

RADIO RETAILING

HOME ENTERTAINMENT MERCHANDISING

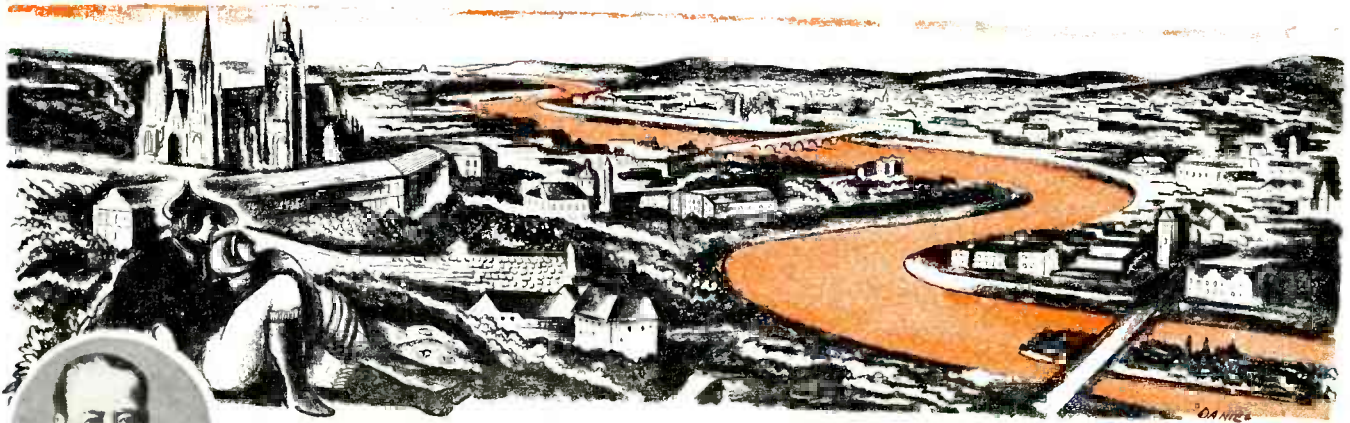
**CAPEHART — Pioneers and Leaders in
Automatic Record Changing Devices . . .**

**The TWO-PROFIT Line: large initial profit on the instru-
ment; big repeat profit in the quantity sale of records.**

THE CAPEHART CORPORATION, FORT WAYNE, INDIANA



Capehart



Friedrich Smetana has woven the story of a great river into his famous symphonic poem *THE MOLDAU*. Brunswick Records 90086-87.

WIDER AND WIDER FLOWS THE GROWING STREAM ♦ ♦ ♦

Like a great river spreading its course across the land, with countless brooks and streams to swell its flood until it rolls on with sweeping majesty, the career of a great corporation goes on from success to success.

Not only must past performance be considered, but due emphasis must be laid on what the future holds. To supply what the public wants is no longer enough, the successful merchandiser of today must be ready to give the public more than it expects!

Every wise dealer is now making his alliances for the future, and in doing so he must choose a company that is strong not only in financial backing and public esteem, but in ideas! One idea can make the difference between "just another radio" and an instrument that can stir a nation-wide demand!

We invite inquiries from dealers with open minds . . .

Brunswick Radio Corporation
MANUFACTURERS OF RADIO, PANATROPE & RECORDS
Makers of the World-Famous Brunswick Records
NEW YORK—CHICAGO—TORONTO
SUBSIDIARY OF WARNER BROS. PICTURES, INC.



BRUNSWICK LOWBOY MODEL 15

Armored chassis with 4 screen-grid tubes and two 45's in parallel. Uni-Selector and Illuminated Horizontal Tuning Scale. Tone Control. Cabinet of seasoned and selected butt-walnut with carved front panels. **\$139⁵⁰**
Other models \$170 up. (less tubes)

BRUNSWICK

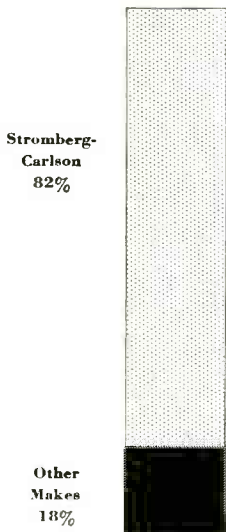
RADIO FUTURA SERIES FOR 1931

RADIO SERVICE ENGINEERS

say "There is Nothing Finer than a Stromberg-Carlson"



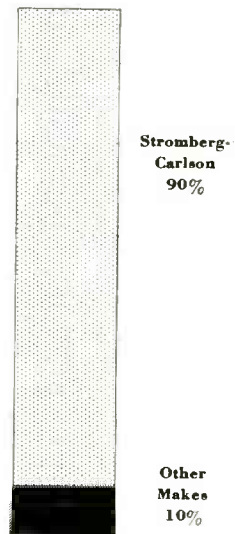
IN TONE



Question "A"

"Kindly name the radio receiver you consider foremost as to giving uniform full audio range with finest tonal quality and fidelity of reproduction."

IN DURABILITY



Question "B"

"Kindly name the radio receiver you consider foremost as to quality of design, materials, ruggedness and durability."

THE conviction that the claims of too many radio advertisers are based on over-optimism, led Stromberg-Carlson to inquire of those in radio best situated to know the facts.

The service engineers of leading radio stores and dealers in the Metropolitan District were circularized with a blind ballot containing questions "A" and "B" as printed above. The results obtained from 285 returns are shown in the tabulation.

To name any of the nineteen manufacturers, other than Stromberg-Carlson, mentioned by the Radio-service Engineers, would be manifestly unfair. Anyone who demands it may, however, see the ballots received in this poll and the manner of their tabulation.

It pays to sell receivers that are recognized by radio technicians, as the finest. There is a *lasting* profit—and an increasing business that comes from satisfied customers.

Stromberg-Carlson Receivers range in price from \$155 to \$369. The Multi-Record Radio, \$645. The No. 11 "Convertible" Console, illustrated above, \$285. (Prices, less tubes, East of Rockies).

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

HOW THEY VOTED

QUESTION "A"		MAKE OF SET	QUESTION "B"	
1 st CHOICE	2 nd CHOICE		1 st CHOICE	2 nd CHOICE
234	34	STROMBERG-CARLSON	254	5
21	49	No. 2	1	22
6	34	No. 3	0	23
4	8	No. 4	1	3
3	18	No. 5	0	12
3	24	No. 6	2	12
3	3	No. 7	1	4
2	14	No. 8	0	10
2	20	No. 9	8	44
2	0	No. 10	0	0
1	12	No. 11	2	5
2	11	No. 12	0	11
1	3	No. 13	0	2
1	33	No. 14	14	89
0	12	No. 15	0	7
0	3	No. 16	0	6
0	1	No. 17	0	0
0	1	No. 18	0	0
0	0	No. 19	0	1
0	1	No. 20	0	1

The above vote is interesting to analyze from many angles, but the vital dependence of FINE TONE on FINE MATERIALS and CONSTRUCTION is emphasized in these figures despite all differences of opinion.



1894

Stromberg-Carlson

MAKERS OF VOICE TRANSMISSION AND VOICE RECEPTION APPARATUS FOR MORE THAN THIRTY-FIVE YEARS



1931

"CUSTOMERS ENTHUSIASTIC ABOUT 4-PILLAR TUBES," SAYS CHICAGO DEALER

That's what all dealers want to know about 4-pillar Eveready Raytheon Tubes—"Sure, the tube's a knock-out, but does the public know it?" We'll say they know it! Thousands of people all over the country are asking for demonstrations at home, with complete sets of these tubes. Buying them, then telling their friends and neighbors about them. Read the experience of the Igleback Electric Company, 1105 E. 47th Street, Chicago:



"FOR the past year we have sold and installed Eveready Raytheon Tubes exclusively — and the only reason in the world why I say 'exclusively' is because I firmly believe these tubes to be the very best obtainable. We are very jealous of our good name, and our reputation for handling only the best in radio. We knew that the National Carbon Company could be depended upon to make radio tubes that were *more* than satisfactory. For years we have sold all other Eveready products with the greatest success, and Eveready tubes, I believe, are the greatest triumph of them all. Every one of our customers is enthusiastic about them, and I believe one would have a hard time trying to find their equal."

Eveready Raytheons come in all types, and fit the sockets of every standard A. C. and battery-

operated radio in present use. Ask your jobber, or write us for names of jobbers near you.

SERVICE - MEN

Information and sales-helps, designed for servicemen's use, will gladly be sent to you free. Among them is a blue-print, giving engineering data on Eveready Raytheon 4-pillar Tubes. Thousands of servicemen are using this material to advantage. Write our nearest branch.



Trade-marks

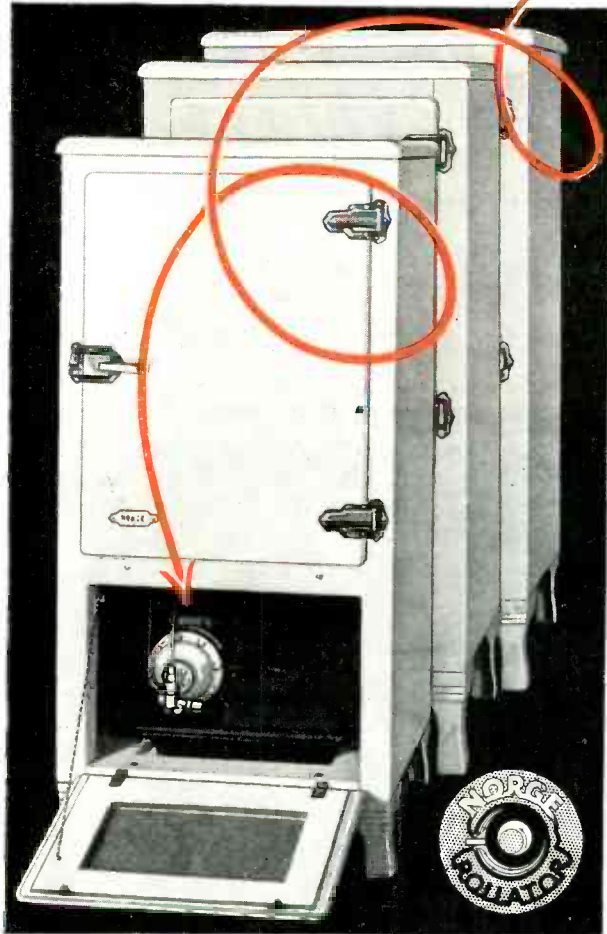
NATIONAL CARBON
COMPANY, INC.

General Offices:
New York, N. Y.

Branches: Chicago Kansas City
New York San Francisco

Unit of  and Carbon
Union Carbide Corporation

The Exclusive Story that won a world wide Success!



The Surprising Norge Dealer Advantages

1. The famous and exclusive "everlasting Rollator".

*Pioneered by Norge.

2. Quick-replaceable, one-piece chassis — no dealer service burden.

*Pioneered by Norge.

3. "Plug-in" installation — dealer delivers in original crate.

*Pioneered by Norge.

4. Unique 1931 national advertising.

5. Only 3 sizes to carry — covering 85% of total market.

*Pioneered by Norge.

6. 20 clever cabinet features.

7. A better product — at prices equal to or under leading competitors.

Write Today for Our
Dealer Plan

"EVERLASTING ROLLATOR"

*Norge has been modest in making claims. These, however, are among the advantages originated and *pioneered* by Norge — which have revolutionized the electric refrigeration opportunity from the Norge dealer's viewpoint.

Electric refrigeration is in demand—the big volume is beginning. Your own share will depend exactly on the make of refrigeration you sell — whether it is exclusive and advanced or merely ordinary.

The Norge is exclusive in design—no other is like it—it contains features unprecedented—being talked about in the trade and among users in every civilized country today. A success—a very great success—a dominant invader in its field. Side by side with competition it is outselling. The outstanding reason is the unit that cools a Norge—called the "everlasting Rollator"—just a *small roller turning slowly in a cylinder in oil*. Radically simple—assuring extraordinary freedom from mechanical troubles—many years of extra life—and far greater efficiency. The Rollator strikes a keynote of superiority which characterizes both the beautiful Norge cabinets and the Norge dealer plan.

BEFORE YOU BUY SEE

PRODUCT OF BORG-WARNER CORPORATION
NORGE CORPORATION, DETROIT

NORGE

ELECTRIC REFRIGERATION

salesmen built into every set

THEIR names are Tone, Control, Sensitivity, Selectivity, Decorative Quality, Construction and Value. Built into every Grebe receiver, these seven salesmen go to work with enthusiasm during demonstrations. "The famous *7-check test* has proved their ability to satisfy the most exacting demands of my clientele," says the Grebe dealer, "and my ledger shows added evidence of the regularity with which they close sales for me."

But that is only half the story. Grebe engineering, scientifically precise, has a dual objective: to sell sets for the dealer and to *keep them sold* by giving the consumer lasting, uninterrupted enjoyment.

This exactness, synonymous with Grebe radio for more than two decades, is reflected in (1) the negligible number of service calls due to defects developing in the sets—actually less than one-half of one per cent—and (2), the rarity of repossessions. For these seven salesmen stand by constantly—are steadfast in their duty to the dealer.



Grebe radio

SUPER-SYNCHROPHASE 

A. H. Grebe & Company, Inc., Richmond Hill, N. Y.
Western Branch, 443 So. San Pedro St., Los Angeles, Cal.



REDUCE SERVICE COSTS

With **SHAKEPROOF**
Lock Washers

THE leading manufacturers of Radio equipment have found that faulty connections are the greatest cause of poor performance. Their exhaustive tests have also proved that the surest way of overcoming such difficulties is to use Shakeproof Lock Washers and Shakeproof Locking Terminals wherever there is the slightest chance for trouble to develop. That is why you now find them on the sets you sell in greater numbers than ever before.

When a nut is turned down on a Shakeproof Lock Washer—it cannot shake loose. The twisted teeth bite into both the nut and work surface and the greater the vibration the tighter they hold. Think what this means to radio reception and you'll easily realize why Shakeproof can be a real factor in your own success.

If you want to reduce your service costs—be sure the sets you sell are Shakeproof equipped—and remember to use Shakeproof Lock Washers on all your service jobs. Free samples will be gladly furnished on request—write for yours, today!

SHAKEPROOF
Lock Washer Company

U. S. Patents
1,419,564
1,604,122
1,697,954
1,782,387
Other patents
pending.
Foreign patents.

{Division of Illinois Tool Works}

2531 North Keeler Avenue, Chicago, Illinois



*"It's the
Twisted
Teeth that
LOCK"*



Type 12. Internal
For S. A. E. and Standard
Machine Screws

Type 11. External
For Standard Bolts
and Nuts

Type 15. Countersunk
For all Countersunk
Screws

Type 20
Locking Terminals
For Radio and Electrical Work



The Original 401 A.C. Tube

THIS is the tube that brings two and one-half million dollars pouring into Kellogg tube dealers' cash registers annually! Here is a market already established for you—a market that you cannot afford to overlook.

Hundreds of set owners in your locality operate sets in which they can use no other tube. They *must* buy Kellogg tubes to maintain the good performance of their sets.

Get *your* share of this business. Stock and display Kellogg 401 A.C. tubes. Write to Dept. 48 for name and address of your nearest Kellogg tube jobber.

KELLOGG AC TUBES



The following sets were designed for and originally equipped with Kellogg 401 A.C. tubes:

KELLOGG Sets—510, 511, 512, 514, 515, 516, 517, 518, 519, 520, 521. McMILLAN Sets—26, 26PT. MOHAWK Sets. SPARTON Sets—62, 63, A-C 7. DAY FAN Sets—5143, 5144, 5145, 5148, 5158. MARTI Sets—TA2, TA10, DC2, DC10, CS2, CS10, 1928 Table, 1928 Console. CLEARSTONE Sets—110. And the first A.C. models of the following: Bell, Walbert, Wurlitzer, Pathe, Shamrock, Bush & Lane, Minerva, Crusader, Liberty, Metro, Supervox, and Case.

KELLOGG Switchboard
and Supply
1066 West Adams Street

COMPANY
Chicago, Illinois



ARCTON



"The **TUBE**"

Millions

OF ARCTURUS TUBES
have proved
ARCTURUS EXCEPTIONAL QUALITY

TWO AND ONE-HALF years ago Arcturus entered the highly competitive radio industry pioneering A-C radio tubes. The continuance of this program of contribution backed by a strict adherence to quality manufacture has won for Arcturus an enviable leadership in the industry.

Today, Arcturus ranks as the leading unallied radio tube manufacturer of the world. Millions of Arcturus Tubes, now giving satisfactory service in every state in the Union, as well as in 54 foreign countries, have carried the news of Arcturus performance to radio set owners everywhere.

Radio jobbers, radio dealers and radio set owners know that Arcturus Blue Tubes combine three essential features: Quick Action, Life-like Tone, Long Life. Radio jobbers and radio dealers know that they are protected by Arcturus' policies and are insured fair profits year in and year out.

Consider these facts carefully in making your plans for 1931. Remember that Arcturus quality, proved by actual test wherever radio tubes are sold, insures a steady demand for Arcturus Tubes.

Get the up-to-date facts from your Jobber.

ARCTURUS RADIO TUBE COMPANY, Newark, N. J.

R U S

with the **LIFE-LIKE TONE**



No Other Franchise offers as much as

Kelvinator

A Kelvinator "Hook-Up" is the Golden Opportunity for Radio Dealers Today

Of all the other commodities a radio dealer might handle, electric refrigeration is the most logical. Radio owners are electric refrigerator prospects, and vice versa. The big buying season for refrigerators begins at the end of the heavy selling season for radios—giving the dealer a full twelve months of sales and profits. Electric refrigeration is the big opportunity for radio dealers today.

No other refrigeration franchise offers you as much as the Kelvinator Franchise. Every one of the eighteen million prospects for electric refrigeration is a Kelvinator prospect. With the new Kelvinator Yukon Model, the lowest-priced quality electric refrigerator today, and the new lines of Standard and DeLuxe Models, the Kelvinator dealer has the outstanding value in every price class—a refrigerator of known value and depend-

ability for every size home and every size pocketbook.

"Over-the-Counter" Merchandise

From a dealer's standpoint, the Yukon represents an unparalleled opportunity. The dealer has no service problems, no parts inventory, nor large stock of cabinets. The only investment is one cabinet for display in the salesroom. The Yukon is "over-the-counter" merchandise and the profit on every sale is practically clear profit.

The complete 1931 Line is the greatest Kelvinator has ever offered in 17 years devoted exclusively to electric refrigeration. It is the golden opportunity for radio dealers. Now is the time to come with Kelvinator. Send the coupon below and get the facts.

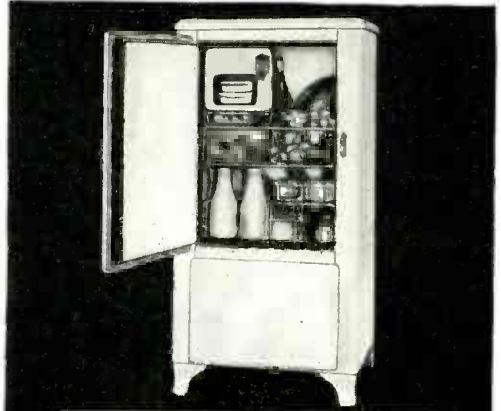
Kelvinator Corporation, 14263 Plymouth Road, Detroit, Michigan
 Kelvinator of Canada, Limited, London, Ontario (167)
 Kelvinator Limited, London, England

THIS COUPON WILL BRING THE FACTS

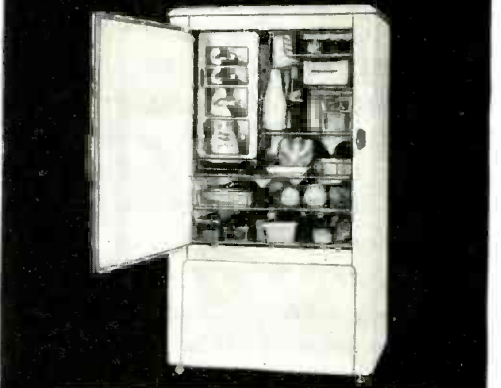
KELVINATOR CORPORATION,
 14263 Plymouth Road, Detroit, Michigan

Gentlemen:
 I am interested in the Kelvinator Franchise. Please send me complete information.

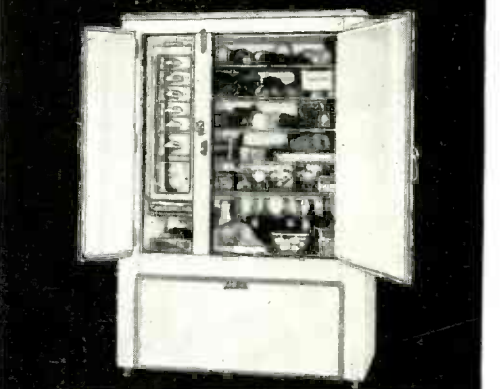
Name _____
 Street Address _____
 City _____ State _____
 Make of radio now handling _____



The Kelvinator Yukon Model
 \$159.50 f. o. b. factory
 Available also in 7 cu. ft. size

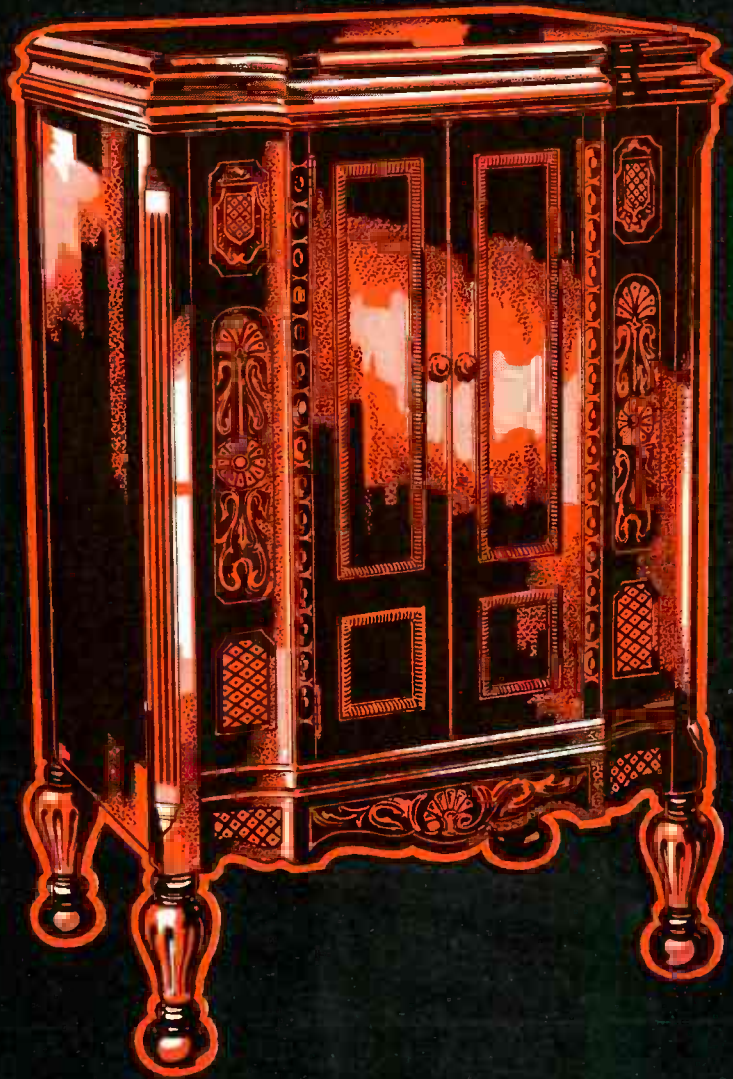


The Kelvinator Standard Model
 \$210.00 f. o. b. factory, upwards
 Available in 3 sizes—4, 5 and 7 cu. ft.



The Kelvinator DeLuxe Model
 \$360.00 to \$755.00 f. o. b. factory
 Available in 6-8-11-14-22 cu. ft. sizes

No Kelvinator Has Ever Worn Out



\$200 BELOW COMPETITION!

Farsœeing dealers regard the new Sparton model 235 as the best headliner of the year. They are featuring it and selling it. At \$280, less tubes, this 12-record, fully automatic radio-phonograph combination is practically alone in its price class. Its price is right in line with many single-record jobs. The public has been waiting for an automatic radio-phonograph at a popular price, and Sparton dealers are enjoying brisk sales, each with a real profit. We suggest that you learn more about this new Sparton.

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

Pioneers of Electric Radio without batteries of any kind (581)

Only SPARTON has the *MUSICAL BEAUTY* of
SPARTON RADIO
"Radio's Richest Voice"

“The unquestioned factory replacement policy is an outstanding virtue in the profitable CeCo franchise.”

Ed. Levy, Mgr., Atlas Stores, Chicago.

Here's further proof of CeCo's growing leadership. In two years **CeCo Tube sales** by Atlas Stores Corp. have jumped from 10th to **1st place**. The 70 retail outlets of the 'World's Largest Radio Dealers' concentrate on one line of tubes—CeCo—for three basic reasons:—unequaled quality ... consumer preference ... more profitable discounts. CeCo's franchise means more profit in 1931.”

Ernest Kauer
PRESIDENT,
CECO MANUFACTURING CO., INC.
PROVIDENCE, R. I.

No. 1 of a series of unsolicited CeCo window displays



Atlas Store, 532 S. State St., Chicago, features this striking three window display. Note the prominence of the "Better or You Don't Pay" streamers. A real business-getting idea.

CeCo

RADIO TUBES

Licensed under Patents of Radio Corp. of America

They're Better or You Don't Pay!

"THE FASTEST SALE I EVER MADE"

"She came into the store and asked for a sunlamp. I could probably have sold her any one of several makes. When I showed her a General Electric Sunlamp she said, 'I'll take it!'"



You needn't waste a lot of time "explaining who made it," when you handle merchandise supplied by the General Electric Supply Corporation. Only nationally advertised products are offered. The names are household words—they win instant acceptance!

You save time in demonstrating and selling... you add to the prestige of your store... when you handle these well-known brands. You keep old customers and add new ones, as you utilize the sales-developing power of these nationally advertised products.



You can obtain prompt delivery of everything electrical from a General Electric Supply Corporation wholesale warehouse near your store.

GENERAL ELECTRIC

SUPPLY CORPORATION

Ken·Rad

Fine Radio Tubes



PROFITABLE

Ken·Rad

Incandescent Lamps



To those who used KEN·RAD Tubes and Lamps during the past year—our sincere thanks.

To those who "nearly" put us on their list—our hopeful appreciation.

To those who expect to come with us presently—our assurance of a hearty welcome.

To all—our most cordial wishes for a Happy New Year and a real comeback in 1931.

THE KEN-RAD CORPORATION

Incorporated

OWENSBORO, KENTUCKY

COMPANIONS

The Biggest Sales Making Idea the Tube Business Ever Saw!

nd as far as we are concerned
 lan means we will go Sylvania from
 ny a different kind of dealer help than any
 efore because it boosts the dealer's business
 e dealer's reputation as much as your company
 e have made about thirty-five new customers
 th your tube sales plan and we are only in
 third week. Things are looking up and
 our tube merchandising pro
 surprising satisfaction. We jo
 out everybody in the place is work
 Great! Biggest thing that ever was done in the
 radio field by any manufacturer of anything rad
 just offered the proposition at our weekly sale
 meeting to see if our men liked it. That settled
 They have it, and it's a wow.
 could certainly like to shake the hand of the man who thought this
 We are overlooking no more business opportunities from now on

The New *Sylvania* Dealer Plan

we believe this to be the smartest
 be promotion ever got out.
 literature at once.
 And the very first
 creased our tube sales 35%
 more than last October's
 increase.
 The Sylvania Plan certainly made a
 men right from the start. They are as
 astic and all building business with it.
 we never realized how many good customers
 You opened our eyes
 we have waited for a long time for a plan which would
 really help us sell radio tubes. And now we have it.
 The new Sylvania Merchandising Plan is something
 than just a
 no dealer gets some help that he ca
 the first time in radio history radio
 received personal merchandising help
 and until we started out with your plan
 neglecting.
 our men are as enthusiastic
 we are. They

RR-1-31

**SYLVANIA
 PRODUCTS
 COMPANY**
 Emporium, Penna.

I'd like to know more about
 your new Merchandising
 Plan.

NAME

ADDRESS

CITY STATE

**Ask
 Today!**



REG. U. S.
 PAT. OFF.

January, 1931

RADIO RETAILING

HOME ENTERTAINMENT MERCHANDISING

O. H. CALDWELL,
Editor

A MCGRAW-HILL PUBLICATION. ESTABLISHED 1925.

Whither



We Must Learn to Merchandise

While the marked acceptance of the "midget" receiver undoubtedly was the dramatic event of the radio year that has passed, another trend, less sensational but of greater underlying significance, was evidenced. It is the duty of *Radio Retailing* to state that 1930 lacked a fighting, constructional, type of salesmanship in the marketing of its radio wares and that there was substituted a bending of the knees to The Great God Price. We chose the course of least resistance, the route of temporary expediency—true values were forgotten.

Gentlemen of the Radio Industry, we must win back this lost ground during 1931.

Ethical manufacturers will band together for the common defense against the destructive forces now at work. Worthwhile jobbers not only will work hand in hand with their suppliers but they will select their dealers with great care and then they will develop that type of promotional salesmanship and initiative in these surviving dealers which will be comparable, in method and in result, to that witnessed in the electrical appliance specialty field.

1931 Holds Much Promise

If our sales stamina and technique be strengthened; if these devitalizing sacrifices to this God of the dollar be dispensed with, 1931 will be a mighty good year for radio.

And why not? Inventories to date are relatively low—compared with twelve months ago. Though there will be some dumping these next three months, particularly of the small sets, such distress sales will be mild compared with those of the spring of 1930.

With 13,000,000 sets now in use, and estimating the average life of a home receiver at five

years, from two to three million sets will be needed this year for replacements alone.

Furthermore, near-future developments in compact, low-priced receivers, in farm sets using the new low-drain battery tubes, in popularly-priced automatic record-changing combinations, in special sets for business and industrial purposes, all will reach new markets and assure a grand total of not less than 4,000,000 unit sales—although aggregate dollar volume probably will be slightly less than heretofore.

While accessory devices will continue to play a minor rôle in profit-making possibilities there is one supplemental article, sound amplification and public address systems in compact "package goods" form, which is now available from the factories of at least seven reputable manufacturers and which merits the consideration of radio dealers.

Leavening Influences

And we must not overlook the leavening influence of the injection of home sound-and-motion-picture apparatus into our industry. As we go to press four producer-manufacturers of national reputation are about ready to announce finished products for domestic use, and to make available at many convenient points adequate film and disk libraries. The radio-music dealer and the radio specialty shop are the ones through which this complementary line will be sold.

During the past month your editors have been making fact-finding expeditions throughout the industry. Hundreds of dealers and jobbers, and all important manufacturing executives, have been questioned as to radio's future markets, products and distribution trends. The preceding comments and the four pages immediately following, reflect, therefore, the most authoritative forecast that will be available covering these vital matters.

Our Changing

CRYSTAL detectors, gooseneck horns, loop aeri-
als, batteries, a.c. tubes, dynamics, superhets
View any cross-section of our changing business,
the reaction's the same—marvelous invention, spectacular
development and a merchandising past where
individual successes have only been eclipsed by
individual failures.

But 1931 is another year and it holds elements
of great promise. This article is concerned
with the trends, the new products and the
new opportunities that will constitute its
pattern. We are considering it from
four major angles: Products, Mar-
kets, Distribution and Technical
Developments.

WHILE the vogue
for a small, low-
priced set unques-
tionably will con-
tinue — because
it fills a speci-
fic need—the in-
dustry

*A forecast of trends, prod
for 1931—Midgets, the
tions, perfected battery sets
movies interesting*

Product Trends Midget Status

should bear in mind that the midget
has definite limitations. It never will
satisfy the requirements of an influ-
ential and large class of buyers for a "first set." While
the price trend on compact models at present is con-
tinuing its downward course it does not follow that this
condition will become chronic. Already there are signs
that manufacturers, distributors and dealers feel the
need for wider margins—in order to conserve profits.

The midget will undergo a refining process. This will
lead, ultimately, to higher price levels and better mer-
chandise. And the public will be taught to pay a fair
price for value received. These deductions, and those
which follow, are based upon the consensus of opinions
of the leading manufacturers and merchandisers in
the country.

An even greater trend toward the small set, it is
contended, will be discernible next spring when distress
stocks of this year's "orphan" consoles are off the
market. Were it not for the present dumping of
consoles at ridiculous prices during the past three
months, midget sales would have been some-
what larger.

With the introduction of three- and
four-tube sets the way is open for the
industry to develop the two-set idea
and our dormant market to the
utmost. It will exploit commer-
cial and industrial outlets,
such as offices, stores and
small factories.

It is generally
felt that the com-
bination instru-
ment will come
into its own
this year.
This
will
be





Business

*ucts and markets
newer combina-
and home talking
possibilities*

largely due to the introduction of the popularly priced automatic record-changing mechanism.

Attention is also directed to the many instances where radio dealers have made a substantial profit in the sale or leasing of automatic electric disc playing instruments for public places. The vogue of these instruments is on the increase.

It is not expected that miscellaneous accessory devices, such as home recording, automatic tuning, remote control, tone control, etc., will be a material factor contributing toward the prosperity of the industry but these devices are always helpful in a promotional sense and will be developed and pushed.

The Tube Outlook

Three factors stand out in considering the tube situation: distribution trends, price changes and the replacement market. Tube manufacturers report that approximately 45 per cent of their 1930 output went direct to the set manufacturer, mostly in kit boxes. They estimate that this year there will be an even more marked tendency for the set manufacturer to ship his receivers equipped with tubes. It is estimated, therefore, that about 55 per cent of all tubes manufactured will find their way to the consumer as initial equipment via the set manufacturer.

The majority of tube executives feel that list prices will find a level at from 5 to 15 per cent lower than during 1930. There is also a possibility that tube discounts will be slightly broader. Actual happenings in these directions will depend to a large extent upon the action of one or two leading tube manufacturers.

The following opinion of a tube maker is illuminating: "Manufacturers who have not previously made attractive prices on manufacturers' contracts will, of necessity, be forced to lower their manufacturing discounts in order to obtain a share of this business. The manufacturers for the most part, however, are quoting prices which are as low as they can be for such companies as expect to stay in business and continue to supply a quality product."

Frankly, 1930 replacement business did not come up to expectations. Engineering improvements, lengthening life and service of tubes, was a factor. Based on the

history of the past, we should, however, replace at least two tubes per each set now in use—or a total of approximately 30,000,000. With list prices and discounts in line with consumer and dealer demand there will be every incentive for the latter to extend his tube replacement activities.

(For another interesting discussion of this subject also see page 35.)

Sound Amplification

There are interesting developments here and the trade may well be expected to give sound amplification and portable public address systems greater attention. Not less than seven well-known manufacturers are now marketing products of this nature in compact units so that radio dealers may sell or rent them. Engineering talent from the factory no longer is required except on large installations or for multiple receiver systems. The market is a broad and varied one. In some cases an automatic disc feed attachment for the continuous playing of recorded music will be desirable and may readily be incorporated. In other instances the various loud speakers are controlled from a central switching panel.

Industrialists are using public address systems not only for the entertainment of their employees but to make announcements and to get over inspirational talks with the least loss of time. Schools, lodges, ballrooms and railroad stations are installing sound amplification apparatus. The number of prospects for public address units in one form or another runs into the hundreds of

thousands. No less than 30,000 units should be sold this year. They are on the market at prices between \$300 and \$500 complete and they are available in semi-portable form for retail purposes.

Home Talking Movies

The engineering development of sound synchronized with motion pictures for the home is well along. Already there are available satisfactory devices of this nature and more will follow during the early part of 1931. Projectors taking 16 mm. films, with mechanically coupled turntable with sound-on-disc, now list from \$200 to \$600. Those to follow will undoubtedly sell within this price range and the radio merchant is being given first consideration as the logical outlet for this cousin of the radio receiver.

The reason home talking movies have not been a better item in the past has been due to the lack of conveniently located film libraries and to the lack of suitable subjects for home entertainment at reasonable rental prices. Several large motion picture producers are actively at work enlarging this bottle neck. These producers also are bringing out home projecting and talking apparatus.

At present the church, the lodge and the school offer the chief market for the rental of films. Already 200,000 home projectors of the silent type have been sold. With the advent of sound and with the opening of these distribution film and disc stations, the market for this combination device will quickly become a major one for the radio industry. If but one home sound projector were sold for every twenty radio receivers now in use the aggregate would gross not less than \$100,000,000. There would be created, also, an additional demand for tubes and for amplifiers as well as repeat business in films and records of very material proportions.

Automobile Radio

More concerns are entering the automobile-radio field—and prices are dropping. With the same manufacturing economies applied here that now are used in producing midgets, the auto-set of the near future will list around \$60-\$70 (less tubes and not installed).

Radio for the motor car has not taken the public fancy as quickly as its sponsors had hoped. With the possibilities of higher broadcasting power, hence better reception; with lower prices and with the public becoming educated to the fact that automobile-radio adds no driving hazard whatsoever and is very desirable, the 1931 market for this commodity should double 1930 sales.

Special tubes and pentodes seem logical developments here. With 19,000,000 automobiles in use, 300,000 sets for this market is within the range of possibilities.

Supplemental Merchandise

In addition to all these products directly related to the radio receiver there has been a marked tendency toward the distribution and sales of certain supplementary household items, particularly electric refrigerators and electric clocks. The former is steadily gaining in favor; the latter is so closely connected with radio in the home that three influential manufacturers of radio sets have announced models with electric clocks and others, it is expected, will follow.

Unwired Home Market

Apart from a replacement demand for not less than 2,500,000 radio receivers we start this year with more new market possibilities than at any time in our past. The presence of the small, compact, low priced set and

the improvements which have been made in low-drain, 2-volt tubes and in the batteries required for their operation are the chief reasons for this assertion.

Radio Retailing, in recent issues, has emphasized the many constructive uses for the midget. By suggestions and examples it has shown a number of new markets await the advent of a low priced, compact receiver.

But the vast unwired-home market needs greater attention. It embraces 3,000,000 urban residences as well as 5,000,000 rural. It is a safe estimate that radio saturation with these types of prospects is half that of families residing in wired homes. Now that low-filament drain tubes are available for dry battery receivers it will be surprising if the industry does not seriously cultivate this market and develop sales of not less than 300,000 of the newer type of sets per annum.

Jobber-Manufacturer Relationship

When a merchandising situation passes the point of the mere mechanics of distribution and requires special effort at the point of ultimate sale, misunderstandings between the wholesaler and the manufacturer frequently result. The many replies to *Radio Retailing's* questionnaire to both these branches of our industry disclose the imperative need for a new relationship between these two parties.

The manufacturers state their side of the case somewhat as follows: "After we have added to factory cost the items of royalties, patent litigation and obsolescence and then of high sales and advertising expenses, if we sell through jobbers and dealers, allowing 50-10 per cent or more, we have reached a list too high for the present price values which have been established in the minds of the consuming public.

"If our jobbers and dealers were highly efficient and performed satisfactorily their legitimate functions there would be more justification for this method of distribution. As it is, however, most manufacturers must maintain a large force of salesmen, not to sell but to help the dealer and the wholesaler carry on."

The jobber's chief complaints are that the manufacturer expects too much in proportion to the narrow margin which he grants the wholesaler, that the manufacturer in instance after instance has left the jobber "out on a limb." Further, that markets have been prostituted and established values destroyed.

No marked trend away from the jobber is discernible but there is need for immediate co-operation in order that this situation be corrected.

Price Movement

Despite the need for wider operating margins it is felt that the pressure of competition, of economic trends and of manufacturing efficiencies will force prices even lower than in 1930. Lines, however, will be simplified. There will be three general type divisions into which receivers will fall: the mantel model, a compact console and the automatic record-changing combination.

Based on manufacturers' forecasts average list prices, less tubes, will range about as follows: for the midget, \$35 to \$70; for the console (or consolette), \$75 to \$125, and for the combination, \$250 to \$350. A few concerns will continue their policy of featuring a de luxe receiver to sell in the neighborhood of \$175 less tubes.

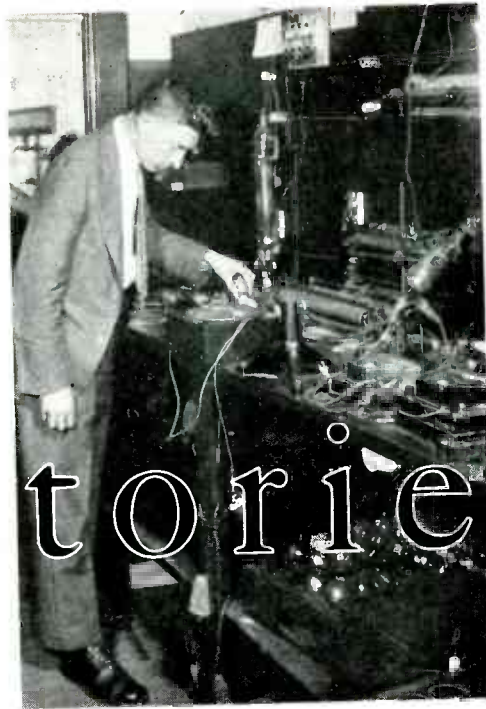
Indicative of price trends, witness the first of the year announcement of a very large set manufacturer as follows: a seven-tube radio-phonograph at \$99.50 and an

(Please turn to page 57)

— and

From the Laboratories

*Probable
Technical Developments*



NO RADICAL changes in receiver design loom on the horizon to upset the 1931 merchandising applecart but several important developments which will improve reception or reduce production costs may be expected. Perhaps the most noteworthy of these will come from the tube laboratories. Majestic, Arcturus and Raytheon are now running life tests on a new, modified screen grid tube which may be introduced as type 551.

Variable Mu Tube

The experimental model resembles a 224 in all respects save the construction of the control grid, which, according to Ballantine and Snow (I.R.E. Proceedings, December), is split, or designed in two sections with a gap between, to permit the tube to function automatically as either a high or a low gain r.f. amplifier, as required by dissimilar signal voltages. The tube is said to retain the sensitivity to weak signals of the 224 while performing with appreciably less distortion upon input voltages which would be excessively high for older types. Requiring about 30 volts negative control grid bias, it would not be interchangeable with existing types.

If perfected, the 551 will improve tone quality in sets designed for its use, especially in the reception of strong local signals with the receiver volume control retarded. It will eliminate the necessity for pre-selector circuits, being less susceptible to cross-talk distortion. And it will operate 25 times more efficiently than present types in automatic volume control circuits.

D. C. Heater Type

Sylvania engineers are working on three new tubes for aircraft, auto-radio and d.c. receivers (including lighting systems) to be known as types 224-C, 227-C and 171-C. These will have indirectly heated cathodes, glass envelopes like the 230 series, five-prong bases and 6.5 volt, .25 ampere filaments. The designers claim that these new heater types will have several important advantages, which seem to be borne out by the makeshift use of high drain a.c. tubes in auto-radios last year.

Heater filament construction is sturdy, tubes of this variety are practically non-microphonic, series filament connection does not introduce troublesome inequalities in plate voltage and grid bias and the isolated cathodes permit sets so equipped to operate universally on either positively or negatively grounded filament supplies.

Perryman's laboratory is engaged in the production of equally interesting tubes for special uses, we understand, and type PA32A, a d.c. screen-grid tube of the filament type for portable use, rated at 1.25 volts, .50 amperes, has already been introduced.

A. F. Pentodes

This year will mark the introduction of some pentode tubes in audio frequency stages, particularly in midgets, auto-radios and the new 2-volt d.c. sets, activity in the R.F.L., Arcturus and Champion laboratories indicates. There is a definite need for the excellent power output afforded by such tubes in midgets, where space must be conserved and production costs reduced. Because of the efficiency of the power pentode at comparatively low plate voltages they may prove to be of inestimable value in 2-volt d.c. sets and auto-radios. The power pentode, incidentally, is not to be confused with the r.f. pentode so widely heralded early in 1930.

The sensitivity of midgets, possibly larger sets, may be appreciably aided by special 224's with higher than standard amplification factors such as those recently introduced by DeForest.

Midget Quality

Many companies are working to improve midget tone quality. Philco is particularly deep in experiments with a type of speaker designed to provide good low frequency response despite the use of a small baffle area and it is possible that something may come of this concentrated effort before long. The RCA laboratories have important power pack improvements under observation and should these be perfected it will no doubt be possible to build cheaper packs which will function with even less 60 cycle hum. Reduction of hum level will make it

(Please turn to page 57)

Partner
LEOPOLD

Two partners meet price competition with standard merchandise — plus salesmanship — in White Plains, N. Y., and emerge with a profit

THE widespread sale of low-priced radios, standard brand midgets as well as orphaned consoles on which the price has been drastically cut, has created a difficult problem for the small retailer. He is completely barred, as a rule, from the orphan business because of his inability to buy in quantity. And though he may secure his share of the midget volume easily enough, he finds it difficult to pay his overhead out of this business due to the narrowness of discount involved.

Small dealers, particularly those located close to metropolitan centers in which larger merchandisers are pushing orphaned merchandise at a lively clip, are, or should be struggling with every possible means in their power to increase the dollar value of each unit sale. For it is upon their ability to sell merchandise in which a substantial profit is contained, rather than volume at retail prices, that the outcome of this year's business will depend. In order to emerge with a profit it will be necessary to sell *up*. And this is precisely what Larry Leopold and his partner H. Maizel, of the Elm Radio & Electric Co., Inc., White Plains, N. Y., are endeavoring so energetically to do.

Leopold and Maizel have devised a method by which the midget may be used to its fullest advantage as a profit builder, securing not only the extra business which this type of set produces but using it as well as the first step in the sale of a higher priced receiver in which the profit margin is more substantial.

The Entering Wedge

WHEN a customer enters the Elm Radio store to see a midget both partners do everything possible to divert interest immediately to a console model without jeopardizing the midget sale. This requires skillful selling. Desire for a console must be planted without injuring receptiveness to the midget. In opening the sales talk, Leopold and Maizel stress the excellence of the small sets, pointing out that these afford excellent reception and are good value for the money. Then, incidentally, the furniture value and superior performance



They Sell

naturally expected from larger and higher priced receivers are mentioned.

If it proves impossible to swing the customer from a midget to a console—and this is quickly determined by experienced salesmen without antagonizing the prospect—the midget sale is closed at once. The customer pays his money, arranges for delivery and leaves the store. A final, and somewhat original attempt is then made to sell *up*. If, in the estimation of the partners, the customer is a good prospect for a set larger than a midget, a console is placed on the truck and goes along *with* the midget delivery. Leopold or Maizel accompanies the truck and, arriving at the home, accompanies both sets to the door.

When the customer sees both the midget purchased and another set ready on the doorstep it is explained, in answer to the inevitable question, that in order to be sure that complete satisfaction is rendered by the store an opportunity is presented to compare the midget with a console. This, it is further stated, is a special service designed to protect the customer. Even after the sale, Elm Radio is interested in making sure that the set purchased is the best possible choice with which the buyer will remain satisfied. The customer has nothing to lose; everything to gain. Usually, the opportunity to compare a midget and a larger set is welcomed. The

Partner
MAIZEL



UP!

salesman presents his story of customer service naively. The installation of both sets is, in most cases, permitted.

Two out of five midget buyers, who permit a console to be installed when the set is delivered and make a thorough comparative test, eventually switch their order to the console.

Placing Their Shots

OBVIOUSLY, not every midget buyer is a prospect for a more expensive set. In order to avoid sending consoles out with midget deliveries where the possibility of an augmented sale is very remote, each midget buyer is tactfully questioned before leaving the store. People who are not financially able to purchase more expensive models; those who wish to give someone a \$40 or \$50 gift and cannot reasonably be expected to spend more; buyers who own consoles and intend using the midget as an auxiliary and customers who live in one or two room apartments which lend themselves only to compact furnishings, are not followed up for console business. In such cases the company considers a midget sale extra business.

Where it is evident that a midget buyer is merely saving money by the purchase and can afford a better set, every effort is made to sell him a console and so

ELM RADIO & ELECTRIC is successfully using two sales ideas suggested in recent *Radio Retailing* issues. A console goes along with most midget deliveries for comparative demonstration—inspired by the article “The Point of the Wedge.” And the reliability and reputation of standard brands is stressed to combat cut-price competition — urged in “Erase This Orphan Competition.”

increase the profit margin. This policy applies as well to buyers who are not completely “sold” on the value of radio but are willing to spend \$40 or thereabouts to listen to especially popular programs. According to Leopold, fully 50 per cent of all people entering the store for midgets are financially able to purchase consoles. This should suggest a fertile field for console business to dealers who have not heretofore attempted to sell *up*, those who have passed midgets over the counter without carefully scrutinizing the situation for possible console business. It should be possible for salesmen of the Leopold and Maizel calibre to check back through sales slips of midget buyers and to follow up those suspected of under-buying. What is to prevent dealers from accomplishing the two-set-per-home idea by selling a midget first and then following up with a console? This is contrary to the usual procedure, of course, but nevertheless extremely practicable.

Leopold and Maizel stock nothing but standard, nationally advertised radio receivers (Radiola, Stromberg-Carlson, Philco) and it occurred to us that they must encounter keen competition for console business due to their proximity to New York City's cut-price outlets. White Plains people very often commute to New York to business.

Leopold answered this question for us. “Despite the fact that a great deal of business is undoubtedly lost to us by virtue of cut-price competition we prefer to feature standard, advertised merchandise. For while we might conceivably obtain greater volume by meeting such competition on its own ground with bootleg and orphaned sets of our own, it would be necessary to sacrifice our profit margin, even on this merchandise, to get down to a competitive level.

“It would be easy enough to take the course of least resistance and pick up price merchandise in job lots. But like all ‘good things,’ there is a disadvantage in this policy. Profit margin would be slim. We prefer to take the risk confronting all retailers who are aggressive enough to stick to their guns and sell *up*. We prefer to pit salesmanship against cut-price order-taking.”



AN EARLY "COMPANIONATE" MARRIAGE. Grebe's "Radiotone," introduced in 1922 at \$310 list, was one of the first combinations. The phonograph was of the old mechanical reproducing type with a horn speaker. The radio was a CR-5, tuning from 150 to 3,000 meters.

SAME IDEA, DIFFERENT SHAPE. Brunswick, in 1924, brought out the popular model 30 equipped with a "Radiola Sr." and a separate two-stage amplifier using WD-11 dry-cell tubes



THE UNION ELECTRICALLY COMPLETED. Electric pick-up and the amplification of recorded music via the audio amplifier of a radio receiver was developed in 1927. All-American's model 88, equipped with a.c. tubes, is representative. It sold for \$425.



Evolution

PHONOGRAPHS . . . RADIO
RECEIVERS HOME
MOVIES . . HOME TALKIES

1930. Home-recording and automatic record-changing combinations achieved wide popularity in 1930. The Radiola 86 is typical of the recording models while the Stromberg-Carlson 14 aptly illustrates the automatic variety.



AN OLD FRIEND. In '25 and '26 Victor phonographs provided with "space for radio" appeared and these were soon equipped by dealers with neodyne panels. The electric pick-up was still unknown.



TODAY. This year another trend in combination design is evident. Bell & Howell's new "Filmophone," which includes home talking movies, radio and phonograph in one cabinet, is a possible forerunner of multi-purpose home entertainment devices.

The Month's Best Records—and why

TWO vocal numbers which will find a host of takers have just been released by Brunswick. The one is a baritone solo, the other a choral number by a German company of singers:

ADELAIDE. (Beethoven.) By Heinrich Schlusnus, baritone. (Brunswick 90104.)

This singer has created something of a sensation in his first New York appearance. In him the critics find an ideal lieder singer—a beautiful voice, perfect diction and the art which conceals untold hard work. Recommend disc to anyone.

STILLE NACHT. (Gruber) and O Du Froehliche. (Traditional.) By the Male Chorus of the Berlin Singing Teachers' Society. (Brunswick 90100.)

A remarkable recording of a singularly well-trained choral organization. There is a seasonal appeal in these apart from the high standard of the performance.

LE BOURGEOIS GENTILHOMME. (Richard Strauss.) Orchestral Suite. Orchestre des Concerts Straram, conducted by Walter Straram. (Columbia Masterworks 148.) Four records.

Richard Strauss is one of those composers about whom probably more questions are asked than any other. Those of his works already recorded are surprisingly popular and his public are always clamouring for more. Here is something for them. This is the first recording to appear on this side of a suite which is gathered from parts of the introduction to the play-within-a-play in which Strauss combined a comedy of Molière and a classical opera, "Ariadne auf Naxos." Also, it is the first locally pressed specimen of the playing of this orchestra, the reputation of which has reached this country ahead of it. It is an album which, if properly brought to the attention of regular customers, should have equal popularity with other Strauss compositions. Note that every instrument comes out plainly and the combination is close to perfect.

TWO CHORAL PRELUDES. (Bach.) Orchestrated by Arnold Schönberg. By the Philharmonic Orchestra of Berlin, conducted by Jascha Horenstein. (Brunswick 90105.)

The last few seasons have seen orchestral transcriptions of several of Bach's composi-

The Popular Numbers

VICTOR

A popular version of what was the hit of last season in the symphony orchestras is "Bolero" (Ravel), arranged by Salingier and Shilkret and played by Nat Shilkret and Victor Orchestra. On the reverse side is a luscious tango which is appropriately named "La Seduccion."

A piece which seems to have found its way onto every gramophone in the country without great effort is "You're Driving Me Crazy," a fox trot, by Rudy Vallée

BRUNSWICK

The latest batch of popular records from this recording company has several items which should be sure-fire. Georgie Price becomes very sentimental and dramatic in "The Song of the Fool" and "The Mender of Broken Dreams." The Castlewood Marimba Band has a couple of waltzes—"Ukulele Moon" and "Drifting on to Avalon"—which are pitched just right, and Hal Kemp and his Orchestra, in "Hurt" and "Them There Eyes," gives us two good fox trots.

COLUMBIA

Some of Columbia's old hands are used to advantage. Paul Specht and his orchestra should do well with the two hits from the movie, "Viennese Nights," "You Will Remember Vienna" and "I Bring a Love Song." The ubiquitous Ted Lewis and his band are above their average in "Somebody Stole My Girl" and "Someday Sweetheart." Ben Selvin and His Orchestra have another "Song of the Fool" coupled with "Who's Calling You Sweetheart Tonight."

tions given with great success by the leading symphony orchestras. Both Toscanini, with the New York Philharmonic-Symphony, and Stokowski, with the Philadelphia Orchestra, have presented these. Now Brunswick offers a couple of particularly interesting numbers—"Schmucke Dich, O Liebe Seele" and "Komm, Gott, Schöpfer, Heiliger Geist"—transcribed nearly ten years ago for the New York Philharmonic. Remember that Stokowski's recording of Bach's "Toccatina" and "Fugue in D Minor" (Victor 6751) was not only a sensation at the time of its release but is still a best seller.

SIEGFRIED. (Wagner.) Excerpts from the Opera in twenty parts. (Victor Masterpiece M-83.)

This album should require comparatively little pushing if any trace of customers' taste has been kept. Wagner enthusiasts are on all sides and here is the very meat for them. Lauritz Melchior, who sings most of Siegfried's lines, and Rudolph Melchior, who takes over for the final duet, are both well-known Metropolitan stars while Frida Leider and Maria Olczewska are members of the Chicago Opera Company's exceptionally strong collection of Wagnerian singers. Albert Coates, who conducts most of the set, will require no introduction and his excellent recordings of the work of this composer are too well known to need mention. Sides II and XIV are especially recommended for demonstration.

Reviewed by

Compton Pakenham



Why They BOUGHT

- ¶ Self-interest, sentiment, pride, parental love—our emotional reactions—are powerful things. They frequently dominate our reasoning faculties and cause us to act at once—on impulse.
- ¶ The following candid expressions from the buyer's side of the picture strengthens this thought and should cause many dealers to direct their appeals to the heart as well as to the head:



"The bedtime stories for my little girl sold me. Cynthia loves to hear them just before she drops off to sleep."

V. C., Douglaston, Long Island.



"The chance to relax while I listen to music on coming home from the office sold me a radio. We had had a phonograph for years and were slow to buy."

O. W. M., Bartlesville, Okla.



"The night Dempsey fought Firpo I called on the next door neighbor. No one answered my rap. Listening, I heard sounds of terrific excitement inside. I couldn't imagine what was going on and kept knocking at the door until admitted. It was the Dempsey-Firpo fight. I never realized before how thrillingly anything could come over the air. That alone made me a radio fan and we have had one in the house ever since."

O. T. F., Lotus Ave., Chicago.



"No more breakfast table squabbles at our house. I bought a radio so I could do my "getting up" exercises to music but since I've found a still better use for it. I am not a particularly cheerful person in the morning and with the radio going we converse less and consequently arguments are kept to a minimum."

E. E. H., New York City.



"My wife plays the piano for me every evening after dinner. Not long ago she went to Kansas City on a visit home. Right when I was becoming good and lonesome I happened to hear a radio playing a piano concert in the most exquisite manner. I felt that here was piano music like I loved, as well as entertainment for my wife while alone during the daytime."

E. C. M., Sheridan Road, Chicago.



"My mother keeps house for me and takes care of my two children. She is alone most of the day. I happened to hear a very funny dialogue over the air and it struck me that cheerful conversation when alone in the house would be company for her. And when the babies go home from school they would enjoy the children's programs. No, I never thought of radio as radio. I was mainly interested in its lifelike tone."

R. F. W., North Winchester Ave., Chicago.



"Newly married women take a lot of interest in fixing up their homes. I know I do. My husband is away all day, often out of town, and my time and attention were taken up in prettying up the house. When I found that a radio brought a lot of good ideas over the air I wanted one. We have not regretted it."

Mrs. F. E. B., Demopolis, Ala.



"I was calling on a neighbor for my daughter. Opening the door gently I discovered her dancing all by herself to radio music. It struck me all in a moment that if a radio had that much entertainment value we should have one."

Mrs. E. V. L., Rokeby St., Chicago.

What's the real reason—behind that barrage of words—that actually induces the prospect to say, "Yes"? Eight customers give us the frank "low down" on this important subject Note how far from the stock talking points are most of these confessions—and revamp your sales talk accordingly

Stronger BROADCAST Signals

will Stimulate Radio

DESPITE the fact that radio reception conditions in most of the populous centers of the United States are now quite satisfactory there still remain vast rural areas where the signal strength of any regular satisfactory program that can be received is so weak all day and during most night periods, especially throughout the summer months, as to make real enjoyment of radio impossible. In these areas sets which are sensitive enough to bring in the distant popular programs invariably amplify also an annoying amount of static interference.

Under such conditions of poor reception, radio becomes not a dependable entertainment service demanded in every home, but remains merely a "novelty," of interest to a small percentage of experimenters. As a result, sales of radio sets suffer, and only a fraction of the volume of merchandise is absorbed, which would be taken if satisfactory broadcasting were available.

The solution of this situation is of course the increasing of the powers of stations operating on clear channels, to the very maximum wattage which such stations are willing to install. At the present moment 28 stations have applied to the Federal Radio Commission for permission to increase their powers to 50 kw. each, but action has been held up owing to differences of Washington opinion concerning high power.

To date, volume business in radio receivers has naturally gravitated to the cities and towns where reception conditions are best. But the time has now arrived when we must broaden our market by seeing to it that the same quality of programs and the same satisfactory reception are made available throughout the entire United States. High-power stations on clear channels will do it. By securing such improved broadcasting, we shall stimulate radio business in a now dormant market of not less than 10,000,000 homes.

Millions Live Far From Broadcast Stations

Forty per cent of the people of the United States live 75 miles or more from any broadcasting station putting out regular satisfactory programs. This great fraction of our population obviously cannot be served by the little 100-watt, 500-watt or 1,000-watt stations in the urban centers, which may be doing a fine job reaching congested areas within a few miles. Even the signals from a 5-kw. station become unsatisfactory and undependable for daytime and summer reception, at distances beyond 30 to 50 miles. The only recourse is the highest possible power on the clear channels—the installation of 50-kw. units at every available site throughout the United States.

The present lack of adequate broadcasting signal-strength over large rural territories, including hundreds of small towns and villages, is very evident to those who have traveled about surveying local reception conditions away from urban centers.

In Northern New York State, for example, reception

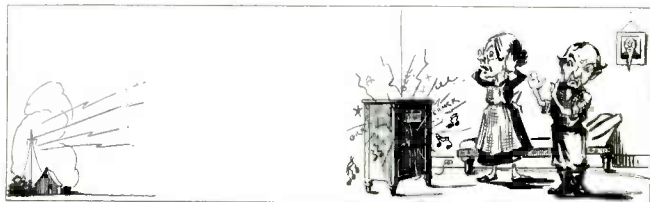
is so poor in the Adirondack country, that nothing can be heard all day long, even with 500-ft. aerials. Only after nightfall during winter time, when undependable waves of distant stations come drifting in, is any radio reception obtainable. Most of Maine is poorly served.

The Southern States have notably poor radio reception. Conditions in North and South Carolina are so bad, compared with modern standards of broadcast reception in cities, that retail sales of receiving sets have lagged, making the ratio of sets to population one of the lowest in the country. Mississippi is without good broadcast reception, and must depend upon clear-channel stations 200 to 300 miles distant.

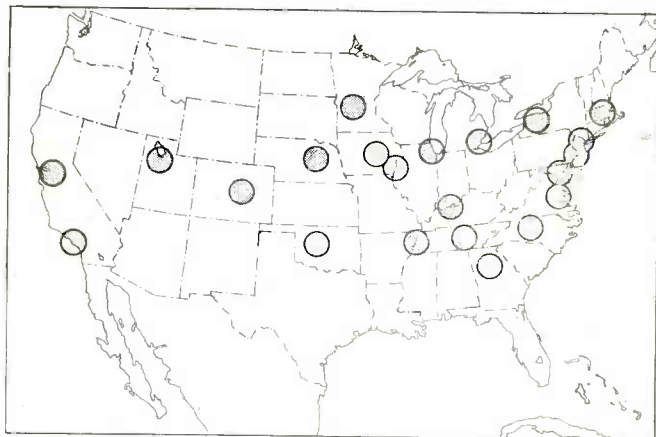
In fact, one can list state after state in which—outside of the cities and surrounding territories—broadcast reception is so weak and "shot through" with so much static and interference that *radio cannot be classed as entertainment*, and so radio sales languish.

Stations Ask 50-kw. Licenses

Applications are now before the Federal Radio Commission from 28 broadcasting stations to increase their power to 50 kilowatts each. The entire radio engineering profession, almost without exception, has approved such



NOW



Present "fair-quality" service areas of the 28 broadcasting stations (chiefly 5 kw.) which are now asking the Radio Commission for 50 kw. licenses

By
O. H. Caldwell
Former Federal Radio Commissioner

Sales

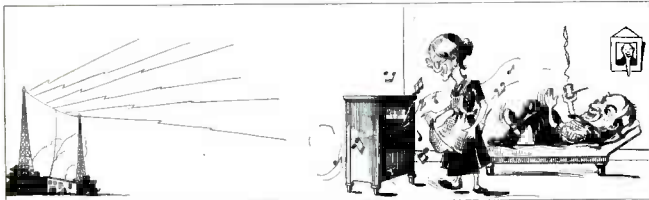
increased power, as an important improvement to listeners service in rural communities.

Following the extensive series of hearings at Washington in October, the Commission's chief examiner who heard all the testimony, Ellis A. Yost, has recommended to the Commission that all stations on cleared channels be immediately granted 50 kw. licenses, declaring it to be the "greatest single contribution the Federal Radio Commission can make to the listening public throughout the nation."

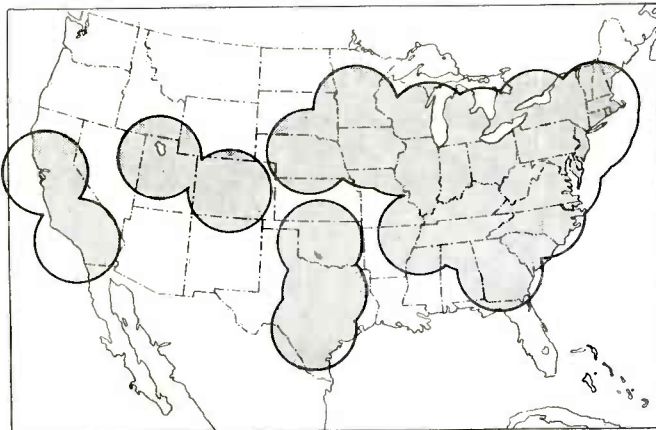
"It is a waste of potential broadcasting resources to limit cleared channel stations to less than 50,000 watts," Mr. Yost said. By modifying its existing order, the commission "would make available additional and improved radio broadcasting reception to many millions of rural and metropolitan listeners throughout America," he said.

"The people of the United States are entitled to receive the greatly improved and additional radio broadcasting reception which would inevitably result from granting all cleared channel station applicants authority to use 50,000 watts."

After considering Examiner Yost's report, the Radio Commission, on Dec. 18, by a vote of four to one returned



IF GRANTED



"Fair-quality" service areas of the 50-kw. broadcast stations of U. S. as they will appear if applications now before the Commission are granted

HIGHER POWER for Broadcasting Stations

would—

1. *Quicken a vast rural market of 5,200,000 homes.*
 - (a) 1,500,000 farms with obsolete receivers
 - (b) 3,700,000 farms without radio equipment
2. *Increase annual set sales at least \$100,000,000.*
3. *Improve summer reception everywhere, ironing out summer slump.*
4. *Add to manufacturers' volume and alleviate unemployment.*
5. *Assure satisfactory reception for automobile radios.*

it to him for revision, pointing out that his recommendation of 50-kw. stations on all 40 clear channels contravened the commission's order No. 42, which limited 50-kw. stations to one-half the clear channels. Examiner Yost was instructed to be guided by this limitation and to recommend, on the basis of the testimony at the hearings, which of the stations applying should be authorized to increase their powers, to fill the remaining eight channels permitted to go to high power, and not yet so occupied. Mr. Yost's revised report is not expected until late in January.

Opposition From Opponents of High Power

Some opposition is expected to develop, on the part of the small stations, and on the part of certain political leaders in Congress who have always opposed high power.

Voicing the attitude of some of the small stations, Oswald F. Schuette, executive secretary of the Radio Protective Association, points out that 14 of the 20 stations specifically favored by the examiner's report, are associated with the National Broadcasting Company's chains, although owned and operated by independent interests.

Mr. Schuette makes the constructive suggestions that all high-power stations should be grouped together on adjoining channels, and that the same chain program should not be duplicated by two 50-kw. stations within the same zone.

Both proposals have long been considered by the Commission, and when interfering situations of Canadian relations and chain synchronizing are cleared away, regulations along these lines will undoubtedly be enforced.

If radio reception is unsatisfactory in your territory, you owe it to yourself and to your community to call the facts of this situation, as presented by this article, to the attention of your senator and representatives in Washington.

Talking TUBES

HOW

Four Western Dealers Are Educating The Uninformed

IT'S effort wasted, this trying to sell replacement tubes without first "breaking in" the prospect on the need for such new equipment, according to the experience of four dealers from out of the West.

"You first must pave the way by a little preliminary educational work—why new tubes are so worth while and what the tests mean,"—these successful tube merchants explain.

Here's how they do it:

Twelvefold Increase the First Month

WHEN the Standard Furniture Company, of Seattle, began checking its service calls it found that two out of every three were occasioned by defective tubes. In the thought that the expense of servicing might be markedly reduced, C. T. Hanes, manager of the radio department, sent out his first tube letter to 5,000 customers.

This letter offered to test radio tubes free of charge. It pointed out that a tube often gives trouble long before it burns out and the fact that it still burns is by no means a guaranty that it is giving good service. Statistics on the number of service calls due to defective tubes were frankly given. For the sake of good performance and to avoid the expense of a service call the customer was urged to bring in his tubes for testing.

A small card was enclosed with the letter showing the types of most of the different radio tubes now being manufactured and what they should test in good, fair or poor condition. The customer, armed with this information in advance, would then be able to judge, from the testing which was done in his presence, just how many of his tubes were in need of replacement.

At the same time an advertisement featuring the testing machine was run in local newspapers. This panel was designed in the store. It proved highly satisfactory in the simplicity of its operation and in the number of types of tubes which it could test. The very unusual appearance of this machine attracted further attention to this advertisement.

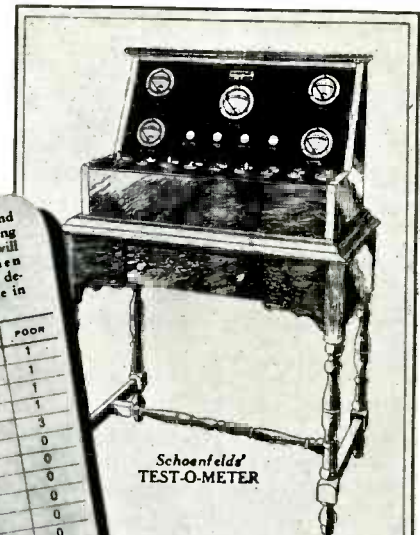
Customers began to come in with tubes in paper bags, in breakfast food cartons, in hand satchels. The machine was installed near the street entrance and the customer stood by to watch his tubes being tested. From his card he could judge results for himself and see that a quite large proportion of his tubes were in a condition to give less than good results. Sometimes he was willing to replace all that were questionable; almost always he

By referring to below chart and comparing same with the reading on the tube testing label that will be placed on your tubes when tested at Schoenfelds, you can determine whether your tubes are in good, fair or poor condition.

TYPE OF TUBE	GOOD	FAIR	POOR
201	4 to 8	2 to 3	1
225	4 to 6	2 to 3	1
227	4 to 6	2 to 3	1
224	4 to 6	2 to 3	1
112	8 to 12	5	3
250	2 to 5	1	0
210	2 to 5	1	0
199	2 to 5	1	0
120	2 to 5	1	0
240	2 to 5	1	0
222	2 to 5	1	0
12	2 to 5	1	0
171	12 to 18	8 to 11	5
245	12 to 18	8 to 11	5
260	5 to 8	3	2
281	2 to 5	1	0

JOHNS
COPYRIGHT 1930 S. P. CO.

The above card is mailed to all replacement tube prospects in order that they may post themselves as to the meaning of instrument readings when they see their tubes tested at the store



Long Since You Had Your Radio Tested? :::::

Long efficient life of a Radio Tube is months to one year, and after this period rapidly loses its efficiency—the tone becomes impaired and distant stations become weaker—the change is generally so gradual that the average radio listener is not aware of the fact that his radio reception has become quite inferior.

It is seldom that the circuit that produces the light burns out; therefore, unless you have your tubes tested frequently you can't determine whether they are operating at their fullest capacity.

It is for this reason that every four months you should have your tubes tested—to do this, remove them from your set, carefully wrap in paper, and bring them to our store. There will be no charge for the service and your tubes will be tested for plate, filament, emission and output. This will be done while you wait.

Many of our patrons have their tubes tested three or four times a year, a free service we will gladly extend to you and one that will enable you to eliminate inefficient tubes and get more real enjoyment and better reception with your radio.

Schoenfelds
STANDARD FURNITURE CO.
47 Years Furnishing Better Homes
Second Avenue at Pine St. 4315 University Way

bought new tubes to take the place of those which his little card told him were poor.

Every call meant one less service call and every call meant a sale of tubes. From a tube business which had remained in the neighborhood of from \$30 to \$40 a month, it increased to \$500 the first month with further possibilities, according to Mr. Hanes.

The original letter and advertisement will be followed up at intervals of about four months with other reminders. The same story is to be repeated; bringing in new customers and many of the old ones who have learned from their first experience how important it is to keep tubes up to their best.

Many customers already have established the habit of bringing in their tubes regularly for testing, an ideal

to the Tenderfoot

— PERHAPS YOUR
RADIO TUBES HAVE!
MILLIAMPERITIS!

The insidious thing about milliamperitis is that not only your best friend, but everybody else knows about it—when this dread plague attacks your radio tubes.

You see, it's this way: When a radio tube is attacked by milliamperitis it knows it! It whines and growls and yelps and moans and hisses.

And what happens to radio reception when a tube is attacked by milliamperitis is nobody's business.

But which one of your tubes is the destroyer of your radio entertainment? That's another insidious thing about milliamperitis: you never know which of your tubes has it—but it's not hard to find out. At "Granville at Dunsmuir" and at "Carroll at Hastings" we hold free clinics. Bring in your tubes for free testing. We'll locate the moaner for you, at no charge.

* Milliamperitis. An ailment not unknown to radio tubes. That it is born in one about a year. It shortens the life of milliamperitis—resulting in strange squawking.

TAKE YOUR RADIO TUBES TO B.C. ELECTRIC STORES FOR FREE TESTING

B.C. Electric STORES

Something new in tube advertising. The British Columbia Electric Company burlesques in a mild manner tube trouble problems

situation both from the standpoint of cutting down service calls and also of boosting the tube business.

Tubes by the Set

ONE day when A. T. Erickson, manager of the radio department of the Ira F. Powers Company, Portland, Ore., was having his car overhauled, the garage man called his attention to the fact that an entire new set of spark plugs would benefit his car—and sold him the set. Mr. Erickson was thus reminded that radio tube replacements usually go by one's or two's whereas frequently an entire new set would markedly improve the operation of the receiver. Erickson, therefore, checked the records of the service department and found that most second service calls were due to the fact that another tube had failed shortly after the first call. As a matter of fact this tube was probably giving something less than satisfactory service at the time of the original visit. Second service calls are sources of dissatisfaction among customers and are expensive to the store—causing loss of goodwill and increasing collection difficulties.

"Sell them an entire set of tubes" then became the policy of the Powers Furniture Company. This did not mean that the customer was denied the use of his tubes through their full lifetime, or that the service department enriched itself by carrying off tubes which were in perfectly good condition. It merely meant that the customer was sold the idea that to ensure really good service from the set it was desirable to have all fresh tubes at one time. Otherwise the partial operation of a tube almost in need of discarding, would impair the satisfaction which should have been derived from replacing one or two tubes. The customer was not asked to discard the old tubes but to have these tested. Those in fair or almost good condition were to be kept by him (carefully labeled to show their condition), later to serve as spares in case of an emergency. He was thus assured

of perfectly satisfactory operation of his set at the time and also had a guaranty of continuous service, even though his tube might later give way on a Sunday or at some other time when store service was not available.

This program was not announced in its entirety to the public, but the need for the testing of tubes was advertised by means of a series of postcards sent out at intervals of a week to every radio customer of the store. Then when customers came in they were sold, not one tube or two, but an entire set. This new policy has more than doubled the tube business of the Ira F. Powers Company.

The Postman an Ally

WHEN British Columbia radio tubes began to develop "Milliamperitis," British Columbia radio set owners began to bring in their ailing tubes to have them tested and the British Columbia Electric Company's tube business increased by leaps and bounds. This new and mysterious disease, which attacks radio tubes any time from their twelfth month on, was an invention of the advertising department of that enterprising firm and was called to the attention of radio set owners by a direct by mail campaign which brought excellent results.

The customers of the company were already used to the informal semi-humorous type of advertising which had been used to popularize radio programs and this new drive was carried out in the same vein. "Scare copy" was mildly burlesqued. The new ailment with the strange name was introduced, much as was halitosis some years back, with asterisks and footnotes explaining the term and with copy faintly familiar in wording. Tubes suffering from "milliamperitis," the public was told, complained of a "tired feeling" in a manner all too audible to the owner of the set. "The insidious thing about milliamperitis," began one advertisement, "is that not only your best friend, but everybody else knows about it."

The message, sent out on cards with a humorous sketch at the head of each one, concluded with an invitation to the customer to bring his tubes in for free testing. Results were immediate. In the first week after the new

(Please turn to page 56)

TUBES OFTEN MAKE OR MAR RADIO RECEPTION

Ira F. Powers Furniture Co.
Third & Yamhill

Bring Your Tubes In For Free Testing

Cunningham RADIO TUBES
FOR BEST RESULTS

Powers drove home the need for testing tubes by a series of post cards mailed to customers at weekly intervals

Another Radio



George R. Worley
WGR



Helen Alpert-Levin
WFBR



Joseph Henry Jackson
KGO

Service

BOOK

By
Thelma Purinton



to conjure with in New York literary and theatrical circles.

KDKA Pittsburgh

Fridays 2:30 p.m.

KDKA's Bookworm Period was started at the time of Lindbergh's famous flight to Paris. A copy of the book "We" came into the hands of the program manager who thought radio listeners would be interested to know of this and other books as they were published.

This program is intended to be an informative service and all types of books, including those for children, are covered. Each is carefully examined and mention of it is practically equivalent to the station's stamp of approval. The National Association of Book Publishers recognizes it as one of the outstanding presentations of its kind.

WGR Buffalo

Thursday 7:30 p.m.

George Worley is partner in an advertising business which probably accounts for the punch in his discussions on books over WGR. Mr. Worley has a great following and his views and opinions have a definite influence on the reading habits of his devotees.

This program represents the evolution of an idea. About two years ago, these book chats were added to the regular schedule of WKEN and four associated stations. They proved so popular they were transferred to the higher powered station, WMAK. Today they are an evening feature on that well known station on the Niagara frontier, WGR.

KGO San Francisco

Sundays 9:45 p.m.

Listed to speak at a luncheon which was to be broadcast, Joseph Henry Jackson, who suffered from space limitations in his literary column in a western news-

SHOP girl or intelligentsia; humble or affluent . . . everybody reads the better books today. It is quite the thing to do. Regardless of our position in life we must have a certain stock of literary lore; we must be able to offer an opinion on the latest biography as well as the latest novel.

But what to read to be conversant with recent literature?

Radio again comes to the rescue. On daily and weekly schedules, over no less than 74 stations, book critics of recognized standing broadcast their reviews to rapidly growing audiences.

Here, then, is a new selling tool and a more important one, by far, than 99 out of 100 dealers realize. Quickly, pleasurably and authoritatively your customers and your prospects may now absorb their literary education "via the air."

So post yourself on these book review hours and on the interesting background of the book critics within reception distance of your territory.

WABC New York City

(and coast-to-coast hook-up)

Tuesdays 7:45 E.S.T.

Under the guise of the "Early Bookworm," Alexander Woollcott speaks his mind on the subject of books. He has probably attracted the most devoted and jealously critical audience that tunes in on WABC. Woollcott first talked over a network of four stations but when news got abroad that he was out to give his unvarnished opinion on the season's books, there went up a great cry for a larger circuit. Now the Early Bookworm is heard over a hook-up of 32 major stations. Woollcott is a newspaper man, dramatic critic and playwright and his is a name



Monroe Upton
KFRC



Henry F. Parks
WCFL



Alexander Woollcott
WABC



Frances R. Doak
WPTF



William S. Crandall
WSMK

REVIEWS

paper, felt there should be room enough on the air and that he'd try the idea out. It went over and as a result, he presented the Readers' Guide on a three week's test basis. That was in 1924 and the Readers' Guide has been on the air ever since.

In the belief that his audience likes to hear the voices of their favorite authors and that these same favorite authors like to talk to their "public," Mr. Jackson has brought more than 100 of them to the mike.

WCFL Chicago

Daily 2:30 p.m.

With the idea of acquainting his listeners with the best in contemporary literature, Henry Francis Parks discusses history, biography, fiction, drama and narrative poetry each day at 2:30.

Mr. Parks has been music critic on the Chicago *Daily News* and several national publications. He says of himself, "I am 35 years young, agnostic and have a careless regard for anything that most everyone else likes. I am a worshipper at the shrine of Bacchus, Demosthenes and Socrates—an aesthete in all the word implies."

WFLA Clearwater

Wednesdays 3:00 p.m.

"Star Dust from Book Land" is the novel and descriptive name given to WFLA's literary program. In 1929, it was decided to give this particular branch special attention, so Pen Pennington did the pioneering work and she prides herself on not having missed one session since she started. Pen Pennington presents a most informal sort of review, quoting from professional reviews and giving glimpses into the lives of the authors. She has her own style of salutation and these programs have been original in arrangement. She admits, "I sometimes whistle, sometimes sing and have even meowed when the story demanded it."

KFRC San Francisco

Wednesdays 3:15 p.m.

Saturdays 9:30 a.m.

Books of all types, from the humorous to the biographical are discussed by Monroe Upton, who has been giving the pros and cons on what to read for three years over KFRC. This program has grown into one of KFRC's features and many stations on the coast take this weekly talk.

To meet the demand for a morning program, another book review hour was added about three months ago by Polly Linden on Saturday mornings at 9:30. At this time, Miss Linden talks about books on the Feminine Fancies Hour, a coast chain feature.

WFBR Baltimore

Thursdays 3:00 p.m.

A former newspaper woman, editor and publicity director, Helen Alpert-Levin, who talks over the "radio voice of the city of Baltimore" each Thursday at 3, says "My audience consists chiefly of the mildly literate; people who 'love to read.'" Mrs. Alpert-Levin has a reputation of being entirely honest in her opinions and convictions and tells her listeners frankly what she thinks of the books she reviews.

Whether her age, she is only 22, her personality which "gets over the air" or her candid and straightforward opinions are the reasons for the popularity of these programs, we decline to divulge.

WSMK Dayton

Saturdays 5:45 p.m.

Two years ago last October, William S. Crandall gave his first book chat with the sole object to interest and appeal to every class of reader rather than to attempt a formal review. Judging from the response to his causeries, he certainly has succeeded in popularizing these talks. Three months ago he asked to be relieved but yielded to

Book Reviews of the Air

(Hours are given in local standard time)

Alabama	WAPI, Birmingham	Sat., 7 p.m.
Calif.	KFI, Los Angeles	Mon. 3 p.m.
	KGO, Oakland	Sun. 9:45 p.m.
	KFRC, San Fran.	Wed. 3:15 p.m.
	Sat. 9:30 p.m. (KHJ, KMLJ, KFPY, KVI, KOIN)	
	KLX, Oakland	Wed. 9 p.m.
Florida	WFLA, Clearwater	Wed. 3 p.m.
Illinois	WCFL, Chicago	Daily 2:30 p.m.
	WMAQ, Chicago	Mon. 7:15 p.m.
Indiana	WGBF, Evansville	Wed. 5:15 p.m.
Iowa	WOL, Ames	Tues. & Thurs. 7:50 a.m.
		W'kd's 9 a.m.
		Wed. 10 a.m.
		Man. 7:45 a.m.
	KSO, Clarinda	
	WHO & WOC, Des Moines	Thurs. 10:15 p.m.
	WHAS, L'sv'le	Thurs. 10:45 a.m.
Kentucky		
Maryland	WFBR, Balt.	Thurs. 3 p.m.
	WBAL, Balt.	Fri. 3:15 p.m.
Mass.	WLEX, Boston	Mon. evening
	WNAC, Boston	Fri. 7:45 p.m.
Michigan	WENT, Detroit	Fri. 2:15 p.m.
	WJR, Detroit	W'kd's 2:45 p.m.
Missouri	WLV, St. Louis	Fri. 5 p.m.
	KMOX, St. Louis	Twice a week
New Jersey	WOR, Newark	Fri. 4 p.m.
New York	WLTH, Brooklyn	Tues. 1:05 p.m.
	WMAK, Buffalo	Mon. 6:30 p.m.
	WGR, Buffalo	Thurs. 7:30 p.m.
	WABC, N. Y.	Tues. 7:45 p.m. e.s.t.
	(WNAC, WJAS, WLWB, WCAO, WTAR, WBDJ, WKRC, WNBC, WGST, WXYZ, WSPD, WDOD, WREC, WLAC, WGL, WMAQ, WCCO, KNOJ, KLRA, WDAT, KOIL, KFJE, KLI, KDYL, KFRC, WORC, WGR)	
	WBNY & 2NBR, N. Y.	Three times a week
	WGBS, New York	Mon. 7 p.m.
	WEAF, New York	Fri. 7 p.m.
	WLWL, N. Y.	First Fri. in month
	WRNY, N. Y.	Mon. 6:30 p.m.
N. Carolina	WPTF, Raleigh	Daily 11 a.m.
Ohio	WAIU, Columbus	Wed. 10:45 a.m.
	WSMK, Dayton	Sat. 5:45 p.m.
Oregon	KGW, Portland	Sun. 8:45 p.m.
Penn.	WLIT, Phila.	Sat. 12:05 p.m.
	KDKA, Pittsburgh	Fri. 2:30 p.m.
	WJAS, Pittsburgh	Sun. 6:30 p.m.
Tenn.	WNBR, Memphis	W'kd's 9:30 a.m.
Virginia	WRVA, Richmond	Tues. 7:15 p.m.
Wisconsin	WHBY, Green Bay	Thurs. 1 p.m.

We acknowledge the co-operation of the Nat'l Ass'n of Book Publishers in compiling this list.

the importunate request of Stanley Krohn, Jr., owner of WSMK, to continue.

Mr. Crandall is a publisher and conducts a book shop in Dayton, specializing in Americana. Most of his life has been devoted to public speaking, editing and publishing and he brings to his talks the fruits of this wide experience.

WJR Detroit

Daily 2:45 p.m.

A rather different type of literary hour, and probably the only one of its kind, is that put on by WJR every afternoon at



How One Bookshop Co-operates With Radio Book Talks

a quarter to three when the best sellers are read in serial form by John B. Eccles, program director. Between the end of one book and the beginning of the next, he comments on current literature to keep his audience abreast with the times. When starting a new number, the listeners decide the one to be read.

WPTF Raleigh, N. C.

Daily 11 a.m.

Possessor of one of the most pleasing women's voices on the air, Mrs. Frances Renfrow Doak has a decided advantage over many of the women broadcasting today but that alone is not responsible for the many "regulars" who listen to the "Social Column" every morning at 11. Mrs. Doak devotes ten or fifteen minutes to reviewing books selected from her own reading. Before joining this station's staff

more than two years ago, she had a wide experience as a reader and interpreter of literature.

WOI Ames, Iowa

Tuesdays and Thursdays 7:50 a.m.
Daily 9:00 a.m.
Wednesdays 10:00 a.m.

"A review to suit everyone's taste" should be the motto of WOI as three distinct programs are broadcast, each from a different angle.

Those who tune in at 7:50 Tuesday and Thursday mornings learn about the books listed in the Radio Book Club catalogue. Books reviewed may be borrowed by members.

Extracts from recreational reading are given daily at 9 a.m. for those who enjoy

hearing selections from recent releases. Informal talks on new books and their authors are given on Wednesdays at 10 a.m.

WRVA University, Va.

Tuesdays 7:15 p.m.

Free use of books to its radio listeners,—that is the generous and co-operative offer of the Peter Quince Book Review Hour. The only cost is for postage. Lambert Davis, managing director of the Virginia Quarterly Review, brings to this period the benefit of his sound judgment and broad knowledge of current writings.

As another form of direct service, WRVA offers to furnish information about books, authors, publishers and prices and to compile reading lists in various fields.

WEW St. Louis

Fridays 5:00 p.m.

A most unique hour is broadcast by WEW in that only Catholic works are reviewed. The Rev. Henry H. Regnet, S. J., who is librarian of the St. Louis University and formerly an instructor in the Ancient Classics and English at St. Ignatius College, Chicago, delivers these talks. The last five minutes are devoted to a resumé of *America*, a Catholic Review.

WHAS Louisville, Ky.

Thursdays 10:45 a.m.

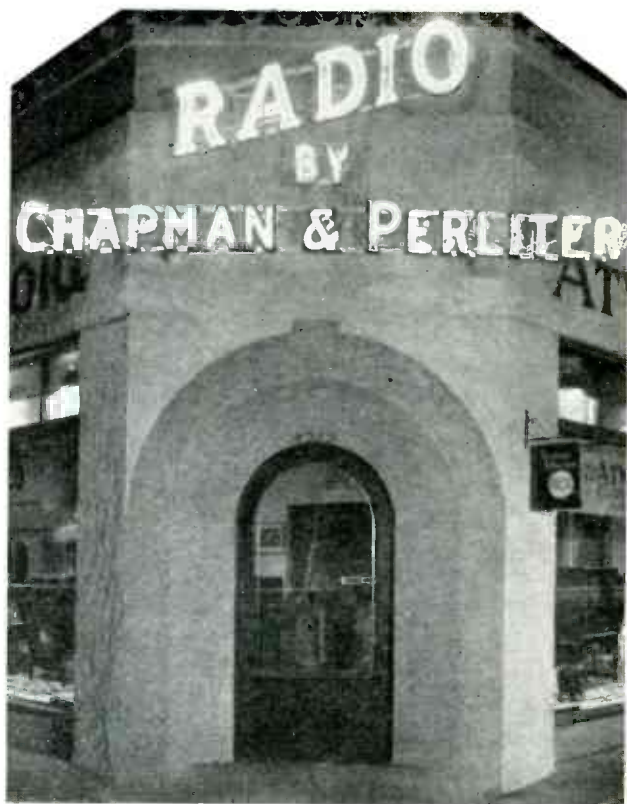
Sponsored by the Louisville Free Library, with five members of the staff giving the morning talks on succeeding Thursdays, WHAS puts on a particularly authoritative period. Edna Grauman is in charge and her work as head of the Reference Department of the Library places her in an unusually good position to direct these programs.

P *Attracting the*
PASSERBY

ALTHOUGH the radio store of Chapman & Perliter, Los Angeles, was well located and of pleasing appearance, transient trade was not the factor it should have been. Thousands of people passed the store daily but few paused or came inside.

This concern solved this problem by rebuilding the entire front and the entrance of its establishment on much larger proportions. Although the interior of the store remained the same the exterior was elevated (from tip of show window to tiled roof) approximately six feet, the approach to the door was dignified by adopting the same basic idea and a very large radio sign was purchased. The special stucco finish and tiled roof completed this idea of *dominance*.

It was found that the extra impressiveness attracted a generous share of the automobile trade as well as of pedestrians. Last year Chapman & Perliter grossed \$175,000, a substantial proportion of this business being credited to the new appearance of the exterior of this store.



Our Readers' Page

Mr. Gilbert asks—

Editor, *Radio Retailing*:

WE ARE just another radio retailer. In almost every trade magazine we pick up we run across articles labeled, "A Challenge to the Dealer," "Know Your Radio Programs," "Sell Programs," etc. ad infinitum. Correct. If you will be so good as to let us know just what programs are going to be on the air, *definitely*, we will be glad to try and sell them.

Mr. Broadcasting Company, you sell "Synchronized Shoes" time on the air. Is your job complete until you have done all in your power to inform every radio owner that "Harold Fauntleroy and his famous 'Shoes'" will be on the air over his favorite station say at 7:30 p.m., Saturday night? Or must he listen to the announcer say these artists will be heard at the same hour every Saturday night and then tune in the following Saturday night to be greeted with the announcement that "Professor Bloop will now tell us why chickens need not cross the road?"

It does seem to us the broadcasting systems could at least give us a week's program in advance. What we need is a poster for our windows giving the programs for the day. It takes "brains" to manufacture radios, "brains" to sell and furnish broadcast programs and it seems to us that "brains" should be able to organize a system of advertising programs so that every owner might get the most from his radio, which after all is what he pays for.

FRANK A. GILBERT,
Gilbert & Comley, Fowler, Ind.

COLUMBIA Replies—

Because of the prohibitive sum that would be involved in supplying radio dealers with our detailed programs, covering seventeen and a half hours of broadcasting daily, we have found it expedient to service only the newspapers of the country.

The outstanding programs, the ones the dealer is interested in knowing about in advance, are, in the majority of cases, scheduled the last minute and there is no opportunity to get out publicity on them. A recent example of this was the eleventh hour change made to present Professor Einstein's talk in order to give radio listeners a more timely program.

JESSE BUTCHER, *Dir. Public Relations.*

NBC Answers—

Since information on our musical programs is usually available barely in time to catch the newspapers, it would be practically impossible to attempt to supply radio dealers. Newspapers have set up a mechanism which makes it possible, in most cases, to kill inaccurate information before it is transmitted to the public. In the case of the radio dealer, no such mechanism exists. The item of expense also enters into the picture.

It would, however, be a first rate idea if sponsors could work directly with radio dealers. This would be to the mutual advantage of each and seems to be the best way of handling the problem.

WALTER STONE, *Acting Mgr. Press Relations.*

Price Sets Complete with Tubes, says Mr. Blackman

Editor, *Radio Retailing*:

DURING the last two years I have been carefully studying the radio tube situation, particularly the advisability of equipping sets with tubes and pricing them "complete." The trend has been steadily in that direction as evidenced by the claim that over 50 per cent of the tubes supplied last year went to radio set makers in tube kits to be supplied with initial sales of receivers.

The automobile industry at the present time is a typical example of the practice through evolution of equipping a car as completely as possible, having in mind the functioning of every part in harmony with the others. Consequently automobiles are sold fully equipped almost universally.

List prices have practically disappeared on radio tubes as far as their meaning anything in relation to the price at retail. The tube situation cannot be stabilized, in my opinion, until radio sets are commonly priced in one way only, namely, complete with tubes. To price radio sets both "less tubes" and "with tubes" immediately ad-

vertises the list price charged for the tubes furnished and creates an immediate sales resistance through comparison of the same tube equipment at cut prices. On the other hand, if radio sets are priced complete, no one has any knowledge as to what portion of the price represents the tube equipment; no more than is the case with tires and spark plugs in an automobile. Furthermore, tube manufacturers are competing keenly with special prices and discounts for tubes as an initial part of the radio sale and, therefore, the tubes furnished with the set cannot, in most cases, be bought as cheaply as separately.

In conclusion, I would say the first point in favor of initial tube equipment is the insurance to the radio owner that he has the proper tubes to secure first rate reception. To the manufacturer, the wholesaler and the dealer it means a profit on that part of his radio set which heretofore has been, and still is, a football for price competition and bait advertising.

J. NEWCOMB BLACKMAN,
*Pres. National Federation of Radio Associations;
Chairman, Tube Committee, R.W.A.*

New IDEAS.....for

One of These May



"TELEVISION—come in and see it!" reads a sign in the window of the Solar Radio Company, Chicago. This dealer has invested \$200 in a single television-receiver kit and gets his money back many times over in publicity. He makes it clear that "tomorrow's television" will probably supplement rather than replace present-day radios and so counteracts any tendency on the part of the public to postpone set buying.

HEY KIDS!

WITH a fundamentally sound, basic merchandising idea in mind ("Sell the Youth") five Springfield, Mo., Brunswick dealers, with the co-operation of the Fox-Gillioz Theater and the Patton Creamery, invited the children of Springfield to a party held at the Fox-Gillioz to see the Warner Bros. picture, "Maybe It's Love," starring Joe E. Brown and the All-American Football Team of 1929. In a full-page advertisement in the Springfield Leader the dealers invited the town's youngsters to visit any one of their stores for tickets. It was stressed in the advertising that there was nothing to buy, nothing to sell and no obligations.

That the youngsters did exactly what they were invited to do is indicated by a news story run by the newspaper on the Monday following the party, which headlined the fact that 4,000 kids had called at dealers' stores, making it the "largest children's theater party ever held in the city." Not only was the feature picture an ideal one from the juvenile point of view, but the theater management gathered together a splendid series of shorts with juvenile appeal and the Patton organization presented each child with an Eskimo Pie.

The dealers co-operating were the Springfield Gas and Electric Co., J. L. Long & Sons, The Wheeler Furniture Co., Hoover Music Company and the Long-King Furniture Co. It is interesting to note that the greatest number of Brunswicks ever sold in Springfield were moved within one week after the party, although it was not run with direct sales in mind.

"1206"

A NEW ENGLAND dealer, specializing in service, wanted to impress his telephone number upon the minds of local set owners. So he equipped all his clerks with arm-bands bearing the number "1206"—nothing else, painted it on the front of his counter in large, white figures, and chalked it all over the sidewalk before the door.

Customers and passersby could not help but notice the numbers and it was amusing to watch the effect upon them. Upon first perceiving "1206" they would gaze at the store, obviously puzzled and looking for some connection. Eventually they gave up and many came in to ask what it was all about. When they did a clerk promptly parroted: "Our telephone number, sir. Call us any time your set needs servicing," and the customer would leave the store with the number indelibly engraved upon his memory.

The dealer reports a decided upward trend in the amount of telephone business transacted since the stunt was inaugurated. Before the campaign an average of seven calls per day came in and after it the average increased to 18. Of course this dropped somewhat after the campaign was dropped but the daily average is still 10 calls per day, 3 better than originally.

BOOM, BOOM

F. J. REYNOLDS, Tampa, Fla., Zenith distributor, has bought him a GMC truck equipped with a complete public address system to demonstrate his sets to crowds. Two large dynamic speakers are mounted in the sides of the car, provision is made for another on top and a horn is provided for directional transmission.

The Reynolds truck tours surrounding towns, making street demonstrations. A typical home receiver output is fed into the p.a. system and amplified while a salesman, who travels with the car, makes periodic announcements and gives short sales talks. A full line of sets is arranged within the truck—really a traveling salesroom. According to Reynolds, the truck will pay its way before it has been long in operation.

TRADE-IN TRICK

F. F. STRICKLIN, sales manager of the O. S. Peterson Company, operating five radio stores in southern California, has worked out a plan by which the outside salesman are restrained from giving trade-in allowances which take all the profit out of a sale. He deducts the amount allowed for the trade-in from the sale in figuring commission and in addition withholds commission to the extent of 30 per cent of the trade-in allowance until the trade-in is resold.

This is how the system works out for the store and for the salesman.

When the second hand set is finally moved the salesman receives 40 per cent of its sale price. This system works out so that in the end the salesman receives his regular 10 per cent on the transaction if he sells the trade-in for exactly what he had allowed for it.

For example: If in selling a \$200 set, the salesman allows \$15 for a trade-in, his commission is figured as \$200 less \$15, or \$185, at 10 per cent, and amounts to \$18.50. Thirty per cent of the trade-in allowance or \$4.50, is withheld, however, so that he receives only \$14 immediately. Later, if he sells the



Roger Coultlee of N. G. Valiquette's, Montreal, Canada, gets around the home demonstration bugaboo in an interesting way. An upper floor of the store is furnished exactly like a home and the prospect listens to the radio he selects from a convenient easy chair.

the.....New YEAR

Pay Your Rent



An interesting merchandising experiment is in progress in the W. D. White & Company drug store, Wilkes-Barre, Pa. A radio, obtained from a nearby dealer, is tuned in upon certain sponsored broadcasts to aid floor traffic. During the Camel hour cigarettes of this brand are grouped on top of the set only to be replaced later by Lucky Strikes when this sponsored program begins. Why not radio as a similar sales aid for other stores?

trade-in for \$15, he receives a 40 per cent commission, amounting to \$6, thus netting him \$20, which would have been his original commission had no trade-in been taken.

If the salesman is clever enough to move his trade-in at a profit he gets some of the "gravy." If, on the other hand, he loses money for the company in handling the trade-in, he bears part of the burden.

REACHING THE NOT-AT-HOME



THIS postcard (return postage guaranteed) is used by outside salesmen of the Potomac Electric Appliance Co., Washington, D. C., to build up worthwhile leads and to reach the not-at-home folks. Each man is given a code number and if he fails to secure permission to send a set on trial or finds no one at home on a call he leaves a card marked with his code number. The result so far, according to G. W. Riley, radio department manager, has been a return of 7 cards out of each hundred with 90 per cent sales from this type of lead. When the cards are returned to the company they are distributed according to their code numbers and the men who originally left them determine the cabinet style desired and most convenient delivery time.

In addition to the Philco card shown, which is printed in black and green, similar cards are used for Atwater Kent and RCA sets. The company has three separate outside crews, one for each of the sets named. They are each assigned territories and when one crew completes its survey an interval of 20 days is permitted

to elapse and then one of the other crews comes in with its different make. The men on each of the crews are specialists but while they talk about one set by preference they are not restrained from selling either of the other two lines.

SWING YOUR PARTNERS

NOW comes the radio dance as a goodwill builder and sales promotion medium. F. J. Hatton, Atwater Kent dealer in Bancroft, Iowa, ran a small ad in his local paper announcing the affair scheduled for the town hall on an early Saturday night, no admission charge. He says about it: "We expected a few but were knocked off our feet by the crowd. By 8:30 the hall was filled.

"We arranged the place in carnival style—paper caps for the men and ladies, lots of balloons and confetti and plenty of serpentine paper decorations. The first dance was so successful that we have been compelled to hold one every so often. If we don't, people begin to ask about it. I have been able to trace many sales to the dances and the indirect publicity received is invaluable."

DOUBLE-CHECK

AMOS AND ANDY'S movie, "Check and Double-Check" came to Spokane, Wash., and the Jones Music Company used it to swell recording-type combination sales. Jones staged a contest to locate the best team of imitators of the famous blackface couple. Tryouts were invited, through newspaper ads, to come to the store and make a record, results to be judged by the records as rendered before the audience at the motion picture show.

By the time the contest was over there was no one in the city who did not know about the new recording combinations and the Jones Music Co., and many came into the store during the tryouts and listened to what was, in effect, a combination demonstration.

BURLESQUE BROADCAST

SI YOUNG, Hutchinson, Kan., hardware dealer, recently put over a publicity stunt that stood the town on its ear. Young installed in his show window a small broadcast transmitter, loaned by KWKH of Shreveport, and broadcast (to the crowd before the door) a regular program of local and imported talent. The station was dubbed SYRA (Si Young Radio Annex) and a placard described it as "operating on a frequency of 350 motorcycles by authority of Federal Prohibition, Norman Broken-wires announcing."

Young advertised the event, featuring the local talent, several days in advance. The crowds gathering before the store and refused to go away until the station "signed off" at 12:15 a.m.

This advertising stunt is producing business at a great rate.

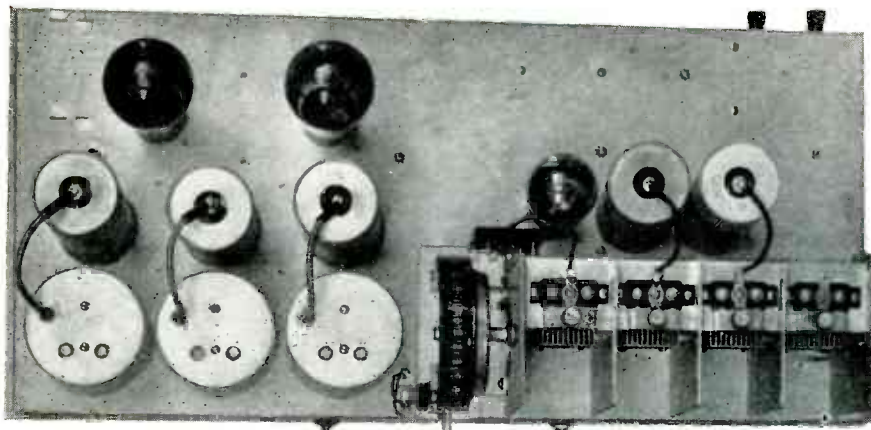
This pocket-size card, printed on both sides, was devised by 30 Long Beach, Cal., dealers to limit shopping for trade-in allowances. All salesmen employed by these dealers carry the cards, which are periodically revised, in an effort to keep profit in sales

TRADE-IN PRICES

	No. Cr.
Home-Made Sets—Stripped	2.00
1-2-3 Dial 5-Tube Sets—Stripped	5.00
1 Dial Set, 6 Tubes (Good) Stripped	4.00
Atwater Kent 30-32-33-35, and Tubes	8.00
Zenith 11-7, and Tubes	8.00
Kolster 6D, and Tubes	8.00
Bosch 7-Tube Table Model, and Tubes	8.00
Crosley Band Box, and Tubes	8.00
Phonograph Upright	3.00
Phonograph Console	6.00
Victor & Brunswick Extra Good Console	9.00
Phonographs	2.00
Tubes	.50
Rectifying Tubes and Units	.50
Speaker's Horn Type	.50
Cone Speakers (Good)	2.00
Dynamic Speaker Mfg. Type	3.00
Dynamic Speaker Table Model	5.00
Storage A Battery	.50
B Eliminator (Good, less tube)	2.50
A B Philco, Complete (Good)	2.00
Trickle Charger	2.00
2 Amp. Bulb Charger (Less Tube)	1.00
Tables	1.00
Console Cabinets (Only)	5.00
Non-Licensed A C Sets, Table Model	5.00
Non-Licensed A C Sets, Console Model	10.00
Licensed A C Sets, Table Model	10.00
Licensed A C Sets, Console Model	10.00
Licensed A C Sets, Dynamic Console	40.00
CROSLEY—Complete With Tubes, Speaker	
First Electric 602, Power Pack separate	12.50
610 Gem Box, 6 Tubes	20.00
Gem Box, 7 Tubes	25.00
Jewell Box, 7 Tubes	25.00
Jewell Box, 8 Tubes	25.00
Jewell Heater, 45 P. P.	30.00
Showbox	30.00
Showbox and Gemchest, same as Table Model 31	25.00
RADIOLA—Battery Type, Stripped	
8	5.00
16	8.00
20	9.00
24	10.00

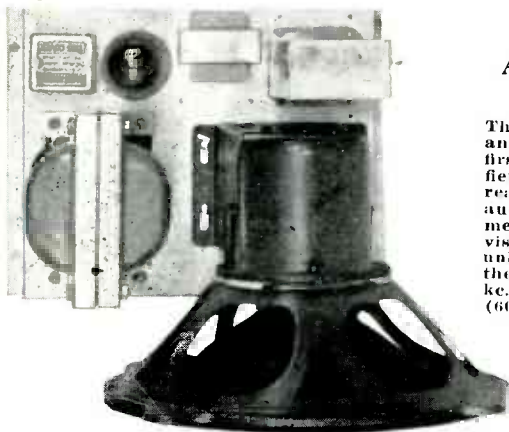
(over)

Servicing Modern



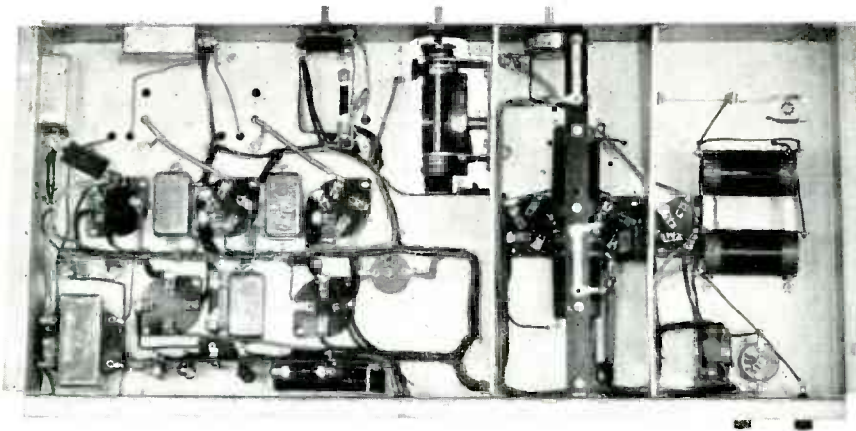
Aligning the t.r.f. stage, oscillator trimmers, i.f. amplifier at 175 or 130 kc.

By McMurdo Silver



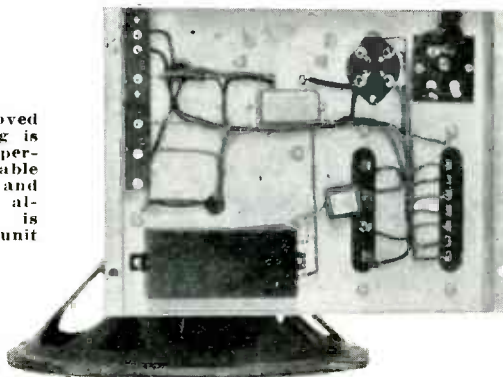
A Typical 1931 Chassis
(Silver-Marshall)

The tubes, from right to left: t.r.f. amplifier, first detector, oscillator, first i.f. amplifier, second i.f. amplifier and second detector. In the rear, two '45s in a final push-pull audio stage. Lock-ratchet trimmers, one for each section, are visible on top of the gang-condenser units, the one nearest the dial being the oscillator high-frequency (1400 kc.) trimmer. The low-frequency (600 kc.) trimmer is on the Micarta strip behind the dial



The Wiring

When the chassis is removed from the cabinet the wiring is immediately exposed, which permits easy servicing. The cable connecting the receiver and power unit is not shown although its terminal strip is visible in the power pack unit



COMPLETE mastery of modern superheterodyne servicing methods is today a matter of vital importance to servicemen, for everyone realizes that, as a result of the release of supplemental licenses by the RCA, many sets of this design are certain to appear this year.

The purpose of this article is to outline general servicing routine for receivers of this type in the hope that once the actual procedure is known those men who look forward apprehensively will be calmed and those who feel over-confident because of past experience with older types of supers will fully appreciate the new problems involved.

Essentially, a modern superheterodyne differs from a t.r.f. receiver in that r.f. amplification takes place at two different radio frequencies for a particular signal, rather than at one frequency. Today's super actually is a combination of a t.r.f. amplifier with a simple superheterodyne. Considering the schematic diagram herewith (Silver-Marshall), tubes S1 and S2 are the r.f. amplifier and first detector, operating at, and tuned by means of the gang-condenser to, the wavelength of the broadcast signal to be received, and resembling an r.f. amplifier stage and detector of a t.r.f. set. Tube S3 is the oscillator, which operates away from the received signal by the intermediate frequency—in most modern supers 175 kc. (Ed. Note: Atwater-Kent uses 130 kc.)

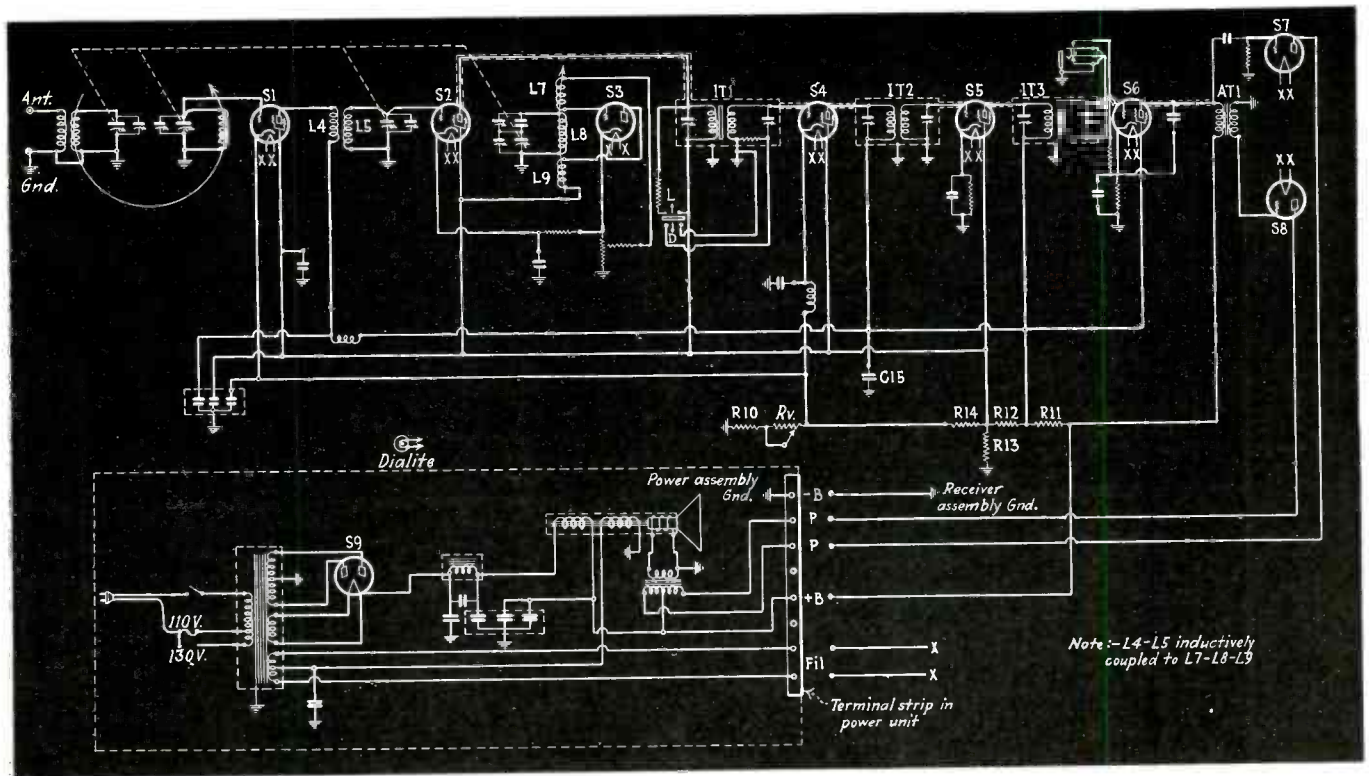
Following the first detector comes the intermediate frequency amplifier and second, or power detector, represented in the diagram as tubes S4, S5, S6 and intermediate transformers IT-1, IT-2 and IT-3. The intermediate, or i.f. amplifier, provides practically all of the r.f. amplification and selectivity of the receiver, and since it operates at only one frequency, it can be designed to provide high amplification and practically absolute 10 kc. selectivity.

The purpose of the r.f. amplifier tube preceding the first detector is not so much amplification but to insure freedom from cross-talk and repeat-spot interference. Other than to state that such circuits are absolutely essential, it is not the purpose of this article to go into technical design details.

Voltage, Circuit Analysis

Unfortunately, many service men have been too prone to reverse the proper procedure in servicing t.r.f. receivers and, at first, they will probably be inclined to do

Superheterodynes



The Circuit

All shielded leads are grounded, usually to one common point, to avoid the possibility of circulating r.f. or i.f. currents which would seriously upset the stability of this high-gain receiver. Voltage dividing resistors are in the set chassis. The local-distance switch throws a 25,000 resistor across the primary of the first i.f. transformer and a 500 ohm resistor in series with its secondary when in the "local" position. The phonograph jack is connected into the grid return of

the second detector circuit. When the pickup plug is inserted a new value of biasing resistor is automatically selected, which causes the second detector to operate as a screen-grid a.f. amplifier, giving a total of two stages of audio for use with records. The coupling between the high-impedance second detector and the push-pull output stage is, in effect, impedance coupling through the left winding of AT-1 to tube S7 and inductive coupling through the right half of AT-1 to tube S8

the same thing in attempting to service superheterodynes—attempt to re-align the various trimmer condensers before analyzing voltage and circuit conditions. This is bad enough in the case of t.r.f. sets but is fatal when applied to modern supers. It is vitally important that, before any attempt is made to align the trimmer condensers found in a modern superheterodyne, the circuit be thoroughly analyzed to determine definitely that the source of trouble does not lie in the circuit components themselves or in the wiring.

There is no point in going into this phase of testing here for every service man worthy of the name is familiar with the use of a circuit analyzer and, even in the improbable event that data is not available for a particular set to be serviced, it is relatively easy to determine whether or not the voltages are correct from a general knowledge of required tube operating voltages and from the similarity of, say, the different screen-grid, the different plate and different bias voltages where the circuits measured require approximately the same potentials on the different tube elements.

Unless the service man is equipped with a suitable signal generator or test oscillator this is as far as he can safely go in attempting to service a superheterodyne receiver. For without an adequate test oscillator it is impossible, except by a

pure freak of chance, to properly align such a receiver by ear. Assuming that such an oscillator is available, the process may, at first glance, appear to be somewhat complicated, but actually does not consume much time if the serviceman is adept.

I.F. Transformers

It has been the writer's experience that service men are all too anxious to take a screwdriver to i.f. transformer trimmer condensers and attempt to align them with only the vaguest idea of what should be done. It is utterly impossible to properly align a misaligned intermediate frequency amplifier if the only signal source is that of some broadcast station. This is because, while it is possible to align the i.f. amplifier for maximum response by ear to a reasonably satisfactory degree, it is absolutely impossible to determine to what frequency the amplifier has been aligned, and it is essential that it be aligned to exactly the frequency at which it was designed to operate.

Since a modern i.f. transformer consists of a tuned primary and a tuned secondary, in practically all cases primary and secondary coils being tuned by midget type mica compression condensers having fairly wide capacity ranges, it is perfectly possible to tune, for instance, a 175 kc. ampli-

fier to 165 or even 185 kc. and, if the i.f. amplifier is not tuned to the exact frequency at which it was intended to operate, it will be utterly impossible to properly align the first detector, r.f. and oscillator trimmers.

This matter has been gone into at some length in order to discourage the serviceman from attempting to align an i.f. amplifier until he is absolutely sure that the balance of the receiver is in first-class condition. The writer's experience has been that those servicemen who hastily attempt to re-align such amplifiers generally misalign them so badly that they then require a really excessive amount of work to get them back into proper alignment. The moral for servicemen, therefore, is never to tamper with the alignment screws of an i.f. transformer unless it is determined absolutely that trouble can be from no other source.

Calibration, Gang-Condensers

Because of the extreme selectivity of the modern superheterodyne, slight discrepancies of alignment, resulting in inaccuracies of dial reading which would not ordinarily be annoying in t.r.f. sets calibrated in kilocycles, show up quite seriously and it is therefore essential that no attempt be made to align even the gang-condenser of

such a receiver on any signal except that provided by a local and accurate signal generator. Such a generator, or test oscillator, should be capable of producing a test signal variable throughout the 550-1,500 kc. frequency range (and also at 175 kc.) and should be equipped with an output meter. The writer is familiar with two suitable signal generators, the type 180 Dayrad and the type 360-A General Radio unit. (Ed. Note: Supreme now has a similar instrument, type 70, which also tunes to 130 kc.)

Because of the fact that the modern superheterodyne's oscillator does not operate at the same frequency as the first detector and r.f. circuits but rather above the signal frequency by the frequency of the intermediate amplifier a special method of alignment is required to make the oscillator track exactly the right distance away from the particular frequency to which the first detector and r.f. circuits of the set may be tuned. This method involves the use of two trimmers for the oscillator circuit; one a high-frequency trimmer used for alignment at 1,400 kc. and usually mounted directly upon the gang-condenser, as are the other gang-condenser trimmers, and a second, or low-frequency trimmer, used for aligning at 600 kc. and customarily mounted separately from the gang-condenser. In the receiver illustrated, which is typical, four trimmers can be seen on top of the gang-condenser, the high-frequency oscillator trimmer being the one located nearest the dial. Directly on the back of the gang-condenser is mounted a Micarta strip, carrying one fixed condenser and one mica compression type variable condenser. It is this compression type condenser which is the 600 kc. trimmer.

Sensitivity, Selectivity

The only reason for attempting to re-align a superheterodyne is low sensitivity or poor selectivity which, after a careful analysis with a circuit analyzer does not appear to be due to any defect in the receiver wiring or parts, or to defective tubes. In such an event, the method would be first, to align the r.f. amplifier, first detector, and oscillator and then, in the event that the selectivity is still poor, to check the i.f. amplifier alignment.


Before attempting alignment of the r.f., first detector and oscillator circuits it will, of course, be necessary to remove the receiver from its cabinet and to provide some temporary pointer against which the dial may be aligned. The position of this pointer must be such that the dial readings correspond exactly to those observed when the chassis is in its cabinet. Provision is sometimes made for this aligning by a special mark on the dial scale, against which the temporary pointer may be set when the condenser plates are entirely disengaged. If such a mark is not provided it will be necessary, with the chassis in its cabinet, to turn the gang-condenser so that the plates are fully disengaged and then scratch a small indicating mark upon the dial to indicate where the pointer read in this position. This done, it is easy to install a temporary wire pointer on the chassis which will read at exactly the same point on the dial when the condenser plates are again fully disengaged.

Oscillator, R.F. Alignment

All alignment of modern supers must be done upon a wood top table rather than one with a metal top, insulated or exposed, for in practically all such receivers one or more of the r.f. coils are located below the chassis. Placing the chassis upon a metal top table seriously alters the coil

Suitable

Instruments of this type are essential for accurate super-het alignment



Supreme (Type 60)
Frequency range: variable from 550 to 1500 kc. and from 125 kc. to 185 kc. External output meter required. Designed for use with self-contained batteries



Supreme (Type 70)
Frequency range: variable from 550 to 1500 kc., calibrated several kilocycles each side of 130 kc. and 175 kc. Has a built-in output meter. Designed for a.c. or battery operation

inductances. When the chassis is in place on the bench the signal generator may be connected to its antenna and ground posts with a .00015 mfd. fixed condenser in series with the antenna lead. The signal generator is then set at exactly 1,400 kc. as is also the receiver dial. The oscillator high-frequency trimmer is then adjusted for maximum output with the output meter connected in the voice-coil circuit of the speaker and with the signal generator output control set to provide a convenient value of deflection on the output meter. If no oscillator output control is available set the volume control of the receiver to give a convenient reading on the meter.

With the oscillator trimmer adjusted for maximum output reading, the remaining trimmers on the gang-condenser should likewise be adjusted for maximum output. This done, the high-frequency or 1,400 kc. alignment process may be considered complete. From here on, the methods of r.f. alignment at 600 kc. as suggested in different service manuals vary, but the writer has found only one method which is quick, simple and accurate. This method involves the disconnection of the circuit lead to the stator of the oscillator section of the gang-condenser from this condenser and the temporary connection of this lead

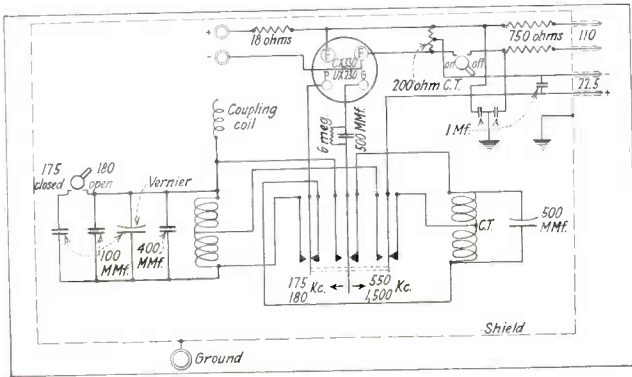
to a 500 mfd. external variable condenser. The other side of this external condenser is connected to the chassis of the receiver. This done, the signal generator is set at 600 kc., as is the receiver dial, and the temporary external oscillator condenser adjusted to give maximum output. The receiver gang condenser is then adjusted for maximum output, which should be obtained at a dial reading not over 10 to 15 kc. off 600 kc.

This operation completed, the external oscillator condenser is removed and the original circuit connection re-soldered to the stator of the oscillator tuning condenser. Then, without touching any of the trimmers on the gang condenser and without touching the tuning dial of the receiver, the oscillator low-frequency (600 kc.) trimmer is adjusted to give maximum deflection on the output meter. If the above operations have been performed correctly, the r.f. and oscillator portion of the receiver is properly aligned for the entire broadcast band, and the dial readings, if in kilocycles, will be as correct as can be expected in a commercial receiver.

I.F. Amplifier Alignment

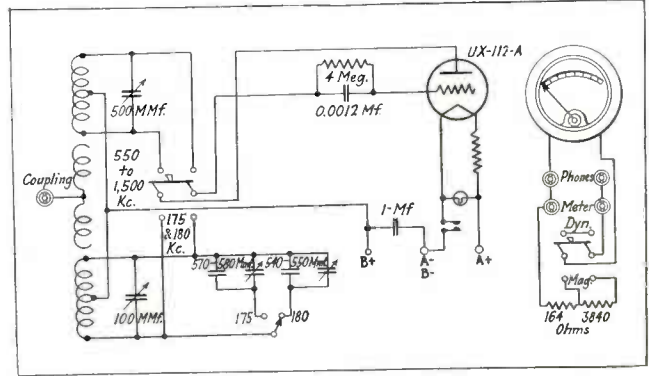
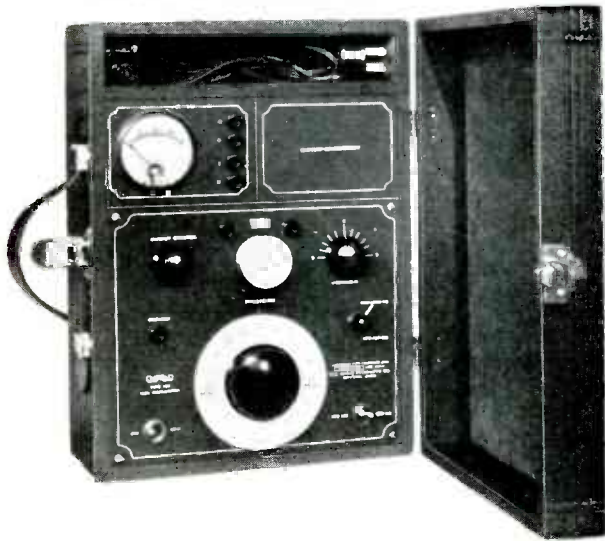
If, after aligning the r.f. and oscillator portion of a superheterodyne, the sensitiv-

Signal Generators



DayRad (Type 180)

Frequency range: variable from 550 to 1500 kc., calibrated at 1 kc. intervals between 170 and 180 kc. and also at 130 kc. Obtainable with or without output meter. For use with batteries or equivalent external d.c. supply



General Radio (Type 360-A)

Frequency range: variable from 550 to 1500 kc., calibrated at 1 kc. intervals between 170 and 180 kc. Has a built-in output meter of the copper oxide rectifier voltmeter type. Designed for use with external batteries or equivalent d.c. supply



ity and selectivity still appear to be down, the i.f. amplifier may be re-aligned by the following process. The grid clip of the '24 first detector should be removed from this tube and the tube grid cap connected instead to the high side of the signal generator, the low side, or grounded lead of the generator being connected to the chassis of the receiver. (Ed. Note: If the first detector is a type '27 clip the high side of the oscillator to its grid terminal.)

With the signal generator set at 175 kc., or whatever the correct intermediate frequency may be, and the volume control of the receiver adjusted to give a convenient reading upon the output meter connected in the speaker voice-coil circuit, the i.f. trimmer screws should be successively adjusted to give maximum deflection on the output meter. If the signal generator output is controllable, the voltage fed from the generator to the receiver should be adjusted to a value which will allow the receiver volume control to be turned as close to "full on" as possible and still provide a convenient value of reading upon the output meter.

If, in aligning the i.f. amplifier, it is observed that it was apparently badly out of alignment at the time the r.f. and oscillator alignment was first made, it will

be necessary to go over the r.f. and oscillator alignment again with the i.f. amplifier properly aligned.

Should a super be encountered in which an i.f. transformer appears to be short-circuited or open circuited, it is, of course, possible to replace it with another transformer, but it is generally possible to remove it from the receiver and to find the broken or shorted leads and to repair them. If the i.f. trimmer screws are stripped off it is usually possible to replace these alone. There are only two reasons for replacing an entire i.f. transformer—the first, a burnt out coil and the second, inability to align the transformer to the correct frequency within the range of trimmer adjustments available.

Microphonism, Audio Howl

Other problems will be encountered, the most frequent probably being poor tone quality or bad microphonism or audio frequency howling. This difficulty is almost invariably due to failure to remove the wooden shipping strips, or blocks, used to fasten the chassis to the cabinet when shipped. Removal of the blocks is essential for if the receiver chassis is solidly anchored to the cabinet in any way vibrations set up by the speaker will usually

cause excess vibration of tube elements or possibly even vibration of the gang-condenser plates which, upon an ultra-selective receiver of this type, will seriously effect tone quality. No attempt should ever be made, incidentally, to test a superheterodyne receiver provided with chassis cushioning unless this cushioning is used.

In this same connection, tube microphonism may be serious and it is important that both the first and second detector tubes be interchanged to insure freedom from noise, microphonism and, in the case of the second detector, to make certain that the maximum possible handling capacity for high volumes is being obtained. As a matter of fact, due to the extremely high sensitivity of the modern superheterodyne, tube selection is somewhat critical, though not excessively so, and it is important that tubes be interchanged for the serviceman in order to assure the best combinations.

There will be no noticeable a.c. hum in modern supers unless some serious defect is present. Such defects may usually be located by the use of a good circuit analyzer, unless a pair of dissimilar '45s are used in the final push-pull stage. It is well to use only tubes showing practically identical plate currents in the output stage.

Oscillation will seldom be encountered,

and if it is found may be attributed, usually, to defective tubes, failure to connect a good ground to the receiver or to open or defective by-pass condensers in the set itself. By-pass condensers can be tested, of course, with a series 90 volt battery block on the basis of their ability to hold a charge for a reasonable period of time. In stubborn cases, detuning the first i.f. trimmer will sometimes stop oscillation and not affect performance appreciably. This is, however, not good policy in general.

Noise, Antennas, Grounds

Because of the extreme sensitivity of a good modern superheterodyne a higher noise level than that noticed when using less sensitive receivers will naturally be observed in any given location. But because of this same high-sensitivity it is also possible for the superheterodyne to receive very weak signals so that one characteristic offsets the other. If a receiver is believed to be excessively noisy the simplest method of isolating the trouble is to remove the antenna connection and determine whether or not there is a diminution in the noise level; if not, the noise is coming in over the power line or is being picked up from nearby electrical apparatus directly upon the receiver coils themselves, which, due to certain manufacturing requirements, may not all be individually shielded.

Where the noise comes in over the power line, a standard noise filter, as made by different manufacturers and familiar to every radio serviceman, should be connected in the power cord to the set. If the noise is still observed without an antenna connected to the set, it is being picked up on the coils of the set itself and all electrical apparatus, such as motors, fans, violet-ray machines and etc., in the room with the receiver or in adjacent rooms, should be carefully examined to make sure that they have no dirty or sparking brushes, loose connections or contacts. Lamps should be tightly screwed into their sockets if near the set to further reduce noise.

If a high noise level is observed with the antenna connected, but not when it is disconnected, a somewhat difficult problem is presented. In this case, the use of shielded wire for the lead-in and possibly even for the ground wire, will often help, the shielding being either grounded or left ungrounded, as appears best from test of the particular receiver involved. Beyond this, there is little to be done, and receivers showing excessive noise will generally be those located in apartment buildings or business locations, where any radio set would show a high noise level.

It is always vitally important that a good ground be connected to a superheterodyne receiver for, although in many instances more and louder signals may be received without one due to the antenna effect of the power line, the noise level is higher in practically all such cases. A good ground, therefore, should always be used to keep the noise level of a superheterodyne down.

Resistors, By-Pass Condensers

In the event of noise being traceable directly to the receiver and being of a varying nature—or even of a constant nature—with the control grid lead of the first detector tube grounded to the chassis, the trouble may be attributed to a varying or broken connection and the wiring should be carefully checked, as should all resistors and by-pass condensers in the set. As previously suggested, by-pass condensers may be checked for their ability to retain a charge, while resistors may be measured either with an ohmmeter, or with a voltmeter, milliammeter and battery and should show values very close to those specified in the servicing manual for the particular receiver under test. If noise is observed in the operation of the volume control it may be easily corrected, if the control is of the wire-wound type, by simply turning its knob back and forth a number of times to clean up the resistor segment. If the control is of the carbon or graphite type it will usually be necessary to replace it.

Local-Distance Switch

The local-distance switch found in most modern supers is there for two purposes—first, to permit of satisfactory volume control when powerful local stations are being received, and to prevent excessive overloading when the receiver is tuned with gain full on through the local programs. Its secondary purpose is to improve fidelity by broadening the tuning of the first i.f. transformer when in the local position. Should the switch fail to operate, the trouble, as a rule, can be attributed to open leads to it, open or shorted resistors in the circuits which it affects, or to a defective switch mechanism. In locations showing excessive noise level it may be found preferable to operate the receiver with the local-distance switch in the distance position. In this position a better signal to noise ratio may often be obtained.

Heterodyne squeals, caused by transmitting stations "beating" upon one another, will be observed upon any receiver and are naturally more noticeable upon high gain sets than on low gain types. Unfortunately, there is nothing that can be done about this kind of interference, for it will be picked up on any receiver sufficiently sensitive to receive the two stations which are heterodyning each other. On superheterodynes, however, one or two tweets or whistles can sometimes be heard upon the dial at certain semi-constant points due to the reaction of certain broadcast stations and the oscillator.

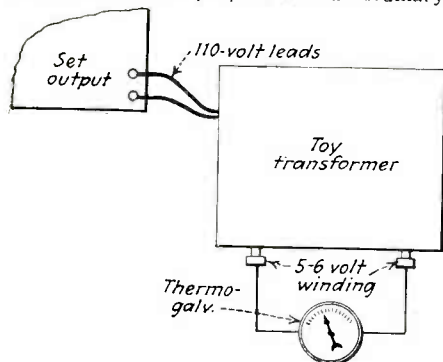
In Chicago, for instance, on a receiver of the type illustrated herewith, one point may be observed at around 700 or 720 kc. But, despite this fact, the receiver can receive a station for every broadcast channel in this range for the tweet is so positioned on the dial that it does not cause interference when the set is properly tuned. On other commercial superheterodynes one or more such whistles may be received, and cannot be eliminated. They should not, however, cause annoying interference and in a carefully designed superheterodyne not more than two should ever be observed.

Short Cuts for Servicemen

An Efficient Output Meter

By L. Olson

A thermo-galvanometer or an a.c. milliammeter may be used to make audio output comparisons for aligning and neutralizing if connected to the receiver on test through a suitable coupling transformer. The writer has used both the Weston model 425 thermo-galvanometer reading 115 milliamperes at full scale and the model 476 a.c. milliammeter reading 100 milliamperes full scale for this purpose with an ordinary



toy transformer as the stepdown coupling device in each case.

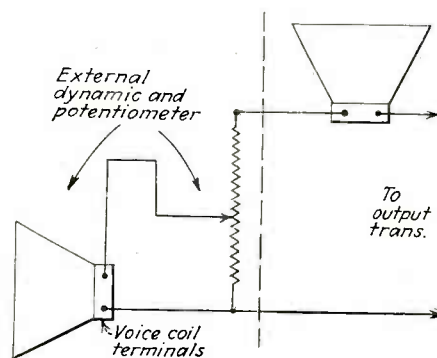
As shown in the accompanying diagram the 110 volt leads of the transformer are connected to the receiver output while the 5-6 volt winding is connected to the measuring instrument, thus giving a stepdown ratio of about 20 to 1. Care should be taken that the receiver volume control is well retarded when the set is first placed in operation as excess output might endanger the meter.

Controlling External Dynamic Volume

By J. E. Ortloff

When installing a separate, external dynamic speaker in connection with a modern set incorporating an output transformer it is quite possible to control the volume of the remote external unit by means of a suitable potentiometer without appreciably affecting the volume of the speaker in the set.

Connect the speakers and a 60 ohm potentiometer as shown in the accompanying diagram, with the voice coils in series. Mount the potentiometer on the external



speaker chassis and it will be found that smooth volume control is available at the remote point without seriously affecting the volume at the set.

Converting Milliammeters Into Voltmeters

The accompanying chart, prepared by the International Resistance Company, gives the total external series resistance values required to change microammeters and milliammeters of the moving-coil type

Voltage Range Desired in Volts	100 ua.	200 ua.	300 ua.	500 ua.	1000 ua 1 M A.	1.5 M. A.	2 M. A.	3 M. A.	5 M. A.
<i>Resistance in ohms.</i>									
1	10,000	5,000	3,330	2,000	1,000	667	500	333	200
1.5	15,000	7,500	5,000	3,000	1,500	1,000	750	500	300
2	20,000	10,000	6,670	4,000	2,000	1,330	1,000	667	400
3	30,000	15,000	10,000	6,000	3,000	2,000	1,500	1,000	600
5	50,000	25,000	16,700	10,000	5,000	3,330	2,500	1,670	1,000
7.5	75,000	37,500	25,000	15,000	7,500	5,000	3,750	2,500	1,500
10	100,000	50,000	33,300	20,000	10,000	6,670	5,000	3,330	2,000
15	150,000	75,000	50,000	30,000	15,000	10,000	7,500	5,000	3,000
30	300,000	150,000	100,000	60,000	30,000	20,000	15,000	10,000	6,000
50	500,000	250,000	167,000	100,000	50,000	33,300	25,000	16,700	10,000
100	1- Megohm	500,000	333,000	200,000	100,000	66,700	50,000	33,300	20,000
150	1.5 Megohm	750,000	500,000	300,000	150,000	100,000	75,000	50,000	30,000
300	3 Megohm	1.5 Megohm	1 Megohm	600,000	300,000	200,000	150,000	100,000	Two 30,000
500	5 Megohm	2.5 Megohm	1.5 Megohm 667,000	1 Megohm	500,000	333,000	250,000	100,000 66,700	30,000 30,000 40,000
1,000	Two 5 Megohm	5 Megohm	3 Megohm 333,000	2 Megohm	1 Megohm	Two 333,000	Two 250,000	Three 111,000	Five 40,000

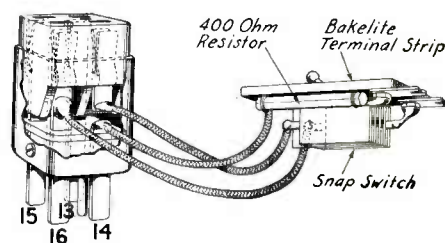
Plug for Silent T.R.F. Aligning

By J. R. Jackson

The desirability of silent aligning of the tuning condensers in the Victor receiver is obvious to every serviceman who has had occasion to do this work, particularly when it must be done in a customer's home. The note of a test oscillator reproduced in the speaker is quite annoying.

In order to eliminate this undesirable noise it is necessary to cut out the voice coil from the speaker circuit, while leaving an output meter across the output. A special plug can be made for this purpose and will permit silent aligning without the necessity of unsoldering any connections. The following materials are recommended:

- 1 speaker plug, stock No. A-908
- 1 speaker section of receptacle plug, stock No. A-905.
- 1 400-ohm resistor, stock No. A-300



- 1 snap switch, stock No. A-402
- 3 2-ft. lengths flexible insulated wire
- 1 piece bakelite
- 2 terminal lugs for connecting to output meter terminals

Saw the speaker section of the receptacle plug, and file the corners so that it will fit into the metal cover of the speaker plug. Solder terminals 13, 15 and 16 of the speaker plug to the corresponding terminals of the receptacle. Solder a wire to terminal 16 and two additional wires to terminal 14 and to the corresponding receptacle terminal as shown. Make the connections to the switch, resistor and terminal strip as illustrated, and then assemble the metal cover over the receptacle and plug.

The switch is to afford a means of listening to the signal in order to determine that the signal which is being read on the output meter is that of the oscillator and not a powerful local broadcast station. The speaker plug is removed from the amplifier, and the adaptor plug substituted. The speaker plug is then inserted in the top of the adaptor and the two terminals of the adaptor cable connected to the output meter used. When the switch is opened the set can be aligned silently.

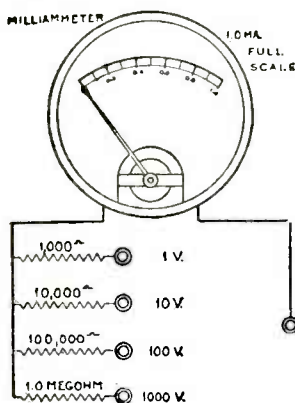
How Do YOU Do It?

Radio Retailing will pay \$5 or more for acceptable letters from experienced servicemen describing original methods, or equipment, which speed up repair jobs, turn out better work, or reduce servicing costs. All letters accepted will be published, together with the name of the contributor.

"Mail 'kinks' and diagrams to the Technical Editor, Radio Retailing, 10th Ave. and 36th St., New York City.

into instruments for accurately measuring voltage. The internal resistance of the meter to be converted is not taken into the calculation as most high-grade milliammeters and microammeters have a low internal resistance, 40 ohms or less, and the error brought about by disregarding this internal resistance is, in most cases, much less than the error in calibration and therefore tolerable.

The maximum per cent error, other than



above, is the sum of the error of the moving element itself and the per cent error in the external resistance. A moving element that is accurate to 2 per cent cannot be made more accurate even if a perfectly calibrated external multiplier is used. On the other hand, if a high degree of accuracy is wanted, and the moving element was designed for that type of work, a more accurate multiplier must be used externally. If closer accuracies than 1 per cent are required resistors accurate to 1/2 per cent should be used.

In taking a reading with a converted meter of this type the original current calibrations are ignored and the voltage is read as a fraction of full scale voltage. If the 100 volt tap is used in connection with the meter illustrated, for instance, the applied voltage is 50 when the meter reads half-scale, 25 volts when the needle reads quarter-scale, etc.

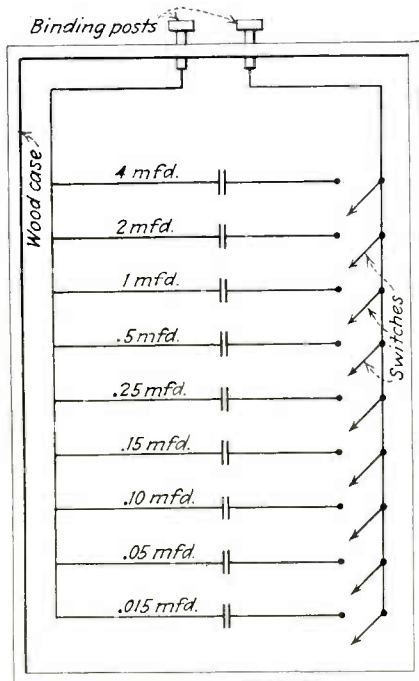
Testing for Open Filter Condensers

By R. F. Herr

An easy method of checking the filter condensers in a receiver for open circuit

is to replace each one in the power-pack, temporarily, with another similar capacity known to be good. A handy accessory used by a number of Philco servicemen for this purpose consists of a group of standard power-pack condensers in a case, arranged with switches so that any one capacity or combination of capacities can be instantly switched to convenient test leads. The condensers used are capable of withstanding high voltages. The switches are mounted on a bakelite panel.

The arrangement shown provides for two test leads, one a common lead to all of the condensers, the other connected to the series of switches. Numerous capacity combinations are permitted by this arrangement. If, for example, the switches connected to the 1, .15 and .015 mfd. con-



densers are closed the capacity across the test leads would be 1 mfd. When testing, the switches are merely thrown to give the desired capacitance and the test leads clipped to the terminals of the condenser under test. If the receiver operates satisfactory when the test unit is in the circuit it is apparent that the capacity incorporated in the receiver is faulty.

In Our

Squash Pies for Announcers



Now, If Ever

IF ever there was a time when substantial wholesalers and manufacturers should sit down together, reconcile their differences and formulate a constructive program it is right now.

The manufacturer needs aggressive, sales promotional distributors—and the far-sighted jobber is seeking radio manufacturers with plenty of mineral matter in their backbones.

The demoralization of price and value standards, the tube situation, merchandising methods and the matter of protection—these are outstanding and vital issues which only can satisfactorily be settled by a type of co-ordination and co-operation between distributor and manufacturer which, to date, has not been evidenced.

No longer is any branch of the industry sufficient unto itself. No longer can the maker of sets formulate his policies without first taking the dealer and the distributor into his confidence.

We've been drifting long enough. This ship of ours cannot forever stand its present racking upon the rocks of self-interest and short-sightedness.

Fortunately there is a way off and into clear-water sailing.

The call for practical co-operation has been sounded—and we are certain that the best minds in our industry will heed it.

HIGHER powers in broadcasting stations seem now well on the way to attainment. With such increased powers will come better rural reception and better sales of radio sets over large areas.

But there is one other point that will help sell more radio sets, and it is expressed very inelegantly by saying that more squash pies are needed in the faces of announcers.

We have never made much objection to the advertising part of programs. We grant there are many offensive advertising announcements, and in many cases the ratio between advertising and program is too high. This, however, is not our particular objection, and in this second point many more share the same view. It is that the announcer seems to think that he is called upon to be the main part of the program. He insists on putting a theatrical personality into the program that is actually nauseating to many listeners.

Along with increase in power, we might well follow the balancing of the equation by getting a decrease of announcer's hot air.



The Langmuir Tube Patent Case

THE Circuit Court of Wilmington, Del., has, by a divided opinion of two to one, reversed the decision of the U. S. District Court—which held the “Langmuir” high-vacuum tube patent to be invalid. An appeal from the Circuit Court's opinion is now before the Supreme Court for acceptance.

This case is of unusual significance because of the wide variety of applications of high-vacuum tubes in radio, telephony, sound pictures, broadcasting, industrial control, musical instruments, power transmission, aviation, etc., and the control of it will affect our great future industries.

It is important, therefore, that, on the highest possible court authority, the fairest possible adjudication be reached at the earliest moment.



Make the Most of a Good Thing

THAT excellent accessory feature, home recording, is stimulating the sale of many radio-phonograph combinations. And in most instances this handy little device is giving complete satisfaction. When it is realized, however, that a studio microphone costs at least \$30 and that the best disk recording is done with the aid of a positive feed attachment the opportunity for perfecting this proposition on the home receiver is apparent.

Though the novelty appeal of the home recording device has so far been stressed it is certain that the con-

O p i n i o n

sumer will shortly demand a high degree of accuracy and fidelity in performance as well.

The dealer has been given a new and excellent sales inducement for the purchase of the combination instrument. The manufacturer has assumed an additional responsibility to the trade and must see that the thoughtless use of uncertain microphones or of cheap recorders which continually "jump the track" are not permitted to bring home recording into disrepute.



Amplifiers Received Deserved Attention

TO encourage the activities of amplifier manufacturers, the Radio Manufacturers Association, at the Cleveland meeting of its board of directors, formed a special Amplifier Section of the Standards Committee of its Engineering Division. This section, under the chairmanship of A. C. Kleckner, Webster Electric Company, Racine, Wis., will develop standardized ratings for power amplifiers and will co-operate with the National Board of Fire Underwriters.

Other committees of this association have been instructed to study the merchandising possibilities and markets for the installation of public address systems.

Another signal development in this field is seen in the action of at least three well-known set manufacturers who have announced, or who are about to bring out, amplifier units which the radio dealer can handle without the need of an outside engineer.



The Possibilities of Radio-Drama

HIMSELF a devotee of the drama, William S. Paley, president of the Columbia Broadcasting System, is enthusiastic over the potentialities of near future radio-dramatic productions. He is an earnest advocate of adapting stage presentations to the air; not merely from the standpoint of entertainment but also for their educational value.

With this sympathetic attitude from the head of such an influential chain, big surprises and rare treats for the listener seem shortly assured.



If It Will Better Broadcasting I'm for It

COMMENTING on your article, 'You Write This Editorial,' good feature records, flying under truthful colors, are not objectionable. They would be the solution of the small station circulation. There is a feature now running here on the coast, 'Cecil and Sally,'

EDITORIAL OBSERVATIONS

on

Co-operation

Squash Pies

A Tube Patent

Home Recording

Multiplying Sound

Drama in Radio

"By Electrical Transcription"

Stair Climbing



for a brake band company, which has, in my opinion, gone over. It has sufficient sustaining interest to overcome the fact that it is canned dope.

As matters now stand, the set owner seems doomed to listen, and the advertiser to pay the toll, until certain 'studio' programs get so rotten that even the advertising agency will have to cut them out.

Give us records, call them what you may, if we may have them instead of the permanent-wave and oil-stock harangues we have to listen to in this corner of the country. If you don't think this kind of junk gives radio a black eye, just try being a radio dealer for a few weeks.

H. D. HATFIELD,
Hollywood, Calif.



Climbing the Collapsible Stairway

OUR business now finds itself in the same predicament that the slapstick comedian experiences on reaching the top steps of the collapsible stairway: suddenly the steps flatten out and down he comes.

To climb this slippery stairway requires a new technique. Radio wholesalers and retail merchants must readjust overheads for the sake of economy, scrap the methods used in a seller's market and reorganize with new ideas and methods that should succeed in a highly selective buyer's market. Inadequate efforts will only cause repeated collapsing of the steps. More aggressiveness and resourcefulness are needed to overcome sales resistance and delayed buying, if we would tap the public's reserve of capital stored in savings banks.

DAVID M. TRILLING,
Trilling & Montague, Philadelphia, Pa.

A STATE



RCA RADIO LA

MENT

On January 1, 1931, the combined total inventory of all Radio Super-Heterodyne models in the hands of distributors, in transit and at the factory represents less than one and one-half sets per dealer. The consistent volume of sales to dealers on all Radio Super-Heterodyne models since their introduction indicates that Radio models 80, 82 and 86 represent unquestioned value in their respective fields and will continue to enjoy steady acceptance with the public.

RADIOLA DIVISION

RCA Victor Company, Inc., Camden, N. J.

A Radio Corporation of America Subsidiary

SUPER - HETERODYNE

Highlights on the

January, 1931

Arranged for

CHICAGO GETS TRADE SHOW

To Be Held June 8-12

The Radio Manufacturers Association, through its show committee, has definitely selected Chicago and the dates of June 8-12 inclusive as the place and time for this year's trade show and convention. The show will be held under one roof.

It will be preceded, June 4-6, by the national gathering of the Institute of Radio Engineers and will be followed, June 15-18, by the national convention of the Music Industries' Chamber of Commerce and of the National Association of Music Merchants.

Exhibitors will be required to show current merchandise and radio products only will be displayed in the main exhibition hall.

As this magazine goes to press the hotel in which the radio show is to be held had not been selected.

"Melotone," 25-Cent Record Introduced by Brunswick

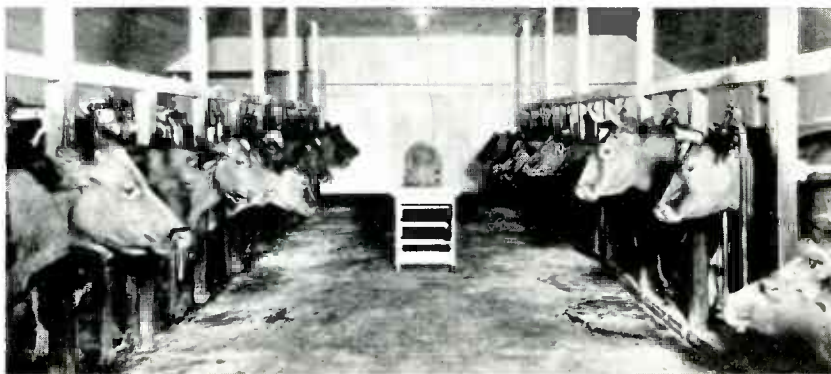
The recording division of the Brunswick Radio Corporation announces a new record to be priced at 25 cents. This record in no way replaces any of the other series presented by Brunswick but brings to the low price field two popular "hit" tunes on every disk.

"The popular price recording field," states general sales manager E. F. Stevens, Jr., "has been in need of a better class record for several years. By better class we mean not only from the point of view of the actual mechanics of recording but from the selections recorded. The trade has known for years that the low price record usually carried a hit number on one side and a "dud" on the other. Melotone records are changing this, each record being notable for the fact that one good tune is backed by another."

Legislative Guardian

All legislative matters in New York State affecting radio interests will hereafter be in charge of J. Newcomb Blackman, New York radio jobber. Mr. Blackman has accepted this appointment of Chairman C. C. Colby of the Radio Manufacturers Association's Legislative Committee to be the guardian of radio legislative interests in New York.

Hollywood Radio Programs, Ltd., is the new name of the reorganized Soundcraft Studios, Inc., maker of electrical transcriptions and custom-made radio programs at 1517 North Wilton Place, Hollywood.



Don't Overlook the Great Cow Market

Now that the poultry raisers have all been sold radio sets and the hens of America are laying double yolked eggs, don't forget the great cow market. "Sweet radio music quiets my nervous cows and increases their milk flow," testifies Ralph Dodd, proprietor of the Marymoor Dairy, of Highland, Wash. Cast your eyes over these contented cows. Is there no end to the wonders of radio?

Dealer Tax Declared Valid

Radio dealers and music merchants in Atlanta lost in their efforts to have the state tax on radios declared null and void when the Georgia Supreme Court declared, Dec. 11, this act to be constitutional.

The local dealers, some 20 in number, had protested against the payment of the radio tax, which is arranged on a graduated scale, ranging from \$10 a year in cities under 10,000 population to \$100 a year in cities of 50,000 population and over.

The dealers secured an injunction against the collection of the tax, contending that it was discriminating, unfair and confiscatory to the radio business.

First Commercial Station



Thirty years ago Marconi sent his first shore-to-ship wireless message from this little shack near Babylon, Long Island. Recently this historic building was located by Major Edwin H. Armstrong, seen at the right of the door, and moved by RCA Communications, Inc., to a permanent resting place within the shadow of its tremendous transatlantic sending and receiving plant at Rocky Point, L. I.

"Bud" Mathews Rarin' to Go.



The general show chairman of the forthcoming NFRA convention at Indianapolis, Feb. 16-17, in a characteristic pose

Fada Wins Speaker Patent Infringement Case

In a recent decision handed down by the United States Supreme Court it was held that the design of Fada speakers does not infringe the Lektophone patents.

"This unanimous decision of the Supreme Court is another definite step in the stabilization of the radio industry," states F. A. D. Andrea, president of the Fada Company, located in Long Island City, N. Y.

Dunlap Succeeds Wallace

W. A. Dunlap, formerly affiliated with the Seattle zone office of General Motors Radio Corporation, has been made southern California zone manager for that company, with headquarters in Los Angeles. He succeeds Don Wallace, who has been transferred to handle special regional work, according to L. C. Warner, regional manager.

News of the Month

Busy Readers

New York, N. Y.

Columbia Enters Concert Management Field

The entrance of the Columbia Broadcasting System into the concert management field in a major way has met with widespread public approval, according to William S. Paley, president of this broadcasting chain, who states that the effects, so far as radio broadcasting itself is concerned, will be in evidence shortly after the first of the year.

"The merger of the seven principal concert management organizations into the Columbia Concerts Corporation," Mr. Paley explained, "has made available for radio broadcasting some of the finest musical talent in the whole world and shortly after Jan. 1 some of the choicest performers will be heard by the radio audiences of the entire country."

Lyricites Convene Again

With all of its distributors present or accounted for, the third convention of Eugene Farny's "Lyricites" opened at Wurlitzer's factory North Tonawanda, N. Y., Dec. 8.

The first formal how of its two latest models (see New Merchandising Section) was the chief *piece de resistance*.

Breakfast at the Statler, Buffalo, high-powered bus rides and a dinner of delightful informalities were entertainment high-points.

Records for Automatics

Acting on request of owners, the Capehart Corporation is now publishing a bulletin of phonograph records which have been tested for use on automatic instruments. The idea is to select those records which carry the greatest appeal to customers with a wide diversity of musical tastes.

Brandt Heads Victor Sales

Arthur A. Brandt, formerly manager of Victor sales promotion, has been promoted to take charge of Victor sales, reporting to Harry C. Grubbs, vice-president in charge of all sales operations of the RCA Victor Company, both the Victor and Radiola divisions.

Mr. Brandt will have as his assistant Robert A. Bartley, recently manager of the eastern district for Victor.

It also has been announced that Roy A. Forbes, manager of Victor instrument sales, has resigned to assume the presidency of the Baltimore Victor Distributing Company.

H. E. Sidles Company, Scotts Bluff, Neb., has been appointed distributor of the new Erla miniature receiver in western Nebraska, eastern Wyoming and parts of South Dakota and Colorado.

REVISED CODE OF SALES PRACTICES ADOPTED BY DIRECTORS, NFRA

Urges Limiting Home Trials to 48 Hours—Truth in Advertising Needed—Designate the Cash Price

At a special meeting, held at the Hotel Astor, New York City, Dec. 16, the following suggested code of business practices for radio dealers was unanimously adopted and endorsed by the board of directors of the National Federation of Radio Associations.

These suggestions carry the following preamble:

"Fair profit is the most necessary item in the retail radio business; all standard practices are based on that foundation. After a study of the retailers' costs and methods of doing business, the following recommendations are made as being fair to the customer and dealer alike and in keeping with good practices in other lines of business."

NFRA Suggests—

1. That prospective customers shall not be allowed a free trial or home demonstration in excess of 48 hours.

2. That an adequate interest charge should be made on all time-payment contracts and that contracts do not extend beyond one year. (These are standard practices in all other forms of time-payment selling.)

3. That when an outside aerial must be put up when a set is installed a charge of at least \$7.50 should be made to meet the cost of labor and materials.

That when an inside aerial must be put up when a set is installed a charge of at least \$5 should be made to meet the cost of labor and materials.

4. That no free service be rendered after 60 days or after a certain number of calls specified at the time of sale. In case of defective parts in the radio receivers after the 60-day free service period, if the manufacturers' warranty covers free replacement of parts and if the instrument has not been tampered with, the dealer should replace these parts, charging only for the labor involved.

5. That if the free service period has expired a minimum service charge of \$2 should be made. If the call is of half-hour or more duration, that a specified rate per hour plus cost of material should be charged.

6. That truth in advertising must be observed to preserve the good reputation of the individual dealer and the entire trade and that the standards for radio advertising as recommended by the National Federation of Radio Associations should be followed.

7. That extreme care be exercised when offering a trade-in allowance in order to protect the dealers' necessary margin of profit.

8. That instruments for trade-in should be confined to radio equipment and musical instruments.

9. That the list price should be clearly designated in consumer advertising as the cash price.

10. That dealers should not offer for sale, by advertising in any form, or by quoting



East Meets West

Mr. and Mrs. C. M. Lee, Christian-Chinese couple of Singapore, S.S., and Hong Kong, China (reads the caption which accompanied this photograph), are partners in one of the largest importing firms of the Orient. During their recent trip to the United States, they stopped at the Clarion factory to see "what makes them work."

Holds Time-on-Air Record

The Grigsby-Grunow Company, sponsors of the Majestic Old Curiosity Shop dramas, Majestic Home-Maker's Hour and co-sponsors of the American School of the Air, all of which are heard over the Columbia Broadcasting System, set a new mark in 1930 radio history for a record number of hours broadcast under one banner. Majestic is on the network seven times each week.

Tough Times Get Them Out

When times are bad there is need for even closer co-operation between radio dealers—and trade association meetings are better attended.

Witness the fact that 776 dealers and their employees attended the recent session held by the Wisconsin Radio Trade Association during its radio show at Milwaukee.

prices, any radio merchandise for which they are not duly franchised dealers.

It is the belief of the board of directors of the National Federation of Radio Associations that if this code of business practices is followed by the dealer, he should operate on a more profitable basis.

Also Advertising Standards

The National Federal of Radio Associations has just published a booklet which sets forth the officially approved standards of radio advertising copy. Five hundred newspapers as well as all members of the NFRA and its affiliated organization, the Radio Wholesalers Association, have received this brochure with acclaim. Extra copies of this booklet are available upon written request.

Steps are being taken by the Radio Wholesalers Association to co-operate with local trade associations and local wholesalers in the observance of these recommended standards. The local Better Business Bureaus also have endorsed these standards and will co-operate with any dealer who calls the matter of an unfair advertisement to the attention of the secretary of the local bureau.

NEW PHILCO FACTORY

*Adding 200,000 Sq. Ft.—
Transitone a Subsidiary*

The Philadelphia Storage Battery Company, Philadelphia, is expanding its factory and laboratory facilities through the erection of a five-story building adjacent to its present plant in Philadelphia. The company has also acquired the Holmes Mills a few blocks distant from Philco headquarters at C and Ontario Sts.

Vice-President James M. Skinner states the 1930 business was double the volume of that which it enjoyed during 1929.

Effective with the beginning of the new year Philco incorporated the Transitone Automobile Radio Corporation as a subsidiary. Mr. Skinner will be chairman of the board, C. Russell Feldman, president, and Sayre Ramsdell, vice-president.

Philco, it will be remembered, first entered the automobile-radio field through a contractual arrangement with the Automobile Radio Corporation, acting as manufacturer and co-distributor.



Recipe for a Riot

Take one beautiful screen star, Nancy Carroll for instance, add a radio set and mix in a presentation of the set by the star to some deserving charitable institution—result, one riot.

Landay Bros. Bankrupt

A petition in bankruptcy was filed Dec. 31 in Federal court for Landay Bros., Inc., one of the best-known dealers in radio equipment, phonographs and musical instruments in New York City. This firm operated a chain of nine large stores.

The petition was signed by Max Landay, as president of the corporation, who asked the court to appoint a receiver.

Mr. Landay gave no figures concerning the corporation's liabilities or assets. He stated in his petition that the firm was unable to meet its debts and that schedules of liabilities and assets would be filed.

Larry Gubb GSM for Philco

Effective the first of this year, Larry E. Gubb will be the general sales manager of the Philadelphia Storage Battery Company. This interesting news was released Dec. 30 at Philco's meeting of radio distributors and representatives. Gubb's appointment climaxes ten years of endeavor for Philco interests, for it was in 1921 that he first started for the firm, selling batteries in West New York.

Recently Larry has done a splendid job reorganizing the distribution of Philco radio in New York City and New England.

Now for Our Dealer-Jobber Convention at Indianapolis, February 16-17

BECAUSE of the present imperative need for an exchange of views and of experiences and because the relationship of dealer to wholesaler must further be strengthened, next month's convention of the National Federation of Radio Associations and of the Radio Wholesaler's Association at Indianapolis will attract a record attendance. Advance reservations at the Hotel Lincoln confirm this observation.

Our hosts will be the local radio association, the Electric League of Indianapolis and the Chamber of Commerce. Ted Brown, Bud Mathews

and an assorted gross of other Hoosier State citizens will bear the brunt of arrangement responsibilities. Entertainment, "safe but satisfying," has been guaranteed.

All dealers and distributors, whether affiliated or not with either of the great representative bodies, are invited—and urged—to come to Indianapolis in time for the opening session on Monday, Feb. 16. No time will be wasted in generalities. "Near-est the heart" issues will be dealt with frankly and constructively. There will be many opportunities for general discussion.

DEVELOPING NEW MIDGET MARKETS

*Pierce-Airo Pioneering—
Licensed by Radio Corp.*

Not content with the more obvious "me too" markets for midget receivers Pierce-Airo, Inc., 117 Fourth Ave., New York City, is instituting a systematic campaign to place the compact receiver in every place where small groups congregate. The following are particularly fertile fields, according to David Wald, president of this concern: recreation quarters for nurses, transportation terminals, small factories, doctors' offices, barber shops, district schools and bachelor apartments.

As noted elsewhere in this issue Pierce-Airo has adopted the trade name, "De Wald," for this type of set. It claims also the distinction of being the pioneer Eastern manufacturer of midget sets and lays much of the marked growth in this business which it has enjoyed during the past four months to the fact that not only has it rendered uninterrupted sales service over a period of ten years but, through moral suasion and the application of common sense in merchandising, it has succeeded to a very great degree in causing its distributors and dealers to maintain suggested resale prices and other policies so necessary to profit-making.

The Radio Corporation of America announces that it recently granted a license to Pierce-Airo to manufacture tuned radio frequencies and superheterodyne receivers.

Invents 32-Volt Set

A 32-volt direct current radio receiver is the product of Lyle Tatro of Decorah, Iowa.

Mr. Tatro was born in Winneshiek County, Iowa. His radio and communication experience dates from the time when, at the age of fourteen, he invented a portable telephone.



It's Bill Mackle and His Daughter

In addition to his duties as manager of the St. Louis Radio Trades Association and of the Southwest National Radio Show, Bill Mackle finds time to take his little daughter for an airing every morning before he goes to work.

What the Wholesalers are Doing

Dickel Philadelphia Host to Fada Dealers

The North Philadelphia dealers of the Dickel Distributing Company, Fada wholesaler in that territory, were entertained at a dinner recently. Following the dinner, a meeting was held in the show rooms of the Dickel Company, where C. M. Sherwood, Fada sales representative from New York, addressed the meeting.

Arch R. Strong Organizes Company

A coast-to-coast selling organization, headed by Arch R. Strong, has just

been launched. National sales programs of manufacturers in the radio, electrical and allied lines will be carried on. Headquarters are in the Daily News Building, Chicago, with field representatives located in every important territory. The official name of the new organization is Arch R. Strong, Incorporated.

Penn State Co. Moves

Larger headquarters have been taken by the Penn State Radio Distributing Company, Philadelphia, Pa., and they are now located at 401 East Broad St., in the Terminal Commerce Building. A. Irving Witz is president of this company, which represents the CCo Manufacturing Company.

Schoellkopf Staff on Review



The Schoellkopf Company which has been appointed distributor of Brunswick radio in northern Texas, is shown here parading its staff. In the picture, back row, left to right are: T. M. Harrell, sales manager; M. J. Linehan, manager, radio department; C. E. Palmer, Jr., representative; "Chalk" Ellis, salesman and G. O. Moore, secretary - treasurer. In the first row, left to right, the Brunswick representatives are: Perry P. Pyle, E. M. Oertly, R. E. Commack, Jr. and H. E. Fuller.



At the Monument of Dvorak

The camera catches G. J. Timmermann, Midwest-Timmermann Company, at the monument in Spillville, Ia., erected to honor Dvorak, composer of the well-known Humoresque. It is fitting that one who has done so much to place music within the reach of the masses should pay homage to the composer of this universally liked composition.

THOMAS H. READ, formerly affiliated with the Master Radio Mfg. Co., Ltd., Los Angeles, has been appointed special representative for the Taylor-Travers Corp., manufacturer of the "Radio Owl."

Recent Distributor and Jobber Appointments

Dubilier Condenser Corp.

W. O. Taylor & Co., Ltd., Montreal, Province of Quebec and the eastern parts of Ontario as far as Kingston; R. C. James Co., Seattle, Wash., states of Washington and Oregon; Associated Engineers, Birmingham, Ala., Georgia, Alabama and Mississippi; M. F. Pray Co., Tulsa, Okla.; Guy C. Kowfeldt, Minneapolis, Minn., Minnesota, North and South Dakota.

Ware Manufacturing Company

Federal Radio & Elec. Co., Paterson, N. J.; Lewis Radio Jobbers, Philadelphia; Musical Products Dist. Co., New York City; Southern Tier Elec. Supply Co., Binghamton, N. Y.; Stewart-Warner Sales Co., Syracuse, N. Y., and Utica, N. Y.; John D. Williams Export Corp., New York City; Plymouth Elec. Co., New Haven, Conn., and Providence, R. I.; Fiske Radio Supply Co., Albany, N. Y.; Fort Pitt Dist. Co., Pittsburgh, Pa.

Cardinal Mfg. Co.

Pacific Wholesale, Ltd., Los Angeles, Calif.; Harper-Megee, Inc., Portland, Ore., and Seattle and Spokane, Wash.; Moore, Bird & Co., Denver, Colo.; Casner Bros., Inc., El Paso, Tex.; Bergstrom Music

Co., Honolulu, T. H.; Star Electric & Engineering Co., Houston, Tex.; J. M. Ward Co., Portland, Ore.; Walter S. Gray Co., San Francisco, Calif.; Edwin Sanger Corp., Dallas, Tex.; American Sales Co., New York City; Jensen-Byrd Co., Spokane, Wash.; Nunn Electric Co., Amarillo, Tex. and Wagner Y. Levien Sucs., Mexico City, Mexico.

National Union Radio Corp.

Billings Hardware Co., Billings, Mont.; Southern New York Electrical Supply Co., Binghamton, N. Y.; Sargent Baker, Inc., Rochester, N. Y.; Standard Battery & Elec. Co., Cedar Rapids, Ia.; Baumgardner & Co., Toledo, Ohio; Bush & Lane, Holland, Mich.; Wattydyne, 4 Rue Bernard Pallisy, St. Etienne, France; York Supply Co., Dayton, O.; Hudson Valley Asbestos Corp., Albany, N. Y.; Crason Electrical Supply, New York City; R. K. Carter & Co., New York City; Friedman Electric Co., Easton, Pa.; Collins Piano Co., New Orleans, La.; Messrs. Rencorect y Cia, Santiago De Chile; Dixie Drug Co., Goldsboro, N. C.

Poole Electric Clocks

Fiske Factors, Inc., New York City, exclusive Metropolitan distributor.

United Air Cleaner Corp. (Sentinel)

Southern Sales Company, Oklahoma City, Okla.; Redding Radio, Inc., Baltimore, Md., territory surrounding Baltimore and Washington, D. C.; Farrar-Brown, Inc., Portland, Me., Maine, northern part of New Hampshire and northern Vermont; Providence Electric Co., Providence, R. I., state of Rhode Island and part of Connecticut.

United American Bosch

Montana Hdwe. Dept. of the Anaconda Copper Mining Co., Butte, Mont., for the Montana district; San Diego Standard Electric Corp., San Diego, Calif., San Diego and Imperial Counties; and Brown-Johnston Co., Spokane, Wash., city of Spokane.

F.A.D. Andrea, Inc.

Daugherty Supply Co., Chattanooga, Tenn., Tennessee, parts of Alabama and Georgia; North Coast Electric Co., Portland, Ore., entire state of Oregon and various parts of Idaho.



For You to SELL



Visionola with Screen Setup

Visionola

IT is unnecessary to set up a special wall screen when showing talkies with the "Visionola," introduced by the Visionola Mfg. Corp., 60 E. 42nd St., New York City, as a screen is ingeniously set in the top of the cabinet which lifts up. The Visionola is a combination radio, phonograph and talking movie machine, all contained in the one cabinet. The projector picks up the film automatically—it need not be set on the teeth of the sprocket. The radio set is housed in a drawer below the projector, and the phonograph is in the usual position at the top of the cabinet.

This instrument comes in an attractive console cabinet and looks no different than the ordinary radio set when closed.

Rented film or home-made movies can be run as the reel size is standard size, 16 mm.

The intended retail price is \$550, less tubes, f.o.b. Saginaw, Mich.—*Radio Retailing*, January, 1931.



Visionola Closed

Magnavox Midget Dynamic Speaker

SPECIALLY designed for use with midget receiving sets, the Magnavox Company, 155 E. Ohio Street, Chicago, Ill., has brought out a new speaker. The performance is unusually good, the manufacturer claims, in comparison with larger reproducers.—*Radio Retailing*, January, 1931.

Philco Superhets

FOR 1931, a complete line of superheterodyne receivers, available in three furniture styles, a superhet combination with record changer, and a screen-grid radio-phonograph combination, are offered by the Philadelphia Storage Battery Co., Philadelphia, Pa.

The superhet receiver has 11 tubes, namely: four 224's, four 227's, two 245's and a 280. The



Philco Lowboy

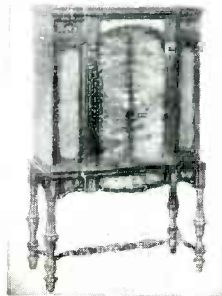
set is non-oscillating, according to the announcement, and will not regenerate electrical disturbances. A range switch at the back of the cabinet permits changing from normal sensitivity to supersensitivity for use in zones of extra low broadcast signal strength. The set is equipped with tone control. The superhet comes in the following cabinets:

A lowboy of American black walnut listing at \$129.50.

A highboy in either Louis XVI or William and Mary design, both types of pencil-stripped walnut and figured butt walnut, priced at \$155.

The superhet radio-phonograph has automatic record-changer playing ten 10- or 12-in. records. The changing device suspends the records above the turntable and places a new record on the disc as its predecessor is completed. \$272.

The new screen-grid combination has 7 tubes, three of which are screen-grids. The motor is a new type, never before used on Philco combinations. \$99.50.—*Radio Retailing*, January, 1931.



Philco Highboy



Tobe Interference Locator

USE of the new two-volt tubes has resulted in a portable interference locator, which is truly portable.

Model 230, just brought out by the Filterette Division, of the Tobe Deutschmann Corp., Canton, Mass., has four specially designed stages of r.f. and two audio stages using three 232 tubes and three 230 tubes for detector and audio stages. The output circuit of the audio amplifier includes a transformer feeding an intensity meter through a silver oxide rectifier. This meter provides a visual indication of interference intensity and allows a more accurate determination of interference or noise level.

A filament meter ensures the operation of the tubes at their



proper rating and enables the operator to calibrate the instrument.

The accessories include a portable sectional antenna constructed of a hard wood handle, split bamboo section and resonance coil, completely wired and insulated to withstand 2,200 volts; separate inductive pickup coil, and carrying strap. The overall dimensions are 7x13x14 1/2 in., and the weight is 35 pounds.

This locator is listed at \$265 net, complete with tubes, batteries and accessories.—*Radio Retailing*, January, 1931.

DeForest Two-Volt Audions

THREE standard two-volt Audions, types 430, 431 and 432, are now included in the line of the DeForest Radio Co., Passaic, N. J.—*Radio Retailing*, January, 1931.

Radio-Controlled Garage Door Operator

ALL you have to do to open or close the doors of your garage with the radio controlled door operator made by the Barber-Colman Co., Rockford, Ill., is to pull a knob on the instrument board of the car.

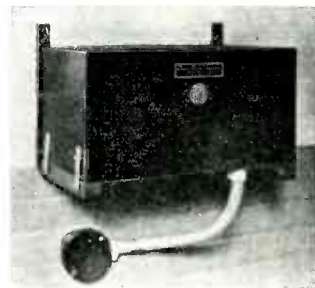
"Coded" to the car, the radio door will open for no other signal. When the car lights are burning, the lights in the garage are turned on, also.

The transmitter consists of three main parts: the timer, the



spark coil unit, and the transmitting antenna, and is mounted under the instrument board. The spark coil unit, enclosed in a small water-tight box clamped to the mainspring furnishes the high frequency current necessary for broadcasting. The receiver unit proper is contained in a box 12x12x18 in., usually mounted on the wall inside the garage. Connected to it is the receiving antenna, which consists of a wire mounted in the driveway. Power for the transmitter is derived from the car battery and the current is drawn for about three seconds each time the car signals. The receiver operates on 110-volt, a.c.

This automatic door operator may be obtained for practically every type of garage door.—*Radio Retailing*, January, 1931.

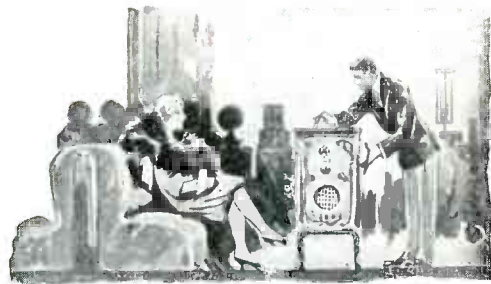


The receiver

Wire Wound Resistor

OPEN contacts are prevented with the new molded end contact on the precision wire-wound resistor placed on the market by the International Resistance Co., 2006 Chestnut St., Philadelphia, Pa.—*Radio Retailing*, January, 1931.

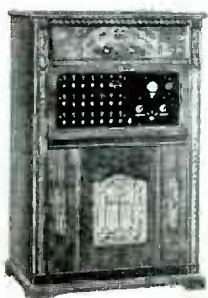
in 1931



Portable A.C. Public Address System

A COMPLETE, portable public address system comprising microphone, microphone amplifier, power amplifier and moving coil dynamic speaker, built in suitable carrying cases and designed for a.c. operation,

The special microphone feature makes this portable outfit extremely flexible in use



Centralized Radio

A SELF-CONTAINED distribution unit in a walnut cabinet, known as Series No. 90, is now being made by the Western Electric Piano Co., 850 Blackhawk St., Chicago, Ill. This unit provides music of phonograph records, radio programs and microphone control, with distribution facilities through 21 speakers.

The Western record chassis No. 200 which plays from 1 to 15 records on both sides, is used, together with a 9-tube radio receiver; a 2-button portable type microphone; a D-250 amplifier, (three 227's, two 250's, two 281's), and a dynamic speaker. The intended retail price is \$1,385 complete, except for speakers, which are extra.—*Radio Retailing*, January, 1931.



has been placed on the market by the Samson Electric Co., Canton, Mass. The system comprises two separate units: first, MIK-100 two-stage microphone amplifier complete in carrying case (39.5 lb.) with tubes, 2 button microphone, microphone desk stand adjustable from 15 to 21 in., 15 ft. of microphone cord and 25 ft. of cord for connection to the power amplifier and speaker unit. Intended retail price, \$185. Second PAM-100 speaker amplifier in carrying case (32.75 lb.) containing a dynamic speaker capable of supplying ample volume for gatherings up to 500 people. Intended retail price, \$158.

The complete system is intended to sell for \$343, complete with tubes, nothing else to buy. No batteries are used. The manufacturer points out that the MIK-100 unit can be used by itself as well as with the PAM speaker amplifier unit and is an ideal unit for remote pick-up use by broadcast stations. It may also be used, with the proper turntable and magnetic pick-up, for high-quality home recording. PAM-100 can be connected to a radio tuning unit or magnetic phonograph pick-up, or used in conjunction with a portable talking motion picture projector to provide good volume and quality.—*Radio Retailing*, January, 1931.



Ehlert Cabinets

EHLERT RADIO FURNITURE CO., 2468 Lincoln Ave., Chicago, Ill., offers for the coming season a wide variety of radio cabinets, ranging in price from \$45 to \$190.

The line includes six highboys, two desk models, a table console, and seven styles for combinations, including a most unusual piece—a replica of a writing desk and bookcase, done in the Old Colonial style.

Illustrated is Model 2375 Ritz of French Renaissance period design. \$100, cabinet only.

Ehlert offers to install the set and speaker in the cabinet at the factory without charge for the dealer, returning it direct to the customer.—*Radio Retailing*, January, 1931.



Filmophone with Special Microphone Feature

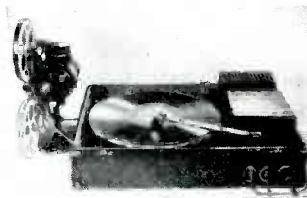
A SPECIAL microphone arrangement which enables the operator to interject remarks relative to any picture which is being shown, and to have his voice come from the loudspeaker in a satisfactory volume, is a feature of the new portable 16 mm. talkie reproducer, the "Filmophone," being made by the Bell & Howell Co., 1801 Larchmont Ave., Chicago, Ill.

This new combination is especially valuable for business, educational, church and small theater use. It is portable and comes in two cases of approximately equal size, totaling 88 lb. A Pilmno Projector is employed for showing the pictures, and sound is obtained by a synchronized, phonograph type of disc.

The microphone feature permits the operator to plug in at

any time, automatically cut out the musical or verbal record accompaniment, and make comments desired to emphasize certain points.

Another advantage is that when silent pictures are used, the salesman can talk into the microphone, explaining the picture as it goes along.—*Radio Retailing*, January, 1931.



Model 61

Clarion Models 61 and 70

FOR the new year, the Transformer Corp. of America, 2309 S. Keeler Ave., Chicago, Ill., has brought out a midget and a midget and stand combined.

Model 61 Clarion, the mantle type, is a 6-tube screen grid receiver with two 245's in push-pull. The power transformer and filter unit are oversized, the dial is illuminated, and a tone control is incorporated. This set

is housed in a good-looking cabinet, 19 1/2 in. high by 15 in. wide, \$67.50 complete with Clarion matched tubes.

Model 70 Clarion may be used in combination with the stand which comes with it, or may be set on a table as a mantle style set. It has 7 tubes, including two 245's in push-pull. Tone control is also a feature of this model, which is 21 in. high by 17 1/2 in. deep. The stand is 20 1/2 in. overall. The set lists at \$79.50, complete. The table is \$8.—*Radio Retailing*, January, 1931.



Model 70



New Pierce-Airo Midget

PIERCE-AIRO Inc., 119 Fourth Ave., New York City, has introduced another "De Wald" midget set. The new circuit is said to have greater amplification and selectivity. The cabinet design is entirely different from the previous model. It is not so modernistic in line and is more ornamental. The intended retail price is \$59.50 less tubes. This same model for 110-volt d.c., using the new low-drain tube, is \$63.50 less tubes.—*Radio Retailing*, January, 1931.



Lyric Midget and Console

A FULL-VISION dial, with spot-light tuning, is one of the distinctive points of the new midget and console sets presented by the All-American Mohawk Corp., N. Tonawanda, N. Y. These sets also have tone control. Four 224's, a 245 and a 280 are employed in the chassis which is common to each.

Model J-3, the midget, lists at \$59.50 complete.

Model J-3, the console, housed in a cabinet the same in design as Model 34, is \$89.50 complete.—*Radio Retailing*, January, 1931.



Howard "Green Diamond" Midget

THREE stages of r.f., using 224's in addition to a 227, a 245 and a 280, are used in the "Green Diamond" compact set made by the Howard Radio Co., South Haven, Mich. The dial is illuminated and electrolytic filter condensers are used. A tone control is also included.

The cabinet is walnut, and stands 17½ in. high by 14¼ in. wide. \$69.50, complete.—*Radio Retailing*, January, 1931.



New Gloritone Midget

QUITE different in design from the first midget brought out by the United States Radio & Television Corp., Marion, Ind., the new model has an oval-shaped top. The natural wood grain has a satin gloss finish with decorations

on the sides of the front panel. This set, which is known as Gloritone Model 26, stands 17½ in. high by 15 in. wide by 8 in. deep.

Three 224's one 245 and a 280 tube are used, and the speaker is an electro dynamic. The intended retail price is \$49.95, complete.—*Radio Retailing*, January, 1931.



Steinite Superhet Midget Combination

THE unusual part of the superheterodyne radio-phonograph combination of the Steinite Mfg. Co., Ft. Wayne, Ind., is that the turntable is located in a drawer beneath the set, rather than on top, as in previous midget combinations. In this way, the set does not take on unusual proportions at the top, making it top-heavy. The cabinet has a birds-eye maple front with the rest in walnut, and it measures 15 in. wide by 19 in. high by 10 in. deep. The chassis takes three 224's, two 227's, two 245's in push-pull, and a 280. This combination plays 10 or 12 in. records and has tone control. It is known as Model 605, and lists at \$99.50 less tubes.

The same model as a straight radio, without the turntable, is \$69.50 less tubes.

Steinite also offers Model 421, a t.r.f. not using three 284's two 245's in push-pull, and a 280 at \$49.50 less tubes. The cabinet measures 18½ in. high x 15½ in. wide. This chassis in a console, Model 425, is \$64.50. It stands 33 in. high and 19 in. wide.

Two other superhets are also available. Model 630 is a console listing at \$79.50, and in addition to this, there is a console combination at \$109.—*Radio Retailing*, January, 1931.



Majestic Midget

ANOTHER of the larger manufacturers, this time the Grigsby - Grunow Co., 5801 Dickens Ave., Chicago, Ill., has entered the midget field. Majestic's set, known as Model 31, is housed in a walnut cabinet of Heppelwhite design, the front panel being matched butt walnut, bordered with an attractive molding.

The chassis takes three 224 tubes, two 245's, and a 280. There are two knobs on the panel—one for tuning and the second being a combination volume control and on-and-off switch.

This set stands 19 in. high, and 15½ in. wide, and 10¼ in. deep, and lists at \$79.50 complete with Majestic tubes.—*Radio Retailing*, January, 1931.

Gilbert Model 70

MODELED along similar lines Mas the former set but with a different speaker grille and the dial located in the center instead of on the side, R. W. Gilbert, 2357 W. Washington Blvd., Los Angeles, Calif., has released a new midget, to be known as Model 70. This set has electro-dynamic speaker and takes four 224's and a 245 and a 280, \$59.50 complete.—*Radio Retailing*, January, 1931.



Phoenix Miniature

A NINE in. electro dynamic speaker, electrolytic condensers, illuminated dial—these are some of the high-lights of the "Phoenix" miniature set placed on the market by the Ross Corp., 3557 S. Halsted St., Chicago, Ill. The walnut-veneered cabinet has hand-rubbed finish. It is 18 in. x 14 in. x 9 in. The price with tubes, is \$59.50.—*Radio Retailing*, January, 1931.



Geneva Sets

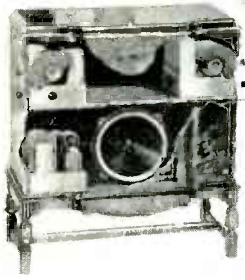
SEVEN-TUBES, including four 224's, a 227, a 245 and a 280, are used in the "Geneva" sets made by the Cordonic Mfg. Co., Holland, Mich.

These sets have four tuned r.f. screen grid circuits, two stages of resistance-coupled audio and screen-grid power detection. Electrolytic filter condensers are used, and a tone control is included.

The midget set comes in a cabinet of American walnut veneer, measuring 17 in. x 14 x 8½ in. \$69.50 complete.

Model 38, the console, stands 34 in. high x 20 in. deep, and retails at \$84.50, complete.—*Radio Retailing*, January, 1931.





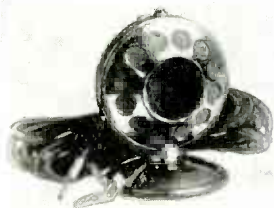
Kennedy Short and Long Wave Set

THE combination long and short wave receiver in the one cabinet shown by Colin B. Kennedy Corp., South Bend, Ind., a short time ago, is now in regular production.

The short wave unit uses three 224's in the r.f. amplifier, detector and oscillator positions. The r.f. stage is tuned, using an antenna coupling r.f. choke. The detector stage is tuned, a variable condenser of .00016 mfd. capacity being across one of the three r.f. coils. This detector stage is regenerative, oscillation being controlled by manually varying the screen voltage.

The output of the shortwave unit is fed to the antenna terminal of the long wave receiver, which is tuned to the frequency of the short wave unit oscillator tube output, and thus provides for short wave reception, the additional amplification of the three r.f. tubes, the power detector and the audio channel of the long wave set. Eight tubes are used for long wave reception.

This "double" set in a low console is \$252.—*Radio Retailing*, January, 1931.



Universal Microphones

ALONG with the movement for things miniature, the midget microphone has come into the field of radio accessories. The Universal Microphone Co., Englewood, Calif., is producing a baby microphone with a 25 ft. extension cord to connect with the home receiver so one can talk into the mike in another room and have his voice come through the radio set. This device is a great favorite with the practical joker, \$7.50.

A new model, "Handi-Mike," is being made especially for use as the mouthpiece in home recording devices, \$10.

This company also makes a line of regular microphones, stands and accessories.—*Radio Retailing*, January, 1931.

AK Centralized Control Installation

COMPLETE apparatus for supplying and controlling from a central point any number of additional speakers up to a maximum of 15, to be used with any 1931 standard a.c. Atwater Kent chassis, may now

be obtained from the Atwater Kent Mfg. Co., Philadelphia, Pa.

The equipment consists of a compact switch control box, a junction box, and the special tapped output transformer which replaces the regular output transformer on the radio set. A complete multi-wire cable connecting the switch box and junction box, together with a 4-wire cable from the special transformer to the junction box, is supplied already connected, so that the setting up involves a minimum of time and effort for the dealer. Small S.P.S.T. switches can be installed for controlling the additional speakers. Where it is desired to install only one or two additional speakers or headphones, the special transformer only is necessary and will be sold separately.

A special table-mounting speaker of the inductor type, which of course, requires no field current to operate, has been developed for these installations. It is of the popular clock shape, and is known as Model JB, listing at \$28.—*Radio Retailing*, January, 1931.



"Graphotone" Tone Control

THE service man or dealer who wishes to put a tone control right in the set panel so as to have a neat, professional looking job, will be interested in the panel type tone control just announced by the Clarostat Mfg. Co., 285 N. 6th St., Brooklyn, N. Y. It is called the "Graphotone" and is enclosed in a Bakelite case. It mounts through a 3-in. hole and has an extra long bushing with double mounting nuts to fit any panel thickness or cabinet wall. The retail price is \$1.80.—*Radio Retailing*, January, 1931.

Poole Electric Clocks

POOLE MFG. CO., Ithaca, N. Y. has announced an attractive assortment of clocks, covering a price range of from \$20 to \$35.

They are of the battery type, and operate independent of electric current, from a small bat-



tery. However, they are universally adaptable and may be operated, if desired, from any house current by the use of an adapter supplied at slight additional cost. The illustrated "Romanesque" model No. 71, in a two-tone brown mahogany with curly maple front panelling and standing 10 in. high, is \$35.—*Radio Retailing*, January, 1931.



Kellogg Hand Microphone

KELOGG'S 30 years' experience in manufacturing carbon for telephone transmitters is used to good advantage in making the hand microphone just placed on the market. This instrument is only 6 1/2 in. long, and weighs but 10 oz. but is sturdily constructed. It is supplied with a 60-in. tinsel cord of dark-brown, mercerized cotton braid, and will find many uses in radio broadcasting, home recordings and amateur work.

A modulating transformer to be used with this Model 29 microphone has also been developed. The microphone is connected to the primary side, which then feeds into the grid circuit of the amplifier through the secondary winding. The heavily enameled copper wire is wound over a large core made of laminated silicon steel. There is a shield between the primary and secondary test. The secondary has sufficient impedance to match the standard amplifying tubes on the market. Both devices may be obtained from the Kellogg Switchboard & Supply Co., 1066 W. Adams St., Chicago, Ill.—*Radio Retailing*, January, 1931.



Sola Voltage Compensator

HIGH incoming line voltages are reduced and low incoming line voltages increased automatically with the voltage compensator made by the Sola Corp., 2525 Clybourn Ave., Chicago, Ill. This compensator is placed between the line and the receiver, and it is said to filter out much of the outside interference. The characteristics are: capacity 100 watts, input 95 to 135 volts, output 0.90 amps. at 110 volts. It weighs 7 1/2 lb. and measures 3 1/2 in. by 4 in. by 3 1/2 in. \$8.—*Radio Retailing*, January, 1931.

Replacement Parts

MAYO Laboratories, Inc., 281 ME. 137th St., New York City, makes a full line of replacement parts for sets, such as transformers, resistances and electrolytic high voltage condensers. The electrolytic condenser can be used for replacement work in the average condenser block which now uses the paper type of condenser.—*Radio Retailing*, January, 1931.

Philco-Transitone Auto-Radio Set

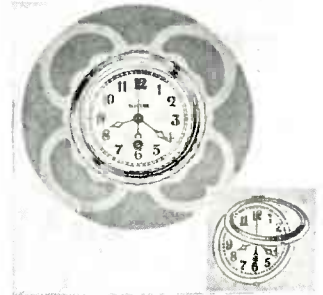
A NEW Philco - Transitone screen-grid auto-radio set is being made by the Philadelphia Storage Battery Co., Philadelphia, Pa., which company recently incorporated "Transitone."

The new set is lower in price, and will sell for \$65 complete with 7 Philco tubes. Installation charges have been fixed at a uniform figure. Installation and B-batteries will bring the total cost to the customer to \$99.80. If aerial installation is necessary the charge is \$10.

Official installation agencies are being appointed in each city, where the sets will be installed for the dealer in from 2 1/2 to 3 hours.

The radio is self-contained in one unit except for the speaker. Both the speaker and receiver are mounted under the dash with the controls mounted on the instrument panel. The dial is illuminated.

Three 224's, two 01A's and two 71A's are used, and the set is equipped with automatic volume control and specially designed electro-dynamic speaker.—*Radio Retailing*, January, 1931.



Electric Radio Clock

THE "Lincoln" electric radio clock is the latest development of the Electric Clock Corp. of America, 500 So. Throop St., Chicago, Ill. It is designed to fit into the speaker in all types of radio sets. Each is a front starter and operates on 60 cycles, 105-120 volt a.c. These clocks are made for manufacturers who wish to include a clock in their consoles.—*Radio Retailing*, January, 1931.



Permo-Point Phonograph Needles

RADIO dealers selling records and combinations, and music dealers, will be interested in the phonograph needle made by the Permo Products Co., 3625 Montrose Ave., Chicago, Ill. The record-engaging portion of the point is composed of osmium-iridium, and the point is fashioned to an elliptical shape to fit the record groove. More than 2,000 records can be played with one needle, the manufacturer claims.—*Radio Retailing*, January, 1931.



Titan Aerial

RETAILING at \$2.50, the Titan Aerial made by Britton-Hall-Wonders & Co., 130 N. Wells St., Chicago, Ill., is said to be equal to a 75-foot antenna in a set. It can be installed inside the cabinet and grounded to a radiator cap or water pipe in the usual way.—*Radio Retailing*, January, 1931.

Hickok Ohm-Capacity Meter

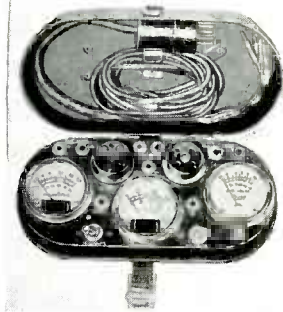
CATALOG R-4647 ohmmeter and capacity meter brought out by the Hickok Electrical Instrument Co., Cleveland, Ohio, has a list price of \$50. It is mounted on a solid Bakelite case 17½x6½x3 in.

The scale of the ohmmeter, which is of the double type, is from 5 to 5,000 ohms, and from 500 to 500,000 ohms. This meter indicates the continuity of all circuits, and at the same time the actual resistances in ohms of the circuit. A pair of insulated leads are supplied with each tester.

The capacity meter operates directly from 110 volt, 60-cycle a.c., and the range is from ¼ to 15 mfd., with maximum sensitivity of from 1 to 4 mfd. Leaky condensers can be instantly checked, not only by reading the capacity, but by using the ohmmeter and measuring the actual resistance in ohms of the condenser.—*Radio Retailing*, January, 1931.

Brunswick D.C. Console

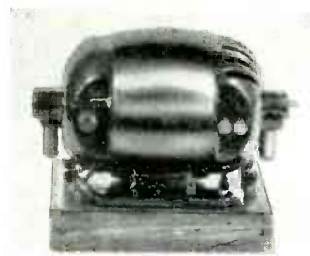
PRESENTED by the Brunswick Radio Corp., 116 W. 42nd St., New York City, in console cabinets, Nos. 15 and 22, the new d.c. receivers use 9 tubes, 4 of which are 32 screen grids. Four 171-A's operate in parallel push-pull. The speaker is a 10-in. dynamic cone, and these sets incorporate all the features of the a.c. models, including armored chassis, uni-selector, capacity volume control, and tone control.—*Radio Retailing*, January, 1931.



Readrite Set and Tube Tester

AN IMPROVED model of the set and tube tester made by the Readrite Meter Works, Bluffton, Ohio, is now on the market. The meters used are: 0-10-140 a.c. voltmeter, 0-60-300 d.c. voltmeter with a resistance of 300 ohms per volt, and 0-20-100 milliammeter.

Model 245-A is a compact tester which checks voltage at the set socket, line voltage, continuity of transformers, chocks, etc. It will test all tubes, and meters are used simultaneously or singly. The tipped leads for continuity testing, screen-grid connector and cable with plug are all contained in the cover. The list price is \$20; net price, \$12.—*Radio Retailing*, January, 1931.



Fidelity Converters

A LINE of radio converters to change 32, 110 or 220 volt d.c. into 110 volt, 60 cycle a.c. is offered to the radio trade by the Fidelity Electric Co., Lancaster, Pa., in several sizes. These converters are ruggedly built for long service and the filtering system is the result of careful engineering and design.

Model 1 has sufficient capacity to operate sets up to 90 volt amperes, \$40; Model 2 for sets up to 120 va., is \$44; and Model 3 for sets up to 160 va., is \$50.

Several larger sizes for special work, amplifiers, etc., are available at corresponding prices.—*Radio Retailing*, January, 1931.

Power Supply

TYPE P-77 power supply, of the American Transformer Co., 178 Emmett St., Newark, N. J., operates directly from standard 110 or 220-volt a.c. and supplies potentials of the order of 375 volts at 200 ma. as well as intermediate voltages. It has been designed especially for use with equipment using 205D type tubes, but similar rectifiers with different output ratings are also available. This power supply unit employs two 66-type mercury-vapor tubes in a full-wave rectifier circuit, and should one tube fail while in operation, the other tube will provide full output as a half-wave rectifier until the operator has an opportunity to make a replacement. The units are mounted on aluminum panels of standard 19 in. width.—*Radio Retailing*, January, 1931.

Polymet Sound Equipment

"SAFETY - MARGIN" is the trade name of the new line of sound equipment which the Polymet Mfg. Co., 829 E. 134th St., New York City, is now producing. A complete line of amplifiers and amplifier parts is available. The condensers, resistors, transformers, chokes, faders and all similar essentials are being built by this company in its own factories, as Polymet contends that by incorporating related parts the service problem is simplified.—*Radio Retailing*, January, 1931.



"Novo Mike"

AN ENTIRELY new model "Novo Mike," with the carbon principle retained, has been brought out by the American Laboratories, Ltd., 2903 Beverly Blvd., Los Angeles, Calif.

The "Novo Mike" is designed for home broadcasting of programs over the radio. It is possible to listen to the studio program, cut in with your own announcement by merely pushing a button, and then return immediately to the broadcast.

This mike lends itself to many novel and entertaining ideas as well as practical jokes. It is easily attached. The price is \$5, including 50 ft. of rayon-insulated cord.—*Radio Retailing*, January, 1931.

Talking Tubes to the Tenderfoot (Continued from page 31)

ailment was introduced to the public, more than 85 customers brought in tubes to have them tested. Usually at least one tube was found defective—in many cases there were five little tubes all of which gave less than satisfactory service.

A Cardboard Carrying Carton

ONE sales letter, calling attention to the number of service calls due solely to defective tubes and offering a free testing service, brought in \$1,600 in tube business to Kinney and Sipprell. Everett, Wash., in three weeks' time. A tube-testing device had previously been devised by Clifford Carpenter, head of the service department, which tested tubes in the presence of the customer. Three hundred set owners brought in their tubes for testing.

The company soon noted that one out of every three persons who brought in his tubes telephoned in advance to ask how to take the tubes out of the set, how they could be replaced and whether or not he was likely to injure them in the process. When the tubes came in,

they were often carelessly jumbled together in a bag, or else were clumsily packed with all sorts of makeshift wrappings to protect them. This experience led to the devising of a tube-carrying carton which the company now provides free to customers. This is divided into cardboard compartments, much like an egg crate, into which the tubes can be fitted. Instructions are printed on the lid, telling how to remove and replace tubes in the set. On the front of the box is printed the name of the firm, Kinney and Sipprell, together with its address and telephone number.

The company now sends out from four to six cards to its mailing list about three times a year. On the first of these cards the customer is advised that the store has something for him "free of charge" which will improve the operation of his set. On his initial call he is given a carton and is shown the instrument for testing his tubes. Thereafter the cards sent him are reminders that for the best service, tubes should have periodic testing and that the time has come to bring them in again.

Our Changing Business — (Continued from page 20)

eleven-tube automatic feed superheterodyne combination at \$272, less tubes.

From the above it should not be assumed that this lower scale of prices will not ultimately be revised upward. A stabilization of production and of consumer buying may be expected to start the price pendulum swinging in the up direction eventually.

Stocks On Hand We enter this year with sets, parts and raw material inventories in a much more normal condition than at any time during the past five years. A majority of the larger set manufacturers have learned to match production with demand and will maintain prices and protect the trade. On the other hand a number of smaller concerns, particularly some of the recent entrants specializing in midgets, will be obliged to take the negative course and sacrifice stocks.

From the Laboratories — (Continued from page 21)

possible to use audio-frequency amplifiers having better low-frequency response.

The Loftin-White system of direct-coupled audio amplification, because of its ability to provide quality amplification at satisfactory volume levels with a minimum of associated equipment, will undoubtedly be very popular this year, especially in midgets. Screen grid tubes in such amplifiers will provide high gain.

Superhets Many new superheterodynes, both of the console and midget type, will be marketed during the year. These will follow very closely the design suggestions charted by the RCA for its licensees and we may expect receivers of this type with 175 kc. intermediate amplifiers and some few tuned to 130 kc. (A special article about superheterodynes begins on page 38.)

It seems likely that those manufacturers who enter the superhet arena from this date forward will express their individuality through the addition of refinements such as automatic volume control rather than in alteration of the prescribed circuit.

"Pygmies" In an effort to further reduce midget prices it is likely that other manufacturers will follow Crosley's lead and produce super-midget receivers having four or less tubes, including the rectifier. It has even been suggested that manufacturers produce "office radios" in simple, utility cases designed to match filing cabinets and similar business furniture and capable of receiving local stations with good voice quality for reception of stock market quotations and like commercial services. High quality amplifiers would scarcely be necessary.

The production of comparatively insensitive receivers for such special uses is made further practicable by the Federal Radio Commission's order concerning modulation. Beginning January 31 all stations are ordered to transmit signals modulated 75 per cent or better. This will not only extend their useful range but will provide greater selectivity by eliminating much useless carrier transmission. We may see, as an indirect result, small, inexpensive sets designed for reception of local stations only. This could easily become an important business.

The metropolitan centers will suffer but this dumping will be in units of thousands rather than in hundreds of thousands. The past twelve months have seen a more drastic elimination of weak sisters than any other twelve-month period of our industry. We believe that this condition has been so marked as to ultimately bring about a strengthening of the position of the remaining manufacturers, wholesalers and dealers. Now, therefore, is the golden time to actively put into practice those sound policies which *Radio Retailing* so long has advocated. Certainly from now on the real job will be done by those veterans in the service whose survival has been due to their judgment and conservatism over a period of years. These brethren will strive to create a keener public consciousness of the difference between a real radio set at a fair price and a piece of distress merchandise purchased under the ancient Roman sign *Carveat Emptor*. "Let the Buyer Beware."

Mechanical Features

Home recording is due for improvement. Ellis, RCA and several other companies have perfected inexpensive, high quality microphones which are badly needed in this field. Gear-fed tone arms will probably be used by a number of manufacturers to secure improved recordings. The problem of designing a turntable motor with sufficient torque to cut larger records will be somewhat more difficult, as this must be accomplished without adding materially to production costs. Nothing of great interest has been done in this direction to our knowledge.

Automatic record changing will continue to be a very important feature in combination models and the trend this year will be toward the use of similar automatic devices in order to further reduce list prices.

Home talkies will become even more closely allied to the radio field. It is likely that several manufacturers of such equipment will omit amplifying equipment from their devices in order to reduce the list, relying upon the use of radio set amplifiers with the talkie unit. Pathé, it is interesting to note, has built a midget receiver into a home talkie cabinet, using this midget not only as a source of audio amplification for the record reproductions but including also a switch which makes it possible to use the set for radio reception as well.

Centralized Radio

With one of the largest set manufacturers definitely in the centralized radio field, this trend takes on added significance for the radio dealer. Special output transformers having multi-winding secondaries designed to feed remote magnetic speakers are obtainable for use in standard AK receivers. This year may see a revival of the output circuit jack, with provision for the use of auxiliary external magnetic speakers in several lines.

The number of manufacturers in the public address equipment field is steadily increasing and a trend toward the production of semi-portable and portable equipment, with greatly simplified controls may increase the value of such merchandise to the non-specializing retailer.

Television will not be a factor.

All in all, it appears that the year promises several important new technical developments but no revolutionary design.

Announcing the New
HOWARD GREEN DIAMOND
 Compact Radio with TONE CONTROL



The
GREEN DIAMOND
 has the following
 features:

Tone Control—an outstanding feature of this set.

Three screen grid tubes and power detector.

Completely shielded tuning condensers and coils.

Non-Oscillating.

Electrolytic-type filter condenser—as used in the most expensive receivers.

The assembly is in one complete unit, the dynamic speaker being mounted to the chassis by means of a bracket.

Dial is calibrated directly in kilocycles for convenience in dialing.

Beautiful cabinet of matched walnut woods.

Adjusting knob on the chassis which makes it possible to bring up to its greatest efficiency any length antenna used with this receiver.

Compact size of 15½ inches width, 18 inches height, 12½ inches depth, weight 32½ lbs.

Price—complete with tubes

3-224
 1-227
 1-245
 1-280

\$69⁵⁰

Also a full line of Green Diamond Compact Models in special furniture, including a small consolette.

No one has ever had greater justification for pride of achievement than has HOWARD in presenting this new Green Diamond Compact Receiver with tone-control. The highest of standards which have guided Howard in the manufacture of their full-sized receivers were not deviated from in the designing of this new set. Every resource at Howard's command was utilized to the fullest extent in perfecting the new Green Diamond. It is now presented to the wide-awake dealers of America as the outstanding achievement in receivers of this type. The addition to the Howard quality line of receivers of the new Green Diamond presents to dealers of integrity and foresight the opportunity of a lifetime to sell quality at a profit.

Write for full particulars—Drawer G

HOWARD RADIO COMPANY, CHICAGO, ILLINOIS
 FACTORY AND GENERAL OFFICES, SOUTH HAVEN, MICHIGAN

The
 New **HOWARD** GREEN DIAMOND
 Compact Radio with TONE-CONTROL

Tone . . . Selectivity . . . Power . . . IN COMPACT FORM

IT'S EASY TO IDENTIFY 1931 TUBES

① Look for Positive Characteristics

TUBES must do more than light, or ride on testimonials. From factory to ultimate socket, they must provide definite electrical characteristics precisely matched to radio set requirements at all times.

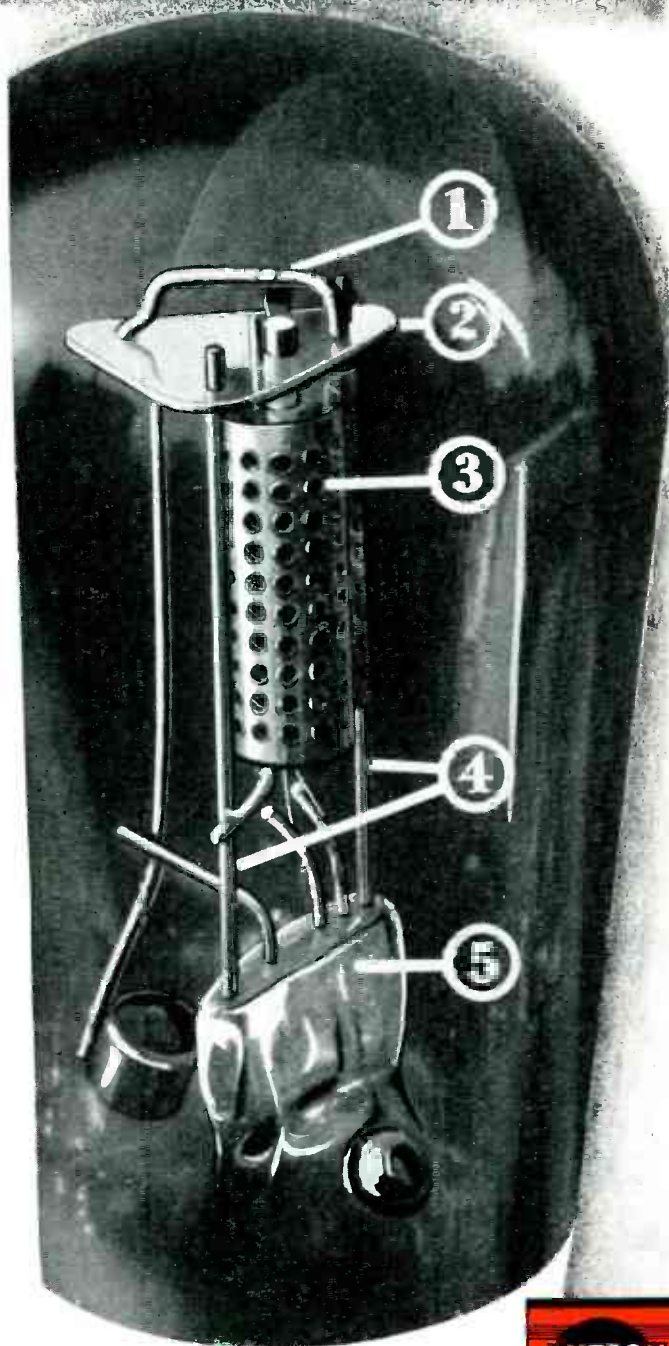
And that is the function of ultra-sturdy De Forest construction:

1. Nickel support wires of twice the normal diameter.
2. Heavy, accurately punched mica spacer positively positioning elements at top.
3. Perforated metal plate in place of wire mesh.
4. Heavier side supports providing ample rigidity four ways.
5. Special tempered glass press produced on unique De Forest automatic units, accurately mounting support wires.

These and other advanced features, found in *fresh* De Forest Audions—tubes produced a month or two ahead of sale—insure the 1931 performance of the 1931 radio set.

This is the first of a series of *debunking* messages dealing with 1931 radio tube features. Perhaps you would like the entire story at once. If so, we shall gladly send you our literature.

DE FOREST RADIO CO., PASSAIC, N. J.



de Forest
AUDIONS
RADIO TUBES



After all, there's no substitute for 25 years' experience



HOME RECORDING

MEANS MORE PROFITS FOR YOU!



**LIST
PRICE
\$25.00**

less microphone

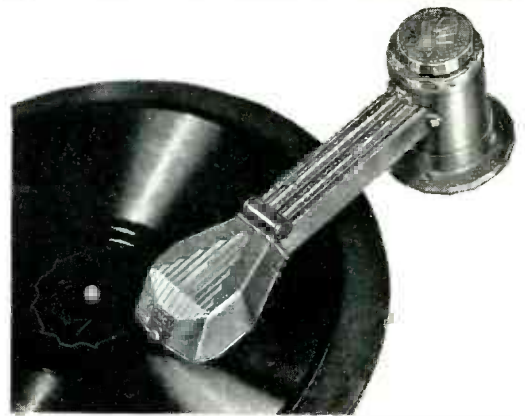
Microphone as illustrated. \$10 additional

SOMETHING that every customer will want—THE PACENT RECORDOVOX. Phonograph records made at home with professional results and without the necessity for expensive apparatus. Tell your customer it will provide a permanent album of the voices of his family and friends or radio programs he wishes to preserve.

THE PACENT RECORDOVOX assembly consists of the RECORDOVOX, furnished with clips, a special adapter and the selector switch illustrated above, together with the necessary connecting cords. Price \$25.00. The hand microphone illustrated will be supplied only when requested, at an extra cost of \$10.00 list.

THE PACENT RECORDOVOX is designed to operate with the pre-grooved type of records which are available everywhere at a small cost. It is a quality product, made by the manufacturers of talking picture equipment now operating satisfactorily in over 2,000 theatres throughout the world.

Public Address System Manual containing last minute data on amplifiers, microphones, loud speakers, together with useful information concerning the planning of sound systems will be sent free of charge upon request.



The new Master Phonovox Catalog No. 107. Contains 12 features that make it the greatest value in pick-ups today. List price \$15.00.

PACENT ELECTRIC CO., INC., 91 SEVENTH AVENUE, NEW YORK, N. Y.
Pioneers in Radio and Electric Reproduction for over 20 Years. Licensee for Canada: White Radio, Ltd., Hamilton, Ont.

PACENT

Department Stores

When buying Sets—consider

Champion

QUALITY

and order the Tube
that . . .

1. Increases your sales.
2. Makes every set perform at its BEST!



Get Champion Tube
Prices—before pricing
your sets—make up your
selling prices after you
have the low . . .

Champion Tube Quotations!

Champion

RADIO TUBES

CHAMPION RADIO WORKS, INC., 1290 PINE ST., DANVERS, MASS.


 MAKERS OF THE WORLD'S FINEST REPRODUCERS
 ROLA Dynamic and Magnetic Loudspeakers
 ROLA Big Tower Theatre and Auditorium Reproducers
 2570 Superior Avenue
 CLEVELAND, O.

January 1st. 1931

To the Radio Industry -


On December 8th. 1930, the United States Supreme Court confirmed the decisions of the lower courts in the recent patent litigations brought against the Rola Company.

Those who have maintained confidence in the Rola organization during these court proceedings will find this decision honoring Rola patent rights a further vindication of their faith and judgement.

To our many friends, we take this opportunity to extend our thanks, sincere in the belief that future accomplishments will justify the fine spirit of cooperation that has been extended during this period.

The industry is entering a year filled with rich promise of accomplishment. May each forward step be interpreted in terms of healthy progress for you, your organization, the radio industry.

Yours sincerely,


 THE ROLA COMPANY
 Vice President



THE OUTSTANDING TUBE SUCCESS
OF THE YEAR



*better built . . . better inspected . . . better packed
better advertised . . . better performance*

PERRYMAN RADIO TUBES

YES SIR

THERE IS SOMETHING NEW IN THIS RADIO BUSINESS

AREN'T you tired of trying to sell people funny-looking, tinny-sounding "Midg-ets" and huge ungainly white-elephant orphaned sets—tired of flat "selling points" that don't mean a thing to Joe Prospect? Cheer up! There is something new in this radio business! Yes, sir!

Here's the new Clarion Model 70. Isn't it a beauty?

Listen: you never heard such beauty of tone...such true-to-life reality of reproduction...such selectivity...such sensitivity! It's amazing! When your customer sees this new Clarion and hears it...well, there's

nothing else to it besides hitting the cash register!

Clarion Model 70 illustrated on opposite page is priced at **\$87.50** complete with seven Clarion matched tubes—is something to make you sit up and take a lot of notice. Here's a set you can sell. Here's a set they'll buy . . . why, it has more talking points than any radio that ever came off a production line!

There isn't space here to tell you all about it. Write us—wire us—phone us—and all the information you can use will be yours at once. But hurry, folks, this is going to be the biggest selling set 1931 will see!

P. S.—Yes, (we answer that question here and now) the new Clarion Junior 1931 model 61 at \$67.50, complete with tubes, also is ready for delivery. A new beautiful Cabinet — a more complete Chassis — more selectivity, sensitivity and sincere tone quality than ever before attained in this type model.

CLARION MODEL 61—6 TUBES

Tone control, screen grid with power detector. 2—245 tubes Push-Pull power amplifier. 1—280 rectifier tube. T. C. A. dynamic speaker. Complete shielding. Battleship construction throughout. Supplied complete with Clarion matched tubes. Excellent sensitivity and selectivity with stability. Cabinet size—Height, 19¾", Depth, 10½", Width, 16½".

Will you be one of the 12,000 dealers who will reap a Golden Harvest in 1931 with Clarion?

TRANSFORMER CORPORATION OF AMERICA, OGDEN AND KEELER AVENUES, CHICAGO

Clarion Radio

THE GREATEST RADIO VALUE AT ANY PRICE



Clarion Model 70
\$79.50
 Complete with 7 matched
 Clarion tubes
 Matched Decorative
 Base \$8 extra

CLARION MODEL 70—\$87.50. Complete as illustrated

Tone control 4-Circuit receiver. Beautifully designed and acoustically perfect cabinet. T. C. A. dynamic speaker—ultra-sensitive. Complete shielding. Battleship construction throughout. Unusual sensitivity, and selectivity over the entire broadcast band with perfect stability. 3—224 screen grid tubes. 1—227 power detector. 2—245 tubes Push-Pull power amplifier. 1—280 rectifier tube. Supplied complete with Clarion matched tubes. Cabinet size —Height, 21" —Depth, 10½" —Width, 17¼" —Stand size, 20½" overall.



Clarion Radio

THE GREATEST RADIO VALUE AT ANY PRICE

List Price only \$49⁵⁰ JANETTE Rotary Converters

Almost unbelievable! A Janette 110 watt Rotary Converter for only \$49.50—complete with filter, cord, plug and A.C. receptacle. Now you can sell A.C. radios wherever there is Direct Current—on farms, aboard ship or in the D.C. districts of large cities.

JANETTE MANUFACTURING COMPANY

555 West Monroe Street, Chicago

Singer Bldg.
149 Broadway, New York

Real Estate Trust Bldg.
Philadelphia

Harrison Sales Co.
314 Ninth Ave., No. Seattle

Mail Coupon For Your Discounts

Janette Manufacturing Co.
555 West Monroe Street, Chicago, Illinois

Send me complete information including discounts on your Type CA-20-F,
110 watt, Rotary Converter.

Company

Address

City State

By



The G-E Radio Certified Inspection Plan



RADIO Dealers Everywhere are now reaping the benefit of the

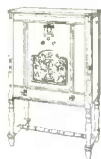


The Studio
Lowboy

This splendid business building plan secures for each General Electric Radio dealer three things. First, it gives him the opportunity to take full

advantage of the tremendous goodwill behind the name General Electric by assuring satisfaction for each customer. Second, it provides a natural reason for customer contact.

Third, it opens up an easy way of securing names of new prospects. It is an exclusive feature of General Electric's sales building program—a definite selling aid which will help to close sales for you.



The
Lowboy

After four months of operation, the G-E Radio Certified Inspection Plan has proved an overwhelming success. Radio dealers everywhere are describing it as the



The
Highboy

greatest merchandising idea they have ever used. You owe it to your business to get all the facts.

Write to your nearest General Electric Radio distributor or direct to the Merchandise Department, General Electric Company, Bridgeport, Connecticut, for details.



The Radio-
Phonograph
Combination

G-E CERTIFIED INSPECTION PLAN

for

GENERAL ELECTRIC FULL RANGE RADIO

The Studio Lowboy, list price \$112.50, less tubes.

The Lowboy, \$142.50, less tubes; with tone control \$5.00 additional.

The Highboy, \$179.50, less tubes.

The Radio-Phonograph Combination \$285.00, less tubes.

Would you like to receive a copy? Write to The American Weekly, 959 Eighth Ave., at 57th Street, New York City.



Perk up your ears when a manufacturer tells you he is going to advertise in **THE AMERICAN WEEKLY.** This magazine has the largest circulation on earth, reaching nearly 6,000,000 families throughout the United States.

Isabel Swayed as if About to Collapse, and Don Lorenzo Caught Her in His Arms. "No, thank you, Noel," Isabel answered, and darted a half-
(Continued on Page 12)

OK Radio Set Engineers

NATIONAL UNION, THE STANDARD TUBE FOR STANDARD SETS



Dr. R. E. Myers, recognized authority on vacuum tubes, scientist, and pioneer in radio tube production, now vice-president in charge of engineering and production of National Union Radio Tubes.

WE can be, we think, justifiably proud that the set engineers of these great radio companies have selected National Union Tubes to bring out all the charm of tone they have built into their sets.

It wasn't luck that put National Union Tubes in these great sets. They were severely tested in competition with practically every radio tube that is made today. They were selected because of their all-round advantages and

precision of their manufacture.

National Union Tubes survived life tests that soon wore out inferior tubes. They brought a new and more glorious tone to every set.

It is another proof that National Union tubes have uniformity that can be trusted. That we are making radio tubes with a watch-like precision seldom found in the radio field.

The careful production and personal supervision of Dr. Ralph E. Myers is the secret of the success we have enjoyed. To him and to his staff of assistants go the credit.

Their skill in making radio tubes has placed National Union in the high position we now enjoy with set manufacturers.

Write and let us tell you how you can capitalize on the rapid success of National Union Tubes—the Standard Tubes for Standard Sets.

Here are a few of the many leading set manufacturers who have endorsed National Union tubes as standard equipment for their sets.

CROSLEY

KENNEDY

ZENITH

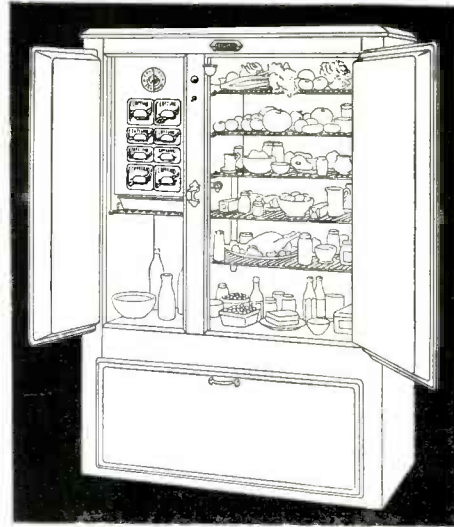
**APEX
RADIATROPE**

ECHOPHONE

National Union Radio Corporation ships more tubes as standard equipment for standard sets than any other exclusive Tube Manufacturer.

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

ELECTRIC REFRIGERATION SALES



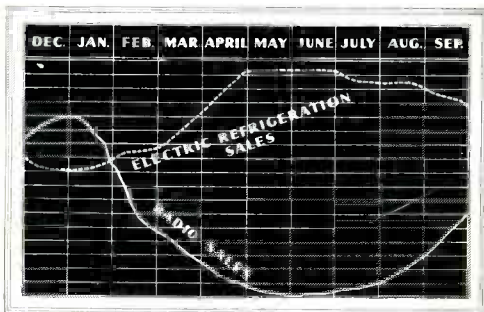
Copeland has the answer!

Your success in selling electric refrigeration depends largely upon the manufacturer you tie up with. Tie up with Copeland.

Copeland knows its business! Copeland pioneered the sales of electric refrigeration through radio outlets. It studied the problems for years . . . and as a result, hundreds of radio merchants are now selling Copeland Electric Refrigeration successfully and profitably.

With Copeland backing, you can successfully combine radio and electric refrigeration sales. No radical change in your set-up is required—the same principles of specialty selling, home installation and service apply in both cases. For prospects you have a ready-made group in your radio customers—and Copeland will show you how to sell the maximum number of them!

Copeland sales climb when radio sales decline



The 1931 Copeland line is a winner. It answers every requirement in the household, apartment and commercial fields with equipment that is superior in every way.

Why not let Copeland give you the benefit of its long experience in merchandising electric refrigeration through radio outlets? Copeland has at its finger-tips plans and procedures followed by its successful distributors and dealers. Take advantage of them—fill out and mail the coupon below.

COPELAND SALES COMPANY
MOUNT CLEMENS, MICHIGAN
342 Cass Avenue

Gentlemen: Please send me complete details on the Copeland Sales franchise.

NAME _____
ADDRESS _____
CITY _____ STATE _____

COPELAND
DEPENDABLE • ELECTRIC • REFRIGERATION

**Successful ■ Sound Equipment
Merchandising ■■■■■■ in 1931 ■■■■■■
accomplished with ■■■■ THE**

**WESTERN
Centralized
Control Unit**

*Radio
Phonograph
Microphone*



The new Western Series No. 90 is a self-contained distribution unit in a beautiful walnut cabinet. It is of finest construction and provides music of phonograph records, radio programs, and microphone control. It has distribution facilities for phonograph, radio, and microphone through 21 speakers. The individual equipment composing the complete unit is the finest manufactured.

Now dealers can sell a centralized radio system in a self-contained unit. Here is an outstanding development. One that is advanced in design and perfect in performance.

It is a standard twenty-one speaker distribution unit designed to be extremely flexible and adaptable for schools, lobbies, and ante-rooms of hotels, mortuaries, restaurants, public buildings, community centers, clubs, gymnasiums, theatres, arenas, race tracks, and numerous other places.

Interest in centralized radio and public address systems is increasing. You should be prepared to meet the demand—you can capitalize on The Western Centralized Control Unit.

Our engineering staff has worked on this distribution unit for months. Our huge facilities for experimentation and development plus their experience has produced this excellent equipment.

With this unit we have actually opened up a great field of profit for you. There will be many sales of this unit in 1931. The business is ripe and now awaits action on your part.

Let us send you complete description and details.

WESTERN ELECTRIC PIANO CO.

350 Blackhawk St., CHICAGO

Manufacturers of Quality Automatic Instruments

ATWATER KENT

RADIO

with the GOLDEN VOICE



**“Take it
from an
old-timer.”**
says 1930 to 1931

DON'T WASTE your time and money on merchandise that doesn't show net profits.

Don't be talked into "propositions" that won't stand the test of experience.

Don't scatter your fire over so big a field that you can't know every inch of it personally.

Make this a year of sane, safe, progressive merchandising with the radio that has made money for dealers for eight years.

Ride with radio's all-time leader. Line up squarely with Atwater Kent.

Concentrate on NET PROFITS.

ATWATER KENT MANUFACTURING CO. · A. Atwater Kent, Pres. · 4700 Wissahickon Ave., Philadelphia, Pa.

The FINAL WORD

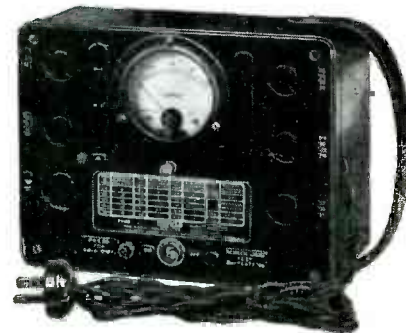
— IN TUBE CHECKING

THE NEW **DAYRAD**
Type L

SELF-BIASING TUBE CHECKER

At last there is a Tube Checker which will perform every function of tube checking you have ever dreamed about. All the efficiency, simplicity and speed in handling which characterize DayRad Service Instruments, with new features which place this Self-Biasing instrument in a class by itself.

- Checks all tubes for "End of Life"—
- Finds open and short circuits—
- Tests both 280 plates separately—
- Shows up noisy tubes—
- Locates the "Duds"—



It has been proven beyond all doubt that Tube Checking profits amount to 25% of your total radio profits. Surely this is an item which merits your careful consideration. You should add this DayRad Self-Biasing Tube Checker to your equipment because of its complete checking facilities, because it will locate all tube troubles—and, chiefly because it will add to profits.

Net Price to Dealers \$27.60

Send for the folder, "The Final Word"

DAYRAD Type 183 Test Oscillator



The instrument consists of a variable frequency Oscillator with a range from 550 to 1500 Kilocycles, and two fixed frequencies, 175 and 180 Kilocycles and an additional frequency of 130 Kilocycles. A vernier is provided for the purpose of adjusting Intermediate Frequency Stages of Super-Heterodyne Receiving Sets. Accurate within $\frac{1}{2}\%$ on I.F. Ranges, and 1% on Broadcast frequencies.

The Oscillator is shielded and is equipped with a variable signal output control. An Output Meter is furnished for the purpose of visualizing adjustments. Furnished with shielded dummy antenna leads, insulated screw-driver, special leads, etc.

Net Price to Dealers \$62.50

Send for Oscillator Bulletin.

THE RADIO PRODUCTS COMPANY

Pioneer Manufacturers of High Grade—Low Price—Radio Service Instruments

5th & Norwood

Department R

Dayton, Ohio, U.S.A.

ARE YOU PENNY WISE?

YOU have often heard it said, "Don't be penny wise and pound foolish." And yet it is so natural. Another tendency is to procrastinate. Do you recall the fellow who explained why he did not repair his leaky roof? He said, "I can't mend it when it is raining and when it stops raining the roof doesn't leak." How many business roofs are leaking now because they were not mended while skies were clear and business was good?

Among "penny wise" people are some Radio Wholesalers. When times are good, they are too busy to find out what a good investment membership in the Radio Wholesalers' Association would be. They take an indifferent attitude. When there is a business depression, then they practice a "penny wise" policy by saying they cannot afford the price of membership.

The Radio Wholesalers' Association was organized and functions for the benefit of the entire radio industry, from Manufacturer to consumer. It safeguards the best interests of the Radio Wholesaler and Dealer. Its membership represents a majority of the purchasing power of the country from Radio Manufacturers.

THE Annual Convention of the Radio Wholesalers' Association will be held in Indianapolis on February 16-17, 1931, and will be a "down to facts and remedies" convention. Rub elbows with the fellows who will *not* be "licked."

Join the Radio Wholesalers' Association, Mr. Radio Distributor—don't be "penny wise," especially in these times. Don't indulge in "false economy." Write for information regarding membership and plan now to attend the Convention in Indianapolis.

RADIO WHOLESALERS ASSOCIATION

Executive Offices:

32 West Randolph Street
Chicago, Illinois

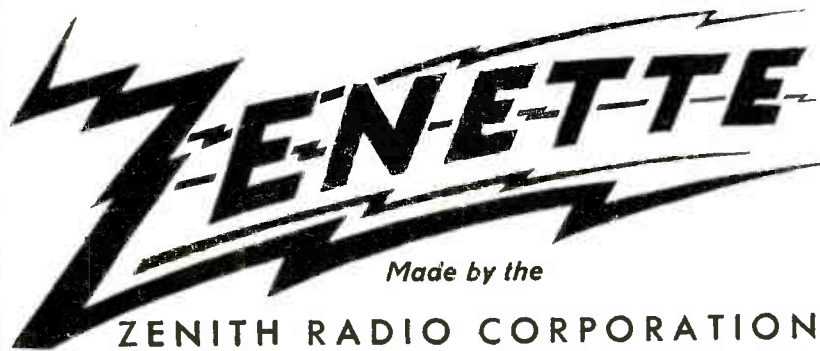
H. G. ERSTROM

Executive Vice-President

NEW!

SENSATIONAL!

REVOLUTIONARY!



ANOTHER

ZENITH

TRIUMPH

**A
HIT!**

**A sensational
 NEW LINE**
 of radio receivers, without
 precedent in value giving..

\$57⁵⁰ **\$94⁰⁰**
LESS TUBES LESS TUBES
TO

(Sold with RCA or Cunningham Tubes)
 Prices slightly higher in Far West

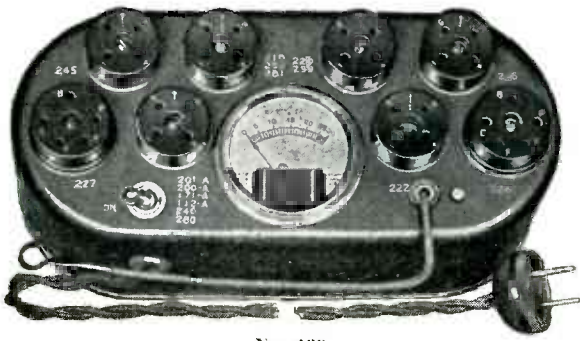
**THE BIGGEST NEWS OF THE
 NEW YEAR!**

*Don't wait a minute... get in touch
 with your Zenith distributor NOW !!*

MADE BY THE MAKERS OF

ZENITH RADIO

3620 IRON STREET, CHICAGO, ILL.

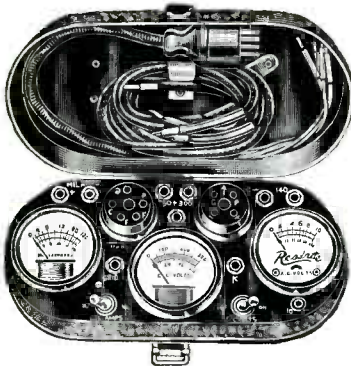


No. 400

Counter Tube Checker

A new tester gives dealer and customer the required tube value information. Mutual conductance test all tubes, including the new 2-volt tubes. Simple to use. Accurate, dependable. Connects to A.C. supply. Attractive baked enamel finish. All parts shielded. Complete with up-to-date chart.

\$12 NET—60 CYCLE \$13 NET—25 CYCLE



No. 245-A

Set Analyzer for Servicing

No service department is complete without this handy, practical tester.

Newly designed to meet the servicing needs of all

types radio receiving sets. Adaptable for every kind of socket test. Also continuity of circuits—a.c.-d.c., and all tubes including screen grid and rectifier. Checks line voltage. Charts for resistance, and capacity tests with full instructions furnished. Accurate. Compact. Simple to use. Durable steel case finished in a beautiful baked enamel.

\$12 NET

If not at your jobber's we will supply direct.

READRITE METER WORKS

Established 1904

BLUFFTON 6 College Ave. OHIO

ACME WIRE PRODUCTS

Parvolt Filter and By Pass Condensers,
Coils—Magnet Wire Wound,
Varnished Insulations

Magnet Wire - - - All Insulations

All products made to Recognized Commercial Standards, including those of:

National Electric Mfrs. Assn.
Radio Manufacturers' Assn.
American Society for Testing Materials

For more than 25 years manufacturers and suppliers to the largest and most discriminating users.

THE ACME WIRE CO.
NEW HAVEN, CONN.

Branch Offices

New York
52 Vanderbilt Ave.

Cleveland
Guardian Bldg.

Chicago
842 N. Michigan Ave.

JRC RADIO TUBES

Thoroughbreds of Radio

There's no occasion for claims or sales arguments when you sell JRC Tubes. Like the real thoroughbreds they are, they *prove by performance*. Put JRC Tubes in your demonstration set and invite your customers to judge them—by tone quality and by every other test of fine reception.

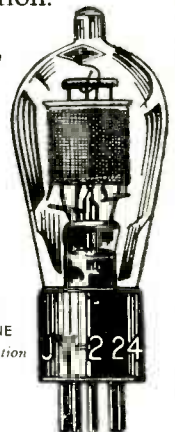
Write for details of
JRC Dealer Proposition



REIGN
COUNT



Scaled in
DU PONT
CELLOPHANE
For your protection



JOHNSONBURG RADIO CORPORATION
JOHNSONBURG, PA.

New York: 55 W. 42d St. Chicago: 28 E. Jackson Blvd.

Incomparable



Model J-3 \$69.50
Complete with Tubes
Table extra
Other Models Ranging
to \$365 Less Tubes



Model J-8 \$89.50
Complete with Tubes



**Spot-Light Full-Vision
Tuning Dial**

Lyric, exclusively offers the dealer this unique feature with which to stimulate sales. A traveling spot of light follows the indicator and under any lighting condition makes the station mark readily visible.

Automatic equalizer; Screen-grid linear detection; Whisper tuning; Razor-edge selectivity; four-gang condenser; Super-dynamic speaker; complete shielding . . . and many other advantages are also featured in the popular LYRIC line.

LYRIC.. Product of Wurlitzer
... again steps ahead!

LYRIC'S success during the past year has been due to continuous vigilance, keeping in advance . . . always anticipating the dealer's needs.

An ever increasing demand for the Lyric line coupled with a detailed survey of the market has prompted the manufacture of these newest models . . . at a price geared to present buying habits.

The advantages of the unusually high merchandising standards employed by the All-American Mohawk Corporation are open in a few select territories. The recognized value of a LYRIC franchise is such that this opportunity will not be open long. Write or wire.

LYRIC RADIO
Product of WURLITZER

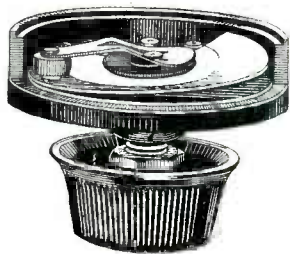
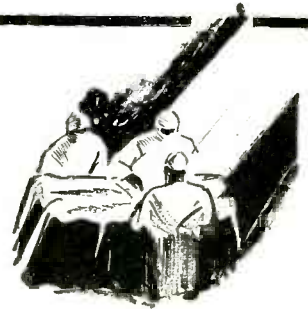
ALL-AMERICAN MOHAWK CORPORATION, North Tonawanda, N. Y.

when Death gambles with control

THE white-robed surgeon, from the moment his knife is poised, never dares to lose CONTROL.

Slovenly technique on the part of even the "scrub nurse" may spell Death. Every phase of the building of a Centralab resistance unit must be under control if it is to function smoothly and noiselessly.

That twenty million Centralab controls have been sold all over the world attests to the perfection of this technique.



Servicemen and Dealers

Send 25c. for new and original VOLUME CONTROL GUIDE giving resistance circuits for all old and new sets. Now service any set with a handful of Centralab controls.

Centralab

CENTRAL RADIO LABORATORIES

Dept. 140-D, 20 Keefe Avenue
Milwaukee, Wis.

NOW! THE "WIRELESS" ANTENNA ELIMINATOR FOR MIDGET SETS

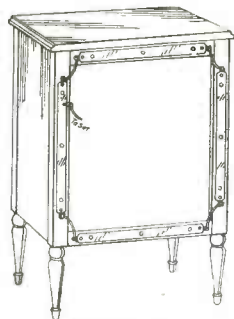
95 CENTS LIST

Standard Package 12

It is flat—Attaches to bottom of Midget—Out of sight—Greatly increases selectivity and brings in out-of-town stations by the dozens.

JOBBERs—Order a dozen and let us send you complete details.

DEALERs—Order a dozen from your jobber—if he cannot supply you order from us and give us your jobber's name.



PAT. APP. FOR

MONEY BACK GUARANTEE!

The "Wireless" Antenna Eliminator for Cabinet Sets (as illustrated) \$1.25 List.

THE JAMES H. BLINN CO.
1800 Blake St., Denver, Colo.

Mrs.
GOLDBERG BROS., Denver

WASMUTH-GOODRICH COMPANY



Fine Radio Cabinets
fashioned by
Master Craftsmen

103 Park Ave., New York
Peru, Indiana



Back to School, MR. RADIO DEALER
with a Public Address System
and **ELLIS Microphones**

Every school can now enjoy the benefits of sound amplification. It is no longer necessary to go through the inconvenience of school assemblies. With an Ellis Microphone pupils can be addressed from the principal's office. Alert radio dealers are securing contracts from their local schools.

Ellis Microphones, precision built, are furnished in several models. Write for complete description and prices.

ELLIS ELECTRICAL LABORATORY

Sole Corporation

337 W 51 MADISON ST

Chicago, Ill. 15



**Insured
Radio
Delivery
Protection**

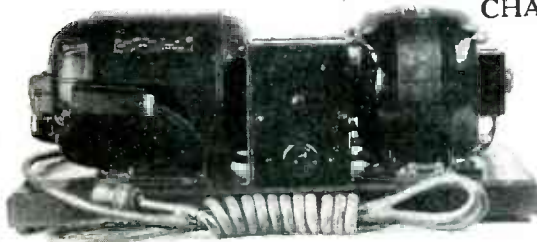
**Weather-Proof
UNIVERSAL
Padded Cover**

Cabinet size cover, shown here, is adjustable to all cabinet radios—Junior Model fits the new table type radios. Just two straps to fasten on large cover; but one to secure on the Junior. Quilted cover of strong, waterproof brown drill padded with thick layer of high-grade felted cotton—guaranteed not to separate unless actually torn.

No. 15, shown here, \$6.00 (\$6.75 Colorado and West). No. 10, Junior Model, \$2.50 (\$3.00 Colorado and West). Shipped Parcel Post, C.O.D. postage paid; on open account if you have account with us.

The Clifford W.

MAISH BEDDING COMPANY
1503 FREEMAN AVE., CINCINNATI, OHIO



CHANGES

**D.C.
to
A.C.**

The Doyle Radio Motor Generator sets are designed especially for supplying 60 cycle alternating current in D.C. districts for operating A.C. radios, phonograph-combinations, public address systems. It is available in 32, 115 and 220 volts at 125, 175, 250 watt capacities. Portable and furnishes noiseless reception.

Ask for Bulletin 101-C—or about territory available.

RADIO POWER EQUIPMENT COMPANY
1447 East Anaheim Street, Wilmington, California
(Los Angeles Harbor)



1 and 2 Watts
Cartridge Type



1/2,
1
and
2
Watts
Pigtail
Type



Precision Wire Wound

**DEALERS and
SERVICEMEN!**

Standardize on
**LYNCH
METALLIZED
RESISTORS**

For permanent replacement. Accurate—guaranteed. Special ceramic casings to permit maximum heat dissipation. Greater safety factors. More value for less money.

**New Low Prices
New Liberal Discounts**

Send for new illustrated Catalog "R"

Lynch Mfg. Co., Inc., 1775 B'way, N. Y.

UNEQUALLED



**WESTON
MODEL 565**

The Weston Model 565 is virtually a complete portable radio laboratory. It makes the required tests on every model radio set, checks every type tube, A.C., D.C., Pentode and both plates of Rectifiers. As a tube checker, it operates directly from any 50/60 cycle, 90/135 volt A.C. line. Model 565 contains an R. F. Oscillator, Direct Reading Ohmmeter, A.C. Ammeter, D.C. Milliammeter, A.C. and D.C. Voltmeter, providing unusual wide ranges of measurements.

With the increasing demand for quality service work, radio dealers and service men need the most dependable service equipment. Those who want the best will appreciate the refinements in design, the ruggedness in construction, precision manufacture and the unequalled reliability in performance of Model 565, the complete radio test set.

Write for Circular HH

—Other Radio Service Instruments—

MODEL 566

An inexpensive, reliable, 2 meter Test Set designed for radio servicing in homes. Tests all model radio sets. Checks all type tubes under same conditions as in their sockets.

MODEL 564

Volt-ohmmeter—6 D.C. ranges for 600/300/30/3 volts, 0-10, 000/0-100,000 ohms. All ranges brought out to binding posts. Equipped with 30-in. test cables with prods and self-contained 4½ volt battery. Used for checking resistance and continuity of circuits.

Weston
PIONEERS
SINCE 1888
INSTRUMENTS

WESTON ELECTRICAL INSTRUMENT CORPORATION
581 Frelinghuysen Avenue Newark, N. J.

AMERTRAN POWER AMPLIFIERS



**Type PA,
Series 80**

An economical means of obtaining flawless reproduction of sound in large volume is available in a new series of Amertran Power Amplifiers, the result of months of laboratory experimentation and exhaustive field tests.

There are four sizes in the new Series 80, one to fill every requirement. The big Type PA-86, shown in the illustration, will flood an auditorium with a full volume of music or speech without distortion. Smaller models are made for installations in restaurants, clubs, dance halls, schools and homes — wherever exceptional fidelity of reproduction at high volume is desired.

The mounting and construction is such that they are installed easily, with no bothersome wiring and connections, and are proof against tampering or damage. Simple controls and ease of portability are added features that contribute to the popularity of Amertran Power Amplifiers whose record of performance has won the distinction of being considered The Standard of Excellence for Audio Reproduction.

Licensed under patents of R. C. A. and Associated Companies



AMERICAN TRANSFORMER COMPANY
178 Emmet Street, Newark, N. J.

For complete description and information contained in Bulletin 1079 send us the coupon below:

RR-431

AMERICAN TRANSFORMER COMPANY
178 Emmet Street, Newark, N. J.

Gentlemen: Send me Bulletin 1079 with complete description of Type PA, Series 80 Amertran Power Amplifiers.

Name

Street & No.

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

FOR TESTS ON SUPERHETS



**The Type 360-A
Test Oscillator**

is the result of more than two years of experience with the design and manufacture of test oscillators for servicing Radiola superheterodyne receivers. Several hundred instruments are already in use and the list is growing as other manufacturers go into production on superhets.

Note the following features: (a) modulated signals are available at 175 kc., 180 kc., and any frequency in the broadcast band; (b) the 180-kc. channel is calibrated at five 1-kc. intervals on either side for aligning band-pass filters; (c) the 500-kc. to 1500-kc. tuning control is calibrated throughout the band; (d) test tools and a copper-oxide-rectifier output meter are included as regular equipment.

*Get the facts before you buy a test oscillator.
Send for a copy of Bulletin 932-T2.*

GENERAL RADIO COMPANY
OFFICES: LABORATORIES: FACTORY:
CAMBRIDGE A, MASSACHUSETTS

MAYO

FOR

**SERVICE MEN
REPLACEMENT
TRANSFORMERS, CONDENSERS
RESISTANCES**

Replace
with MAYO
"They're
Guaranteed"



Majestic Set Block

MAYO *does not* use surplus or salvaged condensers. All parts are manufactured in our own plant from new and the finest of materials.

Send for new Catalog—the most complete ever published

MAYO LABORATORIES, Inc.

Factory and Office

281 East 137th St., New York City

Are your customers still prospects?



Just a few comments from Radex Readers

"Several friends of mine were complaining about not being able to get distant stations, so I bought several copies of RADEX and gave my friends a thrill. They are not sore at their receivers anymore."—Leon V. Garland, P.O. Box 93, El Segundo, Calif.

"RADEX seems to be the only source of authoritative information for the set owner."—J. Roland Stehl, 5308 Fernpark Ave., Baltimore, Md.

"Your magazine surely showed me how to use a radio. I have tuned in 126 stations in 26 days."—John Costie, Stony Brook, N. Y.

"It is a real necessity to anyone who wants to know what he can get, when and how and why."—L. S. Moore, Highland Park, Mich.

"My interest and accuracy in radio tuning have been doubled since using your fine magazine."—Ira W. Campbell, 516 E. Mulberry St., Bloomington, Ill.

"I cannot see how I managed to operate my radio without RADEX."—G. R. Trotter, 302 Bethesda Ave., Mena, Ark.

"A great help to a greenhorn and I am rapidly turning into a regular fan."—H. C. Sweely, Williamsport, Pa.

"Since using RADEX I have heard stations I didn't know existed."—F. C. McGinn, 716 N. Evergreen, Memphis, Tenn.

ONCE you have sold your prospect a radio receiver, do you cross his name off your prospect list? Or are you doing your utmost to keep his interest alive so that you may sell him additional equipment, parts, and supplies?

Your customers can be made a source of continuous revenue. One sure way of doing this, of keeping them interested in radio, is to sell them RADEX, called by its readers, "the perfect radio magazine."

It is published monthly, and contains in addition to an up-to-date and complete listing of stations and programs, conveniently indexed for logging, articles pertaining to the technical side of radio, that spur the readers' interest in what goes on inside the cabinet. It converts ordinary radio listeners into fans,—fans that will make your store their headquarters, their source of supply for the accessories their tinkering will demand. Once read, your customers will demand it every month.

Not only in this way does RADEX increase your revenue for every copy brings you a nice margin of profit.

Send in the coupon below, this quick-selling magazine will bring added radio enjoyment to your customers and increase the popularity of your store.

THE RADEX PRESS
1301 East 6th Street, Cleveland, Ohio

FREE MAP COUPON

The Radex Press
1301 E. 6th St., Cleveland, Ohio
Ship us one dozen RADEX and the free Radio Map. We enclose \$2.00.

Firm
Street
City

RADIO MAP FREE

With first orders for RADEX, provided attached coupon is used and check accompanies order, we will send free, a large two-color radio map of North America—the finest radio map ever published.

Fill out this coupon NOW.

SEARCHLIGHT SECTION

EMPLOYMENT and BUSINESS OPPORTUNITIES—SURPLUS STOCKS—DISCONTINUED MODELS

UNDISPLAYED—RATE PER WORD:

Positions Wanted, 5 cents a word, *minimum* \$1.00 an insertion, payable in advance.
Positions Vacant and all other classifications, 10 cents a word, minimum charge \$2.00.
Proposals, 40 cents a line an insertion.

INFORMATION:

Box Numbers in care of any of our offices count 10 words additional in undisplayed ads.
 Discount of 10% if one payment is made in advance for four consecutive insertions of undisplayed ads (not including proposals).

DISPLAYED—RATE PER INCH

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

POSITION VACANT

PROGRESSIVE British firm offers permanent position as manager of their cabinet making department. Applicants, who will be interviewed in New York, must be prepared to go to Great Britain at short notice. First class knowledge and experience of American methods of mass production in the cabinet or furniture trade are essential. Apply in the first instance to BM/PXJH, London, W. C. 1, England.

POSITION WANTED

WANTED, connection with radio concern; have 28 years' mechanical experience—specialized 15 years in manufacturing, experimenting and developing receivers, parts and variable condensers. PW-135, Radio Retailing, Tenth Ave. at 36th St., New York.

REPRESENTATIVE AVAILABLE

Sales Agents
 Are open for radio and electrical lines of merit to represent in the New York and Metropolitan territory. Ten years' experience among jobbers and retailers. Get in touch with us at once. Highest references. S. and K. Company, 845 Walton Ave., Bronx, New York City.

SPECIAL SERVICES

TAGS, labels (gummed or plain), cards, hand bills, letterheads, envelopes, statements, billheads, \$2.95 per thousand delivered. We print anything at lowest prices. National, Goshen, Indiana.

Distributors

We have been appointed distributors for the following nationally known products:

- Amertran Parts and Power Amplifiers
- Samson "Fam" Power Amplifiers
- General Industries Microphones
- Pilot Short Wave Equipment
- National Company Equipment
- Gold Seal Electric Appliances
- Geo. W. Walker Multi-Unit
- New Haven Electric Clocks
- Radio Engineering Labs.
- Ken-Wel Sporting Goods
- Flechheim Condensers
- Universal Microphones
- Electrad Resistors
- DeForest Tubes
- Esco Generators
- Jewell Meters
- Vibronlex

Send for catalogues and prices on the above.

AMERICAN SALES CO.
 19-21 Warren St.
 Dept. R, New York City

SPECIAL NOTICE:

TO THE RADIO INDUSTRY

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

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

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

WANTED

CABINET REPRESENTATIVES

Nationally known cabinet factory desires services on commission basis several representatives of proven ability to contact large radio manufacturers for their cabinet requirements. State full details; experience, commission rate and territory desired.

RW-134, Radio Retailing
 520 No. Michigan Ave., Chicago, Ill.

WANTED

Notice: Manufacturers and Distributors

WE BUY RADIO SETS

If you need ready cash let us hear from you. We buy current models of nationally known radio sets; but they must be bargains. Let us have your proposition.

LAMMERT FURNITURE COMPANY, 911-19 Washington Avenue, St. Louis, Mo.

RADIO MERCHANDISE

Large or Small Quantities Wanted

Manufacturers, etc., please note the Pacific Coast absorbs enormous quantities.

We export. We job. We represent worth-while products. We buy surplus.

In Radio since 1929

WESTERN SURPLUS OUTLET CO.
 3929 Moneta, Los Angeles, Cal.
 Phone Axridge 3883

One Insertion

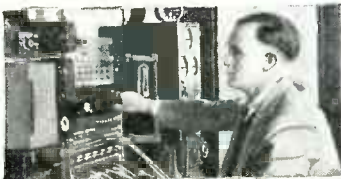
of a

"Searchlight" Ad

is often all that is necessary to locate a buyer.

EARN BIGGER PAY in RADIO

Be a *Certified* RADIO-TRICIAN



\$1800 to \$5000 a Year

Broadcasting stations need men continually for jobs that pay \$1,800 to \$5,000 a year to Radio engineers, operators and station managers. Many men who completed my course are now earning big money in this field. I will train you to do as well or even better.



World-Wide Travel and Good Pay Plus Expenses

Shipping companies use hundreds of operators and give them world-wide travel with practically all expenses paid and a good salary besides. In this fascinating field, too, my graduates are making good. My Employment Department receives many requests every year for "Sea-Operators". Will I soon have the pleasure of recommending you?



\$75 to \$200 a Week

Talking Movies wouldn't be possible without Radio. The good men employed in making and showing talking pictures must know the Radio I include in my course. Salaries range as high as \$75 to \$200 a week.

I'll Train You at Small Cost in Your Spare Time at Home



J. E. Smith
President

Send for my free, 64-page book, "Rich Rewards in Radio". Get the facts on the big-money opportunities this growing industry offers trained men. Find out how quickly you can learn at home in your spare time to earn real money in Radio. My amazingly simple 50-50 home-study training is the secret! It is the *only* training that enables you to become a *Certified* RADIO-TRICIAN.

Many Earn \$50 to \$100 a Week

Many of my graduates are now making \$50 to \$100 a week in responsible Radio jobs. After completing my training you, too, should earn as good or even better pay—for the opportunities in Radio are growing greater every year. I train you for all branches of Radio—manufacturing, selling, servicing sets, a spare time or full time business for yourself, operating on board ship or in a broadcasting station—and many other lines, including Television and Talking Movies. My course is easy to understand, even for those whose education ended in the grammar grades. And no wonder!—it is the result of sixteen years' experience in training men and young men at home in their spare time to become Radio experts.

So Many Opportunities Many Earn \$200 to \$1,000 in Spare Time While Learning

You stay right at home, hold your present job, and learn in your spare time. I teach you to begin making extra money on the side shortly after you enroll. My 50-50 practical method makes this possible. I give you eight big laboratory outfits and show you how to build and service practically every type of receiving set made. Many of my students earn \$10, \$20, \$30 a week *extra* while learning. Why not you? You don't risk a penny when you enroll with me. I back my course with a signed agreement to refund every cent of your money if, after completion, you are not satisfied with the Lesson and Instruction Service I give you.

Send for My Free Book

See for yourself exactly what Radio offers you and what I offer you in Radio training. Send for my valuable free book. It has put hundreds of fellows on the road to big pay in Radio. Mail the coupon for your free copy NOW! J. E. Smith, President, Dept. 1AX2 National Radio Institute, Washington, D. C.



Television

Television is a coming field of amazing opportunities. I'll get you ready for it now so you can get in on the ground floor when it is put into practical use.



Aircraft Radio

Aircraft Radio is coming to the front fast. Airports and airplanes are being Radio Equipped. Get one of these thrilling, fascinating jobs—through N. R. I. I will show you the way to do it.



\$50 to \$100 a Week

There is nothing like being the "boss" in a profitable full time or spare time business of your own. A large number of my men are now making from \$50 to \$100 a week selling and servicing Radio sets in their neighborhoods. Many started their business while taking my course and earned \$500 to \$1,000 even before graduating.

Your Choice of 5 New Advanced Courses Without Extra Charge

My training not only gives you a thorough knowledge of Radio—all you need to get and hold a good job—but, in addition, you may take any one of my new advanced courses, without extra charge. They are Television, Aircraft Radio, Broadcasting, Commercial and Ship Radio Stations, Sound Pictures and Public Address Systems, and Advanced Radio Servicing and Merchandising. You won't be a "one job" man when you finish my training. You'll know how to handle a job in any one of Radio's 20 different branches of opportunity. Send for my free book now.



\$800 in Spare Time

"Money could not pay for what I got out of your course. I did not know a single thing about Radio before I enrolled but I have made \$800 in my spare time, although my work keeps me away from home from 6:00 a.m. to 7:00 p.m. Every word I ever read about your course, I have found true." Milton L. Leiby, Jr., Topton, Pa.



Salary Three Times Larger

"Before I completed your course I went to work for a Radio dealer. Now I am Assistant Service Manager of the Sparks-Withington Company. My salary is three times what it was before taking your course. I could not have obtained this position without it. I owe my success to N. R. I. training." H. A. Wilmoth, Sparks-Withington Co., Jackson, Mich.

FREE 64 PAGE BOOK of FACTS and PHOTOS



MAIL COUPON NOW

J. E. SMITH, President, Dept. 1AX2
National Radio Institute,
Washington, D. C.

Dear Mr. Smith: Send me your free book "Rich Rewards in Radio", giving full information on the big-money opportunities in Radio and your famous 50-50 method of training men in spare time to become Certified Radio-Tricians. I understand this places me under no obligation and that no salesman will call.

Name.....
Address.....
City..... State.....
Present Occupation.....

SEARCHLIGHT SECTION

Radio Retailing
January, 1931

SERVICE MEN and DEALERS:
WE SPECIALIZE IN
REPLACEMENT PARTS
Send for Our Latest Bargain Bulletin



BAL-RAD
REPLACEMENT BLOCK
For Atwater Kent No. 37
This unit contains the proper chokes and high voltage condensers. All flexible wire colored leads identical to the original.
Fully guaranteed **\$4.95** each

BAL-RAD HY
VOLTAGE

Surge-proof Condensers For General Repair and Power-Pack Work
We guarantee these condensers for 100 per cent. free replacement. Repairmen should carry a few dozen in stock.

	MFD.	Working Volts	Each
One	600	"	30c
Two	600	"	40c
Four	600	"	60c
One	800	"	50c
One-half	300	"	25c

PIGTAIL CARBON RESISTANCES
500 ohm 15000 ohm 10000 ohm } **\$1.00**
1000 ohm 25000 ohm 20000 ohm }
4700 ohm 2 megohm 75000 ohm } Per doz.

General Replacement Transformer
Can be used as replacement in all sets using 224-245-280 and 227 tubes.
Our Price **\$2.75**

Thordarson Power Transformer
For Sets using 226, 227, 245 and 280 tubes.
Our Price **\$2.75**

Peerless A. B. C. Power Transformer
For use with 245, 280, 224, 227. Also has a 3-volt winding for 199 tubes or amperita voltage control.
Our Price **\$3.75**

Victor A. B. C. Power Transformer
Used in all Victor Sets. For use with 6-226, 2-245, 1-227 and 1-280 tube. Can also be used for any Power Amplifier using 245 tubes.
Our Price **\$2.75**

Genuine PHILCO Power Transformer
Using 4-226, 1-227, 2-245 and 1-285 tubes.
Our Price **\$3.75**

SPECIALS

United Electric Motor and Turntable	\$7.95
Pacnet Phonovox	4.95
R.C.A. Power Transformer, Part No. 8335	3.95
R.C.A. Part No. 8333	1.50
R.C.A. Part No. 5996	.35
Zenith Power Transformer	3.50
Earl-Freed Power Transformers	4.50
Victor Push-Pull Transformers	2.50
Zenith Audio Transformer	.95
Zenith Output Transformer	.90
Zenith Inter-Stage Audio Transformer	1.25
Freshman Replacement Transformer	.45
Edison Audio Transformer	.85
Crosley Double 30 Henry Chokes	1.50
Polymet III Volt. 1 Mfd.	.35
Polymet 2 Mfd.	.55
Potter 1/4 Mfd. Condenser	.25
Crosley 1/2 Mfd. Condenser	.25
BalRad replacement Block Majestic B Eliminator	2.95
Kolster Condenser Block	.95
Quam Magnetic Speaker	3.75
Muter Dynamic Speaker	8.95
R. C. A. 106 Speaker	14.50
Kolster K-6 Speaker	4.95
R. C. A. 100B Speaker	4.50
R. C. A. 103 Speaker	5.25
Brandes Cone Speaker	2.45
Brandes Type "H" Speaker	1.45
R. C. A. No. 103 Speaker Chassis	3.25
Kolster K-3 Speaker Chassis	2.45
Baldwin Rival Unit	.75
Westinghouse PT Meters	1.00

TERMS: 20% with order, balance C.O.D. 2% discount allowed for full remittance with order only.

No Orders Accepted for Less Than \$2.50
BALTIMORE RADIO CORP.
47-A MURRAY ST., N. Y. C.
Send for Our Latest Bargain Bulletin



Quality--Price--Guarantee

Three Good Reasons for Buying

FEDERAL TUBES

1. Quality —Equal in quality to the best obtainable at any price.	226... .35 280... .40 201A... .40 227... .40 112A... .40 171A... .40 245... .45 199X... .45 199V... .45	224... .50 120... .60 200A... .60 WD11... .75 WD12... .75 210... 1.25 250... 1.35 281... 1.25 222... 1.25
2. Price —Absolutely the lowest for what a quality tube can be offered.	BH125... \$1.75 2 Amp charger bulbs \$2.15 [New and Old Types]	5 Amp charger bulbs \$3.75 [New and Old Types]
3. Guarantee— 3 Months We guarantee to replace free any tube that does not give satisfaction.		

Complete Line Always on Hand
20% With Order; Balance C. O. D.—2% Allowed If Full Remittance Is Sent With Order.

KUCKER RADIO & ELECTRIC COMPANY

67 Cortlandt St., Dept. R New York, N. Y.
Phone: BArlay 7 - 4467

HAVE YOU

Received Our 1931 Issue of
Bargain Bulletin?

This contains a complete line of replacement parts—Radio and Electrical bargains.

Fischer Distributing Co.
152 Chambers St., New York City

Dealers and Service Men
Send for the Latest
Issue of

NUBOR FLASHES

It contains hundreds of
Radio and Electrical bargains
Have you received your Copy?

NUBOR RADIO CO.
14 Warren Street, New York City



At the threshold of a New Year we again extend our most sincere good wishes to the trade for a most prosperous one, and express our appreciation for the volume of business conducted with us during the past year.

During this New Year we propose to make our business policy of bargain values and prompt service, mean even more to every retailer of radio merchandise than it has in the past.

Let's get together for a mutually profitable 1931!

AMERICAN SALES CO.

19-21 Warren Street
New York City



FIG. 1

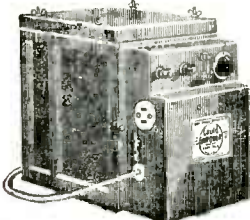


FIG. 2

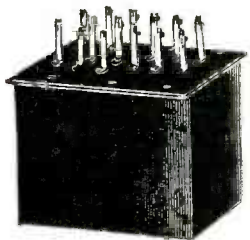


FIG. 3

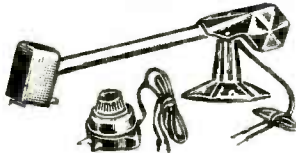


FIG. 4



FIG. 5



FIG. 6



FIG. 7



FIG. 8



FIG. 9

CONTINUING OUR PRE-MOVAL SALE

These Items offered at
SPECIAL SACRIFICE PRICES!

Stock Them Now for a
profitable New Year!

FIG. 1—New Algonquin Speakers, 18 in. Magnetic Cone. Special \$2.50 ea.

FIG. 2—New Type Kathode Gould "Unipower" Unit, with built-in relay. Furnish automatic "A" power from light socket. Special \$7.50 ea.

FIG. 3—Stromberg-Carlson Power Transformers, 250 watts, used in 404RA power packs, and 744 and 734 receivers. For 2-281's and 2-250's. Special \$4.75 ea.

FIG. 4—Patent Electric Phonograph Pick-Ups, complete with tone arm, volume control and adapters. Special \$4.25 ea. Without tone arm, volume control and adapters only. Special \$2.50 ea.

FIG. 5—R.C.A. Uni-Rectron, 210 power amplifier for use with dynamic speakers. Taps for "B" Voltages. Without tubes. Special \$9.50

FIG. 6—Dubilier High Voltage Filter Condenser Blocks, total capacity 11 1/2 mfd. Special \$2.50 ea.

FIG. 7—Dubilier Filter Condenser Blocks, 10 1/2 mfd. Special \$2.50 ea.

FIG. 8—Genuine R.C.A. 216 B Rectifying Tubes, packed in original factory cartons. Special \$1.95 ea.

FIG. 9—Genuine R.C.A. UX200 Detector Tubes, in carton lots of 50 only. Special 6c. ea. \$3.00 per Carton.

FIG. 10—Amplio Royal Magnetic Cone Speakers. Special \$3.50 ea.

FIG. 11—Graybar Electric Phonograph Pick-up Chassis, in cabinet with genuine R.C.A. magnetic pick-up. Handles records up to 12 inches. Special \$17.50 ea.

FIG. 12—"Aerovox" High Voltage Filter Condenser Blocks, total capacity 7 mfd. Special \$2.00 ea.

FIG. 13—Kolster K-5 Electro-Dynamic Speakers, for A.C. operation, 10 1/4 in. cone, 210 or 250 power amplifier, in beautiful cabinet. Without tubes. Special \$15.00 ea. Without cabinet and tubes. Special \$13.00 ea.

FIG. 14—Kolster 6H Console Receivers with K-5 electro-dynamic built-in speaker, 6 tubes. Without tubes. Special \$26.00 ea. Without K-5 Chassis. Special \$17.50 ea.

FIG. 15—Bremer-Tully Model 80 Console Receivers, six tubes, battery operated, one dial, completely shielded, battery compartment. Without speaker or tubes. Special \$17.50

FIG. 16—"American" Midgets, all electric, six tube screen grid, complete. Without tubes. Special \$29.50 ea.

NOT ILLUSTRATED—Fada A.C. Dynamic Speakers, Model 14, 8 in. cone, using 16 disc Kuprox Rectifier, solid walnut cabinet. Special \$14.50 ea.

NOT ILLUSTRATED—Webster 3-Stage Amplifiers, using two 226's and two 210's in final push-pull, operates on 110 volts, 60 cycle. Without tubes. Special \$23.50

NOT ILLUSTRATED—"Cardinal" Midget Radio and Phonograph Combinations, Model 70, six tube, screen grid. Without tubes. Special \$47.50 ea.

NOT ILLUSTRATED—Genuine R.C.A. UX—200-A Detector Tubes in original factory cartons. 85c. ea.

Consult our Bargain Bulletin No. 66 for complete descriptions of all items.

AMERICAN SALES CO.
19-21 Warren Street
New York City



FIG. 10

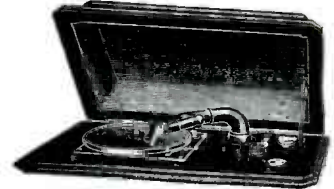


FIG. 11



FIG. 12



FIG. 13



FIG. 14

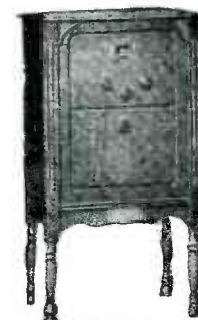


FIG. 15



FIG. 16

QUALITY

The best possible.

GUARANTEE

PRICE

The lowest for a quality tube.

Genuine ALPHA RADIO TUBES

A QUALITY TUBE AT A SENSATIONAL PRICE

Fully guaranteed for 60 days. Every tube meter tested. Packed in attractive Alpha cartons. 20% with order—Balance C.O.D. 2% if full remittance is sent with order.

PRICE LIST

201A	35¢	245
226		280
227		171AC
UX199	45¢	171A
UV199		112A
224		WD11
200A		WD12
	95¢	UX120
210		281
222		250

Complete Line Always on Hand

MANHATTAN SALES CO.

220 UTICA AVENUE, BROOKLYN, N. Y.

Raytheon type BH, 125 mills, \$1.85

DEALERS AND SERVICEMEN



Radio Bargain News
BUY FOR CASH AND SAVE HALF

Write for Your **FREE** Copy of this **BIG** Catalog
40 PAGES
OVER 1,000 ITEMS
OF REPLACEMENT PARTS FOR ALL STANDARD SETS

Free Write Now

Federated Purchaser
16 Hudson St., New York City, N. Y.

Your Overstock is a Dead Investment

Move it at a Profit!!

The Searchlight Section of RADIO RETAILING recognizes the need and convenience of a National "center" where dealers everywhere can bring their overstocks to the attention of others—or can ask for what they wish to buy.

"Searchlight" advertising will help you as a dealer to sell *at a profit* merchandise that otherwise would be a dead loss. And it will help the far-away customer *get something he wants*. Thus both dealer and customer benefit.

Get your overstocks into the Searchlight Section of the next issue of RADIO RETAILING. The cost will be small.

For advertising rates and information, address:

SEARCHLIGHT DEPARTMENT

10th Ave. at 36th St., NEW YORK

POWER PACK —SERVICE—

Replacement Parts

FOR ALL RADIO SETS (Current or Obsolete)
All Makes of Sets or Parts Repaired
—LOWEST PRICES—
—WORK GUARANTEED—
—QUICK SERVICE—

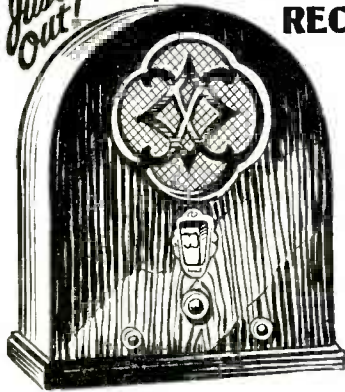
Best equipped shop in Middle West.
Power Transformers rewound like new \$7.50
AK. 37 Condenser Block \$6.00

SEND IN WORK FOR ESTIMATE
ASK FOR PRICE LIST ON REPAIR
WORK AND REPLACEMENT PARTS

Grant Radio Laboratories
6521 SO. HALSTED ST., CHICAGO, ILL.

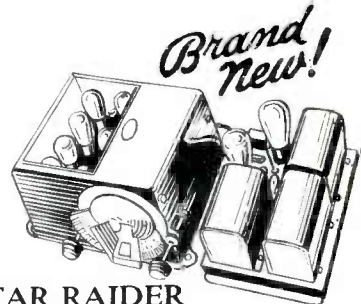
A New Year OFFERING of **FAST-SELLING SPECIALS**
Tremendous Price **REDUCTIONS** Assure **QUICK Turnover!**

Just Out! Lafayette De Luxe MANTEL RECEIVER!



11 BIG FEATURES!

Lafayette De Luxe Mantel Receiver—the most amazing bargain in radio. The only mantel receiver using every feature of full size sets. 11 Super Features, including triple screen grid, tone control, 245 push-pull, phonograph outlet, local and long distance switch, genuine dynamic speaker. **\$29.50**
Special Low Price... Less Tubes



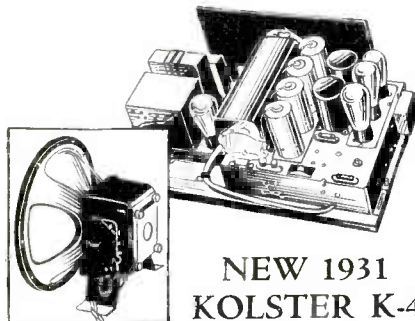
STAR RAIDER BAND FILTER TUNER

A real scoop! The new STAR RAIDER CONTINENTAL TUNER is here at Wholesale Radio! 8 stages of Radio Frequency — 3 tuned, 3 untuned, 9 tubes, including Amperite voltage regulator. Complete with ABC power unit for all tubes in tuner. The finest tuning unit ever made. List price \$225. Our special bargain price **\$39.50**
Less Tubes



RADIOLA 106 SPEAKER

Genuine R. C. A. latest model Dynamic Speaker, equipped with DOUBLE WESTINGHOUSE RECTIFYING ELEMENTS. Housed in beautiful cabinet. Price complete A.C. 110 volts, 25-60 cycles \$14.50
Price complete D.C. 110 volts \$10.50
R.C.A. 103 Speaker \$4.25

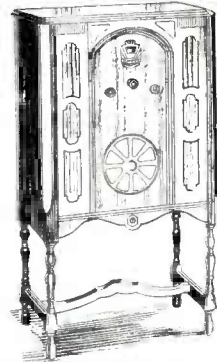


NEW 1931 KOLSTER K-43

Newest and latest in the Kolster series. 1931 Model K-43 Kolster Chassis, with Kolster Dynamic Speaker. 8 TUBES. TRIPLE SCREEN GRID. 245 PUSH-PULL. 4 TUNED STAGES. PHONOGRAPH OUTLET. Price, complete, for **\$43.50**
Chassis and Speaker. Less Tubes

LAFAYETTE AIRMAN

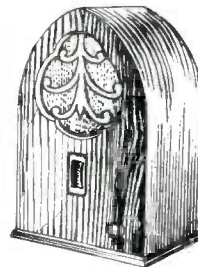
The lowest price, fine quality, full-size radio receiver ever offered. TRIPLE SCREEN GRID — 245 OUTPUT — DYNAMIC SPEAKER — 3 TUNED STAGES — SINGLE DIAL CONTROL. Sensational low price



\$32.50

Less Tubes

LAFAYETTE MANTEL RECEIVER



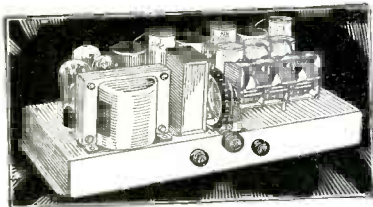
The brilliant new LAFAYETTE JUNIOR MANTEL RECEIVER — "all-mighty atom of the air". TRIPLE SCREEN GRID — 245 OUTPUT — ILLUMINATED DIAL — GENUINE DYNAMIC SPEAKER, assuring perfect reception. A gem of a bargain at the low price of

\$24.75

Less Tubes

R. C. A. RADIOLA 67

A magnificent radio receiver, the R. C. A. Superheterodyne and phonograph combination. An exceptionally fine buy. OUR QUANTITY IS LIMITED. Orders will be filled as received. List Price \$690. **\$159.50**
Our special bargain price, less tubes



A POWERFUL NEW SUPER-HET MADE BY SILVER-MARSHALL

Here's a new superheterodyne of tremendous power! A set worthy of its name. 9 TUBES. 5 SCREEN GRID. 245 PUSH-PULL POWER DETECTION. Extreme sensitivity, without sacrifice of tone quality. Perfect reception under all conditions. (R.C.A. licensed.) Chassis **\$36.50**
only

Radio DEALERS and SERVICEMEN!

Send for our new Radio Replacement Catalog — the most up-to-date bargain catalog ever prepared. Real bargains in standard, nationally advertised radio merchandise. All merchandise guaranteed by Wholesale Radio Service Company — the largest institution of its kind in the EAST. 24 hour service. 25% deposit required on all orders. Send for our new catalog and SAVE MONEY!



WRITE US TODAY!

WHOLESALE RADIO SERVICE CO. INC.

Dept. A-30

Tel: — Cortlandt 7-9080

36 VESEY ST. NEW YORK



De Wald Companion,
A.C. Model 524. D.C. Model 632

NINE POINT FEATURES

- 1—Rugged chassis construction.
- 2—Triple screen grid tubes.
- 3—Screen grid power detection.
- 4—Fine quality audio system rendering excellent tonal fidelity.
- 5—Large size electrodynamic speaker.
- 6—Heavy duty power supply (AC 524).
- 7—Humless filter circuit, employing new type electrolytic condensers (AC 524).
- 8—Minimum amount of tubes, which operate at maximum of efficiency.
3—24's 1—45 1—80 (AC 524)
3—32's 1—30 2—31's (DC 632)
- 9—Chassis is housed in a beautiful burled walnut cabinet.

HAIL THE NEW 1931 "DE WALD"

The Miniature Companion of the Famous



For A.C. or D.C. CURRENTS

Licensed by R.C.A.

The new 1931 De Wald Companion Receiver embodies the knowledge and experience gained through ten years of fine radio set manufacturing. Cash in on midget set popularity by displaying and selling the best one made. A few good territories still open. Write for our proposition.



A.C. Model 724 Pierce-Airo Chassis
D.C. Model 727

PIERCE-AIRO, Inc., 113R Fourth Ave., New York City

MANUFACTURERS OF FINE RADIO SETS FOR TEN YEARS

ALPHABETICAL INDEX TO ADVERTISEMENTS

	Page
Acme Wire Co.	76
All American Mohawk Corp.	77
American Transformer Co.	80
American Weekly	68
Arc-turus Radio Tube Co.	8-9
Atwater Kent Mfg. Co.	72
	Lynch Mfg. Co., Inc. 79
Blinn Co., James H.	78
Brunswick Radio Corp.	Inside Front Cover
Capehart Corp.	Front Cover
CeCo Mfg. Co., Inc.	12
Central Radio Lab.	78
Champion Radio Works, Inc.	61
Copeland Sales Co.	70
Cornish Wire Co.	88
Crosley Radio Corp.	Inside Back Cover
	Parent Elec. Co. 66
DeForest Radio Co.	59
	Perryman Electric Co., Inc. 63
Ellis Elec. Lab's.	78
	Pierce-Airo, Inc. 88
General Elec. Co., Radio Div.	67
General Elec. Supply Corp.	13
General Radio Co.	80
Grobe & Co., Inc., A. H.	5
Howard Radio Co.	58
	RCA Radiotron Co., Inc. Back Cover
	RCA Victor Co., Inc. 46-47
	Radiola Div. 46-47
	Radio Power Equipment Co. 79
	Radio Prod. Co. 73
	Radio Wholesalers Association 74
	Readrite Meter Works 76
	Rola Co. 62
	Shakeproof Lock Washer Co. 6
	Sparks-Wilmington Co. 11
	Stromberg-Carlson Tel. Mfg. Co. 2
	Sylvania Prod. Co. 16
	Transformer Corp. of America 64-65
	Wasmuth-Goodrich Co. 78
	Western Elec. Piano Co. 71
	Weston Elec. Instrument Co. 79
	Zenith Radio Corp. 75

SEARCHLIGHT SECTION
Classified Advertising

	Page
BOOKS	81
EDUCATIONAL	83
National Radio Inst.	83
EMPLOYMENT	82
DISTRIBUTORS	82
REPAIR SERVICE	86
WANTED TO PURCHASE	82
RADIO STOCKS	84-85
American Sales Co.	84-85
Baltimore Radio Corp.	84
Federated Purchaser	86
Fisher Distributing Co.	84
Grant Radio Lab.	86
Kueker Radio & Electric Co.	84
Manhattan Sales Co.	86
Nubor Radio Co.	84
Radex Press	81
Western Surplus Outlet Co.	82
Wholesale Radio Service Co., Inc.	87



RADIO WIRE PRODUCTS

- ANTENNA WIRE
- ANTENNA KITS
- ANTENNA ACCESSORIES
- LIGHTNING ARRESTERS
- LEAD-IN WIRES
- HOOK-UP WIRES
- ANNUNCIATOR WIRES
- CABLES

WRITE FOR CATALOG AND PRICES

If Your Jobber Cannot Supply You—Order Direct

CORNISH WIRE CO. 28 CHURCH ST., NEW YORK, N. Y.

Makers of the Famous

BRAIDITE HOOK-UP WIRE



Amazing and Super-Performing CROSLEY RADIO Money-Saving Bargains for the Year 1931



The BUDDY BOY

The Crosley BUDDY BOY, illustrated at the left, is the ideal radio receiver—suitable for use in every room of every house. It delivers ultra-performance—incorporates all the most recent Crosley Radio developments—and sells, complete with tubes, at an astonishingly low price. Dimensions: 15½" high, 17" wide, 9½" deep.

The exquisitely designed one-piece cabinet is without seams, joints, nails or screws. See your Crosley distributor—examine and hear this radio sensation. It's a big seller at the amazingly low price of.....

\$59.50
WITH TUBES



The BUDDY

An exquisite table, mantel or clock type self-contained receiving set, with power speaker, only 15½" high, 15½" wide and 9¾" deep, so small in size and light in weight that it is easily moved from place to place. Contains the same type receiving set and dynamic power speaker as The PAL and The MATE. Employs three Screen Grid tubes. Nothing ever equalled it at so low a price.

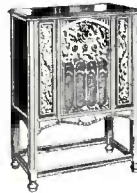
\$64.50
WITH TUBES



The PAL

A marvelously beautiful cabinet, 25½" high, suitable for use as an end, bedside or occasional table. Contains the same receiving set and dynamic power speaker as The MATE and employs same number and type of tubes. The price is amazingly low for the quality and performance.

\$74.50
WITH TUBES



The MATE

A delightfully designed and executed cabinet that harmonizes with any surroundings in the home. It contains an entirely new receiving set and dynamic power speaker. Employs three type -24 Screen Grid tubes, one type -45 and one type -80. The unusual value of The MATE at the exceptionally low price is self-evident.

\$79.50
WITH TUBES

THE ELF

Little Brother of the Crosley BUDDY BOY

Here is a personal radio set for every member of the family. The Crosley ELF, shown at the right, is a beautifully designed all-electric, five-toned radio receiver for nearby stations—uses Screen Grid tubes, Neutrodyne circuit; incorporates Crosley electro dynamic-power speaker. Sells at an amazingly low price. Dimensions: 12½" high, 11½" wide, and 9¾" deep. The beautifully designed one-piece cabinet is of genuine Crosley Repwood "B". Get complete information of this radio marvel from your nearest Crosley distributor.....

\$37.50
WITH TUBES



The DIRECTOR



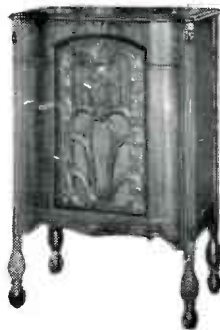
A particularly beautiful cabinet containing a receiving set employing three Screen Grid tubes type -24, one type -27, two type -45, and one type -80. Positive automatic volume control, local-distance switch and latest type Crosley moving coil dynamic power speaker are features of this set. Astonishingly low in price....

\$107.50
LESS TUBES

The New Classmate

A marvelous cabinet exactly like the famous Crosley MATE except that it is five inches higher. Contains the same type sensitive and selective receiving set as The MATE and, in addition, incorporates the latest type Crosley moving coil dynamic power speaker. Amazingly low in price at only.....

\$85.50
WITH TUBES



The New Administrator

Here is a truly magnificent cabinet of thoroughly modern and special design which houses the same type receiving set and latest Crosley moving coil dynamic power speaker as The DIRECTOR. Has positive automatic volume control and local-distance switch. Priced startlingly low at only....

\$112.50
LESS TUBES

The ARBITER



Electrical Phonograph and Radio Combination

A truly versatile instrument that provides complete entertainment for any occasion in the modern home, complete in a cabinet of superlative beauty. The same super-selective and sensitive radio receiving set and moving coil dynamic power speaker as in The DIRECTOR and The ADMINISTRATOR. A marvelous electric phonograph and radio combination for what you would ordinarily expect to pay for a radio receiving set alone.....

\$137.50
LESS TUBES

Available with induction type self-starting motor at \$147.50

THE CROSLEY RADIO CORPORATION

POWEL CROSLEY, JR., President

Home of "the Nation's Station"—WLW

CINCINNATI

Also manufacturers of CROSLEY Battery Radio Receivers, the CROSLEY ROAMIO Automobile Radio Receiving Set, and the famous AMRAD RADIO

YOU'RE THERE WITH A CROSLEY

CROSLEY RADIO

And now

The



HEADLINER

A selective plan of merchandising assistance for RCA Radiotron Dealers. Ask your jobber salesman for details.

RCA RADIOTRON COMPANY, INC.

HARRISON, NEW JERSEY

A Radio Corporation of America Subsidiary

RCA RADIOTRONS

THE HEART OF YOUR RADIO