail to study the merchandising plan for retailers. Take advantage of the dealer helps that come with Kadette assortments—window and counter displays, circulars for mail or personal distribution and newspaper ad and mat service. Put into operation the merchandising suggestions evolved by one of radio's outstanding merchandising authorities.

• • •

The Kadette Line is up to the minute—alive. Priced from \$13.50 to \$34.50 to meet the demand. Don't overlook the many outstanding values in larger models. Note especially the prices of the 1935 Kadette Line. Here is a proposition that is "out of the rut". Get in on a good thing. Order your assortments and start selling NOW.

JOBBERS—Over fifty leading jobbers are co-operating in introducing by mail this new exceptional radio. There is still some territory open. If you want a product with a sales plan that will quickly boost your sales at a lower sales cost—Wire today.



KADETTE

International Radio Corp. Ann Arbor, Mich.

LIST PRICE

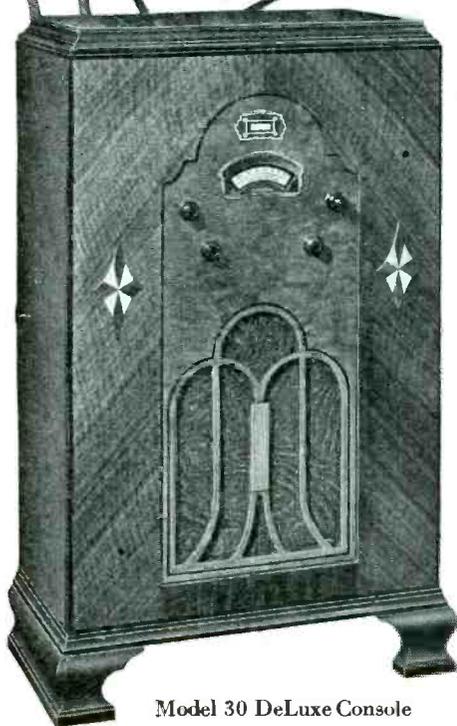
\$ **13⁵⁰**

FEATURED

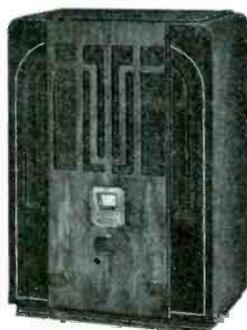
in the "Home of Tomorrow"



EVERY
HOUSE
NEEDS
WESTINGHOUSE



Model 30 DeLuxe Console



Model 22
Mighty Midget



Model 27
Mighty Mite

WESTINGHOUSE RADIOS GIVEN NEW SELLING FORCE

● Featured in 200 magazines and 1,800 newspapers, the new Westinghouse "Home of Tomorrow" is a powerful selling force behind all Westinghouse products. When you sell Westinghouse radios, you are selling authentic reproductions of sets featured in the famous "Home of Tomorrow."

COMPLETE, HIGH QUALITY LINE YET POPULARLY PRICED

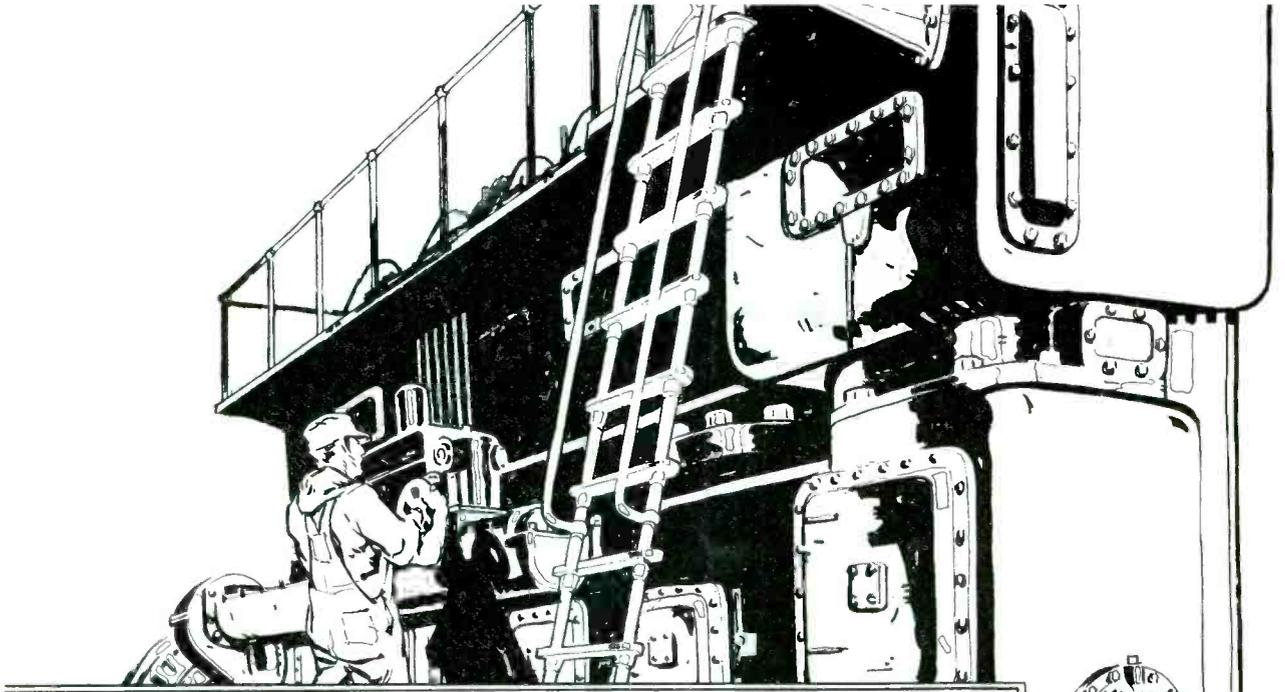
Add to this new and unique selling force, the remarkable value of the sets themselves. Then remember that Westinghouse is the Pioneer in Radio... and you'll see why dealers every day are selling Westinghouse... even though they are also displaying other makes. These dealers recognize the value of the line... and the sales value of this unusual promotional effort.

SELL WESTINGHOUSE RADIOS IN YOUR COMMUNITY

Be the first in your community to take advantage of this triple-power combination. See your Westinghouse distributor or address Westinghouse, 150 Varick Street, New York City.

Westinghouse

The Pioneer in Radio



Accustomed to BIG TASKS!

● Fairbanks-Morse took the Diesel of yesterday—a temperamental plaything of the laboratory. Today, over 2,000,000 horsepower of F-M Diesels are the trusted motive power on the seven seas and in a thousand vital public services where power must not fail.

Electric motors! Fairbanks-Morse took the crude motor of two decades ago and, with a genius for precision methods in volume manufacturing, introduced refinements which raised the standards of a motor-making world.

So the list runs—*achievement* through the sheer will to attain new and higher standards—a restless intolerance of the *approximate* on the production line.

As every service man knows, as does every dealer and distributor—radio receiver manufacture needs today the Fairbanks-Morse ability to produce in the factory the results obtained in the laboratory. A reception difference of five thousand miles may lie in a fraction of a turn on a padding condenser adjustment. A slight mismatching of inductances may lock the gate to good European reception. Radio needs Fairbanks-Morse precision!

Fairbanks-Morse Home Appliances, Inc., 431 S. Green Street, Chicago, Ill.



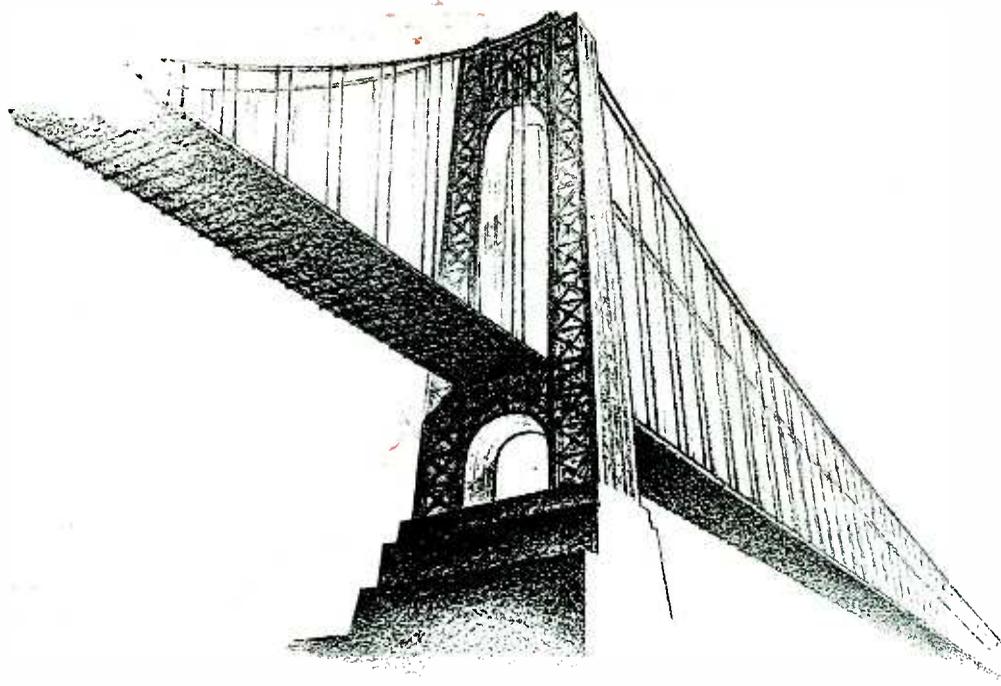
A Fairbanks-Morse Radio Receiver, representative of a complete line which dealers report as winning on competitive demonstration everywhere.



104 Years of
Quality Products

FAIRBANKS-MORSE

Home Appliances, INC.



FIRM FOUNDATIONS

● Even amid the shifting currents of recent business conditions, Hygrade Sylvania Corporation has upheld its reputation as a stable organization to do business with. In fact during this period our financial strength has increased consistently. For years, the credit rating of this company has never varied from the highest attainable.. AaA1!

Contributing largely to this continued success are the firm foundations upon which the company is built. There are no absentee owners in Hygrade Sylvania! The major portion of its stock is owned by the same men who actively manage the business. Their hands are always free to carry out progressive plans of greatest mutual benefit to their company and its associates.

The establishing of extensive research laboratories is an example of the result. In them, Sylvania engineers pioneered the development of that major tube improvement.. the 6.3 volt tube! Hygrade Sylvania is also contributing importantly to the development of radio transmission equipment!

Radio set manufacturers are invited to avail themselves of Sylvania's engineering and laboratory facilities in solving circuit and design problems. No obligation incurred.

Dealers and jobbers handling Sylvania Tubes are assured fair price policies, strong sales support and the backing of a reliable manufacturer. Hygrade Sylvania Corporation Emporium, Penna.



Sylvania

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



THE SET-TESTED RADIO TUBE

© 1933, H. S. C

LIQUIDATION SALE

of GRIGSBY-GRUNOW CO., INC.

makers
of

Majestic

RADIOS, TUBES REFRIGERATORS

by order of the
UNITED STATES
DISTRICT COURT

PURSUANT to an order of the United States District Court, the Trustee in Bankruptcy of the Grigsby-Grunow Company, Inc., offers for sale all of the machinery, equipment, inventory, good will, patents, trade marks and trade names of the Grigsby-Grunow Company, Inc., as well as real estate and buildings used in the manufacture of MAJESTIC radios, tubes and refrigerators.

The machinery consists of the very finest makes of all types of metal working and wood working machinery, also a completely equipped tube plant, enameling plant and plating plant, all of which are in immediate operating condition.

The inventory consists of made-up parts, parts in process and raw materials for radios, refrigerators and radio tubes. The Service Department on all three items has been kept intact.

The good will consists of the name "MAJESTIC" as applied to radios, refrigerators and tubes, which name has been extensively advertised throughout the world, and which name is secured by copyrights in practically every country in the world. The good will also includes many other names, trade names, patents and copyrights.

The real estate consists of factory buildings which have a floor area of approximately 950,000 square feet, and are suitable for almost any type of manufacturing.

The Trustee is authorized to sell at public or private sale, and is now prepared to receive offers for any part or parcels of the assets, which offer if satisfactory will be approved.

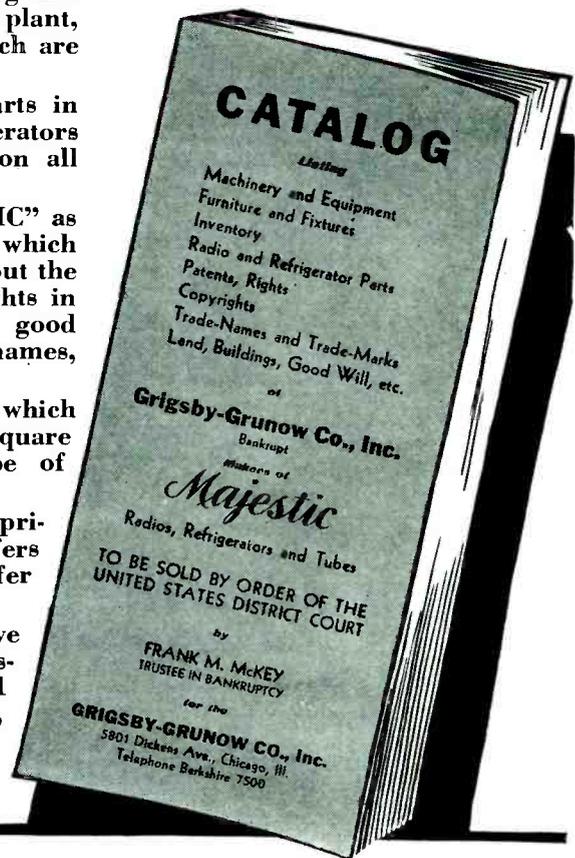
Full opportunity will be given to prospective buyers to inspect the assets. Competent salesmen will be in attendance at the plant, 5801 Dickens Avenue, Chicago, Illinois, at all times, and an early investigation of the property is solicited.

REFRIGERATION SERVICE DEPARTMENT

The Trustee, under order of the Court, has set up a Refrigeration Service Department, to maintain service and to sell service parts for refrigerators. This will maintain the name and prestige of "Majestic" before the public and be an asset of major importance to anyone buying the "good will" of the company.

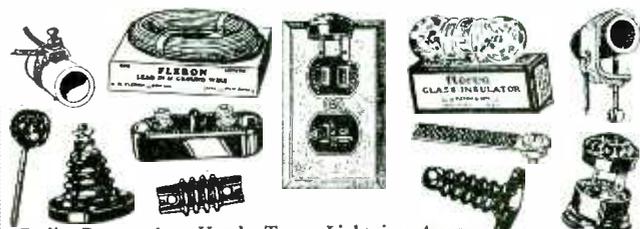
SERVICE PARTS FOR RADIOS

There is on hand a considerable quantity of service parts for radios which are staple merchandise and are being sold to the users of the millions of Majestic radios now in service.



A complete catalog, listing the assets to be sold, has been prepared and will be available to any prospective buyer on request to Mr. Frank M. McKey, Trustee in Bankruptcy, Grigsby-Grunow Company, Inc., 5801 Dickens Avenue, Chicago, Illinois.

FLERON AERIAL ACCESSORIES



Radio Receptacles; Handy Taps; Lightning Arresters; Aerial Outfits; Wire for Aerial Lead-In and Ground; Masts; Ground Clamps; Screw Eyes; Aerial Tighteners; All sizes Porcelain and Glass Insulators; Lead-In Strips; Auto Aerials and Aerial Eliminators; Short Wave and All Wave Aerial Outfits.
Complete Line from One Source. *Catalog R-655 free.*

M. M. FLERON & SON, INC. TRENTON, N. J.

YOU NEED THEM!

—they are designed for servicing the new *All-Wave and Wide-Range Receivers*

Model OC All-Wave R.F. Oscillator and Audio Frequency Signal Generator



Provides three signal outputs: 400 cycle modulated R.F., 400 cycle A.F., and unmodulated R.F. (that can be modulated from an external source such as records or calibrated audio oscillator, as C-B Model OB.)

Operates from any 110 V. A.C. or D.C. line. No battery expense. Heavy filter traps all feed-back through line.

Write today for full description or ask your jobber for demonstration. **CLOUGH-BRENGLE Model OC, net \$29.94**

- **ACCURACY**—50 k.c. to 30 m.c. covered continuously with 6 bands. Dial scale for each band is 25 inches long assuring easy, accurate reading. Each instrument supplied with hand calibrated chart, measuring 11"x17".
- **STABILITY**—Exclusive electron-coupled design eliminates frequency errors common to unstabilized designs.
- **THREE TUBES**—Separate audio, radio frequency, and rectifier tubes are used.

Model UE Volt-Ohm-Milliammeter
Low Price Rotary Selector Type

Eliminates time wasted fumbling with pin-tip jacks. Quick acting rotary selector switch connects every resistance, voltage, and current measuring range to test prods. Ranges are A.C. volts 0-15-150-750; D.C. volts 0-10-100-1000; D.C. m.a. 0-1-10-100 (and 10 amps. with external shunt); Ohms 2,000, 20,000, and 2 and 10 megs.; and three receiver output ranges with built-in blocking condenser. Large 3 1/2 in. meter. Net \$23.94



Vacuum Tube Voltmeter

Here is the most sensitive instrument ever offered in portable form for radio service work. The only sure means of locating shorted r.f. and a.f. coils, measuring r.f. and a.f. stage gain, and countless other voltage measurements for which the ordinary indicating instrument is not sufficiently sensitive. Reads down to .2 volt. Ranges are 0-5-20-100. Write for complete description.



FREE—Write for latest Catalogs!
The CLOUGH-BRENGLE Co.

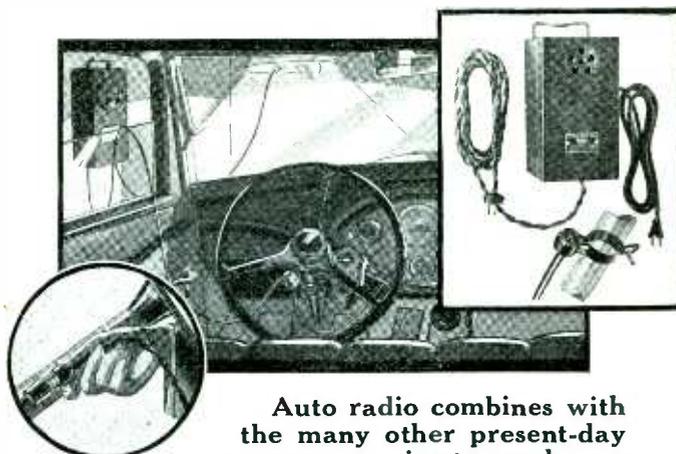
1130 W. Austin Ave., Chicago, Ill.

Please send at once complete catalogs describing the new CLOUGH-BRENGLE Professional Servicing Equipment.

Name

Address

**EVERY AUTO RADIO OWNER
IS A PROSPECT FOR
. . . . A G-E TUNGAR
HOME CHARGER**



Auto radio combines with the many other present-day car accessories to produce a powerful drain on batteries.

In most cases your customers blame battery trouble entirely on their auto radio . . . the last item they purchased. Complaints naturally result. If you explain to them, however, that auto radio is not the entire cause of run-down batteries, but only one of many contributing factors, you can easily convince them of the need for a G-E Tungar Home Charger. Lists complete with wiring accessories at only \$12.95. (Prices slightly higher, West of Rockies.)

The new G-E Tungar, 5-amp., Home Battery Charger not only assures perfect radio reception and proper functioning of every car accessory, but also comes in mighty handy in the winter months when zero weather takes its toll of undercharged batteries.

Every auto radio owner is a hot prospect. Convince your customers of the need for a home charger and you will turn complaints into profitable sales.

For complete information, see your nearest G-E Merchandise Distributor, or mail the coupon.

Section A-3610, Merchandise Department,
General Electric Co., Bridgeport, Conn.

Please send me complete information on the new 5-amp. Mercury Tungar.

Name.....

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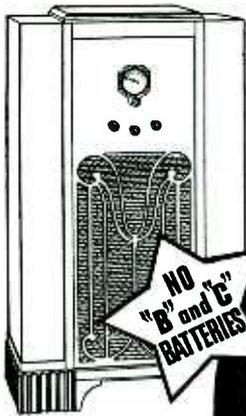
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GENERAL ELECTRIC

AUTOMOTIVE PRODUCTS

**MERCHANDISE DEPARTMENT,
GENERAL ELECTRIC COMPANY,
BRIDGEPORT, CONNECTICUT**

RADIOS BIGGEST SENSATION!



NO "B" & "C" BATTERIES

L. TATRO 6 VOLT RADIO

Operates entirely from 6-volt storage battery. High efficiency—low current consumption—UNBELIEVABLE ECONOMY!

The ideal radio for all homes without electricity. Actual operating cost less than 10c a day!

The Sales Opportunity of the Year

Write or wire for full details of this revolutionary new Radio—it's the profit opportunity of a lifetime! Full details will be promptly sent to you.

L. TATRO PRODUCTS CORPORATION
DECORAH—IOWA

Manufacturers of L. Tatro 32-Volt Farm Light Plant Radio 65-A

Yours and Ours

THE reputation of our dealers, as well as our own, must be upheld by Ken-Rad Radio Tubes. Finest materials, expert workmanship and a sound selling policy, assure both you and us highest prestige. Consumer confidence and increased profits are the result. Find out more about Ken-Rad by sending for complete dealer proposition.



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

Janette Dynamotor Type "Double-Mound" Rotary Converters are the choice of discriminating users for their quiet operation.

Compact design and sustained performance equalling central station A.C. supply.

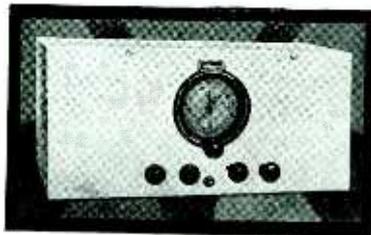
Equipped with special Janette filter and possess every good feature recommended and required by leading radio manufacturers. In 15 sizes. Capacities from 20 to 2500 watts. Input voltages of 6, 12, 32, 155 or 230 volts. Write for Bulletin 1133 C.

Janette Gas Engine Driven Generating Sets



the ideal unit for operation of radios, amplifiers, sound truck equipment, public address systems, etc. 300 to 5000 watts.

JANETTE MFG. COMPANY
556-58 West Monroe St., Chicago, Illinois



McMURDO-SILVER

NOW YOU CAN DEMONSTRATE FOREIGN RECEPTION IN YOUR OWN STORE!

McMurdo-Silver Radios have a world-wide reputation as the finest custom-built receivers that can be made. MASTERPIECE II is the official radio on the Byrd Antarctic Expedition. But you should tune the MASTERPIECE III! It is the ultimate. A magnificent receiver that YOU can now retail.

McMurdo-Silver Radios are featured RIGHT NOW in advertisements in SATURDAY EVENING POST, GOOD HOUSEKEEPING, WOMAN'S HOME COMPANION, NATIONAL GEOGRAPHIC, PRINCIPAL RADIO MAGAZINES, and 99 NEWSPAPERS!

WRITE IMMEDIATELY FOR FULL DETAILS.

McMURDO-SILVER RADIO

3352 N. PAULINA STREET, CHICAGO, ILL. U.S.A.



Go to town!

WITH

SPARTON

"Radio's Richest Voice" Perfected World-Reception

Sparton offers you a *profit line* for the coming radio season. New models are being enthusiastically received by dealers all over the country. They present all-wave and world-reception radio at its best—marvelously clear and distinct. They offer your customers the most advanced engineering, the most careful construction, the handsomest cabinet-work, in a range of models to suit every pocket-book.

"Go to town" with Sparton! Make money with Sparton, twelve months out of twelve—pushing Sparton Radio, Sparton Tubes and the new Sparton Electric Refrigerators, completing a year-round line of popular, profitable merchandise. Mail the coupon below for information about this opportunity in your territory.

THE SPARKS-WITHINGTON COMPANY, Jackson, Mich., U. S. A.
(Established 1900) SPARTON OF CANADA, Limited, London, Ontario

Prices F. O. B. Jackson, Michigan—Slightly higher west of Denver



Model 104—All-Wave World Reception. 4 bands. 10-tube superheterodyne. Viso-Glo tuning. Range from 540 K. C. to 20 Megacycles. \$159.50



Model 65—AC-DC. All-World Reception. 2 bands. 6-tube superheterodyne. 540 to 1600 K.C. and from 19 to 55 meters. \$39.95



Model 67—All-World Reception. 2 bands. 6-tube superheterodyne. Range from 540 to 1600 K. C. and 19 to 55 meters. \$57.50



Model 53—AC-DC. 5-tube superheterodyne. 540 to 1600 K. C. Police calls. Automatic volume control. \$24.95



Model 83—All-Wave World Reception. 4 bands. 8-tube superheterodyne. Viso-Glo tuning. Range from 540 K. C. to 20 Megacycles. \$124.50



Model 464—Baked lacquer on rust-proof steel; stain-proof porcelain interior. 8.5 sq. ft. shelf area. 42 ice cubes. \$127.50. (5 other models to \$438.50.)

MAIL THIS COUPON TODAY

THE SPARKS-WITHINGTON COMPANY
Jackson, Michigan, U. S. A.

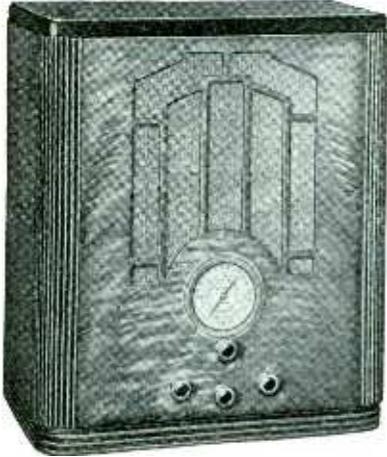
Please send full information about Sparton Radios for 1935. A-9

Name

Address

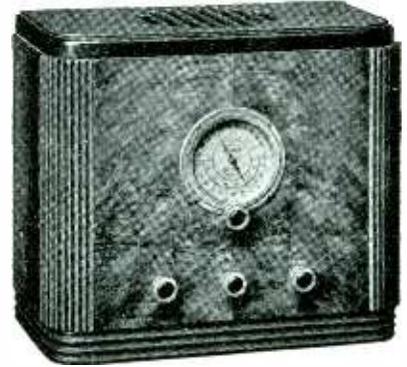
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Cash in on HI-FIDELITY DeWald's Great New Contribution to Sound-reproduction by Radio



HI-FIDELITY, A.C. All-Wave, 8-tube receiver, covering domestic, foreign, police, aeroplane and amateur channels—illuminated four band aeroplane dial—540 K.C. to 23 meg. cycles—full automatic volume control on all bands—full range variable tone modulator—Class A prime audio amplification—Preselector R.F. stage—hand rubbed piano finish American walnut. Table Model 802A—Console Model 802C.

The DeWald line for 1935, features Hi-Fidelity, all-wave sets. It is the most complete line we have ever offered, embracing a full range of new models from our four-tube compact to an eight-tube Hi-Fidelity, All-Wave Receiver. All models are popularly priced for real sales volume. Several choice territories are still open for live jobbers. Write for details and prices.



ALL-WAVE covering broadcast, police, amateur, aeroplane and foreign channels—540 K.C. to 18.5 Meg.—illuminated 3 band aeroplane dial—variable tone modulator—anti-blast tuning—duo-toned walnut cabinet.

PIERCE-AIRO, Inc.

520 Sixth Avenue, New York

MAKERS OF FINE RADIO RECEIVERS SINCE 1921
Not connected with the Pierce Arrow Motor Car Co.

Model 600A—Universal
A.C.-D.C. 6-tube
Model 503A—A.C. 5-tube

DEWALD RADIO

Manufacturers —You Have a Foreign Market

You probably know your market here in the United States. And most likely you have a good idea of how to sell that market.

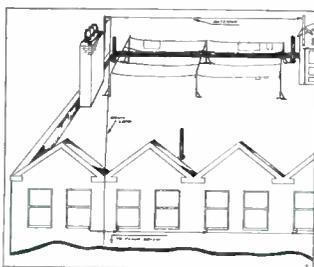
But every manufacturer has another market that he forgets about. It's his market in foreign countries. And because he is in doubt as to how to sell the market outside the United States he does nothing about it.

He forgets that his biggest selling aid is all ready to go to work for him. Whether he has foreign agents or not, he can carry word of his products into far places.

Manufacturers with a product that is bought here in the United States can sell that product to foreign buyers too, and at no additional cost. Every advertisement appearing in *Radio Retailing* goes to 993 subscribers outside the country. No wonder that present advertisers report frequent inquiries from the British Isles and France, Germany and Japan—but what's the use of starting to name countries! *Radio Retailing* is read—and its products are bought—in practically every important country in the world.

Harness this buying power to your selling operations. Advertise your product in *Radio Retailing* and have our foreign readers and your potential buyers learn of your product and its advantages. Radio Retailing Advertising Dept., 330 West 42nd Street, New York.

TACO—the pioneer manufacturer of the famous H.F. All-Wave Antenna System—Announces

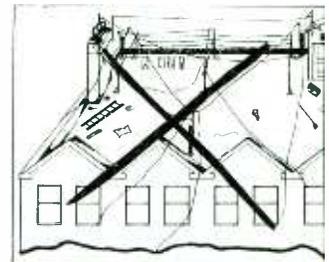


(Licensed A.A.K. Inc.)

the TACO MULTIPLE RADIO OUTLET ALL-WAVE ANTENNA KIT SYSTEM

... a single antenna to serve many sets ... efficient ... easy to install.

Does away with this
atrocious which has
existed since radio
began . . .



Write for details of
the Complete Taco Line

TECHNICAL
APPLIANCE TECHNICAL APPLIANCE CORP.
27-26 Jackson Ave.
Long Island City, N. Y.

SEARCHLIGHT SECTION

REPRESENTATIVES WANTED

High Quality Radio Replacement Parts
Sales representatives wanted. We have some desirable territories now open for representatives on our line, consisting of volume controls, carbon and wire-wound resistors and condensers. In reply state territory covered and lines now handling. RW-191, Radio Retailing, 330 West 42d St., New York City.

WANTED

Radio Manufacturers

Required for export to all foreign countries under our own trade name a first class Super-heterodyne All-Wave Receiving Set (6-tube tuned R.F.) H. M. Hein, Attention: Edgar Cardoze, 162 W. 42d St., New York.

WANTED

Five High-Grade Men

A prominent manufacturer of two of the leading major appliances in the country will entertain the application of five high-grade men familiar with the Middle-West, Great Lakes, or New England Territories. Salary is no object if your experience covers dealer as well as distributor contact work and a thorough knowledge of the specialty selling field and its requirements. The opportunity offered is unusual and only men with outstanding proven performance records are invited to apply. Address this publication.

SW-192, Radio Retailing
520 No. Michigan Ave., Chicago, Illinois

WANTED

To Represent American Products In France

American established in France as importer of Radio Sets and Parts, desires to handle products of reliable American manufacturer.

Write to:

Michigan Radio, 1 Quai Carnot, St. Cloud, France

Agents Wanted

MOTION PICTURE SOUND

Most fascinating field awaits live Radio service men—quick, sure profits.

Ask For Free Catalogs

S.O.S. CORPORATION

1600 Broadway New York, N. Y.
Cable address "SOSOUND" New York

Genuine Grebe Parts

Since operations ceased at the Grebe Factory almost two years ago, we, the former employees and Factory Manager, have successfully carried on the Service Department of A. H. Grebe & Co., Inc., which was purchased by us in its entirety, including test equipment.

We manufacture and furnish only genuine Grebe parts made in strict accordance with the original specifications.

We suggest that you use only genuine Grebe Parts in the servicing of these sets in order to maintain the original quality and performance for which they were noted.

Write for Price List

Grebe Radio Sales & Service Co.
137-28 Jamaica Ave., Jamaica, N. Y.

Owner and former General Factory Manager 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

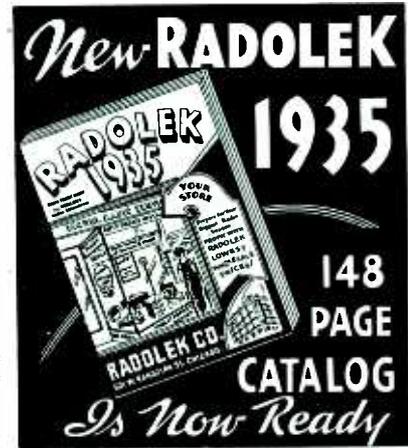
Power Packs and Speakers Repaired

GRANT RADIO LABORATORIES

6521-B South Halsted St., Chicago, Ill.

FREE EQUIPMENT

Every plumber's helper and his brother are exploiting radio service as a spare time foot-ball. This unfair competition is ruining your profits and success. A CHUCKKER is your only weapon against these guess-work-mechanics! Yet, it costs only \$1.00 postpaid. Mail a postal card NOW requesting free details on how you might secure genuine Weston Test Equipment FREE for answering one simple question!
WESTON
FREED'S RADIO CO., Dept. E.
5053 Baltimore Ave., Philadelphia, Pa.



Know What You Are Buying

● Radolek's 1935 Radio Profit Guide accurately describes every piece of merchandise required in Radio Service.

● Radolek's Engineering Staff examines every new item! These technicians write the descriptions published in the Radolek Profit Guide. When you choose merchandise from this big catalog, you are assured of reading an accurate description of what the item consists and what purpose it serves!

● Lowest Prices! Our Engineers compare Radolek's merchandise with competition. Our prices are determined by comparative quality and are equal to or lower than any similar quality offered by any other Distributor of fresh new merchandise. If prices are reduced on any items after you receive the Radolek Profit Guide, you will always receive the benefit of these new lower prices.

● Radolek protects your interests by restricting distribution of the Radolek Profit Guide to active and legitimate Radio accounts. Full co-operation is extended to Radio Dealers and Service Associations to restrict wholesale prices to the Trade only.

Secure Greater Radio Profits! Send for your copy of the 1935 Radio Profit Guide!

The RADOLEK Co.
Dept. 618 West Randolph St.
Chicago, Illinois.



The LARGEST and LATEST RADIO and REFRIGERATION CATALOG

Our new catalog now available, is the largest and most complete ever published by any radio house. It contains 192 pages, including special sections devoted to Refrigerator Replacement Parts, Short Wave Parts and Kits, Christmas Merchandise, Public Address Equipment, etc., in addition to the regular sections on Lafayette sets, radio replacement parts, tubes, hardware, tools, etc.

Thousands of items clearly illustrated and fully described—all at prices that leave a generous margin of profit for the dealer. Full of new ideas, also, to help you do more business and make more money.

Act quickly to be sure of getting your full share of new fall and winter business. Fill out the coupon and mail it in today.

Again we show the way to a new profit field!

Always the leader in its field, "Wholesale" is now first to offer a complete line of replacement parts for all standard types of electric refrigerators. Think what it will mean to be first in your town to have this line and secure this profitable new business. Complete information in the new 192-page catalog.

Wholesale Radio Service Company, Inc.
100 Sixth Avenue, Dept. T-104
New York, N. Y.

Please send me, free of charge, your new 192-page Catalog of up-to-date merchandise and new selling ideas.

Name

Street and number

Town or City

State

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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.

SERVICE MEN SAY —

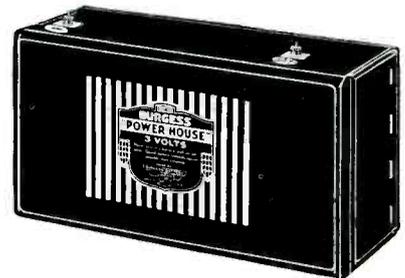


YOU DON'T HAVE TO "BABY" BURGESS BATTERIES

You Can Use Them 7 or 8 Hours a Day and Get FULL Service!

It is no longer necessary to use battery operated sets only a few hours a day to get full service from your batteries. BURGESS engineers have proved—by many tests in our laboratory and in actual use—that you can operate a set equipped with BURGESS Batteries seven or eight hours a day and get the same number of hours of service!* You don't have to "baby" BURGESS Batteries. They are built to stand the gaff!

Dependable DRY "A" Power at Less than 1¢ an Hour!



Distinctly a BURGESS development, the POWER HOUSE is a 100% DRY "A" battery designed for use with 2-volt sets. It costs only \$3.20 and delivers 400 hours of dependable service. It is compact, weighs only 14 lbs., requires no attention, is not affected by weather. The POWER HOUSE will deliver every hour of service we've built into it even when used for long periods each day.

World-Famous BURGESS "B" and "C" Batteries

BURGESS Batteries have been taken to the North and South Poles and all around the world by explorers who would have only batteries built to "take it" hour after hour without any decrease in the total hours of service delivered. Recommend BURGESS Batteries, and as owners of battery operated sets enjoy more programs per day they will thank you. BURGESS BATTERY COMPANY, Freeport, Ill.



* Economical operation of 7 to 8 hours a day depends, of course, on the set being powered by batteries of the proper capacity.

BURGESS

BATTERIES AND FLASHLIGHTS

The ~~CROSLEY~~ Line Moves Forward

... again establishing new standards of quality, performance and beauty yet, according to ~~CROSLEY~~ policy ... priced within the reach of all ...



The FIVER

A history-making radio receiver, improved and perfected, and a greater value than ever. Superheterodyne, full floating, moving coil electro-dynamic speaker, beautiful cabinet, one dual purpose tube making it the equivalent of a 6-tube set. It covers the entire band of American broadcasting and top police band. Excellent tone. Highly sensitive. Where can you match it for only.....

\$19⁹⁹ COMPLETE

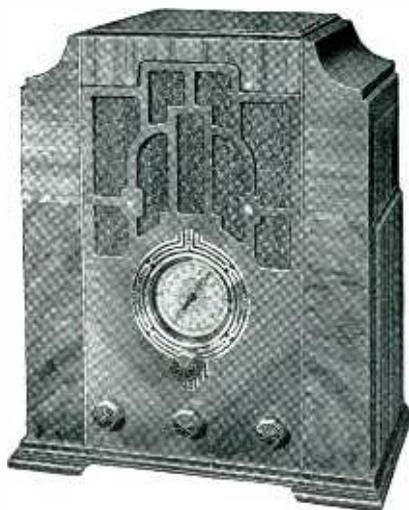
THE three Crosley models shown here are merely examples of the outstanding quality, performance, beauty and value to be found in the Crosley line—from the history-making FIVER at only \$19.99 to a magnificent all-wave console for less than one hundred dollars.



The DUAL FIVER DeLuxe

A 5-tube receiver having the performance of a 7-tube. Three gang condenser, automatic volume control (steady volume on distant stations), new and beautiful cabinet. A startling value in a long range, sensitive, beautifully toned receiver. Dual range for American broadcasts—all police calls, aviation and amateur reception.....

\$29⁹⁵ COMPLETE



The SIXTY-ONE A.F.

AMERICAN and FOREIGN Reception
Another smashing leader—a 6-tube American and Foreign receiver at only \$39.95—the most startling radio announcement of the year. Covers standard band from 540 to 1750 Kc., short wave band from 5700 to 15,500 Kc. Gorgeous cabinet, illuminated airplane type dial—30 to 1 high ratio drive, continuous tone control, automatic volume control, three gang tuning condenser, full floating moving coil electro-dynamic speaker. Two dual purpose tubes provide 8-tube efficiency

\$39⁹⁵ COMPLETE

THE Crosley line is replete with outstanding values and at prices within the reach of all—performance for every need. A. C.—D. C. and STANDARD BROADCAST models range in price from only \$19.99 to \$33.00, complete with tubes. DUAL RANGE models for all American broadcasts, including police, aviation and amateur reception, are priced from \$29.95 to \$17.50 in both table and console models, complete with tubes. Models for AMERICAN and FOREIGN reception, in table and console models, are priced as low as \$39.95 and up to \$79.50, complete with tubes. An ALL-WAVE chassis is incorporated in a table model at the low price of \$79.50 and in a gorgeous console at only \$99.50, complete with tubes.

YOU are strongly urged to study carefully the values of the radio receivers which compose the Crosley line—compare them with all other makes. Set for set, performance for performance, beauty for beauty, dollar for dollar, Crosley challenges the field. Don't judge these receivers by outward beauty alone—look at them from every angle, inside and out. Compare them point for point, tube for tube, value for value, and you will readily realize why it is that no dealer can afford NOT to handle Crosley. The line is exceptionally complete—from a five-tube set having six-tube performance and priced at only \$19.99, complete, up to a gorgeous all-wave console priced under one hundred dollars. Don't fail to get in touch with your Crosley distributor at once

Montana, Wyoming, Colorado, New Mexico and west, prices slightly higher.

THE CROSLEY RADIO CORPORATION

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

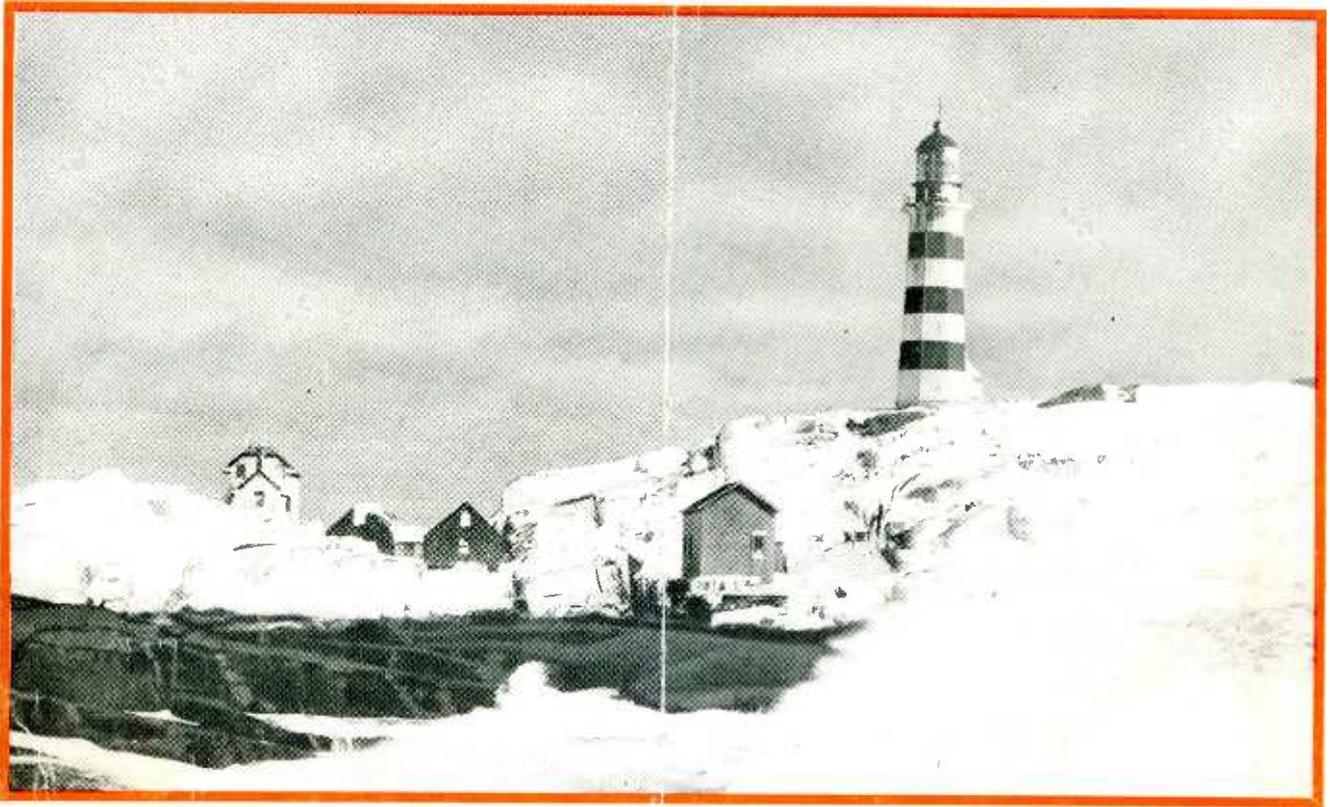
POWEL CROSLEY, Jr., President

CINCINNATI

WHATEVER HAPPENS... YOU'RE THERE WITH A CROSLEY

~~CROSLEY~~ RADIO

Exiled...miles off Nova Scotia's lonely coast



— yet the world is his at the turn of a dial

WILLIAM J. FAULKNER is a "man without a neighbor." Like his father and his father's father, You'll also find him in the police

Old set owners are being changed into new G-E buyers by such dramatic advertisements as this

TELL a woman about a cosmetic that will make her look 10 years younger . . . a man about a golf club that will cut five strokes off his score— And cash registers start ringing!

Because nothing stimulates sales better than a genuine desire to buy.

In the radio world today, General Electric is arousing such a desire with national advertising that is different . . . arresting . . . thrilling.

These advertisements "stop" magazine readers . . . convince them that their present sets are obsolete . . . make their fingers itch to turn an all-wave dial.

In their ability to reach out and get foreign stations, the new G-E All-wave sets are just as dramatic as the advertising behind them.

Also—they are sweet to listen to . . . good to look upon . . . and bear price tags that appeal to all purses, lean or fat.

So, of course, the new G-E line is moving fast these days . . . as G-E Dealers everywhere watch the sales curve climb.

For full particulars, see your General Electric Distributor. Or write General Electric Co., Section R-3610, Mdse. Dept., Bridgeport, Conn.

and South. See your nearest G-E Radio Dealer or write the General Electric Company, Section R-4911, Mdse. Dept., Bridgeport, Conn.

Latin-American series, scores of foreign stations.



MODEL M-106—A new General Electric All-wave console. Priced at \$149.50. Other international receivers as low as \$39.95. Prices subject to change without notice.

BORN OF THE PIONEERING ACHIEVEMENTS OF THE FAMOUS "HOUSE OF MAGIC"

GENERAL  ELECTRIC RADIO

