RADIO

JULY 1930

★

Just as was expected—
Clarion proved itself 1930's RADIO STAR at the Big Show in Atlantic City

★

SEE NEXT PAGE

Clarion

THE GREATEST RADIO VALUE AT ANY PRICE

Clarion

proved itself the RADIO STAR of 1930 at the R. M. A. Show at Atlantic City

There is no longer any question about the success of Clarion. Clarion proved itself to be the sensation of the show. Thousands of radio dealers registered at the T. C. A. booth and pronounced Clarion Radio easily the leading set of the season . . . Ask the dealer or distributor who was there! . . . If you did not receive a Clarion Souvenir, mail the coupon.

TRANSFORMER CORPORATION OF AMERICA

2309 South Keeler Avenue, Chicago

Licensed under R. C. A. and Associated Company Patents; Member R. M. A.

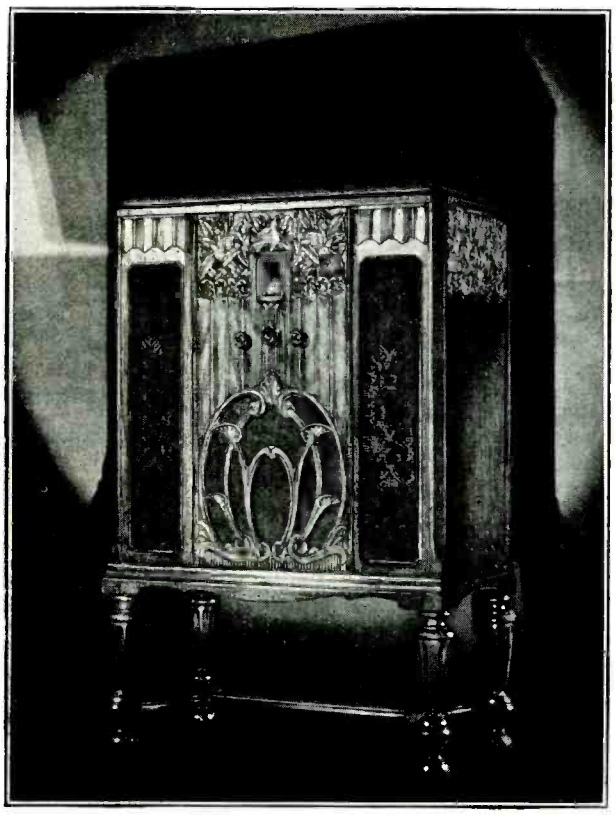
At the Pacific Coast Radio Trade Show in San Francisco, June 30 to July 2, Clarion Radio will be exhibited in Booth 4-G and in Demonstration Room 515, William Taylor Hotel.

Clarion

THE GREATEST RADIO VALUE AT ANY PRICE

TRANSFORMER CORPORATION OF AMERICA
2313 South Keeler Avenue, Chicago
Please send me my Clarion Souvenir and complete information about Clarion Radio.
Name____ Firm____ City____ State____

"RADIO," July, 1930. Vol. XII, No. 7. Published monthly by Pacific Radio Pub. Co., Pacific Bldg., San Francisco, Calif. $2.00 per year. 25 cents per copy. Entered as second-class matter at Post Office at San Francisco, Calif., under the Act of March 3, 1879.



Model 36, less tubes $208
Other Models to $317

The highest note in radio achievement

YOUR best customers look to you for an understanding of their keener musical appreciation, and of their instinctive taste concerning enduring beauty in furniture.

They are the people who will recognize faultless achievement in Radio by Story & Clark.

They are the people who *know* what to expect of a house that has built fine musical instruments since 1857.

This profitable opportunity should be recognized by you.

An inquiry to us will make the contact.

Details of the Story & Clark merchandising plan will be sent to those interested.

Built Complete in the Story & Clark Factories

THE STORY & CLARK RADIO CORPORATION
173 N. Michigan Avenue, Chicago

✣ ✣

Manufactured under STORY & CLARK *owned Patents and Patents Pending*

Licensed under R.C.A. and Affiliated Companies, Charter Member R.M.A.

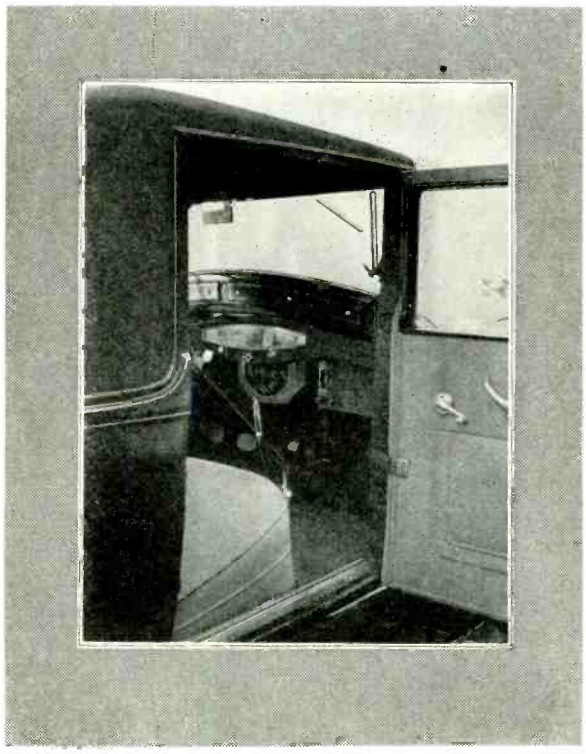
RADIO

by STORY & CLARK

SINCE 1857

The Low-Down on Auto-Sets

Get More Programs



With Greater Ease

The radio that will deliver results in the motor car, and keep on delivering them after the novelty wears off—the Auto-Set that a dealer can really build a business on—is just a very *special type* of battery-operated screen-grid receiver, but it's *Silver-Marshall-made.*

If you know screen-grid history, you know that Silver-Marshall has dominated the field of battery-operated screen-grid sets since their first appearance late in 1927—by sheer force of superior performance and reliability.

Automobile radio is not, with SILVER-MARSHALL, a "new fad"—it's just another application of the extra-rugged screen-grid construction which has become "second nature" to SILVER-MARSHALL engineers.

No wonder the S-M 770 Auto-Set spins rings around all competition in actual demonstration.

Get the low-down on motor-car radio—straight from the laboratory that pioneered this field of design.

If you are a dealer, pin the coupon to your letterhead, and you will receive the whole story promptly.

The S-M 770 Auto-Set has every feature that makes for profit to the dealer: extreme *sensitivity; three screen-grid tubes;* '71A second-audio stage for console-model *wallop;* screen-grid power detection; positive *direct tuning*—no dubious flexible shafts; mounted under the cowl without cutting up the dash; highly accessible; *vibration-proof;* resistance-coupled detector and special speaker giving *fidelity* fully equal to modern full size receivers.

770 Auto-Set only, RCA-licensed; list $79.50. (Tubes required, 3-'24, 1-'12A, 1-'71A.)

771 Auto-Set Accessories, including all installation equipment but batteries, tubes and speaker; list $17.50.

870 Automotive Magnetic Speaker (9½" wide by 3" deep); list $15.00.

SILVER-MARSHALL, Inc.
6415 W. 65th Street, Chicago, U. S. A.

Send at once a full description of Silver-Marshall 770 Auto-Set and full information on installing it (dealer proposition is for legitimate dealers only—inclose letterhead).

Name.....

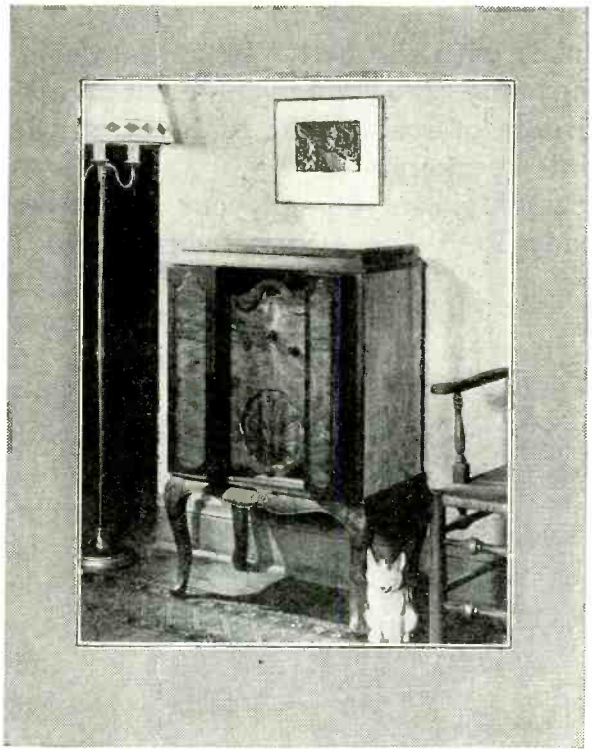
Address.....

SILVER-MARSHALL

SM Auto-Set

SILVER-MARSHALL
RADIO EXTRAORDINARY

Complete Console Receivers



it sells

four others were on trial—the customer purchased the SILVER!

and it stays

"Lightning burnt off the aerial"—but the SILVER RADIO stood up!

"I do not hesitate to say that the SILVER has made some wonderful reception demonstrations, and the customers whom I have sold are well pleased. I might also add that I made a demonstration in a home where four other popular receivers were on trial. I did not know at the time I was making the appointment for the demonstration that all of these other sets were there on trial. Nevertheless the customer purchased the SILVER."

—From a Southern dealer
(Name on request)

"I do not know whether this will concern you or not—I thought maybe you would like to know what your SILVER RADIO will stand . . . I have a model 60, and Thursday night it got a real heavy bolt of lightning; to my surprise, the next night on testing out the parts, I found nothing burned out except the switch, one screen-grid tube fuse, and the little coil between aerial and ground. The aerial, however, was burned off about every two or three feet. Pretty good radio, I would say, to stand what it did!"

—F. W. Dowser
3230 Ontario Ave., Niagara Falls, N. Y

SILVER-MARSHALL complete console receivers—sold only through exclusive distributors to franchised dealers—enter their second year with an enviable record. Dealers who have sold them are coming more and more to divide customers into two classes: those who take away a cheap set and forget where they bought it until trouble develops—and those who are wise enough to buy a SILVER and who become in consequence lasting boosters for the store from which they got it.

SILVER-MARSHALL prices are as low as prices can be for radios of the kind that build dealer reputations—the Princess is only $135, and the Queen Anne Seven (illustrated) only $160—others up to $225. But *each sale makes a booster.* And SILVER-MARSHALL advertising is concentrated on just one goal: to send the customer into your store, in a mood to be sold. Ask your distributor for the startling new SILVER-MARSHALL story!

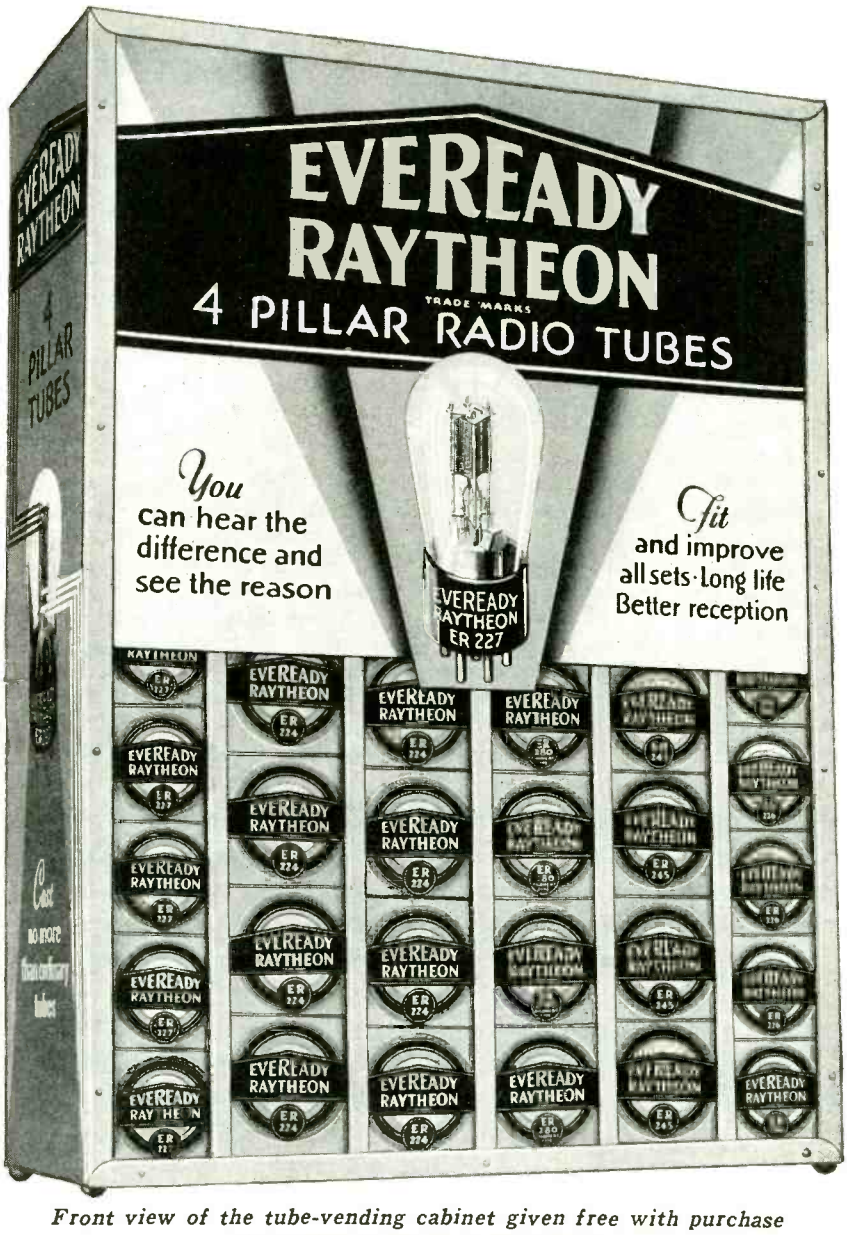
SILVER-MARSHALL, INCORPORATED
6415 West 65th Street Chicago, U. S. A.

WHAT MODERN RADIOS NEED IS WHAT EVEREADY RAYTHEONS HAVE ...4-PILLAR STRENGTH AND RIGIDITY!

MODERN RADIOS need tubes with the better structural design of Eveready Raytheons. Tubes protected against the bumps and jolts of shipment . . . always able to bring out every shade of tone, every final note of realism the radio-set can deliver. And immune to the racking vibration of dynamic speakers!

With Eveready Raytheons only, can you sell your customers such matchless tube-performance. For the Eveready Raytheon 4-*Pillar construction* (a *sound* improvement) is patented . . . no other tube can use it!

That's one angle . . . here's another: With Eveready Raytheons, you get all kinds of sales helps. There is a special introductory sales plan. With the K-11 assortment you get this beautiful all-metal, tube-vending cabinet (as illustrated on this page) *free.* $5 value, without cost! There are also counter and window displays, a wall-chart, and *advertising,* by National Carbon Company, Inc., with all of its resources and experience behind Eveready Raytheons! Ask your jobber, or write our nearest branch for details.



Front view of the tube-vending cabinet given free with purchase of 45 tubes in the K-11 *assortment.*

* * *

The Eveready Hour, radio's oldest commercial feature, is broadcast every Tuesday evening at nine (New York daylight saving time) from WEAF over a nation-wide N. B. C. network of 30 stations.

NATIONAL CARBON CO., INC.
General Offices: New York, N. Y.
Branches: Chicago Kansas City New York San Francisco
Unit of Union Carbide UCC *and Carbon Corporation*

EVEREADY RAYTHEON
Trade-marks

Selectivity

Now is the time for the radio dealer to plan his sales campaign for the coming season of good business. The first step in the campaign is the selection of the models which are most likely to appeal to his customers. In making this selection the dealer should be governed largely by the same factors as will cause his customers to buy. When ordering, he should figuratively place himself in the shoes of the man to whom he will later sell. He should be influenced by much the same points of excellence as will influence the user of the equipment.

These points of excellence are few and simple: How selective and sensitive is the instrument? What is its fidelity of tone reproduction? How about its convenience of operation and beauty of appearance? And last, but not least, how much does it cost? That product is most saleable which possesses the highest degree of these several points of excellence at the lowest price.

But fully as important as these physical points of excellence are the policies of the firms who make and distribute the sets. Just as these firms are selective in their choice of dealers, so should the dealer be selective in his choice of the firms with which he is to do business. He should look for the same energetic sales ability, the same degree of financial stability and integrity, and the same spirit of coöperation as he is expected to display. Then, and then only, can he look forward to the coming radio season with confidence.

Thus selectivity may be considered as the keynote of success, not only in the instrument itself, but also in the choice of those who make and sell it. Nor is it a bad idea to extend this principle of selectivity to those to whom the radio is sold. Radio needs selectivity.

RADIO

Established 1917 — Reg. U. S. Pat. Office

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BRANCH OFFICES—

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CHICAGO: 307 North Michigan Avenue, Phone State 6079
BOSTON, MASS.: 86 St. Botolph Street, Phone Commonwealth 4873

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CONTENTS
for July, 1930

A Suggestion to the Reader:

After reading this July number of RADIO give it to some one else in the trade who might be interested in it. Even if he is your competitor, remember that the safest competitor is an educated one. RADIO is teaching better sales and service methods. But if you want to keep this number yourself, send the name of the man whom you think it would help and the publishers will send him a free sample copy.

There's *Money* in Selling Sound

Every park, bathing beach, swimming pool, fair grounds, theater, church, hall and every place, outdoor and indoor, where people congregate, is the livest kind of prospect for the sale of sound equipment. Sell Wright-DeCoster Sound Equipment and build up a reputation for yourself as selling the best.

Wright-DeCoster Reproducers Endorsed by White City

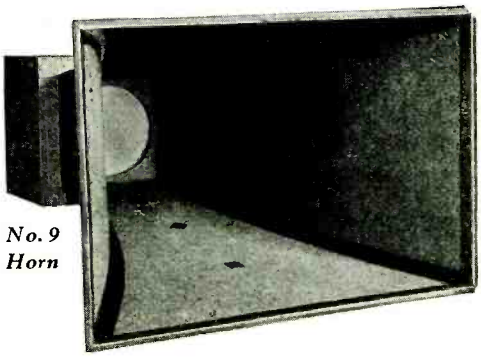
Chicago's Greatest Amusement Park

Herbert A. Byfield, President and General Manager of White City writes, "It was only after complete investigation of various products that your speakers were selected as key-units in our installation. It is a thoroughly satisfactory product and one that you may be justly proud of."

Hundreds of letters from the Nation's famous outdoor and indoor amusement centers speak most eloquently of Wright-DeCoster superiority.

Wright-DeCoster Reproducers

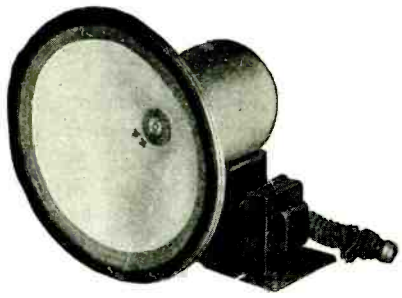
There is a limited amount of sales territory still open. Cash in on your opportunity of selling sound right at the height of its popularity.



No. 9 Horn

Wright DeCoster Inc.

Write for Full Information and Address of Nearest Sales Office



The Speaker of the Year

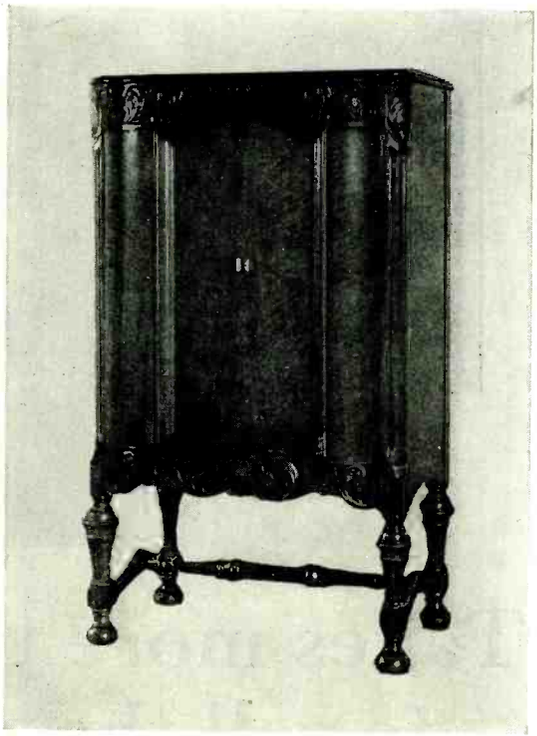
WRIGHT-DECOSTER INC., 2217 University Ave., St. Paul, Minn.

Export Department: M. SIMONS & SON CO., 25 Warren Street, New York City *Cable Address:* "SIMONTRICE," New York

SHOWMANSHIP *is part of* SALESMANSHIP

★

and what a show you can put on with the new Fadas



★ The New Fada 44—Sliding Door Lowboy, $188 without tubes

PROTECTED Tone might well be the slogan of the new Fadas. Unable to improve the close-to-perfection of Fada's famous tone, we have surrounded it this year with devices that guard it against static, and fading, and interference... and that make its sure reception more effortless than ever before in radio history.

Doing so, we have provided Fada dealers with an instrument that puts on a startling performance before a prospect... and satisfies the instinct for showmanship that lies deep in every good salesman.

Enter Mrs. Prospect, roving eye caught at once by the distinguished appearance of the new Fadas. Warmed by their rare beauty, she lends a favorable ear to the demonstration you now put on. You turn the dial, and tune in station after station from near and far, announced by name in the lighted window of the Flashograph. Each station performs at the same agreeable volume, without touching the volume control. There is no suggestion of fading; nor any outrageous blast of deafening sound as strong station follows weak. With a flip of the noise filter switch, you pounce upon and subdue a wave of static that threatens to spoil the show. And meanwhile, the utterly lovely, completely satisfying Fada tone has been charming her ears, protected and made more easily receivable than ever before by ingenious Fada circuits always and automatically on the job.

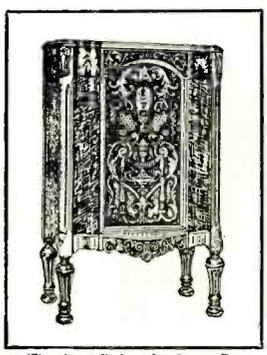
★

Selling is partly showmanship; demonstration is the crisis of a sale. Fada dealers will find the new Fadas the most responsive, most versatile, most dramatic radios of the year...with sale following demonstration almost as night the day.

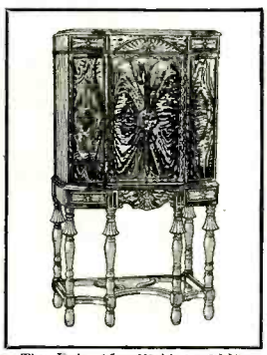
Ask us about a Fada franchise. Invite us to tell you the whole Fada story of product and plans. By all the signs... and there are plenty... this is smashingly a Fada year.

ONLY THE NEW FADAS HAVE *ALL* THESE FEATURES

- ★ FLASHOGRAPH
- ★ AUTOMATIC VOLUME CONTROL
- ★ NOISE FILTER
- ★ PRE-SELECTOR TUNING
- ★ TWO-ELEMENT DETECTOR
- ★ LOCAL DISTANCE SWITCH
- ★ HUMLESS OPERATION
- ★ REMOTE CONTROL SHAFT
- ★ PHONOGRAPH CONNECTION
- ★ NINE TUBES, 3 SCREEN GRID



★ The New Fada 42—Open Face Lowboy, $159 without tubes



★ The Fada 46—Highboy, $228 without tubes

OTHER NEW FADA MODELS

★ The New Fada 41—Highboy, $218 without tubes
★ The New Fada 47—Radio-Phonograph Combination, $328 without tubes

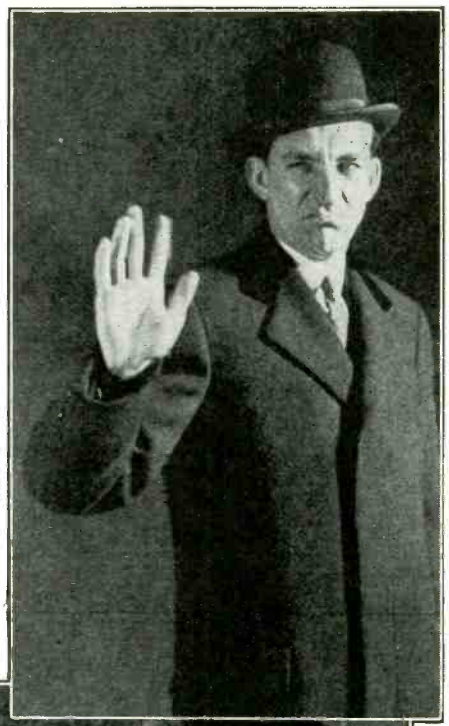
F. A. D. ANDREA, INC., LONG ISLAND CITY, N. Y.

Same Prices West of the Rockies, Slightly Higher in Canada and for Export.

All sets illustrated are A. C. electric, available for either 25 or 60 cycle operation on 90-120 volt lines. 25 cycle slightly higher in price.

FADA Radio

1920—SINCE BROADCASTING BEGAN—1930



Takes more than talk to sell these men

HARD ones, all of them: the man who used to build his own, the skeptic, the cynic, the shopper. They vary as to type, but they have this in common: it takes more than talk to sell them. And the new Grebe has sold them—is selling them—*will continue to sell them*—on actual performance in every essential of radio enjoyment.

At the R. M. A. show, the SK4 line is presented with important refinements and improvements. Profit opportunities for Grebe franchise holders are further strengthened by the inclusion, in the line, of a new moderate-priced receiver which maintains the SK4 audio quality standard.

Grebe radio

SUPER-SYNCHROPHASE

These Grebe receivers are presented without the accompaniment of high-sounding proclamations. *The superlatives have been built into the sets.*

A. H. GREBE & COMPANY, Inc., Richmond Hill, New York
Western Branch, 443 So. San Pedro Street, Los Angeles, California

FOR THE

FIRST TIME

THOUSANDS OF RADIO DEALERS WILL PROFIT BY THE PRESTIGE AND ACCEPTANCE OF THE NAME GENERAL ELECTRIC

GENERAL ELECTRIC

RADIO

SINCE 1914 GENERAL ELECTRIC HAS SPENT $20,000,000 *On Radio Research and Development.*

Radio as we know it today derives many of its fundamentals from the discoveries and developments of General Electric Laboratories at Schenectady.

The Alexanderson high frequency alternator, the high power vacuum tube used in modern transmitting stations, the drawing of tungsten, the dynamic speaker, are but a few of the many General Electric contributions to radio.

The General Electric owned WGY transmitting station at Schenectady with its attendant short wave transmitting stations through which Admiral Byrd kept in touch with his home land are, in effect, vast proving grounds for the work of General Electric Radio scientists.

Thus the production of a General Electric Radio receiving set is but a logical step backed by a vast store of experience to point the way to still further developments.

1—Chester W. Rice and E. W. Kellogg with earliest model of the first so-called hornless loud speaker. They are shown in their laboratory.

2—Experimental short wave transmitter built by Chester W. Rice under direction of Dr. Alexanderson.

3—Sir Joseph J. Thomson, English scientist, Dr. Irving Langmuir, Dr. W. D. Coolidge.

ONLY ONE RADIO SET CARRIES THE GENERAL ELECTRIC MONOGRAM

This is going to be a Super-Heterodyne screen-grid year. No dealer's line will be complete without such a set. There will be more dollars spent in advertising, more merchandising effort and more sales promotion focussed upon this type of receiver than ever before in the history of radio.

Only a Super-Heterodyne screen-grid receiver can give the essential selectivity and the high degree of sensitivity demanded by the radio public today.

General Electric Radio has many sales arguments. Its one outstanding argument is that it carries the name General Electric and the G-E monogram.

In 1930 there will be over two billion advertisements carrying the G-E monogram.

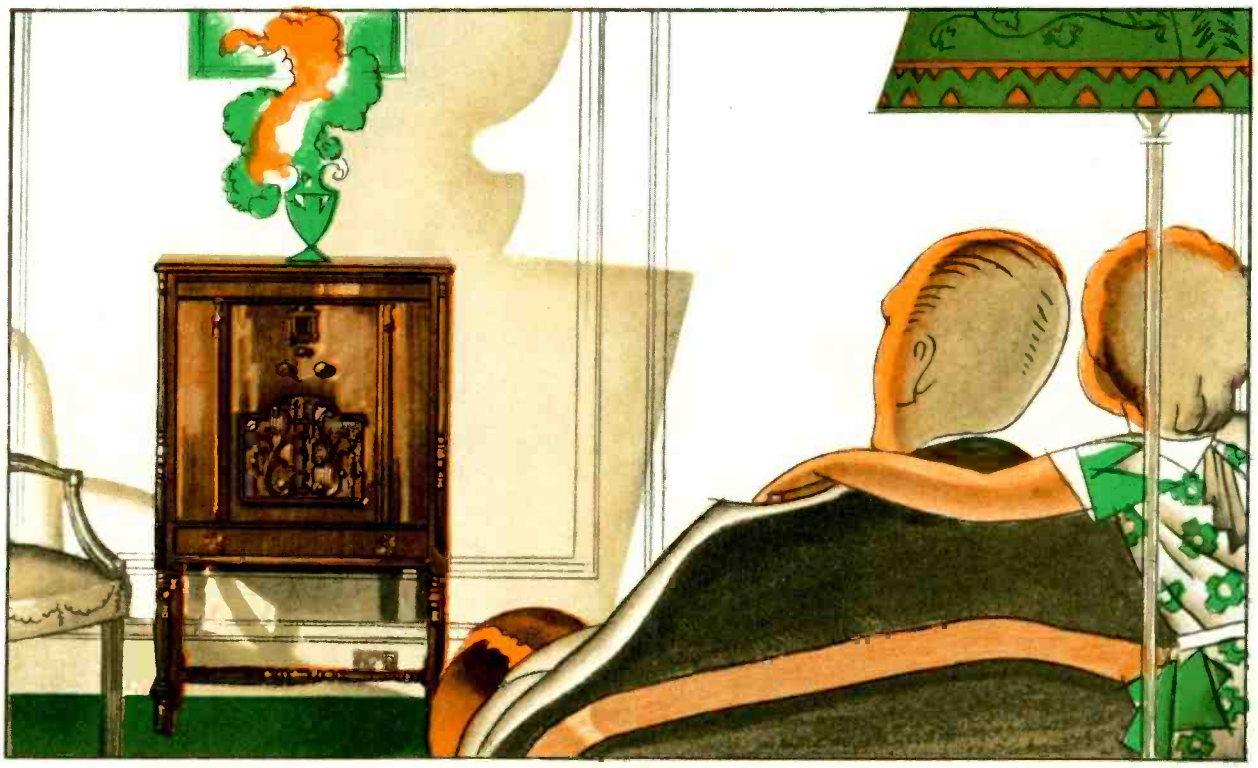
The national magazines will carry double and single color page ads on G-E Radio. Key newspapers will carry large G-E Radio ads.

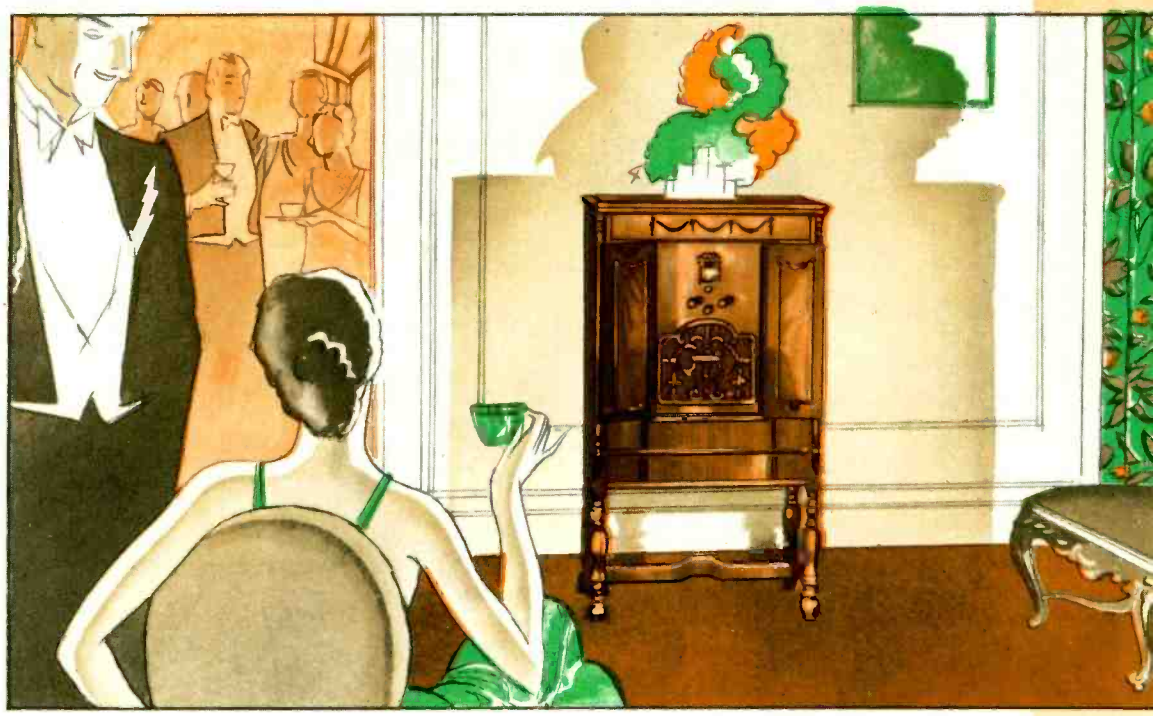
The G-E Radio dealer has at his command a wealth of fine sales promotion material and ideas.

There is no name in radio today that carries the same certainty of satisfactory performance, the same assurance of after-sale service as the name General Electric.

Because of experience with G-E products in the home there is no substitute, so far as most families are concerned—for the General Electric monogram.

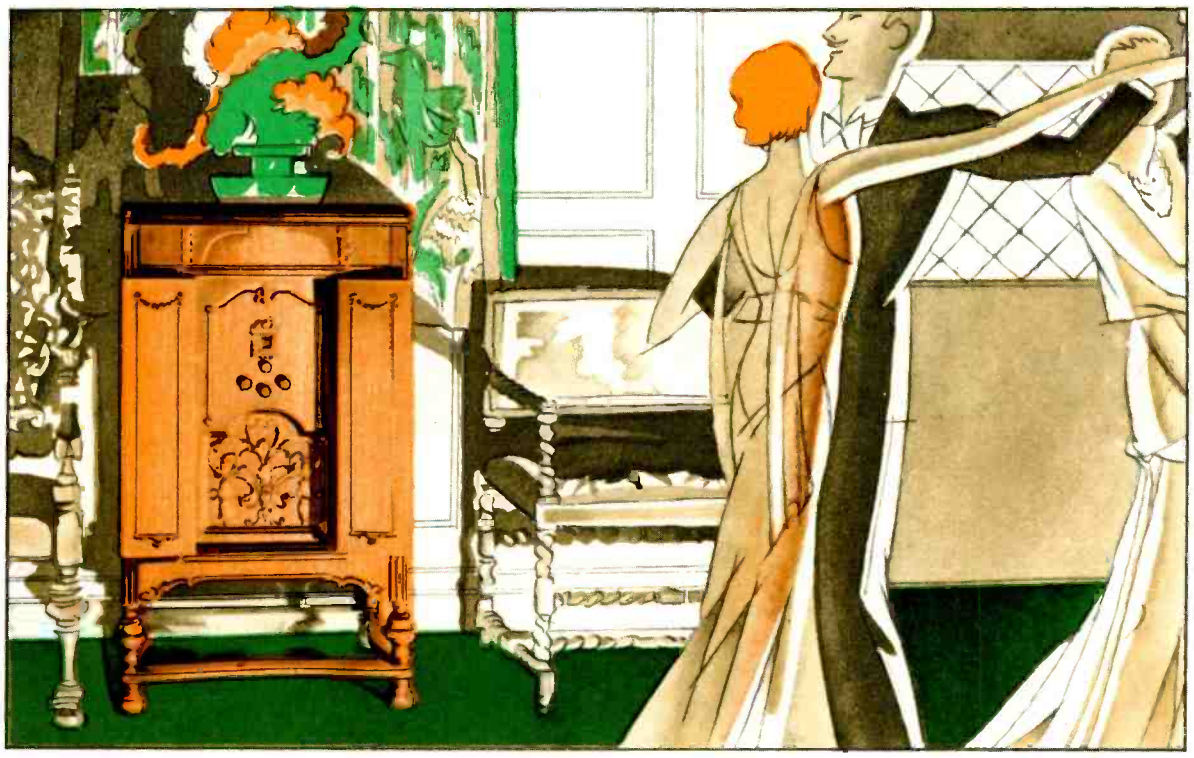
Low Boy





High Boy

Radio-Phonograph Combination



Consists of a Super-Heterodyne chassis using screen-grid tubes. There are three console models. An open face low-boy, a two-door high-boy and a combination radio and phonograph.

The high-boy and combination models are fitted with a tone emphasizer. The General Electric Radio combines extreme ease of operation with remarkable tuning accuracy. It is the most sensitive and selective circuit yet produced.

THE GENERAL ELECTRIC

SALES POLICIES

are planned to bring Permanent Profitable Business to the Dealer - - -

- - - they will be right

General Electric presents to the radio dealer, for the first time, the opportunity to build up a profitable, permanent business based on the prestige of the General Electric monogram.

What has been done with refrigeration and other General Electric appliances can be done with General Electric Radio. Since the earliest days of the radio industry General Electric has watched each development. They have studied and compared practices. They recognize the difficulties and problems.

Their sales policies have been drawn up with all these facts in mind supplemented by a nation-wide survey, and predicated upon the experiences of more than one thousand retailers.

With an eye on the future General Electric has drawn up a unique service plan calculated to enable dealers to maintain regular contact with their customers and retain their good-will for future business.

The General Electric finance plan is of particular interest to the progressive dealer.

General Electric believes that the sales policies which have been adopted mean better business for the dealer not alone in 1930 but in the years to come.

GENERAL ELECTRIC RADIO DEALERS MUST HAVE *Definite Qualifications*

The name General Electric is a pass-word into the home.

For the protection of all General Electric merchandise dealers and so that the sales-value of the name General Electric may continue its present rapid growth, General Electric Radio dealers will be selected on the basis of their ability to do a good merchandising job in keeping with the best traditions of the General Electric Company.

Selected dealers will receive the full support of the General Electric Radio organization.

THESE DISTRIBUTORS WILL HANDLE GENERAL ELECTRIC RADIO

ALABAMA

Birmingham	Matthews Electric Supply
Mobile	Matthews Electric Supply

ARIZONA

Phoenix	General Electric Supply Corp.

ARKANSAS

Little Rock	General Electric Supply Corp.

CALIFORNIA

Long Beach	General Electric Supply Corp.
Los Angeles	General Electric Supply Corp.
Oakland	General Electric Supply Corp.
San Diego	General Electric Supply Corp.
San Francisco	General Electric Supply Corp.
Sacramento	General Electric Supply Corp.

COLORADO

Denver	General Electric Supply Corp.

CONNECTICUT

Bridgeport	Southern New England Elec. Co.
Hartford	Southern New England Elec. Co.
New Haven	Southern New England Elec. Co.
Waterbury	Southern New England Elec. Co.

DISTRICT OF COLUMBIA

Washington	National Electric Supply

FLORIDA

Jacksonville	General Electric Supply Corp.
Miami	General Electric Supply Corp.
Tampa	General Electric Supply Corp.

GEORGIA

Atlanta	General Electric Supply Corp.
Savannah	General Electric Supply Corp.

ILLINOIS

Chicago	General Electric Supply Corp. Metropolitan Elec. Supply Co.
Rockford	Swords Electric Co.
Springfield	General Electric Supply Corp.

INDIANA

Evansville	General Electric Supply Corp.
Ft. Wayne	Protective Electrical Supply
Indianapolis	General Electric Supply Corp.
South Bend	South Bend Electric Co.

IOWA

Burlington	Crescent Electric Snpply Co.
Davenport	Crescent Electric Supply Co.
Dubuque	Crescent Electric Supply Co.
Des Moines	General Electric Supply Corp.
Sioux City	General Electric Supply Corp.

KANSAS

Salina	General Electric Supply Corp.
Wichita	Sutton Electric Supply Co.

KENTUCKY

Louisville	General Electric Supply Corp.

LOUISIANA

New Orleans	General Electric Supply Corp.
Shreveport	General Electric Supply Corp.

MAINE

Bangor	General Electric Supply Corp.
Portland	General Electric Supply Corp.

MARYLAND

Baltimore	General Electric Supply Corp.

MASSACHUSETTS

Boston	General Electric Supply Corp.
New Bedford	Union Electric Supply Co.
Pittsfield	Mountain Electric Supply Co.
Springfield	General Electric Supply Corp.

MICHIGAN

Detroit	General Electric Supply Corp.
Grand Rapids	C. J. Litscher Electric Co.
Kalamazoo	C. J. Litscher Electric Co.
Jackson	C. J. Litscher Electric Co.

MINNESOTA

Duluth	General Electric Supply Corp.
Minneapolis	General Electric Supply Corp.
St. Paul	General Electric Supply Corp.

MISSISSIPPI

Jackson	General Electric Supply Corp.

MISSOURI

Joplin	General Electric Supply Corp.
Kansas City	General Electric Supply Corp.
St. Joseph	General Electric Supply Corp.
St. Louis	General Electric Supply Corp.

MONTANA

Butte	General Electric Supply Corp.

NEBRASKA

Omaha	General Electric Supply Corp.

NEW JERSEY

Atlantic City	General Electric Supply Corp.
Jersey City	General Electric Supply Corp.
Newark	General Electric Supply Corp.
Paterson	General Electric Supply Corp.

NEW YORK

Albany	Havens Elec. Company, Inc.
Buffalo	Falls Equipment Company, Inc.
Brooklyn	General Electric Supply Corp. Royal Eastern Elec. Supply Co.
Bronx	General Electric Supply Corp.
Binghamton	Southern Tier Elec. Supply Co.
Long Island City	Royal Eastern Elec. Supply Co.
New Rochelle	Royal Eastern Elec. Supply Co.
New York City	General Electric Supply Corp. Royal Eastern Elec. Supply Co.
Rochester	General Electric Supply Corp.
Niagara Falls	Falls Equipment Company, Inc.
Syracuse	Syracuse Supply Company
Utica	Langdon and Hughes Elec. Co.

NORTH CAROLINA

Charlotte	General Electric Supply Corp.
Raleigh	General Electric Supply Corp.
Greensboro	National Electric Supply Co.

NORTH DAKOTA

Fargo	General Electric Supply Corp.

OHIO

Akron	General Electric Supply Corp.
Cleveland	General Electric Supply Corp.
Dayton	General Electric Supply Corp.
Columbus	General Electric Supply Corp.
Toledo	General Electric Supply Corp.
Cincinnati	General Electric Supply Corp.

OKLAHOMA

Oklahoma City	General Electric Supply Corp.
Tulsa	General Electric Supply Corp.

OREGON

Portland	General Electric Supply Corp.

PENNSYLVANIA

Erie	General Electric Supply Corp.
Philadelphia	General Electric Supply Corp.
Pittsburgh	General Electric Supply Corp.
Scranton	General Electric Supply Corp.

RHODE ISLAND

Providence	Union Electric Supply Co.

SOUTH CAROLINA

Columbia	Perry-Mann Electric Co.

TENNESSEE

Chattanooga	General Electric Supply Corp.
Knoxville	General Electric Supply Corp.
Nashville	General Electric Supply Corp.
Memphis	General Electric Supply Corp.

TEXAS

Abilene	General Electric Supply Corp.
Amarillo	General Electric Supply Corp.
Dallas	General Electric Supply Corp.
San Antonio	General Electric Supply Corp.
El Paso	General Electric Supply Corp.
Houston	General Electric Supply Corp.

UTAH

Salt Lake City	General Electric Supply Corp.

VIRGINIA

Norfolk	General Electric Supply Corp.
Richmond	General Electric Supply Corp.

WASHINGTON

Seattle	General Electric Supply Corp.
Spokane	General Electric Supply Corp.
Tacoma	Home Electric Company

WEST VIRGINIA

Charleston	Virginian Electric Inc.

WISCONSIN

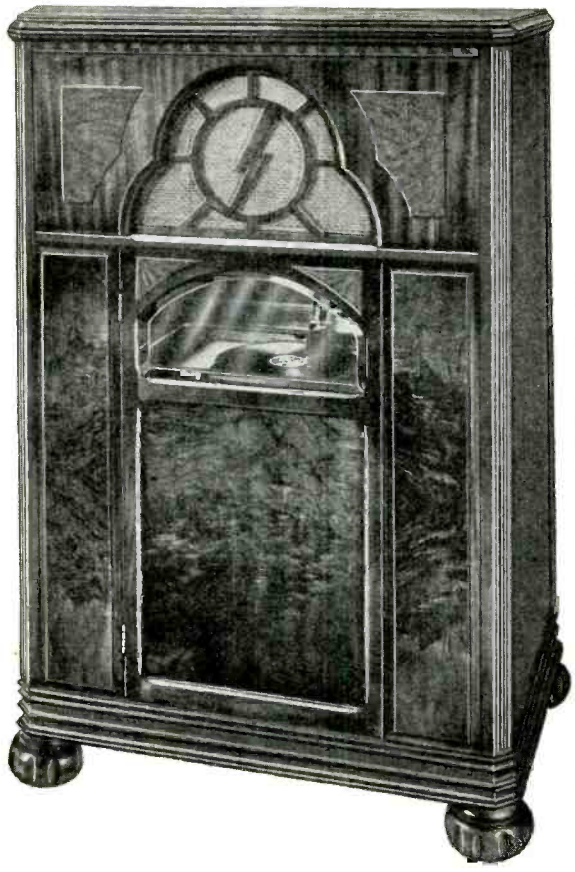
Appleton	G-Q Electric Company
Madison	Crescent Electric Supply Co.
Milwaukee	G-Q Electric Company
Racine	G-Q Electric Company
La Crosse	General Electric Supply Corp.

Printed in U.S.A

CONCERT-TROPE

AUTOMATIC PHONOGRAPH

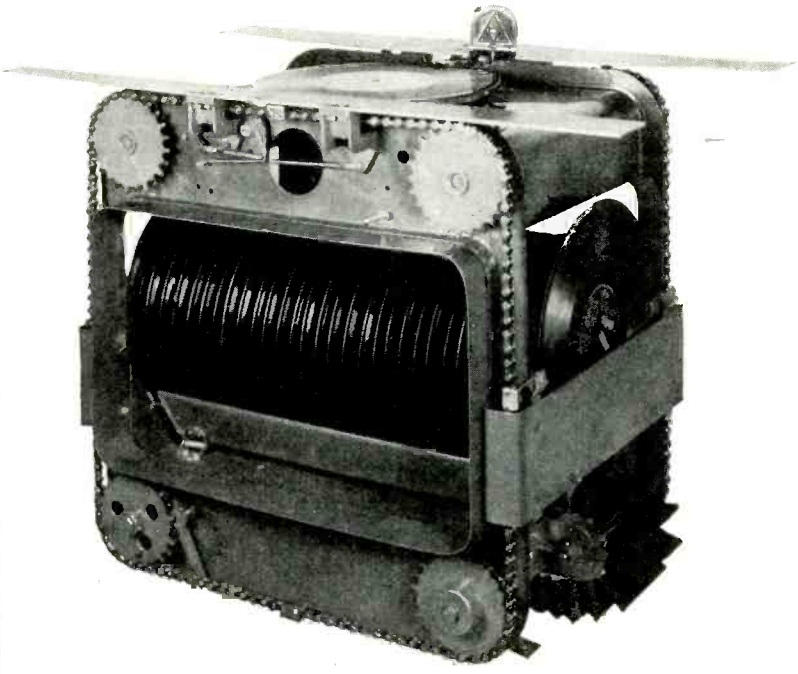
Many Distributors and Dealers expressed their approval of this outstanding automatic, at the Atlantic City Show, by accepting our sales contract.



VISIT US AT
Booth F-4 San Francisco

FEATURES

32 records, both sides . . . no rubbing together . . . simple design, no adjustments to require attention . . . Wright-DeCoster speaker . . . Audak pickup . . . 250 amplification . . . tone at ear level . . . pneumatic tone arm control.



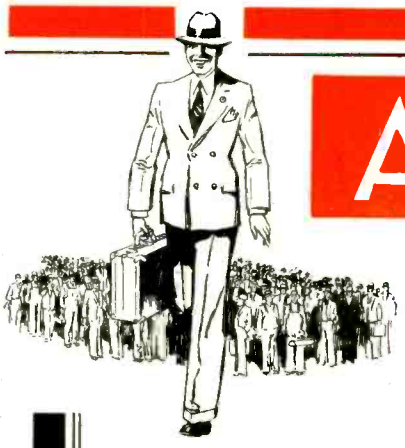
Ideal Chassis
For
Special Installation

May be purchased separately. This wide field has accepted the Concert-Trope chassis as the ideal mechanism.

Write or Wire

CONCERT-TROPE MANUFACTURING CORP.

824 East Market Street — Indianapolis, Indiana



AGAIN ACCLAIMED

Another RMA show!

Makes every conceivable test on any Radio Set-

IN competitive display before the critics of the radio industry Model 400-B SUPREME DIAGNOMETER has again been acclaimed "Supreme by Comparison"—without a rival in its field!

Amazingly complete in its testing facilities—providing analysis of Pentode, Screen-Grid and Auto Receivers in addition to its countless circuit combinations—Model 400-B is undisputably the marvel of the radio servicing industry. Endorsed and recommended by practically every servicing authority.

Wherever and whenever comparisons are made the SUPREME DIAGNOMETER is unanimously selected, Because:

1. Its unique design is outstanding—a guarantee against obsolescence.
2. Its rugged construction prevents break-down—insuring accurate operation at all times.
3. It is the one service instrument capable of making every necessary test—none other so complete.
4. It pays for itself in a few months—faster and more accurate servicing means greater profits.
5. It provides maximum efficiency with utmost simplicity—pictorial diagrams of every test supplied with each instrument.
6. It creates satisfied customers—provides a laboratory method for the solution of every servicing problem.
7. It provides the greatest amount of test equipment in the least possible space at the lowest cost per service unit—the service units in the SUPREME DIAGNOMETER if purchased separately would cost many times its price.

"SUPREME" FEATURES

The SUPREME oscillation test gives the only, easily made, dependable test on tubes; tubes tested under radio frequency dynamic operating conditions.

Tests all types of tubes, including screen-grid, pentode, overhead heater types.

Affords a mutual conductance test of tubes.

Tests both plates of '80 type full-wave rectifier tubes.

All tubes tested independent of radio.

Locates unbalanced transformer secondaries.

Reads either positive or negative cathode bias.

Furnishes modulated signal for testing, synchronizing, neutralizing, etc.

Provides means for aligning of condensers by Thermocouple meter or A-C meter.

Neutralizing with tubes used in the set; only accurate method.

Tests gain of audio amplifiers.

Provides D-C continuity tests without batteries.

Indicate resistances, without the use of batteries, in four ranges. .1 to 25 ohms, 10 to 200 ohms, 150 to 30,000 ohms (calibration curve furnished), 5000 ohms to 5 megohms.

High resistance continuity for checking voltage dividers, insulation leakages, by-pass and filter condenser leakages, bias resistors, grid leaks, etc.

Low resistance continuity for checking rosin joints, shorted variable condensers (without disconnecting R-F Coil), center tapped filament resistors, etc.

Three precision meters; one four-scale D-C voltmeter, 0/750/250/100/10 volts, resistance 1000 ohms per volt. One four-scale A-C voltmeter 0/750/150/16/4 volts. One three-scale mil-ammeter 0/125/25 mils. 0/2½ amps.

External connections to all apparatus.

Universal analyzer plug.

Screen-grid and pentode socket analysis.

Makes all analysis readings. Provides simultaneous plate current and plate voltage readings and the customary readings of A-C and D-C filament voltage, grid voltage, cathode bias, screen-grid voltage, pentode voltage, line voltage, etc.

Measures capacity of condensers from .1 mfd. to 9. mfd.

Tests trickle charger by meter.

Bridges open stages of audio for testing.

Contains 500,000-ohm variable resistor, 30-ohm rheostat and .001 mfd., .002 mfd. and 1 mfd. condensers for testing.

The laboratory test panel is equipped with a variable condenser for controlling the frequency of the oscillator.

Pentode Testing and Analysis.

Servicing Auto Receivers.

Provides many other tests, readings and functions.

"Supreme by Comparison"

SUPREME
Testing Instruments
"SUPREME BY COMPARISON"

"SUPREME"

Another triumph!!

MAKE your Service Department outstanding—Modernize with the SUPREME DIAGNOMETER and watch your profits grow!

Dealer's Net Price, F.O.B. Greenwood, Miss. Size 7½ x 12 x 16½. **$139.50**

Also available in smaller case for the radio man who does not care to carry spare parts, tubes, etc., in the same unit.

And Now!
A REVOLUTIONARY SET ANALYZER

25 Testing Instruments in **1**

ALL READINGS ON ONE METER

ONLY ONE METER TO READ

SUPREME SET ANALYZER MODEL 90

Dealers' Net Price F.O.B. Greenwood, Miss. Size 4¼x 9¼ x 11¼. Shipping weight, 6 lbs.

$78.50

Extremely simple to operate and exceedingly complete in its testing functions Model 90 SUPREME SET ANALYZER combines the ingenuity of Supreme design and construction with a SINGLE METER of remarkable qualities.

It provides 79 possible analytical readings.
It furnishes A-C and D-C Voltage and Current readings on ONE METER.
Voltage readings up to 900 volts.
Current readings to 300 Milliamperes.
Resistance 1000 Ohms per volt, A-C or D-C.
External pinjack connections.
High and Low resistance measurements.
Polarity indication.
Pentode Testing—Auto Receiver Testing.

IT DOES MORE THAN ANY THREE OR FOUR-METER Set Analyzer on the market.
QUICKER, SIMPLER and with a higher degree of accuracy—plus the advantage of ONLY ONE METER TO READ!

"SUPREME BY COMPARISON"

SUPREME TUBE CHECKER
MODEL 17

$21.75

Dealers' Net Price F.O.B. Greenwood, Miss. Size—3-3/16 x 7-5/16 x 5-9/16. Shipping weight, 4¾ lbs.

"SUPREME" economy, "SUPREME" investment value, comparable in quality to counter tube checkers selling for twice its low price. Much more simple to operate. TESTS ALL TYPES OF TUBES INCLUDING SCREEN-GRID AND PENTODE.

Most good distributors carry the complete line of SUPREME INSTRUMENTS in stock, including the Model 50 Tube Tester, Model 10 Ohmmeter. If yours cannot supply you, use order coupon to right.

Supreme Instruments Corp.
370 Supreme Bldg.
Greenwood, Miss.

Please ship SUPREME TEST INSTRUMENT as checked below:

- ____ Model 400-B DIAGNOMETER Net Cash, $139.50.
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- ____ Model 90 Set Analyzer. Net Cash only $78.50.
- ____ Model 17 Tube Checker. Net Cash, $21.75.

All prices are F.O.B. Greenwood, Miss. No dealer's discount.

Date shipment desired _____
Signed _____
Firm Name _____
Street Address _____
City _____
State _____

Please give three or more bank or trade references and names of distributors from whom most purchases are made.

Supreme Instruments Corporation

GREENWOOD, MISS.

Distributors in all principal cities

Service Depots in New York, Philadelphia, Pittsburgh, Chicago, Kansas City, Seattle, San Francisco, Toronto

Illustrated
THE
PA-250
Super Power 8-Tube Amplifier . . .
Suitable for ANY use . . .
Supplies its own Microphone Current
15 WATTS OUTPUT

List Price
$220

NEW IMPROVEMENTS NOW MAKE THE BARRETT AMPLIFIER THE UNDISPUTED LEADER IN THE FIELD

THEY told us that the BARRETT AMPLIFIER was the BEST of all. They listened . . . they bought! But our engineers set about to still further improve this sensational amplifier.

Larger transformers now appear in the new models. Larger Cores. Better reproduction of the low notes. Input transformer now mounted separately and away from the amplifier proper. This results in elimination of hum due to inductive pick-up.

A STANDARD input transformer, separately, is supplied with each amplifier. Special input transformers supplied for other than standard use. New BARRETT AMPLIFIERS also have a pilot light to indicate whether current is on or off. An extra convenience outlet for phonograph motors and associated equipment, operating both amplifier and motor from one control, is also found on the new models. Finally, the new amplifier is of most rigid construction, built to withstand the most severe service . . . ANYWHERE.

and the BARRETT amplifier ALONE has these important features

It matches its output to any speaker or group of speakers. It has eight tubes, three stages push-pull . . . with built-in *noiseless* volume control and still another control for the supply of microphone current, doing away with the necessity for batteries or a separate microphone amplifier. Just hook on your "mike" and talk. Push-pull eliminates all hum. Eight tubes supply tremendous power and the impedance output control *assures* you that the speaker and amplifier are *matched* for *tone*, with a straight line frequency response range of from 40 to 8,000 cycles.

BUY THE BEST ✓ ✓ IT COSTS NO MORE

10-Tube Giant Amplifier!

Model PA-866. 30 Watts output. Four '50 tubes in push-pull. 10 tubes in all. Same exclusive features as Model PA-250.
List Price $297.50

THE BARRETT MANUFACTURING CO.

3714 SAN PABLO AVENUE - - - - - - - - - - EMERYVILLE, CALIFORNIA

Let Us Quote Prices on Hotel, Apartment House and Theater Installations

«AMPLIFIERS THAT AMPLIFY YOUR PROFITS»

There . . . . !

The BLUE BOOK

Closed Another Sale!

"But she sure was hard to sell until the Blue Book convinced her that our trade-in price was fair"

MR. AND MRS. RADIO BUYER know that the Automobile Blue Book sets a fair value on their car. Therefore, they accept the Blue Book quotations as fair, honest, and authentic, when applied to radio.

The Blue Book takes trade-in allowances out of the bounds of competitive wrangling. It is unbiased — Convinces—Makes Sales—Converts shoppers into buyers.

You can't lose money on a Blue Book quotation. Prices are established at one-half of what the set can be sold for, stripped. That leaves a PROFIT for you.

Fourteen Radio Trades Associations have adopted and approved the Blue Book. Finance companies use it and urge dealers to stick to Blue Book quotations.

The Blue Book will SAVE you money and MAKE you money. It pays for itself on the first deal.

Pocket size, attractive blue, leatheroid loose-leaf binder —looks like the official publication it is. Four complete issues a year, always up to date. A year's service for $7.50

Write, wire, or send the coupon. We'll rush a Blue Book.

Correspondence invited from Radio Trade Associations and Jobbers. A few metropolitan territories open to responsible sales representatives.

FROM THOSE WHO KNOW

Best Thing in the Radio Business

"I think the Radio Dealer's Blue Book is one of the best things that has come into the literature of the radio business."

THOMAS MERCER, *Vice President*,
Bankers Commercial Security Company.

Worth Twelve Times Its Cost

"The Blue Book paid for itself on the first deal. In my opinion it is worth $7.50 a month instead of the $7.50 a year that you ask."

CARL JONES,
Radio Dealer, Chicago.

A Sure Cure

"A sure cure for relieving yourself of a great many of the sorrows that come to most radio dealers is to adopt the Radio Dealer's Blue Book."

RADIO & MUSIC TRADES ASSOCIATION
(Seattle)

What the Radio Business Has Needed

"The Blue Book is just what the radio business has long needed. I am instructing our salesmen to do their best to have every one of our dealers get and use the Blue Book."

STRAVELL-PATTERSON,
Radio Jobber.

THE Blue Book has stood the acid test of over a year's use in dealers' hands, first appearing in March, 1929, and quarterly since.

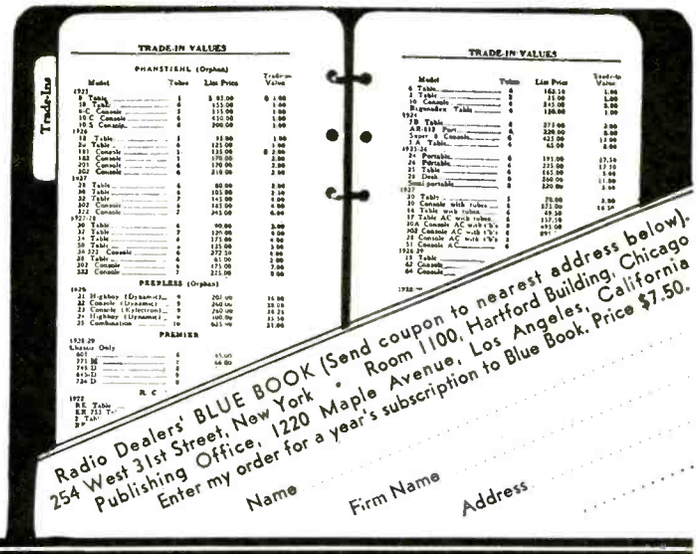
Four thousand, four hundred seventy-one dealers in all parts of the country are using the Blue Book today, 248 jobbers have recommended it to their dealers. Fourteen radio trade Associations have adopted it.

Questionnaires are sent to 8,000 dealers, Blue Book subscribers, leading merchants, etc. Averages are struck from these answers, which are then checked by prominent dealers, jobbers, Association secretaries, and lastly by a committee of leading finance companies. Blue Book quotations are accurate — dependable.

In addition to trade-in prices (292 models of 76 makes) the Blue Book contains—Complete detailed descriptions of all new merchandise with list prices, and — Schematic diagrams of new models.

WARNING!

Blue Books have been so successful that occasionally spurious trade-in books in imitation of the genuine are offered dealers. The original and only genuine Blue Book is protected by Trade Mark No. 231,486 issued by U. S. Pat. Office. The Blue Book is the only Blue Book of trade-in values approved by Radio Trade Associations. Demand the genuine, official BLUE BOOK.



Radio Dealers' BLUE BOOK

Browning-Drake Comes Through With Flying Colors!

Model 71—Console De Luxe—a high bay beautifully proportioned and constructed of the finest materials—the last word in impressive radio quality. Large-size speaker $192.50

Model 71-R (with remote control) $262.50

• • •

The Browning-Drake (60 series) offers maximum radio quality at a popular price. Semi-automatic tuning (47 stations listed by name); triple screen-grid; 5 tuned circuits; push-pull audio; electrolytic trouble-proof condenser . $129.50

Model 70—A beauty! Made of material far heavier than heretofore used in radio cabinets. Note the artistic simplicity of the dial opening. Automatic call-letter tuning. Automatic volume control. 4 screen-grid tubes. Equalized band-pass filter. Antennaless reception. . $159.50

Model 70-R (with remote control) $229.50

• • •

Table model—(Model 68) dignified striped mahogany with satin Duco finish. $95.

• • •

See the new Browning-Drake models at Booth D-13 in the Auditorium, at the Radio Show in Atlantic City. Demonstration space at Hotel Jefferson. . . . . .

All prices listed do not include tubes.

For a limited number of jobbers and dealers who have learned that the set to get behind is the set which "walks away with the demonstration" and then gives service-free satisfaction . . . there's a wonderful season ahead in Browning-Drake sets! But don't wait . . . let's get in touch right now!

BROWNING-DRAKE **dependability** has now been proved. The policy of the famous Browning-Drake laboratory—famous since the earliest pioneer days of radio—comes through radio's recent storm unchanged, flags flying, stronger than ever. • • • • • • • • • •

Quality . . . superior equipment . . . honest craftsmanship—with quantity limited so that every set can be our best.

As a practical dealer we believe you'll say: "What a difference if all radio had only followed the policy Browning-Drake has been setting since the pioneer days!" Into the 1931 season Browning-Drake now sweeps with the finest instruments ever developed in its famous laboratory.

Again . . . quantity limited so that every set can be absolutely assured as our very best. • • • • • • • • • • •

Again . . . superior craftsmanship—a limited number of the best jobbers, best dealers—those jobbers and dealers who prefer to attract the class of trade that appreciates the finer things of life. • • • • •

The latest in modern improvements and conveniences . . . now further improved. And beauty supreme! In the new Browning-Drake 70 series . . . automatic call-letter tuning for the unprecedented number of 125 stations!

In the same distinguished series . . . automatic volume control—an end to the annoyance of distant and semi-distant stations fading out, and from the loud blare of local stations too near. • • • • • • • • • •

By adding a fourth screen-grid tube our laboratory now sets a new standard of leadership in tone quality, unstrained volume, and the final harnessing of distance. There is also the proved efficiency of the equalized band-pass filter; of antennaless reception from light sockets, and all the other lesser features which can now be combined to make fine radio a little finer. • • • • • • • • • • • • • •

In models 70-R and 71-R . . . remote control, the last word in convenience and luxurious ease of operation. • • • • • • • •

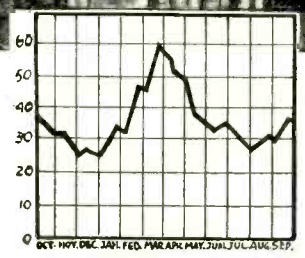
Send for booklet R, BROWNING-DRAKE CORPORATION, 224 Calvary St., Waltham, Mass.

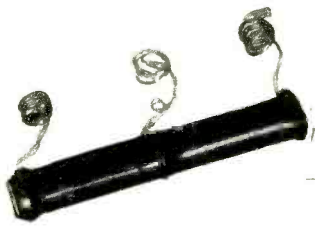
BROWNING-DRAKE SCREEN-GRID RADIO

A Pioneer Manufacturer of Quality Radio Apparatus

OVER 1,500,000 PEOPLE LISTEN-IN ON BROWNING-DRAKE SETS

W to meet your PEAK needs





Vitrohm Resistors may be had with various types of terminals. The braid wire type illustrated finds many applications. Vitrohm Resistors may be had with any desired number of terminals.

WARD LEONARD ELECTRIC CO.

31 South Street
Mount Vernon, N. Y.

Resistors Specialists for More Than Thirty-Nine Years

THE time is here for planning this year's set production schedules. Purchasing Departments and Engineers have had their semi-annual get-together party. Now it's up to the P. A. to satisfy Production.

When it comes to wire-wound, vitreous-enamelled resistors, Purchasing Agents should remember that Ward Leonard is a source of supply that has met the demands of industry for two generations.

We're not only specialists in the design of resistors*, but we get them out on time - - in any quantity - - at a price you can't beat.

Now is the time to write your own ticket on special designs and on delivery schedules. Get in touch with a Ward Leonard Sales Engineer - - he'll be on the job fast.

*Among the Products of Ward Leonard are Vitrohm (vitreous-enamelled) Resistors and Rheostats . . . . A. C. Voltage Regulators . . . . Theatre Dimmers . . . . A. C. and D. C. Motor Starters and Controllers . . . . Slide Wire Rheostats . . . . Arc and Spotlight Rheostats and Ballasts . . . . Mobile Color Lighting Equipment . . . . Auaptorons . . . . D. C. Battery Charging Equipment . . . . Circuit Breakers.


Mr Radio Dealer:
Keep in close contact with your neighborhood radio set owner. This year he is a better prospect than ever for a new receiver
Cunningham
RADIO TUBES
SINCE Cunningham 1915
In your tube selection be guided by a name that has meant tube integrity for the past 15 years

Consumer

of this character reaching your result in increased Cunning-

Cunningham RADIO TUBES

Unexcelled Research *and* Laboratory Facilities

* * * THE high standard maintained in their manufacture is reflected in their quality performance.

Make every tube a Cunningham

Public Endorsement Since 1915

E. T. CUNNINGHAM, INC.
New York Chicago San Francisco
Dallas Atlanta

Where the name means everything

SINCE any radio is really only just as good as the tubes in its sockets, it is clear how vital a point perfectly balanced tubes are.

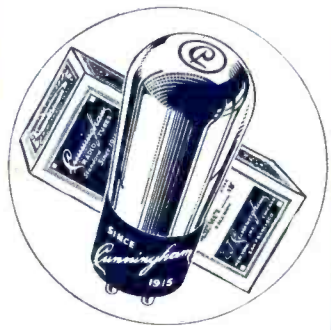
The brand of radio tube is just as important as the "make" of the set.

Insist on

Cunningham RADIO TUBES

The Choice of Millions

Cunningham RADIO TUBES



Be Guided by a name

that has meant absolute tube integrity for the past

15 years

An ever increasing public demand has resulted in national endorsement based on fidelity of tone and superior performance.

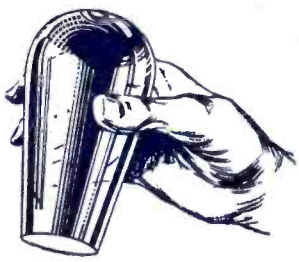
They protect your radio investment.

E. T. CUNNINGHAM, INC.
New York Chicago San Francisco

Advertising

community must of necessity
ham Tube Sales in your store.

Cunningham RADIO TUBES



Where tube Similarity Ends

Outside appearances may be similar or even identical between various makes of radio tubes.

It is the accuracy with which the parts are precisely manufactured and tested that gives Cunningham Radio Tubes their remarkable outstanding quality and long life.

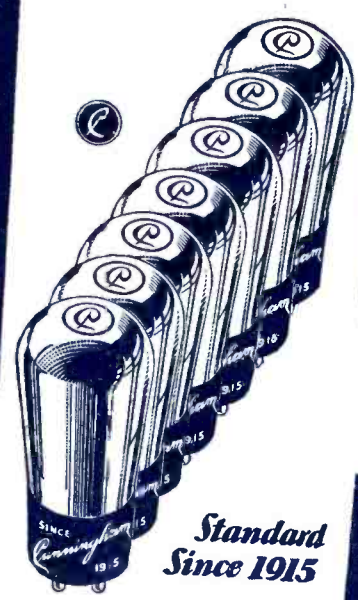
Quality safeguarded from within.

E. T. CUNNINGHAM, INC.
New York Chicago San Francisco
Dallas Atlanta

Cunningham RADIO TUBES

Always keep a spare tube with your radio

Be sure you have a Cunningham tube ready to replace an old worn-out one.



Standard Since 1915

E. T. CUNNINGHAM, INC.
New York Chicago San Francisco
Dallas Atlanta

Cunningham RADIO TUBES

Uniform Quality Since 1915

—obedient to harmony

MODERN broadcasting requires modern radio tubes to meet its exacting needs.

Cunningham Radio Tubes embody principles that combine uniform quality with unfailing accuracy.

Choice of Millions

E. T. CUNNINGHAM, Inc.
New York Chicago San Francisco
Dallas Atlanta

service is the Keynote to Radio Sales

Thru servicing the sets in your local community you will be astonished at the possibilities for future prospects for radio sets.

Servicing can become your successful wedge into the homes and confidence built with your most logical set prospects — radio set owners.

Here is your opportunity to greatly strengthen your future position. Today's owners — Tomorrow's prospects. Keep the contact—Hold Confidence.

E. T. CUNNINGHAM, INC.

NEW YORK CHICAGO SAN FRANCISCO
DALLAS ATLANTA

Cunningham RADIO TUBES

RADIO

the national trade magazine

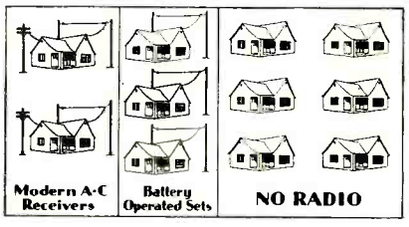
VOL. XII JULY, 1930 No. 7

Preventing the *"Leftovers"*

WITH cabinets laid end to end, there were enough radios made and sold in the United States last year to reach from Boston to Los Angeles, but with enough made and not sold to stretch from New York to Chicago. The "leftovers," nearly a million sets, were carryovers which had to be liquidated at cut prices during the first half of this year. While the figurative "leftovers" reached from New York to Chicago, the real "leftover" reached into the pockets of thousands of retailers, wholesalers and manufacturers from Tampa to Seattle.

This sort of history has been repeating itself every year since 1924. And advance announcements of manufacturing schedules indicate a possible production of five million sets during the 1930-1931 season. The alleged reason for such large schedules is that low costs depend upon mass production. But this seems to be false reasoning when a million or more leftovers must be sold at a loss.

NOTWITHSTANDING the general depression in business, there is good reason to believe that at least three million radios will be sold this season. The National Chamber of Commerce survey shows that only two out of eleven homes are equipped with a modern a-c set, three with a battery-operated one, and six are without radios. If these figures are correct, at least half the families in America are prospects for a new set.



But while these 15 million or more unsold sets indicate that the radio market is still far from being saturated, it would be better business for all concerned if they were sold during a five-year period than during a three-year period. There is sufficient factory capacity to make all of them in one year, but the consumer market cannot absorb them so rapidly.

Nor are radios merely absorbed now. The old days of simply delivering them to order givers are gone. This is emphatically a buyer's market and a salesman must keep on his toes in order to live. The creation of demand is more vital than the production of supply.

The radio business has been running around the vicious circle of over-supply and under-demand for some time. While such circle-running is all right for an athlete who is trying to make a speed record in a two-mile race, it is bad for a man who is lost in the woods. Nor is it any better for a business that wants to get somewhere. In this respect it is like worry, which is thinking in a circle instead of along a straight line to a decision.

The radio business is different from other businesses. It forged ahead during the depression in 1921 while others were marking time or going backward. When times were good it went ahead more rapidly than any other business, and when times are bad it can continue to go ahead—if it travels in a straight line toward the creation of a bigger demand. Yet hand in hand with this, as indicated by the practice of the Farm Board, the oil men and other industries, there must be some limitation in production in order to eliminate leftovers.

Selling Programs *Rather than* Sets

By HARRY P. BRIDGE, JR.

How National Union Radio Corp. Advertises This Idea

THE Harp Company of Baltimore, Maryland, believes in selling people what they want. That is why, figuratively speaking, Harp salesmen frequently sell the microphone rather than the radio set. Most prospects are interested not in the set itself, but in the entertainment it will bring to their homes. If they are not yet prospects, it will, in many cases, be the lure of a nightly box seat at the theatre or the home which will eventually result in their signatures on the dotted line.

As a consequence, this company sees to it that each of its men knows what is on the air. More than that, they encourage salesmen—the outdoor men in particular—to put this knowledge to work in making sales that probably would not be made without it. A knowledge of the broadcast highlights has been found particularly helpful in getting prospects who are "on the fence" to agree to demonstrations in their homes.

Put yourself in the place of the undecided prospect—a man with a wholesome interest in sports—and write your own answer to a telephone solicitation of this sort from a salesman who had called on you previously:

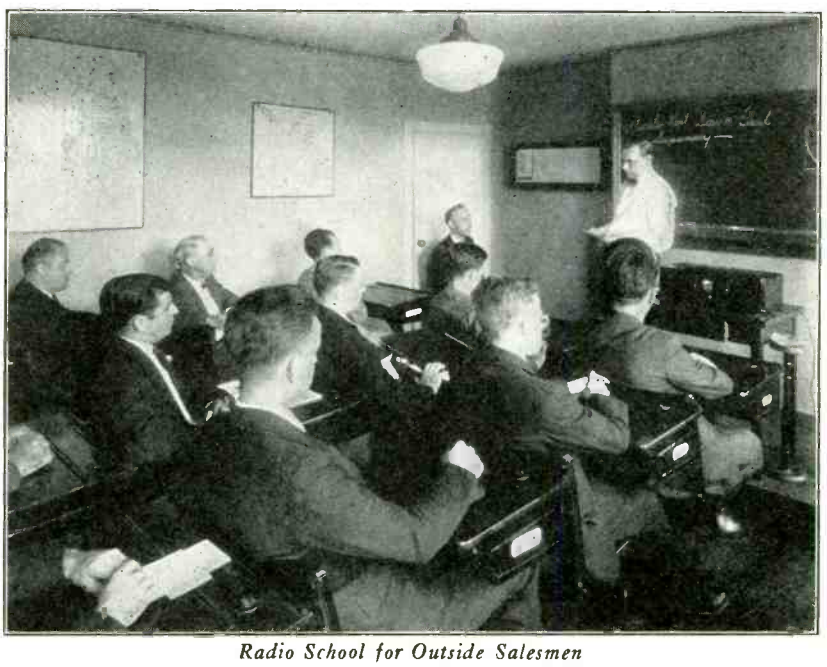
"Good morning, Mr. Jones. This is Frank Smith of the Harp Company. I know you are interested in the World's Series baseball and that is why I called you. The games start tomorrow and each one will be broadcast play by play. I've been talking a lot to you about our radio sets and now here is a fine chance to let one of them speak for itself.

"You will be under no obligation. We'll be only too glad to put in an outfit so you can tune in on the games to be played Saturday and Sunday when you will be at home. The next best thing to a box seat at the games is an easy chair by the radio. You have the chair and we'll supply the radio. Then you can see for yourself how much a set will add to your home. You'll be the judge and jury. If you decide you don't want the radio, we will take it out and thank you for the privilege of demonstrating it."

In order that salesmen may be fully informed as to what is on the air, the Harp Company issues a weekly bulletin giving complete data regarding local broadcasts for a week ahead. Not only the highlights but many of the minor features that take place during the day are emphasized. It is felt that everything is of interest to someone even though that someone may not be the salesman.

No longer is the broadcasting station a refuge for second rate artists and amateurs who perform for the fun of it. Things have changed materially in this respect since the early days of radio. Programs are prepared with as much care as the good daily newspaper. Similarly, not every department in the paper is read by all the subscribers. Editors do not expect that they will be. They do know, however, that each department has its readers and that, to a large extent, this is why they buy that particular paper. With these facts in mind, Harp Company salesmen are urged to study the programs in detail.

Admittedly, a feature such as the broadcasting of the Dempsey-Tunney fights will sell more sets than the finest salesmanship. However, the salesman has to live from day to day and cannot wait for these all too infrequent events of nation-wide prominence to bring business to him. That is why this Baltimore concern is teaching its salesmen to sell the lesser features of the air—to take full advantage of each one in talking to people to whom it probably would have an especial appeal.



Radio School for Outside Salesmen

Opera, lectures, church services, stock market quotations, physical culture talks, bridge lessons, fashion reviews, baseball scores, dance music, educational programs and the host of others all have their adherents. Properly "sold" to radio prospects by the salesmen they will have even more.

The Harp Company does a great deal of outside selling. At least two crews of seven men each, including a manager, are on the job constantly and it is altogether likely that this number will be increased during the coming winter season. Their aim is to get demonstrations in the homes of interested prospects, from 40 to 50 per cent of which result in sales. Thus a knowledge of broadcasting has proved a particularly valuable adjunct to their sales equipment.

People who come into the store are generally sold on the idea of owning a radio. Their problem is merely one of deciding which set to buy. This is not so in the case of many people on whom the door-to-door man calls in the course of a day's work. Other conditions being favorable, either they are not sold on the entertainment value of a radio in the home, they have given it little thought, or they believe the occasional broadcast highlight to be something of a freak with the general run of programs, holding little of interest to a discriminating listener.

In any event, the salesman who is qualified to "sell the mike" stands head and shoulders over the one who is not in his ability to get demonstrations and subsequent sales.

"After all," says General Manager George J. Roche, "broadcasting is the one big reason anyone buys a radio set today. Despite any possible interest in what is inside the cabinet, the true interest centers in what is literally thrown in 'to boot' with the set—countless hours of the finest sort of programs that cost the set owner nothing.

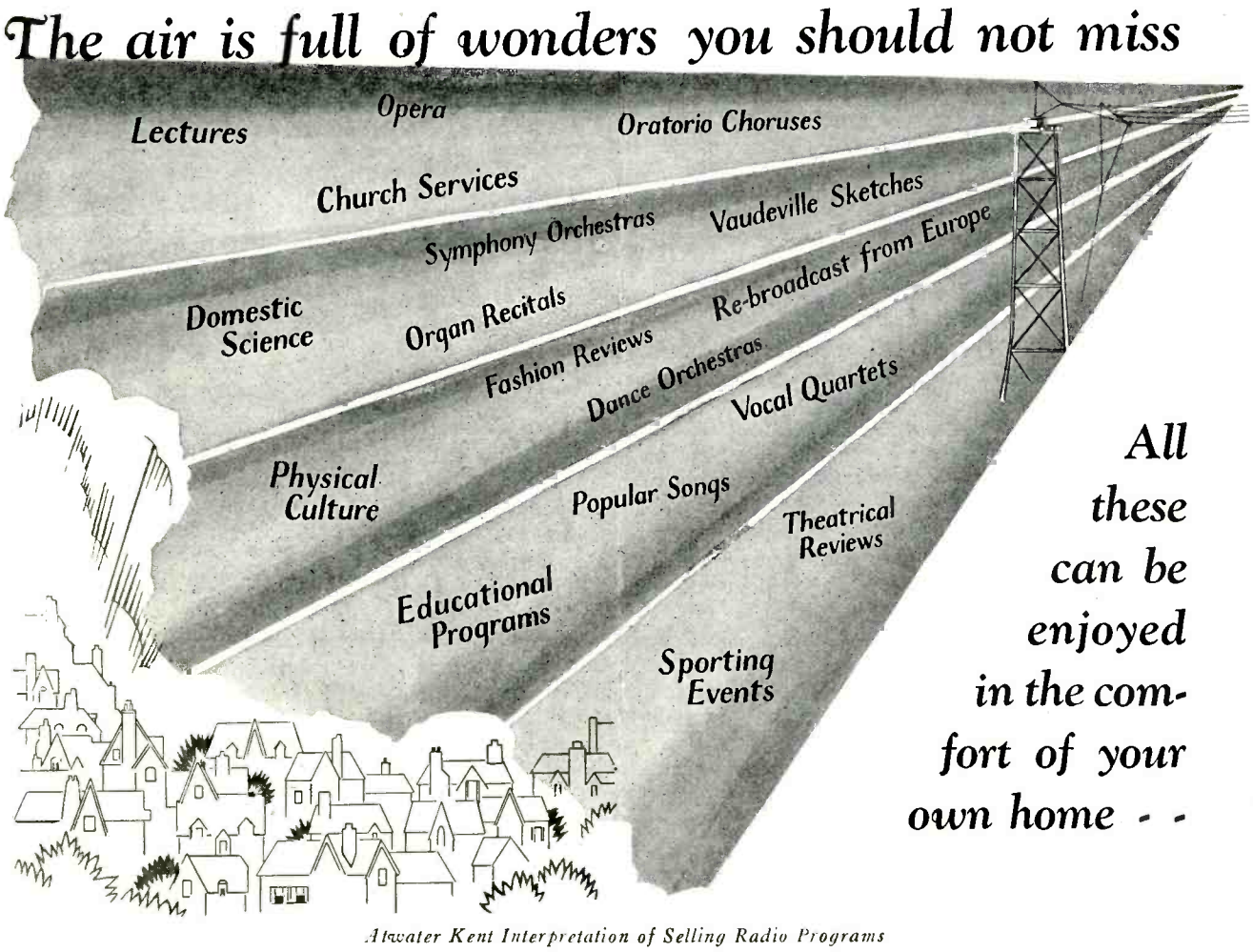
"Consequently, it stands to reason that the salesman who can intensify this interest or center it on some particular feature the prospect feels he cannot afford to miss, will sell more than the fellow whose sole stock in trade consists of attractive cabinets, hook-ups, screen grid tubes, heterodynes and the like.

"The finest automobile would be practically useless without the splendid system of roads which we have today. Motor car manufacturers realize this. More and more, they are featuring the joys of going places and seeing things in a fine car instead of merely talking about the mechanical features and beauty of their particular product. So it should be with radio.

"Recent improvements in broadcasting have done for the radio business exactly what good roads have done for the auto dealer. But not everyone realizes the full extent of the enjoyment inherent in what is going out over the air eighteen hours every day. As a result, we feel that one of our big selling jobs lies in selling the microphone.

"We believe that one reason more people do not buy radio sets is because they are not yet sold on the entertainment and educational value of almost any well known outfit. This may seem strange to the average radio salesman to whom radio is so much a part and parcel of his everyday life. However, it is true nevertheless—just as it was true that the hunter couldn't see the woods for the trees."

In one week not long ago, the Harp Company's outdoor men sold one hundred sets. In many of these sales, the microphone unwittingly played a prominent part. In doing so, it vindicated the opinion of those in charge that, after all is said and done, it is the real reason the discriminating listeners—and that means 95 per cent of all people buying sets today—would want radio in their homes.



Atwater Kent Interpretation of Selling Radio Programs

Skip, Gyp *and* Crook

(Concluded)

[Wherein the author makes more confessions about how he was stung and how he stopped credit losses.]

By VOLNEY G. MATHISON

THE fall and holiday months are the ones in which professional crooks most often operate, because those are the months in which stolen sets can be most quickly and profitably sold. One November evening a portly and prosperous looking man with eye-glasses and whose face somewhat resembled the portraits of one of our deceased presidents, came into the Gray Radio Store and in a businesslike way requested the demonstration of a $350 combination. The address given was that of a bungalow apartment, but it was away out in one of the fairly good districts of the city. Acting on that, and on the good looks of this man, the Gray Company delivered the machine and installed it. The next day was Sunday. When the closer went out to see about the machine Monday, he found the apartment vacant. He learned from the landlord that the prosperous looking stranger had paid only a five-dollar deposit on the apartment, promising to bring the rest of the money the following Monday, but instead he vanished Saturday night about midnight with the big combination. The machine was never recovered; no trace of it was ever found.

On the other hand, the Gray Radio Company had a dishwasher customer who lived in a rooming house in the worst part of town. He came in and first bought a $30 second-hand battery set on time; paid for it; bought a $175 electric radio and paid for that; then bought a $225 machine and gave it away to his grandmother and paid for it. He paid $5 a week from the first day he put his foot in the store until he was square, and he looked like a tramp. I guess he was a freak case, but at any rate other ill-looking persons also came and bought radios and paid for them, sometimes in cash. The upshot of this is that it is absolutely impossible to go by appearances; you have to investigate every purchaser impartially, no matter how bad or how good he looks to you at first sight.

The small dealer who does all his own selling is prone to fall into the queer delusion already mentioned that he knows all his customers; he has worked on them so long and so hard getting them to buy, and he is so anxious to get sales that he is willing to gloss over a lot of doubtful points in their credit statements. This kind of attitude is dynamite. The dealer who works that way will soon be chasing around after a lot of unpaid instalments and several missing radios.

IT IS a hard job to be a salesman and a credit manager at the same time; in fact, it is just about the hardest thing the smaller dealer has to learn to do. If he is going to succeed, he must be a salesman first of all, breaking down the buyer's resistance and winning his confidence, not to say his friendship—and in the same breath he has to be the skeptical and canny investigator, watching out with all his might that he is not being taken in by some bird who buys everything on credit that he can possibly get hold of and pays cash for nothing but gasoline and bootleg whiskey.

I repeat that it is almost impossible to be a high-powered salesman and a credit manager at the same time and I have a notion that hardly any dealer can ever be a big success who does not get a partner and separate the jobs of selling and of credit and business managing into two distinct departments. The credit manager must have the upper hand always; he must regard every credit application coldly, as if he didn't care much whether the store sold one set a month or a thousand.

The radio dealer has simply got to take the cold-blooded attitude of a banker who more or less openly considers every unknown person who enters his bank as a gyp or at least of doubtful character until he has positive evidence to the contrary. You have got to kind of figure that things are not what they seem and that nobody is what he appears to be: the slouchy wop who looks like a bomb-thrower may be an honest window-washer, and the good looking, well dressed man may be a glib-tongued scoundrel. You can't tell by a cursory glance, no matter how clever you are. It is necessary to get antecedent facts and investigate them carefully.

It is the queerest thing in the world the way radio dealers and even large furniture stores that ought to know better are breaking their necks to get valuable radios into the hands of people who cannot or will not pay for them—accepting five dollars down and any old credit statement that is only half checked up.

Does a banker or a loan shark or any salary-loan plan concern work that way? Just walk into a bank and say, "My name is Bunkum Skip; I want $150 please, and I'll pay you back at the rate of $10 a month if I can." The banker would be apt to call the cops and tell them a nut had gotten into the bank.

Yet the radio dealer runs himself to death to park a $200 radio in a furnished apartment occupied by some mink who has been there less than a month and who works only "now and then," if at all. A radio is not exactly the same as money, but almost. You have to pay out real money for the radios in your store, and when you sell one on time *you are making the purchaser a loan of the cash he would otherwise have paid you for the machine.* If he doesn't pay you your instalments, he has that much more cash for some other purpose. Therefore, you are indirectly loaning *cash,* and you should never forget it.

The radio dealer's profit in a time payment sale depends on the integrity of the purchaser; there is no profit until the very last payment has been made, until the last dog is dead. Getting the down payment is only the beginning of the worries of a merchant who sells on the instalment plan; there are twelve or fifteen more payments to be gotten and a lot of things will happen to the buyer in the course of twelve months, especially if he lives in an apartment house and is behind in his rent and is working in an auto-body factory that is going to close down next month.

THE applicant for credit should be turned down if he has not a steady job or cannot show satisfactory evidence of means to pay for the radio on the terms agreed on. If the purchaser has "just come into town," the dealer must find out where he came from, getting his exact address and full references in the town he came from and *check them up.*

One applicant of the Gray Radio Company, a fellow who wanted to buy

a late model $140 radio of a portable table style in a metal case, gave as a reference an auto dealer in a distant state. An airmail letter to the auto dealer requesting verification brought a reply that the auto dealer had a warrant out for the arrest of the said would-be radio purchaser for the embezzlement of the car he was travelling in! Another time, the reference given was a large furniture house who reported they knew the applicant and that he had been through bankruptcy three times in their city and that everybody in the place had been taken in.

I am not sure that I know why petty crooks give references of this kind, but I think I do; they are confused by the rapid cross-examining of an expert credit granter and the names slip out before they can check themselves. It is important to put the buyer who "never bought on credit" through an especially searching cross-examination, mentioning definite articles, as "Did you never buy any jewelry on credit, Mr. Flimflam? A watch? Ring for your wife? Did you never carry an account with a clothing house? Did you ever buy a car? Credit tires? Get a salary loan? Have a doctor bill? A dentist bill? A grocery account?"

An examination of this kind, skilfully carried on, will elicit the desired information without too much riling of the customer, if he is sincere. Be as tactful as you can and explain to your prospect the urgency of his giving you the information you seek; if he flies into a rage or gets sulky, let him go unless you have already found out enough to satisfy you.

Even if you get a number of credit references and they check up O.K. you haven't got much, or at least you are not entirely safe, because some people are clever enough to pay their bills on the dot in one or two stores and never pay them anywhere else. For this reason it is advisable and good business for the radio dealer to make use of the credit investigating bureaus that exist in most cities for the purpose of doing such work. A credit association check-up on one prospect revealed a case of this class where a person checked A-1 in two department stores and had uncollectible bills for a total of nearly $2000 strung through eight other stores in the district.

The attitude of the credit associations is slightly too conservative at times and they will occasionally report a prospect as a bad risk when he is a fairly good one. The reason is this: many a person has bought some article, say a suit of clothes or a set of furniture or other merchandise with which he was entirely dissatisfied, and failing to get a satisfactory adjustment from the store where he got it, he has reverted it, or refused to make good his payments. This purchaser is blacklisted in the large credit associations, yet he may be a responsible person, perfectly able and willing to pay for the radio he has selected from your store. A little careful questioning will immediately bring out whether your customer has a grievance of this kind; if he has, it will not matter much, so far as you are concerned, whether his attitude was justified or not in the previous case. It may only indicate that the prospect is particular and hard to suit and you will have to investigate further into his references and general statements in order to arrive at a decision on his application. If he has substantial property, he probably will be 100 per cent O.K., and if you coddle him you may make a valuable and influential friend. It's all a matter of tactful, careful work on your part, whether you go right or wrong in your credit granting.

Where the dealer operates a store so large that he never does any actual selling himself, his mental outlook naturally tends to become more critical and more exacting in his inspection of purchasers' credit statements, and it is a lot easier to judge accurately than when the dealer has to sell by the power of his own good lungs and line.

EVEN the smaller dealer is now getting to himself salesmen nowadays, and I doubt that any profitable volume of business is being done today by any exclusively radio concern that does not employ at least one outside man, either for part time or full time work. The radio business is tending more and more to direct selling, like the washing-machine and sewing-machine businesses.

Every dealer is on the lookout for good salesmen, but it is an odd fact that some of the very best salesmen, the ones that can bring in a lot of business and do it in a hurry are often unscrupulous and have to be rigidly checked and double-checked.

The Gray Company had salesmen who turned in absolutely spurious credit statements, in which references were made to all kinds of large concerns known to be strict in their credit granting. Checking up these statements proved that they were entirely false. The Gray Company also had men bring in contracts with impossibly small down payments and on the contract's being rejected by the company, the salesman would blithely prepare a new contract and forge the customer's name to it, raising the down payment just enough to get by, and then himself tender the additional money to the dealer which money he immediately got back in the shape of his initial commission advance.

This may appear to be an utterly senseless trick for a salesman to pull off, but there is a reason for it. The salesman will consider the loss he thus suffers as a cut in his commission, but he believes that he will eventually get something out of the sale and that some commission is better than none. In other words, the salesman is too confident that his customers will make good, and he helps them put up their ante. Salesmen are the most easily hoodwinked beings on earth; they fall for any old yarn of an impecunious purchaser and labor under the fancy that every man who will sign a contract for him and put up a few dollars along with it is as honest and good as the kind fairy of a Hans Anderson tale; and the salesman, determined to aid his prospect, is tempted in turn to hoodwink his employer by the means above outlined.

Therefore, don't take the word of an outside salesman that this is a swell account. It's Mr. Flooey; he lives in his own home; he is the owner of the United Sardine Company, and he was once the mayor of Geewhilikens. It doesn't mean a thing. Salesmen are suave talkers. They are naturally interested in their commissions more than they are in the dealer's profits. The swell account may be a rotten account, the home may be double-mortgaged, the United Sardine may be head over heels in debt and not really own a cuspidor to spit in, and as likely as not Flooey was in jail in Geewhilikens for failing to support his family. You never can tell. Investigate thoroughly for yourself and use your own judgment.

DON'T think I am overstressing the risk of loss you face through the criminal proclivities of some persons who enter your store. And don't imagine that the law will protect you from such. The law may be on your side, but so is the "law" on the side of all the people you read about in the newspapers who are stuck up and attacked and shot by gangsters. I have found out from much experience that the police are usually about the poorest possible aid in protecting the radio dealer from "skips."

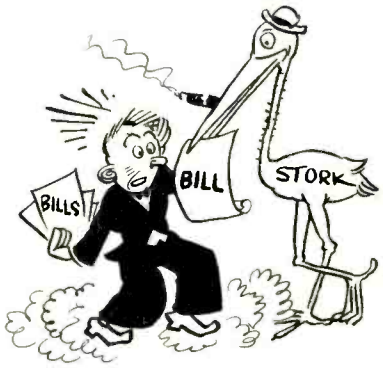
And remember, too, that once you accept a written sales contract signed by a purchaser and yourself, the criminal courts are just about through with the matter. If you lose your radio through the purchaser skipping out, you are likely to be told bluntly that you have made an agreement with the missing person; that you used your own judgment in doing so; and that if the other fellow turned out to be a crook, that shows your judg-

ment was rotten and you can do your own crying about it.

If you really can't find your radio, you may be able to get a warrant for the arrest of the "skip," but that's about the last you'll hear of it, unless you locate the criminal by your own private activities. The Gray Company did that three times and every time failed to get a conviction because the culprit proved in court that he had kept the radio in his own possession and had not sold it for money. It's a funny thing that a man can make off with property purchased under contract and as long as he doesn't sell it, nothing in the world can be done to him in a criminal court.

Think that over. If a man moves away with your radio, all you can really do even if you find him, is to take your property back, and it may cost you fifteen or twenty dollars for a replevin to do that—and you may get a smashed, broken-up, valueless radio after all. And even if you find the skip and the radio is not in his possession and he alleges on oath that it was "stolen" from him, you are out of luck. You can't do a thing. These are facts and any attorney can verify them—yet not one dealer in fifty understands the risk he is taking in instalment selling. I had to sell $150,000 worth of radios on time before *I* learned it properly.

Even a "good risk" is risky enough; young married couples with good references buy a radio and break up housekeeping in a fight before the machine is half paid for; neither of them wants it, so it is reverted, obsolete, dirty, tubeless and dented from flying flatirons and dishes; the powerpack full of toothbrushes and pieces of lipstick and other articles. Or again, Mr. Stork gums up



the works with doctors' bills and other troubles that make it impossible for the radio to be paid for; or the husband loses his job unexpectedly and is unable to get another; or he gets a better job in Patagonia or China and can't take the radio on such a long trip; or a new model comes out and he cooly decides to let his old one go back so that he can go and get the new one, or—well, if your customers can't think of anything else, they'll lie down and die on you, and then where are you? Up that famous creek—that's where!

Using *Radio* to Stimulate *Sales*

By **GEO. R. THOMPSON**

SELLING goods by long distance telephone within six minutes after the radio program was put on the air was the experience of C. F. Giese, local manager of the Ira F. Powers Furniture Co. store in Eugene, Oregon.

One Saturday, Mr. Giese decided to put on a red-hot special to test the reception of his daily half-hour broadcast. Twenty-five vacuum cleaners that had been in stock for some time and that were proving themselves a burden and an overhead, were featured at a decided cut.

The announcement was made that the cleaners were to be sold on the no-demonstration plan, cash on the barrelhead, the machines to be taken "as is" with no returns, the purchasers depending upon the reliability of the manufacturer's product as being sound.

The announcements were of the simplest, a mere mention of the fact that the program was being sponsored by the store, that the store was selling furniture at 15 to 20 per cent reductions in a pre-inventory sale, and that as a special for the day there were twenty-five vacuum cleaners to be sold to the first takers.

The program went on the air at 1 P. M. Six minutes after the program went on the air, a woman called by telephone from Florence, a town one hundred miles distant, and requested that a vacuum cleaner be shipped at once. Within 10 minutes after the program went on the air, the store had received three long-distance telephone calls ordering machines. By the time the program was over, a 30-minute entertainment, six machines had been sold as a direct result of the program. The writer of this article happened to enter the store at 1:40, 10 minutes after the program was over, in search of a bit of news. While he was talking to the manager, the office girl was taking the order for the tenth machine over the telephone.

Thus did Mr. Giese discover the extent to which the store's programs were being heard. He cleaned out a slow-moving, burdensome stock. He created customers in territory not hitherto touched, and he re-established his faith in radio advertising.

He is planning to put on a "red-hot" special daily and clean out a lot of stock that is absorbing its own profits because it cannot be sold by the ordinary methods.

Benjamin Wolfe, Supt. U. S. Department of Commerce, Radio Monitor Station at Grand Island, Neb., which will start checking reception of radio stations throughout the world on September 1.

More Fine *Points* in *Selling Radio*

By HECKERT L. PARKER

How Price, Tone Quality, Appearance and Performance appeal to people of different yearly income, and the effect of Social Standards on the selection of a receiving set.

PREVIOUS lessons in this series, which started in December RADIO, have considered what a salesman should know about himself, and the characteristics of his prospects. These are a salesman's tools wherewith to shape prospects into customers. The dealer then tells the salesman what kind of people the firm wants turned into customers. This depends upon the policy of the firm in four things, namely: The financial ability of the prospect to pay for any radio; what price trade-in, if any; the price class of receivers handled; and the social habits or environment of the prospect. Before the salesman can sell, he must be able to adapt himself to the firm's policy.

Inasmuch as most radio salesmen work either on a straight commission basis, or a combination of salary and some form of bonus, it is to their advantage, as well as for the retail firm, not to waste time on prospects whose orders would not be accepted, nor—what is important because so often overlooked—lose possible profit for both the firm and the salesman by selling low-priced receivers where high-priced receivers could be sold.

Common sense and ordinary observation generally constitute the only method used by salesmen in investigating the credit responsibility of a prospect. But in all lines of trade, the report and comments of the salesman accompanying an order are taken into consideration by the person who passes on credit.

However, every successful retail firm has some definite and reliable source of information upon which to base credit of a customer before goods are let out of the firm's possession on charge or time-payment sales orders. This is seldom a function of the salesman, but it behooves him to secure definite instructions from his boss on this subject before working on prospects whom the firm may not accept as credit risks.

Trade-In Policies

THERE are some 5 to 7 million homes in America where an old battery set, or early a-c type set, is still operated by people who are more or less radio-minded and are excellent prospects for a modern receiver. Just as the "used" automobile is a problem for the auto dealer, a collection of "used" radio receivers often ties up the salesman's commissions and is all that a dealer has to show for profits at the end of the year's business. Every owner of a used receiver thinks his set has some value to apply on the purchase of a new receiver. The salesman's problem is to convince the prospect that an old set has little, if any, value to the dealer-firm.

About one-fourth the retail dealers have adopted a strict policy of not accepting a used set as part payment on a new set, under any conditions whatsoever. A salesman working for such a firm has only to learn a few diplomatic methods of imparting this policy to his prospects. When the prospect is just as emphatic about getting something from the dealer for the old set, the chances are slim for a sale. But the good salesman does not give up without trying to influence the prospect to dispose of the old set in some manner. It is a compliment to the prospect for the salesman to suggest that the set be given away to some needy person, some relative, or turned over to some institution for the aged or blind. If the prospect insists on getting some money value for the old set, he can be reminded that a private sale will always bring a higher price than any dealer could allow for it as a trade-in.

No special knowledge or much effort is required to prepare and place an advertisement of a used set in a local newspaper, but to many people this would seem difficult. The salesman can offer to do this for the owner, the owner to pay the cost of the ad. If there are objections to having strangers call at the owner's home to see the set, then the next suggestion is that the dealer act as agent for the owner and sell it at his store for a price established by the owner. Should the dealer object to this arrangement, the receiver may be left in the salesman's home to be shown or demonstrated to callers in answer to the newspaper ad. In either case, the dealer may insist that it be made clear to the prospect that the purchase of the new receiver is a transaction all by itself, even though the sale of the new receiver may be contingent upon a satisfactory disposal of the old receiver.

About three-quarters of retail radio firms accept used receivers, under varying policies, as part payment on new receivers. The value established for these "trade-ins" depends upon many factors; likewise, policies vary as to the method and amount the salesman's commission is reduced where a trade-in is involved.

With few exceptions, the prospect will have in mind a higher value for his old receiver than the dealer can afford to allow. This is not always because the prospect is trying to put over something on the dealer, but because he thinks only in terms of what was originally paid for the receiver. Usually it is quite a shock to the prospect to be told that $5 to $10 is all that can be allowed for a set which cost from $150 to $200 two or three years ago. In order to retain that prospect's faith in both the salesman and his firm, the salesman must assume that the prospect is honest but is laboring under a wrong impression as to the value of the used receiver.

Simply explaining that buyers of used radios are only those who can not afford to buy a new one, and that to interest such people the price must be very low, brings down the prospect's mental valuation of his trade-in. Use a pencil and pad to figure as the talk progresses. In the case of a battery set, figure up the price of a new set of tubes and batteries, and add that to the prospect's value of the old set. Or in the case of an old type a-c set, add at least the price of a new set of tubes. If the old receiver requires other repairs, such as refinishing the cabinet, replacing the speaker unit, etc., to put it in a reasonably good condition for reselling, these additions help the salesman's argument. Explain further that it will cost the dealer part of the fixed overhead expense, and something more, to advertise and resell the old set.

The salesman should realize that the regular rate of commission can only be paid to him on the amount of the new

set after deducting the amount allowed for the trade-in. The "mark up" on used sets varies with different dealers, but is around 20 to 35 per cent; hence the commission paid for the sales of used sets can not be as large as for new sets. When the dealer does not get the full amount allowed for the trade-in, plus the cost of handling, testing, repairing, selling, etc., he loses just that much on the new set sale.

Most retail firms who take trade-ins have a list of the various models of different makes of receivers sold for the past three or four years in their locality, on which a trade-in allowance is established for each model. In some cases these values are based on the experience and judgment of the individual retail firm; and in others the values are those established by publishers of trade-in price lists. Some dealers will furnish their salesmen with such lists; others will have an appraisal made by another member of the organization who advises the salesman what can be allowed for a particular receiver. The latter course is most always necessary where salesmen lack practical knowledge of the resale value of trade-ins.

The policy of some retail firms permits the amount allowed for an old receiver to be increased when it is applied against a high-priced new receiver. In principle this is wrong, because the price of the new receiver does not alter the market value of the trade-in. A customer for a second-hand set will not pay $5 more for it because the dealer allowed or paid $5 more than he should have for it.

Likewise, it is just as wrong in principle to establish one flat uniform price for any and all used sets, regardless of model, make or condition. Where this is done, it means that the dealer or manufacturer has established the list price of new merchandise at such a figure that some allowance can be made to all dealers for every trade-in accepted; and that neither the dealer nor the manufacturer expects to have one cent of the allowance made up by resale of the trade-in sets. Where this latter policy is applied to merchandise having a nationally-advertised list price, it means that the manufacturer assumes the burden of the disposal of the trade-in sets and dealers are required to ship the trade-ins to the manufacturer so the latter can either burn or destroy them so they will be out of the market entirely; or dispose of them to some large salvage merchandise concern who has a market for parts.

To consider only the salesman's angle of the trade-in situation, assume that he is working on a straight 10 per cent sales commission and specializing on a receiver listing at $200. Where no trade-in is involved, the commission is $20. With a trade-in valued at $20, the salesman's commission would be reduced to $18. The salesman's problem is to determine when to stick with the prospect and try to sell the new receiver for the full $200 without taking the trade-in, or when to sacrifice $2 in commission by allowing the trade-in, save his own time, get on to the next prospect, and let the dealer worry about getting back his $20 allowance through the sale of the trade-in.

Therefore, it behooves the salesman to have a full and complete understanding with his boss about this question of commissions when trade-ins are involved in sales of new sets.

Prospect's Ability to Pay

A SOUND sales plan demands that the salesman consider the prospect's point of view and needs.

To visualize the interwoven complexities of financial ability and social standards of different prospects, the table on the next page is helpful. To understand how and why certain desires or buying motives are strong in some minds and weak in others, requires an understanding of how people live, before the salesman can "put himself in their shoes" and reason out what will most appeal to any one prospect. Not all salesmen can hope to be successful in selling to people of every social standing in every community.

All people can be classed as types, such as reticent, decisive, suspicious, etc., and fundamental desires such as family and parental instincts, pride of possession, companionship, desire to know, etc., are the underlying impulses which lead to purchase. But differences in social habits, environment and hereditary influences will cause people of different social standards and income to react differently to these same fundamental impulses.

The data in columns (a) and (b) of the table are taken from the U. S. Internal Revenue Department reports. Column (a) gives an arbitrary classification of yearly incomes of different amounts, and column (b) shows the actual percentage of citizens in each income class.

The fact that 84 per cent of the prospects have incomes between $1000 and $5000, is a sound reason for the mass production of sets priced from about $125 to $250. However, because one manufacturer decides to offer, say two sets, one at $125 and one at $160, is no reason why a dealer should try to force those sets upon every prospect with whom he comes in contact. A large number of $125 sets have been sold to people with incomes around $4500, who should have been sold, with better salesmanship, a set at $250. Methods for avoiding this loss in profit to the dealer, and commission to the salesman, have not been given enough consideration in the sales-help and instructions provided for the salesman. Likewise, many people with incomes around $2000 have been sold sets at around $250 which they could not afford; consequently have caused much grief and trouble in repossessions.

Column (c) suggests the list price of the receiver which each income class can generally afford to purchase without placing a strain on pocketbooks, provided that there are not too many other demands upon the family strong-box to keep up payments on a new home, an automobile or other merchandise, or to keep the children in college.

Methods to predetermine the price class of receiver for a particular prospect must be tempered with a lot of common sense, or sales will be lost while trying to force a high-priced receiver on a prospect whose income would normally permit the purchase of the higher priced receiver, but who, because of some temporary condition, which pride might keep him from disclosing, will buy only a lower priced receiver. That is, the price must not put too much of a strain upon the pocketbook *at that particular time*. Often the salesman must learn what other buying-desires may be occupying the minds of some members of the family. The family income might indicate ability to handle a $400 radio set and the man of the house willing to purchase, but the wife or daughter may be weighing the relative needs of a new set of bathroom fixtures, or new rugs for the living room, and be willing to do without a new radio at this time or take one of lower quality or appearance in order to secure the other things they desire.

The experience of several retailers in selling radio and other household specialties was called on to give the figures in columns (d) and (e), showing the relative percentage of people of different incomes who pay cash as compared with the per cent of each income class who buy such merchandise on a time-payment plan. These figures are given as a guide as to what the salesman may expect on an average. If more than 10 per cent of a salesman's customers of incomes less than $1000 per year pay cash, that salesman is doing better than average in that respect. If less than 20 per cent of a salesman's customers in the $5000 to $10,000 class pay cash, that salesman is not doing as good a job as he should in that respect.

The complexities and overlapping influences which act upon *any one* individual to cause the selection of his first receiver, are illustrated by the headings and percentage figures in columns (g), (h), (i) and (j). They are presented in this form to further impress the necessity for more effort on the part of

salesmen to learn as much as possible about the lives and habits of their prospects before applying a canvass or sales talk. This is to save time, by stressing the points which are important in the mind of a particular prospect; individual sales are made in shorter time; hence more sales are made.

For example: Consider an individual with an income of $1500 per year and rated "poor" with respect to social habits, etc., column (f). According to the table, the selection or purchase of a receiver by this individual will be influenced by: 85 per cent by price, 5 per cent by tone quality, 5 per cent by appearance, as compared with the extent that these same factors will influence a person rated under column (f) as "fair" or "good."

Also, another individual of the same income but rated "fair" in column (f), may have higher social ambitions or a greater desire to keep up with his neighbor, and is therefore a little more influenced by "appearance" than by "tone quality." A third individual of the same yearly income, but because of early educational advantages, parental influences, etc., may be rated "good" in column (f), and because of a keener interest in good music than either of the other two people considered above, "tone quality" will be equally important with "appearance."

Of the same income class, both individuals rated "fair" and "good" were influenced slightly less by "price," than the individual rated "poor," because their social standing forced them to give more attention to "tone quality" and "appearance."

While the table was prepared to illustrate principally the overlapping influences on a single individual, it happens that the same figures come quite close to last year's experience of the average retail radio dealer, with the percentage of all prospects who were interested in "tone quality," as compared with the number of people interested in "price," "appearance," "performance," etc.

Obviously, the high-priced receiver prospects would be limited to those living in neighborhoods where land and homes are high priced, with the exception that there are always to be found people with plenty of money who continue to live in a poorer, or run-down neighborhood because they feel more at home, more socially equal to the people living near them. Likewise, there are people living in all sorts of neighborhoods who have poor judgment—simply do not "know how"—but who strive to ape the families in the higher social levels, and foolishly spend more than they can afford for radio.

HOW INCOME AND STANDARDS OF LIVING DETERMINE PRICE, CLASS AND SELECTION OF RADIO RECEIVERS

U. S. INTERNAL REVENUE DATA		List price receiver can afford (c)	PAYMENT HABITS		When social habits, education, hereditary & environmental influences are (f)	EACH GROUP IN EACH INCOME CLASS IS INFLUENCED IN SELECTING A RADIO RECEIVING SET			
Yearly Income Class Divisions (a)	Population in Class (b)		By cash (d)	Time plan (e)		By price (g)	By tone quality (h)	By appearance (i)	By selectivity sensitivity (j)
Under $1000	6%	Under $100	10%	90%	Poor	85%	4%	8%	3%
					Fair	85%	5%	5%	5%
					Good	80%	9%	5%	1%
$1000 to $2000	36%	$100 to $150	15%	85%	Poor	85%	5%	5%	5%
					Fair	75%	5%	15%	5%
					Good	70%	10%	10%	5%
$2000 to $3000	31%	$125 to $200	15%	85%	Poor	75%	10%	10%	5%
					Fair	60%	15%	20%	5%
					Good	60%	15%	15%	5%
$3000 to $5000	17%	$175 to $300	15%	85%	Poor	60%	10%	25%	5%
					Fair	60%	15%	20%	5%
					Good	55%	20%	20%	5%
$5000 to $10,000	6%	$200 to $1000	20%	80%	Poor	55%	10%	30%	5%
					Fair	40%	25%	25%	10%
					Good	40%	25%	30%	5%
$10,000 to $25,000	3%	$500 and up	50%	50%	Poor	15%	10%	65%	10%
					Fair	10%	40%	40%	10%
					Good	5%	50%	35%	10%
$25,000 to $50,000	¾ of 1%	$1000 and up	90%	10%	Poor	5%	15%	65%	15%
					Fair	1%	40%	50%	9%
					Good	.....	45%	45%	10%
$50,000 and up	¼ of 1%	No limit	100%	0%	Poor	.....	25%	60%	15%
					Fair	.....	40%	50%	10%
					Good	.....	45%	45%	10%

On the other hand, there are many wealthy people of high social standing whose desire for radio can be satisfied with the $130 receiver because of more modest social inclinations.

The income of a laboring man may be low, under $2000 per year, but his family life quite genteel, or perhaps quite religious.

The social habits of an uneducated mechanic, raised in poor environment, might be of too low an order to appreciate good music or educational radio programs, but the sudden acquisition of wealth by inheritance or bootlegging profits make them prospects for a $1000 receiver. In this case, a large cabinet of no particular design, highly ornamented, capable of exceptional volume, distorted or undistorted, could be sold easily.

Another type of prospect easily able to afford a $1000 receiver, but whose standards of living, education, habits, etc., would only be satisfied with a receiver housed in a cabinet which harmonized perfectly with the interiors, decorations and furnishings of their home, and with a tone quality of the very best.

As manufacturing methods are improved, mass production will place on the market cheaper and cheaper sets each year, but there will always be a class of people who will demand something better, and some will demand the best.

As RADIO becomes more important in the daily lives of people, the necessity for two or more receiving sets in the same house will provide much profit for the dealer and his salesmen.

The factors influencing receiver selection as given in the table apply only to people who are purchasing their first radio set, or to those who are prospects for only one new receiver to replace their present receiver used in the principal living quarters of the home.

There are many thousands of present radio users, with incomes of around $5000 per year and upward, who own only one receiving set and who are prospects right now for a second or third receiver for their home. A person with a $500 radio set in their living room or drawing room may be satisfied with a $100 radio set for the children's nursery, or the private room of some member of the family who may want a different program than the other members of the family, or want to listen in at hours of the day or night when radio would be objectionable to others in the same house.

All of these things are obvious and may seem elementary, but they are brought out here to impress the student salesman with the necessity for determining, *in advance,* the social habits and financial standing of his prospects, in order to determine the type of receiver upon which to concentrate with a particular prospect.

The *Skillful* Handling of *Credit Applications*

By JOHN T. BARTLETT

Get essential information—The facts about application forms—The place of "hunch"—Interviewing tips.

AMONG large city stores, the use of credit application blanks is universal. These require answers to a varying number of questions. Sometimes the applicant fills out the form, but more often a store employee. The applicant sometimes is required to sign the application.

Country and neighborhood stores seldom use application forms. They should use them more, however—not perhaps for all customers, but there seems to be the occasional case where the value of one is certain.

The information developed systematically by application forms should be acquired in other ways, if no form is used. There is no principle of efficient credit which is more certain than that sound information is the basis of sound credit.

The modern way of handling a credit application is to obtain information in detail from the applicant, then refer to the credit bureau, who may find on investigation this information of an applicant is not in its files.

The Alert Questioner

A GREAT deal of psychological skill can go into an application interview. If an application form is used, almost always there is some adaptation to the individual applicant. Questions asked of some people are not asked of others. The store employee does not seek information which he already knows.

Name and address are obviously needed. These are amplified in a variety of directions. Where does the applicant work, and how long has he worked there? Does his wife work? How many children has he?

In what bank has he an account, and to what fraternal orders and lodges does he belong? Does he owe payments on an automobile? If so, how much? What property does he own?

What are other local stores with which he has a charge account? What are the names of two personal references?

In installment credit, application forms become exceedingly detailed. This is because of the "skip" hazard. Much information is wanted for the help it will be in the event the customer disappears. Thus, his height, weight, and color of eyes actually may be taken!

Some application forms require the applicant to state the total amount of past due obligations he has.

There is much information which can be obtained far more readily from the credit applicant than in any other way. Don't be afraid to ask questions. Altogether too many merchants have a "complex," and fear to interrogate, believing they will offend the customer. Credit office experience is that the person who is offended by questions frankly put is in small minority.

Most people, if questions are put in a friendly way, do not resent them. They recognize that the store is entitled to know something of them, since trust—credit—is under consideration.

When it is apparent that an applicant is reacting in an unfavorable way, some credit men explain necessity for questioning, and then proceed. Some others do not push the situation, but get names of references. These will be checked. No further information may be needed as the credit bureau report comes in.

"What Credit Do You Want?"

IT MAY or may not be necessary to ask the applicant, in so many words, what the amount of credit which is desired is. However, many times to put this question is a wise move. In the practical extension of retail credit, the amount of credit which is wanted is found to influence decision time and again. A customer considered all right for a small amount may not be qualified for a large amount.

It may immediately appear as an applicant is questioned that he is not "good" for open account credit. There are factors in the situation which are decidedly not up to standard. One course, upon this, is to reject the application then and there as tactfully as possible.

Another course is to search about, with questions, for ways to qualify the applicant. One of the most common measures is to require a guarantor. Minors in particular buy on accounts which are guaranteed by parents. Employers sometimes guarantee accounts.

The chattel mortgage may be the way out. Some men whose personal credit is worthless have wives whose credit is good. In such a case, making the wife responsible may be the solution.

Ingenuity finds many ways when the applicant is closely questioned, to make credit extension sound when otherwise it would not be.

Your Attitude Should Be Friendly

OBSERVE the credit man of great retail stores in action. You will find that the best of them, meeting credit applicants, have a friendly attitude. They know how to smile, and how to be cordial. They do not "fight" the applicant, but instead have a receptive attitude. They are trying their hardest to qualify the account, rather than their hardest to find weaknesses in it.

The friendly attitude toward applicants is a necessity if credit volume is to be built to the maximum.

The information to be obtained frequently, in the case of country credit, is to confirm or supplement information the merchant already possesses. I have observed country merchants whose cleverness in obtaining information without seeming to do so was amazing.

They "gossiped" about crops and community affairs for fifteen or twenty minutes with the credit applicant—and at the end of that time possessed all the information they needed!

Many of the losses which occur in retail credit come because a risk, formerly quite good, changes, and before creditors realize it, is poor to bad. Even when there is acquaintanceship with an applicant dating back some time, a conversation which brings information down to date is a mighty valuable thing. Repeatedly, it eliminates losses, because it reveals facts of which the merchant was in ignorance.

In general, the information secured from the applicant should assist the merchant in deciding whether or not it is safe to extend credit. While facts are wanted, "impression" and "hunches," as a conversation unfolds, are important. Considerable can be deduced concerning a man—his moral character, ability. Credit will not be extended on the basis of these, but they will be considered along with facts developed.

Handle right the interview in which credit is applied for, and the whole credit granting process is off to a good start.

The *Value* of Saving *Time* in a *Radio Store*

By ARTHUR R. BOYDEN

ALIVE radio dealer in one of the western states called a round table conference of his associates to find out why the overhead was so high and the profits so lean. After considerable discussion the problem simmered down to a matter of saving some of the time that everyone was wasting. Even the manager found that he was wasting two hours a day in listening to callers, talking with employees and salesmen, or waiting for telephone connections or calls. Everyone else was wasting about the same amount of time.

Although they realized what a dent this was making in a day's work, they could not immediately decide how it could be helped. Certain callers had to be seen, a certain amount of talk with employees was necessary, and certain telephone calls could not be avoided. The question was finally put up to a meeting of all the employees. They were shown how the habit of wasting time was causing them additional work and preventing any increase in salaries.

The outcome was that employees soon began to try to save time. It was almost like a game, each vieing with the others in solving the problem. Unnecessary conversations, stalling and futile movements began to disappear. Business was speeded up and the daily routine grew steadily more and more efficient. Soon

**"Time wasted is money lost.
Time saved is money gained."**

cuts were made in the overhead and profits continued to increase. And all this was accomplished without additional work. In fact, far less overtime or putting things off until the next day, was now necessary.

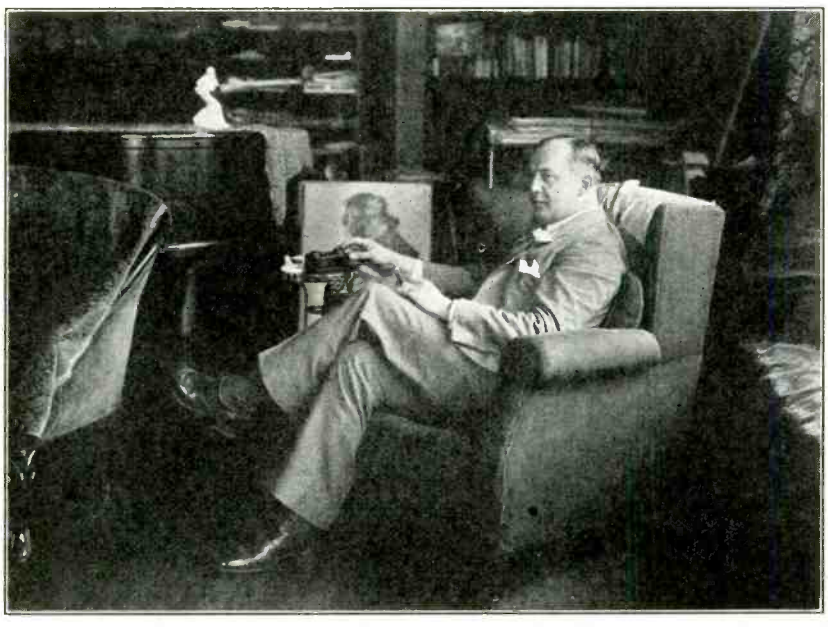
While these changes were taking place within the office, the manager and the entire personnel were slowly but surely creating a different approach in handling callers and customers. Always polite and courteous, they nevertheless firmly insisted that nothing but the business in hand should be discussed and in as clear and concise a manner as possible.

Slogan signs, like that at the head of this article, were placed about in conspicuous places. These proved a decided deterrent to unnecessary conversations. Racks for folders and other sales literature were placed at convenient locations and the salesmen were drilled into keeping these in their proper order so that they need not waste time pawing through a mass of documents in order to find the one they wanted when they wanted it. Forms for inter-office communication and form letters were developed, thus saving time wasted in unnecessary dictation and transcribing.

At weekly meetings talks were made on "time saving," the fact always being stressed that disorganized and chaotic salesmanship showed a disorganized and chaotic mind. Thus it did not take the employees long to digest this thought, especially when it was backed up by tables showing in cold, hard figures just what time saving was doing for the company. At the end of the first year a survey showed that with a very material increase in business, the overhead had actually been cut down, while the work of the personnel had not visibly increased.

Although the manager is loath to make public the actual money saved, he asserts that it runs into the thousands of dollars each year. Because of this saving the company is able to keep plugging along through fat and lean years. No employees are laid off during slack months, the advertising appropriation has been increased and so much time has been gained that during the summer months most employees are given a full Saturday holiday each week in addition to their annual two weeks' vacation.

Referring to the slogan signs he declares that they have worked wonders not only among the employees, but among callers. The psychological effect has been to put a stop to long-winded visitations or the discussion of things outside the business at hand.



A Radio Chassis, Hidden Away in a Cupboard, Can Be Controlled from a Library Chair by Means of a Sleeper Remote Control Unit

"Always be sure that the article you are selling on time is, and will continue to be, worth more than the buyer owes you."

The *Other Side* of the *Dealer-Finance* Company *Problem*

Radio paper salesman analyzes Volney G. Mathison's "$150,000 a Year—and Broke."

By G. S. CORPE

As EVERY successful dealer has to do some financing of instalment sales, he must deal with a finance company whether he likes it or not. So the more he understands about the finance companies' attitude and their basis for doing business, the better is his chance for an agreeable and profitable connection.

If, as Volney G. Mathison agrees in his article on "$150,000 a Year—and Broke," the small dealer can compete with the big furniture houses and cut-rate dealers in getting a larger payment down, I can see no reason why he also cannot successfully add the financing charge onto the face amount of each contract. In fact, I know dozens of dealers who are doing this with every sale and without complaint from their customers. Have you not noticed many articles advertised with two prices quoted—the lower marked "Net Cash Price" and the other marked "Time Sale Price"? Of course you have; why not handle your time sale problems in the same manner? If a person is granted time in which to make payments, why in the world shouldn't he pay interest for such use of the money? This *is* being consistently done everywhere; and since it is right and proper, I feel sure will be successfully continued in the future.

The statement that the average radio dealer is not a business man, applies to enough dealers to make it necessary to handle about all of them alike. So the possible majority must suffer for the shortcomings of the possible minority. Most dealers are enticed into the business of retailing radio sets because of the romance and glamour of radio, but not of business. They may have successfully built a couple of super-hooperdynes in their woodsheds and, being possessed of a pair of pliers and a bum blow-torch, feel the urge to show the world up in the matter of radio sales.

What happens? They start out with less capital than an average cigar stand and absolutely no business experience. After they get things buzzing along nicely and sell a lot of sets with little or no cash down payment and "hock" their contracts with some finance outfit, they take a look at their books and, without analyzing the figures or taking into consideration such simple things as contingent liability on their contracts, etc., decide that they certainly are on the road to sudden and great wealth. Whereupon they buy an automobile on the same 17 per cent per annum basis that Mr. Mathison talks about; take a lease on a storeroom at a figure three times as expensive as they can afford; go into debt to fit it out like a palace and, in general, proceed to spread out and plaster things with a deep shade of red that is in no manner justified.

Then pretty soon things begin to happen. A few slow accounts have to be taken up; a change in model or a drop in price comes along, necessitating some more comebacks; and a few weeks later Mr. Dealer lights belly-up in the bankruptcy court.

Unfortunately, though, that doesn't end the story for the finance company. It still has a year's supply of bum paper which was bought from Mr. Dealer in his palmy days, and it all has to be collected, repossessions made and resold, etc. Furthermore, there probably are two new dealers in the place of the first Mr. Dealer, knocking at the finance company's door for an outlet for their paper. But possibly by this time the finance company has been nicked so hard and so often that the board of directors goes into a huddle and decide that they will handle no more radio paper; and, of course, when that word goes out, the dealers who have been unloading paper on them send up an awful yowl about the unfair way they are being treated, etc.

With history repeating itself over and over along these lines, can you blame a finance company for holding back a certain percentage to cover comebacks and emergencies? Whose money is it that is being played with, anyhow? Is it the dealer's money? Not by a jugful; it is the finance company's, and that certainly is entitled to Safety First.

MR. MATHISON mentions that banks manage to keep their heads above water on a basis of 7 or 8 per cent, and infers that finance companies should be able to do the same thing. Here's the difference: Walk into your bank and try to borrow $10,000. See what kind of collateral you have to put up to get it. You will find that the bank will either take a mortgage on $20,000 or more of good real estate, or will accept $20,000 of high-grade bonds or stocks. In other words, they practically always have at least a 2 to 1 safety margin, and no foolin' about the safety, either. Contrast this with a radio contract of say 80 per cent of the retail price. Tubes cost a big part of that 20 per cent margin and can be easily ruined. Rough treatment can make the cabinet nearly worthless. A change in model or a slight

drop in price can wipe out that little 20 per cent safety margin—overnight.

Another thing: Contrary to Mr. Mathison's opinion of 20 cents per instalment, it does cost money to make monthly collections and keep books on same; 20 cents per instalment isn't a drop in the bucket toward the actual cost. But does Mr. Banker have to bother with such things? Hardly. He either deducts the interest in advance, or collects it all in one lump sum at the time the note is paid. He has to make *one* collection entry, against ten or twelve on the radio contract.

As a matter of fact, anybody can go out with hard money nowadays and buy a gilt-edge first class mortgage with at least a 10 per cent discount. It will bear 8 per cent interest, too. If it is for the standard period of three years, it will therefore be bringing in about 12 per cent (⅓ of 10 per cent discount is 3⅓ per cent, plus 8 per cent on 90 per cent of face value of mortgage, or nearly 12 per cent). With such inviting investments as this, which necessitate four entries per year (interest payable quarterly usually), why in the world does anybody fool away his time with such potential dynamite as radio paper?

Besides the simple investment in a good mortgage, we must not forget that the business world is full of high-grade paper at good discounts. Trade acceptances and warehouse receipts are plentiful at 10 or 15 per cent discount; millions of dollars in automobile paper is floated annually; washing machines, sewing machines, ice-boxes, tires, false teeth, and what-not paper is available in any quantity you want to buy.

This explanation is included so that radio dealers will realize that the world of finance doesn't owe them anything more than it does other lines of business; and that money has a thousand outlets besides radio paper. In other words, the business of instalment sales of radio sets has to be done in a legitimate, business-like way, and don't get the idea just because your neighbor's boy copied the short-wave set on the "Southern Cross" clear to Australia, that radio retailing is anything other than good old hard-boiled business. That's all it is and, therefore, it must be handled as such.

I HAVE been in the radio game for years, being a ship's operator, instructor in the army, owner of a broadcast station, trying to manufacture radio stuff, selling sets, and for the last seven years handling radio paper. I have handled several millions of dollars worth, not only sets, but short-wave stuff, parts, phonograph pick-ups, etc., and have never lost a single dollar on any of it. And here's the secret: *Always be sure that the article you are selling on time is and will continue to be worth more than the buyer owes you.*

That statement should be both pasted in your hat and nailed on the wall over your desk. Analyze every sale, and apply the above to it. When your smooth-tongued salesman tries to hypnotize you into selling to Mr. Neverpay for $10 down, shake off the trance and firmly tell that salesman to go to hell. What good is any customer who wants to go into debt $120 for a radio set and has so managed his financial affairs that he can pay but $10 down? That man ought to be buying a $2 crystal set, instead, and probably using the other $8 to pay off some of his other encumbrances.

Fellows, *don't sell radio sets for less than one-third down.* That may sound impossible, but it truly isn't. I know a dealer who started with less than $500 capital five years ago, but who has been economical and careful, and who is now selling up to $5000 per month; but he never lets anything go out of the store with less than one-third down. Do you think he worries about comebacks? Of course not, because even if he has to make them occasionally, due to absolutely unavoidable occurrences, he has obtained so much down that he is still safe and can resell the merchandise profitably.

Make your contract balances pay out in ten months. A party who cannot pay one-third down and the other two-thirds in ten months, plus a decent carrying charge, should not be on your books. Do less business, and let the above be your method of curtailing, and you will find that at the end of the year you have more money and less gray hair. It's a fact—I have watched it carefully since broadcasting first began, and there just isn't any argument about it.

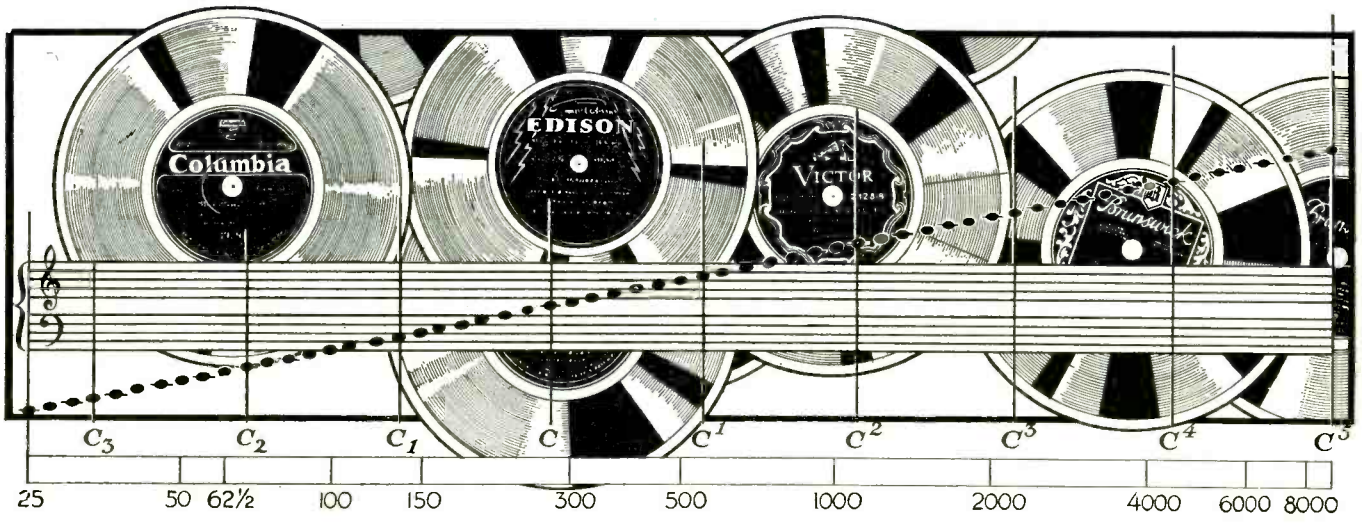
Don't worry about your hook-nosed competitors with the full-page ads and nothing-down sales. Explain to your customers that the chances are 9 out of 10 that they are only peddling off their old refinished comebacks. Let them run themselves ragged hauling in repossessions and rejuvenating ruined tubes. You saw wood and get enough down to keep yourself safe all the time. Of course, take care of your customers' service—and believe me, you will be in better financial shape to do that little thing, too, because of playing it safe.

It is hardly within the scope of this article to get into economics so deeply as to criticize modern instalment selling, but permit me to say that the pendulum is starting to swing back, and you are going to see a gradual tightening of credit on time sales; you smaller radio dealers might just as well be in on the early part of the movement. Artificial stimulation of production can be kept up about so long by fool credit sales, but after a time something is going to bust; don't let it be you.

You are going to find finance companies pretty human. If you try to slip them a flock of punk paper from slow-pay artists, you are going to get into trouble with them. But if you will carefully pick your customers, pass up the dead-beats, and accept business from those who not only carry a reputation for good pay, but who also are not so everlastingly anxious to keep in debt that they cannot pay you more than $10 down, you are going to send your finance company good contracts and the bond between you and the finance company will be strengthened by good clean business.

May I add a word about making collections? Of course, you realize that it costs just as much to send out a collector to jar $10 out of a customer on a radio set as it does to get $50 on an automobile contract. That's why the finance companies rely on the local dealer to help make the collections—they have to, because radio contracts carry such petty payments that no finance company can afford to be chasing collectors out month after month. Here's where the dealer's part comes in. When you get a notice that a customer is delinquent, go after him. Find out what is the matter. If it is sickness or emergency, help him out. Take his note and send in the payment for him. If the delinquency is just cussedness or negligence, remove the set and explain to him that you are going to make the payment for him, and will hold the set until he repays you. He can't legitimately kick; didn't he sign a contract to pay a certain amount on a certain date of each month?

I am convinced that far more radio dealers fail because of being bum collectors than for any other reason. The excuse of not sufficient capital won't hold water. The only reason more capital seems to be needed is to carry more worthless accounts. No radio dealer would attempt to carry his slow or bad accounts. It is much better not to have that type of contract at all. And it surely is not within the province of the dealer to be a banker or to try to carry his own paper. If you have enough money to do that, why be in the radio business? Why not just put the money out and live on the interest and enjoy things?



Selling Radio by Recorded Music

ONE snappy bit of music, probably inspired by conflicting emotions resulting from the Stein Song and the Eighteenth Amendment, is the Mug Song, as played on Victor Record No. 2242B, by the High Hatters. This is another of those rousing marches put to fox-trot time. The blare of the trumpets is itself worthy of note, and is backed by splendid bass accompaniment. The other side of this record contains a modern version of The United States Naval Academy's song, Anchors Aweigh, which has been taken off the drill field and battleship and put upon the dance floor in the rollicking rhythm of shuffling feet. It still has, however, just enough of that military flare to urge the spirited young American to drop his fair partner and take up a musket. This arrangement features the piccolo and cornet and is therefore an excellent record with which to demonstrate the extreme high notes. The bass is there also, although not as prominent as in some dance records, which might be due to the fact that the melody itself has enough swing without emphasizing the time by the boom boom of a tuba. The record winds up with a touch of the martial, featuring the fifes and drums.

THE Victor Company has a new album, composed of the works of Friml, which is full of possibilities for the radio salesman. Charles Rudolf Friml is a Bohemian pianist and composer, born in 1881 and trained at the Prague Conservatory. He is especially famous for writing several extremely melodious light operas, such as The Firefly, Katinka, High Jinks and Rose Marie. The five records in this album are made up of selections from the various light operas, piano concertos and songs of the light opera nature. The first record, Victor No. 9649A and B contains two piano solos by Friml himself: "Improvisation" and "Amour Coquet." The other side has a pair of orchestral numbers, "La Danse Des Demoiselles" and "Mignonette," played by the Victor Salon Orchestra under Nathaniel Shilkret, who has arranged the album. This side of the record contains several vaguely familiar airs which most people have not connected with Friml. The violin work in it is excellent, showing off the high frequencies to a fine degree.

The second record in the album, No. 9650A, features a tenor solo with Victor Salon Orchestra accompaniment. The tenor is Lewis James and the selections are "L'Amours, Toujours, L'-Amour" and "Ma Belle." In these, also, the violin work is very bright. The other side of this record contains a selection which is, perhaps, one of the most perfectly suited to the demonstration of radio receivers ever described in this department. It is Friml's "Veil Song" from the Japanese ballet: "O Mitake San." The lead is carried throughout by the flutes, beautifully played, and backed by the bassoons, French horns, clarinets and trombones. Twice during the rendition the French horns play a long, resonant blast, answered by the liquid notes of the flutes. Then the trombone injects its deep, sonorous tone into the otherwise frivolous ballet, this being followed by violins and flutes. The clarinets and flutes, and possibly other woodwinds, play in ensemble, with the bassoon occassionally rumbling along several octaves below. The harmony is beautiful, and the opportunity offered the salesman to pick out the high instruments, then the bass instruments is almost unparalleled. Certainly the background to such technicalities is most pleasing.

In the next three records, orchestral work and vocal ensembles and solos are featured. No. 9651A and B is composed of selections from the operas "You're In Love" and "High Jinks." No. 9652A and B is a reproduction of the recently very popular operas, "Rose Marie," and "Katinka," which also has won universal approval. In both sides of this record vocal solos and duets are recorded. A soprano and tenor duet with an accompaniment of kettle drums in Rose Marie provides the very popular redskin effect as well as demonstrating the bass reproduction of the receiver very nicely. On the Katinka side the prospect's attention should be called to a short harp solo, which really runs well down into the deep bass notes.

The last of the five records in the album, No. 9653A and B, contains selections from the "Vagabond King" and "The Firefly." The orchestra is superb in both sides of the recording; the French horns are very brassy, the bells are beautifully clear and in the final movement the basses drop right down out of "sight." The last few revolutions of the last record offer one of the finest tests for bass to be had.

Due to the fact the Friml is a contemporary composer, and has written so much music that appeals to the masses, even though it is not jazz or dance music, it would appear to be a good psychological move to become familiar with his works. And as for demonstrating qualities, the above mentioned "Veil Song" is unbeatable.

AN unusually powerful symphony orchestra record is the Columbia record No. 5000M, containing "Pomp and Circumstance" by Elgar, on one side and "The Coronation March" from "Prophet" by Meyerbeer, on the other. Both of these marches are very full of excellently recorded bass music, among other things, and therefore well fitted for demonstrating purposes. The theme in

(Continued on Page 73)

Radiotorial Comment

By the Editor

RADIO manufacturers have usually side-stepped the trade-in problem, leaving the dealer to work out his own salvation. They have frowned upon the the publication of trade-in appraisals and have seemingly assumed that there ain't no such animal as a trade-in. Yet the problem is one which the dealer cannot completely solve unaided. He needs the coöperation of the entire industry. The dealer has carried many a manufacturer and wholesaler to prosperity while he has been losing his own money. The trade-in is an important factor in dealer losses.

Trade-Ins

The same condition was and is still true in the automobile business. Recently Buick has started a national advertising campaign to aid dealers in disposing of used cars. General Motors and Ford are junking the old cars which they buy from dealers. The enterprising radio manufacturer who adopts similar tactics will undoubtedly earn the enthusiastic support of his dealers.

CONSIDERABLE speculation, both figurative and literal, exists regarding the outcome of the suit which the Government has brought against the RCA and its patent-pool associates. Because they control patents, which are entirely legal monopolies, the owners are being prosecuted for forming a combination in restraint of trade, which is entirely illegal under the anti-trust laws. The question is which set of these contrary laws is paramount. If the anti-trust laws take precedent over the patent laws, the extreme penalty would be a forfeiture of broadcasting licenses and a reversion of patents to original owners. But as even this extreme unscrambling of the eggs could be accomplished by various legal reorganizations there seems to be no cause for concern.

The Problems of Patent Control

The greatest menace to the prosperity of the radio industry, as pointed out by H. B. Richmond in his presidential address at the RMA convention, is found not in an antagonistic dominating patent control, but in the decentralization of patents. There are so many groups who are exploiting non-adjudicated patents, that a manufacturer may be forced to pay as high as 15 per cent of his selling price in order to use patents which may be subsequently found to be invalid. This situation might tend to become worse if the Government dissolved the RCA group.

As a solution of the problem Mr. Richmond proposes the establishment of a patent interchange bureau whereby all factories could use ordinary patents upon the payment of a reasonable royalty. He predicts that unless some such solution is soon found most of the manufacturers will be forced out of radio.

WITH the advent of tone control, which is the selling point of some of the newly-presented radios, the tuning of a radio set takes on a new aspect. Formerly it meant merely the adjustment of the radio-frequency circuit so as to offer a minimum resistance to radiated energy of the frequency transmitted from a desired station. Now it means, in addition, the partial suppression or exaggeration of certain bands of audio frequencies so as to conform to the listener's preference in tone reproduction. This does not mean that a soprano voice is thereby converted into a contralto, but merely that the high notes are weakened in intensity and not heard so clearly. The effect is much the same as that produced by a piano pedal in emphasizing or subordinating certain passages. The effect of such tone control is not additive, but substractive.

Tone Control

For persons who, because of personal infirmities or prejudices in hearing, may not be satisfied with the rendition of a program as given in the broadcast studio, this feature may be made the clincher in a sales presentation. It certainly allows for more self-expression even though the individual satisfaction may not be pleasing to a roomful. It is just another refinement that may make radio more enjoyable to someone who might not otherwise buy a radio.

A Leaf from the Diary of Keyhole George

ANOTHER weekly grouch meeting. Peppier than usual account of everybody picking on the same grouch—demonstrations. Attacked it like carrion on a corpse (Izzy Clayton's simile, not mine). Izzy started the ball rolling with subject of best days for business. Most of them surprised that there were any good days. Got their eyebrows down again and voted for Saturdays; Fridays and Mondays runners-up. That's why they do all their advertising on Fridays. Few dissentients, but nobody with any real dope on it. Sort of "follow-the-leader," ten-thousand-dealers-can't-be-wrong stuff.

Unanimously declared, however, that Saturday's the punkest day for demonstrating. Reason why—all the best B. C. stations toying with sports. Ball game and beauty contest reports (and the strident tones of professional announcers) don't give the sets a chance. Salesmen's assurance of mellifluous tones don't sound too convincing to the accompaniment of raucous bellowing from the set.

Some fathead groans tragically, "Oh, what to do? What to do?" Another bright boy suggests petitioning the stations to substitute musical programs. Somebody suggests picking out one station, and showing them how they can put it over on the rest. Idea seized upon with avidity (a hungry bunch, these dealers). Propose to tip off Station WHAT that they'll have the trade behind them if they run an orchestra all afternoon Saturdays instead of a ball game. It will be the official demonstrating station and so make first contact with the customers. Said customers therefore will presumably be sold on WHAT and tune them in automatically ever after. Maybe. Still the idea has merits.

But hark! An alternative suggestion. Two ideas in one afternoon, and at a dealers meeting. Things are looking up. Al Scrubbs, the Hotwater-Fawsett dealer suggests that a new season is almost upon us. Most of the new lines include combinations (phono-radio, not wearing apparel). Why not demonstrate the audio end—tone quality being the present day criterion, whatever that is. Ums and ahs of approval. Al is seconded, informally.

With renewed courage, he clears his throat (anti-climax, no cuspidor handy). Swallowing, he continues. "Let's make a practice of demonstrating the phono end, which shows the quality of the pickup, audio amplifier, and speaker. Everybody knows that the radio-frequency end has little to do with the tone quality. We can explain that the r.f. merely affects the distance-getting, and let it go at that. With things as they are, we have a splendid excuse for not demonstrating the entire set." Much buzzing of conversation.

Chairman chimes in, "Well, don't know what you fellows think, but I figure most customers will be satisfied with that, which will be a big help to some of you boys—har har." One or two sickly smiles noted. Several opine that that's all right as far as it goes. But what's the best kind of record to use? Probably have to give the salesman a few lessons on selling by recordings. Somebody at the end of the table pulled the old wheeze about breaking a few records.

Then Izzy has another spasm. Jumps up and takes the floor again. "Boys," he says, "I got THE idea. Let's have a special record made that will do the selling for us. The salesman just puts it on and the record demonstrates everything we want to demonstrate, and the salesman keeps his mouth shut. This here record," he continues, "can play some selections from well-known pieces and include a few high and low notes. When it plays those notes it will tell the listeners what it is going to do and say that if they can hear these notes they'll know the set is a good one." Izzy sits down with a bump. Then bedlam breaks loose.

General verdict—the idea's a pip, but who the heck will go to the trouble and expense of getting out a record like that? Chairman beams. "Fellows," he grins, "I bet I could put that over. Do you want it?" Did they? When the noise died down a little, he said, "Well, boys, here's the answer to a maiden's prayer. I don't pretend to be a magician, but just take a peek in the July issue of RADIO, and you'll find your dream has come true."

NEWLY ELECTED RMA OFFICERS for the 1930-1931 Term

MORRIS METCALF of Springfield, Mass., vice-president and treasurer of the American Bosch Magneto Corporation is the newly elected president of the Radio Manufacturers Association for the 1930-31 term. He is a pioneer in radio and in association work. Other officers are as follows: First Vice-President, Joseph L. Ray of New York; Second Vice-President, B. G. Erskine; Third Vice-President, Arthur L. Walsh; Treasurer, E. N. Rauland. Eight new members of the Board of Directors were also elected for three-year terms. They are: H. S. Hyde; R. W. Jackson; Ernest Kauer; A. C. Kleckner; James M. Skinner, and three of the officers already mentioned—E. N. Rauland, Joseph L. Ray and Arthur L. Walsh.

MORRIS METCALF, President
He has been vice-president and treasurer of the American Bosch Magneto Corp. for the past six years and for the past several years has been a member of the Board of Directors of the RMA. He is a graduate of the Massachustts Institute of Technology.

Left—J. L. Ray, Vice-President of the RCA-Victor Corporation, is the newly electec First Vice-President of RMA.

Right—B. G. Erskine, President of the Sy vania Products Corporation is the newly elected Second Vice-President of the RMA.

Right—Newly elected Treasurer of the RMA, Mr. E. Norman Rauland, President of the Rauland Corp., of Chicago.

These newly elected officers also serve on the Board of Directors.

Left —Arthur L. Walsh, Vice-President of Thomas A. Edison, Inc., is the association's new Third Vice-President.

Other Newly Elected Board Members

M. F. FLANAGAN (above), Executive Secretary of the Radio Manufacfurers Association. Prominent in all convention and trade show activities.

ERNEST KAUER (above) President of the CeCo Manufacturing Company, serves on the Association's new Board.

R. W. JACKSON, General Sales Manager of the Brunswick Radio Corporation, joins the new RMA Board.

JAMES M. SKINNER, Vice-President of the Philadelphia Storage Battery Company, another new Board member.

H. S. HYDE (right), General Manager of the Radio Master Corporation of Bay City, Michigan, also serves as a member on the new Board of the RMA.

ARTHUR G. KLECKNER, President of the Webster Electric Co., Racine, Wisconsin, newly elected to the Board.

Continuing Members of the Board Include:

(Term expiring 1931)

Morris Metcalf Am. Bosch Mag. Cp. Springfield, Mass.	**B. G. Erskine** Sylvania Products Co. Emporium, Pa.	**L. A. Hammarlund** Hammarlund Mf. Co. New York, N. Y.	**J. C. Tully** Story & Clark Corp. Chicago, Ill.
Wm. Sparks Sparks-Withington Jackson, Mich.	**L. E. Noble** United Reprod. Corp. Springfield, Ohio	**N. P. Bloom** Adler Mfg. Co. Louisville, Ky.	**Leslie F. Muter** Leslie F. Muter Co. Chicago, Ill.

(Term expiring 1932)

R. J. Emmert Gen. Motors Radio Dayton, Ohio	**J. Clarke Coit** U.S. Radio & Tele. Cp. Chicago, Ill.	**H. C. Forster** Utah Radio Prod. Co. Chicago, Ill.	**R. T. Pierson** Dudlo Mfg. Co. Fort Wayne, Ind.
Fred Williams Nat'l Carbon Co., Inc. New York, N. Y.	**H. B. Richmond** General Radio Co. Cambridge, Mass.	**R. H. Langley** Crosley Radio Corp. Cincinnati, Ohio	**H. E. Young** Grigsby-Grunow Co. Chicago, Ill.

CROSLEY

MODELS FOR THE 1930-1931 SEASON

Frank G. Macomber
General Sales Manager of the
Crosley Radio Corporation

AN entirely new line of Crosley Models is featured for the coming season. Crosley "MATE"—$75.00 list, uses three '24 tubes, screen grid detector, one '80 and one '45. Crosley "PAL"—$69.50 list. Same chassis as used in "MATE."

Crosley Automatic Phono-Radio Combination, $215 list. Crosley 77-B Phono-Radio Combination—$137.50 list. Uses three '24 tubes, one '27, two '45's and one '80.

THE "MATE"

AUTOMATIC COMBINATION

THE "PAL"

CROSLEY PRICES ARE NOW THE SAME IN ALL PARTS OF THE U. S.

MODEL 77-B

AMRAD for 1930 1931

The new AMRAD line is now being manufactured by the Crosley Radio Corporation. Two of the season's new models are illustrated. At the left—Model 84-C, the AMRAD Console, listing at $150.00, without tubes. Right—AMRAD 84-D, Phono-Radio Combination, list price $240.00, less tubes. Chassis used in both models: Four '24 tubes, one '27, two '45's and one '80.

NEW FEATURES

Automatic Volume Control. Audio Level Control. Screen Grid Detector. Local and Distance Switch. Resistance Coupled Audio. Push Pull Output. Magnavox Dynamic Speaker. Power Detector. Four Tuned Stages. Four Gang Condenser. Parallel Intermediate Audio Stage.

The New "JUBILEE" SPARTON LINE

New Models

Upper Left—Ensemble, 13 tubes
$520.75 without tubes
$580.00 with tubes

Upper Right—Model 610, 10 tubes
$136.75 without tubes
$169.50 with tubes

Lower Left—Model 750, 11 tubes
$222.25 without tubes
$275.00 with tubes

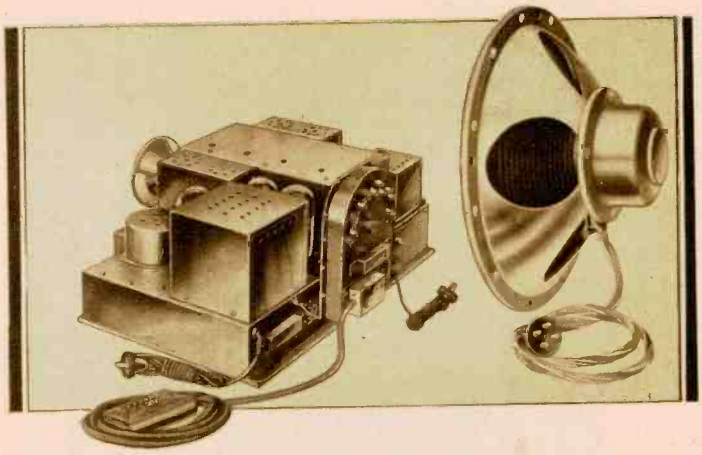
Lower Right—Model 600, 10 tubes
$136.75 without tubes
$169.50 with tubes

There are nine new 30th Anniversary JUBILEE SPARTON models, ranging in price from $115.50 to $520.75, less tubes. 610 at $136.75; 740 at $182.25; 620 at $151.75; 870 at $323.75 and 593 at $115.50.

Model 600 is known as the "APARTMENT" series and uses the same chassis as the 610. The "ENSEMBLE" Phonograph Combination is made by Cardon-Phonocraft Corporation and distributed through Sparton jobbers. Another addition to the Cardon-Phonocraft line is the model 234, a single record combination listing at $234.00 without tubes. A Sparton Automobile Radio is also available.

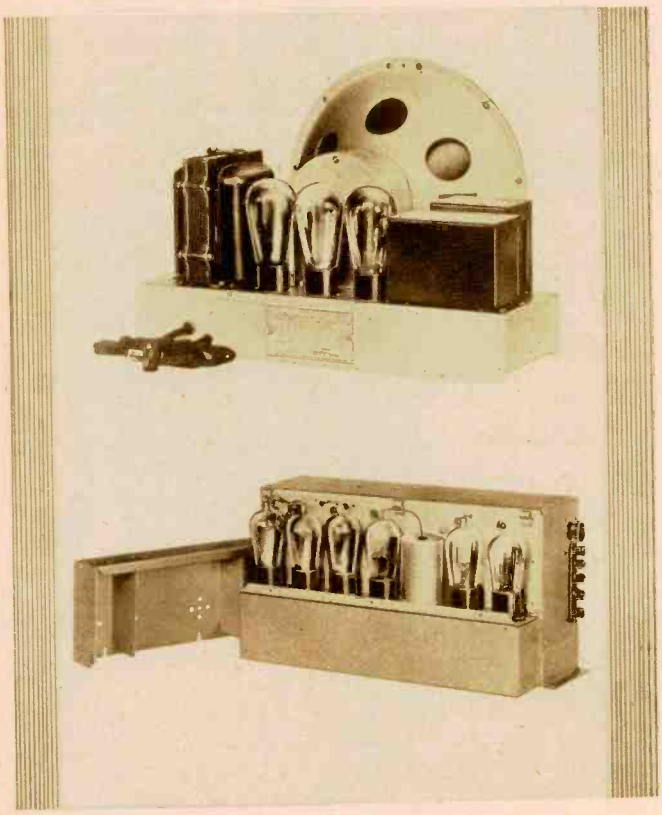
NEW COLONIAL CHASSIS

S. K. Dickstein, Advertising Manager of the Colonial Radio Corp.



Colonial No. 33 Chassis and Speaker with Cutting Fully Automatic Remote Control.

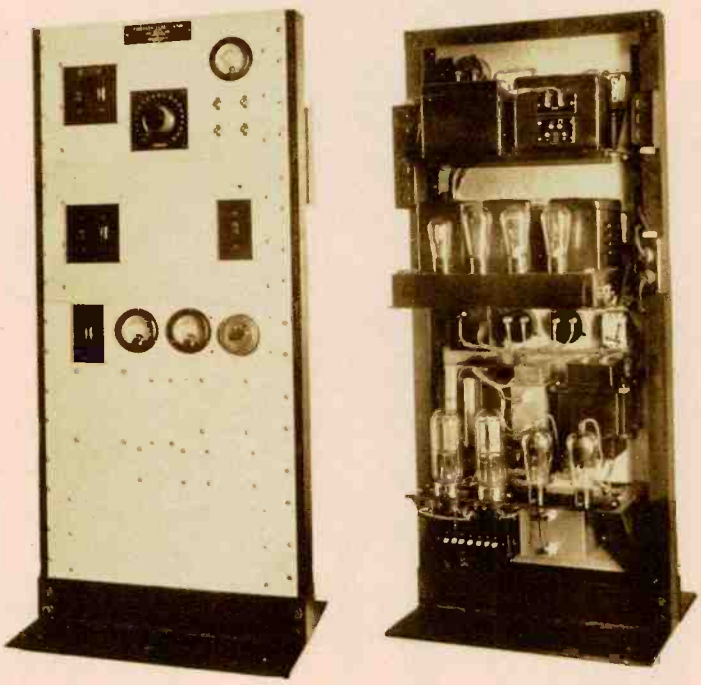
BOSCH De Luxe 60



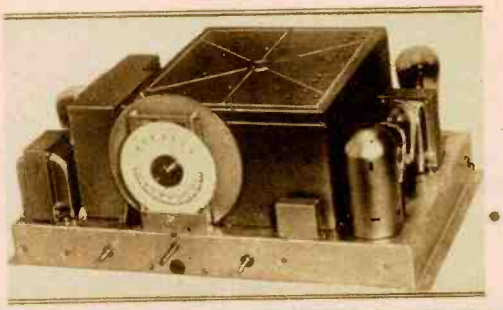
Upper illustration shows the De Luxe Bosch Model 60 power unit and speaker with larger and more sensitive unit, speaker tone control, and phonograph connection.

The Lower illustration is the chassis for the new Bosch Model 60. Five '24 tubes and one '27 tube are used. The audio tubes are two '45's. Line-O-Lite tuning dial, automatic volume control with tuning meter, and other features are found in this new chassis.

RADIO RECEPTOR AMPLIFIERS



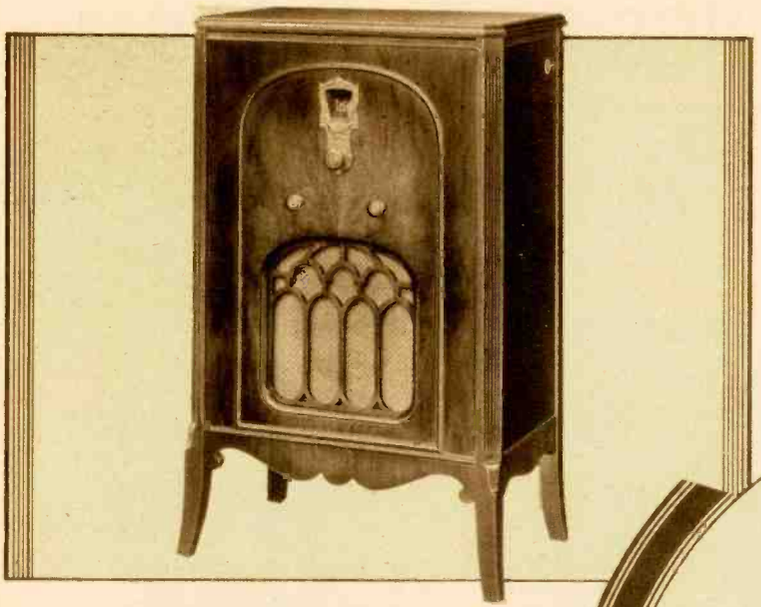
The new 50 watt Powerizer amplifier incorporates two UV-845 power tubes and two UX-866 mercury vapor rectifier tubes. Full wave rectification is used. This new Radio Receptor Company's product is of the new three unit panel construction. The amplifier may be used in various combinations with microphone pre-amplifier and radio or phonograph input.

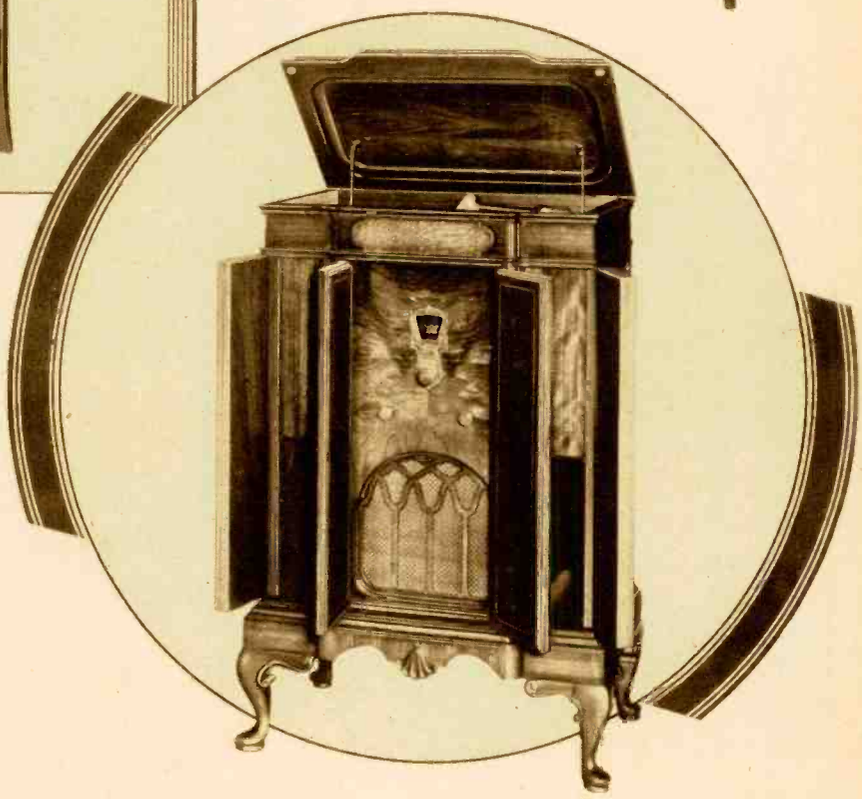


FADA Radio

New FADA chassis is equipped with automatic volume control, noise filter, "Flashograph" station indicator, pre-selector tuning and double-coupled transformers. The same chassis is used in new models 41, 42, 46 and 47.

The New SCREEN GRID *Majestic* RADIO Models





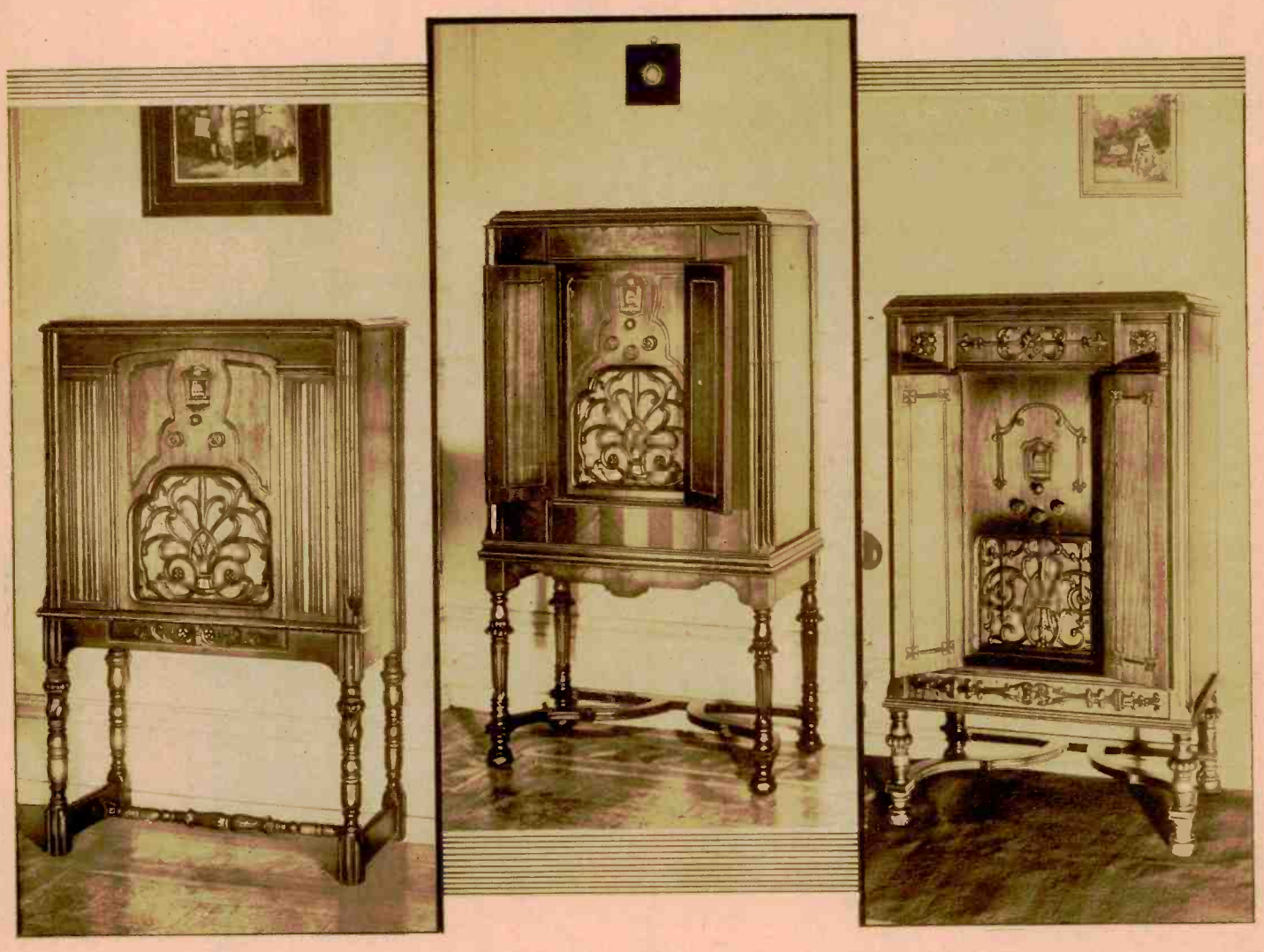
The new screen grid Majestic Radio Models exhibited at the R.M.A. show have three stages of screen grid amplification, screen grid power detection and push-pull '45 power stage with '80 rectifier . . . seven tubes in all. List prices, both East and West, of the new Majestic Radio Line are . . .

Model 130 (Upper left) $117.50, less tubes
Model 131 (Upper right) $137.50, less tubes
Model 132 (Lower left) $167.50, less tubes
Model 233 (Lower right) $245.00, less tubes
Model 233 is a phono-radio combination

Tubes for above models list at $26.00 for the set of 7

Westinghouse Radio

SUPERHETERODYNE SERIES FOR 1930-1931



Westinghouse—"Pioneer of Radio in the Home"—announces a Superheterodyne series for the new season. Three of the popular models are pictured.

Left: WESTINGHOUSE Model WR-5 Lowboy. Four screen grid tubes. Linear power detection. Power filter system to eliminate hum. New electro-dynamic power speaker. Band pass pre-selector tuning. Local-Distance switch. Tone control (except on low priced models). WR-5 uses 4 screen grid tubes; two '27 tubes; two '45 tubes and one '80 rectifier.

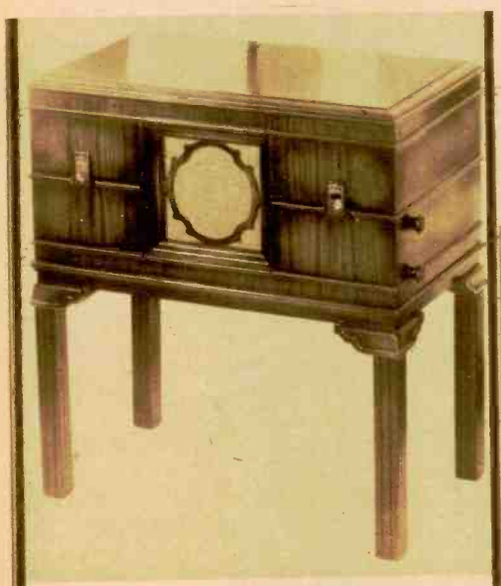
Center: WESTINGHOUSE Model WR-6. Screen Grid Superheterodyne with special tone control.

Right: WESTINGHOUSE Model WR-7 combination phonograph and radio set. Screen grid Superheterodyne. Special tone control.

The Royalty of Radio

Among the new Kennedy models for the new season are:
426—An ARM CHAIR model for home or apartment demanding economy of space.
526—OPEN-FACE HIGHBOY.
726—Remote control with phonograph or straight radio and phonograph combination.
826—COMBINATION. Has long and short wave chassis for both American and foreign reception.

COLIN B. KENNEDY



MODEL 426

MODEL 726

List Prices (less tubes):

426	$159.00
526	$169.00
726	$229.00
826	$199.00
220-B	$140.00
626	$189.00
726-A	$285.00

(Radio with Remote Control)

726-B	$390.00

(Radio with Remote Control and Automatic Phonograph)

826-A	$242.00

(Radio and Phonograph Combination)

826-B	$252.00

(Radio for Long and Short Waves)

826-C	$304.00

(Radio for Long and Short Waves and Automatic Phonograph)

MODEL 526

MODEL 826

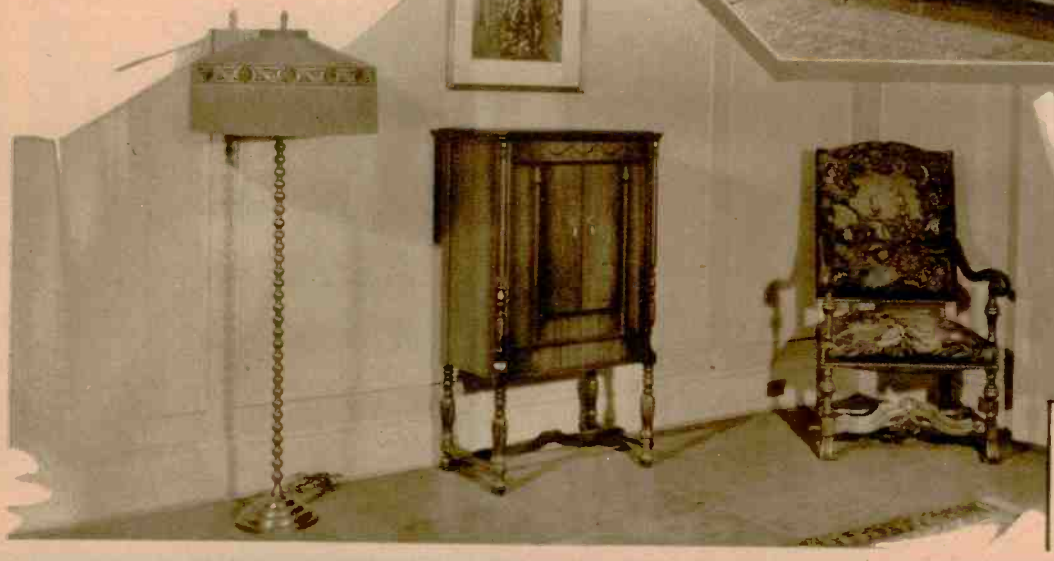
GENERAL ELECTRIC

also enters the
RADIO MERCHANDISING FIELD

Three of the NEW SUPERHETERODYNE MODELS

GENERAL ELECTRIC RADIO Lowboy Superheterodyne. 9 tubes, of which four are screen grid. Dynamic speaker. Local and Distance switch.

GENERAL ELECTRIC RADIO. Combination Model Superheterodyne. 9 tubes, of which four are screen grid. New improved electrical reproduction. Tone control. Local and distance switch. Dynamic speaker.



GENERAL ELECTRIC RADIO. Highboy Superheterodyne. Tone Control. Local and distance switch. Dynamic speaker.

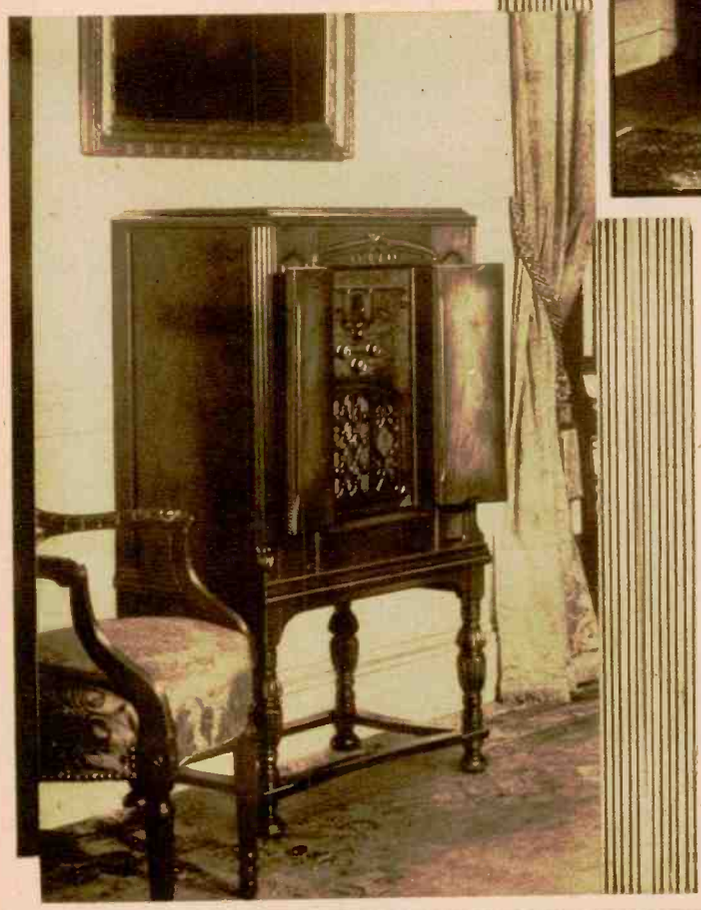
RCA RADIOLA SUPERHETERODYNE

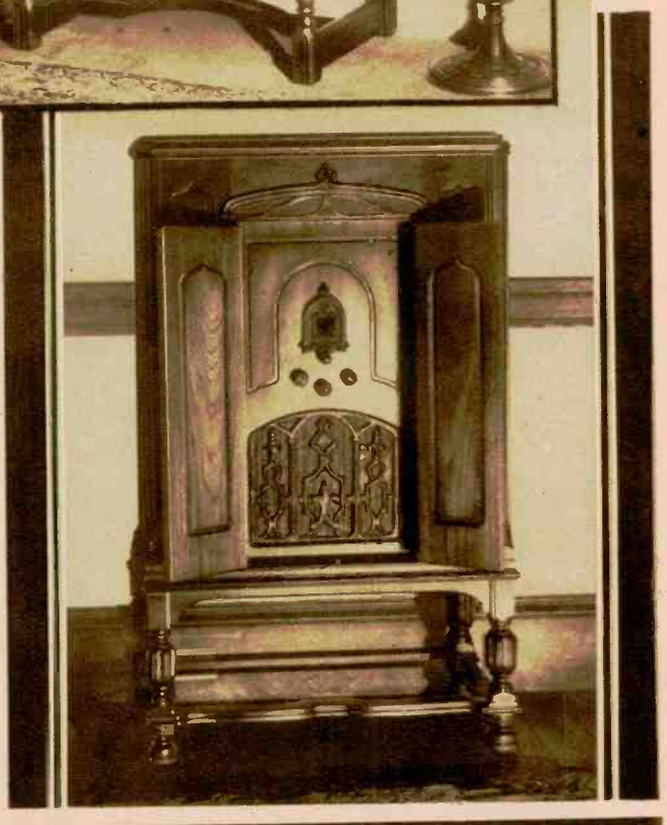
The new RADIOLA SUPERHETERODYNES include screen grid features—tone color device — and a phono-radio combination of an improved type.

Model 80 RADIOLA SUPERHETERODYNE (upper right) is the popular price model.

Model 82 is the DELUXE RADIOLA SUPERHETERODYNE (lower left illustration). It combines the new TONE COLOR device.

Model 86 is the new RADIOLA COMBINATION radio and phonograph (lower right).





New England's SECOND ANNUAL Radio Trade Show

The Second
NEW ENGLAND RADIO TRADE SHOW
was sponsored by the
RADIO WHOLESALERS CLUB, INC.
June 18, 19, 20
At the Hotel Statler, Boston, Mass.
Officers of Radio Wholesalers Club, Inc., are:
H. B. VAUGHAN, President
F. D. PITTS, Vice-President
ARTHUR C. MARQUARDT, Treasurer
FRANK C. GORMAN, Attorney and Sec'y.

SHOW EXHIBITORS

C. E. Bailey Co.	Lyric
Bigelow & Dowse Co.	U. S. Radio & Telephone
Butts & Ordway Co.	Sentinel
J. H. Burke Company	Atwater Kent
George Collins Company	Fada
Oliver Ditson Company	Victor
Decatur & Hopkins Company	Kennedy
Eastern Talking Machine Co.	Victor
General Electric Supply Corp.	General Electric Sets
Graybar Electric Co., Inc.	Graybar
Howe & Company	Atwater Kent
Linscott Supply Company	General Motors
Lewis Electric Supply Co.	Sparton
Milhender Electric Supply Co.	Philco
New England Distributing Co.	Sparton
Northeastern Radio, Inc.	Zenith
Post & Lester Company	Brunswick
F. D. Pitts Company	R. C. A.
Stern & Company, Inc.	Silver Marshall
Stewart Warner Sales Co.	Stewart Warner
H. M. Tower Corporation	American Bosch
Vega Company	Colonial
Wahn Radio Company	Gulbransen & Clarion
Wetmore-Savage Company	Westinghouse
Wetmore-Savage A. E. Company	Crosley

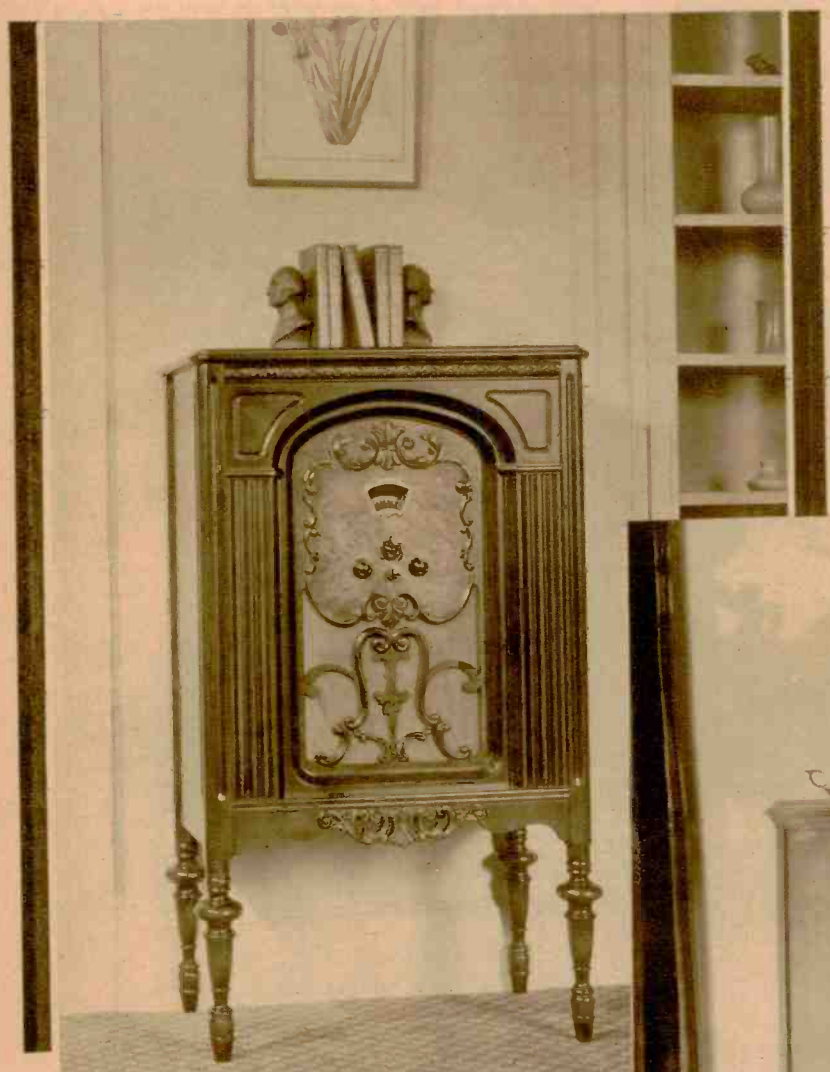
Sheldon H. Fairbanks, Managing Director New England Radio Trade Show and Boston Radio Exposition.

H. B. Vaughan, General Manager of Wahn Radio Co., Boston, Mass. He is President of the Radio Wholesalers Club, Inc., sponsors of the New England Radio Trade Show.

Mr. C. C. Colby, President of Samson Electric Company.

GREBE RADIO

TRADE MARK

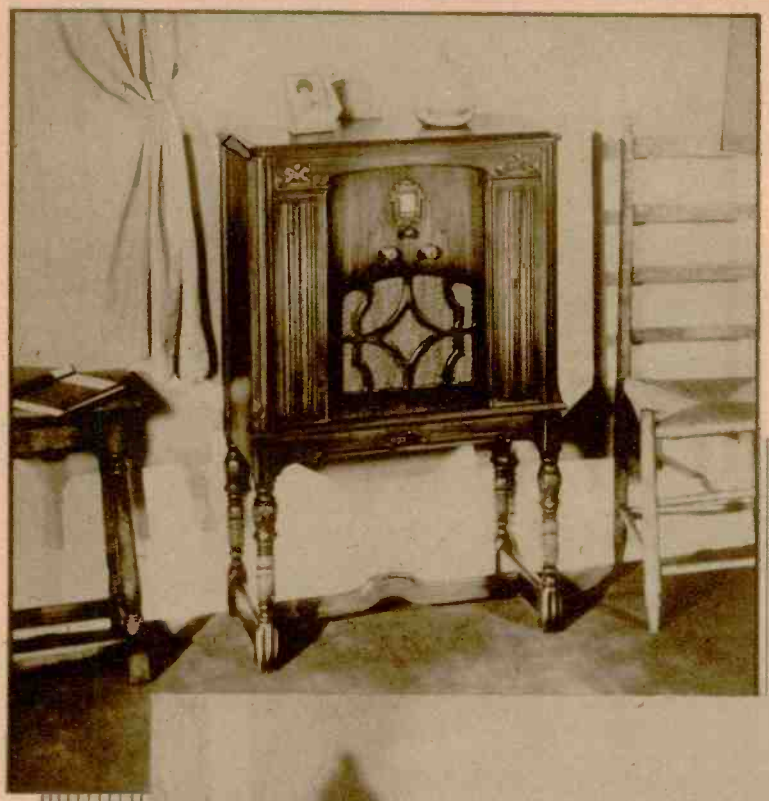


GREBE models for 1930-1931 range in price from $160.00 to approximately $400.00. The low priced model is shown to the left. It lists for $160.00, less tubes. The lower illustration shows an innovation in radio cabinet design for another of the GREBE receivers. It lists for $225, less tubes. In all new GREBE models the following tubes are required: three '24's, one '27, two '45's, one '80.

Models will also be available for 25-30, 50-60 cycles, 110 volt AC operation and also for 110 volt DC operation.

GraybaR

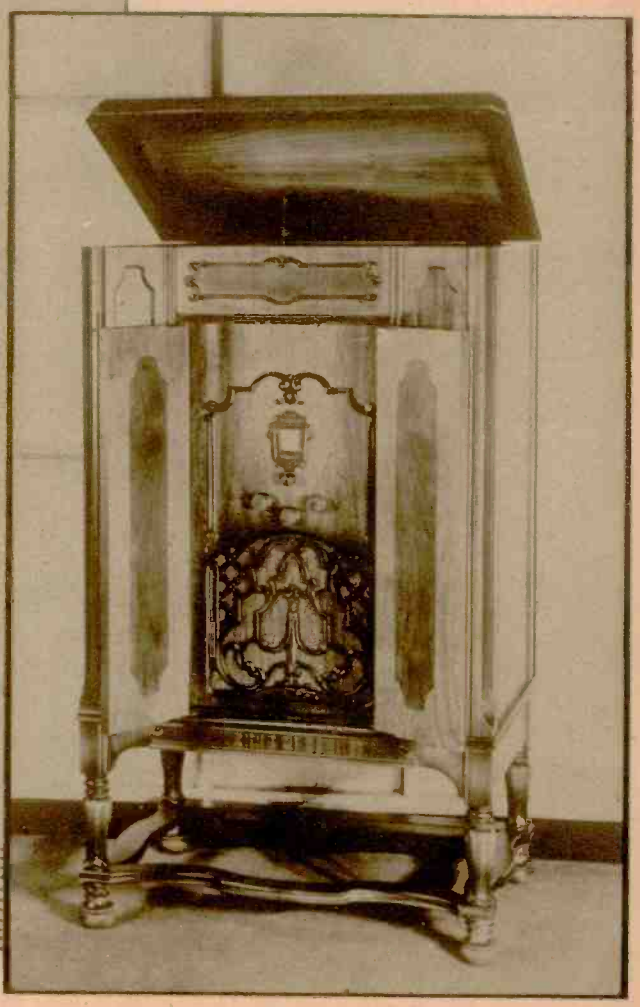
Announces SUPERHETERODYNE Models for the New Season



GRAYBAR also selects the SUPERHETERODYNE for 1930-1931. At the left is the GRAYBAR No. 700 Lowboy.

Center: GRAYBAR No. 770 Highboy

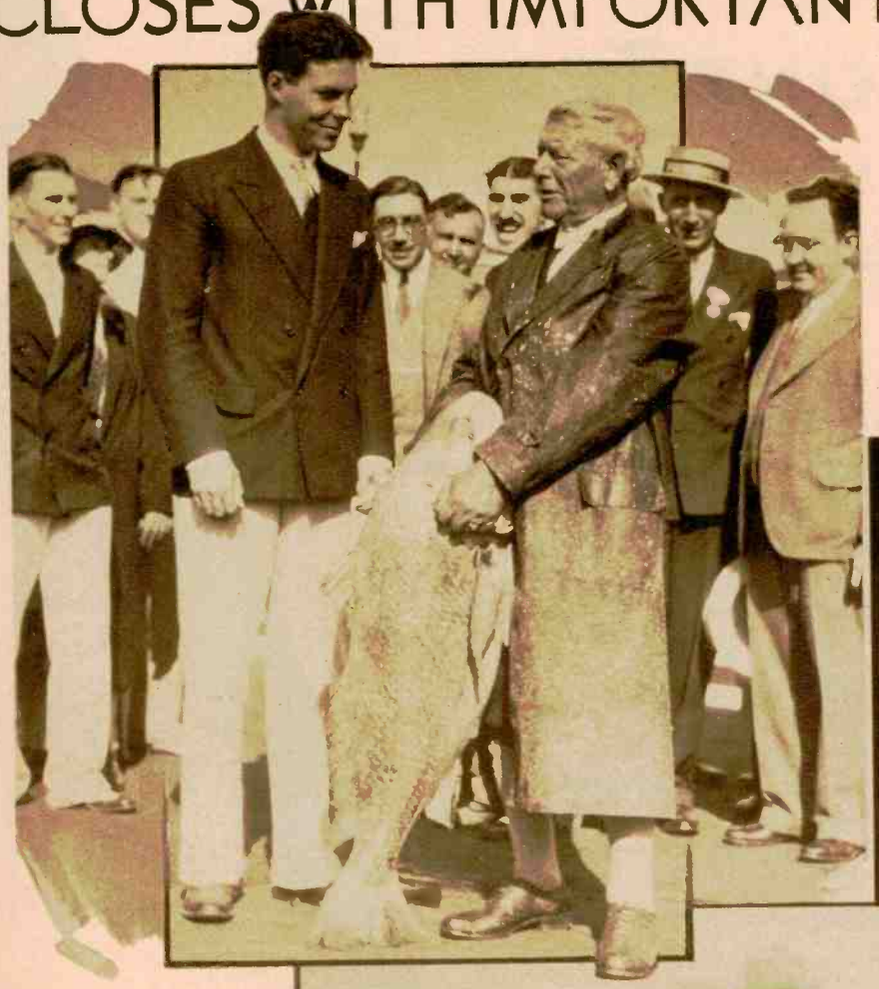
Right: GRAYBAR No. 900 radio phonograph combination.



SILVER-MARSHALL

CLOSES WITH IMPORTANT DISTRIBUTOR

H. C. Bodman, General Sales Manager of Silver-Marshall, Inc., will shortly announce the appointment of five new Distributors. They include Marshall-Wells, world's largest hardware distributors with offices at Duluth and Minneapolis, Minnesota; Great Falls and Billings, Montana; Seattle and Spokane, Washington; and Portland, Oregon. This is the first season that Marshall-Wells' entire organization has been behind the distribution of one radio receiver.



Capt. J. L. Young, multi-millionaire Atlantic City showman, laughingly presented McMurdo Silver, President of Silver-Marshall, with a fifty-eight pound Drum Fish (of absolutely no value) when the Captain entertained a group of Silver-Marshall Distributors on the Million Dollar Pier, during the R. M. A. Trade Show.

H. C. BODMAN, General Sales Manager, Silver-Marshall, Inc., Chicago

SILVER
"Sharpshooter Chassis"
Radio in a modernistic setting, which shows there is beauty in a chassis as well as in a cabinet.

Other new Silver-Marshall Distributors are: Hyland Electrical Supply Company of Chicago, distributing in northern Illinois and Indiana; Bluefield Hardware Company of Bluefield, West Virginia, distributing throughout Virginia and West Virginia; and State Radio Distributing Company of Atlanta, covering entire State of Georgia. Redding Radio, Inc., Silver-Marshall Distributor in Baltimore and Washington, D. C., is shortly to establish a branch office in Philadelphia.

JUST OUT

A TONE TEST DEMONSTRATION RECORD

Enables You To Make Comparative Tone-Tests

of sets . . . phonographs . . . amplifiers and pick-ups . . . INCREASE YOUR SALES! Let your prospective customers judge the reproducing qualities of different sets by means of this Record.

A SIX-MINUTE demonstration—ORIGINAL —INSTRUCTIVE and ENTERTAINING— of the effects of the high, intermediate and low notes—individually and in groups—of the flute, piccolo, cello, violin, bells, trombone, drums, and orchestral effects of the full organ. Short, snappy talks are made between each rendition—telling the listener what each demonstration means. Play this record and give the prospect a REAL demonstration. Play it on one set—then on another. Judge the reproducing qualities of ANY instrument. Every dealer, every salesman, every service man should have one of these records. Manufacturers and engineers will find many uses for it.

Recorded and produced for the publishers of "RADIO" and sold to you on a money-back guarantee.

Only $1.00 POSTPAID IN THE U.S.

SPECIAL INTRODUCTORY OFFER

Buy a standard package of 6 of these records and give one to each of your salesmen. SIX RECORDS FOR $5.00, postpaid.

—Shipments made on same day your order reaches us . . .

RADIO

Pacific Building,
San Francisco, California.

Send ..... Demonstration Records to me immediately upon receipt of this order.

I enclose $ ..... in full payment.
(Prices: $1.00 each, or $5.00 for six) ☐

☐ CHECK HERE IF C. O. D. SHIPMENT IS WANTED

Name .....

Street and Number .....

City .....

State .....

NEWS *of the Radio Industry*

R. M. A. Convention Brevities

H. B. Richmond, retiring president, said that unless a patent interchange plan is adopted to end litigation, most of the manufacturers will be forced out of radio.

Morris Metcalf, as chairman of the Fair Trade Practice Committee, said that the radio industry is doing an effective job in policing its own advertising and merchandising practices. It "realizes that it can survive only upon a basis of public trust and faith in its integrity."

The RMA Board contends that license rights of authors and composers should stop at the broadcast station and not extend to the use of receiving sets in public places or in dealer demonstrations. The Association will attempt to prevent extension of such licensing rights beyond the broadcast station.

The RMA also will challenge the constitutionality of a license-to-operate tax imposed by the South Carolina legislature on owners of receiving sets. These taxes range from 50 cents to $2.50 a year. That reception of radio as well as transmission is interstate commerce and therefore beyond the jurisdiction of the states will be contended in opposing this and similar petty taxes on owners of sets.

Herbert H. Frost, as chairman of the Merchandising Committee, stated that radio manufacturers spent 40 million dollars for advertising last year, or over 10 per cent of their sales receipts. One-half of this was spent in newspapers and one-fifth for broadcasting.

Leslie F. Muter, as chairman of the Credit Committee, declared that the RMA plan of frank exchange of credit information prevented the depression of last fall from assuming more serious proportions in the industry than it did.

Walter E. Holland, as director of the Engineering Division, declared that the year's outstanding achievement is closer coöperation between manufacturers of sets and of tubes in bringing out new developments. This will do much to eliminate unnecessary changes in radio sets at times when the public is satisfied with current products.

Philco to Make Transitones

Transitone Automobile Radio Sets are to be made in the plant of the Philadelphia Storage Battery Company and to be distributed both through Philco and Transitone distributors and dealers. This set can be installed on any automobile and is now optional equipment on the Chrysler, Dodge, DeSoto, Pierce-Arrow and Studebaker cars.

General Motors Service Plan

Separation of sales and service with direct factory control is the servicing plan devised by Maurice F. McCarthy, service manager for General Motors Radio Corporation. After the dealer makes a sale he telephones the major service station in his city, of which 75 have been licensed, that he has some sets to be installed. The station sends its delivery truck to the dealer's store, with a service man, loads on the cabinets and gets the installation instructions. He

Maurice F. McCarthy, Service Manager, General Motors Radio

delivers the radios, sets them up and sees that they are functioning perfectly. The major service station then bills the dealer for this work on a flat rate basis. Repairs can be handled in the same way.

Dealers in rural communities remote from key cities can do their own servicing and quickly obtain replacement parts from the nearest major service station which is required to carry a prescribed minimum number of parts and to make warranty replacements without charge. Dealers can get instruction from the major station in the latest methods of tests and repairs. One condition of this arrangement is that no sets are to be sold by the service station.

New Steinite Plans

Mr. Oscar Getz of Steinite states that new merchandising plans have been created to reestablish the Steinite line during 1930. Information on these new developments will be released August 1. Sales organizations are now being organized and district managers appointed.

Addition of Carrying Charge Urged

That national advertisers of products regularly sold on instalments be required to state in their advertising that a carrying charge will be added when the article is not bought for cash, is the recommendation of the Instalment Research Committee of the National Retail Furniture Association. Their terms are practically standardized at ½ to 1 per cent a month.

Audio Research Foundation Urges Passage of Dill Patent Bill

Resolutions urging the House of Representatives to speed the enactment of the Dill bill, which would make patents unenforceable when used to violate the anti-trust laws, were adopted at the first annual convention of the Audio Research Foundation during the Radio Trade Show. The Dill bill has been passed unanimously by the Senate and will now be considered by the Patents Committee of the House of Representatives. It is the most important item of anti-monopoly legislation that has been considered by the present Congress.

The Foundation represents the independent talking movie and amplifier industry. The following board of directors was reelected: C. C. Colby, Canton, Mass., chairman; J. McWilliams Stone, Chicago, secretary; A. C. Kleckner, Racine, Wis., treasurer; L. G. Pacent, New York City, and H. E. Capehart, Fort Wayne, Ind. Ernest R. Reichmann is general counsel and Oswald F. Schuette, director of public relations.

Hammarlund Finds Interest in Home Radio Set Construction

The interest in simple and multi-tube radio set building at home is still high, a recently completed compilation of replies to a questionnaire sent out by the Hammarlund Manufacturing Company, New York City, revealed. The countless distinctive engineering advancements being made, which are making radio more and more intriguing, is a great contributing factor toward this sustained interest, the survey indicated. "Three general classes were found to exist," said Lewis Winner, under whose guidance the survey was conducted, "those who like to tinker, those who like to construct for some permanence, because of the superiority of custom-built receivers, and those who are engaged in building of radio sets as a profession."

Auto Radio Installation

A round-table discussion of subjects pertaining to installing radio receiving sets in automobiles was held by a group of leading radio engineers in connection with the RMA meeting at Atlantic City. It was agreed that for best all-round results an antenna occupying the greatest available space in the roof of an automobile was desirable. The antenna should be as high as possible with the least coupling to grounded circuits or metal body parts. Also that any shielding of the antenna lead-in wire should be loosely coupled.

Terminologies of the interference eliminating factors were to be: Spark plug resistor, distributor resistor, universal resistor, generator capacitor, coil capacitor, and universal capacitor.

Consensus of opinion favored 180 volts of *B* battery with two general types of battery boxes. Engineering data will be exchanged regarding this subject with hope of reducing the present quantity of eight different sizes and shapes of boxes to two.

Efforts will be made to have the automobile manufacturers adopt standard spacing dimension between the two roof bows near the center of the car, for roof-mounted speakers. The adoption of a standard color code for battery cable was agreed upon.

The problems of automobile radio and reception will receive the closest attention of the engineering departments of the following companies who were represented at the meetings: Automobile Radio Corporation, A. A. Leonard, chief engineer; Philadelphia Storage Battery Company (Philco), H. W. Grimditch, assistant chief engineer; American Bosch Radio Corporation, G. J. Lang, vice-president; L. F. Curtis, chief engineer; F. S. Coe, engineering department; General Motors Radio Corporation, Delco Radio Corporation Division, R. Ellis, sales manager; The Crosley Radio Corporation, F. E. Johnson, engineering department, and W. M. Heina, engineering and sales department.

General Electric Radio

Sales of the complete line of receivers with which the General Electric Company will enter the market this fall will be handled through the Merchandise Department at Bridgeport, Conn., of which C. E. Wilson is manager. B. C. Bowe is sales manager for General Electric Radio, and R. Del Dunning is advertising manager. A sales organization of district supervisors and salesmen has been established to work with distributors who will supply the sets to a selected group of franchised dealers.

Sparton Finance Plan

Sparks-Witherington Company have arranged to have instalment contracts on Sparton radios to be handled by the Bankers-Commercial Security Company of New York City. A minimum down payment of 15 per cent is required with charges on unpaid balances running from 4 per cent for six months to 7 per cent for twelve months, increasing at the rate of ½ per cent for each month. An additional service charge is made for contracts in lots of less than $500.

"Captain" Carl S. Wilkins

In connection with his radio "ship" store at Columbus, Ohio, which has a 14-ft. anchor outside and a "bridge" and "passenger deck" inside, "Captain" Carl S. Wilkins, Sparton dealer, has developed an unusual policy for shifting sales responsibility. He steps down from the bridge every third week and puts the ship in charge of one of his salesmen. That man has complete authority to put his own sales ideas in effect for one week, including the window trim. This not only puts new ideas into the merchandising, but also determines his ability.

The dealer receives 80 per cent of the contract balance in cash, less the service charge, and equal monthly payments on the 20 per cent deferred payment. The dealer makes the collections, remitting monthly. Any form of instalment contract is acceptable if it retains title to or provides a valid lien on the merchandise.

Magnavox Company, Ltd.

Magnavox Company, Ltd., which recently absorbed the Amrad Corporation, will function as two divisions: The speaker division will make dynamic speakers at Oakland, Calif., and Fort Wayne, Ind. The condenser division will make Mershon condensers. Plans are also being made for the manufacture of radio accessories and electrical products.

Joint Advertising by Radio Dealers

Seven radio dealers in Richmond, Va., have recently coöperated in a program for joint advertising and merchandising of Radio-Victor radio sets which are handled by each of the dealers. This co-operative effort is mainly devoted to advertising. Advertising media used include local newspapers, outdoor posters, and a radio advertising program from a local station at regular intervals.

The major coöperative advertising program is timed with the introduction of a new set. On these occasions, an extensive tie-in is made with the manufacturer's advertising in the local newspapers. It is understood that, in the outdoor advertising program, each dealer maintains his own boards, but all are used simultaneously. There is no restriction as to advertising by members of the group individually. Each dealer may advertise in any way and whenever he chooses.

One interesting feature in the co-operative program is an arrangement by which the group has made available an expert technician to instruct their service men.

The dealers involved in this case are not radio dealers exclusively. They handle a variety of lines, such as furniture, electrical specialties, musical goods, and several others. No formal type of organization has been set up. Instead, the associated dealers meet each month for the purpose of formulating their general merchandising and advertising plans. It is reported that each dealer spends 5 per cent of his annual radio sales volume as his share in the coöperative program.

These facts are taken from "Co-operative Marketing Factors in Business," a pamphlet distributed by the Policyholders Service Bureau of the Metropolitan Life Insurance Company.

Colonial Merger

Colonial Radio Corporation is the official name for the recently combined firms of the Colonial Radio Corporation of Long Island City, New York, and the Valley Appliances Incorporated of Rochester, New York. Since the merger these firms have coöperated closely in all departments. The new models for 1930-31 are completed and will soon be announced to the trade.

Capehart Home Model Combination

Capehart Corporation announces a new home model combination of radio and phonographs in custom built cabinets listing at $1195. The new Capehart record-changing device to plug in on any radio lists at $365.00. All Capehart products will be sold direct from factory to dealer.

New *Radio* Equipment

De Forest Tube With Rotating Grid

The engineering department of the De Forest Radio Company, under the direction of Allen B. Du Mont, has devised a vacuum tube whose grid is rotated when electrons strike its vanes.

Allen B. Du Mont with Electron Motor Tube

The speed of rotation depends upon the plate voltage and cathode temperature. While it is still somewhat of a scientific curiosity, it has possible application in television, or where a variable resistor is used to accomplish various commutating and switching actions. It can also be used as a synchronous electron motor.

Crosley Makes Pick-Up Phonograph

Crosley Radio Corporation is making a complete electric-driven phonograph with pick-up unit to work with any standard radio set, fitting on top of the cabinet. Its price is $30.

Brach Electric Clocks

L. S. Brach Mfg. Company of Newark, N. J., announces a new line of kitchen and mantel electric clocks listing as low as $5.00.

Carteret Motoradio

Carteret Radio Laboratories, Inc., New York City, announces a new five-tube set for automobile use. It requires two '24, one '27, one 112 and one '71 tube, and operates a power speaker. It is designed for dashboard mounting and has direct tuning control. It lists at $67.50 less accessories.

Howard Synchro-Dial

Howard Radio Company of South Haven, Mich., provide a remote control tuner for use with their line of radio receivers. This is known as the Synchro-Dial and consists of a duplicate tuning

Howard Synchro-Dial

device attached to a flexible electric cord which is attached to the receiver. It synchronizes with the tuning dial on the radio across the entire tuning indicator, enabling reception of any station that can be tuned in by hand on the receiver itself. The device can be used at any point within range of the connecting cord, which can be of any length. This unit is installed in any Howard radio for $100 additional and is not sold separately.

Clarostat Electric Soldering Iron Control

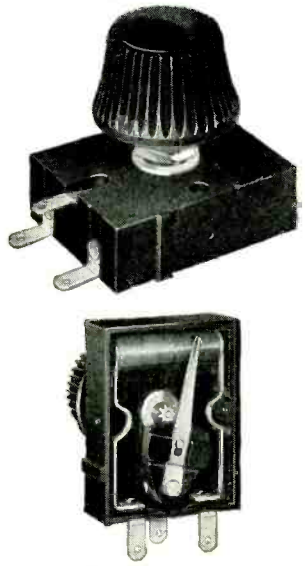
Clarostat Mfg. Company, Brooklyn, N. Y., provides a device to supply reduced current to a soldering iron after it has reached operating temperature, thereby preventing premature burnouts and necessity for frequent cleaning of the tip. A variable resistance unit is controlled by a three-position switch, so as to regulate the amount of current, a pilot light indicating "on" and "off."

New National Thrill-Box

National Company, Inc., of Malden, Mass., is making an a-c shortwave receiver whose five tubes supply loudspeaker reception of distant programs. It uses two '24 tubes in the r.f. stages and three '27 tubes in the detector and audio stages, and is claimed to give humless reception when used with a special power unit. It has single dial tuning with auxiliary control of regeneration. The tuning condensers may be readily adjusted to provide a "wide-band spread." A similar set has been designed to use low-wattage d-c tubes. Both models are available in either kit or completely wired form.

Bradleyometer

Allen-Bradley Company announce a new potentiometer, known as the Bradleyometer, which consists of about fifty resistance disks interleaved with thin metal disks along which a movable con-



Bradleyometer

tact arm slides. The arm is geared to a bakelite control knob which makes one revolution. The resistance value of each step is separately controlled and the total number of steps are assembled in accordance with the desired resistance-rotation curves. The device is made in single, double or triple units for various applications in the control of audio circuits.

New Speed Tubes

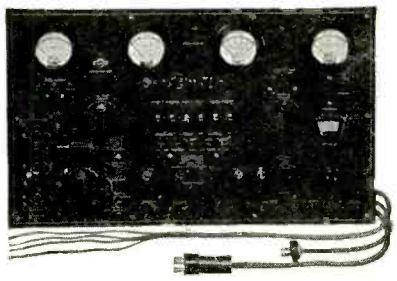
Cable Tube Company, Brooklyn, N. Y., is producing 230, 231 and 232 type tubes as additions to the Speed line. Speed tubes are now made with an "armored bridge" construction to insure

"Armored Bridge" Construction of Speed Tubes

greater uniformity and strict maintenance of operating characteristics. Paul S. Weil has recently become advertising manager.

DayRad Shop Test Panel

Radio Products Company of Dayton, Ohio, W. W. Boes, sales manager, announces a new test panel for shop use. It can be used as a tube checker, set



analyzer, grid dip meter and all manner of special tests. So requires no panel adapters and is furnished with complete instructions. Warehouses are being established at San Francisco, Portland, Los Angeles, and Denver.

Premier Chassis

Premier Electric Company, Chicago, are making Model 824 as a screen grid chassis for private brand sets. The three r.f. and the tuned power detector stages use '24 tubes, a '27 is used for the first resistance-coupled audio, two '45s in a push-pull for the second audio, and an '80 for rectifier with Mershon condensers in the filter. Parts and wiring of the steel chassis are accessible, the illuminated dial is calibrated in kilocycles and degrees, and pick-up jack is provided for phonograph. The price is $78.00.

Pilot Auto Radio Kit

Pilot Radio & Tube Corporation, Brooklyn, N. Y., are marketing an automobile radio receiver in kit form. It requires a-c screen grid tubes in the three r.f. and detector stages and a '27 and '45 in the audio stages, causing a 4 amp. filament drain when wired in series-parallel from a 6-volt battery. It fits into a steel case designed to be carried on the running board and is operated from a small control panel through a flexible shaft. A small magnetic speaker is supplied as an accessory.

Webster Pick-ups and Amplifiers

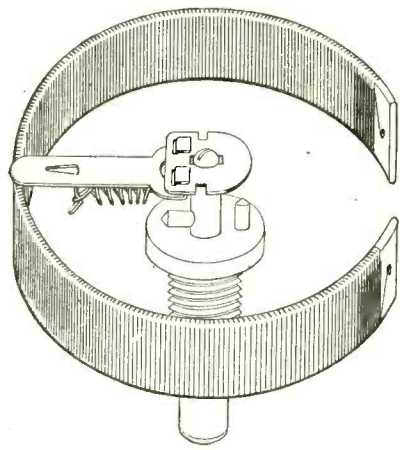
Webster Electric Company, Racine, Wis., announce new models of electric phonograph pick-ups and a complete line of power and "rack-and-panel" amplifiers.

Sparton Presents Ten New Models

Capt. William Sparks presented ten new Sparton Jubilee models at a meeting of three thousand dealers at Jackson, Mich., on May 28. These range in price from $145 for Models 591 and 593, and $169.50 for Model 600, to $580 for the Cardon-Phonocraft Ensemble. These prices include tubes.

Eby Wire-Wound Volume Controls

H. H. Eby Mfg. Company of Philadelphia are producing a new line of volume controls which are available in single or double units in all sizes up to 100,000 ohms. The spring arm is de-



Resistance Unit in Eby Volume Control

signed to provide heavy contact pressure with light uniform torque, thus giving noiseless operation and long wear. They can be furnished to give any desired taper because of a new method of copper-plating the wire-wound strip. The resistance units are sealed into a shell which insulates them and dissipates heat in heavy-duty work.

Hoyt Handy Meter

Burton-Rogers Company, 755 Boylston Street, Boston, are making a Hoyt Handy Meter in different models for measuring d-c and a-c volts or amperes. It is housed in a convenient bakelite case.

New Triad Tubes

Triad Manufacturing Company, Pawtucket, R. I., announce production on T-230, 231, and 232 tubes, and the redesign of T-24, T-45 and T-50 tubes, so as to have greater power output and longer life, with less distortion.

Sterling Uses Loftin-White Amplifier

The Sterling Mfg. Company of Cleveland, Ohio, have incorporated the Loftin-White audio amplifier in their new Minstrel model, which is also provided with tone control. This model uses '24 tubes in the three r.f. and detector stages, and two '45 tubes in the audio stage, selling for $123.50. The Cloister model, which sells for $107.50, uses push-pull audio amplification.

Acme Making Parts for Manufacturers

Acme Electric & Manufacturing Co. of Cleveland, Ohio, have discontinued their line of receivers and are making chokes, audio and power transformers, and a new multiple coil winder.

Victory Antenna-Eliminator

Victory Speakers, Inc., Oakland, Calif., have developed a compact coupling circuit which takes the place of an outside aerial when connected to the antenna and ground posts of a radio

Victory Antenna Eliminator

receiver. With good ground connection, it gives almost the same volume on distant or local stations as can be obtained with the average 100 ft. aerial. It also decreases static noises, yet it is small enough to fit inside many standard size cabinets. Its price is $3.75, with guarantee of money-back if not satisfied.

New Condenser Speaker

Coronic Manufacturing Corporation has been formed at Holland, Michigan, to produce a new type condenser speaker for radio manufacturers, automobiles, theatres, and hotels.

King Model 109 Chassis

King Mfg. Company, 122 Greenwich Street, New York City, announces the King Model 109 chassis. It uses three '24 tubes, one '27, two '45s and one '80. Valley Appliances speaker and Adler Royal cabinets have been selected. Units shipped separately to dealer for assembly. Allan Strauss is announced as sales manager for this new company.

Tom Thumb Portables

Automatic Radio Mfg. Company, 112 Canal Street, Boston, announce a complete new line of Tom Thumb portables and a Junior Model automobile set.

Crosley Makes Amrad Sets

Crosley Radio Corporation has taken over the receiving set manufacturing business of the Amrad Corporation, together with the exclusive right to use the name Amrad in producing and marketing radio receiving sets. The set engineering staff of Amrad, headed by Fred Johnston, has been moved to Cincinnati as a division of the Crosley Engineering Department. According to Powel Crosley, Jr., this move makes possible more efficient manufacturing and sales methods for the Amrad line, with resulting higher quality at lower prices.

Who *Distributes* It *Now*

"The greatest problem in the efficient and economical movement of radio products from the maker to the user is in the development of better channels of distribution."

New Stewart-Warner Distributors

Stewart-Warner Sales Company, Roanoke, Va., with branches at Norfolk, Richmond and Raleigh; C. A. Brown, president, G. H. Bowers, vice-president.

New Bosch Distributors

American Bosch Magneto Corporation has appointed Anthracite Radio Company of Philadelphia and Morris Distributing Company of Syracuse, N. Y., as distributors.

Bosch radios are to be distributed by the James Supply Company of Chattanooga, Tenn., and the Peaslee-Gaulbert Corporation of Louisville, Ky., with branches at Houston, San Antonio and Dallas, Texas.

Radiola Distributors

As announced by V. W. Collamore, manager, Radiola Division of the RCA Victor Company, newly appointed Radiola distributors are the Motor Equipment Company of Salt Lake City, Utah, Onondaga Auto Supply Company of Syracuse, N. Y., and H. E. Sidles Company of Lincoln, Neb. Former distributors who will continue to handle this line include Ludwig Hommel & Company, of Pittsburg, Pa., Texas Radio Sales Company, of Dallas, Texas, F. D. Pitts Company of Boston, Mass., and Reichmann-Crosby Company of Memphis, Tenn.

Gulbranson Distributors

The Gulbranson Company, manufacturers of the "Champion" model radio, have appointed Wahn Radio Co., Boston; Brown-Dorrance Co., Pittsburgh; and the Motor Supply Co., Savannah, Ga., as distributors. M. E. Seegmiller has been made special sales representative to assist district representatives throughout the country. Martin J. Polihoff of Philadelphia is district representative for Eastern Pennsylvania, Maryland, Delaware, and Virginia.

New Edison Distributors

The appointment of four new distributors for Edison radios in the southeastern states was recently announced by Horace H. Silliman, eastern sales manager of Thomas A. Edison, Inc. They are the Southern Electric Supply Company of Atlanta, Ga., the Benton-Bailey Co., Inc., of Richmond, Va., the Seals Piano Company, Inc., of Birmingham, Ala., and the American Hardware & Equipment Company of Charlotte, N. C. These are in addition to four others in the Southeast: Tampa Radio Corporation, Tampa, Fla.; Southern Radio Distributors, New Orleans, La.; Russell-Heckel Co., Memphis, Tenn.; and the Edison Distributing Corporation, Dallas, Texas.

Sentinel Distributors

The United Air Cleaner Corporation have arranged to distribute the new Sentinel radios through the following jobbers: Butts & Ordway Co., Boston; Young & Leonard Co., Providence, R. I., J. H. McCullough & Co., Philadelphia; Raub Supply Co., Lancaster, Pa.; Cappel Furniture Co., Dayton, O.; Stollberg Hardware, Toledo, O.; W. E. Fuetterer Supplies, St. Louis, Mo.; Lemke Electric Co., Milwaukee, Wis.; Hall Hardware Co., Minneapolis, Minn.; Brown Camp Hardware, Des Moines, Iowa; Warren Electric Co., Sioux City, Iowa; W. A. L. Thompson Hardware Co., Topeka, Kans.; Ellis Electric, Rockford, Ill.; A. & E. Supply Co., Parkersburgh, W. Va.; American Hardware & Equipment Co., Charlotte, N. C.; Mutual Tire Store, Columbia, S. C.; Fuller's Music House, New Bern, S. C.; Florida Tire Co., Orlando, Fla.; Ohio Valley Hardware & Roofing Co., Indianapolis and Evansville, Ind.; Dixon Radio Co., Wichita, Kans.; Boxwell Radio Company, South Bend, Ind.; C. & D. Auto Supply Co., Cincinnati, O.; Southern Sales Co., Oklahoma City, Okla.; Radio Supply Co., Tulsa, Okla.; Western Sales Co., Great Falls, Mont.; L. D. Heater Co., Portland and Seattle; L. P. Myers Co., Plattsburgh, N. Y.

New Grebe Distributors

A. H. Grebe & Company, Inc., Richmond Hill, N. Y., announces that their products will be handled exclusively by Elliott Lewis Electric Company of Philadelphia, Bright & Company of Reading, Pa., and Janney-Semple-Hill, Inc., of Minneapolis, Minn. The S K 4 chassis will be continued in cabinets of price range from $219.50 to $450. The A H 1 chassis with three '24, one '27, two '45 and one '80 will be available in cabinets whose prices range from $160 to $225.

Changes in Quarters

New York City offices of The Rola Company have been moved to larger quarters at 205 East 42nd Street.

Eveready Stocks in Southwest

National Carbon Company, makers of Eveready products, has moved into its new Western Division headquarters at 910-912 Baltimore Avenue, Kansas City. The new building, providing adequate facilities for housing the sales and service organization for the large southwestern territory, is in line, officials say, with the company's policy of providing the maximum coöperation to the trade. Adequate personnel, together with complete stocks of merchandise, place the organization in a position to give the trade throughout the entire territory intensive sales help and cooperation in merchandising Eveready products. In addition to stock maintained at Kansas City, there is a completely stocked warehouse at Houston, Texas.

Sylvania in Chicago

The Sylvania Products Company, who make radio tubes at Emporium, Penn., have established a factory branch office at 605 West Washington Street, Chicago, to serve parts of Illinois, Wisconsin and Iowa. Frank J. Foster of Evanston, Illinois, is branch manager.

RADIO TRADE-INS

Their Acceptance and Disposal

This article is taken from one of a series of Radio Talks published by Trilling & Montague, Sunbury, Pa.

By **DAVID M. TRILLING**

TRADE-IN problems can be solved successfully if the dealer will handle them intelligently and abide by certain fixed policies as to what is profitable and what is not profitable. Nor is a trade-in always to be regarded disfavorably, especially if the dealer finds himself with an odd model that is not selling or is to be discontinued. Also dealers are periodically offered propositions on high priced models by well known manufacturers making it possible to allow substantial trade-in allowances without affecting the net profit.

Dealers who do their own selling or who employ salaried sales-people can better afford to handle trade-in business, because no sales-commissions are involved or because such commissions as must be paid are usually small. This does not mean that such a dealer can better afford to allow excessive trade-in allowances than others who employ outside salesmen on commission, because the dealer's time may be more valuable to him than the expenses given to a commissioned salesman. The advantage implied is that he can better conserve the net profit left to the dealer.

The author does not look upon sales involving trade-ins as business to be favored; and sales volume should not be built up this way. The future of a well meaning dealer depends on his selling *honest values, properly designed* and *correctly priced* radios, and his own services.

Wherever it is available, the writer favors the use of a "Radio Blue Book" such as that on which automobile trade-in allowances are based. Such quotations, if followed closely, will result in profits; and automobile manufacturers check their dealers' use of them on the principle that the dealers must make money in order to keep their franchise. Likewise, finance companies which handle automobile paper want to know how much of the down-payment is represented by an exaggerated trade-in allowance, as they are interested in knowing that the purchaser has sufficient equity in his purchase to protect the sale. Such a "Blue Book" would help radio dealers more forcibly to convince certain types of people of the fairness of the concessions they are willing to make in much the same manner as the automobile dealer.

WHEN promoting trade-ins, a third party can be introduced into the sale to good advantage. The third party may be the owner of the business, the manager of the store or department, or a "trade-in" salesman trained for this purpose who can be known as the "appraiser." A sales procedure can be worked out which will attach some atmosphere of professional importance to a trade-in transaction. The following ideas, with variations, can be applied to suit the need of any dealer.

We will assume that a prospect has entered the dealer's store and has made known his mission. "I am interested in buying a new radio provided I can get an allowance on my old one," or "I have seen your advertisement regarding trade-ins and would like to know how much I would be allowed on my old radio toward the purchase of a new set." The salesman's response should be: "That will depend on what make and model radio you have and which radio you intend buying."

"Will you kindly come and meet our appraiser? He will tell you what your set is worth according to its age, make, model and condition. That amount can be used toward the initial payment on the purchase of a new radio."

The prospect is introduced to the appraiser by the salesman, who explains openly the details of the sale and what kind of a trade-in is offered. The man to whom the prospect is taken must be sufficiently tactful to work on the information given him by the salesman.

We will assume, in this case, that the prospect owns a battery set for which he paid $300. He has used it more than two years. The appraiser can, after learning this, say to the prospect: "Your radio set is considerably out of date and represents little or no value today, but you have derived two years of use and enjoyment from it. I dare say the radio has given you at least $2.50 worth of entertainment a week, and figuring on a basis of 104 weeks, the value you have received from it amounts to $260. Don't you think it has served you well?

"You will be surprised to learn how radio has improved since you purchased your battery set, and though you have had your money's worth it still has some value. We can allow you ..... dollars on your set towards the purchase price of the model you have chosen.

"If we allow you ..... dollars on your set towards the purchase of the high grade set on which you have decided, you will not be out any of your original investment, considering the pleasure you have derived from it."

After the appraiser has thus placed a valuation on the set which is to be traded in, he informs the salesman of the amount and walks away, allowing the prospect to remain with the salesman so that the sale can be completed.

Throughout the transaction the dealer and the salesman must continue to bear in mind the prime fact that they are in business to make money. Remember that sets purchased from distributors are always better investments than sets purchased from your customers. It is wise, as a rule, when an allowance of more than $10 must be made, to accept as trade-ins only such sets as can be resold. To do so will insure turn-over on the investment and prevent the tying-up of capital in dead stock.

When a prospect demands an excessive trade-in allowance, point out to him his own reaction as a purchaser of a used radio. Ask him if he would pay $20 or $25 for some particular used set on display in your store. If his answer is negative, ask him at once why he should expect another buyer to be willing to pay you, for his old set, the sum he asks as allowance on it. Care should be taken, however, to impress upon the mind of a prospect who demands an exorbitant allowance that he has come to *buy* a radio set and not to *sell* one.

Some radio dealers in metropolitan sections where competition is quite keen are creating for themselves a "bidder's market." A bidder's market, to use a slang expression, is simply a "racket."

As an outgrowth of the buyer's market, the buyer has been educated by some sellers to know that if he shops long enough and far enough he can make his own deal, either through a cash concession, an exorbitant trade-in concession, free financing, free aerials or the presentation of things foreign to the radio industry, such as floor lamps or benches. Dealers in such a market have only themselves to blame for this condition. They caused it to exist. Had they been careful in their operations, there would be no necessity for them to force business.

When a dealer allows a trade-in, he should be sure to pick up the old radio set instead of being satisfied to leave it with the customer in view of its apparent worthlessness. It will at least settle in the prospect's mind that it was not merely a cut price at which he bought his set. Buyers will have more confidence in the establishment from which they buy when the conditions of the sale are entirely lived up to by the dealer; and it is equally as important for the dealer to live up to the conditions of the sale by picking up the trade-in involved, as it is for him to require the buyer to live up to the terms of the purchase.

How to Dispose of Trade-Ins

A dealer who does not care to sell trade-ins at retail can generally sell them at low prices to other dealers in localities where they are marketable. In a neighborhood inhabited by foreigners or low-wage earners, a good radio set, battery-operated, or of an early all-electric type, will be bought for a fraction of its original value. Other dealers have a chance to sell such instruments to farmers and to individuals in sections where there is no electric current.

Others may find neither of the above suggestions of any assistance. Their method of disposing of such sets may be to conduct clearance sales. Or the sets may be disposed of through the classified advertising columns of the newspapers, using some employee's home address as an outlet. Again, some dealers have occasional calls for the temporary use of radio sets on a rental basis. Traded-in sets, particularly those of the loop type, can be used very effectively for this purpose.

In larger towns, variations of the following expedient have been used with good results. The dealers have gotten together and arranged an immense bonfire in which old radio sets were destroyed. On such occasions, a general invitation can be extended to all members of the community to be present and to bring with them their old "squealers" and broken down sets to be similarly destroyed. Dealers can even volunteer to collect these sets for the occasion. (In so doing, the names of many prospects can be added to their lists.) Refreshments can be served to all those present. The coöperation of local trade associations, such as chambers of commerce and boards of trade, can secure for the occasion a great deal of free but valuable newspaper publicity.

There is another method of disposing of such sets which will perhaps prove to be one of the best. That is, to give them outright to public institutions, particularly to hospitals, etc. When such presentations are made, the dealer is usually permitted to display a card or sign on or near the set; and the goodwill value of such an investment is quite often more than could be realized in cash if the set were sold.

Again, to give such sets to families unable to afford a radio set, but able to pay for accessories, may prove profitable in many ways. The dealer can thus be enabled not only to bring a great deal of happiness to otherwise dull homes, but also to insure himself of making the sales when those families come eventually to be able to afford new and up-to-date sets.

It is an undeniable fact that in most cases trade-ins represent a total loss to the dealer. At best they involve two sales in order to make one profit. It is, therefore, desirable to avoid trade-ins as much as possible. In the author's opinion this problem will more or less solve itself in the not too distant future, in view of the following considerations.

Radio began as a battery-operated device. The cost of pioneering and experimental developments was passed on to the customer in the form of high prices for radio sets. With the quick advent of electric sets, however, the consumer found it convenient and desirable to change over to an electric set. Then it became the dealer's problem not only to absorb a considerable portion of the depreciation in the value of the battery set traded in by the consumer, but it also was often impossible for him to dispose of the battery set at any price. In other words, the amount paid by the consumer for his old set and its value to the dealer were as far apart as the poles. To further aggravate the situation, the improvement in manufacturing facilities together with a severe competitive condition forces the price down to a comparatively low level, thus giving the dealer a smaller unit of profit in each sale.

It appears, however, that out of this unfortunate situation will evolve the solution to the trade-in problem. Owners of old battery sets to be traded in will naturally be satisfied with smaller trade-in allowances than heretofore, since they will feel that they have obtained more value out of their original investment. Owners of electric sets purchased within the past two years, who are desirous of trading their sets for newer models will likewise take into consideration the relationship between cost and value received which, as can be seen, is not so far apart as in the past. At the same time, an electric set traded in to a dealer has a fair resale value. Thus, a dealer will not be called upon to give away a considerable portion of his profit on trade-ins, and will find this phase of the business more tolerable than heretofore.

It behooves the dealer, however, to ponder further upon this phase of his business since competition will always be present to force the greatest possible trade-in allowance and a consequent reduction in his profit. The most important consideration in this respect, in the future, will be whether or not the set traded-in is an "orphan." In other words, whether its manufacturer is defunct or still in business. In the latter event, the trade-in will represent at least 50% more resale value. A further consideration is the prestige of the manufacturer—whether or not there is attached to his product the element of pride of possession on the part of the purchaser. Everything else being equal, the dealer will find it easier to obtain his price for a second-hand set with a reputation for superiority than a set which is regarded as ordinary.

SELLING RADIOS BY RECORDED MUSIC

(Continued from Page 48)

each is easily understandable by all music lovers, whether trained in the appreciation of so-called "high-brow" music or not. They are played by Gino Marinuzzi and his symphony orchestra.

Among John McCormack's many beautiful records, Victor No. 1293, upon which are "I Hear You Calling Me" and "Mother Machree," is very well suited for the purpose of comparing radio receivers. While the tenor voice does not actually reach the extremely high notes the very softness and clarity of such a voice as McCormack's is due to the presence of a multitude of harmonics, each harmonic having a frequency of twice the one that preceded it. If a radio receiver reduces the strength of the high frequencies (those from 2000 to 5000 cycles per second) too greatly John McCormack's voice will be made to sound like that of a mediocre backwoods singer, hence the necessity of building radio receivers capable of reproducing frequencies no human being can reach. It is well to point out that purity of tone is dependent mainly upon this ability of reproducing the highs.

LETTERS TO THE EDITOR

Store Failures, Their Cause and Possible Cure

Sir: Allow me to present you with a sheaf of roses for the article in this month's RADIO by Volney G. Mathison. He has said what is right at the right time. Would that there was a solution to the problem, some kind of a solution for the little dealer like I am. One doesn't have to read his efforts twice to understand just why we are all in the same boat, nor to eradicate the last vestige of skepticism regarding the present status of the radio sales game.

Yet, what are several thousand small dealers going to do when there is no co-operative help to be had from the manufacturers or even the distributors. Why don't the manufacturers put a stop to these furniture and department store people smearing the papers with spread-eagle ads on standard brands of radio at "No down payment, no carrying charge, use our convenient club plan, buy now and make the down payment on next month's bill, free installation and free service, $1.00 down and $1.00 per week, etc., *ad infinitum, ad naseaum*," stuff. I wish that the entire game would go out flatter than a punctured tire. It is a shame the way radio merchandising has been prostituted, here, and I presume everywhere else.

One of the largest radio stores in this city of 300,000 souls has gone into bankruptcy this week because of this condition. Assets about $35,000, liabilities reported about $200,000. Along with it went a good sales organization, a good service department, good will and prestige. No, the finance companies weren't hurt; they have their paper secured and have enough reserve to take care of any repossessions. And these will be few in this instance.

The manufacturers have themselves only to blame for this trend. In their frantic haste to obtain maximum distribution in minimum time, they have appointed most any old distributor who had a credit rating and a warehouse. Ethics? Bah! Distribution, distribution! "Let's get it into the hands of the consumer quick; the factory is going at break-neck speed and there must be an outlet. Hi pressure 'em, boys; put the gaff to 'em; give 'em ———! Dump this marvel of the ages, this very latest model of super-excellence on the market; force the sale; we want our costs plus a good profit NOW and hang the rest."

They did not maintain a careful ethical setup within the factory-distributor-dealer tree. Ravenous distributors appointed Tom, Dick and Harry to sell to the consumer. Each one has his own ideas, each one employed different advertising tactics, different sales tactics, and service and maintenance tactics. Tom advertises his radio at the standard price; his salesmen go out and close a sale with an additional $5.00 tacked on for a dern good aerial installation. Dick learns of this, believes it is easily overcome, that he is smarter than Tom, and has his salesmen give the customer a ditto aerial installation for nothing—"just as an incentive to get the contract signed." Then Harry gets smarter, and not only gives the aerial but cuts his carrying charge as well, and throws in a tube guarantee for 90 days.

Mr. Distributor, in the interim, complacently sits behind his desk rubbing his hands together and gloats over the wonderful distribution flowing by. Mind you, Tom, Dick and Harry are small boys, the buzzard hasn't appeared on the scene yet, the horse isn't dead quite. Along about the time these three have come to the conclusion that they are dealing in mudslinging competition, Mr. Department Store and Large Furniture Store swoop down from the clear skies and take a good seat on the limb of the highest tree. Forthwith the newspapers break with the advertising aforementioned and more. T., D. and H. retire from labor unto rest, not refreshment; Mr. Distributor stops rubbing his paws, gets a strained look on his face, plays bad golf, and howls, "What is the matter now?"

This is a crucial moment, and anything is liable to happen. It does. Prices are slashed in order to stimulate business. Distributor and dealer are caught with a large lossage, some more dealers pop out, others lie down on the hot sand and writhe in agony, praying that succor will arrive before it is too late, and the distributor becomes meat for the jackals and hyenas, the gyp cut-rate bargain houses who specialize in distress merchandise. The second dumping takes place, in two parts. Part One, distributor to Gyp; part two, Gyp to consumer. And this is one instance wherein the public, contrary to the old saw, does NOT pay; they get standard merchandise out of original packing cases for much less than it ever cost the dealer.

Some one will now say: "Well, you are so smart, what would you do to remedy the situation?" Let the manufacturers diligently weed out those distributors who are the least bit shady, or better still cut them all out, do their own distributing and, by so doing, reduce the price of the machines; then set up a rigid and ethical plan for the dealers to go by and the first one that breaks it give him the medicine. Establish a standard carrying charge in co-operation with the finance companies, or better still, discourage them and finance direct from the factory. Employ a standard advertised down payment and do not allow a deviation therefrom. Employ a standard trade-in allowance and ditto. Seek to establish the merchandising of radio on a plane somewhat higher than the dog-fight class. Zealously and jealously guard it with a preservative; quit dragging it through the mire of dirty competition and financing and make it a game that any dealer will be glad to enter.

Well, editor, that is part of it. Trust I haven't inflicted too much upon you. I could write a manuscript on the situation here in this southwest of ours. But let me again hand you the rose and say that yours is the only magazine that has stood solid as a rock for the art from the commercial standpoint, and not been afraid to say when the onion smells strong.

Stay in there and pitch, OM, give us some more of Volney G. Mathison, Earle Ennis, Keyhole George and yourself. Maybe some day some of this radio miasma will wake up and realize that it is slowly strangling itself to death.

PORTER T. BENNETT, Mgr.,
Dallas, Texas. Behrends Radio Music, Inc.

Recognition for the Service Man

Sir: April RADIO'S Radiotorial Comment about the importance of the service man is in the right direction, but doesn't go far enough. The radio salesman, who does not know anything about the mechanical features of the set that he is selling, makes promises in his sales talk that no service man on earth could fulfill. I venture to say that 80 per cent of those who sell radios don't even know what makes them tick and have no more ability for mechanical work than a pig has to skate.

Yet the average dealer and distributor kicks like sixty when a radio mechanic asks for a decent salary, after having plugged for ten years or more in order to become an expert. Yet they expect him to be on tap 24 hours a day, 365 days a year, and they think he is just a mechanic who only has to tighten up a screw or solder a few joints.

But who is it that bears the brunt of the complaints? Who has the responsibility of re-selling a dissatisfied customer? Who must make good the salesman's dreams? Who is sent out to help collect the delinquent payments? Who risks his life on bad roofs? Of course it is the service man, who must be a diplomat, salesman, engineer, electrician, collector, and steeplejack all in one.

The service man is the axle around which the wheel of the radio industry revolves. If a distributor's service man knows his job he can make even a poor line go over after the dealer and his service man are ready to throw it out. If a service department is properly organized and operated, it should put a fair profit into the owner's pocket. But this will only be possible when the service man is paid a good salary, allowed to use his own ideas once in a while, and not treated like a mere screw-driver and plier man. More radios are sold in a week through the service man's ability than in a month by the hot air spread around by the average salesman.

AL SMITH.

Philadelphia, Pa.

Auto Radio Interference

Sir: We would like to criticize, in a constructive way, the article "Stopping Interference to the Auto Radio," by N. Earl Borch, on pages 48-49 of March RADIO. In the last column, at the bottom of page 48, he says, "But heat and vibration crystallize a carbon resistance with a consequent change in value. It will, therefore, be found necessary to periodically change the units."

The Speer Carbon Company has developed a carbon resistor for use on spark plugs and distributors that will not change in resistance. In the laboratory a set of six has been on test, putting high tension current from a Delco-Remy distributor, running at the equivalent of fifty-two (52) miles per hour, through them. They have been on test for more than 65,000 miles without a change in resistance of plus or minus 5 per cent. Another set has been on the writer's car for over eight weeks, or 2,000 miles with practically no change.

Mr. Borch speaks of heat and vibration causing the carbon resistor to "crystallize." It is our experience that vibration has no effect on the resistance. It might cause the resistor to break, or the connections to loosen. Most carbon resistors are made of some form of carbon; an insulating material for a filler; and a binder. After being molded they are baked somewhere around 200° C. for some time. On an automobile engine they would not get that hot in normal operation. We find that prolonged heating at above 200° C. does not "crystallize" the resistor, but "carbonizes" the binder (usually a resin or gum which is an insulator), so that the original resistance is decreased.

We wonder how Mr. Borch arrived at 30,000 ohms as the correct resistance. In our tests so far we have really found no difference using as high as 100,000 ohms—but, on the principle that the lowest resistance should be used, that would suppress the interference, we have been using twenty 30,000 ohm resistors. We are now actually making measurement tests to see to what limits we can go.

Mr. Borch's article is the most illuminating one on the subject we have read, and we felt it only right to call your attention to the points mentioned.

H. W. ABBOTT.

St. Mary, Penn.

ASSOCIATION NEWS

THE N. F. R. A. open meeting at the Trade Show and Convention was presided over by J. Newcomb Blackman, president. The first speaker on the program was H. B. Richmond, president of the R. M. A., who delivered an address on "The Manufacturer's Point of View." Mr. Richmond emphasized the fact that it was necessary for each and everyone within the radio industry to understand each other better and to work in closer harmony and coöperation.

Immediately following Mr. Richmond's address, J. Newcomb Blackman delivered his address on the Association's activities. The membership now consists of forty-nine radio associations throughout the United States, and one member in Canada.

In commenting upon new sales policies, Mr. Blackman said: "The trade will watch with keen interest the success, or otherwise, of some of the new sales plans being announced by radio manufacturers, and particularly one being introduced by a well-known concern, but new in the radio field. It remains to be seen whether the radio dealer will gracefully accept any plan which calls for his acceptance of his supply on a sight draft bill of lading attached basis, which of course means C.O.D. This plan has been successful in the automobile line, but of course automobiles represent a much larger initial investment and the dealer in turn either receives cash or has means available to finance his installment paper.

"The difficulty with customary sales plans in vogue in the radio business seems to be that they are not rigid and uniform with each dealer. The average dealer places too much value on the so-called independent action on his part. A survey of successful sales plans will often disclose an obligation on the part of all dealers to play the game squarely—to permit constant supervision of the conduct of their business—to furnish periodically financial statements to the one that gives them credit in any form. In other words, I believe that if the independent dealer is to successfully compete with his chain store competitor, he must first sell himself on the idea that it is in his own interest that he express a willingness to be directed by those competent to help him make money. Dealers should first understand that not over about 5 per cent of those entering business make a success. The other 95 per cent eventually quit because in one way or another they have proved unsuccessful. Consequently it seems reasonable to make the statement that most dealers cannot do business successfully if left to their own resources and direction.

"It may mean that we are in an era where there must be laws in business ethics which will be recognized to be as important to business as are certain laws regulating society. Long ago society recognized the fact that the mere possession of an article does not carry with it the license to do as you please with it once it becomes your property, regardless of the effect upon others. The so-called liberty of free speech is often exercised and guarded, but the fact remains that while we may talk, we can still be held responsible for what we say.

"Competition has been running riot in the radio business and I do not hesitate to make the statement that the time has now come when the successful radio manufacturers will be those who find the ways and means to adopt sales policies which can be inaugurated and controlled from the factory. Such sales policies, of course, can only be established and maintained by concerns of ample capital, experience and seasoned responsibility. Only the outstanding factors in the business world today make a real success, the others merely struggle along until they fail. There will have to be less manufacturers and certainly many less wholesalers and dealers."

Following Mr. Blackman's address, Mr. Harry Alter, president of the R. W. A., spoke of the activities of that Association on the wholesalers' problem. He stated that the R. W. A. supported the N. F. R. A. in all of its legislative activities and endeavored to sponsor and promote local associations wherever possible.

Mr. Henry Steussy, chairman of the Retailers Group of the N. F. R. A., delivered a very splendid address on the "Advantages of Local Associations to the Retailers," pointing out that the retailer who does not cooperate with his local association on all of their activities, is losing an opportunity to better his own conditions and to make his industry more profitable. Mr. Steussy stressed particularly the advantages of local associations adopting Standards of Trade-In Values for radio sets. A large percentage of the sales during the past year involved traded-in radio sets, with a result that the retailer must be doubly cautious to watch the allowances he is making for the old set in order not to jeopardize the profit on the new merchandise. Local associations can profitably adopt a Code of Business Practices, giving standards for the installation of radio sets, down payments, interest carrying charges, minimum service calls, etc., that, when followed, will be of great value to all of the retailers.

Another big feature for retailers to cooperate on is that of the Examination and Registration of Service Men. By this method the retailer is insuring himself of the best possible service and is assisting the service man to become a higher grade man than before the inauguration of the plan. By examining and registering service men, the public is protected in having qualified service men available to solve their radio difficulties, thus insuring a greater per cent of public confidence in radio than ever before.

Executive Vice-President H. G. Erstrom, in speaking to the members, emphasized the necessity for every local association to start activities for National Radio Week, September 22 to 28. He announced the dates of the next Annual Convention of the N. F. R. A. and the R. W. A. as February 16 and 17, 1931, in Indianapolis, Indiana, the dates having been definitely decided upon by the Board of Directors just previously to this meeting. Mr. Erstrom requested closer cooperation of local associations, adding that without that coöperation his service to them would be limited.

THE Radio Wholesalers Association held but one open meeting during the Trade Show and Convention at Atlantic City. Harry Alter of Chicago opened the meeting with an address on the activities of the R. W. A., enumerating them chiefly as follows:

The Association has taken a decided stand in favor of the Capper Kelly Bill which has been before Congress for many years, but for the first time receiving a favorable report from the Sub-Committee this year. Members of the R. W. A. have written and wired to their Congressmen urging the support of the measure. Mr. Alter called their attention to the necessity of writing their Congressmen immediately in detail, completely covering all of the advantages to the general trade in the supporting of this measure. He urges personal representatives being sent to Washington and every possible coöperation extended in this manner.

For the past two years the R. W. A. has been making a considerable effort to stabilize the handling of radio tubes. Several surveys have been made by the executive offices and the results submitted to the proper authorities with the result that we feel in a large measure that we are responsible for the better tube conditions prevailing in the industry during 1929. The Tube Committee is still hard at work in attempting to solve the difficulties involved in the handling of this type of merchandise.

Another activity is that of establishing an Audit Bureau. This Audit Bureau installs a uniform Cost Accounting System in the dealer's place of business. The wholesalers in the group furnish the books free of charge, while the dealer pays for the installation and monthly service charge. Each month every dealer's books are audited by the auditing firm, with the result that his business is kept on an even keel and he knows exactly what the true picture is of his business. The R. W. A. have complete details as to how these plans can be placed in effect and bring it to the attention of every wholesaler. It is valuable, in that facts and figures can be exchanged at the end of each month, so that the retailers themselves can compare their operating costs with the average of the other retailers, and in this manner know definitely wherein their costs vary with those of the average. It offers to the wholesalers a definite means of protecting their credit allowances in that supervised monthly reports are made of each dealer's books to the group.

Advertising standards have taken a decided turn during the last year, with the result that the Executive Offices delivered a model set of Standards for Radio Advertising which was adopted and endorsed by the Board of Directors. Copies of the Standards for Radio Advertising are available to all members of the R. W. A. and additional copies can be secured at their cost price. The Standards have also been endorsed by the N. F. R. A. and are being circulated by that

organization through the Better Business Bureaus, manufacturers, local associations, and everyone interested in the Advertising of radio products. It is believed that the adherence to the practices as recommended will result in establishing greater public confidence and good will toward the radio industry. It is the first time that a national set of Standards for Radio Advertising has ever been adopted.

A monthly survey inaugurated by the R. W. A. for its members is one of the greatest and most important activities it has ever undertaken. The industry has agreed that one of the primary causes for our distressed merchandise sales was that of over-production, and it is with this thought in mind that the R. W. A. Executive Offices are undertaking a monthly survey of radio sales and inventories among its membership. This survey reveals the actual total volume of radio sales among the members of the association and forewarns the manufacturer of the potential market that is available through his wholesaler's outlets. The monthly survey has been endorsed by the R. M. A. and is enthusiastically received by its individual members. It has been the first time that a constructive step has been made in attempting to forecast the actual sales of radio sets and, while it cannot limit production, it does offer a concrete picture of the true conditions within the field.

The executive offices have also made a survey of the supplementary lines being handled by the members of the R. W. A., such as lamps, outboard motors, boats, washing machines, sporting goods, etc. Members of the Association can write the Executive Offices, who will furnish them with a list of the members handling the lines they are interested in investigating. Direct communication can then be established which will enable a wholesaler to determine the advisability of handling that product. It is felt that this actual interchange of information will be of great benefit to the membership.

The Traffic Committee of the R. W. A. has been very active during the last year and in coöperation with the Traffic Committee of the R. M. A. has secured a reduction in freight rates on radios which effects an approximate savings of $1,500,000 in the annual freight bills. The organization has secured a reduction in the minimum carloadings of radio cabinets with loud speakers combined, retroactive to September 7, 1927, which has resulted in many members filing back claims which have paid their dues for several years. Arrangements have been made with an auditing organization in Chicago whereby members of the R. W. A. may have their freight bills audited free of charge, and if a claim for over-charge is filed and is successful in securing reparation, a reduction on the usual fee is made. The usual charge for freight auditors is 50 per cent of the amount saved, through members in the R. W. A. the charge is only 40 per cent of the claim, which will effect a saving of many dollars for the membership.

Executive Vice-President H. G. Erstrom spoke of the assistance the executive offices were ready and capable of giving to the individual members in solving their individual problems. Many members have made direct requests for assistance in securing reparations, adjustments, shipments, etc., which have been successfully carried out by the offices. They stand ready at all times to make every membership in the Association more worthwhile and would gratefully receive any suggestions as to how they could be of greater service. The executive offices are promoting National Radio Week in conjunction with the N. F. R. A. Sample streamers and posters, together with seals on National Radio Week will be sent to all members within a short period of time and he urges every wholesaler to coöperate in bringing radio to the attention of the public for one week. The dates for National Radio Week are September 22 to 28, at the same time of the Radio World's Fair in New York City.

The next meeting of the R. W. A. will be in Indianapolis, February 16 and 17, 1931. This is the next business session of the Association, and every member should plan now on attending this event. The Cleveland convention was the most outstanding one ever held in the history of radio. The "down-to-facts" discussion that took place greatly benefited every wholesaler, making his visit to the convention very profitable.

Following Mr. Erstrom's remarks, J. Newcomb Blackman, chairman of the Tube Committee, presented his report. Mr. Blackman outlined the activities of the Tube Committee in securing a more equitable method of handling radio tubes, which was unanimously endorsed by the Association. The Tube Committee was given a vote of confidence in their activities and thanks for their sincere work. Details of the activities will be released as soon as definite plans have been placed into effect.

Howard Shartle of Cleveland, Ohio, spoke in behalf of the Capper Kelly Bill, stating that he had been in direct correspondence with his Congressmen and they had insisted on knowing the exact reasons for their favoring the measure. He urged that members of the R. W. A. again communicate with their Congressmen and urge the passage of this measure by doing it in such a manner that it is a personal request of each individual rather than a stereotyped "we are in favor."

David Goldman, chairman of the Set Committee, advised the membership of the intentions of the Set Committee to secure the adherence of advertisers to the Standards for Radio Advertising now being published. If any discrepanices should take place, please call it to the attention of the local radio trade association or the local Better Business Bureau so that such advertisements might be corrected and steps taken to prevent them from appearing again. If this method was not successfull, tear sheets should be sent to the executive offices, together with a complete description of the difficulty arising which would be, in turn, forwarded to the Set Committee for their action. The Set Committee is working on a series of definite activities which will be reported at a later date.

H. Shartle, chairman of the Membership Committee, reported that the Board of Directors has authorized the publishing of an R. W. A. Year Book which would contain details of all the activities of the Association for the past two years and explain the advantages to be secured by membership in the Association. A concentrated membership drive will be started, climaxing in the early fall and it is the hope of the Membership Committee that the present roster will be doubled within the next six months.

Francis Stern in reporting the activities of the Traffic Committee, reiterated the statements of Mr. Harry Alter in regard to the savings effected by their activities. He states that the Traffic Committee was ready to do everything within its power to assist the Association and would welcome suggestions as to what problems should be considered next.

Following the Committee reports, discussions took place concerning the various wholesalers' activities in various communities, which was of great value to the attending delegates.

RADIO NEWS BRIEFS

Boley Oliver Company, 33 West 57th Street, New York City, is a new distributor of Storey & Clark Radio.

James C. Cushman, Inc., 1112 Midland Bldg., is representing Stromberg-Carlson Telephone Mfg. Company at Kansas City, Missouri.

Marshank Sales Company of Los Angeles have been appointed representatives of Tung-Sol Condenser Company of Chicago, manufacturers of electrolytic condensers and vacuum tubes.

Transformer Corporation of America announces the appointment of McIntyre-Burrall Company, Green Bay and Milwaukee, Wisconsin, as exclusive distributor for Clarion Radio in Wisconsin and Northern Michigan.

French Battery Company is introducing the Ray-O-Vac autoradio *B* battery which is designed to withstand moisture, temperature extremes and vibration.

Among new developments of the Insuline Corporation of America are a complete line of radio convenience outlets for aerial, ground, power, and remote control of speakers. Another new device is an earphone adapter for DX listening. A relay for simultaneous testing of four loud speakers is also being made, as well as a "Variotone" for use with any receiver.

Cable Radio Tube Corporation is making an S-84 and an S-82B tube for Sparton type receivers, and 230, 231 and 232 types of low wattage tubes.

Sylvania Products Company is making three new tubes for portable and mobile sets, the SX 230, 231, and 232, as well as the SX 484 for Sparton receivers.

The Precision Radio Products Corporation of Little Rock, Ark., is designing a new line of test instruments of which the condenser tester is the first.

Transformer Corporation of America announces the appointment of A. J. Hutter and associates, with offices at 10 South LaSalle Street, Chicago, Illinois, as director of Transformer Corporation's Export Division. Wakem & Whipple have been appointed distributors at Chicago and vicinity for Clarion radio.

Mayo Laboratories, New York City, are starting production on a complete line of replacement parts, amplifiers, and condensers.

Zenith Radio Corporation has appointed Leo W. Reed as field representative to contact distributors and dealers in Ohio, Michigan, Indiana, Kentucky and West Virginia.

Air-King Products Company, Brooklyn, N. Y., announces production on a six-circuit tuner chassis for the Loftin-White amplifier and a short-wave adapter of the a-c or d-c superheterodyne type.

Sylvania Products Company announce the appointment of S. J. Foulkes of Atlanta, Ga., as Southwest representative, and of Frank J. Foster as Chicago representative. William E. Erskine has become assistant to the president.

De Forest Radio Company have appointed Charles A. Rice as Eastern sales manager.

Radio Pickups

Items of trade interest from here, there and everywhere, concentrated for the hurried reader.

Music Merchants Recommend Standard Practices

During the convention of the National Association of Music Merchants at New York on June 9, a resolution was adopted to provide a standard of practices for the protection of dealers. This resolution states:

"A schedule of fair retail prices should be established on a basis contemplating that every retail buyer shall be treated alike and all pay the full retail price. If present retail schedules are too high, they should be reduced. With foolish concessions eliminated from selling, present retail price schedules could be reduced. Manufacturers when quoting on sets and to institutions should always quote prices on a basis that the dealer can meet and still enjoy a profit.

"The discounts provided for dealers should be given to only bona fide dealers in musical merchandise and a differential should be provided to favor the dealer who carries stock as compared to the dealer who sells without carrying stock. Small business concerns not specializing in the music business should receive not more than 10 per cent discount.

"A down payment of not less than 20 or 25 per cent should be required. Monthly payments to cover the balance should be limited to not more than twelve months. Ten months would be better, and invariably a carrying charge should be made on term sales.

"The actual value of a used instrument should be made the basis for the allowance in taking it in trade for a new instrument. In making this valuation, provision should be made for doing whatever work is necessary to put the instrument in salable condition and to cover the selling cost, plus a small profit. Any other basis for making allowances is simply a form of price-cutting and is unbusinesslike."

American School of the Air

A feature whose possibilities in promoting the sale of radio receivers has frequently been overlooked is the American School of the Air, which may be heard from coast-to-coast over some one of the Columbia Broadcasting System stations on Tuesdays and Thursdays at 2:30 p. m. E. S. T. The Tuesday programs deal with history and those on Thursday are devoted to literature, civics, music, health, and nature study. Among the methods of presentation used are: Radio dramatizations, dialogues, story telling, Socratic debates and games, each program having been prepared and the subjects previously selected after consultation with an advisory faculty of twenty-two distinguished educators, headed by Dr. William C. Bagley, Professor of Education, Teachers' College, Columbia University, New York.

These programs offer a particular inducement for the installation of radio equipment in schools, as well as in homes, where the mother might be interested.

RMA Joint Committee on New Tubes

Roger M. Wise of Emporium, Pa., has accepted the chairmanship of the recently appointed R. M. A. Joint Committee on New Tubes. This committee operates under the R. M. A. Engineering Division and is made up of engineers of some of the leading tube and receiver manufacturers. The membership includes R. S. Burnap of Harrison, N. J.; Allen Du Mont of Jersey City, N. J.; George Perryman of North Bergen, N. J.; N. O. Williams of Providence, R. I.; George Lewis of Newark, N. J.; J. D. Cook of Chicago, Ill.; L. F. Curtis of Springfield, Mass.; E. T. Dickey of Camden, N. J.; J. F. Dreyer, Jr., of Philadelphia, Pa.; W. H. Grimditch of Phiadelphia, Pa., and R. H. Langley of Cincinnati, Ohio.

At the first meeting of this committee, recently held in New York, a number of questionable points in connection with the proposed pentode or five-element tube were discussed and tentative characteristics for pentode detectors and audio output tubes for experimental use were determined. Several of the tube manufacturers will make up experimental pentodes for the engineers of the receiver manufacturers to work with in the laboratory with a view of exchanging results in a later meeting and deciding which tubes, if any, may be desirable for production and incorporation in radio receivers.

New Jewell Instruments

The Jewell Electrical Instrument Co., in addition to the complete line of a-c, d-c and thermocouple meters, is displaying many radio testing instruments for shop and portable use.

Jewell A-C Tube Tester

The latest addition to the line is the Pattern 579 service test panel with remote control box which gives direct readings on resistances, capacities, voltages and currents. Several types of self-contained and panel mounting ohm-meters and volt-ohmmeters are shown, as well as set analyzers and tube checkers.

PERSONAL MENTION

Arthur T. Haugh has been appointed sales manager of domestic and foreign sales for the Zenith Radio Corporation of Chicago. He has appointed Frederick W. Will as district sales manager.

R. L. Davis, engineer in charge of radio development at the East Pittsburgh plant of the Westinghouse Electric and Manufacturing Company, has been named Manager of the Radio Engineering Department of the Westinghouse Chicopee Falls, Mass., plant. V. E. Trouant has been appointed to the radio engineering position at East Pittsburgh made vacant by the transfer of Mr. Davis. As manager of the Radio Engineering Department at Chicopee Falls, Mr. Davis will succeed H. J. Nichols, who has resigned. D. G. Little will continue as chief engineer of the Radio Engineering Department.

H. S. Dunning, after twenty years' service with the Westinghouse Lamp Company, has become associated with The Ken Rad Tube & Lamp Corporation, as quality engineer.

J. W. Neebe, formerly of the Campbell-Ewald Company, represents Sound Studios of New York, Inc., makers of recorded programs, at 2111 Woodward Avenue, Chicago.

C. E. Stahl is now general manager of the Arcturus Radio Tube Company, Newark, N. J.

John J. Mucher, president of the Clarostat Manufacturing Company, has taken over the supervision of the organization's sales activities.

D. J. Hartnett, 75 Fremont Street, San Francisco, has been appointed sales representative for The Ken-Rad Corporation in Utah, Nevada and Northern California.

David Grimes has been appointed engineer in charge of the circuit and apparatus section of the recently organized patent division laboratory of the Radio Corporation of America. This laboratory was organized for the purpose of coöperating with various manufacturing companies that are licensed under R. C. A. patents.

L. W. Chubb, former manager of the radio engineering department of the Westinghouse Electric & Manufacturing Company, has returned to that company as director of the Westinghouse Research Laboratories. For some months past he has been assistant to the vice-president of the Radio Victor Company. Mr. Chubb is filling the position left vacant by the promotion of S. M. Kintner to assistant vice-president.

E. Roy Nash, formerly radio manager for Schwabacher-Frey of San Francisco, has taken charge of the wholesale radio division of Waterhouse-Weinstock-Scovel Co., distributors for Bosch radio and Servel electric refrigeration, in the metropolitan area of San Francisco.

Edward G. Hefter, formerly president and general manager of the Great Western Auto Supply Company of St. Louis, has been appointed field representative for the Zenith Radio Corporation in the Southwest, according to W. C. Heaton, sales promotion manager. F. R. Mihleisen has been appointed field representative covering the Northwestern states.

NEW RADIO CATALOGS

The Samson Electric Company, Canton, Massachusetts, has issued a number of pamphlets, covering every phase of the theory and practice of amplifier installation and of public address systems.

Amplion Corporation of America is distributing a new booklet which describes various types of Amplion group address systems and their applications. The company has standardized on three systems which are designed to serve from 1,000 to 4,000 people outdoors or up to 10,000 square feet indoors, from 4,000 to 10,000 people outdoors, or up to 20,000 square feet indoors, and from 5,000 to 30,000 people outdoors, or up to 500,000 square feet indoors, respectively.

A new catalog from the Cornish Wire Company shows a complete line of radio wires, antenna kits, and lightning arresters.

"Data on Volume Controls," is the subject of an interesting bulletin from Central Radio Laboratories, Milwaukee, Wis. It gives standard dimensions and specifications together with directions for preparing requisitions for special jobs.

Catalog 34-R from Jefferson Electric Co., Chicago, illustrates and describes replacement audio transformers and output transformers for magnetic and dynamic speakers. Details are also given regarding Union radio fuses for protecting radio sets, chargers, eliminators, etc.

Bulletin F from the Hammond Clock Company of Chicago is devoted to the Hammond synchronous electric phonograph motor, whereby it is possible to reproduce music at the same pitch at which it was recorded.

"Power Amplifiers for Sound Distribution" is the subject of an unusually complete loose-leaf catalog from the Webster Electric Company of Racine, Wis. Besides giving the illustrated specifications of various single and double channel amplifiers and accessories, it contains a thorough discussion of the application and requirements of sound distribution systems.

The General Industries Company, Elria, Ohio, are distributing a loose-leaf catalog of spring and electric motors for phonograph and radio combinations.

The Merchandise Department of General Electric Company at Bridgeport, Conn., is publishing a new magazine for the benefit of G. E. Radio dealers. The first number includes a statement as to the personnel of the radio sales organization.

In "The Autobiography of A Note," The Brunswick Radio Corporation, 116 West 42nd Street, New York City, what is believed to be the smallest piece of quality direct by mail promotional literature. It measures 2¼ by 3 in., and traces the progress of a personified single note from a broadcast station through all the parts of a Brunswick screen-grid radio.

Jewell Electrical Instrument Co. of Chicago, has issued "Instructions for Servicing Radio Receivers," which contains tabulated information regarding 139 popular models. The tables are arranged in the same form as in the Jewell Set Analysis Cards, and allows comparison of test data secured by means of any Jewell set analyzer.

"General Radio Co., Cambridge, Mass., "*Experimenter*" for April contains an article on "A Tuning Fork Audio Oscillator," by C. E. Worthen, and on "An Audio Amplifier for the Laboratory," by A. E. Thiessen.

"How to Build Home Radiovision Equipment" is the subject of a six-page folder from the Jenkins Television Corp. of Jersey City N. J.

BOOK REVIEWS

"Television: Today and Tomorrow," by Sydney A. Moseley and H. J. Barton Chapple, 130 pages, 5½ by 8½ in., published by Isaac Pitman & Sons, New York City; price $2.50.

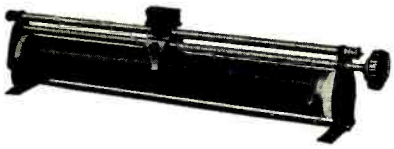
This is essentially an account of the development and a description of the operation of the Baird system of television in England. As such it throws interesting sidelights on the general subject of transmitting and receiving action pictures. Special chapters are devoted to the use of infra-red rays for scanning, recording pictures on wax disks, and television with color and stereoscopic effect. The text is clearly and plainly written in a non-technical style and contains a wealth of information for anyone interested in the subject.

"The Radio Amateur's Handbook," by A. Frederick Collins, 394 pages, 5½ by 8 in., published by Thomas G. Crowell Co., New York City; price $2.00.

Everything that a boy needs to know in order to make and work a radio receiving or sending set may be found within the covers of this book which has been revised and brought up to date by G. C. B. Rowe. While it contains much that is obsolete as regards spark transmitters and crystal detectors, it gives an understanding of these devices which is a good basis for study of the modern equipment whose action is also well described. It deals primarily with shortwaves and various kits that can be assembled for use. It has chapters on filters and power-supply units, power detectors, radiovision and other modern applications. The treatment is extremely simple and non-mathematical. While evidently intended for the use of a fourteen-year-old boy, it also imparts a thorough knowledge of this art which is had by but comparatively few of his seniors.

An Improved Tubular Rheostat

Hardwick, Hindle, Inc., Newark, New Jersey, have announced the addition of a line of tubular rheostats to their resistor products. Among the novel features is a screw engagement mechanism which is self-supporting,



Tubular Rheostat

self-aligning, and non-binding. The contact shoe maintains firm contact with the wire, but cannot tear it. Due to a new spring arrangement on the contact shoe there is no current carried through it, consequently the pressure springs cannot overheat.

Heavy Duty Rheostats and Potentiometers

To meet the exacting requirements of the talking movies and other photo sound reproducing systems, and to provide an added degree of perfection in the power control of many other circuits and systems to which the wire wound variable resistor is adapted, the De-Jur Amsco Corporation, Broome & Lafayette streets, New York City, have introduced a new line of heavy duty rheostats and potentiometers. They have made several types to provide for the various requirements in this new field.

Capehart Corporation Sues Western Electric Piano Company

The Capehart Corporation of Fort Wayne has entered suit against the Western Electric Piano Company, 850 Blackhawk Street, Chicago, Illinois, for infringement of the Seabolt patents, owned by The Capehart Corporation, suit being filed May 31. The Seabolt patents are basic patents covering the stacking of phonograph records in automatic record changing devices, used in automatic phonographs and as units in complete amplification and distribution systems. The patents also cover the sliding of records either from the top or bottom of the stack to the turntable. This allows the records to be placed in the record changing device without any necessity for attaching them to metal plates, placing each record in a separate compartment, or "spooling" them on a special rod or shaft. It also permits continuous playing of the records on both sides, automatically, without the necessity of restacking, respooling or resetting the instrument in any way.

According to a statement made by H. E. Capehart, president and general manager of The Capehart Corporation, the suit is a friendly one and intended to establish definitely for The Capehart Corporation, the exclusive right to use this principle in the manufacture of record changing devices.

"We feel," said Mr. Capehart, "that as long as this patent is our property, it is our duty to protect it against infringement. Other manufacturers, spurred on by the remarkable success of The Capehart Corporation, have endeavored to get into the field by imitating the device on which we hold patents." No definite date has been set for hearing of the suit.

Heater Type Rectifier

National Radio Tube Company of San Francisco is making a half-wave rectifier, the National Rectobulb R-81, which has a maximum output of 150 ma with 750 volts a-c on the plate and 7½ volts a-c on the filament. It is of the mercury vapor type with an indirectly heated cathode instead of an exposed filament.

Automatic Line Voltage Regulator

The Clarostat automatic line voltage regulator is a compact plug and receptacle for use in maintaining a uniform voltage on any 110-volt a-c receiver. The device contains a self-compensating type of resistor, which offers high resistance to high line voltages, and low resistance to normal or sub-normal voltages. It also acts as an r.f. choke to reduce line noises and as a fuse in the event of short circuit in the receiver.

Improved Lynch Resistors

A feature of the Lynch metallized dynohmic resistor is its metal molded end cap which gives positive electrical and mechanical connection. This is integral with the metallized resistance element and protective tubing and has molded into it a tinned copper pigtail lead. The cap is tapered for insertion in standard cartridge type mountings.

TOBE Filterette

JULY, 1930

RADIO SHOW PROMISES BANNER YEAR FOR INTERFERENCE

Manufacturers to Devote Increasing Attention to Problem

NO ONE who stood for long at the Tobe Deutschmann booth at the recent Radio Show at Atlantic City could fail to be impressed at the interest evidenced by those in whose hands lies the destiny of the radio business today. The Atlantic City Show was, of course, open only to manufacturers, jobbers and dealers. The attitude of these men toward any phase of radio is a barometer of sentiment which does much to indicate the trends for the coming year.

It will be a source of gratification to all who follow the progress of radio interference elimination to know that almost to a man, the radio manufacturers intend this year to do something about this problem. On every hand the story is the same: Unsettled conditions last year obliged many who were anxious to prosecute this matter to the end to restrict their activities to a minimum. True, they did turn over their inquiries as usual to the Tobe Deutschmann Corporation, but there was nothing new in that. They have been doing it since this corporation first placed on the market the original catalogued radio interference filter.

Correspondence which has passed between these manufacturers and this office has always been highly gratifying to any-

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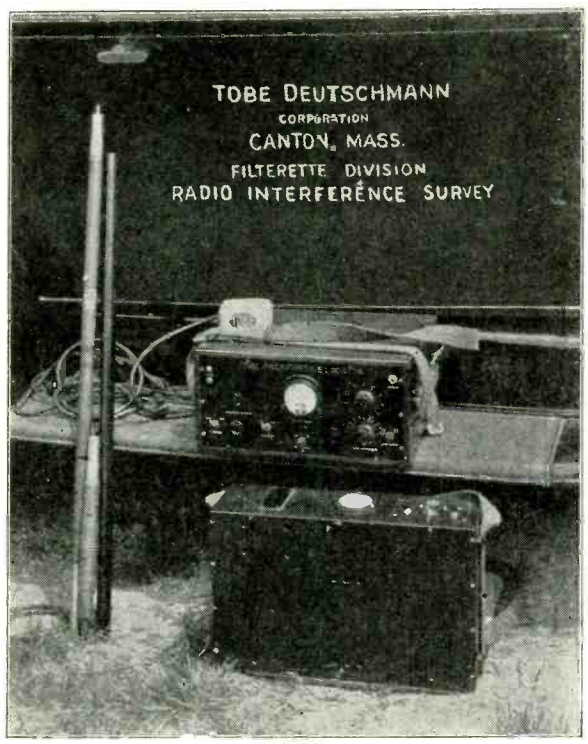


TOBE

INTERFERENCE LOCATOR

INTERFERENCE DEMONSTRATIONS

Of interest and importance to every reader of the Filterette will be the announcement that the First Annual Pacific Radio Trade Show will include lectures and demonstrations on the causes and elimination of radio interference. On Monday, June 30, there is to be a group of lectures at the Hotel William Taylor, lasting from 3:00 to 5:00 p. m. These lectures are open to the entire trade. Experienced interference investigators and officials of public utility and commercial organizations will address the gathering. Lantern slides, diagrams and actual demonstrations of causes and cures of interference will be shown. Methods used for locating trouble will be fully explained. There will be lectures also on Tuesday, July 1, also at the hotel and on July 2, both at 3 p. m. Tobe Filterettes and the Tobe Interference Locator will be used in these demonstrations. You are urged to attend.

POWER COMPANY TO INSTALL FILTERETTES FREE

Marks New Step in Public Interference Education

THE day is rapidly passing when the listener who is harassed with interference blames the power company for his distress. More and more power companies, whom this practice has cost much in trouble and money in years past, are being exonerated from blame which too long was placed upon their shoulders. Figures tabulated in sections where radio interference ordinances are in force show that a bare eleven per cent of causes come even remotely within the jurisdiction of the power company. It is manifestly unfair and even absurd to call the company to account for radio noises caused by the operation of unfiltered electrical apparatus on the tenant's own premises. Yet for years this is exactly what people were doing.

Obviously, these telephone complaints cost the company money, for they had to be investigated, just the same, and the process of educating the public was expensive. The first change came when several of the companies began to run series of articles in the newspapers explaining what radio interference was caused by, and how the source might be determined by the average householder, before he rushed to the telephone to put in a call for a power company service truck. The result was that the needless complaints dropped off, while

(Continued on Page 82)

Tobe *Interference Locator* Draws Crowds at *Show*

Field Tests Highly Successful

THE Tobe Interference Locator is a proved success. Production has been going on for weeks now, and output will be gradually increased to meet the flood of orders which have poured in since the announcement that the instrument was available for immediate delivery.

The first production model, that is, the first instrument which was completed in the regular factory assembly, rather than in the laboratory, was taken to Sturgis, Michigan, by a Tobe Radio Interference engineer, who is now conducting a survey of radio receiving conditions there, at the request of municipal authorities.

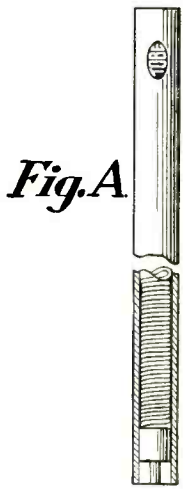


Fig. A. Cross Section of Resonance Search Pole, Showing Construction.

The enthusiastic telegram sent to the Tobe Deutschmann Corporation tells the story in a few words:

"SET WORKS PERFECT WONDERFUL FOR LOCATING LEAKS ON POWER LINES STOP IF A LINEMAN ON A POLE TOUCHES TWENTY THREE HUNDRED VOLT PRIMARY WITH RUBBER GLOVE SET METER WILL SHOW AN INCREASE OF THREE POINTS STOP RESONANCE COIL ON POLE WORKING PERFECT STOP CITY OF STURGIS HAS AUTHORIZED CONTINUING SURVEY UNTIL JOB IS COMPLETED AND THEY WILL ALSO BUY THE FILTERETTES NECESSARY AND ARE ORDERING AN INTERFERENCE LOCATOR THEY HAD A ..... MAKE AND RETURNED IT AS UNSATISFACTORY."

The locator is undoubtedly a unique instrument. The ordinary trouble-shooter bears not the slightest resemblance to it. Because it has been the custom in the past to use a portable radio set as a makeshift trouble-shooter, a great many people make the mistake of confusing the Tobe Interference Locator with a radio set.

When Tobe engineers, realizing the need for an instrument for detecting interference and power leaks, set out to design such an instrument, they started at the beginning to build a completely new apparatus, expressly for this purpose. They listed the qualifications which such an instrument should have and then set about designing an instrument which should have them, rather than compromising on what they could get out of the ordinary radio set.

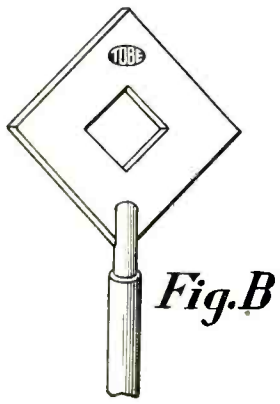


Fig. B. Tobe Inductance Loop, Supplied as Extra on Order.

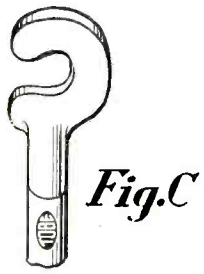


Fig. C. Tobe Audio Frequency Coupling Unit, Auxiliary Apparatus.

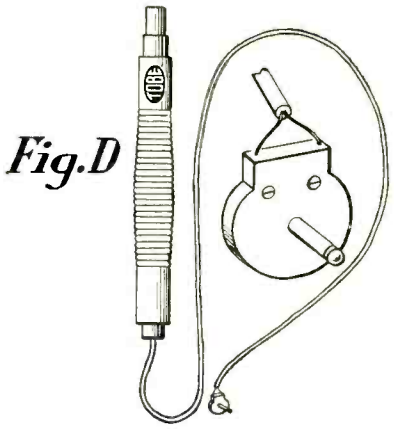


Fig. D. Handle of Resonance Search Pole, Showing Method of Attachment by Plug.

For example, a great many radio sets do not give equal response on high and low wave lengths. It was essential that an instrument of this sort should have exactly those qualifications both for accurate calibration of the interference and for a correct estimate of its relative strength. Thus the necessity for this characteristic in the ideal instrument automatically threw out the average radio set which has an unequal response, usually more sensitive on the lower wavelengths.

Another problem was to design an instrument which, while portable, and not coupled to the power lines, which carry interference, should nevertheless be equally as sensitive to that interference though not coupled to the power lines. When the gain of the commercial set of today is taken into consideration, this was no small order.

How well the engineers succeeded can be deduced from the telegram. There is already a tremendous demand for these instruments, but it is nothing to what will arise when the enthusiastic users of the first production models start telling about the results they are getting.

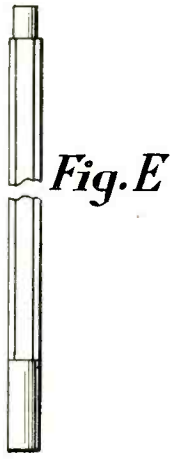


Fig. E. Cross Section Showing Extension Joint Construction.

A feature of the instrument which enhances its value to the service man is the diversity of antenna pick-up systems. There is a light pole, of split bamboo, the resonance search pole, used to indicate conductors along which interference may be travelling. Of course, the regular antenna and ground connections may also be used by connecting antenna to the sleeve side of a phone plug and inserting this plug in antenna jack in the upper right hand corner of the instrument panel. The ground wire should then be connected to the binding post provided for this purpose.

When it is desired to use the instrument with a loop, the loop leads should

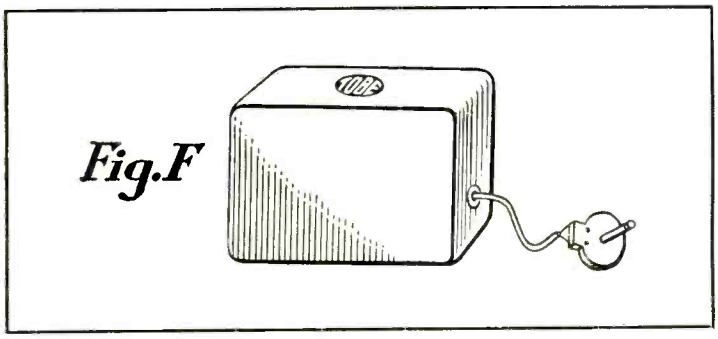
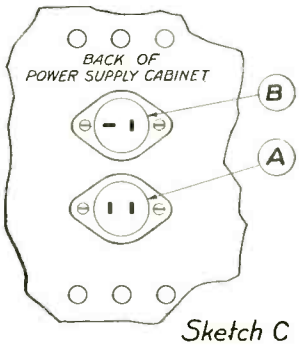


Fig. F. Capacitor Plate, Showing Plug for Attachment.

be connected to a standard phone plug and inserted in the jack provided for the purpose.

An additional pick-up device which will be of value in determining the intensity of interference carried on a conductor is the Tobe Audio Frequency Coupling Unit. This is auxiliary apparatus, and while not provided as regular equipment, will be supplied at a small additional cost, where it is found that the type of field work for which the instrument is being used can be materially assisted by the use of such an audio frequency unit.



Sketch C

Showing Connections for Automobile (B) and Portable Use (A) in Battery Cabinet.

To those who are contemplating placing their order for this Interference Locator, we can only suggest that they get their reservation in as soon as possible, as the large number of orders on hand which are being filled as quickly as they come in promises to pile up in spite of the large daily shipments. The instruments are individually inspected, being submitted to the most delicate tests to which they are rigidly held, and on this account it will be impossible for the present to exceed the maximum present daily output of the factory.

BANNER YEAR FOR INTERFERENCE

(Continued from Page 79)

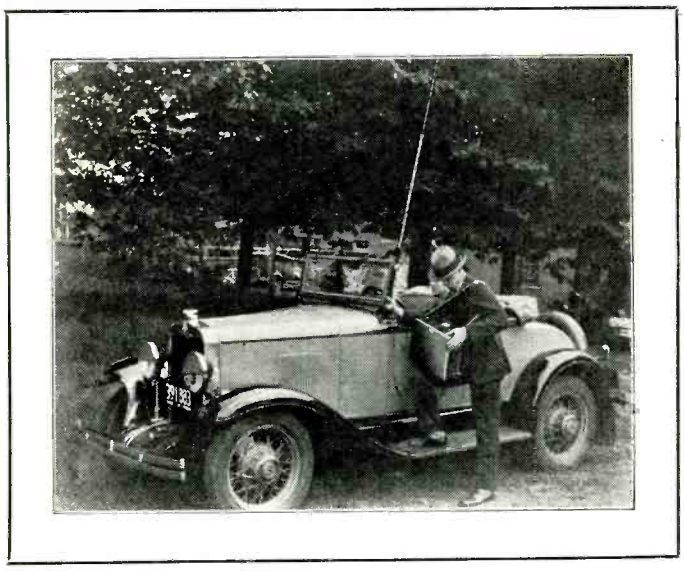
one who has worked so hard to put over the message which Tobe has been hammering at for these many years. Now, at the show, many of these manufacturers and their representatives made a point to locate the Tobe booth without delay, and to discuss with the engineer in attendance methods for coöperating in the reduction of noise level and interference.

A great deal has been accomplished in the past year by the unremitting activities of a corporation, working single-handed. The radio interference campaign with its poll of reception conditions in cities and towns proved conclusively that public sentiment is aroused throughout the nation, and that concerted action is all that is necessary.

What then, will be the result when the radio manufacturers, with the prospect of a year of stabilized business facing them, are enabled to carry out the plans for radio interference reduction which only the exceptional conditions of last year prevented their completing.

It was because of this handicap, the unstable conditions of the industry, that manufacturers were especially grateful to Tobe for carrying on single handed, the work which they would have liked to join him in. More than one official stepped up to the booth to add a voice of commendation for the splendid results which have been accomplished, and to voice his regret that conditions had not permitted as extensive activity on the part of his company as he would have like to see. And invariably there was the promise of increased coöperation for the coming year.

There is no question that this universal coöperation from radio manufacturers is the biggest thing which can happen for Tobe, both on account of the tremendous effect which the light of proper publicity will throw on this little-understood subject, and also on account of the direct sales return in filterettes, which are receiving the endorsement of these great companies.



Interference Locator in Use

NO TELEVISION UNTIL RADIO INTERFERENCE WIPED OUT

Delicacy of Apparatus Demands Perfect Reception Conditions

SPEAKING before the Radio Dealers' Association of Red Wing, Minn., T. A. Findley of the Findley Electric Company of Minneapolis told the association that "Until interference is eliminated there will be no television."

It is a healthy sign to see that steps are already being taken to clear the air for future developments in television. Despite the fact that the progress of television to date is still far from the goal of being commercially practicable, it has made recently one tremendous stride in the adaption of the new system of projection whereby the image, which formerly was seen on the plate of the tube and could be increased in size only through the use of a magnifying lens, now through the increased amount of light made available can be thrown on the screen as was recently done in a demonstration in a New York theatre.

But even if this development proves to be all that the optimistic are claiming it to be, and it certainly has overcome one of the principle stumbling blocks in the path of home reception, the importance of clear radio reception is thereby doubled. Distortion may sound bad, but when seen in a television image its destructive effect is only then fully appreciated. Imagine watching a ball game and having the image flicker and flash so that you could not tell whether the batter struck out or smashed out a homer.

One thing is certain, that as soon as television becomes practicable for the home, the business of eliminating interference will take even more rapid strides forward. The same wave impulses that cause the music to crackle and squawk will blur and streak the television image beyond recognition. This means that the

demand for filterettes will be just doubled, for the householder has now two reasons for wishing to have interference-free reception—listening and seeing.

SOME PROBLEMS CLARIFIED

If the Tobe Exhibit at the Radio Show Had Done Only One Thing—

Cleared up the misunderstanding in the minds of many engineers about filterette installations—it would have served its purpose. It is remarkable how many instances come to our attention where the failure to read and apply correctly the instructions which come with the filterette results in imperfect suppression of the interference.

When you buy a filterette and are installing it, *read the directions first.* A filterette may not look like a delicate instrument, but it has certain very definite characteristics, and if they are not taken into account, beneficial results from the installation are certain to be pretty well vitiated.

Common sense should dictate that where ratings are given on the filterette they should be adhered to. Yet we find countless instances where the buyer "takes a chance"—and blows the filterette to uselessness.

One of the most common types of error encountered is that of using too long a return lead to the frame of the motor. It should be remembered that the effectiveness of the filterette in a majority of instances is directly determined by the length of this return lead. If the lead is long, the efficiency of the filterette is reduced by just so much. Keep the return lead short, as short as possible; keep it down to inches if you can.

And another caution. We are casting no aspersions on the technical knowledge of anyone when we say: "The return lead should go to a carefully cleaned part of the motor frame." Many service men nod knowingly when this paragraph is reached and say, "Oh, yes; well, we'll ground that lead; it's simpler because the connection is handy and doesn't have to be cleaned up especially, and it's all the same thing." The trouble, of course, being that they then write in and tell the service department that the filterette would not work. Those instructions are for the purpose of aiding the service man, not mystifying him, and when they read, "return lead to the frame of the motor," they mean exactly that and nothing else.

POWER COMPANIES INSTALL FILTERETTES

(Continued from Page 79)

the percentage of those turned in showed a higher ratio of necessary calls.

Now one company has gone so far as to offer to install free any necessary filterettes to stop radio interference. All the complainant has to do is to buy the filterette. Since the amount of wiring entailed in installation may on occasion be considerable, this represents real service on the part of the company making the offer.

Of course, the ideal arrangement is still that in California, where the Pacific Radio and Music Trades Association handles all complaints of radio interference which come into the power companies, and thus saves them hundreds of dollars in investigating causes which prove to be outside the company's jurisdiction.

We urge upon all service men to tell their customers who complain of radio interference something about the causes in order that, as public knowledge of this subject grows, the householder may know at once to whom he is to look for relief from radio interference, and not call up the power company when what he wants is a Tobe Filterette Service Station with a good stock of Filterettes.

WHY NOT YOUR OWN COMMUNITY?

WE REPRODUCE below a half-page advertisement from the *Era,* of Bradford, Pa. The announcement tells its own story. There are still many people today who do not realize the amount of correction which can be accomplished by a proper radio interference survey.

Note especially the tone of the whole announcement. The reader who glances through it sees at once that here is a campaign for the public good. No wonder enthusiasm is aroused and everyone starts talking radio interference with his neighbor.

This is what does the trick. Get the public talking about any evil and sooner or later a way will be found to reduce or eliminate it. Try it in your own town. Talk radio interference, tell your friends about it, show them the filterette, and explain what this corporation is trying to do. A word or two from you may bring relief to the very one who most needs it, and you will earn the gratitude of a friend.

▸▸ TELL YOUR CUSTOMERS! HOW NEW B-H RECTIFYING TUBES IMPROVE RECEPTION

Carton of four Eveready Raytheon B-H Tubes.

EVEREADY RAYTHEON B-H

MILLIONS of "B" eliminator units have been sold in the last few years. Giving satisfaction, making friends, for those who sold them.

Few dealers realize the extent of the replacement market in their communities. Have you thoroughly combed *your* community?

New Eveready Raytheon B-H Tubes give a vast improvement in reception. Suggest them to customers who are using "B" eliminators.

They come in handy cartons of four tubes. Always have at least one carton on hand!

* * *

The Eveready Hour, radio's oldest commercial feature, is broadcast every Tuesday evening at nine (New York time) from WEAF over a nation-wide N. B. C. network of 30 stations.

NATIONAL CARBON CO., Inc.
General Offices: New York, N. Y.
Branches: Chicago Kansas City New York San Francisco

Unit of Union Carbide UCC *and Carbon Corporation*

EVEREADY RAYTHEON

Trade-marks

It would be FATAL *to lose* CONTROL

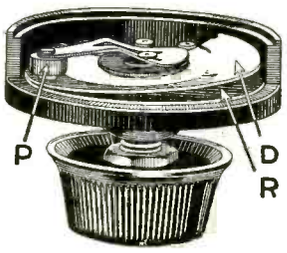
BARBED wire—trenches—dugouts—a field set and a thin strand of wire.

The difference between control and lack of control may spell life or death to an entire brigade.

It's a far cry from No Man's Land to the comforts of your home.

But even in your radio set . . . control plays a vital part . . . and it has been the privilege of CENTRALAB to furnish the volume controls of millions of radio receivers.

Is your radio—CENTRALAB equipped?



This shows the exclusive rocking disc construction of Centralab volume control. "R" is the resistance. Contact disc "D" has only a rocking action on the resistance. Pressure arm "P" together with shaft and bushing is fully insulated.

Write Dept. 103-A for Free Booklet, "Volume Control, Voltage Control, and Their Uses."

Centralab

CENTRAL RADIO LABORATORIES

DEPT. 103-A 14 KEEFE AVE. MILWAUKEE, WIS.

Who *Makes* It

Classified Index of Radio Equipment and Its Manufacturers
Corrected Monthly

Key to Letters and Numbers

A- 1 The Abox Co., 215 N. Michigan Ave., Chicago, Ill.
A- 2 Accusti-Cone Laboratories, 1 N. Seventh, Philadelphia, Pa.
A- 3 The A-C Dayton Co., 300 E. First St., Dayton, Ohio.
A- 4 Acme Apparatus Corp., 37 Osborn St., Cambridge, Mass.
A- 5 The Acme Electric & Mfg. Co., 1444 Hamilton Ave., Cleveland, Ohio.
A- 6 Acme Products Co., 22 Elkins St., South Boston, Mass.
A- 7 The Acme Wire Co., New Haven, Conn.
A- 8 The Actron Corp., 123 N. Sangamon St., Chicago, Ill.
A- 9 Adler Mfg. Co., 29th and Chestnut Sts., Louisville, Ky.
A-10 Adrola Corp., Fort Jefferson, N. Y.
A-11 Advance Electric Co., 1260 W. 2nd St., Los Angeles, Calif.
A-12 Aerial Insulator Co., Inc., 429 N. Washington St., Green Bay, Wis.
A-13 Aero Products, Inc., 4611 E. Ravenswood Ave., Chicago, Ill.
A-14 Aerovox Wireless Corp., 70 Washington St., Brooklyn, N. Y.
A-15 Ajax Electric Specialty Co., 1926 Chestnut St., St. Louis, Mo.
A-16 Akron Porcelain Co., Akron, Ohio.
A-17 Alden Mfg. Co., Brockton, Mass.
A-18 Aladdin Mfg. Co., 602 E. 18th St., Muncie, Ind.
A-19 All-American Mohawk Corp., 4201 Belmont Ave., Chicago, Ill.
A-20 Allan Mfg. & Electrical Corp., 529 Broadway, N. Y. C.
A-21 Allen-Bradley Co., 494 Reed St., Milwaukee, Wis.
A-22 Allen-Hough-Carryola Co., 279 Walker St., Milwaukee, Wis.
A-23 Alpha Wire Corp., 520 Broadway, N. Y. C.
A-24 Aluminum Co. of America, 2400 Oliver Bldg., Pittsburgh, Pa.
A-25 American Apparatus Co., Richmond, Ind.
A-26 American Battery Corp., 2053 N. Racine Ave., Chicago, Ill.
A-27 American Bosch Magneto Corp., Springfield, Mass.
A-28 American Electric Co., 64th and State St., Chicago, Ill.
A-29 American Hard Rubber Co., 11 Mercer St., N. Y. C.
A-30 American Lava Corp., 29 William St., Chattanooga, Tenn.
A-31 American Piezo Supply Co., 1101 Huron Bldg., Kansas City, Mo.
A-32 American Porcelain Co., Akron, Ohio.
A-33 American Radio Hardware Co., 135 Grand, N. Y. C.
A-34 American Reproducer Corp., 1200 Summit St., Jersey City, N. J.
A-35 American Storage Battery Co., 128 Dartmouth, Boston, Mass.
A-36 American Transformer Co., 178 Emmet St., Newark, N. J.
A-37 Amoroso Mfg. Co., 60 India St., Boston, Mass.
A-38 Amperite Corp., 561 Broadway, N. Y. C.
A-39 Amplex Instrument Labs., 132 W. 21st St., N. Y. C.
A-40 Amplion Corp. of America, 133 W. 21st St., N. Y. C.
A-41 The Amrad Corp., 205 College Ave., Medford, Mass.
A-42 Anaconda Wire & Cable Co., 111 W. Washington St., Chicago, Ill.
A-43 F. A. D. Andrea, Inc., Jackson, Orchard and Queen Sts., Long Island City, N. Y.
A-44 Anylite Electric Co., Fort Wayne, Ind.
A-45 Arc-Aerial, Inc., Green Bay, Wis.
A-46 Arco Electrical Corp., 207 E. Columbia St., Fort Wayne, Ind.
A-47 Arcturus Radio Tube Co., 260 Sherman Ave., Newark, N. J.
A-48 Argon Tube Corp., 102 Livingston, Newark, N. J.
A-49 Armstrong Electric Co., 187 Sylvan Ave., Newark, N. J.
A-50 Armstrong & White, 9th and Liberty Ave., Pittsburgh, Pa.
A-51 Arnold Electric Co., Racine, Wis.
A-52 Aston Cabinet Mfrs., 1223 W. Lake St., Chicago, Ill.
A-53 Atlantic Electric Lamp Co., Salem, Mass.
A-54 Atlas Radio Corp., Peabody, Mass.
A-55 Atwater-Kent Mfg. Co., 4700 Wissahickon Ave., Philadelphia, Pa.
A-56 Auburn Button Wks., Inc., Auburn, N. Y.
A-57 Audak Co., 565 Fifth Ave., N. Y. C.
A-58 Audiola Radio Corp., 430 S. Green, Chicago, Ill.
A-59 The D. L. Auld Co., 5th Ave. and 5th St., Columbus, Ohio.
A-60 Automatic Radio Mfg. Co., 112 Canal St., Boston, Mass.
A-61 Automobile Radio Corp., 1475 E. Grand Blvd., Detroit, Mich.
B- 1 Bailey-Cole Electrical Co., 1341 Flatbush Ave., Brooklyn, N. Y.
B- 2 Baldor Radio Corp., 80 4th Ave., N. Y. C.
B- 3 Nathaniel Baldwin, Inc., 3474 S. 23rd St., E., Salt Lake City, Utah.
B- 4 Balkeit Radio Co., North Chicago, Ill.
B- 5 Baritone Mfg. Co., 844 W. Jackson, Chicago, Ill.
B- 6 Barkelew Electric Mfg. Co., Middletown, Ohio.
B- 7 The Wallace Barnes Co., Box 506, Bristol, Conn.
B- 8 Barrett Mfg. Co., 3712 San Pablo Ave., Oakland, Calif.
B- 9 Bassett Metal Goods Co., Derby, Conn.
B-10 Bastian Bros. Co., 1600 Clinton Ave., N., Rochester, N. Y.
B-11 Batteryless Radio Corp., 116 W. 65th St., N. Y. C.
B-12 Beaver Mfg. Co., 625 N. 3rd St., Newark, N. J.
B-12a Beede Electrical Instrument Co., Penacook, N. H.
B-13 Belden Mfg. Co., 2300 S. Western Ave., Chicago, Ill.
B-14 Benjamin Electric Mfg. Co., Des Plaines, Ill.
B-15 Benwood-Linze Co., 19th and Washington Ave., St. Louis, Mo.
B-16 Bernard Electrical Mfg. Co., 36 Flatbush Ave., Brooklyn, N. Y.
B-17 Best Mfg. Co., 1200 Grove St., Irvington, N. J.
B-18 Bethesda Crystal Lab., Bethesda, Md.
B-19 Birnbach Radio Co., 254 W. 31st St., N. Y. C.
B-20 Bisby Mfg. Co., 59 Warren, N. Y. C.
B-20a B-L Electric Co., St. Louis, Mo.
B-21 Bodine Electric Co., 2254 W. Ohio St., Chicago, Ill.
B-22 Bond Electric Corp., Jersey City, N. J.
B-23 Borden Electric Co., 480 Broad, Newark, N. J.
B-24 Bosworth Electric Mfg. Co., Main and Lexington Ave., Norwood, Cincinnati, Ohio.
B-25 Boudette Mfg. Co., 67 Crescent Ave., Chelsea, Mass.
B-26 L. S. Brach Mfg. Corp., 55 Dickerson St., Newark, N. J.
B-27 Braun Co., W. C., 551 Randolph, Chicago, Ill.
B-28 Bremer-Tully Mfg. Co., 656 Washington Blvd., Chicago, Ill.
B-29 Bright Star Battery Co., Hoboken, N. J.
B-30 Broadcaster's Service Bureau, San Jose, Calif.
B-31 Brooklyn Metal Stamping Corp., 718 Atlantic Ave., Brooklyn, N. Y.
B-32 Browne & Caine, Inc., 2317 Calumet Ave., Chicago, Ill.
B-33 Browning-Drake Corp., Calvary St., Waltham, Mass.
B-34 Brunswick-Balke-Collender Co., 623 S. Wabash Ave., Chicago, Ill.
B-35 Buckeye Electric Mfrs., Gladwin, Mich.
B-36 The Buckingham Radio Corp., 440 W. Superior St., Chicago, Ill.
B-37 Bud Radio, Inc., 2744 Cedar, Cleveland, Ohio.
B-38 Burgess Battery Co., Harris Trust Bldg., Chicago, Ill.
B-39 Bush & Lane Piano Co., Holland, Mich.
C- 1 Cable Radio Tube Corp., 84 N. Ninth St., Brooklyn, N. Y.
C- 2 Candy & Co., Inc., 2515 W. 35th St., Chicago, Ill.
C- 3 Cannon & Miller Co., Inc., Springwater, N. Y.
C- 4 The Capehart Corp., Fort Wayne, Ind.
C- 5 Carborundum Co., Niagara Falls, N. Y.
C- 6 Cardwell Mfg. Corp., 81 Prospect St., Brooklyn, N. Y.
C- 7 Carter Radio Co., 407 S. Aberdeen St., Chicago, Ill.
C- 8 Cary Cabinet Corp., 1427 N. 15th St., St. Louis, Mo.
C- 9 The Caswell-Runyan Co., Huntington, Ind.
C-10 CeCo Mfg. Co., Inc., 702 Eddy St., Providence, R. I.
C-11 Central Radio Corp., Beloit, Wis.
C-12 Central Radio Labs., 16 Keefe Ave., Milwaukee, Wis.
C-13 Champion Radio Works, Inc., 140 Pine St., Danvers, Mass.

Items

ADAPTERS, Tube
A-17, C-7, C-39, F-22, G-12, I-5, L-12, M-5, P-1, R-13, R-22, S-26, W-24.

AERIAL EQUIPMENT, Leadins, Lightning Arresters, Loops, Mastarms, Plugs, Poles
A-15, A-33, A-37, A-45, A-50, B-9, B-13, B-20, B-21, B-26, B-37, C-16, C-17, C-36, D-15, D-16, E-1, E-23, F-12, F-15, G-1, G-12, G-26, G-31, H-11, H-18, I-5, L-11, M-18, M-23, N-5, P-7, S-13, S-17, S-26, S-47, T-20, T-21, U-6, W-13, W-21, Y-1.

AERIAL INSULATORS
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ALUMINUM SHEET, ROD & TUBE
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AMPLIFIERS, Audio
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BATTERIES, Storage
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BATTERY CHARGING RELAYS
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BATTERY POWER UNITS (Combination)
A-35, A-46, C-33, D-1, D-14, E-12, F-17, G-8, G-23, G-29, H-7, K-4, K-12, P-6, R-8, S-9, S-20, S-24, T-13, V-3, W-15, W-27.

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CABINETS
A-9, A-52, A-59, B-34, B-36, B-39, C-8, C-9, C-15, C-26, D-2, E-4, E-21, E-24, E-25, F-6, F-10, F-19, G-30, H-2, H-21, K-16, L-8, L-9, M-12, N-3, P-11, P-14, P-17, R-5, R-6, R-12, R-23, S-15, S-22, S-30, S-34, S-37, S-38, S-43, U-1, W-4, W-6, W-16.

ARE YOU TRAVELING

to

CHICAGO, ST. LOUIS
DETROIT, PHILADELPHIA
OR BOSTON?

BE ASSURED of pleasant hotel accommodations, suiting your requirements, at attractive rates in above cities. Write, stating number in party, date of arrival and sort of accommodations required—full information will be sent without charge. Avail yourself of this free service today.

Representing Hotels
of Outstanding Merit

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The ALBION SHORE
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Reservations exactly suiting your requirements made without charge

Affiliated Hotels Bureau

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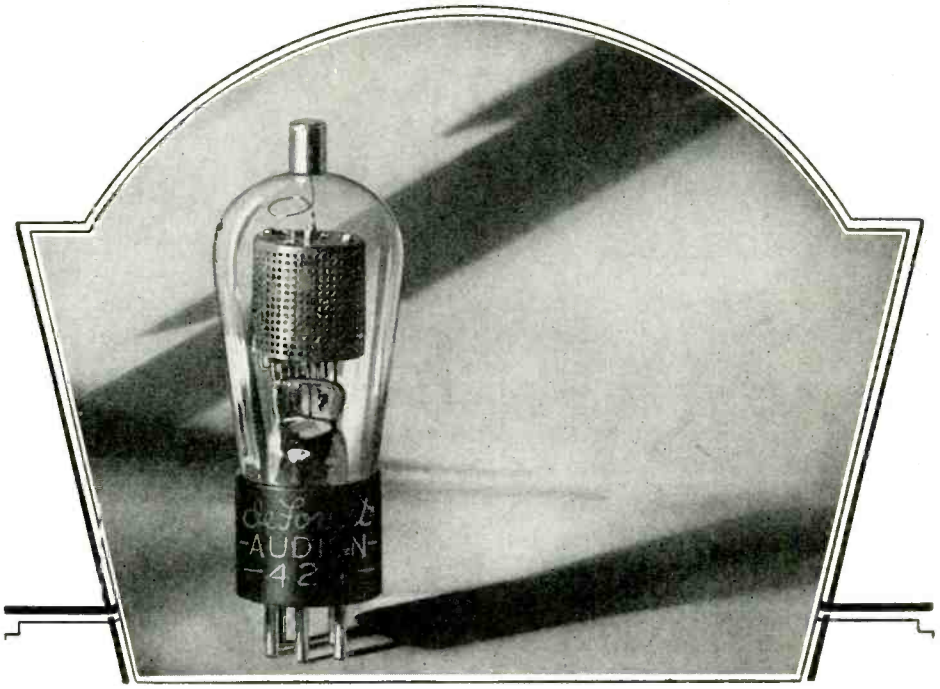


THE PRESTIGE OF SELLING *the* ORIGINAL RADIO TUBE

THE retailer is known by what he sells—particularly merchandise like radio tubes. For after all, the average listener does not understand or appreciate the technical differences between tubes.

There are two factors which largely influence his choice of tubes—your recommendation and his faith in the name of the maker.

The radio owner knows the name De Forest. He recognizes it as evidence of standard, uniform quality and dependability.

It is to your advantage to recommend De Forest Radio Tubes. These high-vacuum, long-life tubes improve reception and increase the satisfaction of your customer. And the recent De Forest price reduction cuts the cost to him from 20 to 25 per cent.

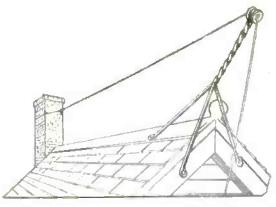
Push De Forest Radio Tubes—produced under the supervision of the man who invented the first radio tube in 1906, Dr. Lee De Forest. It will bring you more business, added good will and greater prestige—which means that De Forest Radio Tubes are the most profitable tubes you can handle.

de Forest RADIO TUBES
AUDIONS

DE FOREST RADIO COMPANY, Passaic, New Jersey
Export Department: 304 EAST 45TH STREET, NEW YORK CITY

Lightning Arrestor $1.00

Antenna Mast $1.00



Solter's New Lead-in Rod Arrestor makes easy permanent installations by drilling small hole at hollow part of wall or at window casing.

Write for pamphlet and discounts on "How to Meet Your Difficult Antenna Problems With Our Masts." The most inexpensive practical mast on the market.

SOLTER'S MIDGET ANTENNA MAST COMPANY
418 Boston Block Minneapolis, Minn.

C-14 Chicago Transformer Corp., 4541 Ravenswood Ave., Chicago, Ill.
C-15 Chillicothe Furniture Co., 1 Cherry St., Chillicothe, Mo.
C-16 Circle F Mfg. Co., Trenton, N. J.
C-17 Clarostat Mfg. Co., Inc., 285 N. Sixth St., Brooklyn, N. Y.
C-18 Cole Sales Co., 36 Pearl, Hartford, Conn.
C-19 Colonial Radio Corp., 25 Wilbur Ave., Long Island City, N. Y.
C-20 Columbia Phonograph Co., Inc., 1819 Broadway, N. Y. C.
C-21 Columbia Radio Corp., 711 W. Lake St., Chicago, Ill.
C-22 Concourse Elec. Co., 294 E. 137th St., N. Y. C.
C-23 Condenser Corp. of America, 259 Cornelison Ave., Jersey City, N. J.
C-24 Connecticut Electric Mfg. Co., Bridgeport, Conn.
C-25 Connecticut Telephone & Electric Co., Meriden, Conn.
C-26 The Conner Furniture Co., 5th and Oak Sts., New Albany, Ind.
C-27 Consolidated Elec. Lamp Co., 88 Holten, Danvers, Mass.
C-28 Consolidated Vacuum Tube Corp., 22 East 21st St., N. Y. C.
C-29 Continental-Diamond Fibre Co., 1150 W. 3rd St., Cleveland, Ohio.
C-30 Continental Electric & Mfg. Co., 1890 E. Fortieth, Cleveland, Ohio.
C-31 Continental Radio Corp., Fort Wayne, Ind.
C-32 Cook Porcelain Ins. Corp., Cambridge, Ohio.
C-33 Cooper Corp., 8th and Main Sts., Cincinnati, Ohio.
C-34 Cornell Elec. Mfg. Co., Rawson St. and Anable Ave., Long Island City, N. Y.
C-35 Corning Glass Works, Corning, N. Y.
C-36 Cornish Wire Co., Inc., 30 Church St., N. Y. C.
C-37 Crescent Braid Co., Providence, R. I.
C-38 Cresradio Corp., 166 Jamaica Ave., Jamaica, N. Y.
C-39 Crosley Radio Corp., 3401 Colerain Ave., Cincinnati, Ohio.
C-40 Crouse-Hind Co., Syracuse, N. Y.
C-41 Crowe Name Plate & Mfg. Co., 1749 Grace St., Chicago, Ill.
C-42 E. T. Cunningham, Inc., 370 Seventh Ave., N. Y. C.
C-43 The Cutler-Hammer Mfg. Co., 12th and St. Paul Ave., Milwaukee, Wis.

D- 1 D. A. Radio Co., 30 Hollister St., Buffalo, N. Y.
D- 1a The Daven Co., 160 Summit St., Newark, N. J.
D- 2 Davis Industries, Inc., 314 W. 43rd St., Chicago, Ill.
D- 3 Day-Fan Electric Co., 1320 Wisconsin Blvd., Dayton, Ohio.
D- 4 DeForest Radio Co., Central and Franklin Sts., Jersey City, N. J.
D- 5 DeJur-Amsco Corp., 418 Broome St., N. Y. C.
D- 6 Demco Products Co., 1521 Market St., Wheeling, W. Va.
D- 7 Diamond Appliance Co., South Bend, Ind.
D- 8 Diamond Electric Corp., 780 Frelinghuysen Ave., Newark, N. J.
D- 9 Diamond Vacuum Products Co., 4049 Diversey Ave., Chicago, Ill.
D-10 Diehl Mfg. Co., Elizabethport, N. J.
D-11 Dilco Electric Corp., Harrison, N. J.
D-12 Dongan Electric Mfg. Co., 3001 Franklin St., Detroit, Mich.
D-13 Donle-Bristol Corp., Meriden, Conn.
D-14 Dooley Rectifier Co., Wheeling, W. Va.
D-15 Dubilier Condenser Corp., 342 Madison Ave., N. Y. C.
D-16 Dudlo Mfg. Co., Fort Wayne, Ind.
D-17 Duovac Radio Tube Corp., 360 Furman, Brooklyn, N. Y.

E- 1 Eagle Electric Mfg. Co., 59 Hall St., Brooklyn, N. Y.
E- 2 Eastern Coil Co., 56 Christopher Ave., Brooklyn, N. Y.
E- 3 Easton Coil Co., Keplers, Ind.
E- 4 Ebert Furniture Co., Red Lion, Pa.
E- 5 The H. H. Eby Mfg. Co., Inc., 4710 Stenton Ave., Philadelphia, Pa.
E- 6 Thomas A. Edison, Inc., Orange, N. J.
E- 7 The Ekko Co., 111 W. Monroe St., Chicago, Ill.
E- 8 Electrad, Inc., 175 Varick St., N. Y. C.
E- 9 Electrical Products Mfg. Co., Providence, R. I.
E-10 Electrical Research Labs., Inc., 1731 W. 22nd St., Chicago, Ill.
E-11 Electrical Specialty Co., 211 South St., Stamford, Conn.
E-12 Electric Autolite Co., Toledo, Ohio.
E-13 Electric Heat Control Co., 5902 Carnegie Ave., Cleveland, Ohio.
E-14 Electric Storage Battery Co., Philadelphia, Pa.
E-15 Electro Acoustics Products Co., 55 E. Wacker Drive, Chicago, Ill.
E-16 Electron Relay Co., 83 Fourth Ave., N. Y. C.
E-17 Elgin Cabinet Corp., Union and W. Chicago Sts., Elgin, Ill.
E-18 Elkon, Inc., 200 Fox Island Road, Port Chester, N. Y.
E-19 Ellis Electrical Lab., 333 W. Madison St., Chicago, Ill.
E-20 Emerson Radio & Phonograph Corp., 635 Sixth Ave., New York City.
E-21 The Empire, Ltd., 11th and Harrison, Rockford, Ill.
E-22 Empire Steel Corp., Mansfield, Ohio.
E-23 Essenbee Radio Devices Co., 2016 W. Lake St., Chicago, Ill.
E-24 Eureka Talking Machine Corp., 5939 S. Lowe Ave., Chicago, Ill.
E-25 Excello Products Corp., 4820 W. 16th St., Cicero, Ill.

F- 1 Fahnestock Electric Co., East Ave. and 8th St., Long Island City, N. Y.
F- 2 Fairmount Elec. & Mfg. Co., 59th and Woodland Ave., Philadelphia, Pa.
F- 3 Fansteel Products Co., No. Chicago, Ill.
F- 4 Farrand Mfg. Co., Inc., Metropolitan Bldg., Long Island City, N. Y.
F- 5 John E. Fast & Co., 3982 Barry Ave., Chicago, Ill.
F- 6 Federal Wood Products Corp., 206 Lexington Ave., N. Y. C.
F- 7 Ferranti, Inc., 130 W. 42nd St., N. Y. C.
F- 8 Fibroc Insulation Co., Valparaiso, Ind.
F- 9 Fidelity Radio Corp., Walker Bank Bldg., Salt Lake City, Utah.
F-10 Robert Findlay Mfg. Co., Inc., 1027 Metropolitan Ave., Brooklyn, N. Y.
F-11 Fisch Radio Co., 1283 Hoe Ave., N. Y. C.
F-12 Fishwick Radio Co., 133 Central Parkway, Cincinnati, Ohio.
F-13 A. M. Flechtheim & Co., Inc., 136 Liberty St., New York City
F-14 M. M. Fleron & Son, Trenton, N. J.
F-15 Foote-Pierson & Co., 75 Hudson, Newark, N. J.
F-16 The Formica Insulation Co., Cincinnati, Ohio.
F-17 France Mfg. Co., 10325 Berea Rd., Cleveland, Ohio.
F-18 Freed-Eisemann Radio Corp., Junius St. and Liberty Ave., Brooklyn, N. Y.
F-19 Jesse French & Sons Piano Co., New Castle, Ind.
F-20 French Battery Co., 30 N. Michigan Ave., Chicago, Ill.
F-21 S. Freshman Co., 225 N. Michigan Ave., Chicago, Ill.
F-22 Herbert H. Frost, Inc., 1124 W. Beardsley Ave., Elkhart, Ind.

G- 1 Gardiner & Hepburn, Philadelphia, Pa.
G- 2 Gardner Electric Mfg. Co., Oakland, Calif.
G- 3 Gearhart Radio Co., Fresno, Calif.
G- 4 General Coil Co., Weymouth, Mass.
G- 5 General Dry Batteries, Inc., 13100 Athens Ave., Cleveland, Ohio.
G- 6 General Electric Co., Schenectady, N. Y.
G- 7 General Engineering Corp., Charlotte, Mich.
G- 8 General Instrument Corp., 225 Varick St., N. Y. City.
G- 9 General Lead Battery Co., 1 Lister Ave., Newark, N. J.
G-10 General Motors Radio Corp., Dayton, Ohio.
G-11 General Plastics, Inc., Walck Road, North Tonawanda, N. Y.
G-12 General Radio Co., 30 State St., Cambridge, Mass.
G-13 General Transformer Corp., 910 W. Jackson Blvd., Chicago, Ill.
G-14 Gibraltar Radio Supply Co., 5 Union Square, N. Y. C.
G-15 Gilby Wire Co., 150 Riverside Ave., Newark, N. J.
G-16 Gilfillan Radio Corp., 1815 Venice Blvd., Los Angeles, Calif.
G-17 Gillette-Vibber Co., New London, Conn.
G-18 Globe Technolean Corp., Reading, Mass.
G-19 Globe Union Mfg. Co., 14 Keefe Ave., Milwaukee, Wis.
G-20 Gold Seal Electrical Co., Inc., 250 Park Ave., N. Y. C.
G-21 The L. S. Gordon Co., 1800 Montrose Ave., Chicago, Ill.
G-22 Gossard Radio & Wire Co., Belvidere, Ill.
G-23 Gould Storage Battery Co., 250 Park Ave., N. Y. C.
G-24 Gray & Danielson Mfg Co., 2101 Bryant St., San Francisco, Calif.
G-25 Graybar Electric Co., Lexington Ave. and 43rd St., N. Y. C.
G-26 Gray Products, Inc., Poughkeepsie, N. Y.
G-27 A. H. Grebe & Co., Inc., 109 W. 57th St., N. Y. C.
G-28 Frank Greben, 1927 So. Peoria St., Chicago, Ill.
G-29 Grigsby-Grunow Co., 5891 W. Dickens Ave., Chicago, Ill.
G-30 Gulbransen Co., 3232 W. Chicago Ave., Chicago, Ill.
G-31 Gustin-Baker Mfg. Co., Kansas City, Mo.
G-32 Guthrie Co., Elyria, Ohio.

H- 1 Halldorson Co., 4500 Ravenswood Ave., Chicago, Ill.
H- 2 Hamilton Mfg. Co., Two Rivers, Wis.
H- 3 Hammarlund Mfg. Co., Inc., 424 W. 33rd St., N. Y. C.
H- 3a Hammond Clock Co., 2911 N. Western Ave., Chicago, Ill.
H- 4 Hardwick, Hindle, Inc., 215 Emmet St., Newark, N. J.
H- 5 Kenneth Harkness, Inc., 72 Cortlandt, N. Y. C.
H- 6 Hart & Hegemann, Hartford, Conn.
H- 7 Hartford Battery Mfg. Co., 47 W. 63rd St., N. Y. C.
H- 8 Hartford Metal Products Co., Hartford, Conn.
H- 9 Hartman Electrical Mfg. Co., 31 E. 5th St., Mansfield, Ohio.
H-10 Harvey Hubbell Co., Bridgeport, Conn.
H-11 Heinemann Electric Co., Trenton, N. J.
H-12 Heintz & Kaufman, 311 California St., San Francisco, Calif.
H-13 Herald Electric Co., 35 East End Ave., N. Y. C.
H-14 Hickok Electrical Instrument Co., 10514 Dupont, Cleveland, Ohio.
H-15 High Frequency Labs., 28 N. Sheldon St., Chicago, Ill.
H-16 Hilet Engineering Co., Orange, N. J.
H-17 The Holyoke Co., Inc., 621 Broadway, N. Y. C.
H-18 Hope Webbing Co., Providence, R. I.
H-19 Howard Radio Co., South Haven, Mich.
H-20 Hoyt Electrical Instrument Works, 857 Boylston St., Boston, Mass.

CABLE, CABLES AND CONNECTING WIRE
A-7, A-23, A-42, B-13, B-19, B-26, C-21, C-36, C-37, D-16, E-1, G-15, G-22, H-17, I-2, I-5, K-5, N-12, P-2, P-7, P-16, R-33.

CLAMPS, Ground
A-50, B-7, B-13, B-23, B-26, C-17, C-24, C-40, E-1, E-7, F-1, F-2, F-22, G-17, H-6, H-11, I-5, M-18, M-20, M-23, R-31, T-8, Y-1.

CLIPS
A-15, A-17, B-7, F-1, K-17, L-12, M-18, M-20, M-23, N-3, W-5.

COILS, A-F Choke
A-4, A-5, A-7, A-46, C-7, C-14, C-22, D-12, D-16, E-3, E-18, F-7, F-17, G-3, G-5, G-8, G-12, G-13, G-24, H-1, J-2, K-11, M-23, N-3, P-12, P-16, P-23, P-25, R-3, R-25, R-27, S-5, S-18, T-16, W-8.

COILS, R-F Choke
A-4, A-13, C-22, D-16, E-3, E-10, F-17, G-4, G-12, G-24, H-3, H-5, K-3, M-12a, M-23, N-3, P-12, P-16, P-23, P-25, R-3, R-25, R-27, S-1, S-16, S-18, T-4.

COILS, R-F
A-4, A-6, A-13, B-14, B-19, B-21, B-28, B-35, C-11, C-21, C-22, E-2, E-3, E-10, F-17, G-3, G-12, G-24, H-3, H-5, K-3, K-11, M-4, M-12a, N-3, P-1, P-12, P-22, P-25, R-9, R-19, R-27, S-6, S-16, S-18, T-4, T-24, V-7.

COIL WINDING MACHINES
A-5, B-13, H-1, M-12a, M-18.

CONDENSERS, Fixed
Electrolytic
A-14, A-41, C-23, C-39, D-15, E-18, I-1, M-9, P-16, P-19, P-23, S-27.

CONDENSERS, Fixed Mica
A-14, A-39, C-23, C-39, D-15, E-8, E-10, F-22, M-13, M-23, P-12, P-16, P-19, S-2, W-19, X-1.

CONDENSERS, Fixed Paper
A-7, A-14, B-32, C-22, C-23, C-34, C-36, D-15, E-8, F-5, F-7, F-13, G-12, I-3, K-5, K-17, L-12, M-13, M-23, P-12, P-16, P-19, P-21, R-4, S-27, T-12, W-19.

CONDENSERS, Variable
A-13, C-6, C-39, D-5, E-10, G-1, G-3, G-8, G-12, G-24, H-3, H-12, K-3, L-3, M-23, N-3, P-1, P-12, P-22, P-25, R-7, R-9, R-19, S-7, S-18, U-11.

CONDENSER SHAFTS AND COUPLINGS
H-3, N-3, P-12, P-22, S-7.

CRYSTALS, Piezoelectric
A-31, B-18, G-12, R-30.

DIALS
A-17, A-29, A-56, B-31, C-39, C-41, D-5, E-10, G-12, G-24, H-3, I-5, K-3, K-18, M-5, N-3, N-15, P-1, P-12, P-13, P-22, P-25, R-2, R-19, S-7, S-18, S-26, T-24, W-5.

DIAL LIGHTS
B-12, M-5, M-8, N-2, N-3, P-12, P-25, Y-2.

FIBRE, Vulcanized sheet, rod and tube
C-29, I-5, N-9, P-12, S-25.

FILAMENT BALLASTS
A-6, L-12, M-23, P-12, S-25.

GRID LEAKS, Fixed
A-14, A-21, C-5, D-15, E-1, E-8, H-5, I-6, L-12, M-13, M-23, N-3, P-1, P-12, P-16, S-10, W-2.

GRID LEAKS, Variable
A-21, A-39, C-12, C-17, C-43, E-1, E-8, G-1, H-4, M-23, R-10, W-2.

GRID LEAK HOLDERS (See MOUNTINGS, Resistor)

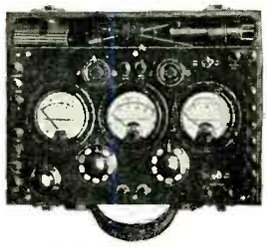
HEADSETS
A-15, A-34, B-3, C-3, F-11, F-22, G-25, P-1, T-15.

INSULATION, Composition
A-7, A-17, A-29, B-36, C-2, C-29, F-16, G-11, I-1, I-5, K-18, L-11, M-14, N-9, P-13, S-8, S-26, W-5.

INSULATORS (See AERIAL INSULATORS.

INTERFERENCE ELIMINATORS
A-14, T-12.

JACKS
A-2, A-17, B-7, B-31, B-37, C-7, D-5, E-5, E-8, F-22, G-12, K-5, P-1, P-12, P-25, S-26, Y-2.



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J- 4 Jenkins Glass Co., Kokomo, Ind.
J- 5 Jenkins Television Corp., 346 Claremont Ave., Jersey City, N. J.
J- 6 Jensen Radio Mfg. Co., 6601 S. Laramie Ave., Chicago, Ill.
J- 7 Jewell Electrical Instrument Co., 1640 Walnut St., Chicago, Ill.
J- 7a Johnsonburg Radio Corp., Johnsonburg, Pa.
J- 8 Howard B. Jones, 2300 Wabansia Ave., Chicago, Ill.
J- 9 Jones-Motrola Sales Co., 370 Gerard Ave., N. Y. C.
K- 1 K & H Electric Corp., 68 Springfield Ave., Newark, N. J.
K- 2 F. Kallus Mfg. Co., 104 Court St., Hoboken, N. J.
K- 3 Karas Electric Co., 4040 N. Rockwell St., Chicago, Ill.
K- 4 Kato Co., 727 So. Front, Mankato, Minn.
K- 5 Kellogg Switchboard & Supply Co., 1066 W. Adams St., Chicago, Ill.
K- 6 Kendrick & Davis Co., Lebanon, N. H.
K- 7 Colin B. Kennedy Corp., 212 W. Ewing Ave., South Bend, Ind.
K- 8 The Ken-Rad Corp., Owensboro, Ky.
K- 9 Kersten Radio Equipment, Inc., 1415 Fulford St., Kalamazoo, Mich.
K-10 Kester Solder Co., 4201 Wrightwood Ave., Chicago, Ill.
K-11 Keystone Radio Labs., Inc., 129 N. Jefferson St., Chicago, Ill.
K-12 Kimley Electric Co., 2665 Main St., Buffalo, N. Y.
K-13 King Mfg. Corp., 254 Rano St., Buffalo, N. Y.
K-14 Knapp Electric, Inc., Port Chester, N. Y.
K-15 Knox Porcelain Corp., Knoxville, Tenn.
K-16 The Knoxville Table & Chair Co., P. O. Box 1087, Knoxville, Tenn.
K-17 The Kodel Electric & Mfg. Co., 507 E. Pearl St., Cincinnati, Ohio.
K-18 The Kurz Kasch Co., 1415 S. Broadway, Dayton, Ohio.
K-19 Kwik Test Radio Labs., 4464 Cass Ave., Detroit, Mich.
L- 1 Langbein-Kaufman Radio Co., 62 Franklin, New Haven, Conn.
L- 2 La Salle Radio Corp., 143 W. Austin Ave., Chicago, Ill.
L- 3 C. R. Leutz, Inc., 195 Park Place, Long Island City, N. Y.
L- 4 Liberty Bell Mfg. Co., Minerva, Ohio.
L- 5 Liberty Electric Corp., of New York, 342 Madison Ave., N. Y. C.
L- 6 Liberty Radio Corp., 123 N. Sangamon, Chicago, Ill.
L- 7 Lincoln Radio Corp., 329 So. Wood St., Chicago, Ill.
L- 8 The Logan Mfg. Co., 338 E. Front St., Logan, Ohio.
L- 9 I. A. Lund Corp., 1018 S. Wabash Ave., Chicago, Ill.
L-10 Lundquist Tool & Mfg. Co., Worcester, Mass.
L-11 Luzerne Rubber Co., Muirhead Ave., Trenton, N. J.
L-12 Lynch Mfg. Co., Inc., 1775 Broadway, N. Y. C.
M- 1 Magnatron Corp., 406 Jefferson, Hoboken, N. J.
M- 2 The Magnavox Co., 1315 S. Michigan Ave., Chicago, Ill.
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M- 4 Marti Radio Corp., 18th and Springdale Ave., E., Orange, N. J.
M- 5 Martin-Copeland Co., Providence, R. I.
M- 6 Marvin Radio Tube Corp., Irvington, N. J.
M- 7 Master Engineering Co., 122 So. Michigan Ave., Chicago, Ill.
M- 8 Matchless Electric, 1500 N. Ogden Ave., Chicago, Ill.
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N- 8 National Union Radio Corp., 400 Madison Ave., N. Y. C.
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N-13 Northern Mfg. Co., 371 Ogden St., Newark, N. J.
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N-15 Norton Labs., Lockport, N. Y.
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P- 2 Packard Electric Co., Warren, Ohio.
P- 3 R. M. Peffer, Harrisburg, Pa.
P- 4 Perryman Electric Co., 33 W. 60th St., N. Y. C.
P- 5 Pfanstiehl Radio Co., 10 E. Kinzie, Chicago, Ill.
P- 6 Philadelphia Storage Battery Co., Ontario and C Sts., Philadelphia, Pa.
P- 7 Philmore Mfg. Co., 106 7th Ave., N. Y. C.
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P-21 Powrad, Inc., 121 Ingraham Ave., Brooklyn, N. Y.
P-22 Precise Products, Inc., 254 Mill St., Rochester, N. Y.
P-23 Precision Mfg. Co., 1020 Santa Fe Ave., Los Angeles, Calif.
P-24 Premax Products, Inc., Niagara Falls, N. Y.
P-25 Premier Electric Co., Grace and Ravenswood Aves., Chicago, Ill.
P-26 Premier Radio Corp., Defiance, Ohio.
P-27 Presto Machine Products Co., Inc., 70 Washington St., Brooklyn, N. Y.
P-28 Prime Mfg. Co., 653 Clinton, Milwaukee, Wis.
P-29 M. Propp Co., 524 Broadway, N. Y. C.
Q- 1 QRS-DeVry Corp., 1111 Center St., Chicago, Ill.
Q- 2 Quam Radio Products Co., 9705 Cottage Grove Ave., Chicago, Ill.
Q- 3 Quinn Tube, 1890 E. 40th, Cleveland, Ohio.
R- 1 Racon Electric Co., Inc., 18 Washington Place, N. Y. C.
R- 2 Radiall Co., 50 Franklin St., N. Y. C.
R- 3 Radiart Corp., Inc., 13229 Shaw Ave., E. Cleveland, Ohio.
R- 4 Radio Appliance Corp., Springfield, Mass.
R- 5 Radio Cabinet Co., 818 Butterworth St., Grand Rapids, Mich.
R- 6 Radio Cabinet Co., Seminary St., Rockford, Ill.
R- 7 Radio Condenser Co., Copewood and Davis Sts., Camden, N. J.
R- 8 Radio Corp. of America, 233 Broadway, N. Y. C.
R- 9 Radio Engineering Labs., 100 Wilbur Ave., Long Island City, N. Y.
R-10 Radio Foundation, Inc., 1 Park Place, N. Y. C.
R-11 Radio Insulation, Parkersburg, W. Va.
R-12 Radio Master Corp., Bay City, Mich.

KEYS, SOUNDERS AND BUZZERS
K-5, M-10, S-17, S-26, T-3, V-6.

LOUDSPEAKERS
A-2, A-15, A-18, A-19, A-27, A-34, A-40, A-43, A-44, A-55, A-59, B-3, B-5, B-17, B-25, B-28, B-33, B-34, B-35, C-3, C-32, C-39, E-18, F-4, F-9, F-11, F-18, G-25, H-13, J-6, K-7, K-9, M-2, M-22, M-23, N-2, O-3, O-4, O-5, P-1, P-6, P-11, P-14, P-17, P-27, Q-2, R-1, R-8, R-10, R-17, R-29, S-18, S-19, S-22, S-28, S-33, S-35, S-36, S-39, T-6, T-15, T-22, U-3, U-7, U-9, U-10, U-12, U-16, V-2, W-14, W-23, W-26.

LUGS, Soldering
A-17, B-6, B-19, K-5, L-6, S-7, W-5, Y-2.

MARKERS, Metal Cable
C-41, W-5, Y-2.

METERS, D-C, A-C and Thermo
B-12a, D-12, F-7, G-6, H-14, H-20, J-7, R-13, R-22, S-33, S-45, W-11, W-12.

MOTORS, Phonograph
A-22, A-51, B-21, B-34, D-10, G-6, G-21, H-3a, J-9, K-6, L-5, P-1, P-9, P-28, S-17, S-22, S-35, S-40, U-7, U-16, W-11.

MOUNTINGS, Resistor
A-14, C-17, D-5, E-1, E-8, I-6, K-5, L-12, M-19, M-23, N-3, P-12, P-16.

OUTLETS, Convenience Wall
B-12, B-37, C-7, E-1, F-22, H-10, R-28, S-47, Y-2.

PANELS, Composition
A-29, F-7, F-14, F-16, F-22, I-5, L-11, P-12, P-23, R-19.

PANELS, Metal
A-24, A-59, B-10, B-35, C-11, C-29, C-39, C-41, N-3, P-12, R-14, R-19, S-7, S-33, U-5, V-4.

PICKUPS, Phonograph
A-17, A-22, A-27, A-28, A-40, A-41, A-55, A-57, B-36, C-3, C-39, E-9, E-10, G-21, H-4, M-24, P-1, P-8, P-27, R-3, S-17, S-35, S-39, S-40, T-14, T-22, U-2, U-7, U-15a, U-16, W-8.

PLATES, Name
A-15, A-59, B-7, C-7, C-41, S-7, W-11.

PLUGS, Phone and Multiple Connector
B-12, B-26, D-5, E-1, F-22, G-12, H-10, M-5, M-23, N-3, P-7, P-12, P-16, S-26, Y-2.

REACTIVATORS, Tube
I-6, J-2, S-33.

RECEIVING SETS
A-3, A-11, A-19, A-27, A-39, A-41, A-43, A-55, A-58, A-60, A-61, B-2, B-3, B-4, B-11, B-24, B-28, B-33, B-34, B-35, B-36, B-39, C-19, C-20, C-21, C-31, C-39, D-2, D-3, D-4, D-6, E-6, E-9, E-10, E-20, F-18, F-19, G-16, G-24, G-25, G-27, G-29, G-30, G-32, H-9, H-19, K-5, K-7, K-11, K-13, L-1, L-3, L-6, M-4, M-12, M-15, M-16, N-1, N-2, N-3, N-4, N-6, N-11, P-5, P-6, P-7, P-10, P-11, P-13, P-25, P-26, Q-1, R-8, R-13, R-17, R-32, S-6, S-11, S-12, S-13, S-14, S-15, S-17, S-18, S-19, S-22, S-23, S-32, S-33, S-36, S-38, S-39, T-6, T-9, T-11, T-16, T-17, T-23, U-7, U-9, U-11, U-12, V-1, W-1, W-3, W-4, W-9, W-11, W-14, W-22, W-24, W-25, Z-1, Z-2.

RECEIVING SET KITS OR CHASSES
A-13, B-33, E-1, G-24, G-27, H-3, H-5, H-15, K-3, L-3, L-7, N-3, N-7a, P-12, P-25, R-9, R-27, S-6, S-11, S-18, T-24, V-7.

RECTIFIER UNITS
A-1, A-46, A-47, B-4, B-20a, D-6, E-18, F-4, F-17, G-8, K-14, K-17, N-3, P-6, R-14, S-19, T-15.

REMOTE CONTROL UNITS
B-3, C-19, U-16.

RESISTORS, Fixed Carbon
A-21, C-12, C-17, H-4, I-6, M-13, M-19.

R-13 The Radio Products Co., Fifth and Norwood Sts., Dayton, Ohio.
R-14 Radio Receptor Co., 106 7th Ave., N. Y. C.
R-15 Radiotron Corp. of America, 233 Broadway, N. Y. C.
R-16 Radio Utilities Corp., 67 Winthrop, Newark, N. J.
R-17 Radio-Victor Corp., 233 Broadway, N. Y. C.
R-18 Radio Wire Corp., 6629 Central Park Ave., Chicago, Ill.
R-19 Ranger Coil Co., W. Davenport, N. Y.
R-20 The Rauland Corp., 3341 Belmont Ave., Chicago, Ill.
R-21 R. B. M. Mfg. Co., Logansport, Ind.
R-22 Readrite Meter Works, 15 College Ave., Bluffton, Ohio.
R-23 Red Lion Cabinet Co., Red Lion, Pa.
R-24 Reliable Parts Mfg. Co., Wellington, Ohio.
R-25 A. E. Rittenhouse Co., Honeoye Falls, N. Y.
R-26 Rival Radio & Battery Co., 180 E. 123rd St., N. Y. C.
R-27 Robertson-Davis Co., 361 W. Superior St., Chicago, Ill.
R-28 Rodale Mfg. Co., 200 Hudson, N. Y. C.
R-29 The Rola Co., 4250 Hollis St., Oakland, Calif.
R-30 J. T. Rooney, 4 Calumet Bldg., Buffalo, N. Y.
R-31 Rosenbeck & Sons, Torrington, Conn.
R-32 Roth-Downs Mfg. Co., 2512 University Ave., St. Paul, Minn.
R-33 Runzel-Linz Electric Mfg. Co., 1751 N. Weston Ave., Chicago, Ill.
S- 1 Samson Electric Co., 227 Washington St., Canton, Mass.
S- 2 Sangamo Electric Co., Springfield, Ill.
S- 3 Sarras Electric Co., 67 Park Place, N. Y. C.
S- 4 Saturn Mfg. & Sales Co., 48 Beekman St., N. Y. C.
S- 5 Scanlon Electric Mfg. Co., 1113 N. Franklin St., Chicago, Ill.
S- 6 Scott Transformer Co., 4450 Ravenswood Ave., Chicago, Ill.
S- 7 Scovill Mfg. Co., 99 Mill St., Waterbury, Conn.
S- 8 Scranton Button Co., Scranton, Pa.
S- 9 See Jay Battery Co., 915 Brook Ave., N. Y. C.
S-10 Shallcross Mfg. Co., 700 Parker Ave., Collingdale, Pa.
S-11 Shamrock Mfg. Co., 196 Waverly Ave., Newark, N. J.
S-12 Shelby Co., 10 Prince, Trenton, N. J.
S-13 Shinn Mfg. Co., N. Racine Ave., Chicago, Ill.
S-14 Shortwave & Television Lab., 104 Brooklyn Ave., Boston, Mass.
S-15 Showers Brothers Co., 10th and Morton Sts., Bloomington, Ind.
S-16 The F. W. Sickles Co., 191 Chestnut St., Springfield, Mass.
S-17 Signal Electric Mfg. Co., Menominee, Mich.
S-18 Silver-Marshall, Inc., 6401 W. 65th St., Chicago, Ill.
S-19 Simplex Radio Co., Sandusky, Ohio.
S-20 B. H. Smith, Danbury, Conn.
S-21 Sonatron Tube Co., 1020 S. Central Park Ave., Chicago, Ill.
S-22 Sonora Phonograph Co., Inc., 50 West 57th St., N. Y. C.
S-23 The Sparks-Withington Co., Jackson, Mich.
S-24 A. R. Spartana, 806 N. Gay, Baltimore, Md.
S-25 Spaulding Fibre Co., Inc., 484 Broome St., N. Y. C.
S-26 Specialty Insulation Mfg. Co., Hoosick Falls, N. Y.
S-27 Sprague Specialties Co., 1511 Hancock St., Quincy, Mass.
S-28 Standard Radio Corp., 41 Jackson St., Worcester, Mass.
S-29 Standard Transformer Co., Warren, Ohio.
S-30 The Starr Piano Co., S. 1st and A, B, C and D Sts., Richmond, Ind.
S-31 Starr Porcelain Co., Trenton, N. J.
S-32 Steinite Radio Co., Fort Wayne, Ind.
S-33 The Sterling Mfg. Co., 2831 Prospect Ave., Cleveland, Ohio.
S-34 Stettner Phonograph Corp., 310 E. 75th St., N. Y. C.
S-35 Stevens Mfg. Corp., 46 Spring St., Newark, N. J.
S-36 Stewart-Warner Speedometer Corp., 1826 Diversey Parkway, Chicago, Ill.
S-37 St. Johns Table Co., Cadillac, Mich.
S-38 Story & Clark Piano Co., 172 N. Michigan Ave., Chicago, Ill.
S-39 Stromberg-Carlson Tel. Mfg. Co., Rochester, N. Y.
S-40 Studner Bros., 67 W. 44th St., N. Y. C.
S-41 Sturges Multiple Battery Corp., Jamaica, N. Y.
S-42 Sunlight Lamp Co., 76 Colt, Irvington, N. J.
S-43 Superior Cabinet Corp., 206 Broadway, N. Y. C.
S-44 Supertron Mfg. Co., Hoboken, N. J.
S-45 Supreme Instruments Corp., Bright Bldg., Greenwood, Miss.
S-46 Swaboda Co., 612 E. Pike St., Seattle, Wash.
S-47 Swan-Haverstick, Inc., Trenton, N. J.
S-48 Sylvania Products Co., Emporium, Pa.
S-49 Sturges Multiple Battery Corp., Jamaica, N. Y.
T- 1 Taylor Electric Co., Madison, Wis.
T- 2 Tectron Radio Corp., 1270 Broadway, N. Y. C.
T- 3 Teleplex Co., 76 Cortlandt, N. Y. C.
T- 4 Teleradio Engineering Corp., 484 Broome St., N. Y. C.
T- 5 Televocal Corp., 588 12th St., West New York, N. J.
T- 6 Temple Corp., 5253 W. 65th St., Chicago, Ill.
T- 7 Therm-A-Trol Mfg. Co., 52 Willow, Springfield, Mass.
T- 8 Thomas & Betts Co., 15 Park Place, N. Y. C.
T- 9 Thompson Radio Co., 25 Church, N. Y. C.
T-10 Thordarson Electric Mfg. Co., 500 W. Huron St., Chicago, Ill.
T-11 Tilman Radio Corp., Lagro, Ind.
T-12 Tobe Deutschmann Co., 136 Liberty St., N. Y. C.
T-13 Todd Electric Co., 42 Vesey, N. Y. C.
T-14 Toman & Co., 2621 W. 21st St., Chicago, Ill.
T-15 Tower Mfg. Corp., 124 Brookline Ave., Boston, Mass.
T-16 Transformer Corp. of America, 2301 S. Keeler Ave., Chicago, Ill.
T-17 Trav-ler Mfg. Corp., 1818 Washington Ave., St. Louis, Mo.
T-18 Trenle Porcelain Co., East Liverpool, Ohio.
T-19 Triad Mfg. Co., Inc., Fountain and Blackstone Sts., Pawtucket, R. I.
T-20 Tri-Boro Radio Mfg. Corp., 62 W. 21st St., N. Y. C.
T-21 Trico Products Corp., 817 Washington, Buffalo, N. Y.
T-22 Trimm Radio Mfg. Co., 847 W. Harrison, Chicago, Ill.
T-23 Trutone Radio Sales Co., 114 Worth, N. Y. C.
T-24 Tyrman Electric Corp., 314 W. Superior St., Chicago, Ill.
U- 1 The Udell Works, 1202 W. 28th St., Indianapolis, Ind.
U- 2 Ultraphonic Products Corp., 270 Lafayette, N. Y. C.
U- 3 Ultratone Mfg. Co., 1046 W. Van Buren St., Chicago, Ill.
U- 4 Union Electrical Porcelain Works, Muirhead Ave., Trenton, N. J.
U- 5 Union Insulating Co., 296 Broadway, N. Y. C.
U- 6 Union Metal Products Co., 2938 Pillsbury Ave., Minneapolis, Minn.
U- 7 United Air Cleaner Co., 9705 Cottage Grove Ave., Chicago, Ill.
U- 8 United Radio & Electric Corp., 500 Chancellor Ave., Irvington, N. J.
U- 9 United Reproducers Corp., Springfield, Ohio.
U-10 United Research Labs., Inc., 864 W. North Ave., Chicago, Ill.
U-11 United Scientific Lab., Inc., 113 Fourth Ave., N. Y. C.
U-12 U. S. Radio & Television Corp., Marion, Ind.
U-13 Universal Battery Co., 3410 S. La Salle, Chicago, Ill.
U-14 Universal Electric Lamp Co., Newark, N. J.
U-15 Universal Electro Chemical Corp., 30 W. 15th St., N. Y. C.
U-15a Upco Products Corp., 270 Lafayette St., N. Y. C.
U-16 The Utah Radio Products Co., 1737 S. Michigan Ave., Chicago, Ill.
V- 1 Vaga Mfg. Co., 720 Atlantic Ave., Brooklyn, N. Y.
V- 2 Valley Appliances, Inc., 634 Lexington Ave., Rochester, N. Y.
V- 3 Valley Electric Co., 4221 Forest Park Blvd., St. Louis, Mo.
V- 4 Van Doorn Co., 160 N. La Salle St., Chicago, Ill.
V- 5 Van Horne Tube Co., 280 Center St., Franklin, Ohio.
V- 6 Vibroplex Co., 825 Broadway, N. Y. C.
V- 7 Victoreen Radio Co., 2825 Chester Ave., Cleveland, Ohio.
W- 1 Walbert Radio Corp., 1000 Fullerton Ave., Chicago, Ill.
W- 2 Ward Leonard Electric Co., Mt. Vernon, N. Y.
W- 3 Ware Mfg. Corp., Broad St. Bank Bldg., Trenton, N. J.
W- 4 Wasmuth-Goodrich Co., Peru, Ind.
W- 5 Waterbury Button Co., Waterbury, Conn.
W- 6 Watsontown Table & Furniture Co., Watsontown, Pa.
W- 7 The Webster Co., 850 Blackhawk St., Chicago, Ill.
W- 8 Webster Electric Co., Racine, Wis.
W- 9 Wells Gardner & Co., 816 N. Kenzie Ave., Chicago, Ill.
W-10 Western Felt Works, 4029 Ogden Ave., Chicago, Ill.
W-11 Westinghouse Electric & Mfg. Co., Pittsburgh, Pa.
W-12 Weston Electrical Instrument Corp., 614 Frelinghuysen Ave., Newark, N. J.
W-13 T. C. Wheaton Co., Millville, N. J.
W-14 Wilcox Labs., Charlotte, Mich.
W-15 Willard Storage Battery Co., 346 E. 131st St., Cleveland, Ohio.
W-16 Winnebago Mfg. Co., Rockford, Ill.
W-17 Wireless Corp. of America, 1744 N. Robey, Chicago, Ill.
W-18 Wireless Egert Eng., Inc., 179 Greenwich St., N. Y. C.
W-19 Wireless Specialty Appliance Co., 76 Atherton St., Jamaica Plain, Mass.
W-20 Wise-McClung Corp., New Philadelphia, Ohio.
W-21 Wirt Co., 5221 Greene (Germantown), Philadelphia, Pa.
W-22 Wiz Mfg. Co., 225 Sixth Ave., N. Y. C.
W-23 J. W. & W. L. Woolf, 133 W. 21st St., N. Y. C.
W-24 Workrite Radio Corp., 1838 E. 30th St., Cleveland, Ohio.
W-25 World Electric Co., San Dimas, Calif.
W-26 Wright-DeCoster, Inc., 2233 University Ave., St. Paul, Minn.
W-27 Wubco Battery Corp., Swissvale Sta., Pittsburgh, Pa.
X- 1 X-L Radio Labs., 1224 Belmont Ave., Chicago, Ill.
Y- 1 Yahr-Lang, Inc., 207 E. Water, Milwaukee, Wis.
Y- 2 Yaxley Mfg. Co., 1528 West Adams, Chicago, Ill.
Z- 1 Zaney-Gill Corp., 5912 So. Western Ave., Los Angeles, Cal.
Z- 2 Zenith Radio Corp., 3620 Iron St., Chicago, Ill.

RESISTORS, Fixed Processed
A-14, C-5, C-7, C-17, C-38, E-8, H-4, I-6, L-12, M-13, M-19, N-3, P-12, P-16, R-2, W-21.

RESISTORS, Fixed Wire Wound
A-14, A-36, C-7, C-17, C-38, D-1a, D-5, E-8, E-10, F-7, F-22, G-6, G-12, K-19, L-3, M-9, M-13, M-19, M-23, N-3, O-1, P-1, P-12, P-16, R-22, R-27, S-10, W-2, W-21, Y-2.

RESISTORS, Variable Carbon
A-21, B-31, C-7, C-17, E-8, F-22, K-5, P-12, P-16.

RESISTORS, Variable Wire Wound
C-7, C-17, C-43, D-5, E-8, E-10, F-22, G-8, G-12, H-4, K-19, M-19, M-23, N-3, P-1, P-7, P-12, P-16, R-19, U-11, V-7, W-2, W-21, Y-2.

SHIELDS
A-24, C-7, C-11, C-39, G-24, L-3, N-3, P-12, S-18.

SOCKETS, Tube
A17, A-29, A-56, B-14, C-11, C-43, D-5, E-5, E-10, F-22, G-12, G-24, I-1, I-5, K-5, K-17, K-19, N-3, N-15, P-1, P-12, P-13, P-25, R-19, S-4, S-11, S-18, U-5.

SOLDER, Self-Fluxing
K-10.

SWITCHES AND SWITCH CONTACTS
A-15, B-6, B-12, B-31, C-7, C-12, C-43, E-10, F-1, F-11, F-22, G-12, G-18, H-10, H-11, H-15, K-4, K-5, M-23, P-1, P-12, P-22, R-11, R-19, S-4, U-5, W-19, Y-2.

TESTING EQUIPMENT, Tube and Set
B-12a, E-13, F-7, F-11, G-12, H-12, H-14, H-20, J-7, K-19, L-3, L-10, N-3, P-3, P-29, R-9, R-13, R-22, S-17, S-33, S-45, T-1, T-22, W-2, W-12.

TRANSFORMERS, Audio
A-4, A-5, A-13, A-36, A-39, B-8, C-7, C-14, C-21, C-22, D-16, F-5, F-7, F-14, G-2, G-3, G-8, G-12, G-13, G-22, G-24, H-1, H-3, H-5, J-2, K-3, K-5, L-6, M-23, N-3, N-15, P-1, P-12, P-16, P-22, P-25, R-19, R-20, R-25, R-27, S-1, S-2, S-4, S-5, S-18, S-29, T-10, T-16, V-4, V-7, W-8.

TRANSFORMERS, Power
A-4, A-5, A-6, A-13, A-36, A-46, B-8, B-24, B-31, C-7, C-14, C-22, D-12, D-16, E-13, E-18, F-1, F-7, F-8, F-17, G-3, G-4, G-8, G-12, G-13, G-22, G-24, H-1, H-12, J-2, K-3, K-5, K-11, K-12, K-17, K-19, L-3, M-9, M-23, N-3, N-12, P-12, P-16, R-2, R-3, R-10, R-25, S-11, S-18, S-20, S-29, T-10, T-24, U-5, V-7, W-7, W-19.

TRANSFORMERS, R-F (See COILS, R-F)

TRANSMITTING APPARATUS
A-4, A-13, A-31, C-6, D-4, E-11, F-22, G-12, G-28, H-12, H-16, K-5, L-3, N-3, N-7, R-9, R-17, S-2, S-20, T-10, T-12, W-18.

TUBING, Spaghetti
A-7, A-15, I-5.

UNITS, Loudspeaker and Phonograph
A-2, A-13, A-22, B-3, B-5, B-17, C-20, E-7, E-10, E-18, F-9, F-11, H-15, M-23, R-29, S-22, S-46, T-15.

VACUUM TUBES
A-8, A-20, A-27, A-47, A-48, A-49, A-53, A-54, B-3, B-22, B-27, C-1, C-10, C-13, C-27, C-28, C-30, C-42, D-4, D-8, D-9, D-11, D-13, D-17, E-16, E-20, G-14, G-20, G-29, H-23, H-24, J-1, J-7a, K-1, K-5, K-8, L-2, M-1, M-6, M-8, M-21, N-2, N-7, N-8, N-10, N-13, P-4, P-6, P-7, P-12, Q-3, R-15, R-16, S-11, S-21, S-42, S-44, S-48, T-2, T-5, T-19, U-7, U-8, U-14, V-5, W-11, W-17.

VOLTAGE REGULATORS
A-4, A-38, C-17, E-1, G-1, I-5, M-7, N-3, R-22, W-2, W-21, X-1.

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342 Madison Avenue New York, N. Y.

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CHOCK FULL OF REAL LIVE BUYS AT REMARKABLY BIG SAVINGS TO YOU

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19-21 Warren Street, New York City, N. Y.

MR. MANUFACTURER and MR. JOBBER!

We are outright cash buyers of surplus stocks of standard Radio Merchandise.
In fact we have cash resources that permit us to buy stocks of any quantity and they can't come too big.
Before disposing of your next lot be sure to get our cash bid.
Upon receipt of complete details—such as make, models and amount of stock on hand—we will promptly submit our bid.
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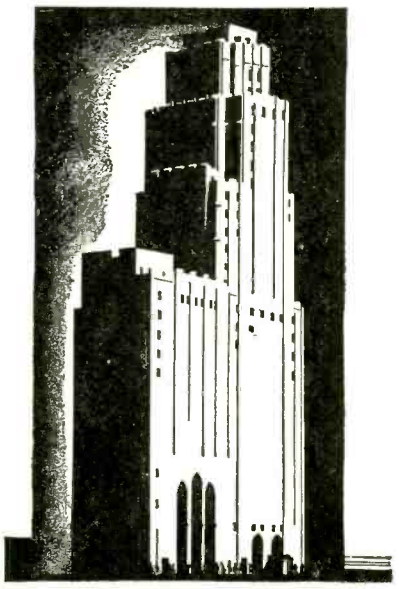
HOTELS for RADIO TRAVELERS



WILLIAM TAYLOR HOTEL HEADQUARTERS

For Visitors to the San Francisco Annual RADIO TRADE SHOW

Single Rooms with Bath $3.00, $3.50, $4.00, $5.00; Double Rooms with Bath, $4.00, $5.00, $6.00, $7.00.

SUITES
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EVERY ROOM OUTSIDE
Commanding Magnificent View

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HOTEL WHITCOMB AT CIVIC CENTER

500 rooms of comfortable hospitality with same rates. Dining rooms and Coffee Tavern. Garage under same roof.

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ENJOY THE BEST! Modern, scientific equipment and management make it possible for you to enjoy the best in New York at the Hotel Lincoln.

1400 Rooms Each with Bath and Shower

$3-5 For One **$4-7** For Two

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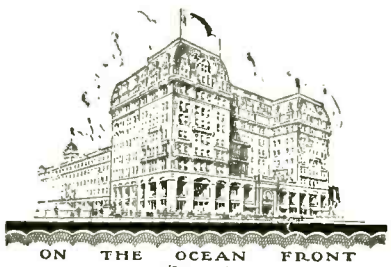

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The Breakers
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Preferred—

In all seasons by those who know and wish the best upon either the American or European Plan.

Bathing from Rooms

Sensible Rates Withal!

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MOST CENTRALLY LOCATED AT
CLARK STREET NEAR JACKSON BOULEVARD

ONE BLOCK FROM LASALLE STATION POST OFFICE & BOARD OF TRADE

450 ROOMS $2 A DAY AND UP

FAMOUS FOR FOOD

SEND FOR COPY OF CHEF'S RECIPES AND DESCRIPTIVE FOLDER

WHEN YOU GO TO ST. LOUIS STOP AT THE NEW HOTEL **JEFFERSON** 800 ROOMS

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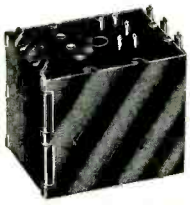
OWNERS AND MANAGERS

WE SPECIALIZE IN REPLACEMENT PARTS

RCA—Victor—Freed—Edison—Etc.

RCA Replacement Condenser



BLOCK FOR

RCA

Nos. 17, 18, 33 Sets

Special

$1.50

each

Part No. 8333
LIST $7.40

RCA By-Pass Condenser

Part No. 5996

Comprising one ½ and three .1 mfd. condensers

LIST $3.00

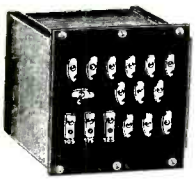
Our Price 35c

RCA Choke Coils

15 Henrys—35 Mils. Impregnated in Rosin. Ideal choke for B Eliminators and A-C Sets. D-C Resistance 500 Ohms.

Special 30c

VICTOR
A B C POWER TRANSFORMERS

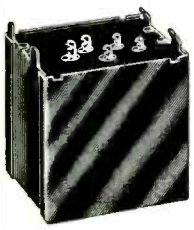


Supplies Voltages for—
6—226 tubes
1—227 tube
1—280 tube
2—245 tubes.

Can be used in Loftin-White Circuit

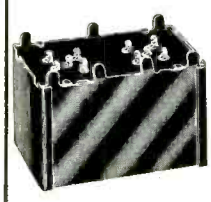
Price $2.75

VICTOR Audio Transformer



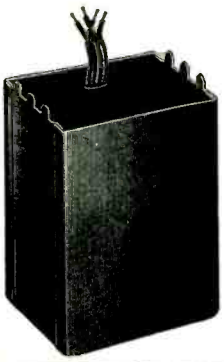
Our Price
95c

VICTOR Push-Pull Transformers



Our Price
$2.50 Per Pair

RCA Double Filter Chokes



RCA Replacement Part No. 8336
Contains Two 30-Henry 80-Mil. Chokes
Special
$1.70
Each
Each Choke insulated for 1000 volts

YAXLEY 2000-OHM VOLUME CONTROL

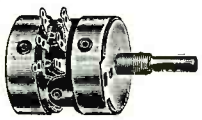
RCA Replacement Part No. 5091

For Radiolas 17, 18, 32, 42, 44, and practically all other sets. Insulating strip (easily removed) for metal panels.
List Price $1.95

Ea. 45c. Doz. $4.50

FROST TWIN VOLUME CONTROL

30-3800 Ohms



Will stand up. No more burned-out volume controls. Standard for Victor, but can be used on all sets.

List Price $2.50
Our Price 55c
Dozen for $5.50

FIXED PIG-TAIL RESISTORS

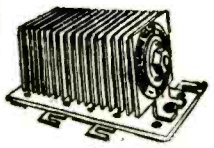
Ohms		
500	10,000	25,000
2000	15,000	50,000
4700	20,000	100,000
		250,000

$1.00 Per Doz.

GRID SUPPRESSORS

750-ohm, 10c Ea.
$1.00 per Dozen

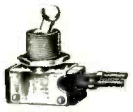
The Famous M16 Elkon New Type Replacement Rectifier



Officially recognized by Grigsby-Grunow as the proper replacement unit for Majestic "A" eliminator. May be used on the following "A" eliminators: Majestic, Mayolian, Elkon, Philco, Webster, Knapp, Gen. Inst., Metro, Fada, Bernard, Sentinel, and Briggs and Stratton.

First Time at This Price
With Base—$3.45

Hart and Hegeman Toggle Switch



For Battery and Electric Sets
Approved by Underwriters

20c Each—$2.15 per dozen
General Electric A-C Switch
20c Each—$2.15 per dozen

Polymet By-Pass Tubular Condenser

$1.00 per Dozen

.1 Mfd., 200 Volts Can be used across Choke Terminals in Victor Sets to reduce hum.

Polymet Hi-Volt, 1 Mfd. Filter Condenser, 300 Volts D-C

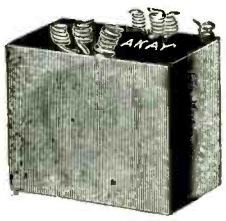
35c Each
$3.60 per dozen

"BAL-RAD" REPLACEMENT BLOCKS

All Brand New and Fully Guaranteed—Products of an Old Reliable Manufacturer

A replacement block for Majestic eliminators, guaranteed for a period of one year. The condensers in this block are all composed of high voltage condensers, and you can be assured that once this block is installed it will last indefinitely.

Net $2.95 each

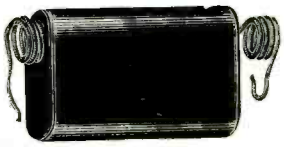


(For Atwater Kent Electric Set, Model No. 37) This unit contains the proper chokes and high voltage condensers. All flexible wire colored leads identical to the original. Fully guaranteed.

Net $4.95 each

The "BAL-RAD"

HY VOLTAGE UNCASED SURGE-PROOF—For General Repair and Power-Pack Work



	Each
One MFD. 600 Working Volts	$0.30
Two MFD. 600 Working Volts	.40
Four MFD. 600 Working Volts	.60
One-half MFD. 300 Working Volts	.25

This "Bal-Rad" Condenser is the result of many suggestions from service men throughout the country. It is small and compact, impregnated in pitch with long flexible leads to facilitate making connections quickly. Can be placed outside of pack. We guarantee these condensers for 100% free replacement. Dealers and service men should carry a few dozen in stock.

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TERMS:—20% with order, balance C. O. D. 2% discount allowed for full remittance with order only.

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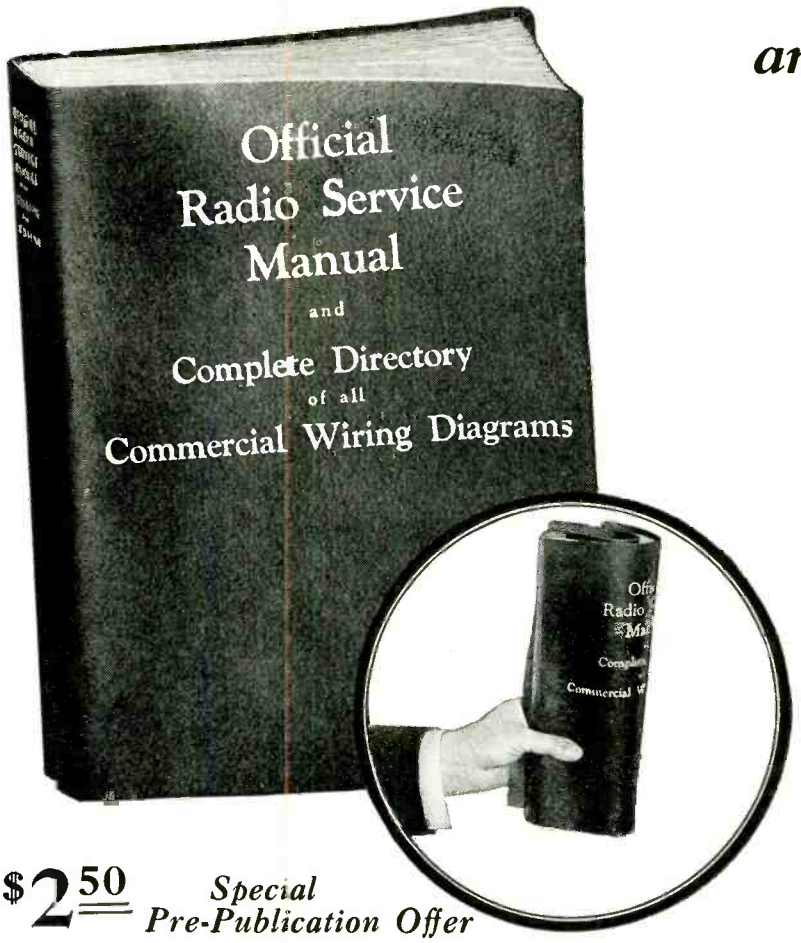
RADIO SERVICE MANUAL

and Complete Directory of all Commercial Wiring Diagrams of Receivers



PREPARED ESPECIALLY FOR THE RADIO SERVICE MAN !

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WE ANNOUNCE the early publication of the long-awaited OFFICIAL RADIO SERVICE MANUAL. This manual is the first complete and most up-to-date book of this kind. Nothing else like it has ever appeared in print.

A tremendous amount of material has been collected, not only for the Service Man, but for everyone interested in radio. A complete directory of every radio circuit of commercial receivers is now possible, and not only do you get every circuit of every set manufactured, of which there is any record, but in addition, an entirely new idea makes it possible to keep the manual up-to-date.

The OFFICIAL RADIO SERVICE MANUAL is made in loose-leaf form—handsomely made of flexible leatherette—the entire book can be folded and slipped easily into your pocket or put in your bag.

Rarely do manufacturers supply information about receivers made before 1927—even 1930 service data are not always available because many manufacturers do not supply independent Service Men with such data. And, when you can get the material from some of the manufacturers, it is of little use to you because it is not uniform, and it is scattered in different places; difficult to get at.

Additional service data, for new receivers as they appear on the market will be published and supplied at trifling cost so that the MANUAL may be kept up-to-date at all times.

SERVICE INFORMATION

But that is not all. The OFFICIAL RADIO SERVICE MANUAL contains also a most comprehensive instruction course for radio Service Men, giving practical information from every angle on how to service sets.

In short, the OFFICIAL RADIO SERVICE MANUAL is the biggest thing of its kind that ever came along in radio. It will be hailed by every wide-awake radio man throughout the entire industry.

The size of the OFFICIAL RADIO SERVICE MANUAL is 9 in. by 12 in. There are several hundred pages, printed on good paper, and the book contains hundreds of illustrations and diagrams.

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As per your special offer, I enclose herewith $2.50 for which you are to send me postpaid, one copy of the OFFICIAL RADIO SERVICE MANUAL as soon as it is published, at the pre-publication price of $2.50. I understand that the price will be $3.50 as soon as the MANUAL is published.

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Crosley Brings NEW Beauty, Originality, Individuality and Distinction to Radio Cabinet Design and Construction

The Sensation at Atlantic City

The NEW Crosley radio receiving sets are NEW in every respect. *New* chassis, *new* power speakers, *new* cabinet designs, *new* cabinet construction, *new* low prices for the big values offered and the super-performance delivered.

Eye-filling beauty, startling originality, distinct individuality, outstanding performance, amazingly low prices—these describe the NEW Crosley sets to the extent that it is possible for words to do so. Actually to see the marvelously designed and executed cabinets, to feel the supreme sensitivity and selectivity of the sets, to hear the astonishingly true tone of the speakers, is the only way to gain a full appreciation of these truly exquisite and gorgeous new radio receiving sets. Neither mechanically nor from the standpoint of appearance is there the slightest ear-mark of anything that has gone before.

As an example of the beauty, value, originality and distinction of the NEW Crosley line, look at The Crosley Arbiter shown to the right. *An electric phonograph and radio combination at only* $137.50! A highly sensitive and selective Screen Grid, Neutrodyne, power speaker, A. C. electric receiving set housed in a delightfully designed and executed cabinet—*plus*—an electric phonograph and pick-up. Never before has such an outstanding value been offered in radio. The beauty of the cabinet is self-evident. The latest type Crosley moving coil dynamic speaker is used. The *automatic volume control* maintains a uniform volume all over the dial. The tubes required are: Three Screen Grid type -24, one type -27, two type -45, and one rectifier tube type, -80. Dimensions: Only 35″ high, 23½″ wide, 14¾″ deep.

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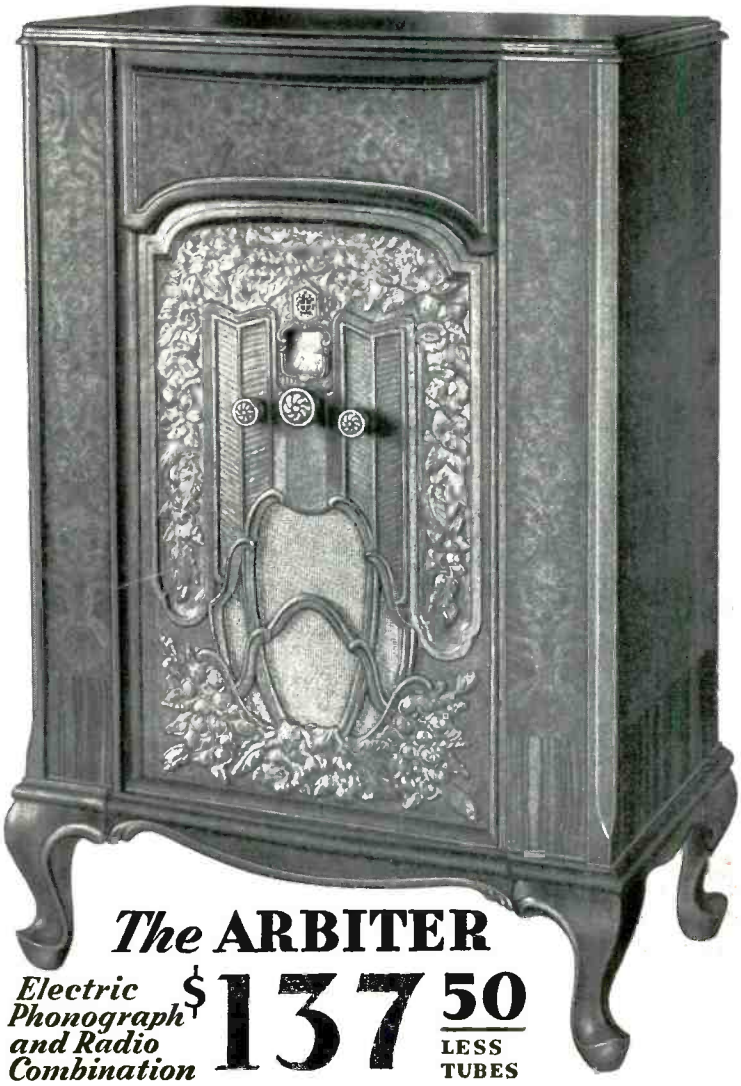
$69.50 LESS TUBES

Screen Grid Neutrodyne Power Speaker A. C. Electric

An Amazing NEW Electric Phonograph and Radio Combination Sensationally Low Priced



***The* ARBITER**

***Electric Phonograph and Radio Combination* $137.50 LESS TUBES**

The NEW Crosley Pal, illustrated at the left, is another indication of the wonderful eye and money-value to be found in the new Crosley receiving sets. This magnificently beautiful cabinet is only 25⅝″ high yet it houses the Crosley NEW Companionship Series radio receiving set and the newest type Crosley electro-magnetic power speaker. The front and sides are of the exclusive new Crosley Repwood giving all of the most intricate details of a costly original wood carving. The whole cabinet is finished in the finest of dull walnut effects. The set itself is highly sensitive and selective due to the use of three Screen Grid tubes. The tubes required are: Three Screen Grid tubes type -24, one type -45, one type-80 rectifier tube. At the amazingly low price at which it is offered, The Crosley Pal will be one of the most sensational sellers the radio world has ever seen. Dimensions: 25⅝″ high, 21″ wide, 10⅝″ deep. Get in touch with your Crosley distributor today!

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POWEL CROSLEY, Jr., President Home of "the Nation's Station"—WLW

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THESE THREE FACTS

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There's no question about QUICK ACTION when you use Arcturus Tubes . . . the program is there in 7 seconds by your watch.

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There's no hum, no background noise, to mar the CLEAR TONE that is characteristic of Arcturus Tubes. Test it yourself on any program.

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Exceptional ability to withstand overloads—easily proved on your meter—has given Arcturus Tubes the *world's record* for LONG LIFE.

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