

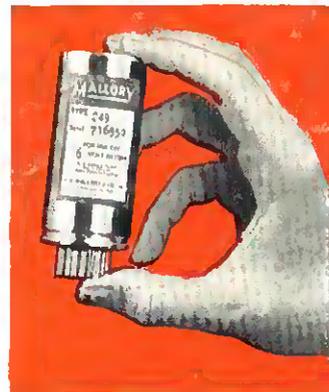
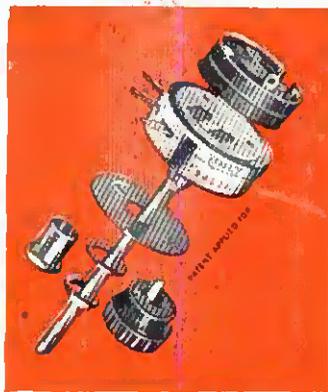
MARCH, 1936

INCLUDING
SERVICE
AND
INSTALLATION
SECTION

RADIO RETAILING

THE BUSINESS MAGAZINE OF THE RADIO INDUSTRY

Universal Application is an outstanding feature of all **MALLORY-YAXLEY** Replacement Parts



FOR CONDENSERS, Mallory provides universal application for both carton type and round can condensers. 69 Mallory Replacement Condensers now fulfill all service needs. To fill *all* requirements which Mallory Condensers now meet, literally thousands of condensers would have been needed heretofore.

FOR VOLUME CONTROLS, Yaxley has developed universal application through engineering developments that make Yaxley Volume Controls meet all service needs for over 4,000 different radio receiver models.

FOR VIBRATORS, a mere handful of Mallory Replacement Vibrators render universal service to over 3,000,000 automobile radio sets now in use.

Mallory engineering to develop the practice of universal application not only has established Mallory-Yaxley leadership in the production of radio parts—it has enabled radio distributors and dealers to render a complete replacement service without the burden of enormous stocks and wasteful inventories. At the same time, this gives the service man immediate facilities for prompt and completely efficient servicing.

MALLORY

P. R. MALLORY & CO., Inc.
INDIANAPOLIS INDIANA
CABLE ADDRESS—PELMALLO

YAXLEY

ARVIN

Tailor-Fit CAR RADIOS

You sell satisfaction with the fine dependability of the new Arvins . . .

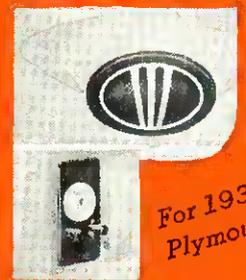
Thrill every customer with the perfect performance of powerful metal or glass-tube superheterodynes . . .

Satisfy every personal desire with the wide variety of Arvin radio-speaker and matching panel control combinations.



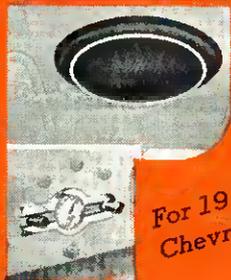
For 1936
Ford V-8

Invisible overhead speaker and matching panel control.
Model 18HP \$44.85



For 1936
Plymouth

Overhead speaker and matching panel control.
Model 18H5P1 \$46.35



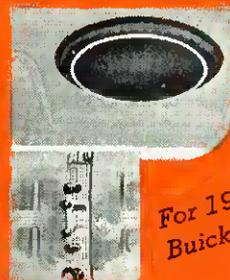
For 1936
Chevrolet

Overhead speaker and matching panel control.
Model 18H3P17 \$48.85



For 1936
Dodge

Overhead speaker and matching panel control.
Model 18H7P2 \$46.85



For 1936
Buick

Overhead speaker and matching panel control.
Model 18H3P20 \$49.85



For 1936
Oldsmobile

Overhead speaker and matching panel control.
Model 18H3P18 \$49.85

Only a few of many Arvin tailor-fit overhead speaker and matching panel control models for new cars

The new Arvins give you all the splendid qualities that have been built into car radio . . . plus new and exclusive improvements that set new standards of performance and dependability; such as: Built-in filter-loc motor noise suppression system—completely shielded high sensitivity circuits—matched antennae tuning system using two high gain iron core coils—manually operated continuously variable tone control, etc. The new models are beautiful—modern in design and finish. They give you the tremendous sales appeal of powerful metal or glass-tube superheterodynes—overhead speaker models—Universal models—matching panel controls and modern streamlined steering column controls—everything to match new cars or harmonize with older cars. Exactly what you need to build a profitable radio business. Order from your jobber—and ask about the free Arvin sales helps.

NOBLITT-SPARKS INDUSTRIES, Inc., Columbus, Indiana
Also makers of Arvin radios for the home and Arvin Hot Water Car Heaters



OVERHEAD SPEAKER MODELS FOR NEW CARS

with special matching controls that fit perfectly in the instrument panel, as low as . . .

\$44⁸⁵

UNIVERSAL MODELS FOR ALL MAKES OF CARS

with in-the-set or separate case speaker and steering column control, as low as . . .

\$39⁹⁵

RADIO RETAILING

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Cleveland *Boston*

Next Month— AUTO-RADIO

JUDGING from activity among designers auto-radio selling is expected to begin one month earlier than last year, top all gains to date. Numerous improvements are included in new models, chief among them being increased signal-to-noise ratio, more flexible panel-matching escutcheons and provision for remote or adjacent speakers.

MUCH speculated about is the choice of tubes. Will they be metal or glass? This and other details such as price, dimensions, drain and intermediate frequencies will be shown in a listing which looks at this time as if it would require at least three pages. Trends which make auto-radio more desirable than ever before for home-set merchandisers will be covered, together with selling suggestions, elsewhere in this same Spring issue.

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McGRAW-HILL PUBLISHING COMPANY, INC.

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

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Chairman

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Vice-President

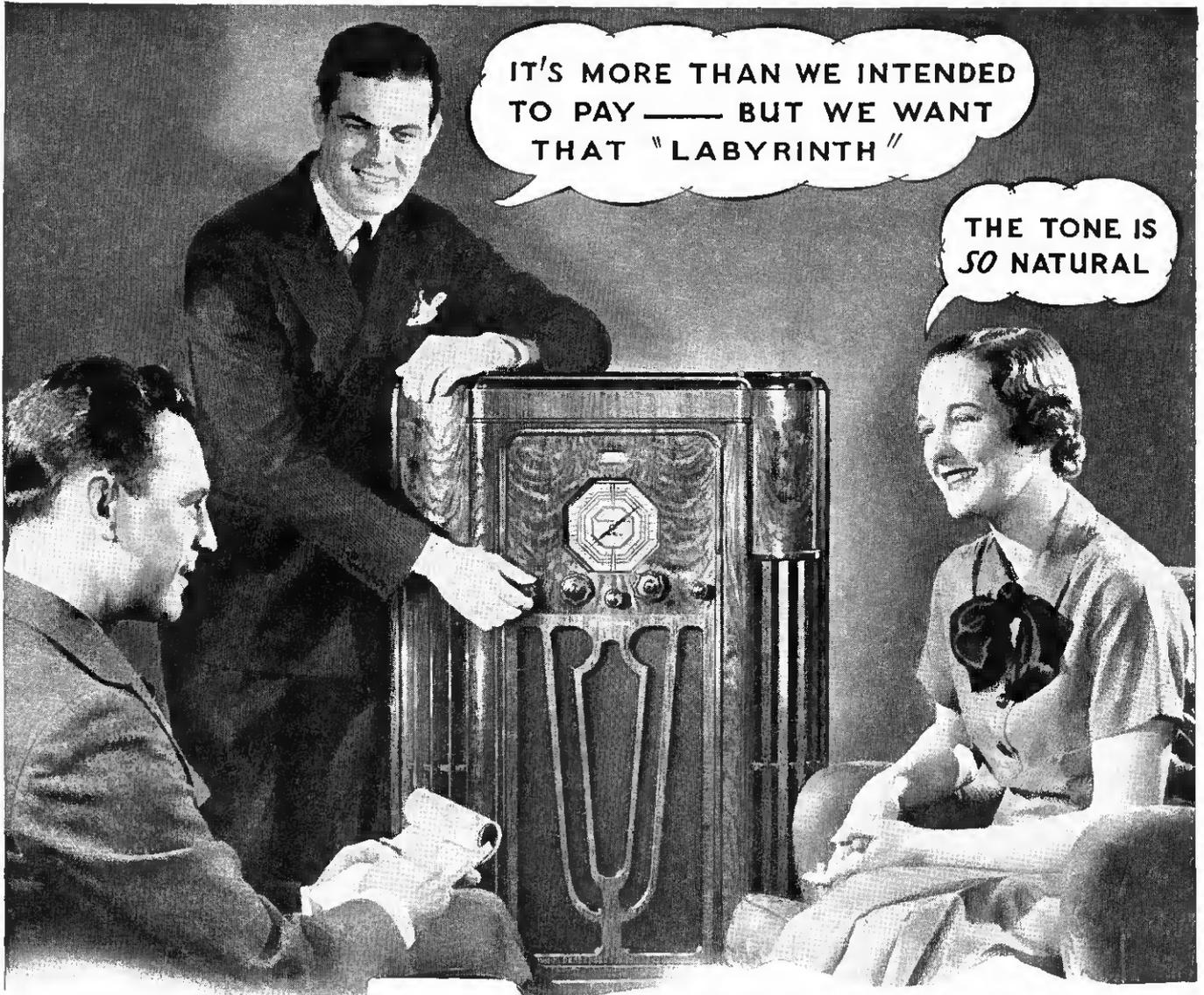
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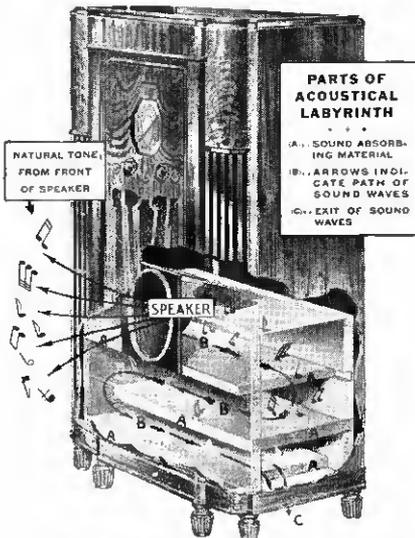
D. C. MCGRAW
Secretary

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IT'S MORE THAN WE INTENDED TO PAY — BUT WE WANT THAT "LABYRINTH"

THE TONE IS SO NATURAL



No. 84 (Illustrated) Four Range High Fidelity (Metal Tubes, with the Acoustical Labyrinth. **\$285**

ONCE a prospect hears a "Labyrinth" model Stromberg-Carlson, he will never be satisfied with a lesser radio. He can instantly detect the markedly improved reproduction and see and understand the reason for it.

Here is demonstrable superiority over all competition—the kind of a feature that will sell larger dollar units and greatly increase your net profit.

Today, it is the Authorized Stromberg-Carlson dealer who is making more and larger sales because only Stromberg-Carlson radios have the Acoustical Labyrinth.

THE ACOUSTICAL LABYRINTH. This exclusive Stromberg-Carlson feature takes the unnatural boom out of radio voices and music, and provides deep bass notes with a new fidelity. The long, winding passageway of the Labyrinth, lined with a special acoustical material, takes the place of the usual box-like cavity in the cabinet which is the source of

the exaggerated boom in the low tones. The air column of the Labyrinth is so tuned and proportioned that it not only removes this exaggeration, but also greatly extends the range of bass notes that are effectively reproduced. The volume handling capacity and accuracy of performance of the loud speaker are increased by the provision of an adequate air load.

There are 21 Stromberg-Carlson models, priced from \$59.50 to \$985.00. All-Wave Antenna Kit, \$7.00. (Slightly higher southeastern states and west of the Mississippi). Liberal retail finance plan available to all franchised dealers. "There is Nothing Finer Than a Stromberg-Carlson."

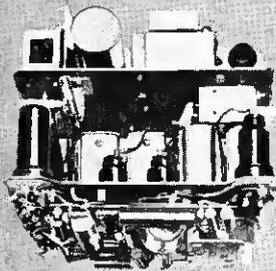
STROMBERG-CARLSON TELEPHONE MFG. CO., ROCHESTER, N. Y.

Stromberg-Carlson

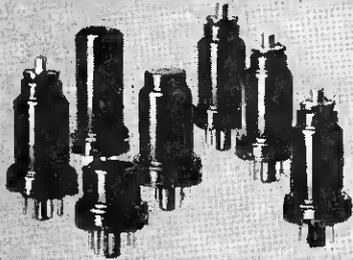
AMERICAN-BOSCH *Skylark* CAR-RADIO

*Your Toughest Competition
Can't Touch this Combination*

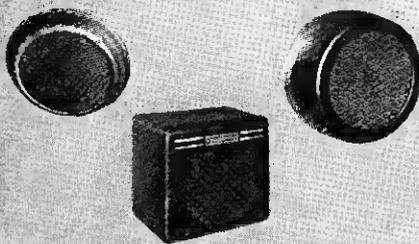
*Springs 3 new
selling ideas for Dealers!*



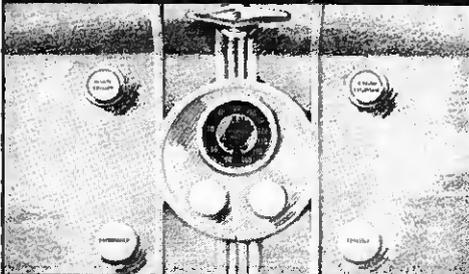
DOUBLE-WINGED CHASSIS



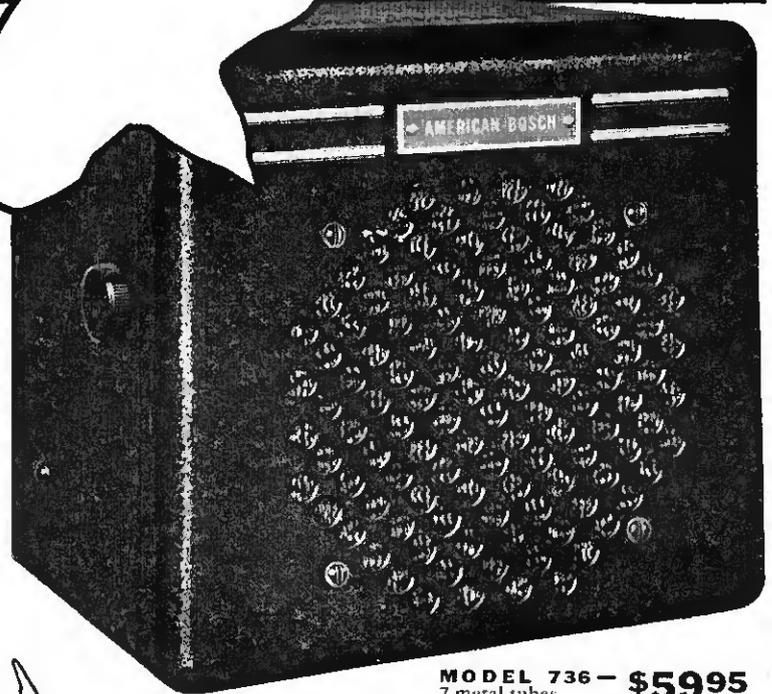
METAL TUBES



**HEADER, BULKHEAD OR
SELF-CONTAINED SPEAKER**



**CUSTOM STYLED PANEL MOUNTINGS
TO FIT 1935 OR 1936 CARS**



MODEL 736 - \$59.95
7 metal tubes . . .
Other models, \$39.95 up to \$67.95.

Selling idea #1: A new car-radio with a wing shaped chassis that achieves as much for car-radio as the CentrOmatic Unit did for American-Bosch Home Radio. Enriches its tone. Greatly reduces the wiring. Eliminates numberless soldered connections and shortens those that remain.

Selling idea #2: This year, the toughest nut that dealers have to crack is the matter of control panel mountings. American-Bosch has the answer . . . an attractive display kit containing panel mountings for every car on the road . . . at an investment that's hardly worth mentioning.

Selling idea #3: Be prepared for anything the customer wants and you'll never lose a sale. Does the customer want glass tubes or metal tubes? American-Bosch has it. Does the customer want the inbuilt speaker, overhead speaker or bulk-head speaker? American-Bosch has it. Does the customer want steering post control, under dash control or a panel mounting to match and harmonize with his car? With American-Bosch you can give him what he wants . . . with the minimum inventory.

*Exceptional displays and advertising material . . .
write or wire for complete story.*

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



Retailers of Tung-Sol tubes need not lose sales or customers for the lack of any type of tube. The Tung-Sol line contains the types required to meet current demand. And every sale pays the retailer a full profit. For Tung-Sol is the line that provides all nine basic qualifications essential in the "plus profit" retailing of radio tubes. There are still desirable locations where independent radio retailers and service organizations could qualify as Tung-Sol retail agents.

TUNG-SOL Flow radio Tubes

TUNG-SOL LAMP WORKS, INC.

Radio Tube Division

SALES OFFICES: Atlanta, Boston, Charlotte, Cleveland, Chicago, Dallas, Detroit, Kansas City, Los Angeles, New York.

General Office: Newark, N. J.

"EMERSON BUILDS GREAT SELLERS"

Emerson Radio

"RE-CREATES THE ARTIST

IN YOUR HOME"



\$ 39⁹⁵
LIST PRICE

Every Model a SALES PROMOTION Feature

January and February sales of all Emerson Models—from \$14.95 to \$129.95—were several times those of a year ago, and 1935 was our biggest year!

Dealers everywhere realize the value of Emerson Radio as the LEADING sales promotion line. Why don't YOU look into these opportunities—two examples of which are illustrated here?

EMERSON Model 119

6-TUBE AC-DC SUPERHETERODYNE Incorporating METAL TUBES . . . 3 BANDS: AMERICAN—FOREIGN—POLICE . . . AUTOMATIC VOLUME CONTROL . . . TONE CONTROL . . . 8-INCH DYNAMIC SPEAKER

Three bands—19 to 55 meters, 63 to 190 meters, 180 to 555 meters. Illuminated dial with Emerson "Micro Selector" Tuning and other advanced engineering features. Walnut cabinet—16³/₄" high.

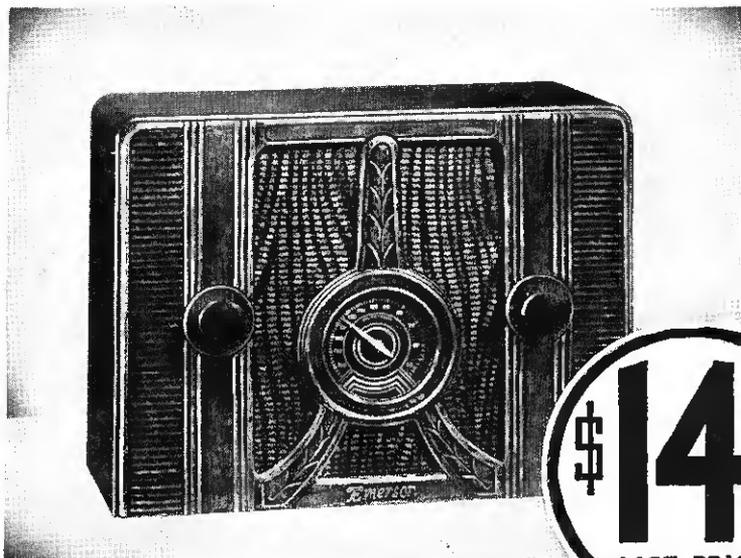
EMERSON Model 118

(At Right)

AC-DC . . . 5 Tubes Including METAL Ballast Tube . . . Standard American Broadcast and Low Frequency Police Calls . . . Illuminated Aeroplane Dial . . . Litz-Wire Coils . . . Electro-Dynamic Speaker.

Advanced type tuned radio frequency circuit. Full size Electro Dynamic Speaker . . . Built-In Aerial. Straight grain walnut cabinet—front panel of Syroco-wood, carved design. 10 in. wide.

In 1936—a "radio election" year—hundreds of thousands of EXTRA sets will be sold in homes and offices. Most of them will be small sets. The Emerson Line is "made to order" for that business. Ask your nearest Emerson distributor or write direct.



\$ 14⁹⁵
LIST PRICE

EMERSON RADIO AND PHONOGRAPH CORPORATION, 111 Eighth Ave., New York, N. Y.
The EMERSON Line Also Comprises Models for Every Foreign Market. Cable Address: EMPHONOCO, N. Y.

CUSTOM BUILT STYLE AT ATTRACTIVE PRICES!

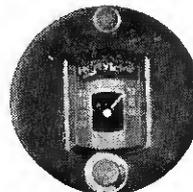
Three NEW RCA Victor Auto Radios

RCA Victor Auto Radio Model 5M has 5 tubes, plus Powertron (synchronous vibrator), giving it 6-tube performance. ONLY \$39.95. f. o. b. Camden! Extra speaker available at small cost. Mounting illustrated, for Dodge.

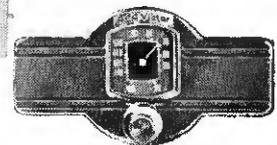


THIS year in auto radio RCA Victor sets the style pace by offering 20 different custom-built panel mountings, harmonizing with the instrument boards of 1935-1936 cars. You get a complete kit of mountings on a new and liberal plan. With one exception, each can be installed on the dash without drilling or filing; just bolt it in where the car manufacturer has provided for it! And **PRICES!** \$39.95, \$49.95, \$54.95 for 5 and 6 tube sets, each using a synchronous vibrator (Powertron) which makes them the equivalent of 6 and 7 tube radios using rectifier tubes... It's a great line, with Metal Tubes, extra speakers, many other features. Get the details from your nearest RCA Victor distributor.

Ask about NEW RCA auto antenna for both running boards - easy installation, remarkable signal pickup



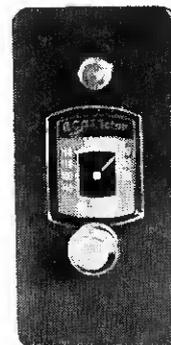
Ford mounting



Chevrolet mounting



DeSoto mounting



Plymouth Mounting

• Get money-making ideas at RCA Service Meetings, held monthly. Ask your local distributor for these dates.



RCA Victor

RCA Manufacturing Co., Inc.
Camden, N. J.
A Service of Radio Corporation of America

RADIO RETAILING

The Need is Mutual

WITHOUT PROGRAMS radio receivers would be useless conglomerations of wire, glass and wood. Without sets broadcasting would be simply a means of throwing power into the air.

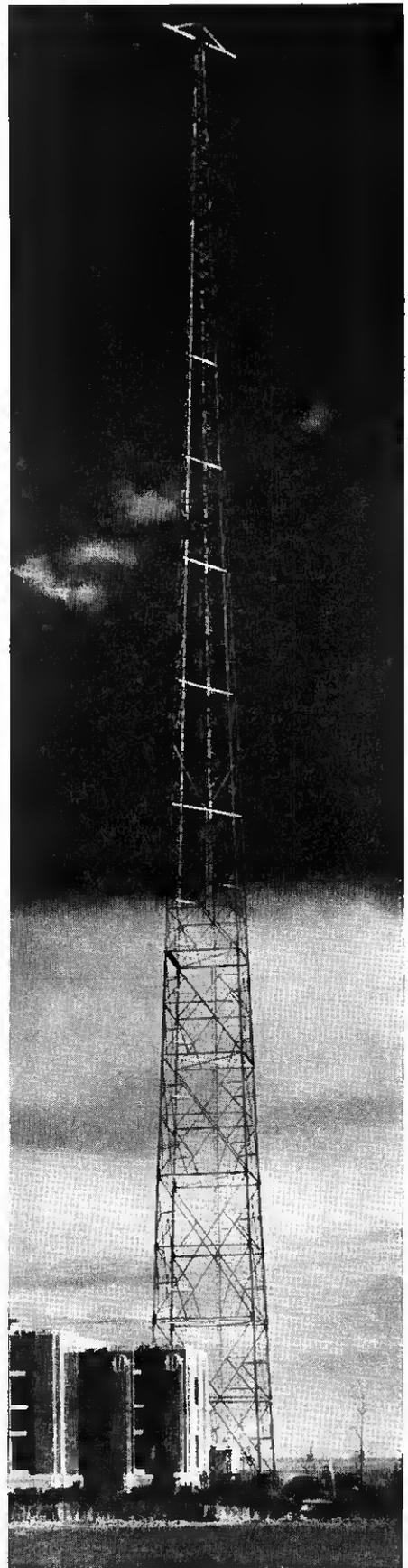
The radio set obtains a share of the consumer's entertainment dollar sufficiently large to rank with the movies. Broadcasting obtains a share of the nation's advertising dollar sufficiently large to rank with newspapers. Both industries are major industries in their own right. Yet both are wholly inter-dependent. Just *how* inter-dependent neither fully realizes, to their mutual loss.

The radio trade needs all the broadcasters can provide in the way of good programs. For, in the final analysis, consumer interest in programs is what sells sets, tubes and repair jobs. The broadcasters need the audience that only the radio trade can provide. For it is the trade that holds and increases the "circulation" upon which advertising time rates are based.

Specifically, the radio trade has largely failed to talk about new programs to prospects, remind the consumer of time, day and station in direct-mail and window-displays. *Particularly, the trade has failed to fight the broadcaster's battle against criticism of the percentage of advertising-to-entertainment.*

Just as specifically, broadcasters have largely failed to tell the consumer about the necessity for periodic tube tests, set overhauls and new models. *Particularly, broadcasters have failed to fight the trade's battle to gain the consumer's confidence in such matters as tube-testing and repair work.*

The radio trade and the broadcasters aid each other just by exercising their normal functions. But how much faster each could rise by acting as spokesman for the other!





Chicago
Dealers
Clamp
Down on

AN OPEN LETTER TO RADIO BUYERS

By Dumke Radio Co.

About one-half of Rogers Park families have "wholesale" connections—the other half buy at "retail." So if you buy a radio through retail sources, almost invariably come one will say, "Gee, I could have got it for you wholesale." "Wholesale" connections are remarkably plentiful and convenient it seems. But buying "wholesale" often costs more than buying retail, especially in radios, automobiles or refrigerators.

If you prefer to buy at wholesale prices, you need not buy outside of Rogers Park. And the privilege is extended to everyone. Right here, at 1618 Howard street you may buy any radio at 25 to 40% off list! Our profit on this basis is very slim, of course. The extra bonus we receive for large volume purchases and cash discounts constitute our profit.

But frankly, we'd prefer to sell on this basis. As with any "wholesale" purchase, the seller is relieved of a lot of responsibility. There are no liabilities. No grief and bother at the seller's expense if things go wrong, as often they do. It is for you to choose whether you wish to pay wholesale prices or retail prices—and since we sell to you either way, we want you to know that we are a "two-price store."

An explanation is in order before you can decide which plan is more desirable—

THE WHOLESALE WAY:

1. Your guarantee is limited to manufacturers' guarantee on defective parts.
2. Defective tubes or parts are replaced free during 90-day guarantee period, but service is charged for.
3. Radio is not subject to exchange. It must be accepted as shipped from factory.
4. No trade-ins are accepted.
5. Terms arranged only on a restricted basis.
6. Noise reducing antennae systems and installation are charged for—which if properly done with full equipment and lightning protection may cost from \$12 to \$20.
7. No free calls are made. Adjustments, replacements, instruction in short-wave tuning, etc., are charged for.

However, if you prefer to buy at retail prices, you receive the following benefits:

1. A generous allowance is made for your old radio.
2. Radio, parts, tubes, etc., are guaranteed unconditionally for six months.
3. Service is free—day or night—and you are assured service by experts the same day called.
4. We install without charge and without skimping, complete noise-reducing antennae equipment, etc., with any radio that lists for \$75 or more. (Standard aerials with lower priced receivers.)
5. Each radio is tested and checked, before delivery. It is balanced to highest efficiency—or rejected if it cannot be made to perform at maximum.
6. Exchange privileges if radio selected is not as suitable to your location as some other model.
7. Foreign reception at its best—WITH FULL AUDIBLE VOLUME guaranteed.
8. We give all time necessary to instruct you in short-wave tuning.
9. Terms to suit—at lowest possible rates. Radio and electrical appliances also may be purchased through us on your Edison light bill.

So there we have explained frankly the difference between two ways of buying your next radio. You may buy it wholesale—or retail. We've sold loads and loads of radios with rarely any advertising, WITHOUT canvassing—and WITHOUT high-pressure methods or "trick" sales. A well equipped service organization—a sincere desire to please and 14 years' experience with radio problems have won for us a volume of business that we are proud of. Buy your next radio here with confidence—wholesale or retail.

Sincerely yours,
DUMKE RADIO CO.,
By Erick Dumke

1618 Howard Street
Sheldrake 7093

LIGHTS THE FUSE

Retailer ERICK DUMKE, independently attempting to fight fire with fire, advertised radios at two prices in the December 12 *Howard News* . . . 40-off "as is" . . . Or full list (less trade-in allowance) including installation, service, guarantee

Wholesale *at* Retail

Demand resolution gets results—One distributor cuts off 21 offending accounts—Others falling in line to reduce estimated million-dollar annual loss

● CHICAGO—All last autumn Erick Dumke had people coming into his Howard Street store to look at radios. When pressed to buy, they airily would say, "Oh, I'll take the number of this one and let you know later." "Finally," says Erick, "a guy came in and asked for the number on a set. He could get it wholesale downtown, he told me out and out. By golly, that made me mad. I was used to having people try to get discounts. But when customers actually told me that they were going to buy wholesale, I figured it was time to do something. I was tired of being some other fellow's show window."

So there was published in the *Howard News*, December 12, Dumke's offer to sell either at wholesale or retail. (See opposite page.) Customers were given 40 off if they took a radio out in its original case, without trade-ins, without free calls, without guarantee.

"The ad drew about 100 people into the store," Dumke relates. "We sold three sets on a wholesale basis. We sold 25 sets on our regular retail terms. The public did not want to buy that way when it learned the handicaps of the wholesale proposition."

Brought Things to Head

Independent action such as Dumke's brought the "wholesale at retail" situation to a head. Points out L. L. Rosene, Arvin distributor: "Even in warehouse space, without advertising or other retail overhead expense, it costs a distributor 20 to 22 per cent to do business. These retailers seeking to make their profit on 10 per cent, even in cash, forgot service items that must be absorbed in the general overhead, forgot advertising, rent, heat, windows and other items. Tales floated about Chicago of dealers who sold \$200,000 worth of radio and made only \$2,000 or \$3,000 profit."

Three general avenues were followed in the wholesale selling:

1. *Through industrial accounts.* The idea here was to get the purchasing agent of some big corporation to pass out cards to corporation employees which permitted them to buy at 40 off. More than 500 corporations in Chicago were passing out such cards to employees, it is estimated.

2. *Plain chiseling.* This consisted of selling radio on any discount, without the formality of a courtesy card. Anything was given to get the sale.

3. *Catalogs.* In Chicago alone, it is estimated, some twenty different catalogs offering electrical merchandise at wholesale were being mailed widely.

In one way or another all Chicago was penetrated by the 40-off proposition. It began to look as if anybody buying on time was terrifically penalized for doing so. Radio dealers estimated that wholesale selling activities cost Chicago's radio retail men from one to one and one-half million in profit, for 1935 alone. Estimated on *Radio Retailing's* average list price of \$68.30 per radio, this million dollar loss would mean that some 37,000 sets were sold last year at wholesale in Chicago.

Association Gets Busy

Chicago radio dealers didn't take their licking lying down. As far back as 1933 the Illinois Radio Association was formed with Jack Miller, of General Radio & Electric Service, as the first president. Steps to stop industrial selling and catalog activities were taken then without a great deal of luck. Large outlets would not "play ball." When 1935 came around, however, such firms as Wieboldt's, Lyons & Healy, Fish Furniture, The Fair, Marshall Field & Company, Goldblatt's and most of the big department stores and furniture store outlets became alarmed at the inroads wholesale selling was making on their business. Today the Illinois Radio and Electrical Dealers Association, headed by Wm. E. Egan, of the L. Fish Furniture Company, and executive secretary George W. Rockwood, affiliated with the Illinois Chamber of Commerce, the Chicago Retail Furniture Association and the Illinois Federation of Retail Associations, is getting action.

Following a December meeting of dealers and distributors at which the distributors presented their story, Chicago distributors were prompt to fall into line. There was, obviously, strength in numbers. One particular distributor promptly cut off 21 accounts and put 15 on probation. One representative of a national manufacturer declared frankly that in 1931 some 85 per cent of their dealers were sold on open account, 15 per cent on a C.O.D. basis. With the return of better times it was felt that it was the logical time to clean up practices that tended to break down the price structure.

(Please turn to page 47)

News and Views

REPEAL SECTION 302, known as the "Davis Amendment" to the Radio Act. This provides that stations shall be allocated according to population, with the result that there has long been an overcrowding of broadcast stations in cities and an underservice in the wideflung rural areas.

On March 13, 1935, Senator Wheeler presented a bill to repeal this clause and to amend section 307 as follows: "In consideration of applications for licenses (or changes thereof when demanded) the Commission shall make such distribution of licenses, frequencies, hours of operation and power among the several states and communities as to provide an *equitable distribution of radio service* to each of the same."

The present law is contrary to natural laws and results in over-ample broadcasting service in small zones and lack of adequate service in the larger zones. The radio trade, through its congressmen, should press for the repeal of section 302.

Note: Feb. 20 the Committee on Interstate Commerce reported Mr. Wheeler's bill back favorably to the Senate. It still remains to be passed, however, by the Congress.

* * *

► **SAYS HUGH EBY** in the February issue of *Electronics*: "Unless parts suppliers can make money they cannot continue to render service. . . . How could parts suppliers be expected to make money on volume controls supplied to set manufacturers at, say 14c.; on resistors selling from \$12 to \$15 per thousand; on speakers under \$1? . . . Sometimes



they are forced to bid for the very right to make a product of their own design.

"The set manufacturer is not entirely to blame. . . . Every supplier who has deliberately cut under a com-

petitor's price to land an order, or who has under-bid on another's design, is equally to blame.

"With more and more emphasis being placed on the price of radio components it is obvious that only one thing could happen. Slowly but surely inferior parts crept into the picture. . . . In the long run set manufacturers stand to lose if radio sets are not all they should be. . . . Even the ultimate consumer has been hurt because he has received less in the way of true quality than he has every right to expect."

* * *

► **IT IS A HOPEFUL SIGN** to have David Sarnoff speak as he did in Chicago. After citing the fate of radio in Europe under dictatorships, he declared:

"With communications free, public opinion controls democratic government and keeps the people free. By the control of communications, autocratic government forges the chains of dictatorship upon the people. The freedom of communications is the freedom of speech. . . . the essence of democratic government."

Brave words, Mr. Sarnoff, and truly spoken. Unfortunately, however, as the *New York Times* points out, the ultimate status of "freedom of the air" is yet to be clearly established. Constitutional safeguards, not the undeterminable rulings of a politically appointed commission, must be set up.

The Supreme Court decision, February 10, reaffirming "freedom of the press" has been construed in Washington as tending also to grant further latitude to broadcasters. This helps.

* * *

► **HOW CAN the dealer use broadcasting to strengthen his sales position?** Well, for one thing, he can take time out occasionally to do his "home work." There, free from interruptions, let him study programs, not just tune them in. Let him weigh their merits as sales agents, tabulate this information—and then use it.

► **LITTLE LEGISLATION** affecting radio's present status is expected from the Congress now in session. This, the opinion of Representative Sam Rayburn, chairman of the House Interstate Commerce Committee, is predicated on the premise that the government boys will be too busy with other and more important (to them) matters.

* * *

► **"FIRST PROVIDE** auto-radio installation and service depots throughout your territory before selling your dealers our new line of auto-radio sets." This is the sound sales policy insisted upon by a large set concern in its last month's sales and distributor conventions announcing its 1936 line of auto receivers.

* * *

► **NOT ONE DEALER** in 1,000 knows how to sell the broader benefits of radio for everyday living—understands the psychological stimulus of the intelligent use of program offerings. To cite an example: Walter Pitkin, in his latest book,



"Take It Easy," stresses the necessity of knowing how to relax. We must ease those tense nerves if we would avoid physical collapse, he declares—and recommends the radio as a God-given means to that end.

Call the attention of your high-strung customers to this excerpt from Mr. Pitkin's admirable work:

"Something tense breaks within the listener, as the music flows on; some strange release is brought by its magic. Many people have told me that they never knew what utter relaxation was until they caught the trick of turning off the lights, tuning in on fine radio music, and then flinging themselves in an abandon of rest upon the bed."



► **"RADIO PIRATES"** — Britons who evade their radio license fee—are being tracked to their lair by postoffice inspectors who travel in vans equipped with detector apparatus. License holders now number 7,250,000 but pirates are doing the government out of \$2,500,000 annually. Ho for the good old English system!



► **RADIO'S UTOPIA** is in Sweden. writes AGA-Baltic Radio A.-B. Here are the reasons:

"Dealers don't cut prices. Set sales are booming because of organized cooperation throughout the entire trade. Prices of all sets are determined by the manufacturers collectively, at the start of the season and held to that level all year. No advertising allowances. Tom, Dick and Harry cannot sell receivers here. Every retailer must be registered, have financial ability and be accepted as a member of his local radio association. Otherwise no manufacturer will sell to him. The set makers maintain a patent pool. We all stress dealer promotion."

Sounds too good to be true. But it is.

U. S. companies please copy.



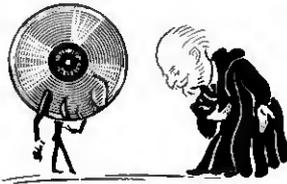
► **RADIO IS TOO GOOD**, too satisfactory and economical a means of obtaining home entertainment for Wired Radio to crack. The Muzak Corporation, experimentally transmitting programs via telephone and light lines to suburban Cleveland consumers as described in the October, 1935, issue of *Radio Retailing*, "folded up" on February 15.

Service to hotels and restaurants is apparently the only "in" for this

type of service and while the Cleveland outfit has discontinued even this type of transmission, there is a rumor afoot that it may shortly resume operation in New York.



► **SPOT BROADCASTING** receives new life with the ruling, January 28, by the FCC that "multiple announcements" (one following each record played) no longer are compulsory. New rule 176 specifies that announcements "shall accurately describe the type of mechanical reproduction being used." Which means that it will simply be necessary to plainly label special



program recordings and ordinary phonograph records when switching from one to the other.

With former restrictions removed, numerous advertisers who have shied from this low cost way of securing small station coverage may be expected to utilize quality spot programs, with resultant improvement in service rendered, especially away from large centers.



► **LATEST WRINKLE** in the outside selling game is the story going the rounds in New York concerning the large retailer who paid inside salesmen 2 per cent, outside salesmen 15 per cent. When the floor men sold enough to guarantee their drawing account they turned floor business over to pals on the outside, split the commission $7\frac{1}{2}$ and $7\frac{1}{2}$!



► **CONTINUED SUCCESS** of the serial program is attracting more sponsors. Holds the attention of a large audience week after week.

► **"THIS FIRE** comes to you through the courtesy of —." The radio sponsor can tie to an orchestra, a comedian, a prizefight—or a fire.

New Britain, Conn., had one of the latter recently. Station WNBC covered it with its announcers and technical staff at the scene—and also put its salesmen on the phone. A fire insurance company quickly got the idea, pointed the moral to the tale in appropriate interspersed announcements and sold quite a bunch of fire policies.



► **SQUELCHED IS THE RUMOR** of undue trouble with wind charging devices. Writes the head of a big manufacturing company: "During the past year we have sold many, many thousands of wind driven generators. They are giving satisfaction everywhere save in a few states where, at certain seasons, there is not enough wind to drive a butterfly out of its course. Daily we get a batch of letters from farmers praising the device. The few complaints received are invariably due to improper installation.

"The fact that we have just brought out a gas-driven generator is due solely to our desire to take



care of those few locations where wind force is insufficient for proper wind charger operation and to provide current for auxiliary lighting."



► **DEPRESSION PROOF** is the household refrigerator business. With the exception of one year this product has made outstanding gains over each previous year. Here's the picture: 1921, 5,000 units; 1925, 75,000; 1926, 210,000; 1928, 560,000; 1930, 850,000; 1933, 1,080,000; 1934, 1,350,000, and 1935, 1,650,000.

BROADCASTERS *Urge*



ANNINGS S. PRALL

Chairman
Federal Communications Comm.

Interviewed by the editor of *Radio Retailing*, Feb. 12, Mr. Prall revealed a keen interest in better programming, in a more equitable allocation of station coverages, in the American system of broadcasting and in the business welfare of the radio dealer.



LENOX R. LOHR

New President
National Broadcasting Co.

Showman of the first rank; Mr. Lohr's masterly management of the Chicago World's Fair revealed an executive ability and understanding of human nature which should soon be transmitted, via program policies, to millions of American listeners in all walks of life.



WILLIAM S. PALEY

President
Columbia Broadcasting System

Our youngest big chain executive head—who ventured a large private fortune in a new art and provided a type of healthy competition which has resulted in giving U. S. listeners program services far superior to those on any other part of the globe.



POWEL CROSLY, JR.

President
Crosley Radio Corp.

Pioneer broadcaster, whose vision and courage was responsible for America's first 500,000-watt transmitter. Overcoming engineering difficulties and political stymies, he supplied the need for strong signal strength in remote areas, thus stimulating farm sales.

EDITOR'S NOTE: Last July a proposal was submitted to the broadcasters, by RMA, providing for a mutual basis of cooperation, for the improvement of programs and

the promotion of set sales. To date but one meeting has been held by the joint committee authorized at the NAB convention. This project must not be allowed

to bog down—due to lack of interest, misunderstanding of objectives or the means for attaining them. Write us your ideas on this important subject.

"For the Public Interest, Convenience, Necessity"

The gist of an interview by the editor of this magazine with Annings S. Prall, chairman of FCC, at Washington, D. C., Feb. 12, 1936. Addressing the radio trade through "Radio Retailing," Mr. Prall said:

I REGARD RADIO as an ultra-modern combination of journalism, the theatre, the public rostrum and the school house.

During the last year the broadcasting industry has made greater progress along useful lines than during any other period in its 15 years of history. It now is in a position more stable and secure than at any time since its inception.

Programs improved tremendously last year. They will be even better during 1936. The Commission hopes to bring together the educational groups and the broadcasters to develop a cooperative plan for the advancement of education by radio.

I solicit the support of the radio dealer in the Commission's determination to free the air of objectionable programs and strengthen friendly radio reception in the home. You may rest assured that, where the broadcasters themselves do not clean house, the FCC will see that broadcasting information is accurate and acceptable.

High-powered advertising announcements already have been toned down, the chains and most of the independ-

dents have done a splendid job in their voluntary censoring of commercial continuities.

The additional time now given to news reports may have a far reaching bearing upon the future status of the broadcasting stations. As the broadcasters become more alive to their editorial responsibility they will find themselves establishing editorial standards—and participating in civic affairs in their own territories.

The Commission is mindful of the fact that the stations now operate under six month licenses. I agree that under ordinary circumstances they would have some reason to protest but I do not agree that this power of the Commission has been used to intimidate or coerce either by the Administration or the Commission.

I can see no good reason, when once the industry has established itself on a sound program basis, why the Commission should not give the one year license extension serious consideration.

As for TELEVISION, laboratory development has progressed remarkably but this art is not yet ready for practical operation, I am told. Our engineers at the Commission have not yet seen fit to recommend that television be used in any way other than under rigid experimental limitations. *Until FCC sees fit to lift that barrier there can be no commercial television in America—and we will not lift it until we are convinced that it is ready for public acceptance and will serve a public need.*

I would hazard that five years from now you won't

Trade Cooperation



LEO J. FITZPATRICK
President, NAB
Director, WJR, Detroit



LESLIE F. MUTER
President, RMA
Washington, D. C.

Top executives, in exclusive statements to our readers, reveal appreciation of job dealers are doing — Promise closer contact, better program service

A Pledge

"We who provide the programs and you dealers who assure us of an ever expanding market for our wares have an identical interest—service to the listener. The broadcaster and the radio salesman are equally dependent on each other. We should become better acquainted, work closer together. To this end I pledge the entire facilities of the NAB."

Leo J. Fitzpatrick

An Acceptance

"The Radio Manufacturers Association appreciates the opportunities offered by the broadcasters for mutual business advancement. And progressive dealers will tie their activities to timely programs. Because so many sales now come from set owners the local station is an outstanding medium for reaching prospects. Better sets in the home mean more listening hours."

Leslie Muter

just as much as you are dealers in radio equipment. To listeners—your customers—the net result of radio purchases made in your stores consists of home entertainment. This commands your active interest in our programs.

LENOX R. LOHR.

Must Keep Abreast of Progress

BBROADCASTING, in its comparatively short life, has changed materially. It has become an important public influence and a great cultural force. Today timely discussion of vital issues is competing increasingly with music, drama and light entertainment for attention in millions of homes.

The future progress of the industry will depend in great measure on the parallel advances made at both the transmitting and receiving ends of broadcast operations. Thus it is important that the manufacturers and dealers maintain the finest possible link between the broadcaster and the listener. There must be an awareness of developments in reception equipment just as thoroughly as the people are kept advised of forthcoming programs to be broadcast each day.

Columbia is constantly conducting extensive surveys to learn listening habits, to improve its service and to make program content, production and transmission the best available. Many results of this work can be used by the retail trade in helping the listeners get the most from each day's broadcast schedule. Columbia welcomes inquiries concerning such findings and urges the closest cooperation among all branches of the broadcasting industry.

WILLIAM S. PALEY.

recognize your radio receiver—with its additional fittings for television and facsimile. But, I repeat, that while the FCC will do everything in its power to hasten that day, it will also see to it that no new offshoots in radio will be offered the public until they are ready for that introduction beyond the shadow of a doubt.

Active Interest In Programs Essential

THE RELATIONSHIP between the various groups which comprise the complete broadcasting structure greatly interests me. Clearly the broadcasters, the receiving set manufacturers and the radio dealers have a great deal in common. They are links in a chain of service to the American public. Without good programs, there would be no incentive to buy good radios and good programs would be wasted unless listeners were equipped to receive them well.

In addition to providing the best programs possible, NBC has contributed directly to your interests by broadcasting announcements reminding listeners that they should have their sets checked up at intervals in order to assure the finest reception.

I believe that it is to the advantage of radio dealers to tie-in with the fine programs which are being broadcast 18 hours a day by the leading stations of the United States. In the long run, you are dealers in programs,

Super-Power and Program Acceptance

NO TWO GROUPS in any one great American industry have interests so closely intertwined as radio broadcasters and retail radio dealers. I have naturally had a warm personal interest in the activities of radio retailers for 15 years. This interest is one of the fundamental reasons for Crosley's entrance into broadcasting.

Since the inauguration of WLW as a 50-watt trans-

(Please turn to page 38)

HUMAN INTEREST—Photographs of announcers identified as voices behind products sold by Trask, Prescott & Richardson made an effective "opening gun" window. A card at the left reading: "Listen to the World With Your Radio" gave set business a boost (right)



CHEAP, PRODUCTIVE—This and other island, counter and elevator space displays cost the retailer only \$2.20 apiece



QUALITY APPEAL—Sales of these products increased from 25 to 300 per cent as a direct result of the tie-in with broadcasting. No extra newspaper advertising was used during the campaign

Retailer "Harnesses" Chain Broadcasts

Department store's tie-in with nationally advertised products booms soap sales, indirectly aids local radio business

ERIE—In December, 1934, checkup by Howard J. Holcomb, advertising and sales manager for Trask, Prescott & Richardson, 58-year-old department store operating in this city, disclosed the fact that the company stocked 24 products advertised nationally over the NBC chain. Photographs of announcers identified with these programs were obtained without cost from Radio City and a window display built up around them. Regular newspaper space invited residents of Erie and surrounding Pennsylvania towns to see the faces behind familiar voices when downtown.

Island, counter and elevator space displays, costing \$2.20 per average display, were installed. Each product was featured for a week or more throughout 1935, using a quality rather than a price appeal. Results: Sales by the store of "Lux" increased 110 per cent; "Bab-O" turnover jumped 200 per cent; "GE" refrigerators upped 25 per cent; "Vig-

oro" skyrocketed 300 per cent; "Hoover" cleaners recorded a 92 per cent pickup; "Palmolive" rose 35 per cent. Manufacturers, in most instances, took tie-in newspaper space of their own volition to help the campaign along. Other products included in the drive but not featured achieved an 11.1 increase.

Sells Radio Too

Obviously, anything which stimulates interest in broadcasting likewise stimulates interest in radio receivers. Armed with the above figures it should be possible for radio dealers in other cities to interest local department stores in similar campaigns, reaping the indirect benefit. Success of the Trask, Prescott & Richardson experiment likewise suggests that vigorous publicizing of broadcast programs by radio dealers themselves should swell store traffic, use of announcer pictures attracting attention where

photos of performers have outworn their usefulness. Stores selling both general products and radios would, of course, profit in both directions. The idea should be useful to dealer associations.

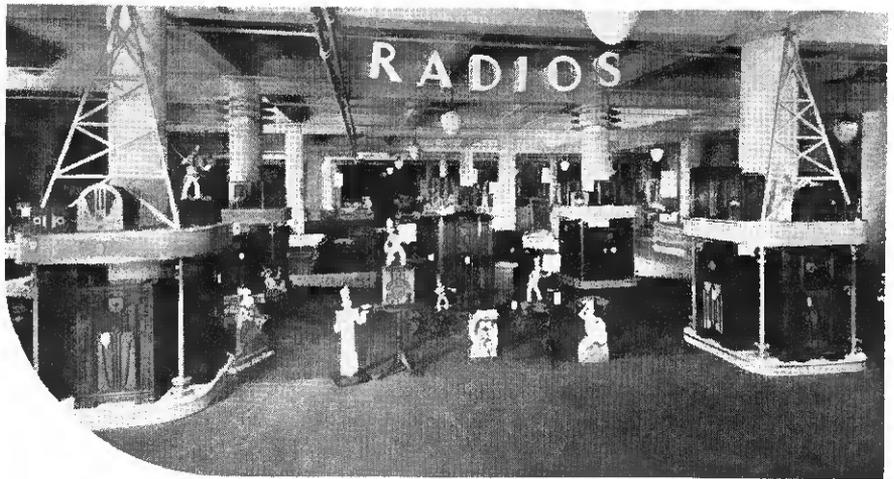
The results of this campaign, together with the fact that the same programs may be similarly merchandised by any enterprising retailer, are highly important to advertisers and retailers alike. For the story is not of a special case. T. P. & R. is an average store. Its competition, including at least one other large department store with the same resources, facilities and budget, is comparable to that of most operators.

The outlet is situated in a city neither wholly industrial nor wholly residential, neither completely urban nor entirely rural. For the first six months of the drive the store bought no more newspaper advertising than it ordinarily uses, the campaign being carried on within the budget.

the card is filled out by the person receiving the job and then sent along with the job to the repair shop. The bottom section (identical with the two above but omitted from the illustration to save space) is torn off and filed in the main office. The remaining two cards are attached to the set.

After the receiver has been repaired the back of the two cards attached to it are filled out. When the job is called for or delivered the lower of the two cards is torn off, sent to the office and filed in alphabetical order for future reference. The top card, bearing the name of the company, is left tied to the receiver so that the customer knows exactly what has been done and also retains the firm's name and 'phone number.

The card fills a double need, serving as a shop work record and keeping the office informed of every bit of work the shop does.



ISLAND DISPLAY — Burdine's of Miami has effected this unique radio display in its house-furnishings division. Use of "islands", four of them built round pillars supporting the ceiling, permits traffic to pass right through the department, retains goodwill of other department managers. According to radioman I. H. Silverman both radio and housefurnishing sales have improved

Auto Radio Sales Ideas Reported

Correspondent surveys trade to uncover plans for early Spring drive

OKLAHOMA CITY—Dealers in this state appear to be formulating plans for an early drive on auto-radios. Demand is anticipated a month earlier than usual this spring and the following sales ideas have been uncovered:

One dealer copies new car sales records each week, suggests through mailed cards that the time to install a set is when the car is new, offering a demonstration. Salesmen follow up prospects who return the cards, indicating interest. Another dealer follows new car

registrations but refrains from contacting prospects until 30 days after the final payment is made, believing that purchasers are more readily found when their automobiles have been paid for.

A third dealer operating in Oklahoma City finds his best market to be among purchasers of good used cars. Lists are procured from used car dealers each week at a total cost of \$1 if and when a set is sold. Salesmen make contacts without advance advertising. Purchasers of good used cars evidently have more

money left for the accessory than do buyers of new machines.

A fourth dealer concentrates on purchasers of home radios. He believes that satisfied customers are his best market for auto-radio.

Intercity truck operators make good prospects, according to a fifth dealer. One operator offers to pay half the cost of a radio if the driver will take on the remainder. He maintains that the use of a radio keeps his men more alert on long runs. Traded-in sets sometimes sell better than new equipment to this market.

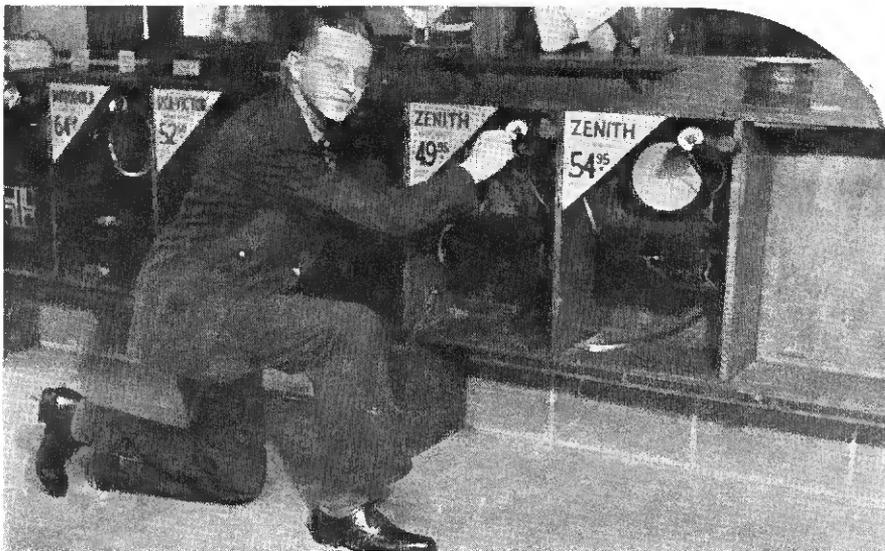
A sixth outlet obtains all its business by working with a large garage.

"The best auto-radio sales idea we ever used," says a seventh, "was to make used and new car dealers our agents. Most of them prefer to recommend our sets for a \$1 commission to selling their own and taking the installation and service troubles. Nearly all add a little sales talk after they have sold a car. Where we have merely to deliver and install a set, all sales work being completed by our agent, we pay higher commissions."

People who drive their cars the most are best auto-radio prospects, according to the eighth dealer. He checks with service station men, concentrates on newspaper men, traveling salesmen, insurance men, doctors and small, one-man express companies.

The ninth dealer contacted concentrates on single men, especially younger single men. "They like music with their dates," he says. Best bet for this type of prospect is the inexpensive model.

The tenth feels that many people still believe auto-radio reception to be much inferior to home reception. He compares performance of both types of set in all advertising, sales promotion work and even gives comparative demonstrations in the store.



AUTO-RADIO SALES AID — George E. Manschall of Real Radio Service, Milwaukee, shows the construction of a simple and effective auto-radio demonstration board which permits competitive sets to be demonstrated side by side

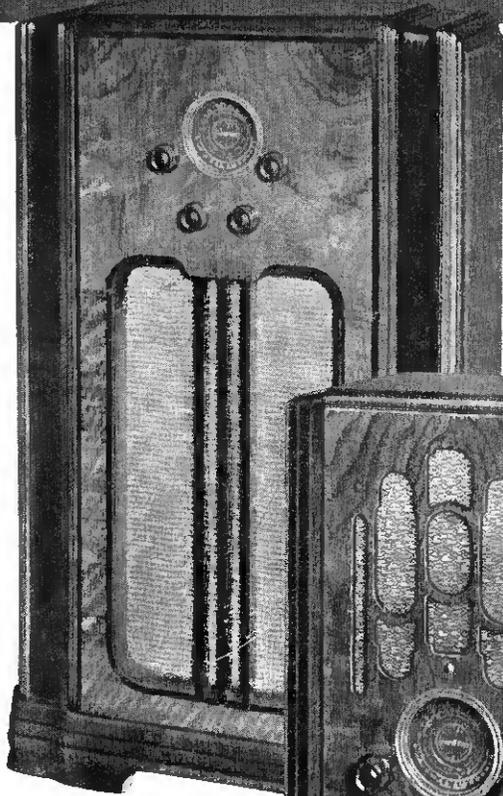
Look!

Four new sets for Spring
that sell on sight... with
NEW ARROW-LIGHT TUNING • NEW RAINBOW DIAL

WATCH your customers walk right up to these new Atwater Kent models when they see them! It's the *new* Rainbow Dial—soft colors give the new sets more eye appeal, make the dials easier to read. *New* Arrow-Light Tuning—finds stations easier, accurately. Just follow the arrow to the station you want. See the four new models pictured below.

THIS SPRING THEY'LL BE TALKING ABOUT ATWATER KENT

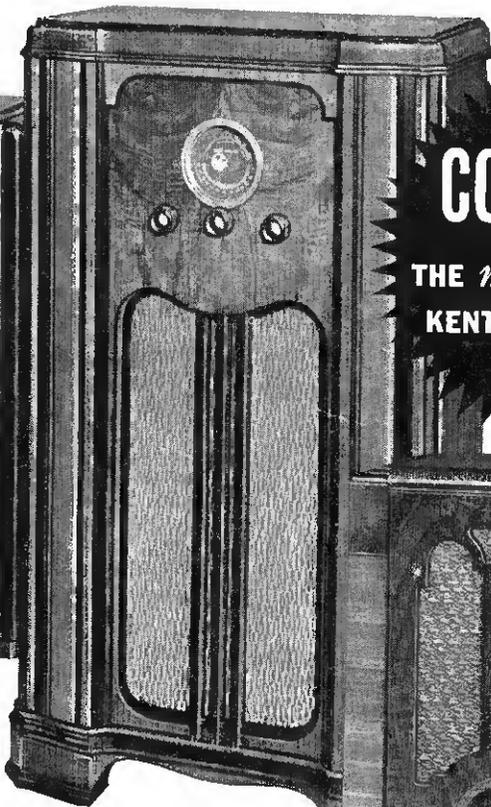
ATWATER KENT MFG. COMPANY *A. Atwater Kent, Pres.* PHILA., PA.



MODEL 676 (at top)—Six-metal-tube console with New Arrow-Light Tuning and New Rainbow Dial, including Atwater Kent's newest feature—the Fan-Spread Station Spacer. **\$69.90** f. o. b. factory.



MODEL 456 (next to top)—This smart compact cabinet houses the same chassis as the console above. Phonoposts are standard equipment. **\$49.90** f. o. b. factory.

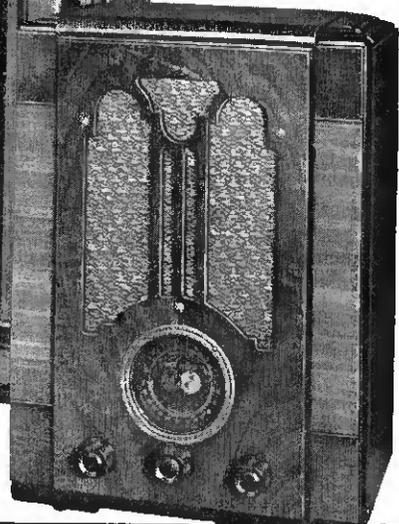


MODEL 535 (next to bottom)—A five-tube console with metal tubes that goes from store to home as quick as any set you'll sell. New Arrow-Light Tuning and New Rainbow Dial. **\$54.50** f. o. b. factory.

MODEL 725 (at bottom)—Here's a five-tube compact that's bound to play an important part in your spring sales. Improved short-wave reception. It's a natural. **\$39.90** f. o. b. factory.

Prices slightly higher in South and West.

BATTERY MODELS Similar in appearance to illustration at right, is the 5-tube, 2-volt battery model **515Q** with short-wave band—one of the new Atwater Kent battery receivers for Spring sales. **\$39.90** without batteries f. o. b. factory.



COMING!
THE *new* ATWATER
KENT MOTOR CAR
RADIO

ATWATER KENT

THE RADIO WITH *Control-Room Reception*

DIRECT

THE NEW FRIGIDAIRE with the

Frigidaire launches its 1936 selling season with the most sensational new model, the most dynamic selling plans, in its entire history

● For months Frigidaire has been waiting for this day. For months feverish excitement has been growing . . . mounting toward the day when this smashing announcement could be made. And now Frigidaire proudly displays its sensational 1936 product—the New Frigidaire with the Meter-Miser. With it, Frigidaire introduces the most powerful, the most dramatic selling program ever devised

to support a new product. The New Frigidaire is *new* . . . from stem to stern. And the plans that will help you sell more than you have ever sold before, are new plans . . . new methods for getting a greater share of refrigerator sales. The product, the plans, the sales program . . . everything . . . is set for the biggest year on record. Remember this slogan: "You'll Do Better with Frigidaire in '36!"

Buy on Proof!

For the first time in the industry, refrigerator prospects need not be forced to make their decision on blind faith or unsupported claims. Frigidaire's dramatic 1936 program provides a definite basis of comparison for buying an electric refrigerator the *Right Way*—on its ability to meet All Five Standards for Refrigerator Buying. Meeting one standard is not enough—*for complete 1936 value your customers will demand Proof of All Five!*

FRIGIDAIRE'S FIGHTING CHALLENGE THAT SIGNALIZES EVERY 1936 ACTIVITY

Frigidaire has wrapped up its new product in a new story—a dramatic, smashing, aggressive advertising theme! In 1936 Frigidaire says: "You Can't Beat Proof!" "Buy on Proof!" Frigidaire, and every man who sells Frigidaire will be able to give proof, visual, convincing proof, that Frigidaire meets All Five Standards for Refrigerator Buying! Here is a stirring advertising story that ties together both the advertising and the demonstration. This complete co-ordinated program is a mighty selling tool with which Frigidaire men will go to town in 1936!

With the greatest product in its history, with the most forceful selling and merchandising plans on record, Frigidaire offers you the opportunity for your biggest refrigeration year.

MEET THE 1936 FRIGIDAIRE WITH THE "METER-MISER"

Look at the spectacular New Frigidaire with the Meter-Miser! Beautiful—eye-catching beauty! Crammed with new use-in-the-home conveniences. Wider, roomier, handier than ever! But even greater than these important selling features is the fact that *no refrigerator has ever performed as remarkably for so little operating cost!*

Frigidaire has built right into the product itself, selling features, unusual and compelling beyond all expectations. Beside the Meter-Miser there is the Food-Safety Indicator. A newly designed, handier-to-use, sealed Steel Cabinet, Sliding Shelves, Portable Utility Shelf, Automatic Interior Light . . . just about everything that has definite sales appeal—and this year Frigidaire has added the vital selling tool of a Five-Year Protection Plan for every purchaser of a Frigidaire.



THIS IS THE
"Meter-Miser"

Frigidaire's new cold-making unit cuts current cost to the bone. Quiet . . . unseen . . . trouble-free. Gives more cold for much less current cost, because of outstanding design that makes necessary only three moving parts, permanently oiled, precision built and completely sealed against moisture and dirt.



The New Food-Safety Indicator Frigidaire is now equipped with this new Food-Safety Indicator, an accurate instrument built right into the center of the food compartment, giving visible proof that the cabinet is kept at Safety-Zone Temperature, below 50 degrees and above 32 degree

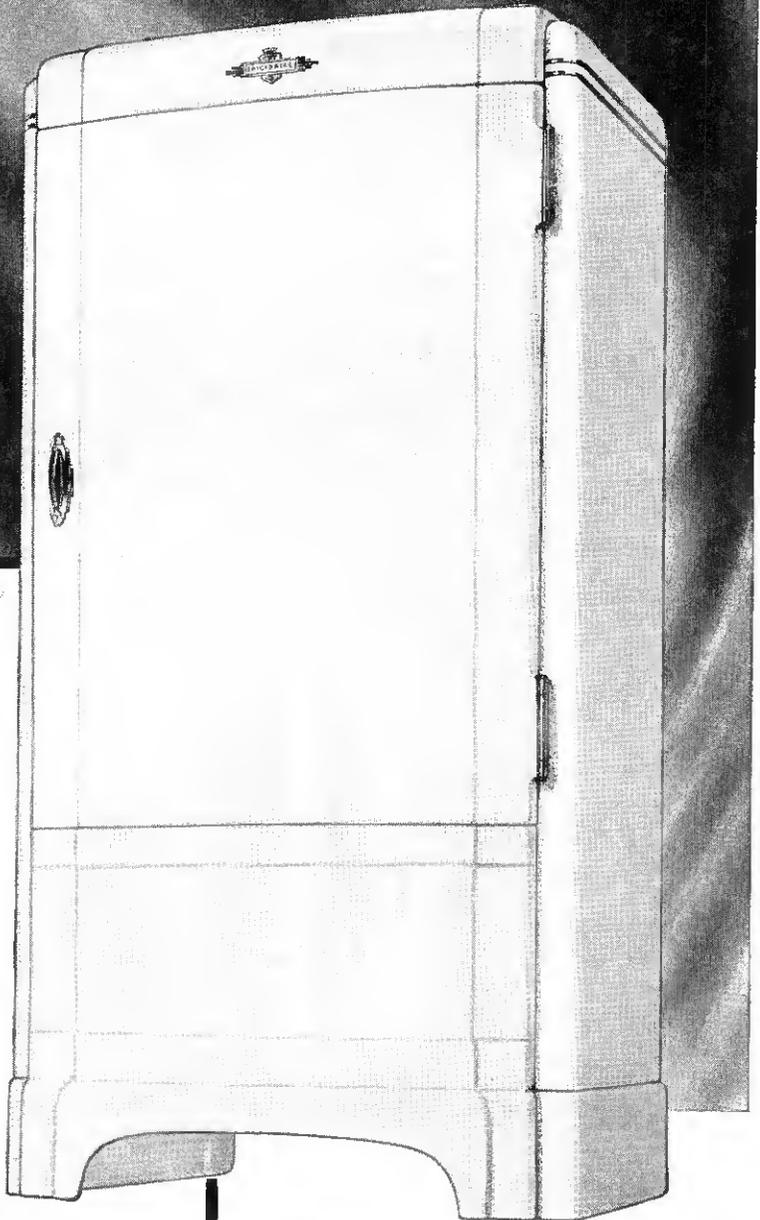
THE NEW FRIGIDAIRE WITH THE "METER MISER"

MEETS ALL 5 STANDARDS FOR REFRIGERATOR BUYING

- 1 LOWER OPERATING COST
- 2 SAFER FOOD PROTECTION
- 3 FASTER FREEZING—MORE ICE
- 4 MORE USABILITY
- 5 FIVE-YEAR PROTECTION

★ ★ ★

HIT!
"METER-MISER"



Five-Year Protection Plan

Frigidaire places such faith and confidence in the Meter-Miser that this sealed-in mechanical unit, a marvel of outstanding design and engineering, comes to your customers protected for Five Years against service expense.

The 1936 Frigidaire Line Includes

FOUR MASTER MODELS
 from 4.1 to 7.24 cu. ft. capacity. All with Dulux Exterior, Stainless Porcelain in Seamless Interior and a long list of other superior advantages.

In addition there are the Koldchest, 2.1 cu. ft. capacity . . . and the D3-36, 3.3 cu. ft. capacity.

FIVE SUPER MODELS
 from 4.1 to 9.1 cu. ft. capacity. All with Porcelain Exterior and Interior, Portable Utility Shelf, Hydrator and the Quickube Ice Tray, in addition to all other Frigidaire advantages.

FOUR EXTRA-SIZE AND DE LUXE MODELS
 from 10 to 15.1 cu. ft. capacity.

TWO SPECIAL MODELS
 5.1 and 6.24 cu. ft. capacity.

FRIGIDAIRE OFFERS THESE OUTSTANDING SELLING FEATURES

Meter-Miser · Food-Safety Indicator · Wider, Roomier Interior · Portable Utility Shelf · Full-Width Sliding Shelves · Automatic Interior Light · Frigidaire Hydrator · Super Freezer · Automatic Reset Defroster · Automatic Ice Tray Release · Quickube and Rubber Grid Ice Trays · "Double-Range" Cold Control · Sealed Steel Cabinet finished in Dulux or Porcelain · Touch-latch Door Opener · Exclusive "F-114" Refrigerant.



The New Name-Plate is a Salesman in Itself

Frigidaire is made *only* by the Frigidaire Division of General Motors Corporation. Your prospects are being educated to look for this name-plate before they buy.

FRIGIDAIRE CORPORATION · DAYTON, OHIO

What's Wrong

with the COMBINATION?

Radio-phonograph sales decline in face of disc gains—Trade takes merchandise for much needed airing, offers constructive suggestions

RECORD SALES

There has been some pickup in sales to lovers of fine music who buy recordings for old machines. And the remaining discs have gone largely to youngsters who play dance tunes on inexpensive portables and attachments.

What's wrong with the combination? It cannot be expected to attain volume heights achieved by straight radio, perhaps. But it should, in our estimation, represent more "plus" business if for no other reason than that the industry is already too narrow for comfort.

Dealer interviews and a mail survey of the trade indicates that the chief reason for the startlingly slow progress of the combination is the fact that radio

RADIO-PHONOGRAPH SALES GO DOWN

ANYONE with a hopeful finger on the pulse of phonograph record business during the past three years has been rewarded by a quickening throb of renewed life. Sales have not exactly skyrocketed, but records are regaining at least part of their virility, lost when the initial novelty, convenience and low maintenance cost of radio knocked discs on the head.

Not so with phonograph combinations. One would think that the sale of combined radio-record players must "up" with record gains, but investigation discloses that this has not happened. Coin-operated machines and public-address systems installed in small dance halls, road houses and restaurants to avoid orchestra cost are today absorbing a high percentage of manufactured discs.

By

W. MacDonald

GO UP

suits the great majority of home entertainment seekers too well.

Says Fred O. Smith of Nashua, New Hampshire: "People who have bought combinations scarcely ever play records. Either it is too much bother to change records and needles or programs received over the air are more satisfactory." Says George R. Campbell of Ann Arbor, Michigan: "There is one serious drawback. If combinations other than automatic types are used someone has to look after the music frequently." And even automatic record-changing does not seem to be the answer. Says R. H. Jacobs of Lima, Ohio: "In my own home I have a large machine that automatically plays eleven records. It works fine, but we just don't seem to use anything but the radio. It is not once in three months that we play a record."

Further proof that dealers encounter high sales resistance when attempting to sell up with the combination comes from J. P. Crouse of Dixon, Kentucky, who states: "Buyers in this locality just do not seem interested." And from Irwin Lichter of Charleroi, Pennsylvania, who writes briefly: "We do not receive any inquiries for combinations."

Such retailers might be accused of expecting merchandise to sell itself were it not for statements from men like F. Brammell of San Bernardino, California, whose reply is typical of many: "If we have a used ten-tube straight radio and a used ten-tube combination in stock, both at the same price, it is easier to sell the radio!"

Angelo Tomalino of Glendive, Montana, comes as near to hitting the nail squarely on the head as any one we've contacted when he points out: "Records and combinations must be advertised to sell. It seems to me that only one company is giving them much of a boost."

Price Is Weakness and Strength

By far the majority of dealers talked to feel that combinations cost too much more than straight radios. This is obviously dangerous ground, as price is both the weakness and strength of the instrument, for unless it can be set up as the "tops" in home entertainment and reward intensive sales effort with proportionate profit there appears to be little reason to push the merchandise.

Bemidji Music of Hibbing, Minnesota, thinks people are once again becoming interested in record playing, but insists that combination prices are too high. E. B. Hunt of Woonsocket, Rhode Island, believes that "if a major manufacturer would be smart enough to bring out a combination at about \$89.50 with a liberal allowance for old

talking-machines it would be a big stimulation to the business." In the opinion of William Buescher Music of Cleveland, Ohio, it would be desirable but difficult to build a combination at a low price and still give it an appearance "edge" over cheaper straight radios.

Still another dealer doubts if the trouble is purely a matter of price, writing: "We have a \$350 combination on the floor priced at \$39.50 for clearance and still it does not move. People have an idea that combinations are obsolete like phonographs." Stanley Glaser of Washington, District of Columbia, another advocate of reduced combination prices, affirms significantly that: "The amount of national advertising devoted 100 per cent to radio-phonograph combinations is so small that the public has very little to influence and inform them about this merchandise."

Record Business Not "Right"

Certain of the larger music houses have been content to sell combinations chiefly as a means of swelling repeat record sales. The smaller stores and particularly those considering themselves primarily radio or appliance specialists appear unwilling to do. Obviously something is wrong with the record business in so far as the small retailer is concerned and without him neither discs nor machines to play them can secure desired volume.

Says F. R. Gooding of Wilmington, Delaware: "The radio-phonograph business has drifted almost entirely to record dealers who are interested primarily from the standpoint of disc promotion." Ben Schmutzler of Watertown, Wisconsin, admits that he has "actually been afraid to stock these instruments as it involves handling records." Yet he believes that the combination is a worthwhile instrument.

Why should any dealer be "afraid" of salable merchandise? Perhaps the answer is given by L. Meier, Cleveland, who, although he was one of the original franchised record distributors in the area 15 years ago, no longer carries records "because of the difficulty of handling a complete line without running into a financial outlay which is out of proportion to the volume of business to be obtained." Meier comes through with a constructive suggestion: "If record manufacturers would develop a system of exchanges whereby a local inventory could be kept circulating with the obviously slow numbers being drawn out of stock and returned for faster moving ones more small dealers might be encouraged to stock records and push them." C. H. Gruver of New Village, New Jersey, concurs with the statement: "If some scheme could be worked out whereby a dealer could sell a combination and with the sale give the customer a record service, mailing or delivering new numbers every two or three weeks this would enable the dealer to ask for and get a good price on the machine.

C. M. Sigler of Harrisburg, Pennsylvania, is more hard-boiled about it: "When the Electrola came out in 1927 we had a fine record department. But the price of the machine was too high and because radio sales were

booming we permitted our record department to die a natural death. We re-stocked on combinations not so long ago, but again found them slow-movers by comparison with radio. The only way in which we would be interested in reviving our record department would be a consignment proposition on combinations until such a time as the business warranted making a permanent investment."

Still another retailer says point-blank: "Distributors of leading makes of combinations have made the mistake of trying to encourage dealers to go into the record business at the same time they take on combinations." We don't see what else the manufacturer can do as records and machines certainly go hand in hand, but here is a typical dealer reaction.

While the trade is by no means satisfied with the combination in its present form, it is evident that a majority of dealers are genuinely interested in improving either the merchandise or its method of sale or both. Only one outlet contacted during the past month thinks the game hardly worth the candle. He writes: "From our seventeen years' experience in the radio business we seriously believe it would be most advantageous for all manufacturers to focus their entire attention on continued improvement of broadcast receivers without wasting time on combinations, as they will never be popular with the public, our efforts in the past proving that the customer wants to hear the artist in person and not on wax."

This is not the general trade's attitude and it certainly is not ours. Properly handled, the potentialities of both combinations and records are too great to be thrown over one's left shoulder. Somewhere in the following constructive suggestions by dealers, or in combination or modification of these suggestions, a solution may be found.

Irwin Lichter contends that unless some new appeal can be developed by record makers he cannot conceive why the average customer should (1) shop for records, (2) purchase records and (3) play records when virtually the same thing can be obtained without this cost over the radio. He suggests:

- (A) A different name for records
- (B) A new type of recorded entertainment
- (C) A competitive price level for machines
- (D) Lower record prices or a rental plan
- (E) A possible tie-up with radio programs

C. M. Newkirk of Rapid City, South Dakota, feels that: "The idea of combinations is all wrong to begin with. The radio and phonograph should be separate instruments. If some company would come out with an automatic record changer in a small console cabinet with true high-fidelity tone, to sell for about \$75, then go out and dramatize opera recordings through national advertising both the machines and the records would sell."

George R. Campbell thinks the industry should right-about-face and sell youngsters records and machines instead of concentrating, where it does any advertising at all, upon the small group of oldsters interested primarily in classical music. "Youngsters are accustomed to making their own entertainment and should mind record-changing less. Dance records have a genuine appeal for this sizable group."

Here are both destructive and constructive criticisms of present combination instruments, merchandise and merchandising methods. Something must be done to put this business on a more profitable basis and we will welcome further correspondence from readers on the subject.

FHA Tester Finance Plan Benefits Trade

*Extension beyond April 1 hoped for
Manufacturers turn portables into
"stationary" equipment*

THE Federal Housing Administration's approval of radio test equipment purchasing through Government-protected bank loans is everywhere stimulating instrument business. Enabling servicemen and dealers to buy sadly needed testers other than portable types without planking down an initial cash payment, and on terms running as long as two years, the FHA plan is causing something of a stir, many retailers scurrying to get in under the wire before it expires on the April 1 deadline. Hope is expressed by many that an extension will be granted but the whole FHA program is entirely up to Congress.

Under the plan instrument distributors obtain credit blanks from local banks, have these filled in by dealers purchasing equipment. The Government protects the banks up to 20 per cent of total loans. Otherwise banks and purchasers deal directly with each other on a normal credit basis.

One fly in the ointment is the difference in policy from one bank to another. Most will handle the business on loans as small as \$50, permitting terms of from 12 to 18 months. Others have set a \$100 minimum and the only solution for the purchaser in this case is to buy two or more instruments at once if the individual items sell for less than the local minimum. Minimum monthly payments range from \$4.50 upward.

Stationary Units Only

Ticklish point is the FHA's insistence that it will guarantee credit only on stationary equipment and not on portables. Large counter tube testers naturally come under this heading, as do other instruments specifically designed for fixed use. Most manufacturers originally applied for approval on just this class of equipment, but some have since discovered that by removing the handles on certain portable items, or installing them in shop-type cases, or by affixing bench-mounting brackets, virtually their entire line may be approved.

Many Companies Qualify

Samuel Milbourne of *Supreme* informs us that his company is now operating extensively under the plan. Similar advice is forthcoming from D. E. Johnson of *DayRad*, John S. Meck of *Clough-Brengle*, N. A. Triplett of *Triplett* and *Readrite* and M. Mentzer of *Precision*. Harold L. Olesen of *Weston* indicates that his company is taking steps to place its equipment in an eligible form. V. S. Church of *Burton-Rogers* says his company is already moving higher priced laboratory type of units on this basis. *RCA*, according to George P. Allen, feels that while much equipment would be eligible if the handles were removed the cost of changing dies to blank out holes would probably exceed any profits which could be made through FHA financing.

**WHAT A BATTERY RADIO!
FOR FARM HOMES, COTTAGES, SCHOOLS,
BOATS, CAMPS AND TRAILERS**

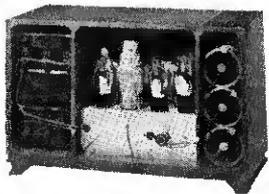


I HAVE SOLD RADIOS for many years and I want to say that your new Kadette Battery Radio, Model 400, leads the field! Everyone who listens to the new Perm-O-Flux permanent magnetic, dynamic speaker simply marvels at the lifelike quality and volume of tone. Why, it's just as good as any electro-dynamic speaker I ever heard.

People appreciate the modern selected walnut cabinet. It looks as good as it sounds. Complete portability, due to its compactness and weight of only 25 pounds with batteries, is another high spot. I was somewhat skeptical about saving 50% on original battery costs and 25% on battery usage. I did not believe any speaker could be built that would not show *some* drain on the battery—however, *I am sold now*. You underestimate the savings.

300 hours pleasure out of 3 ordinary ignition-type dry cells also sounds unbelievable, but it's true. These features, plus the low retail price, will open the doors of hundreds of thousands of unwired farm homes and rural schools. Every cottager and camper is a prospect; so are boat owners and motorists owning trailers. It is ideal for such purposes. For the first time, Kadette gives wired-home performance in a battery radio. I expect to 'go to town' with it—*Congratulations!*"

J. G. BRADBURN, Bradburn Radio Corp., Houston, Texas



**ONLY
\$29.95
—
INCLUDING
BATTERIES
& TUBES**

All batteries self contained. Size 16" wide, 7" deep, and 10 3/4" high. Aerial enclosed, completely portable. Weight, 25 pounds. 3 ignition-type dry cells, 3 small "B" batteries. About 300 hours use before replacing ordinary ignition dry cells.

**THE INTERNATIONAL
KADETTE
FARM BATTERY MODEL 400 RADIO**

**FIRST!
WITH THE REVOLUTIONARY
New
PERM-O-FLUX
PERMANENT, MAGNETIC
DYNAMIC SPEAKER**

The source of power in this speaker is a new magnetic metal developed and perfected in the laboratories of The Continental Motors Corporation. It is the most powerful yet known to science. This speaker is lighter than electro-dynamic speakers and has equal or better sensitivity. It delivers a lifelike tone without distortion. The unique design of the voice coil and suspension insures continuous and trouble-free operation. Radio experts marvel at its performance. Ever alert for the newest and best, Kadette is first to use it. Cash in on the tremendous sales appeal of the Perm-O-Flux while it is the sensation of the radio world.

THIS new Kadette Battery Radio, Model 400, is absolutely without a rival in its particular field. It has all of the essential qualities of an electro-dynamic set, and none of the disadvantages of the old-fashioned, clumsy battery sets. It eliminates battery recharging and the danger of acid. It is completely portable. To fully appreciate its sensational performance and value, you should see one. Write today for full information. There is still territory open for aggressive distributors and dealers.

INTERNATIONAL RADIO CORPORATION, ANN ARBOR, MICHIGAN

These BROADCASTS



CURTIS MITCHELL—Editorial director of "Radio Guide," Chicago; formerly editor of "Radio Stars."

Mr. Mitchell, an eminent authority on radio from the listener's viewpoint, suggests the accompanying following programs as particularly suited for demonstration purposes:

SUNDAY

Metropolitan Opera Auditions, NBC, 3:30 p.m. EST.
 Comment: These auditions present would-be operatic stars. Offerings range from deep mezzo-contralto to high coloratura soprano. Orchestral background provides a test for any good radio set. (SW—15.33)

Ford Sunday Evening Hour, NBC, 9 p.m.
 Great concert artists and concert orchestra. (SW—11.83)

MONDAY

Between the Bookends, CBS, 2 p.m.
 I choose this because it is important that a radio set deliver a speaking voice fine in quality. This program presents a good voice and a service for listeners regarding lately published books. (SW—15.27)

Voice of Firestone, NBC, 8:30 p.m.
 Fine voices backed by a fine chorus make this ideal as a demonstration program. Many sets fall down in reproducing chorus work. (SW—9.53)

TUESDAY

Women's Radio Review, NBC, 4 p.m.
 Speakers and orchestra combined.

Fred Waring's Orchestra and Glee Club, CBS, 9:30.
 Waring is one of music's most famous names and his entertainment most satisfactory. (SW—11.83-6.06)

Helen Hayes, in "The New Penny," NBC, 9:30.
 This proves that a star of a great Broadway success can be brought into the home for the flip of a switch. (SW—6.14)

WEDNESDAY

Musical Reveries, CBS, 12:15 noon.
 Also on at same time Monday, Friday and Saturday. Excellent for that lunch hour appointment.

Burns and Allen, CBS, 8:30 p.m.
 Presenting Gracie Allen's remarkable voice contrasted against George Burns' interruptions and Jacques Renard's orchestrations. (SW—11.83-6.06)

THURSDAY

Radio Guild, NBC, 4:30 p.m.
 A fine troupe of radio actors presenting fine plays.

Rudy Vallee's Variety Hours, NBC, 8 p.m.
 This program presents an ever-changing cast of fine entertainers plus the latest in modern music. (SW—9.53)

FOR DEMONSTRATIONS

**Editor Mitchell, Program Expert,
 Suggests These Fine Offerings:**

FRIDAY

American School of the Air, CBS, 2:30 p.m.
 One of the foremost education features, helpful to young and old. (SW—15.27-9.59)

Cities Service Concert, NBC, 8 p.m.
 Jessica Dragonette's fine voice, plus the famous Revelers Quartet, with an unusually large orchestra provide exceedingly rich entertainment. (SW—9.53)

SATURDAY

Metropolitan Opera, NBC, 2 p.m.
 This program offers the most difficult test to which any radio set might be put. This successful series of broadcasts represents a remarkable engineering triumph. (SW—15.33-9.53)

Beauty Box Theater, CBS, 8 p.m.
 Light opera, a splendid orchestra and a wide range of voices. (SW—11.83-6.06)



HELEN HAYES—Stars in a continued human interest drama, "The New Penny."

While this program terminates this month, it is anticipated that Miss Hayes will continue her radio presentations at a near future date



NELSON EDDY—Heard on Firestone program. He is shown in the role of Sergeant Bruce in his recently released movie triumph

Rate TOP POSITION

VOTED MOST POPULAR

By 239 Radio Editors and by
Listeners in 40 Key Cities

RCA "Magic Key" (sw-15.27) WJZ Sunday at two.
Philharmonic Symphony (sw-11.83-9.59) CBS at three.
Jack Benny (sw-11.87) WJZ at seven and 11:30 EST.
Cantor et al (sw-11.83-9.59) WABC seven and 11:00.
Major Bowes, Amateurs (sw-9.53) WEAJ at eight.
Paul Whiteman, variety (sw-6.14) WJZ 9:45 and 11:30.
Radio Theatre (sw-11.83-6.06) WABC Monday at nine.
One Man's Family (real stuff) WEAJ Wednesday at 8.
Town Hall Tonight (sw-9.53) WEAJ Wed. 9 and 12.
Burns & Allen (sw-11.83-6.06) WABC 8:30 and 11:30.
Lanny Ross, Showboat (sw-9.53) WEAJ Thursday at 9.
Hollywood Hotel (sw-11.83-6.06) WABC Friday at 9.
Your Hit Parade (sw-9.53) WEAJ Saturday at eight.
Shell Chateau, Jolson (sw-9.53) WEAJ Saturday 9:30.
March of Time (tentative) (sw-6.12) WABC nightly
10:30.



FIFTH ANNUAL N. Y. World-Telegram radio editors' poll rates Jack Benny's Sunday evening half-hour as the most entertaining program on the air. The "hot numbers" on this page (left) are compiled from this poll plus a survey of listener opinion conducted in 40 large cities.

Programs are not listed in the order of their popularity vote. These selections do not include those programs picked by Curtis Mitchell, on facing page, many of which rate high in the opinion of the above mentioned judges. All time given is afternoon or evening.

New Programs That Promise Well

Washing machine dealers—"Helpful Harry's Household Hints," sponsored by the American Washing Machine Association, started over Mutual chain, Feb. 18. On the air Tuesdays, Thursdays, Saturdays at 8:15 a.m.

Sam Taylor's "Hollywood Highlights" program, heard over WOR three times a week, has won a large movie-fan audience since it started Jan. 21. Over 25,000 cinema-crazed listeners have written for give-away photos of Nelson Eddy, Jeanette MacDonald and Anita Louise.

Malcolm La Prade, known to radio listeners for the past 12 years as "The Man from Cook's," resumed his microphone travelogues with the aid of more than 200 European offices of Thomas Cook & Son, Sunday, Feb. 23. Tune in at 5:30 p.m. EST, over WJZ network.

Eddie Stanley, the young master of ceremonies heard last month in his Chicago radio debut, returned to the WGN "Funny Bone Follies" program, Sunday, Feb. 23. Stanley may be heard with a galaxy of soloists and Harold Stokes and the WGN dance orchestra in the full hour program from 4 to 5 o'clock.

"Ziegfeld Follies" took to the air Saturday night, Feb. 22. With the incomparable Fannie Brice, this number should prove a winner. WABC chain at eight. Will have a slight continuity theme.

The Little Theatre off Times Square is now 3,000 miles from old Broadway. The First Nighter program is being broadcast from the new NBC studios in Hollywood. Don Ameche, Betty Lou Gerson, Harry Jackson's orchestra and a cast of movie actors constitute the new ensemble.

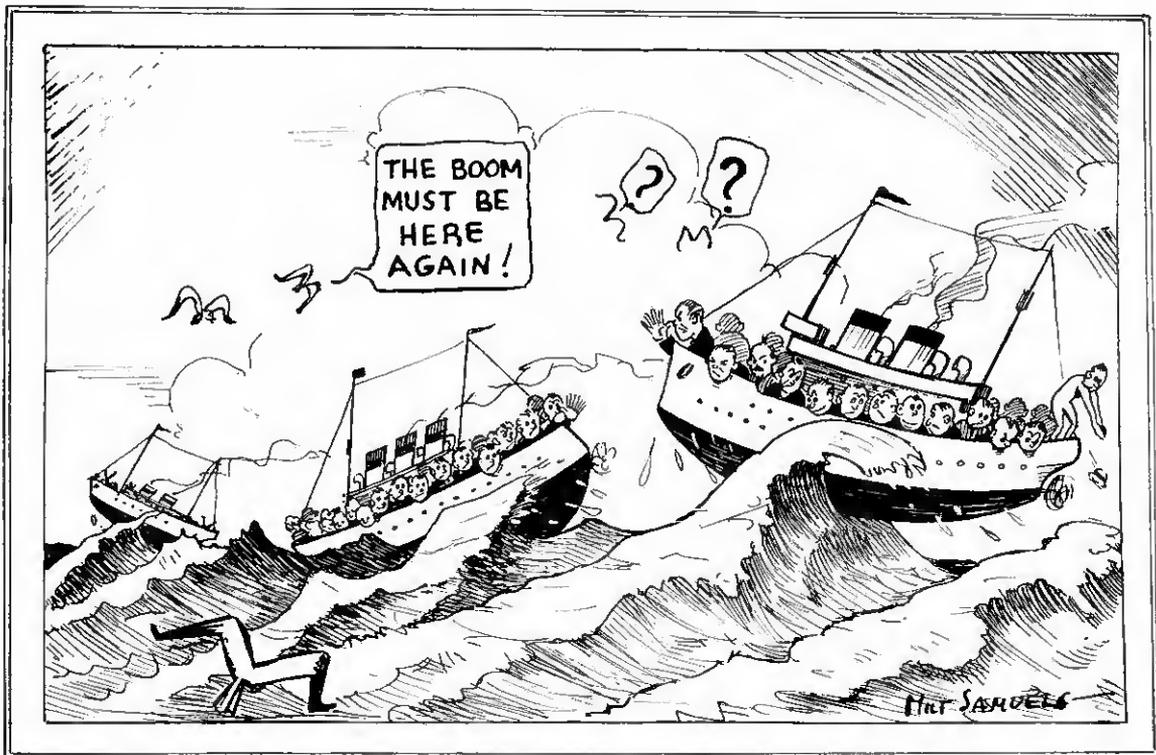
Columbia announces the following feature serials recently launched: Chrysler's new "Airshow," every Thursday night at eight (44 stations) and talks for women, by five noted personages including the Grand Duchess Marie and Beatrice Fairfax—weekday mornings at 9:30.



ROBERT WOOLSEY
With a neat little package in cellophane, Phyllis Barry. Many prominent screen stars will be heard on radio programs during 1936



PHIL BAKER—Supported by Beetle and Bottle, Hal Kemp's orchestra and the Seven G's, is one of radio's fixtures



Hello Sailor

In which Milton Samuels suggests some delightful (?) cruises for the industry's pain-in-the-necks

SHIVER me timbers . . . Avast ye landlubbers . . . Anchors aweigh! This is the season when the radio business goes nautical. For the annual regatta is about to commence and rumor has it that cruises will be just as numerous and more elaborate than ever. Everything in the line of seagoing trips seems to be on the docket, including a closeup of the Virgins of Bali.

So long as the industry *must* run cruises why not do a good job of it? Why not run a few specials for the unsung "heroes" who are doing their bit for the advancement of the art? Here is a suggested list for manufacturers who have not yet bought up a boat:

CRUISE NUMBER 1. For "Switchers."

The chief trouble encountered when planning such a cruise for retail salesmen who never sell a man the set he really wants but switch to the store's pet profit nondescript would be locating a large enough boat. This group not only deserves to be taken for a ride but should preferably be stranded in mid-ocean on a reef, or switched to a small boat without oars during a hurricane.

CRUISE NUMBER 2. For Too-Liberal Credit Managers.

A special trip for those worthies who just hate to return

a deposit when the credit risk is NG. We suggest a cruise to the Equator in a scow with the Ancient Mariner.

CRUISE NUMBER 3. For Tube-Tester Manipulators

For the man who just can't stand the shock of seeing a tube register "good." Starts monkey-business, to the amazement of the consumer, who really isn't so dumb. How about a cruise on a Hudson River Day Boat? . . . I said *day* boat!

CRUISE NUMBER 4. For The Backward Ad Man.

I refer to those intellectuals who haven't changed a local layout or advertising claim since 1926. Still use such novel phrases as: "The greatest value in the city." . . . "A radio scoop." Or: "Beats all competition." For these imaginative winners of consumer goodwill how about a sail on the Erie Canal . . . on a hot day?

CRUISE NUMBER 5. For 30-Percent Off-ers.

The less said about this type of "hero" the better. They should all be gathered together on a large cattleboat . . . with 30 per cent of its bottom removed!

At that, I've overlooked a class really entitled to a genuine cruise at the expense of the entire industry—the *Consumer*. This is the man who dug deep into his pockets last year and bought our sets despite conflicting tube claims, television threats and wads of negative advertising.

He's entitled to a world cruise on the S.S. Normandie, and I don't mean maybe!

NOW WE ADD Another Punch

TO THE HIT LINE OF '36!

New
**5-YEAR
Protection
Plan**

**SUPERIOR BECAUSE
IT'S OPTIONAL**

WESTERN UNION

ACCT'G INFMN.
TIME FILED

WHITE
REVENUE
the terms on back hereof, which are hereby agreed to

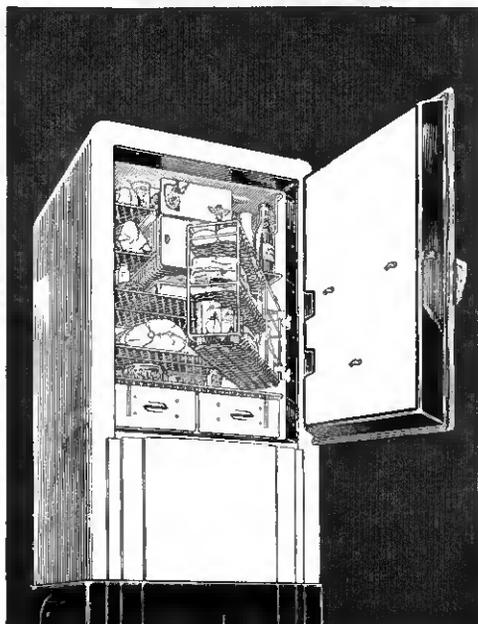
J. C. WILLEVER
FIRST VICE-PRESIDENT

NEWCOMB CARLTON
CHAIRMAN OF THE BOARD

STEWART WARNER IS HAPPY TO ANNOUNCE OPTIONAL 5 YEAR PROTECTION PLAN ON ALL 1936 REFRIGERATORS INCLUDING THOSE ALREADY SOLD AND INSTALLED STOP WARRANTY IS OPTIONAL BECAUSE WE BELIEVE DEALER AND PURCHASER SHOULD HAVE RIGHT TO DECIDE WHETHER THEY WANT TO USE PLAN STOP USUAL FIVE DOLLAR CHARGE FOR EXTRA FOUR YEARS WILL APPLY STOP YOUR DISTRIBUTOR HAS COMPLETE INFORMATION NOW

STEWART WARNER CORPORATION

New Optional Protection Plan Does Not Penalize Attractive List Price Set-up— Provides Adequate Dealer Compensation



Above is De Luxe Model 766, showing how SAV-A-STEP holds most-used foods where they're easiest to reach—and swings out to turn back space to "front" space.

If you're still wondering what line you can go to town with this year—just talk to a Stewart-Warner dealer! We've never seen a line click so fast—or set such a pace in sales. Sales in January were 155% larger than in January, 1935—and February figures are more than double those of the year before! Old dealers are cheering—and new ones climbing onto the band-wagon! Housewives come—look—and surrender that down payment without an argument!

Now we're following up one big punch with another! We already had the handsomest line you'll see this season. We had eye appeal. We had SAV-A-STEP—the exclusive feature that increases get-at-able space 30%—plus SLID-A-

TRAY, and the new illuminated freezing control, and a long list of other outstanding conveniences. We had the quiet, current-saving Slo-Cycle unit that cuts service losses. *And now we make the whole thing bomb-proof with a Protection Plan that's superior because it's optional—because it doesn't change list prices—and compensates the dealer fairly!*

DON'T MISS THE BOAT

on the line that offers you the most for 1936. Phone or wire your distributor without obligation for all the facts on the line, and on this new and better protection plan.

STEWART-WARNER CORPORATION
Chicago, Ill.

STEWART-WARNER

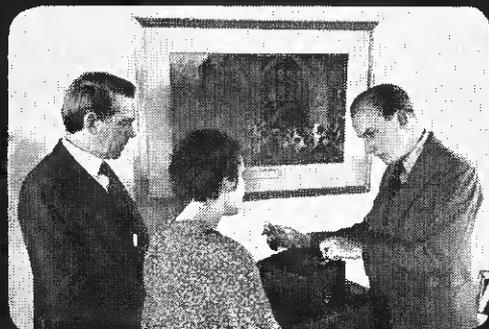
We greased the wheels for Check-up



The RCA Check-Up gets you into the home. It's what you do there that counts



These postcards will bring me \$9.50 each



I always have the customer watch me test tubes



Look here—Ridge Radio did \$900 with the Check-Up

SEE THE NEW RCA SOUND
FILM AND YOU'LL SEE THEM
GO AROUND AND AROUND

THE RCA Radio Check-Up Campaign isn't just an advertising man's brainstorm. It grew out of a need... 3856 dealers asked us for it. Then—we didn't stop at putting the idea on paper—we greased the wheels for Check-Up to make it go around and around... grind out profits for every dealer.

See the new RCA Sound-Film entitled "As A Matter of Fact" and you'll see how Check-Up works for you the easiest possible way. This film takes the Check-Up Campaign out of RCA headquarters and right into every dealer's shop—your shop—your customer's home. It is packed full of sales tips worth real money to you... shows you how to put them over—clearly, simply.

The Check-Up Film is now being shown by RCA Radio Tube distributors. Ask your distributor for the next date and GO!



Radio Tubes

RCA Manufacturing Co., Inc., Camden, N. J.
A Service of the Radio Corporation of America

Our Readers Write



ABOUT

- ▶ Wind-driven charger distribution methods
- ▶ Further promotion for multi-band sets
- ▶ Second-hand set-selling specialists
- ▶ Our good points and our bad

One Side—

Editor Radio Retailing:

It started last fall, this profitless new policy of selling wind-driven chargers to the consumer and short-circuiting the dealer and jobber. That was bad enough, with men like myself obliged to service the accessories miles out in the country whether we liked it or not. And now manufacturers are putting out gasoline-driven generators on the same plan. We do the selling and get not a cent for our work.

The chargers help sell battery sets, it is true. And some argue that we can slap on a service charge. But the principle is wrong. It will lead to even worse things. It won't be long before the consumer expects to buy even his radio at the manufacturer's cost.

I understand that a certain large set maker is going to buck this giveaway policy. More power to him. An ample jobber and dealer discount on every radio item is the only safe, sane and fair-deal course.

HERBERT HIEB
Des Moines, Iowa

Other Side—

Ray V. Sutcliffe, Editor:

The farmer realizes and appreciates the fact that the radio manufacturer, distributor and dealer does not make a profit on the Wincharger and will not expect the radio servicemen to install these units without charge. Servicemen should have guts enough to ask for from \$5 to \$15.

We have made it possible for radio-men to earn one-half million dollars in the past six months and next year the figure should go well over a million dollars. This accessory should make it possible to materially swell battery set sales and this is the important thing.

C. L. PARRIS, President
Wincharger Corporation

Still The Best Sales Bet

McGraw-Hill Publishing Co.:

I wonder if the average dealer is fully using the modern radio set as a dual instrument, capable of rendering one kind of service in the broadcast band and another on shortwaves? The RMA, realizing the growing importance of shortwave broadcasts, has for many months been providing 500 newspapers spread out across the country with a shortwave program service, through the cooperation of the foreign embassies in Washington.

LESLIE F. MUTER, President
Radio Manufacturers Ass'n.

Excellent Idea

W. MacDonald, Radio Retailing:

Most of the "logs" and other program information which have been issued for the guidance of shortwave set owners have been highly complicated. Therefore we (The Shortwave Institute of America, Inc.) have compiled time-tables of shortwave news broadcasts from Europe as an introductory step toward simplification of this problem.

From the daily schedule of international broadcasts we have selected forty-nine news transmissions because they are the best index of the wealth of European programs now available. Each of these news items is just one part of a more extensive international broadcast and therefore should serve as a key for listeners. More than half of them are transmitted in English.

Distribution of the time-tables is being carried out by associates of the Institute and their dealers. Dealers are distributing them to customers with monthly statements.

OSWALD SCHUETTE
Washington, D. C.

It's OK With Us

Radio Retailing:

Enclosed you will find a sample index [we did but can't reproduce it] of all the "Tricks of the Trade" repair items published to date in Radio Retailing and "Service." I'm planning to sell them to servicemen at 50 cents the copy and think the material printed in your paper is so valuable that I'll get it.

JAMES V. CLARK
Granville, Ohio

It Hasn't Reached St. Louis

Radio Retailing:

Regarding your article concerning the spread of specializing second-hand set stores in the February issue. I do not know of anyone in this city who specializes and have consulted a number of my dealer friends who state definitely that there is no one here exclusively in the business.

They further expressed the opinion that it would be hard for such an outfit to compete because of the tendency on the part of the legitimate dealer to move such sets as he takes in exchange at cost, or below cost, in order to keep new stock moving. Dealers here do not think a specialty operation would be profitable for this reason.

HAROLD J. WRAPE, President
The Benwood-Linze Co.

Thanks, Thanks

Ray V. Sutcliffe, Editor:

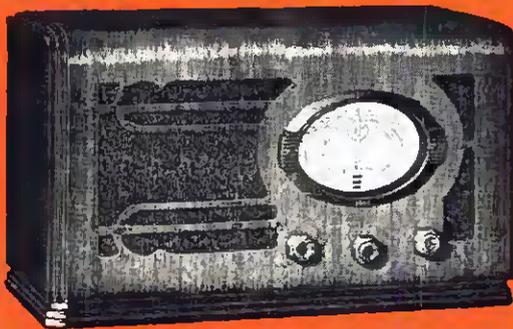
Your January issue was so outstanding in interest and value that I would be derelict in common courtesy if I did (Please turn to page 47)

Look at all 5

Tuned to the market which will elect our next president!



Model 522



Model 686



Model 880

Vitaly interested in the political issues which will soon dominate the air lanes are radio's least saturated markets—farm homes and summer resort dwellers.

Belmont offers for this trade the 522, an economical, modern broadcast band, five tube, superheterodyne, battery operated receiver. Only 0.37 amperes at 2 volts and 16 ma at 90 volts are required. Either dry batteries or farm lighting systems can economically supply this small current.

For a-c wired summer resorts, the Model 686, three band superheterodyne using the latest octal base tubes provides an attractive and powerful receiver. It is designed with an especially low noise level which facilitates sales under summer static conditions.

Out where the test begins—out where signals are few and weak, Belmont's Eight-eighty pulls in and holds with its delayed avc circuit stations no ordinary auto-radio can touch. From its iron core antenna coil to its 6A6 nine-watt output, the 880 is a de luxe auto-radio receiver.

These ultra-sensitive receivers are especially popular in areas where the signal levels are low.

BELMONT
THE DEPENDABLE
RADIO

new Belmont Receivers

Vote for a new deal in auto-radio



Model 666

The running mate, Model 566, uses five standard tubes, standard AVC, iron core antenna coils, plug-in vibrator, and "custom-trim" dial.

Optional Header-Speakers

The dynamic speaker in Model 666 may be easily removed for mounting in the roof of a car, Fig. 1, and installed in a special header frame, Fig. 2, available with extension cable at a slight extra cost. Fig. 3 illustrates how the header is assembled for roof mounting in an auto.



Fig. 1



Fig. 2



Fig. 3



Model 566

The round dial plate as illustrated matches Ford V-8 trim. The dial mechanisms for both Models 566 and 666 are supplied without plates. A wide assortment of custom-trim plates are available for instrument panel mounting.



BELMONT RADIO CORP.
1257 Fullerton Ave. : : Chicago, Ill.
Cable Address: Belrad
(Licensed under R.C.A. and Hazeltine Patents)

BELMONT
THE DEPENDABLE
RADIO

NEWS OF THE MONTH

NO LET DOWN IN SALES DRIVES

RCA-Victor Launches Big Cash Prize Contest

CAMDEN—The first of last month RCA Victor inaugurated a nationwide "Sales-caster" contest claimed to be the biggest in the history of radio. Every retail salesman gets a triple profit opportunity. The contest will run for three months.

Following each sale the man making it writes his own bonus check on special blanks provided. After 25 sales have been consummated he gets an additional 10 per cent reward. Fortnightly prizes, six \$150 sets, are also available, sponsored by J. S. Sayre, assistant to the president.

Stromberg Launches Third Salesmanship Campaign

ROCHESTER—In Stromberg-Carlson's latest salesmanship campaign each salesman can win all the prizes—if he sells 15 of the models selected. The value of these merchandising awards totals \$40.50, a greater than 3 per cent bonus. If a man sells 25 specified sets he rates as a grand prize a \$32.50 Waltham watch.

Two-Set Campaign

SAN DIEGO, CAL.—"Two radios for every home" is the theme of the present campaign of the Bureau of Radio & Electrical Appliances of San Diego County. Taking advantage of a situation existing in thousands of homes, and combining humor and seriousness in a way expected to strongly affect radio sales this spring, the advertising campaign started Feb. 10 in newspapers, over the air, on street car fronts and in dealers' windows.

The keynote of the theme points out the real need for more than one radio in the average home, suggesting that the present radio be reserved for the young folks and a new one be acquired for the rest of the family.

Lee McCanne Promoted

ROCHESTER, N. Y. — Lee McCanne, secretary of the Stromberg-Carlson Telephone Mfg. Co., and active in formulating the sales promotion policies of this concern as relating to its radio receivers, has been

justly rewarded for a job well carried on. Effective March first he officially was given the title and authority of radio sales manager.

Mr. McCanne is the son of the late W. Roy McCanne, for many years president of the Stromberg-Carlson Company. A graduate of the Massachusetts Institute of Technology, McCanne is a thorough technician as well as a modern merchandiser.

With Zenith Sales Dept.

CHICAGO—James Rasmussen, formerly assistant sales manager with General Household, joined the Zenith Radio Corp. last month. He will assist Eugene Tracey, sales manager.

John E. Delp, Jr., is now field representative for Zenith in the Pennsylvania territory. Mr. Delp was formerly acting in a similar capacity for RCA.

Frank Dewey Promoted

PHILADELPHIA—Atwater Kent has selected Frank A. Dewey as divisional sales manager for the New England states. Frank previously covered less ground as assistant to the DSM. He has been with AK since 1927, with time out to work with J. H. Burke, Boston Atwater Kent jobber.

Crosley Activities

CINCINNATI—The following firm recently has been appointed a Crosley distributor: Simon Distributing Corp., Washington, D. C. (Initial order included 18 carloads of "Shelvadors".) Simon just moved into larger quarters.

H. I. Hitchcock has joined the Frenkelite Co., Cleveland jobber for Crosley. Will act as merchandising advisor to dealers. David Frankel, president of this concern, left the fore part of last month for a two weeks' sojourn in Panama.

Over 200 dealers braved below zero weather to attend a two-day showing of the new Crosley line by the Motor Power Equipment Co., at the Nicollet Hotel, Minneapolis.



GE, New York, Signs Up for Caribbean Cruise

"The most ambitious cruise yet run in radio history," is the way Earle Poorman (left) characterizes GE's forthcoming jaunt to southern waters in the good ship "Evangeline." D. W. May (center) will be cruise manager. At right is R. U. Parker, traffic manager for the Eastern Steamship Line.

The itinerary includes stops at colorful Kingston, Jamaica, Colon, a trip through the Panama Canal, a tour of the picturesque city of Panama and a stop at Cartagena, famed walled city of the ancient Mayas.

Dan McKinnon Mid-West Representative for Emerson

CHICAGO—Dan R. McKinnon, active in the radio for a decade, has been appointed Western sales representative of the Emerson Radio & Phonograph Corp., succeeding Joseph Gerl. He will headquarter in Chicago and will contact Emerson dealers and distributors in surrounding States.

Mr. McKinnon was active in the radio back in the Federal Tel. & Tel. days when that Buffalo concern produced the early radio-phonograph combination. After four years, he joined Amrad. For the past five years he has been with the Stewart-Warner Corporation.

Chatten Heads Andrea Sales Organization

WOODSIDE, N. Y.—Frank Andrea, president of F. A. D. Andrea, Inc., announces the appointment of Louis J. Chatten as general sales manager. Mr. Chatten was associated with Mr. Andrea in the same capacity for 11 years prior to 1933. This is renewed a relationship which was markedly successful for many years.

For the past 18 months, "Andrea" radios have been shipped in increasing numbers to foreign markets. Mr. Chatten

sailed Feb. 19 on an extensive trip to Central American countries to further develop these markets.

It is understood that upon his return he will devote much time to introducing this new line to domestic buyers.

Zenith Auto-Radio Meetings

CHICAGO—Indicative of the trend toward the earlier announcement of new radio lines is a series of meetings held last month by Zenith. Under the able generalship of sales manager Gene Tracey and sales promotion manager Parker Erickson, distributors throughout the East and Middle West have been meeting to review the new line of five Zenith auto-radios. Advertising plans call for spot broadcasting announcements, full sized billboard posters and an elaborate assembly of store trims and printed matter.

Metal Tube Ratio Up

Final figures from the tube makers reveal that 24 per cent of all tubes used in table and console models last year were the new "metal" type.

From reliable authority we learn that those set manufacturers who adopted the metals last fall plan to continue their use on a broader scale—with new recruits in the offing.



Ernest Vogel Now SM, of GE Radio Division

BRIDGEPORT, CONN.—Ernest H. Vogel was appointed sales manager of the General Electric Company's Radio Division, Bridgeport, Conn., effective February 1, according to R. J. Cordiner, manager of the division. For the past six years Mr. Vogel has been associated with the RCA Mfg. Co., Camden, N. J., having joined that organization in 1930 as advertising manager. He later was appointed radio sales manager, and was engaged in RCA sales activities until his recent resignation.

Mr. Vogel is widely known to the radio and music trades, having been identified with them throughout his business career. Prior to his connection with RCA, he was merchandise manager for the American Piano Company.

Antenna Business Good

NEW YORK—Cornish Wire Co., has doubled its floor space. Reason: demand has doubled for its double-purpose antenna.

Corona Strengthens Its Key City Distribution

CHICAGO — The appointment of six new sales representatives in as many strategic centers has materially strengthened the position of

the Corona Radio & Television Corp., this city.

Appointments are as follows: New York City, Kraft Dist. Co.; Boston, W. E. Daw; Pittsburgh, M. J. Wilkoff; Detroit, Marvin Ressler; Chicago, J. Rosenthal and Kansas City, R. T. Boylen.

Republic Electric Co. Active at Davenport

DAVENPORT, IOWA — The Republic Electric Mfg. Co., is now making 6-volt electric generators also 6- and 32-volt radio sets under the trade name "Republic." A. A. Johnson and technician Reitan, formerly in the sales department and chief engineer, respectively, with L'Tatro Products Corp., Decorah, Iowa, are now functioning as sales manager and chief engineer respectively with Republic.

Vandex SW Chart

FAIRFIELD, Me.—One of the best shortwave guides we've yet seen is published "way down East." Fairfield Publishing Co., Fairfield, Maine, in its "Vandex Chart of the Air" gives a whale of a lot of information in condensed form. Price 25c list.

Service by Summit

AKRON, OHIO — Summit Radio Supply Co. will shortly place on the market a special filing box and card index of service hints and methods. This quick-reference guide for service men will be most complete and authoritative, we are informed. Many sources have been drawn upon for this material.

RCA Opens 18 Offices

CAMDEN, N. J.—In accordance with its new policy of unifying its selling activities, the RCA Manufacturing Co., has established 18 district control offices throughout the

country and appointed a corresponding number of district managers to man same.

The field forces which formerly operated independently of each other selling RCA's many allied products, are now consolidated.

EVERYONE INVITED

RSM Convention and Trade Show at Chicago, March 27-29

CHICAGO — Radio service men, amateurs, engineers, in fact anyone connected with the radio trade is cordially invited to attend the technical sessions and view the radio products to be exhibited at the Hotel Sherman, this city, March 27, 28, 29.

The technical sessions of the Fourth Annual National Convention of the Institute of Radio Service Men will be held in the Grand Ball Room adjacent to exhibition hall. Nationally known speakers will discuss topics of practical interest to the trade.

The convention committee, headed by A. E. Rodriguez, has completed an outstanding program. All exhibition space was contracted for over a month ago.

RR NOMINATES for membership in its PRIME MOVERS CLUB



To qualify for membership in our "Prime Movers Club" one must have contributed, in an altruistic sense, to the advancement of the radio industry.

Kenneth Hathaway

For half a decade Kenneth A. Hathaway, Chicago, has been striving to improve the status of the service man, to expand his technical knowledge and to raise the ethical standards of his profession.

Persistently, sincerely, and at times almost single-handedly, "Ken" has carried on—preaching the need for cooperative activities by service men.

As technical editor of the *Chicago Daily News*, in 1930, Mr. Hathaway encouraged this idea. The preliminary meetings, looking toward the organization of servicers, were held in his office. It was due to his encouragement and advice that the Institute of Radio Service Men came into being, June 15, 1931.

In the role of executive secretary, Mr. Hathaway has promoted the growth of the IRSM until it now functions in many cities and towns throughout the United States—reporting a present membership in excess of 3,000.

Arcturus Engineer to Address IRSM Conclave

CHICAGO—J. A. Stobbe, field engineer of the Arcturus Radio Tube Co., Newark, N. J., will address the convention of the Institute of Radio Service Men on March 29, 8 p.m.

Lately, Mr. Stobbe has addressed various servicemen's associations in different parts of the country and his talks have been very well received.



Dyer Heads Auto-Radio Sales for S-W

CHICAGO—Walter H. Dyer, formerly sales executive for the U. S. Radio and Television Corp. and more recently a director of General Household Utilities, Chicago, in charge of automotive and contract sales, joins Stewart Warner as sales manager of its automobile set division.

His appointment is one of a number being made by Stewart Warner in both sales and production staffs, as part of the expansion program made necessary by rapid gains in radio and refrigeration sales.

PITTSBURGH — The Tydings Co., has moved to larger quarters at 114 9th St. This concern represents Tung-Sol Lamp Works in western Pennsylvania.



Carries Complete Line of Replacement Parts

Dealers may make quick selection of radio parts and accessories from bins and shelves installed in this Ford truck. It reaches dealers as far as 50 miles from the supply house

THESE PROGRAM PARAGRAPHS PACK SALES PUNCHES

Information About Broadcasting You Can
Use to Clinch Those New Set Contracts

The best American short wave programs are being put out by the World Wide Broadcasting Foundation, a non-profit organization. For adult thinkers recommend the Academic Series, on Tuesdays and Thursdays. The station is WIXAL; frequencies 6.04, 11.79, 15.25 and 21.46 megacycles. Write the University Club, Boston, Mass., for advance program—something superior in educational and entertainment values.

NBC has developed a coat bucket transmitter that will enable announcers to tell their story of important events or to circulate at will in large assemblages and give the news "right where it happens."

The Princess Pat Players, who have dramatized plays over NBC networks for two years, take permanent roles as members of the cast of "A Tale of Today," an original radio drama now presented in serial form each Monday at 9:30 P.M., E.S.T., over the WJZ network. It is the story of the Houston family, and of the people who enter their daily lives.

December 30, 1932, William Rankin, advertising agency man, paid Station WEAJ \$100 to deliver a speech over the air. The next day he got fifteen letters and twenty-five telephone calls. This was the first commercial program to go on the air.

More than half of all Columbia Chain stations made major technical improvements

during 1935. Forty-four installed new equipment (high fidelity, vertical antennas, 100% modulation), 18 doubled (or better) their day power.

Expansion of broadcasting facilities at the NBC Chicago plant has been completed with the addition of three new studios and the installation of a large pipe organ.

Household Finance Corp. provides the latest example of the enormous following radio enjoys. Its one-time offer of an Edgar Guest calendar, over 18 stations brought 250,000 responses.

When in New York visit "Radio City" and the Columbia Broadcasting studios. A trip through these plants will amaze and instruct—fill you with new enthusiasm for radio, which you can pass on to prospects.

The two NBS networks now consist of 96 stations in 72 key cities and are linked by 21,635 miles of special wires.

87.5 PER CENT of all top notch programs listed in feature article, this issue, also may be heard on one or more shortwave bands—broadcast concurrently. Great news for the farmers, and many others. Are you dealers making the most of this sw service, using it in your demos?

Columbia chain sends out on 15.27, 11.83, 9.59, 6.12 and 6.06 megacycles; WJZ favors 15.21 and 6.14 while WEAJ uses 15.33 and 9.53 megacycles.



"Detroit News" Adds Short Wave Station W8XWJ and Air Studio to Facilities of WWJ

Outstanding example of the trend toward newspaper control of broadcasting is visualized in these pictures. Above, Ty Tyson, sports announcer, WWJ, about to embark with aviation editor James Piersol, both of the Detroit "News" on first flight of new air studio "Early Bird." This airplane broadcast inaugurated the opening of ultra s. w. "Apex" station—also owned by the "News."

A. B. Allen, short wave editor of this newspaper, says: "Although W8XWJ is only a 100-watter its signals should reach the far corners of the earth due to its frequency (3,160 kilocycles) and special antenna system, over 600 feet above Detroit street level. Transmitter is modern, high fidelity type."

RCA Offers Gas Engine and Wind Driven Chargers on "Dealer Profit" Basis

CAMDEN, N. J.—Gen-E-Motor gas engine driven generators and Winchargers are now available through RCA-Victor distributors on a profit-making discount basis. Both these excellent accessory lines have been described at length in previous issues of *Radio Retailing*.

Illustrated and described in a just released mailing piece, suitable for use as a window poster, are six battery sets for use with either of these devices.

Corn Belt Wireless Network

DES MOINES, IOWA—A new type of network keying, via radio pickup, started here last month. 50,000-watter WHO is the feeder, commercials as well as sustainings. Eight mid-west stations—the Corn Belt Wireless Network—will rebroadcast. They are: WOC, Davenport; KOIL, Omaha; KFAB, Lincoln; KMBC, Kansas City; KMA, Shenandoah, Iowa; WNAX, Yankton, S. D. and KFJB, Marshalltown, Iowa. Joe Maland is the moving spirit of this enterprise, which may spread and become a big factor in broadcasting. Mr. Maland is vice-president of the Central Broadcasting Company.

Did You Know That...

- It's a world's record—383 stations now using the Chevrolet "Musical Moments" electrical transcription program.
- If WLW had not one listener in Cincinnati it still would have 95 per cent of its present audience.
- Thirty stations now are regularly re-broadcasting the programs of adjacent major transmission units.
- The broadcasters total income last year was 20 per cent greater than 1934.
- 145 U. S. stations are now

owned or controlled by newspapers. This is nearly one quarter of the total number of broadcasting units.

• Educational institutions own 35 stations; religious organizations, 14, and states and municipalities control 9 stations.

• Less than four per cent of all program time is taken by advertising announcements.

• Only 1.4 per cent of the \$87,500,000 spent last year by sponsors was used by set manufacturers, dealers and jobbers to advertise "radio by radio."

Brown-Dorrance Joins Stewart-Warner Family

PITTSBURGH—Brown-Dorrance Electric Co., one of the oldest jobbers in the East, has been appointed by Stewart-Warner Corp. as distributor of its radios and refrigerators.

An Akron branch under the direction of R. L. Balch will be operated to cover that territory as well as the Pittsburgh area.

Stewart-Warner also announces the appointment of the Front Co., Wheeling, W. Va., as distributor in that territory. This outfit, headed by A. K. Clifford, has held a dominant jobbing position in this section for many years.

SEATTLE, WASH.—Graybar Electric Co., this city, has signed to represent Atwater Kent in this area.

Youngest Star



Ann Shelley, 4 years old, made her radio debut in "One Man's Family" last month. Plays the role of Joan, Claudia's daughter.

Tell your customers they may hear radio's littlest actress Wednesdays at eight—WEAF chain.

VICTOR RECORD ARTISTS WIN UNDISPUTED LEAD IN RADIO POLL!

Victor Record artists came out with flying colors in the recent New York World-Telegram Radio Poll of the country's 239 radio editors. Results proved that a winning majority of the nation's dance and classical favorites are Victor artists. This is one of the reasons why Victor Records are enjoying their tremendous sales increase!

People demand Victor Records not only so they can hear their favorite artists, but because they know that they hear them as they should be heard—for Victor's tone quality is unsurpassed in the record field. And Victor Records are up-to-date, offering the favorites of the moment, in addition to the greatest artists and compositions of all time.

Victor Records offer you the greatest sales and profit opportunities. These great artists themselves broadcasting all over the country—are stimulating record sales for you. And RCA Victor is behind you with advertising and promotion. You have a wonderful opportunity to build a profitable record business with the leader—Victor Records.



VICTOR RECORDS

RCA Manufacturing Co., Inc., Camden, New Jersey • A Service of the Radio Corporation of America

DANCE BANDS

Ranking

- *1 GUY LOMBARDO
- 2 WAYNE KING
- *3 RAY NOBLE
- 4 CASA LOMA
- 5 WARING'S PENNSYLVANIANS
- *6 RICHARD HIMBER
- *7 EDDIE DUCHIN
- *8 PAUL WHITEMAN

VOCALISTS

Ranking

- *1 LAWRENCE TIBBETT
- *2 LILY PONS
- 3 GRACE MOORE
- *4 NELSON EDDY
- *5 GLADYS SWARTHOUT
- *6 JOHN CHARLES THOMAS
- *7 RICHARD CROOKS
- *8 NINO MARTINI

SYMPHONIC CONDUCTORS

Ranking

- *1 LEOPOLD STOKOWSKI
- *2 ARTURO TOSCANINI

INSTRUMENTALISTS

Ranking

- *1 ALBERT SPALDING
- *2 JASCHA HEIFETZ
- *3 JOSE ITURBI
- 4 RUBINOFF
- *5 MISCHA ELMAN
- *6 FRITZ KREISLER
- *7 JESSE CRAWFORD

*Denotes artists now recording for Victor

REFRIGERATOR GUARANTEES ARE EXTENDED

Norge Hits New High with 10 Years on "Rollator"—Stewart-Warner, for \$5 Fee, will Protect for 5 Years

LONGER and longer grow the guarantees on electric refrigerators. It's a war of warranties! The unbounded confidence which the manufacturers have in their rolling stock is superb, must make a lot of sales. And maybe it's okeh—for today's product certainly does stand up and deliver.

Latest goodwill gesture is Norge's 10-year guarantee on its "Rollator" mechanism. However the rest of the machinery and box is covered by a mere five-year replacement (if defective) contract.

And from Chicago comes Stewart-Warner's announcement, Feb. 26, that the payment of five dollars, in addition to the regular selling price, will provide for four added years of protection, beyond the one year standard period.

S-W feels that the dealer is entitled to his choice as to whether he wishes to offer this added service or not; likewise the customer. "In the case of most other well known makes the policy is to make the five years' service and five dollar charge arbitrary," states this company, adding, "It is entirely possible that many customers will waive this five-year privilege and save their five dollars."

Another feature of Warner's new plan is a generous fixed scale of payments to the dealer for any service rendered under the new contract.

Grunow has a five-year "assurance" plan similar to its Chicago competitor, i.e. four years over the first one for five dollars.

Frigidaire's five-year protection covers the mechanical unit against any service expense, with a one year warranty on the cabinet. But why are the moving parts ex-

pected to last so much longer than the shelves and box, we ask?

Kelvinator's five-year plan provides for free replacement by the factory on any compressor part and a "Certificate of Low Cost of Operation."

R. L. Hirsch, buyer of radio and sporting goods for Wieboldt's six department stores for the last five years, Chicago, has taken over purchasing of all major appliances.

"... Over Miami"



B & W Co., Miami, Fla., makes good! Partners Herman Wronker and Nate Bauer sell 121 Hotpoint refrigerators to three apartment houses in three weeks. They gang up on 'em —per above

Merrily We Roll Along



The "big three" of the electrical appliance business, radios, refrigerators and washing machines, are here attractively grouped on a float prepared by W. W. Frankfurt, of Fremont, Nebraska.

Topping the exhibit, upper left, is a wind charger—its revolving propeller lending action to the ensemble.



Frigidaire Bigwigs Instruct 2,400 Dealers

A turnout gigantic distinguished General Motor's Chicago convention, Feb. 11. But these refrigerator bigshots rose to the occasion: (L. to R.) L. F. Skutt, manager Chicago division; F. R. Pierce, mgr. household division; Ted Horton, sales promotion; C. A. Copp, G.S.M. and H. J. Walker, Jr., who heads the public utilities division for Frigidaire

"Be Prepared" Appliance Jobber's Slogan

Moser & Suor set splendid example of planning for refrigerator's biggest year

KANSAS CITY — Anticipating the biggest year in major electrical appliances yet experienced and determined to take full advantage of the outlook, Moser & Suor, Inc., have set a fine example in preparedness which other wholesalers might profitably follow.

This company, distributors in Missouri and Kansas for the Norge line, has increased its sales force 50 per cent. Its new advertising, merchandising and promotion set up will compete favorably with that of many large manufacturers. Already it has fortified its salesmen, dealers, and dealers' salesmen with facts and product information most comprehensive.

This live outfit's first step was an intensive sales training course for its own salesmen, concluded Jan. 6. It next held dealer meetings in every important city in its territory. Moser & Suor plan the extensive use of moving pictures provided by Norge in dealer show rooms and theatres throughout the territory and have arranged for showings to prospective buyers.

"Capacity Production"

CHICAGO — "Capacity production" was the keynote of bulletin board notices at the General Household Utilities Co., Grunow refrigerators and radios, following one of the

most successful distributor meetings in the organization's history.

New Grunow distributors who attended included the M & M Co., Cleveland; Ridge Motor Supply Co., South Bend; Lappen Electric Co., Milwaukee, Ignition Service & Supply Co., Albany.

F-M To Reopen Plant

INDIANAPOLIS — The Home Appliance Division of Fairbanks, Morse & Co., will be moved to this city just as soon as the \$100,000 modernization program is completed on its manufacturing plant here. This division manufactures electric refrigerators, washers, ironers and radio receiving sets. It is planned to have the unit in full operation by May or June.

BOSTON—Hunt, Marquardt, Inc., has been appointed wholesaler for Stewart Warner refrigerators in eastern Massachusetts.

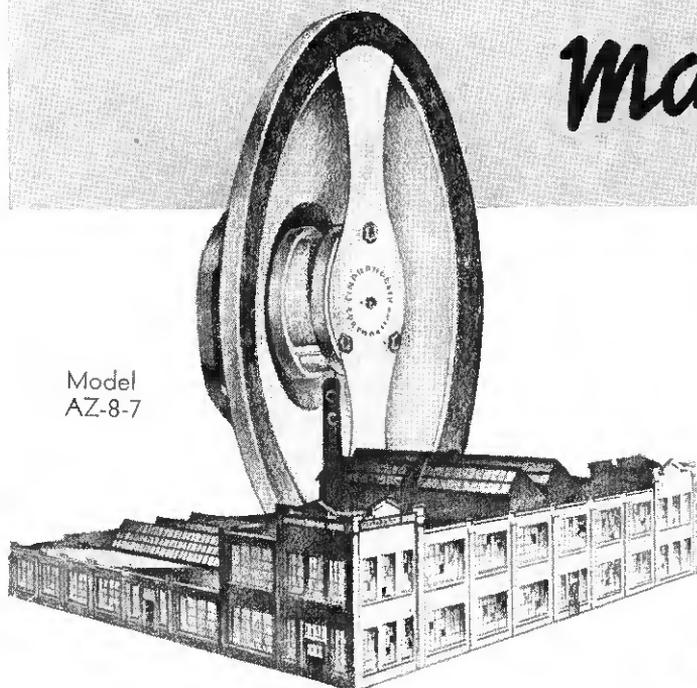


HOMER H. KUNKLER—will assist v. p. F. A. Hiter, Stewart-Warner, in promoting the sale of electric refrigerators

The CINAUDAGRAPH

Magic Magnet^{*}

SPEAKER



Model
AZ-8-7

TODAY, there is a "Magic Magnet" Speaker. A group of engineers dared visualize it. They worked over it in the Cinaudagraph laboratories. For suspense-packed months, they combed the earth for materials; contrived new ones; tested all. They refused to be hurried. Now they give the "trade" the Cinaudagraph "Magic Magnet" Speaker.

THIS Speaker offers in combination five basic developments you never saw or heard of before—"Nipermag", the "Magic Magnet" alloy; Polyfibrous Cone Construction; Interlaced Spider Device; Quartz Silicate Voice Coil; the Infinite Baffle. With these, with many other developments, such as shallow cone construction, 18" models, simplicity of construction—the "Magic Magnet" Speaker sets absolutely the highest standard in speaker performance.

UNDER one roof, in one of the largest, most modern speaker plants in the world, our chief concern is to produce a splendidly engineered speaker, superbly built. For this reason, all parts required in the assembly of the speaker are completely manufactured by the Cinaudagraph Corporation. For this reason, cost of production is reduced. And for this reason we can give you the "Magic Magnet" Speaker at a remarkably low price.

Complete details on the 8, 10, 12, and 18 inch models will be supplied on request.

*"Nipermag"—the "Magic Magnet", used exclusively in Cinaudagraph Speakers, should not be confused with other permanent magnet alloys now available on the American market. It is an exclusive Cinaudagraph product.

DESTINED TO REVOLUTIONIZE CONVENTIONAL SPEAKER CONCEPTS

In every detail of its design, its construction, its materials, the "Magic Magnet" Speaker is new.

● It's New in Cone Construction

A new polyfibrous material, developed and manufactured by Cinaudagraph exclusively, is presented for the first time in the "Magic Magnet" Speaker. Constructed so as to present a varying density of composition, this cone will transmit voice coil oscillations with uncanny fidelity. Shallow construction makes it particularly suitable for auto radios. Will fit into the smallest space conveniently. Overall speaker depth $2\frac{3}{8}$ " for model AZ-8-7.

● It's New in Magnetic Material

"Nipermag"—a permanent magnet alloy presented for the first time in American speakers by Cinaudagraph engineers, has been and is being used extensively with great success in Europe. The use of "Nipermag" reduces the battery consumption of your auto radio, eliminates fire hazards and makes humless reproduction possible in any application. It is the ideal speaker for farm receivers.

● It's New in Voice Coil Construction

A core of quartz silicate, a non-elastic, extremely dense mineral, is used in the construction of the voice coil. The advantages of this voice coil are its ability to transmit frequencies without losses or deviations and its ability to operate under adverse climatic and temperature conditions.

● It's New in Spider Construction

A centering device, an exclusive Cinaudagraph development, consisting of an interlaced net, the extreme flexibility of which makes a really low note obtainable.

● It's New in Baffle Construction

The Cinaudagraph "Magic Magnet" Speaker is designed to operate within an Infinite Baffle. This Infinite Baffle absorbs rear radiation, and allows only true, undistorted tones to emanate from the front of the speaker.

These five major engineering improvements contribute largely to the attainment of an extraordinarily flat frequency response of from 30 to 15,000 cycles. Extreme flexibility of the polyfibrous cone makes possible the production of speakers to individual frequency requirements.

CINAUDAGRAPH CORPORATION

SPEAKER DIVISION—DEPT R

STAMFORD CONN., U. S. A.

SYLVANIA

ANNOUNCES . . .

THE NEW TECHNICAL MANUAL!



Bigger . . . better . . . more complete in every detail. No wide awake radio man will want to be without it!

● It's half again as big as the old one. A new index. New appendix. It's improved in a dozen different ways. Here are a few of the subjects covered by this valuable book:

1. A 50% increase in contents.
2. 141 tube types will be listed with important circuit application information given on each type.
3. Characteristics on all types will be the very latest. In other words, our book will be up to date including all the standard types of metal tubes.
4. A section on circuits has been increased to include 13 typical radio receiver and amplifier circuits which show proper use of the most popular types of tubes now being employed.
5. Curve data on ballast tubes for battery sets.
6. The convenient pocket size has been retained in spite of the large increase in material.

Send 15c. for this new Technical Manual now! It will mean cash in your pocket.

See us at the I.R.S.M. Show, Chicago, Booths 59 and 60.
Hygrade Sylvania Corporation, makers of Sylvania Radio Tubes and Hygrade Lamps. Factories at Emporium, Pa., Salem, Mass., and St. Mary's, Pa.

SYLVANIA

RR-36

HYGRADE SYLVANIA CORPORATION, EMPORIUM, PA.

Please send me the new Sylvania Technical Manual. I enclose 15c in stamps.

Name
Address
City State

CINAUDAGRAPH MARKETS NEW TYPE OF SPEAKER

Dynamic Cones Use Permanent Magnet Material
Successful In England—Other Products Coming

LONG ISLAND CITY, N. Y.

—The Cinaudagraph Corporation of 2109 43rd Ave., this city, announces just as we go to press its entry into the speaker field with a line of 8, 10, 12 and 18 inch permanent magnet dynamic cone speakers designed along radically new lines for use in all-electric radios, public-address equipment and theatres as well as battery-type home and auto-radios.

Developed over a period of five years, these speakers are intended for high-fidelity service, use aluminum wire voice coils wound on mica forms directly coupled to a three-material cone by a novel method eliminating the conventional "spider" and providing wide-angle high-frequency radiation. High-frequency reducing "mass" is further avoided by a specially treated gauze centering medium. "Nipermag", an ultra-efficient magnet material used in England for more than a year and now made in the United States exclusively for Cinaudagraph, eliminates the necessity for external field current. Prices, power output, will, we are informed, be competitive with existing quality field coil types.

Officials of the company are Harold W. Harwell, vice-president and director; Daniel P. O'Brien, sales director of speaker division, Howard C.

Seaman (former treasurer of E. W. Bliss & Co.), treasurer and director, and Sherman Reiss Hoyt, secretary and director. John Sherman Hoyt, social registerite, president and director, is a retired director of the American Car & Foundry Co.

In the engineering department Lionel D. Cornwell heads design and research, is assisted by Hallton Friend. Robert Neuschotz, formerly with Starrett Tools, is in charge of mechanical design.

A factory capable of producing 30,000 units a week is nearing completion at Stamford, Connecticut, will be ready for production early in April. Other products of interest to radio and electronic fields are, we understand, to be announced shortly.

Power Up 131% Since '30

The average wattage of all American broadcasting stations has more than doubled within the past five years, according to figures just received from Radex Press, Conneaut, Ohio.

Here's the picture:

YEAR	No. STATIONS	Ave. POWER
1925	566	214
1930	620	1,824
1935	637	4,216

Broadcasters Urge Trade Cooperation

(Continued from page 13)

mitter, 14 years ago, it has expanded in successive increases in power to 500, 5,000, 50,000 and 500,000 watts. I feel that the use of super-power will be increased throughout America, and that it will overcome many of the present "dead spots" now existing in the less populous areas. Super-power is also increasing the use of radio during daytime hours.

I can never discuss radio broadcasting generally without mentioning radio programs. Hundreds of radio dealers can remember, as I do, the quality of programs eight years ago. When these early programs are compared with the finished performance available today, all those who have a part in the radio industry should feel just pride.

The delicate matter of balancing what the radio audience wants against what the radio audience should have is a fascinating but endless problem. Radio retailers can do much to assist in this problem. They have so great a stake in the radio industry that they can well afford to concern themselves with the public reaction to radio programs. Their public comments in favor of specific programs deserving of praise, and their private criticism directly to broadcasters on the subject of mediocre programs will benefit the entire radio industry.

POWEL CROSLY, JR.

Today we are building a better refrigerator than the world has ever known before.

And we are telling the world about it as no refrigerator story has ever been told before.

Today, to millions of people, one word means everything that is new and modern—everything that is beautiful and convenient—everything that is efficient and dependable in a refrigerator . . .

That one word is **Kelvinator**

Charge to the account of

CLASS OF SERVICE CLASSIFIED	CLASS OF SERVICE CLASSIFIED
TELEPHONE	TELEPHONE
TELETYPE	TELETYPE
TELEGRAPH	TELEGRAPH
TELEVISION	TELEVISION
INTERNATIONAL	INTERNATIONAL
OTHER	OTHER

WESTERN UNION

RECEIVED BY CUSTOMER
 RECEIVED BY OFFICE
 RECEIVED BY MESSENGER

Send the following message, subject to the terms on back hereof, which are hereby agreed to:

*Arcturus Radio Tube Co.,
 720 Frelinghuysen Ave.,
 Newark, N. J.*

*Rush Increased Profit Plan on
 New Coronet to Replace Glass
 you sign here*

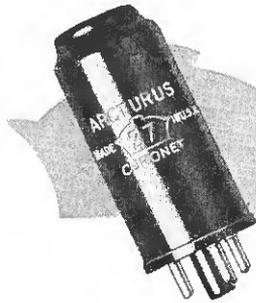
WESTERN UNION MESSENGERS ARE AVAILABLE FOR THE DELIVERY OF WORDS AND PACKAGES.

- These 'CORONET' TUBES replace glass tubes of the same type number:
- | | |
|--------|-----------|
| 2A6 | 'Coronet' |
| 24 | " |
| 27 | " |
| 51(35) | " |
| 55 | " |
| 56 | " |
| 57 | " |
| 58 | " |
| 75 | " |
| 77 | " |
| 78 | " |
| 80 | " |
| 85 | " |
- Also 'CORONETS' for the new metal-tube sets.

Pick up the phone. It will pay you to send the above wire immediately. We'll have full details of the new 'CORONET' METAL TUBE for replacing glass tubes in your hands by return mail. 'CORONETS' will put your TUBE SALES on a paying basis! Here's a *perfected* Metal Tube which will modernize and rejuvenate glass tube sets made during the past 5 years—the tube 25 million radio owners have been looking for. Send that wire TODAY! Don't let the other fellow beat you to it. Get in on this easy, highly profitable replacement business *right at the start*. The volume is BIG—the margin GENEROUS. Competition is NIL—for Arcturus, and only Arcturus OFFERS your customers a metal tube for their glass tube radios. Act now! Send that wire! Get full particulars of this unusual opportunity to increase your profits in 1936!

At the Show!

If you attend the I.R.S.M. Convention at the Hotel Sherman, Chicago, March 27th, 28th and 29th, be sure to see the ARCTURUS EXHIBIT Booth No. 9.



ARCTURUS 'CORONET' METAL TUBES

ARCTURUS RADIO TUBE CO.
 Newark, N. J.

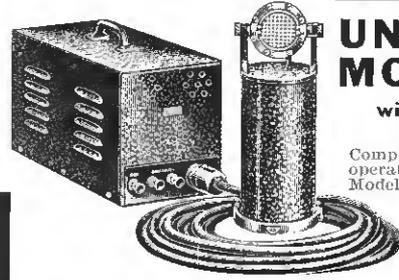


"Noise-Master" makes every receiving set a BETTER set. Electrically AUTOMATIC in operation. Eliminates "man-made" static on both broadcast and short-wave lengths.

List price . . . **\$6.75**

Also available with special transformers for European broadcast bands. . . list. \$7.00

CORNISH WIRE CO., Inc.
 30 Church St., New York City



UNIVERSAL MODEL "E"

with A.C. Humless Power Supply

Completely assembled—A.C. operated—Ready-to-use Model "E" condenser microphone unit. Guaranteed as silent as batteries—yet without battery expense or annoyance—Two-stage amplifier with No. 230 tubes—Model E microphone with 90° swivel head; barometric adjustment; solid cast grating diaphragm protection—Frequency response from 35 to 10,000 cycles—A quality unit offered at the lowest price consistent with Universal standards.

UNIVERSAL MICROPHONE CO., LTD.
 424 Warren Lane Inglewood, Calif., U. S. A.



Complete Electric Plants

ONAN ALTERNATING CURRENT PLANTS supply electricity for Camps, Cottages, Farms, Boats, Commercial Purposes and places where current is not supplied by power companies. Operate Radio, Water System, Refrigerator, all Household Appliances as well as Public Address and Sound Car Equipment.

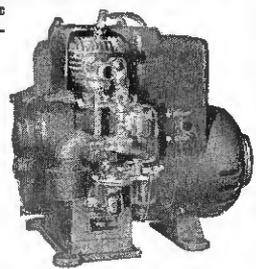
Sizes to Suit Every Purpose

110 volt, 60 cycle, A.C.—32 volt, D.C. Capacities 350 watts and up, prices \$110 and up available from stock. Complete, ready to run.

Gasoline, Gas, or Oil Burning types in larger sizes. Write for details.

D. W. ONAN & SONS

432 Royalston Ave., Minneapolis, Minn.



WANTED 20,000 AUTHORIZED RADIO SERVICE MEN

Millions will be paid authorized service men this year for installing Winchargers, the wind-driven battery charger that enables farmers to operate their radios for 80c per year. Wincharger is new, beneficial and profitable to the service man. Each installation charge varies from \$5.00 to \$15.00, plus material. Tens of thousands of these units are already in use—more being installed every day. Get your share of this profitable business right now—write for your service manual today.

WINCHARGER CORPORATION
 Manufacturers of 32-volt Equipment Since 1927
 2700 Hawkeye Drive, Sioux City, Iowa.



NEW MERCHANDISE

AUTO RADIOS



American Bosch "Sky Lark" Auto-Radios

The "custom-built" feature of the new line of auto radios of the United American-Bosch Radio Corp., Springfield, Mass. makes it possible for the dealer to satisfy any car-radio demand. He is able to offer: glass or metal tube sets; header, bulkhead or built-in speaker, steering post control or a panel control mounting to match practically every make of car—at a price range of from \$39.95 to \$67.95.

A new technical development, the "Double Winged Chassis," which embodies the principal advantages of the CentrOmatic unit is also incorporated. Owing to the limited space in which to work, the chassis was entirely reshaped and given wings. On the upper wing is mounted the entire power supply, on the lower wing, isolated and shielded from power supply noises, are all the radio elements.

There are six models: 736, 7 metal tubes, self-contained speaker; \$59.95; 737, same but with separate header speaker, \$64.95; 738 with separate 8 in. bulkhead speaker, \$67.95; 636, 6 glass tubes, self-contained speaker, steering post, under dash or dash panel tuning control, \$49.95, 637 same as 636 with separate header speaker, \$54.95, and 536, 5 glass tubes complete with self contained speaker and steering post control, \$39.95.—*Radio Retailing*, March, 1936.

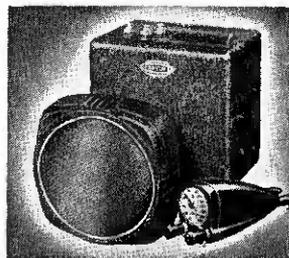
Arvin "Tailor-Fit" Auto-Radios

Both metal and glass tube superheterodynes with overhead, separate case or in-the-set speakers are included in the new "Tailor-Fit" series of Arvin auto radios just announced by Noblitt-Sparks Industries, Inc., Columbus, Ind. These sets come with matching panel control designed especially for new cars and modern streamline steering column controls. Overhead speaker models for new cars with matching panel controls are priced as low as \$44.85. Universal models with in-the-set or separate case speakers and steering column controls begin at \$39.95. Matching panel con-

trol models with in-the-set or separate case speakers for many popular makes of cars start at \$44.

All Arvin speakers and controls are interchangeable and may be used with any one of the three chassis.

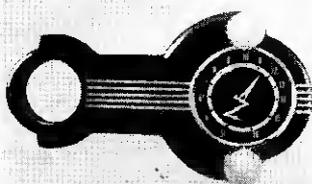
A few of the many features outlined by the manufacturer are: Built-in filter-loc motor noise suppression system, individually shielded glass tubes and self-shielding metal tubes and matched antenna tuning system using two high gain iron core coils.—*Radio Retailing*, March, 1936.



Zenith "Safety" Motor Car Sets

The "Safety" line of motor car radios just introduced by the Zenith Radio Corp., 3620 Iron St., Chicago, is so called because of the new big black safety dial, with the figures softly lighted from behind so there is no glare, and illuminated pointer. The dial is illuminated only while the set is being tuned. The light automatically goes off when the operator takes his hand from the knob.

Five sets comprise this new line. The 6 and 7 tube sets



are engineered to match either single or twin speakers. A special plug permits quick installation for twin speakers without further rearrangement of connections. All 6 and 7 tube models have Metaglas tubes, interchangeable with the new metal tubes.

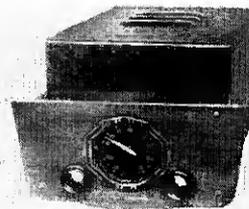
Model 5M90, 5 tubes, self contained "Travelspeaker" is \$29.95; Standard Six, 6 Metaglas tubes, single unit, may be used with twin speakers, \$39.95; De Luxe Six Special, 6 Metaglas tubes, for use with a variety of external Travelspeakers, \$49.95; De Luxe Six, 6 Metaglas tubes, built-in speaker, \$49.95; De Luxe Seven, with battery saver, high fidelity city-country, local-distance switch, 7 Metaglas tubes, \$69.95.—*Radio Retailing*, March, 1936.



Crosley Auto-Radios

The Roamio A-156 superheterodyne auto-radio of the Crosley Radio Corp., Cincinnati, Ohio, is a single unit set with remote control and illuminated airplane type dial. It has high gain antenna system, Hi Q pre-selector circuit with three-gang tuning condenser, \$39.95.

Roamio A-166 is a 6-tube, two-unit receiver with self-rectifying vibrator. It also has remote control with illuminated airplane type dial, \$54.50.—*Radio Retailing*, March, 1936.



Halson Auto-Radio

The chassis, speaker and control of the new 5-tube auto radio of Halson Radio Mfg. Corp., 12 E. 16th St., New York City, are in one compact all-metal cabinet. This set has plug-in type vibrator, does not use suppressors and incorporates an iron core antenna coil. The ornamental dash matches the panel of the automobile. List price, \$27.50.—*Radio Retailing*, March, 1936.

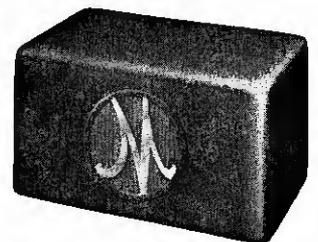
Motorola Auto-Radios

Overhead ear-level speaker at no extra cost, where provided for in car design, may be obtained with the 1936 Motorola auto-radios of the Galvin Mfg. Corp., 847 W. Harrison St., Chicago, Ill. Twin speakers are also available for models 60 and 80, matched to give even distribution of sound to passengers in both rear and front seats. May be had for combined under-cowl and overhead installation or combined under-cowl and rear seat installation. \$6.50 extra.

The sets are custombuilt to match the dash of all cars. Both metal and glass tube sets are offered, the newly improved "Magic Eliminode" for motor noise free radio reception is included; no spark plug suppressors are needed. The sets have "Series-Fed" antenna system—

adjustable for peak performance either using under car or roof aerial.

Model 50, 6-tubes, single unit, \$39.95; 60, 6-tubes, 6-in. separate speaker, \$49.95; with 8-in. speaker, \$54.95; 80, 8 metal and double sealed metal clad tubes, 8-in. separate speaker, \$67.50 and the "Golden Voice" model, 10 all-metal tubes, 10-in. separate speaker, \$89.50.—*Radio Retailing*, March, 1936.

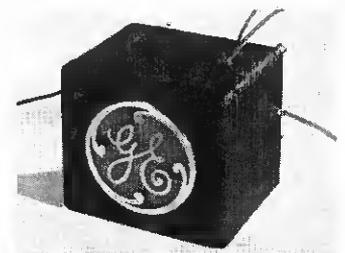


GE N-60 Auto Radio

Six metal tubes are used in the new N-60 auto radio just added to the line of the General Electric Company, Bridgeport, Conn. The speaker, chassis and power supply are all encased in a small compact cabinet with a blue crystalline crackle finish.

An iron-core input coil, a recent development, is used in the input circuit to give high antenna step-in ratio. Taps are provided on the input coil for high and low capacity antenna.

Remote control is available for instrument-panel mounting with special mounting plates for various makes of cars. Tubes used are 6J7, 2-6K7, 6Q7, 6F6 and 6X5.—*Radio Retailing*, March, 1936.



Kay Universal Remote Control Unit

A modern auto-radio remote control unit embodying "wrist-watch" finger control, full airplane dial calibrated in kilocycles, and escutcheons with chromium knobs harmonizing with all car interiors is presented by Kay Products of America, Inc., 562 DeKalb Ave., Brooklyn, N. Y.

This control permits easy custom-instrument panel installation of all makes and models of auto sets without the necessity of cutting the dashboard or difficulties in fitting. There are no visible bolts or screws. Supplied in various gear ratios to fit all sets.—*Radio Retailing*, March, 1936.

AND NOW...



PLUG-IN "B" BATTERIES

Connecting "B" and "C" batteries to radio receivers has always been a complicated and difficult task. Wrong connections are sometimes made, resulting in poor set performance or even damage to tubes or batteries.

Each of the most popular Eveready "B" and "C" batteries is now equipped with a built-in socket, similar to a tube socket, firmly embedded in the seal of the battery. The battery cable is equipped with plugs which fit the battery sockets. No complicated instructions are needed. Just stick the plugs in the sockets. If they fit, they are properly connected. If one doesn't fit, it belongs in another socket. It is impossible to go wrong.

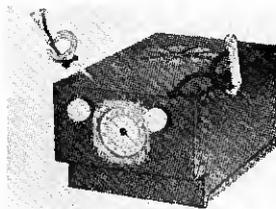
The leading makes of 1936 Model "Air Cell" Receivers come equipped with plugs, permanently connected to the receiver, making battery connections simplicity itself. For receivers not equipped with plugs, Eveready is providing at no extra cost an adapter with each plug-in battery. This adapter is a flat disc of bakelite with pins projecting from one face to engage the socket and standard Fahnestock connectors projecting from the other face to take the wires from the set. With the first purchase of Eveready plug-in batteries, connections are made to the Fahnestock Terminals, just as in the past. Thereafter no more connections need be made. The receiver has become a plug-in set. When renewal time comes, the adapter plugs are removed from the old batteries, leaving all wires connected, and inserted in the sockets of the new batteries. All connections are automatically made by this simple act.

NATIONAL CARBON COMPANY, INC.

General Offices: New York, N. Y.

Branches: Chicago, San Francisco

Unit of Union Carbide  and Carbon Corporation



Autocrat Auto-Radio

A single-unit motor-car set using 5 tubes may be obtained from the Autocrat Radio Co., 3855 N. Hamilton Ave., Chicago. It tunes from 200-500 meters and has a.v.c., illuminated airplane dial and direct tuning. Three hole mounting—easy to install and service. Fits all types of cars. Size 6½x3x10½ in. List. \$30 complete, factory.—*Radio Retailing*, March, 1936.



Ward A-R Aerials

Several types and sizes of auto-radio aerials are being presented by Ward Products Corp., 2135 Superior Ave., Cleveland, Ohio.

The "Long Range Twins" are sealed in rubber, all leakage from moisture is eliminated, \$4; the "Duo Magic-Ski" may be attached without drilling, will not rattle nor collect mud, etc. and is non-directional, \$3.50; the "Mono Magic Ski" is of same construction as the "Duo" model but is a "single" antenna, \$2.

The "Dual Marvelwave" is \$2.75; as a single model, \$1.50.

The new improved "Magic Super" is of sturdy molded rubber construction, has "Magic pick-up flap" to increase volume 22% to 40% by utilizing ground waves, the catalog reads, \$3.50.—*Radio Retailing*, March, 1936.



Auto-Radio Antenna

A new type of auto-radio antenna is now being introduced by Schiffmann Bros., 3840 N. Ashland Ave., Chicago, Ill.

The new vertical plate antenna is called the "Red Head, Jr." Some of the claims for this antenna are: being vertical the fixed capacity between antenna and metal of the running board are at a minimum; will not short out when wet; will not collect mud and will not rattle. This antenna is easy to install as there are only two mounting brackets which are adjustable and can be bent in any position.—*Radio Retailing*, March, 1936.

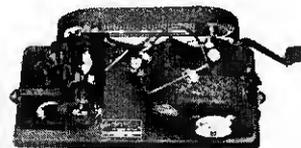
"Chekatube" Tester

All metal and glass tubes can be checked on the Model C 111 "Chekatube" made by the J-M-P Mfg. Co., Inc., Milwaukee, Wis.

This checker tells plainly whether the tube is good or bad, indicates shorts and leaks, and has a meter for reading line voltage. Comes in a neat sloping front leatherette case with carrying strap and cover for portable use. Size 10x11x6 in. Reasonably priced.—*Radio Retailing*, March, 1936.

Republic 6-Volt Radios and Electric Plant

A 6-volt electric plant and 6-volt radio for as low as \$109 is offered by the Republic Electric Mfg. Co., 114 E. First St., Davenport, Iowa. The set is a 5-tube upright table set which gets police calls. The set alone is \$49.50; generator, \$59.50. Republic also offers a 5-tube 6-volt console at \$67.50, a 7-



tube, 6-volt table set at \$69.50 and a 7-tube, 6-volt console at \$39.50.

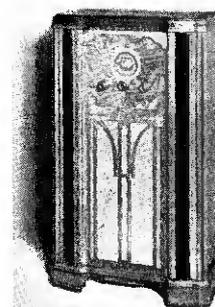
Sets are all wave models. Republic also makes several 32-volt radios.

The 6-volt electric plant, \$59.50, can be furnished separately and is operated with a V-belt so that the proper r.p.m. can be obtained on the generator and still run the engine very slowly. It is mounted solidly on a cast iron base and has a 4-cycle ½ hp. air-cooled gas engine with easy starting pedal. This company states there is plenty of power to charge the 6-volt batteries and to run the lights with enough power to run a washer or separator on line shaft arrangement. One gallon of fuel will run the plant twelve hours.—*Radio Retailing*, March, 1936.

AK Battery Models

Two new battery sets, Models 515-Q and 485-QT, are announced by the Atwater Kent Mfg. Co., Philadelphia, Pa.

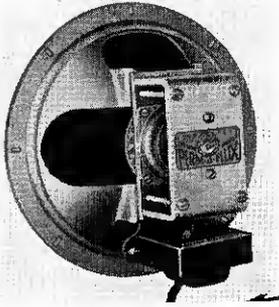
Both use the same chassis and are designed for two-volt air cell operation. Also have the new arrow-light tuning and rainbow dial. One is a table set and the other is a console, both of modern design.—*Radio Retailing*, March, 1936.



Fox Speaker

A low-level reproducer especially valuable for indoor installations has been introduced by the Fox Engineering Co., 3120 Monroe St., Toledo, Ohio. It is capable of reproducing a wide range of frequencies, strengthens all sound but without annoying projection features, the manufacturer states.

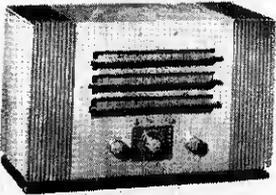
The mounting bracket is attached at the center of gravity making directional adjustment stable. The cradle is free to turn through a radius of 360°. The bell can be moved through 180° in a longitudinal direction.—*Radio Retailing*, March, 1936.



Continental Speaker

A new type radio speaker known as the "Perm-O-Flux" permanent magnet dynamic speaker has been developed by the Continental Motors Corp., 12301 Jefferson St., Detroit, Mich. This speaker permits a saving of 80 per cent of the electrical current consumption and has a sensitivity and tone quality comparable to the most powerful electro-dynamic speaker, the statement reads.

The motive power consists of a new, patented development in magnetic material which maintains its magnetic strength indefinitely. This material, together with the unique design of the voice coil and suspension, makes an unusually rugged unit particularly well adapted for automobile or farm battery radio sets.—*Radio Retailing*, March, 1936.



Kadette Battery Model 400

The new Kadette Model 400 battery receiver just announced by the International Radio Corp., Ann Arbor, Mich., is portable with aerial attached and batteries entirely self-contained. Weight approximately 25 lb.

This set uses three ordinary 1½ volt ignition dry cells for A-supply and three portable size B-batteries. A saving of 20 per cent is claimed by the manufacturer with the International battery saver. Added to this is the further reduction of speaker battery drain through use of the new "Perm-O-Flux" dynamic speaker. Tuning range covers both standard and short-wave.—*Radio Retailing*, March, 1936.

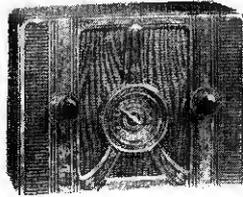
Heavy Duty Vibrators

A new line of heavy duty vibrators, designed especially for police radios and transceiver work, has just been announced by Electronic Laboratories, Inc., Indianapolis, Ind. The outstanding feature is their unusually large contact points, these being approximately twice the diameter of the contacts used in vibrators of the standard types.

The non-synchronous models are plug-in units on a four-prong base, while the synchronous types are on a standard five-prong base. These new heavy duty vibrators will list only slightly higher than the standard vibrators.—*Radio Retailing*, March, 1936.

Emerson Model 118

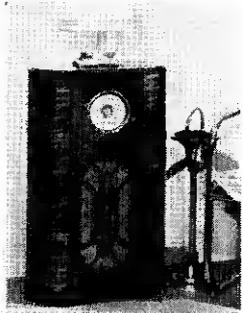
A low priced, quality radio, using 5 tubes in a t.r.f. circuit (including metal ballast tube) to retail at \$14.95 has been brought out by the Emerson Radio & Phonograph Corp., 111 Eighth Avenue, New York City. It is housed in a walnut cabinet with Syroco wood front. It has an illuminated airplane dial, full size electro-dynamic speaker and built-in antenna. Tuning range: 180-550 meters. Operates on a.c. or d.c.—*Radio Retailing*, March, 1936.



Detrola Radios

Placing particular emphasis on cabinet design, the Detrola Radio Corp., 3630 W. Fort Street, Detroit, Mich., has announced its new line. Illustrated is the "Airflo" console listing at \$55. It is a 7 tube ac-dc set, covering from 540 to 15,750 kc. It has Detrola's new "network" dial. Another distinctive set is the Faust in the new "round" design. The circular cabinet is 12 in. high by 12 in. wide and 6 in. deep. 5 tubes, ac-dc, 750 to 550 meters. \$29.50.

Other models include the 101A, 4 tube ac-dc, 65 to 555 meters, \$19.95; 102B, 7 tube ac-dc, 540-15,750 kc., \$39.95; 105A, 5 tube ac-dc, 70-500 meters, \$27; 100A, 6 tube ac-dc, 68-555 meters, \$32.50. These are all table sets. There is also another console, model 100C, a 6 tube ac-dc superheterodyne 68-555 meters, \$39.95.—*Radio Retailing*, March, 1936.

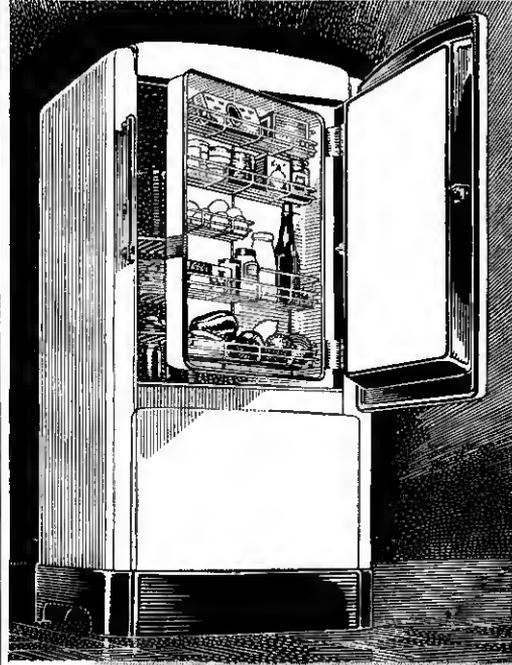


Freed Eisemann FE-56

The new Model FE-56 of Freed Mfg. Co., Inc., 44 W. 13th St., New York City, may be had in any one of three wood finishes—walnut, mahogany or maple. It is a 5-tube set with large airplane dial mounted to one side. \$27.—*Radio Retailing*, March, 1936.



THE CONSERVADOR



... a demonstrable money-saving feature that *Makes Sales*

● The Fairbanks-Morse Refrigerator is the *only* refrigerator on the market that gives you, the dealer, a *demonstrable* money-saving feature that *customers can see and feel and understand*. This feature is the *CONSERVADOR*. It is a shelf-lined inner door behind the main door for storing most frequently used foods. It serves to keep the *COLD* air from rushing out when the main door is opened. Motor doesn't run as often. A five-minute *demonstration* that *shows* lower refrigerating cost means more to a prospect than five months of *claiming* it! And it means more sales for the dealer. That's why F-M dealers are "going to town". It puts overwhelming sales advantage on your side—with *CONSERVADOR* you can *show economy and convenience* that others only claim. And that's not all. The F-M Refrigerator has *everything* offered by any other refrigerator—*plus* the *CONSERVADOR*.

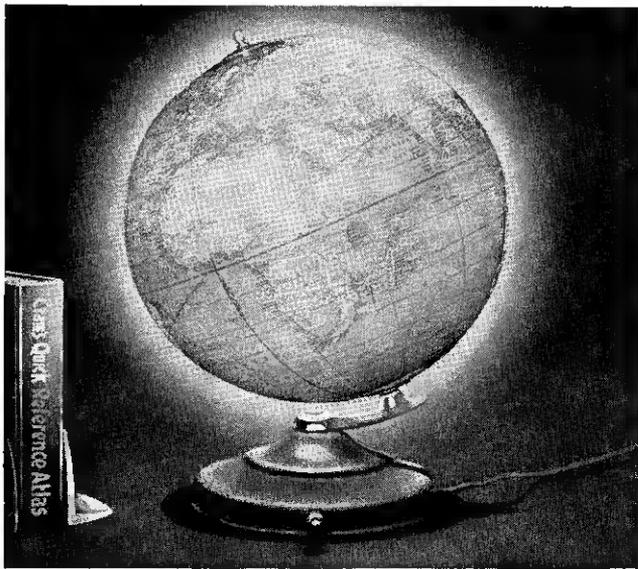
Conservador Refrigerator machine units are warranted for 5 years

What to do about it—If there is an opportunity for more sales and profits in selling refrigerators—you want to get in on it. *There is!* It's the F-M franchise. Maybe it's open in your territory. Don't miss the boat by waiting—write or wire now for details. Fairbanks, Morse & Co., Home Appliance Division, Indianapolis, Ind.

FAIRBANKS - MORSE

Refrigerators

Other F-M Products: Washing Machines, Ironers, Radios, Automatic Coal Burners



Your Customers Want Globes

Sold or used as premiums with radios, Cram's Globes will increase sales and profits. Globes have become a real necessity with short wave reception and world news through radios, newspapers and magazines. Everyone needs a globe. You can cash in on this demand.

Our illuminated radio globe, pictured above, is just one of a complete line in sizes, styles and prices to meet any premium or promotional program. Write for information and suggestions.

The George F. Cram Company
Globes—Atlases—Maps—Since 1867

Indianapolis Indiana

ITS MODERATE PRICE MAKES MONEY FOR YOU

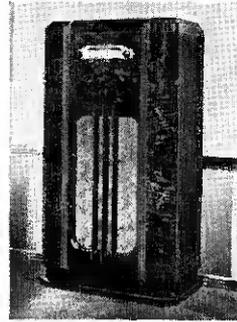


COMPLETE
RCA VICTOR PORTABLE PUBLIC ADDRESS SYSTEM **\$79.50** F. O. B. CAMDEN

Whether you sell or rent P. A. Systems, the RCA trademark on the equipment is a big help. When you can get an RCA Portable P. A. System for \$79.50, less your discount, why handle merchandise that may not have the RCA acceptance and reliability? The equipment shown is a fast seller for use in moderate-sized auditoriums, restaurants, night clubs, etc. Other models to fit any requirements. Write for information.

COMMERCIAL SOUND SECTION
RCA Manufacturing Co., Inc.

Camden, New Jersey • A Service of the Radio Corporation of America



G-E Radios

Five new sets, each employing a new type of metal tube, the 6Q7 duodiode-triode which has characteristics that permit unusually high sensitivity, selectivity and power output, it is claimed, have been announced as additions to the line of the General Electric Co., Bridgeport, Conn. Two of the sets are consoles and three are table models. One of the latter is a compact ac-dc set, the others being designed for ac operation. All provide shortwave reception.

The new 6Q7 duodiode-triode used with the sets combines the functions of detector, audio amplifier, and automatic volume control.

Table model A-52 and console A-55 have a five-tube chassis and list at \$29.95 and \$39.95. A three-band 8-tube chassis is used in table model A-83 and console A-85. \$79.50 and \$99.50.

The ac-dc set, table model A-54, is a two-band 5-tube receiver, priced at \$39.95 in walnut and at \$44.95 in colored finishes.—*Radio Retailing*, March, 1936.

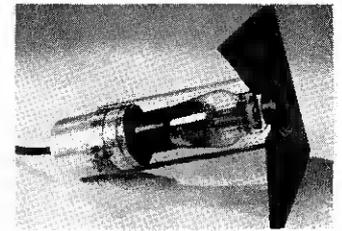
and panel unit may be assembled for use on 20, 40, 80 and 160 meter bands. All drilling and machining has been done and complete detailed instructions, including photographs, are supplied. Built from standard parts regularly stocked by Jobbers.

Information may be obtained from any of the above companies or from J. M. Haggard, 222 W. Adams St., Chicago.—*Radio Retailing*, March, 1936.

DeWald 616 and 515

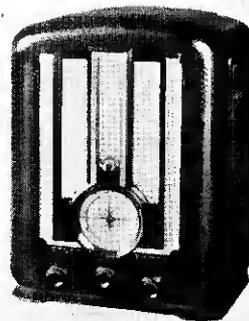
Model 616 DeWald radio, made by Pierce-Airo, Inc., 510 Sixth Avenue, New York City, is a 6-tube ac-dc two band set 75-550 meters. It comes in the popular semi-modernistic type cabinet and lists at \$25.95.

Model 515 is a 5-tube TRF set covering from 70 to 560 meters. Also in a modernistic cabinet, carrying a list of \$21.50.—*Radio Retailing*, March, 1936.



Taco Tuning Indicator

A simple, effective and inexpensive means of bringing any set up-to-date may be found in the tuning indicator being made by the Technical Appliance Corp., 17 E. 16th St., New York City. Makes use of the 6E5 electron ray tube. An entirely self-contained unit arranged for ready mounting. \$1.50, less tube.—*Radio Retailing*, March, 1936.



Pilot Radios

A new radio set made in two models, one for ac-dc and one for battery operations, is announced by the Pilot Radio Corp., 37-06 36th St., Long Island City, N. Y.

The upright table cabinet is the same for either model—polished black Bakelite with chromium striping. Each uses 5 tubes and covers from 545-1680 kc. and 5700-18,800 kc. Available also in longwave model for European areas only.—*Radio Retailing*, March, 1936.

Bulls-I-Units

For all pilot light purposes and for building lamp annunciators, H. R. Kirkland Co., 75 West St., New York City, offers its "Bulls-I-Unit" for single hole mounting. These are particularly useful in p.a. work also.—*Radio Retailing*, March, 1936.



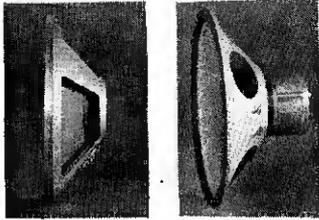
Amperite Velocity Mike

Amperite Corp., 561 Broadway, New York City, has brought out a new velocity microphone and one stage pre-amplifier to fill the gap between the carbon mike and the less sensitive high quality microphone. It makes possible the immediate use of a high fidelity microphone without any extra pre-amplifiers. The output can be fed directly into amplifiers using ordinary carbon microphone. A gradual rising characteristic (7,000 to 11,000 CPS) results in a brilliancy of reproduction. The 6J7 metal tube used can be operated from batteries or a.c.—*Radio Retailing*, March, 1936.

All-Star Transmitter

A new "All-Star" transmitter, sponsored by seven manufacturers, is now ready. The same arrangement, under which the "All-Star" equipment was offered last year, still holds. The cooperating manufacturers are Thordarson, Hammarlund, Cornell-Dubilier, Triplett, Ohmite, E. J. Johnson Co., and Crowe Nameplate.

A modern, professional rack-



High-Fidelity, Permanent-Magnet Dynamics

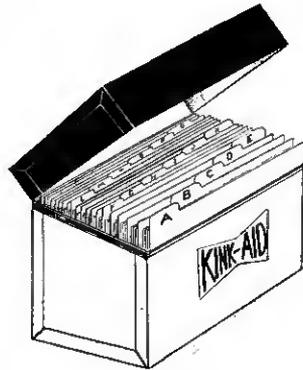
Shown in the photographs are two high-fidelity, permanent-magnet dynamic speakers included in the line of 8, 10, 12 and 18-in. models produced beginning March 15 by the Cindagraph Corporation, 110 Davenport St., Stamford, Conn. The magnet, made of "Niper-mag", developed and used for more than a year in England and now made in the United States, is on the back in large models, within the cone to conserve space on smaller units.

Designed to operate with backs completely enclosed (infinite baffle), these speakers use aluminum-wire voice coils wound on quartz silica (mica) forms and cemented directly to the cone apex without the use of the conventional heavy "spider". Centering is accomplished by means of a novel interlaced cloth "net" which further reduces bulk and there is no orifice in the cone itself to admit dust. —Radio Retailing, March, 1936.

complete with cathode ray tube, 24 in. 5 wire cable, escutcheon, etc., \$3.—Radio Retailing, March, 1936.

Service "Kink-Aids"

A most complete collection of indexed and filed service kinks has been compiled by the Akrad Products Co., 362 Wooster Ave., Akron, Ohio. "Kink-Aids" are clearly printed on durable filing cards, indexed by set name and model number and filed in a two-tone enameled steel filing case. Each kink represents a completed service job—describes symptoms, parts responsible and successful repair. \$1.50, complete.—Radio Retailing, March, 1936.



Brush Microphone

The latest additions to the complete line of microphones made by the Brush Development Co., Cleveland, Ohio, are its spherical or BR2S sound cell microphone, second of the Brush round microphones. This is a high quality low priced instrument for p.a. system, amateur transmission work, etc.

The other is its new lapel or BL1 sound cell microphone with a special cushioning of the internal members and protecting rubber jacket to insure quiet operation. No interference from breathing noises, cable rattling, rub of clothing, etc.—Radio Retailing, March, 1936.

Webber Oscillator

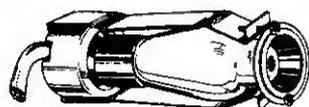
A new low priced test oscillator with a direct reading, full vision dial has just been released by the Earl Webber Co., 1217 W. Washington Blvd., Chicago. It is known as the 1936 improved Model 20 and is powered by one 45-volt C and one 22½-volt B battery. Therefore it can be used equally well for aligning the home receiver in the service laboratory or the auto set in the car. The frequency range is continuously variable from 90 kc. to 60 mc.

A jack permits the use of a frequency modulator so that sets may be checked on a cathode ray oscillograph.—Radio Retailing, March, 1936.

Mystic Eye Tuning Unit

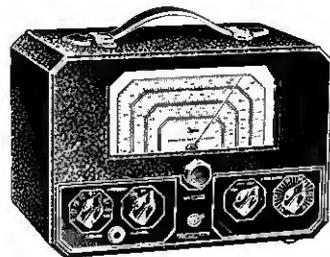
Any radio receiver using automatic volume control and operating with 2½ or 6-volt tubes can be modernized with the Mystic Eye tuning unit of the Empire Radio Corp., formerly Clinton Products Co., 1217 W. Washington Blvd., Chicago, Ill.

This unit is equipped with the new cathode ray tube and makes visible the process of tuning the receiver to resonance with the desired broadcast station. When the receiver is turned on for operation, the Mystic Eye shows a green ray of light. Proper resonance is



indicated when the gap is at the nearest point.

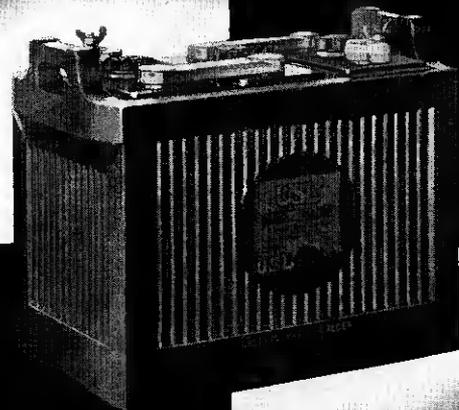
The unit is easily installed and is held by two screws to the panel. Five connections are all that are necessary on the receiver. This unit is wired



Line Voltage Dropping Resistor in Metal-Tube Form

Employing a standard metal-tube casing and 8-prong octal base, the Clarostat series "MT" line voltage dropping resistor has been placed on the market by the Clarostat Mfg. Co., Inc., 285 N. Sixth St., Brooklyn, N. Y. Identical in size, shape and finish to metal-tube 25Z6 rectifier, the new resistor is installed by providing another octal socket.—Radio Retailing, March, 1936.

Battery sets give longer full-capacity performance with



USL BUILT-TO-LAST RADIO "A" BATTERIES

USL offers a new line of 2-volt and 6-volt batteries especially designed for radio service.

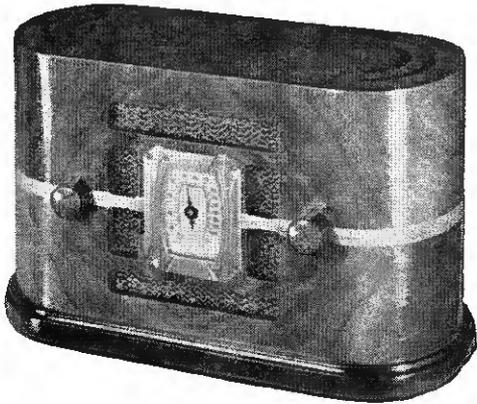
USL radio battery plates are machine-pasted with patented "Activite"—the purest and most active plate oxide in existence. USL Activite radio battery plates not only last longer but maintain their original high capacity over a much longer period of time.

USL Radio "A" Batteries have no superior. Their first cost is low. They represent a most economical form of "A" power. The market for radio storage batteries is increasing by leaps and bounds. Send for complete details on USL Radio Batteries.

USL BATTERY CORPORATION
Niagara Falls, N. Y.; Oakland, Cal.; Oklahoma City, Okla.

TRAV-LER

THE WORLD'S SMALLEST 5 TUBE RADIO



Trav-ler model 512. 5-tube AC-DC superheterodyne with the new MG tubes. 5" dynamic speaker. Illuminated wrist watch dial. Covers broadcast band 175 to 550 meters including police calls. W-11", H-6 $\frac{3}{8}$ ", D-5 $\frac{1}{8}$ " Wt packed—7 lbs. List price—\$26.95.

TRAV-LER RADIO & TELEVISION CORP.
1028-36 W. VAN BUREN STREET
CHICAGO, ILLINOIS

6 and 32 volt Airchargers, 15 amps. in moderate winds, roof or post mounting. Brush and collector ring current take-off. Some dealer and distributor territories still open.

The Kato Konverter runs A.C. radio from direct current. Changes 6, 32, and 110 v. D.C. to 110 v. A.C. Runs coin-operated phonographs, amplifiers, neon signs, etc. Write for new low prices.

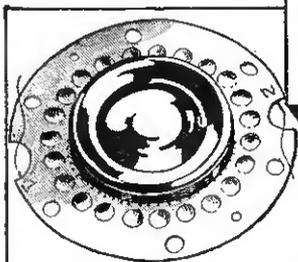
A.C. CURRENT-ANYWHERE!
WITH Kato LIGHT PLANTS

A little gas and a Kato AC plant enables you to operate AC radios, amplifiers, refrigerators and other standard household appliances. Sizes 300 watts and up. Write for interesting descriptive literature on AC and DC models. Burn Kerosene, 3 and 5 KW Diesel driven.

All models self cranking. One battery cranks 300 and 450 watt sizes.

KATO ENGINEERING CO., Mankato, Minn., U. S. A.

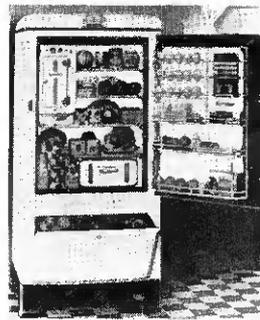
THOUSANDS
KNOW



nothing takes the place of the one piece metal Fox diaphragm used in the Fox Electro-Dynamic Speaker Unit. It combines extreme hardness with great elasticity. Especially processed to free it from internal strains and stresses.

Write today for catalog, price list and technical data sheets on complete line of Fox Sound Equipment.

FOX SOUND EQUIPMENT CORP.
3120 Monroe St., Toledo, O.

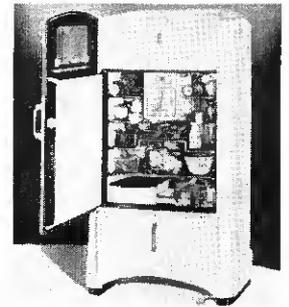


Sparton Refrigerators

Five new refrigerators make up the 1936 line of the Sparks-Withington Co., Jackson, Mich. The capacities are 4.6, 6.1, 9, 7.4, and 6.1 cu.ft. respectively. All models incorporate the following features: Spar-Lac exterior finish; ice tray release; electric lighted interior. The de luxe models are equipped with an anti-frost clock, which automatically defrosts cooling unit daily as well as serving as a kitchen clock, a Baskador, and Vegabin. De luxe features are adaptable to standard models at slight extra cost.—*Radio Retailing*, March, 1936.

special models; rearranging shelf on inside of door; two refrigerated shelves for fast freezing; new tray release; newly designed food compartment; Len-A-Dor; oblong ice cubes, automatic electric light and sliding shelf.

There are eleven models in the three lines—4 P models, 5 L models and 2 LS models. The P line is porcelain finished inside and out; the L line has porcelain interior and Permalain baked enamel outside and the two lower priced models, LS line, are finished in Permalain.—*Radio Retailing*, March, 1936.



G-E Hotpoint Refrigerator

The Hotpoint Refrigerator Division of General Electric Co., Cleveland, Ohio, has announced its 1936 line. With the Standard, De Luxe and Thrift-type models, Hotpoint now has a total of twelve. The De Luxe models are distinctive in styling, with a V-type door. They are manufactured with Glyptal-baked enamel as well as all porcelain cabinets.

Features include sliding shelves, foot pedal door opener, interior light. Accessories on some models include aluminum frozen dessert trays, flexible rubber ice trays, ice tray remover, vegetable pan, vegetable bin and vegetable drawer, water bottle, and a complete set of covered glass dishes.—*Radio Retailing*, March, 1936.



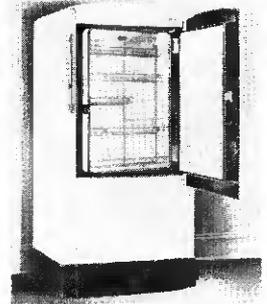
"Savamaid" Washers and Ironers

Under the trade name "Savamaid," the Crosley Radio Corp., Cincinnati, Ohio, has entered the electric washer field with four models and an electric ironer. There are three wringer-type washers and a centrifugal type dryer, called the "Spe-Dry."

Listing at \$99.95, the Spe-Dry Model 64 does the washing, bluing, and rinsing in virtually one operation and reduces the number of operations from thirteen to five, it is said. All the washing and pre-iron drying are automatically done within the machine itself without the need of the usual drain tubs.

The wringer models come in three price classifications: Model 61, \$49.95; 62, \$69.95, and 63, \$79.95. These may be had with pump at \$10 additional. They may also be had with Briggs & Stratton gas engine assembly for use where electricity is not available, at an additional cost.

The new electric ironer lists at \$49.95. It will handle everything from the laiciest frills to the heaviest garments and is equipped with foot control.—*Radio Retailing*, March, 1936.



F-M Refrigerators

The new "C" line of Conservador refrigerators are now ready according to an announcement from Fairbanks-Morse Home Appliances, Inc., 430 So. Green St., Chicago.

The B line models are also being continued. There are nine models in the complete line, all equipped with the exclusive Conservador feature. It is stated by the manufacturer that the Conservador cuts operating costs by eliminating the escape of cold air and by preventing the inrush of warm air when only the outer door is opened.—*Radio Retailing*, March, 1936.

Leonard Refrigerators

All new refrigerators of the Leonard Refrigerator Company, Detroit, Mich., except the smallest model, have vegetable drawer below food compartment, for storing dry vegetables; rubber equipment in every tray except

Wholesale at Retail (Continued from page 9)

All along the line distributors and manufacturers were "pinned down" by the following registered mail letter:

"Whereas, the sale of radios in Chicago by specialty radio dealers, and also by furniture and department stores, to the ultimate consumer has diminished to the point where the Christmas season just passed was one of the worst for them in history, and

Whereas, the causes for this deplorable condition are known to be certain wide-spread and prevalent practices, such as industrial selling of radios and electrical appliances through the purchasing agents of corporations, large and small, and also the indiscriminate selling of radios at wholesale discounts to the public by so-called 'catalog wholesalers' and other 'sub-jobbers' and/or illegitimate retailers well-known to the trade, and

Whereas, if these present above-mentioned practices continue, the distribution of radios and other electrical appliances in Chicago will reach a state of extreme demoralization, including the wide-spread use of manufacturers nationally advertised list of prices for comparative prices only, and

Whereas, the members of this association feel keenly that the manufacturer-distributors—their sources of supply—can to a great extent correct and eliminate these glaring chaotic conditions which make it impossible for any retailer of radios to show a profit.

THEREFORE BE IT RESOLVED, that the Illinois Radio & Electrical Dealers Association, in meeting assembled, call upon

radio manufacturer-distributors to establish and maintain the following policy of distribution:

1. The manufacturers and/or jobbers of radios and electrical appliances shall limit the distribution of their products to regularly franchised dealers for resale purchases only at the list prices suggested by the manufacturers and/or jobbers. A regularly franchised dealer is to be defined as a dealer who has an established retail business, who handles and stocks one or more standard lines of approved radios and/or appliances, and who further conducts his retail business in an ethical manner.

2. Manufacturers and/or jobbers of radios and electrical appliances further agree to make every effort to confine the distribution of their products to the above channels, and to act promptly to correct any abuses of the same which are called to their attention supported by facts.

The radio dealers, also furniture and department store buyers represented by this association will be interested to receive, at your earliest convenience, your acceptance or rejection of this resolution."

Simultaneously with the mailing of this resolution the Association petitioned top executives of some 500 large Chicago corporations to aid in the improvement of local business by discontinuing the use of special wholesale discount cards.

Dealers "shop" regularly to see how well promises are kept.

Our Readers Write (Continued from page 29)

not write you my hearty congratulations. The article on page 16 and 17 giving the usual sales method used by that Los Angeles store is something from which the radio interests can well profit. I certainly expect to make good use of that article in our radio promotion here in Kansas City.

G. W. WESTON, Sect'y-Mgr.
Electric and Radio Ass'n. of Kansas City

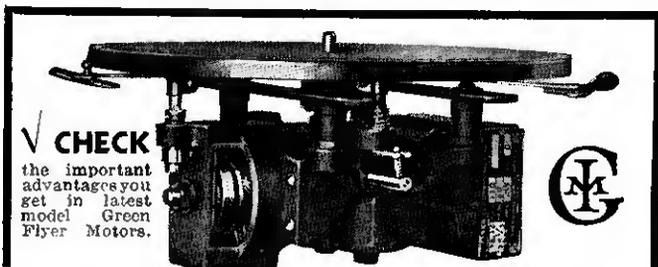
Way Ahead Of Us

Editor, Radio Retailing:

Read Edgar H. Felix's article, "There Are Things No Radio Can Do," in the December issue and was very much pleased with it. You may be interested to know that the very same idea was expressed by me in the December 30 number of the *Jamestown Evening*

Journal before I saw this Felix article. It was later reprinted in a small six-page folder and distributed by members of the Radio Service Engineers of Jamestown to help keep sets sold and avoid unnecessary requests for service caused by unfamiliarity of the consumer with radio vagaries.

NORMAN W. SMITH, Sect'y,
Jamestown Radio Service Engineers



Will The Phonograph Motor You Use DO THESE THINGS?

WILL it operate SILENTLY, with absolutely uniform speed, however severe the variation in voltage and record drag?

Will it play BOTH 33 1/2 and 78 R.P.M. records with equal fidelity?

Will it shift from one speed to the other instantly and positively?

Will it operate in closed cabinets without any overheating?

Will it operate month after month without need of service?

Green Flyer Motors, made by General Industries, for many years America's leading specialists in precision-built phonograph motors, do every one of these things—continuously, dependably. Their spiral-cut gears of laminated bakelite run in oil and are completely enclosed. They have long oversize bearings. Two-speed shift lever, convenient and fool-proof. Positive governor control. Induction type, with ample power for heaviest pickups, on all records. Supplied for all commercial A.C. voltages and frequencies, for 110 and 120 volts D.C., also universal A.C.-D.C.

Test Green Flyer Motors in Your Own Installations

Order samples today, and check up on these big advantages. Your tests may bring you the big improvement you've wanted for your product.

The GENERAL INDUSTRIES CO.

3637 TAYLOR STREET, ELYRIA, OHIO
Order Samples, Too, of Our Newest, Simplified, Space Saving,
Economically-priced Record Changer Units.



Sorry, Lady . . . all the charm, sex appeal and pleading in the world won't get you a Radolek Radio Profit Guide. We're only human. We like you and we think you're swell . . . but the Radolek Profit Guide is for Radio Dealers and Servicemen ONLY . . . so we'll have to turn you down . . . but if you have a sweetheart, brother or husband who is a qualified Radio-Serviceman he will love you all the more if you tell him that Radolek offers HIM . . .

One complete dependable source for all his Radio needs. Over 10,000 Radio Repair Parts . . . the largest Radio Parts stock in the world . . . a complete gigantic selection of Tubes, Instruments, Tools, Books, Receivers and Amplifiers . . . everything he needs . . . always in stock . . . ready for speedy shipment to him . . . at the right prices. He needs the Radolek Radio Profit Guide. Tell him to send for it right now . . . and to please enclose his Business Card or Letterhead.



RADOLEK

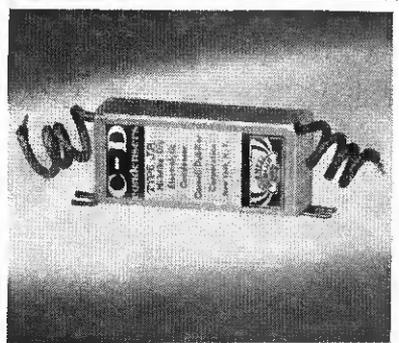
585 W. Randolph—Chicago
Send me the Radolek Profit Guide Free.

Name

Address

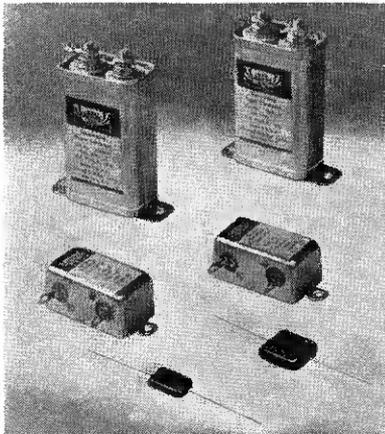
Service man? Dealer? Experimentor?

Cornell-Dubilier Condensers are the answer to profitable servicing



TYPE JR Electrolytic

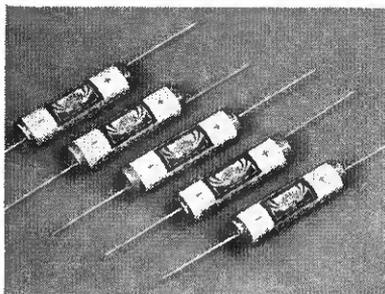
Tiny, etched foil dry electrolytics—with convenient mounting feet and flexible color coded wire leads. For use in the most limited spaces as in AC-DC midget receivers.



Paper and Mica Condensers

Type TF Dykanol high voltage filter condensers. Exceedingly small, sturdily built for power amplifier and transmitter work. Types DA hermetically sealed bypass and filter condensers can be supplied in single, dual and multiple section units.

Moulded mica condensers known for their lasting dependability and sturdy construction. Rated at 500 volts, these condensers insure satisfaction in receiving circuits as padding units, plate blocking, grid, r. f. bypass and tuned filter condenser.



TYPE ED Electrolytic

Tubular compact dry electrolytics—convenient for point to point wiring. Supplied with self mounting, solidly anchored wire leads. Available in a complete capacity range from 5 to 450 volts.

• GOOD CONDENSERS

A survey recently conducted by a large set manufacturer indicated that the majority of radio listeners are primarily interested in the continued satisfactory operation of their receivers. To them, failure, whether caused by a loose set screw in the gang condenser shaft or a shorted filter or bypass condenser means 100% failure. Consequently the majority of progressive servicemen are demanding *quality* radio parts.

These progressive servicemen are using C-D condensers exclusively—because they are the accepted standard of quality condensers in the radio industry!

When you use C-D condensers on a job—you assure yourself of "customer satisfaction" and unflinching dependability in operation.

SOUND SALES POLICY

A SALES Policy that has won the approval of the nation's radio jobbers, dealers and servicemen for the past three years, will be continued without deviation in the future.

Uniform nominal prices, identical throughout the country, 100% protection—all sales restricted to jobber channels only, coupled with the outstanding Cornell-Dubilier guarantee, assure the serviceman of complete satisfaction!

The Cornell-Dubilier Corporation offers the jobber, dealer and serviceman the most complete condenser line available today. C-D's extensive manufacturing facilities can fill your most exacting requirements in ELECTROLYTIC—PAPER—MICA—and DYKANOL condensers.

Write today for complete data on this money making line.

CORNELL-DUBILIER
CORPORATION

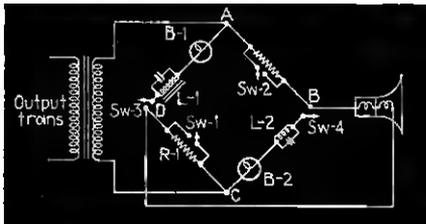
4399 BRONX BOULEVARD • NEW YORK

SERVICE SECTION

CIRCUITS of the MONTH

"Auto-Expressionator"

On page 67 of the September, 1935, issue of Radio Retailing, followed up by a more extensive article on page 49 of the November number, we published a description of RCA's tube-operated "Expander" circuit, designed to restore volume on reproduction peaks monitored out while recording phonograph discs. Now Crosley comes along with the



"Auto-Expressionator," a clever circuit accomplishing much the same thing on monitored broadcast programs through the use of small, special "bulbs."

The component parts of the basic circuit shown comprise a Wheatstone bridge. The two expressionator bulbs B-1 and B-2, because of their inverse thermal-resistance characteristics, cause an increase in current through resistor legs R-1 and R-2 of the bridge as volume increases, thereby effecting an increase in speaker output. The bulbs operate continuously but only become illuminated at high volume levels.

When the expressionator knob of the receiver is in the "off" position, SW-1 and SW-2 are closed, shorting out R-1 and R-2. SW-3 and SW-4 are open, which removes the bulbs from the circuit and connects the output transformer directly to the voice-coil. When the control knob is in the "on" position SW-1 and SW-2 are opened and SW-3 and SW-4 are closed, making it necessary for the audio current from the output transformer to flow through the bulbs and resistors before reaching the voice-coil. The resistances of R-1 and R-2 are slightly less than the cold resistances of B-1 and B-2 so that the bridge is permanently out of balance by a slight amount. When the signal from the output transformer increases the resistances of the expressionator bulbs also in-

creases, thereby throwing the bridge farther out of balance. When the bridge is thrown further out of balance a greater portion of the total signal is heard at the speaker.

The purpose of L-1 and L-2 is to provide permanent unbalance of the bridge independent of the expressionator bulb temperature at a low frequency of about 40 cycles. When the auto-expressionator is "on," therefore, there is a decided boosting of extreme bass at low volume levels as well as a restoration of peaks monitored out of transmission.

Noise-Silencer

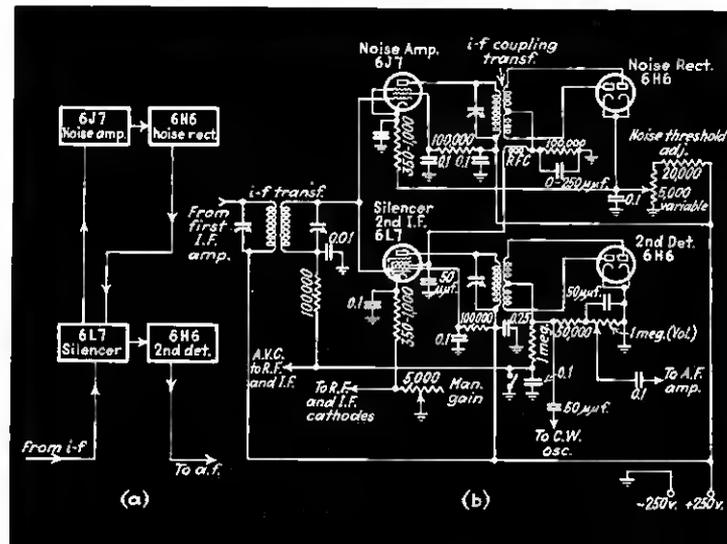
Amateurs who read "QST" are, no doubt, already familiar with the noise reducing circuit adaptable to superheterodynes, recently announced by Jim Lamb and the ARRL technical staff. Because many servicemen do not see the amateur publication referred to and because there is some likelihood that manufacturers may eventually take up this circuit, particularly those making "communications" type receivers, we describe its action in figures A (block diagram) and B.

A conventional i.f. signal is supplied

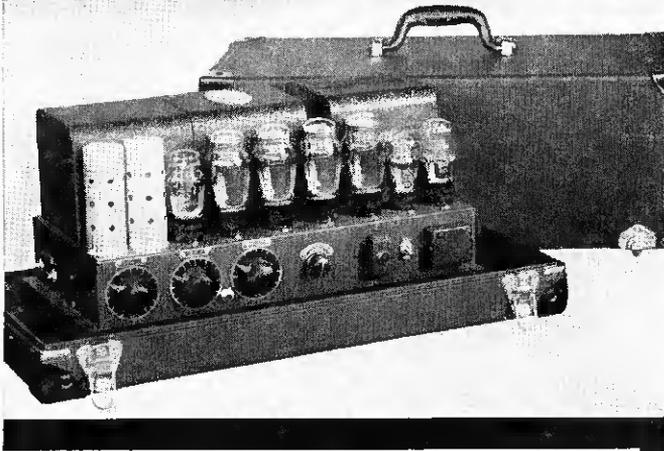
by an ordinary superheterodyne receiver whose first detector (or succeeding i.f. amplifier) feeds a signal to the "silencer," a second i.f. amplifier which also acts as the noise-blocking tube. This tube, for successful operation, must at this writing be a 6L7. The i.f. signal fed to the grid of this tube is also fed to the grid of the "noise amplifier," a 6J7, which amplifies both signal and noise, feeding them to a full-wave diode rectifier. The bias on the noise amplifier and noise rectifier cathodes is made adjustable by means of a control resistor.

The rectified output of the diode is then fed back to the number 3 grid of the 6L7 through a filtered connection which will not pass r.f. and which offers an extremely short time-constant to the rectified d.c. passing along it. The d.c. voltage supplied by the diode through this connection is thus capable of blocking the 6L7 silencer tube without introducing feedback of r.f. energy. The output of the 6L7 is then fed to the conventional second detector of the superheterodyne.

By properly adjusting the cathode bias control noise impulses can be made to interrupt i.f. amplifier operation for a period so short that the listener is not conscious of a "break," provided these



**COMPACT!
POWERFUL!
FLEXIBLE!**



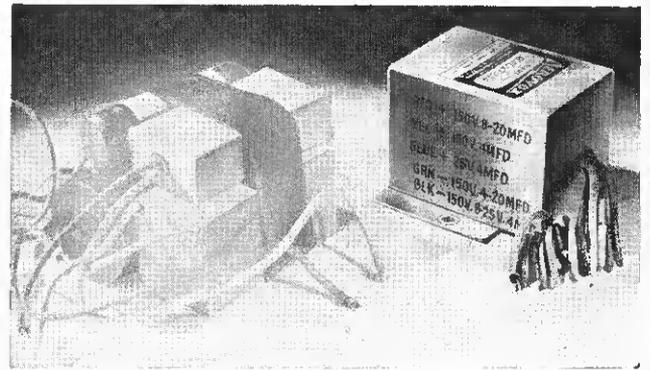
**30-watt, Class "A" Webster
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SERVICE SECTION

noise impulses reach amplitudes greater than peaks of wanted modulation and are of relatively short duration. Automobile ignition noise, noise produced by small series-type electric motors such as those used in most fans and contact noises of the variety produced by elevator controls and dial-telephones has such characteristics and is effectively reduced by the silencer. "Mushy" and relatively continuous noise produced by such things as faulty neon-signs, therapeutic devices, oil-burner ignition arcs and certain types of natural static is not so effectively handled for while such noise may develop amplitude peaks above wanted modulation peaks these usually are of such long duration that blocking would produce objectionable gaps in the program.

Latest News On Tubes

6G5 This is a newcomer similar to the 6E5 cathode ray tuning indicator. Unlike the original, its triode section has a variable-mu characteristic which permits the application of a.v.c. voltage. Which means that appreciable movement of the tuning ray shadow is produced on weak signals while overloading on strong signals is prevented.

Characteristic data is as follows.

Heater voltage (a.c. or d.c.)	6.3
Heater current	0.3
Plate supply (max.)	250
Target voltage (max.)	250
Series triode plate resistor	1 meg.
Triode plate current for 0° grid voltage	.25
Triode grid voltage to give 0° shadow	22
Triode grid voltage to give 90° shadow	0

Socket connections, looking at the bottom, reading clockwise from the heater pins, is: heater, heater, plate, grid, target, cathode.

1F4 Here's a 2 volt battery series low drain output pentode. Characteristics are as follows:

Filament voltage	2
Filament current	.12
Plate voltage	135
Screen voltage	135
Grid voltage	45
Plate current	.8
Screen current	2.6
Plate resistance	200,000
Mutual	1700
Amplification factor	340
Load impedance	16,000
Power output	.340
Distortion	.5 per cent

Socket connections, looking at bottom and reading clockwise from two filament pins are: filament, filament, plate, grid, screen.

6L7 We understand that this tube can be used as an r.f. or i.f. amplifier as well as a mixer, for which it was originally designed. (See "Noise Silencer" circuit in these pages). When so used the control grid G_1 receives applied signal. A.v.c. will generally be applied to grids G_1 and G_2 in commercial receivers, we hear.

The tube can be employed as an amplifier in receivers developing more than 15 volts of a.v.c. voltage. It is not, however, necessary that both grids receive this full control potential. G_2 may be but a fraction of the available po-

tential. Characteristics of the tube when used for a.v.c.-controlled amplifier service are as follows:

Heater voltage	6.3
Heater current	.3
Plate voltage	250
Screen voltage	100
Grid 1 voltage (min.)	3
Grid 3 voltage (min.)	3
Plate current	5.3
Screen current	5.5
Plate resistance	800,000
Transconductance (G ₁ -P)	1100
Transconductance with 15 on Grids 1 and 3	5

Chief use seen is for supers having only one i.f. stage, where the designer wants fairly flat a.v.c. characteristics and response to strong local stations without excessive distortion.

6R7 Specifications on the 6R7, latest metal tube, are as follows:

Plate voltage	250
Grid bias	-8
Plate current	.9
Amplification factor	16
Plate resistance	8500
Mutual conductance	1900
Load resistance	15000
Power output (milliwatts)	280

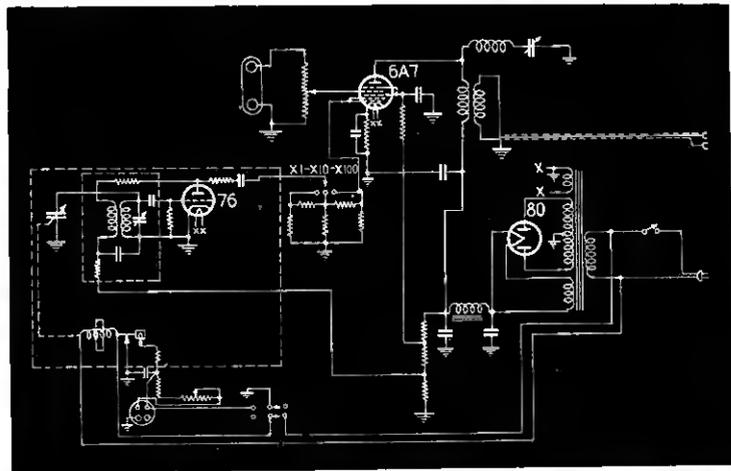
Filament rating is 6.3 volts at 0.3 amperes and base connections, looking at socket from bottom and reading clockwise from locator key, are: shell, heater, triode plate, diode plate, diode plate, heater, cathode tap. The control grid is the top cap. The tube does not use an indirectly heated cathode.

Designed primarily as a detector, a.v.c. and triode driver tube.

Frequency Modulator

Clough-Brengle's new Model 81 frequency modulator unit comprises a heterodyne oscillator (76) and mixer tube (6A7) plus a built-in power supply and sweep motor. Its output is fixed at 670 kc. modulated 15 kc. plus and minus.

Primary purpose of the instrument is to permit frequency modulation of the output of a standard r.f. generator. This is not, however, accomplished by actually varying the frequency of the standard generator but by the "beat" method, a novel but effective procedure.



By connecting a standard r.f. generator to the binding posts at the upper left and setting the frequency of the standard generator so that its sum or difference with respect to the 670 kc. developed by the Model 81 is the value required for tests the resulting sum or difference frequency signal available at the output connections shown at the upper right is frequency modulated because the Model 81's 670 kc. signal is internally varied by the sweep motor.

A table of sum and difference frequencies designed to facilitate setting of the standard r.f. signal generator for any required output frequency of the two units together is furnished by the manufacturer. Two settings are possible in each case.

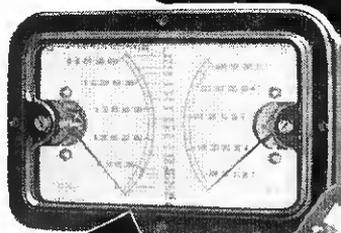
Connection to the associated oscillograph is made by simply inserting the plug shown at the lower left in the cathode-ray device if this happens to be one of the company's own Model CRA or CRB devices equipped with a matching receptacle. A suitable receptacle for the plug may be a properly connected tube socket in the case of other oscillographs.

Any oscillograph equipped with an amplifier for the vertical deflecting plates which is free from both amplitude and phase distortion over a range of 40 to 800 cycles may be used. If the oscilloscope is equipped with a horizontal amplifier this is turned off and the horizontal amplitude control of the device turned to maximum.

"AUDIO FREQUENCY"

JUDGING FROM PATENT APPLICATIONS methods of conveniently broadening tuning of i.f. stages in the interest of high-fidelity are occupying much of the set designer's time these days. One of the most significant recent applications involves a method of automatically broadening i.f. turning on signals sufficiently strong to insure a good signal-to-noise ratio. D.c. voltage developed much as a.v.c. does it may, for example, be applied as bias to grids of tubes, the plate currents of which vary the degree of saturation in iron-cored coupling transformers.

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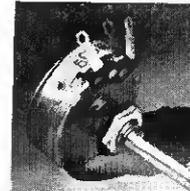
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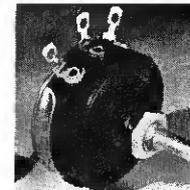
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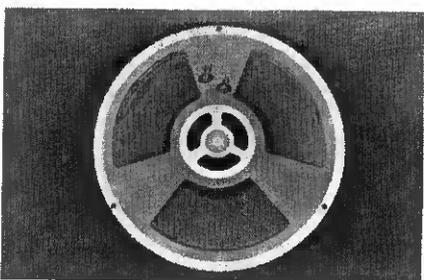
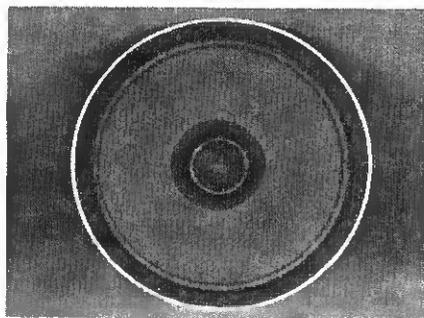
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SERVICE SECTION

Circuits for Measuring Electrolytic Capacitor Characteristics

By Paul MacKnight Deeley

Chief Engineer Electrolytic Div., Cornell-Dubilier Corp.



Dynamic Speaker Has No Cone Orifice

If you spot a speaker that has a forward "dent" at the apex of the cone where an orifice ought to be; if there is a piece of material resembling black mosquito-netting stuck to the back of the cone and the metal framework; if the aluminum-wire voice-coil is wound on transparent mica; if a permanent-magnet resembling a small "pot" in size and shape (mounted either on back or within the cone) grabs a screwdriver right out of your hand; if the output transformer is up in the chassis and if the whole back of the thing is closed up in the cabinet you've run across one of the new permanent-magnet dynamics just introduced by Cinaudagraph.

The cones are thin and flexible at the outer edge for good "low" tone pushing, become somewhat stiffer near the middle and harden up perceptibly at the apex, where the "dent" serves to spread "highs" around the room. The light, non-resilient voice-coil form is cemented right to the back of the cone, eliminating the usual spider, providing efficient coupling and reducing mass. The "mosquito-netting" serves as a centering device, permitting cone movement only backward and forward. The magnet is "Nipermag", with a flux density of from 7,000 lines of force per sq.cm. in the 8-inch jobs to 13,000 in the 18's. Backs may be completely inclosed without cramping the speaker's style and, in fact, such "infinite baffle" is recommended.

The first photograph shows a front view of a 12-inch model and the forward "dent" at the apex may be plainly seen. This size uses a magnet on the back and Chief Engineer Cornwell says centering is taken care of at the factory and stays that way. The second shot is the back of a 2 lb., 8-inch job having the field magnet in front, within the cone. In this model a metal pin running through and through keeps voice-coil centering fixed. Through the three cut-out metal segments in the metal frame the "mosquito netting" centering cloth may be seen. Mounting of the output transformer at the set is recommended, so that only two audio leads are required to the speaker.

THE capacity of a dry electrolytic capacitor is proportional to the surface area of the electrodes at any given voltage of formation. The capacity is inversely proportional to the voltage at any given area of the surface of the electrodes.

Other factors being equal, the equivalent series resistance and, consequently, the power factor, is inversely proportional to the area of the electrode surfaces. In other words, the greater the capacity and the higher the voltage, the lower the equivalent series resistance and power factor.

The direct-current leakage is directly proportional to the voltage, capacity and completeness of the formation of the anodic film. The equivalent circuit network of an electrolytic capacitor is considered as being a capacity in series with a resistance.

Leakage

Direct-current leakage may be measured by applying rated voltage to the capacitor through a milliammeter. Fig. 1 illustrates a conventional setup consisting of a power transformer with an adjustable rheostat in the primary, rectifier tubes, voltmeter and two milliammeters arranged for initial high leakage currents as well as lower stable leakage values after capacitors have assumed normal lower leakage characteristics.

Capacity

Capacity measurements may be made by two methods. One method is the impedance method, using a voltmeter and an ammeter. The other is the capacity-bridge method.

The impedance method for the determination of capacity consists of passing an alternating current through the capacitor under test and a standard mica or paper dielectric capacitor which is connected in series with the electrolytic. From the measurement of this alternating current the capacity is calculated with the aid of the following formula:

$$C_x = \frac{IC}{2\pi fEC - I}$$

C_x = capacity of electrolytic in farads

C = capacity of standard capacitor in farads

I = alternating current in amperes

E = alternating current voltage across two capacitors in series

Polarizing voltage which exceeds at all times the peak value of the alternating current measuring voltage should be maintained on the electrolytic capacitor as shown in Fig. 2.

Capacity, Resistance and Leakage

Shown in Fig. 3 is a bridge method which will serve to measure capacity and equivalent series resistance as well as leakage current. The two variable resistor arms can be directly calibrated so that one reads capacity direct while the other reads equivalent series resistance direct, R_2 per-

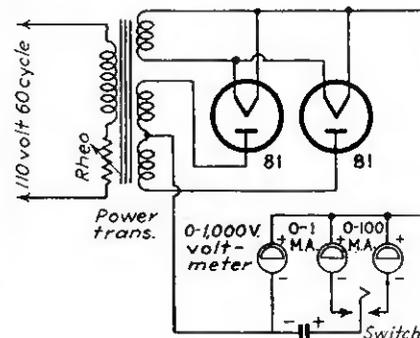


Fig. 1—D.C. leakage test

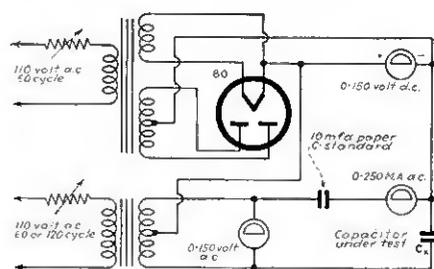


Fig. 2—Impedance test for capacity

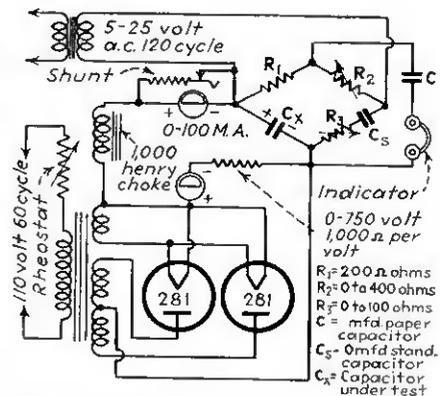
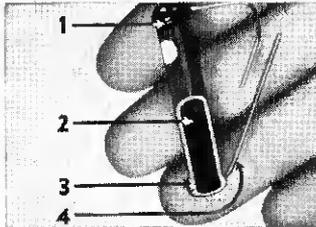


Fig. 3—Bridge circuit for measurement of capacity, leakage and equivalent series resistance

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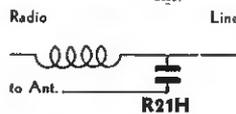
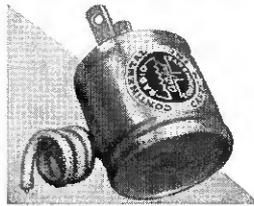
RESISTORS Bulletin 104



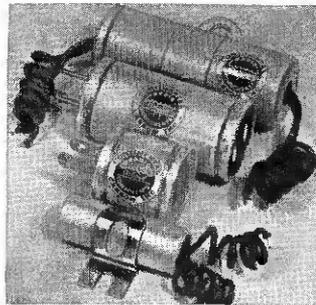
Cut-away view of a CONTINENTAL Carbon 2000-volt ceramic insulated resistor.
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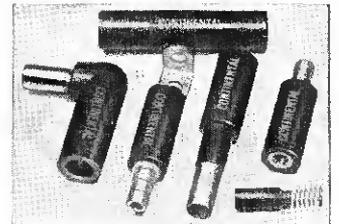
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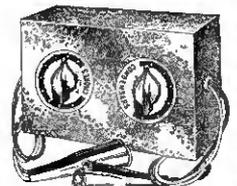
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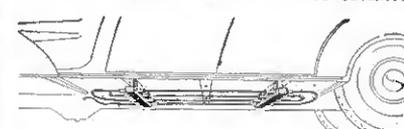
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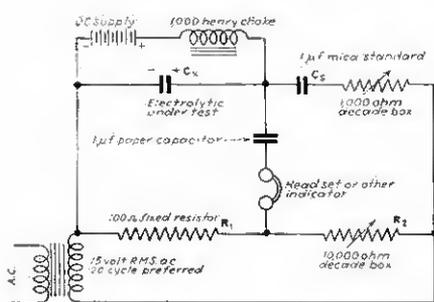


Fig. 4—Capacitor bridge for electrolytic condensers

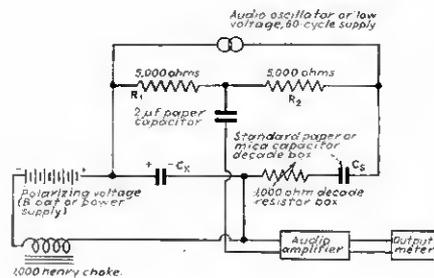
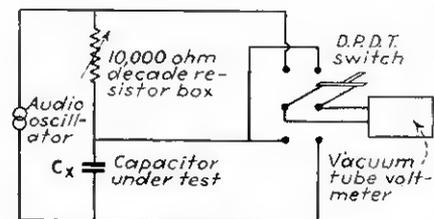


Fig. 5—Another capacitance bridge for electrolytic condensers



Method: Adjust decade resistor box until the same reading is obtained on vacuum tube volt-meter with switch in either position. When this condition exists the decade box reading is equal to the impedance

Fig. 6—Direct comparison method of determining impedance of capacitors at various frequencies

forming the first and R_3 the second function.

When the bridge is balanced to indicate a null point on the indicator the following relation exists:

$$\frac{R_1}{R_2} = \frac{C_x}{C_s}$$

$$C_x = \frac{R_1}{R_2} \times C_s$$

C_x = electrolytic capacitor under measurement

C_s = standard mica or paper dielectric capacitor

Both R_2 and R_3 must be adjusted to reach a balanced position. The resistance indicated at R_3 when balance is obtained, is the equivalent series resistance of C_x . In using the bridge method it is recommended that rated direct current operating voltages be maintained on the electrolytic capacitor. A pair of phones may be used as an indicator but for accuracy it is recommended that the phones be preceded by a two stage audio amplifier.

In the use of either the capacitance or impedance bridge for the determination of equivalent series resistance it is important to remember that if an accurate determination of the equivalent series resistance is to be obtained then capacity must be balanced against capacity. This means that the capacity of the standard should be equal to or almost equal to the capacity under test.

If a type of bridge network is used where the standard capacity is a fixed value and resistance arms are varied for balance, then consideration must be given to the matter of correcting for equivalent series resistance reading, otherwise indicated resistance values may be erroneous to the extent of the ratios of the two capacities, that of the standard and the capacitor under measurement.

If capacity is not balanced against capacity then the correction factor shown herewith must be applied to the formula appearing above:

$$\text{Equivalent series resistance} = R \left[\frac{C_s}{C_x} \right]$$

In Figures 4 and 5 other forms of bridge circuits which may be used in place of the one just described are shown. If the indicated 120 cycle current source is replaced with an audio oscillator then capacity and resistance measurements may be made at various frequencies.

If it is desired to measure impedance directly Fig. 36 will serve the purpose admirably.

brushes with a clean cloth dipped in gasoline. Sandpaper of about 00 size may be used if handled carefully. Make sure that the filter is in good condition and that the shielding on the power leads is grounded.

Battery noise is usually due to the owner's letting his battery discharge too far. Internal resistance increases if the battery is mistreated in this manner and produces coupling effects which are passed on to the filaments of the tubes. This noise sounds something like static and is heard on all bands, being particularly bothersome on shortwaves because of lower signal strengths from received stations. Place a 2 mike paper condenser across the terminals of the battery.

Wind Charger "Static"

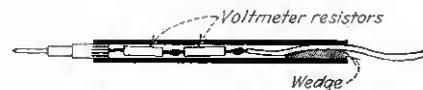
By F. S. Miller

When installing wind-driven chargers be sure to connect a 1 mike condenser around the cutout relay if the device does not already have one. If this part is not included heavy interference will be experienced in many cases as the wind periodically cuts the generator on and off.

Meter Resistors In Test Prods

By Carl F. Mathisen

A great deal of disturbance to circuits under measurement can be avoided by mounting meter resistors within the hollow handles of test prods rather than at the meter itself. This avoids adding the capacity of a long test lead and also reduces the possibility of shocks to the operator as voltage is cut down before it leaves the



prods. Capacity effect of the hand is also largely reduced if the resistors are mounted well up toward the sharp points of the prods.

Resistors of the type using leads molded right into the ends are best for this purpose because of their small size. It would be preferable to use one-watt sizes because of the accuracy of these but they are usually too large in diameter so I place two half-watt units in series. Heating is rarely a problem as test prods are generally used for momentary tests.

It is well to put a wedge of insulating material in the end of the handle as shown in the illustration to hold the leads tight. This method, of course, necessitates separate prods and leads for various meter ranges. If many ranges are used it might be desirable to mount a tip jack in the end of each prod handle so that one lead wire would do for all. Such a jack should be mounted well down in the handle to avoid the possibility of shock to the operator.

SHOP SHORTCUTS

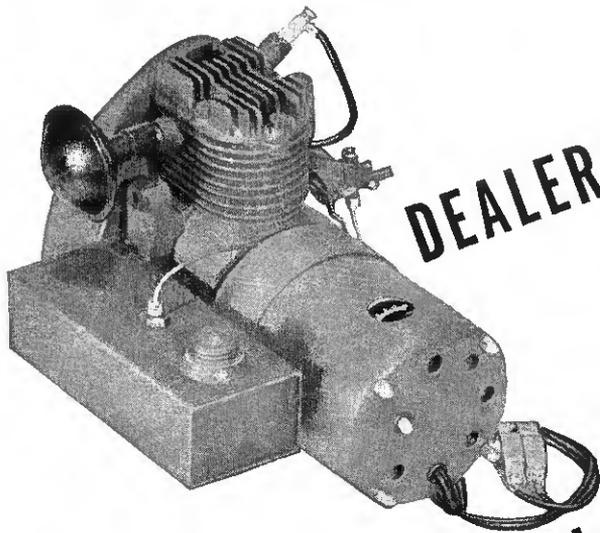
Service Notes On Air-Powered Receivers

By Harry D. Hooton

Since most farm radios operating from air-powered chargers use directly-heated tubes noisy reception is frequently en-

countered, particularly on the shorter wavelengths, due to dirty dynamotor commutators and brushes and noise originating in the storage battery itself.

Dynamotor noise is easily distinguished from ordinary whine by its "staccato" rather than "whirring" sound. This staccato interference can usually be eliminated by carefully cleaning the commutators and



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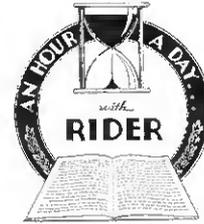
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SERVICE SECTION

TRICKS of the TRADE

ARVIN. Excessive vibrator hum in 1935 models of these car sets . . . Move large yellow "A" wire running from volume control switch to power supply compartment as far as possible from second i.f. coil.

AK 465Q. Distortion, sounds like speaker out of adjustment . . . Caused by an open 8 mike electrolytic connected from B-plus at speaker cord to ground. This open also causes howling at times and is almost always diagnosed at first as speaker trouble.

EDISON R1, R2, C2. Weak reception, set will not regenerate around 550 kc., even though regeneration switch is in proper "up" position with all voltages, tubes and circuit parts checking ok . . . Look for poor ground from two 1.5 mike plate bypasses located in center part of chassis near volume control coupling shaft. Solder flexible lead from their common ground to chassis. Also pigtail rotor of tuning gang, tighten antenna binding post (or solder it directly to the post itself), tighten all bolts in gang and tighten two bolts in single turn voice coil under speaker. When drawing up bolts on gang use extreme care not to move stator sections out of alignment.

1935 FORD. Noise from ignition after all usual methods of clearing it up in these cars fail. . . . Scrape paint off under side of hood where it fits on the cloth head of the body. Wrap bare copper wire around head and ground it at each speed screw fastening the head in place. The hood will then make good electrical contact with the body and frequently clears up radiation of the racket to the antenna.

GE M106. Sensitivity poor on shortwaves all or part of time . . . Check r.f. and detector condensers by-passing coil returns to ground. Dial slips on fast speed knob setting . . . Remove chassis and bend down three contact springs on tuning knob shaft.

GRUNOW 7A. Intermittent or no reception . . . Common cause is defective .1 condenser in block back of tuning gang, identified by green lead which, with two red leads, is connected to a common terminal at the left rear of the shortwave switch. Use a 600-volt replacement. Also replace 1,000-ohm resistor located nearest filter condensers on resistor bank, as this is usually ruined by failure of the condenser described above.

KOLSTER K140. Weak reception, fading . . . R19, a 1-watt resistor of 25,000 ohms, in screen circuit, located at the end of chassis farthest from power transformer and R21, a 10,000-ohm, 1-watt unit located near it, change value. Replace both with 10-watt units. Difficulty in aligning receiver due to unstable i.f. amplifier . . . Align all transformers exactly to 175 kc., find the one which seems to be least stable and turn its trimmer all the way in. This seems to give better selectivity and stability than staggering. To locate unstable stage place screwdriver near each, noting the one in which most change is introduced.

LYRIC S80. Low volume, fading and generally poor reception . . . Common fault is change in value of 16,000-ohm resistor connected from plate circuits to screens and 15,000-ohm resistor connected from screens to cathodes. Use 10-watt replacements.

MAJESTIC 200 SERIES. Generally poor reception . . . R1, a 15,000-ohm, and R2, a 20,000-ohm resistor, both in the voltage divider, connected from plates to screens and from screens to cathode coil of the first detector, change value. Replace with 10-watt type. Also replace entire can containing C5, .03 coupling condenser, .04, a .1 mike first detector cathode bypass and C3, a .25 mike r.f. cathode bypass. Leakage is common between these units and is sometimes of the order of two to three megohms.

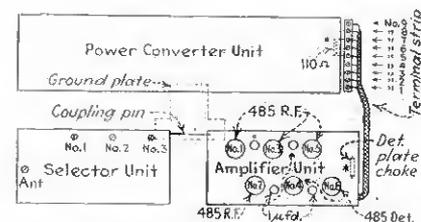
RCA 46. Oscillation experienced, identified as too small an antenna load . . . Make sure all shields and grounds are ok, then connect a .001 or .005 condenser from antenna to ground and realign antenna stage. Tighten up entire condenser gang while set is open as shifting of either rotor or stator plates is quite common.

SILVER MARSHALL 36A. Breaks into oscillation after operating satisfactorily for a short time, insertion of analyzer cable in any socket clears up trouble and makes test difficult . . . Trouble is defective r.f. choke in series with first i.f. amplifier tube's cathode.

SPARTON EQUASONNE A.C. MODELS. Routine trouble tests from specialist's notebook . . . Temporarily short terminals 1 and 2 with tip of screwdriver. If pronounced click is not heard from speaker check speaker connections and main filter condenser block. If power unit is ok loosen and remove terminal screw on .25 mfd. condenser shown in diagram. If set continues to operate after removal of screw replace it. On some models in which original condenser is still in place the

following test may be used instead of above. This older style condenser has metal top with screw through center. Momentarily short top of condenser to side of amplifier. If spark occurs the unit is ok. If not, replace. This may usually be done without removing amplifier from cabinet by removing bottom screw going through terminal on side of condenser and bending terminal up against side of condenser, then turning condenser counter-clockwise. To install unit reverse this procedure.

Turn volume control completely off. If noise similar to static results check detector plate choke before suspecting control. If new choke cannot be ob-



Front of Radio Chassis
Note: Asterisk - * marks location of parts which most often become defective

tained remove all wire from old choke form and scramble-wind the form full of No. 36 enamelled wire. Solder ends to terminals and do not use anything but pure rosin flux. Impregnate choke with commercial r.f. coil dope or something similar. If set operates but volume is low and decreases after passing half-way point on control trouble is usually due to open in 110-ohm wire-wound resistor connected between terminals 5 and 7.

By placing volume control full on (if set does not operate) and touching antenna to coupling pin between selector can and r.f. amplifier can the set should pick up some signals. If so, trouble is indicated in selector can, either a defect or bad alignment. The pin referred to is directly under the back of the drum dial. Without the selector stations will naturally be jumbled together.

After above routine tests and with volume control full on pull extra 485 tube used on selector can as amplifier almost out of socket and work it up and down so that it makes and breaks contact with the socket terminals. There should be loud clicks. If not, check for open plate choke or condenser beneath socket.

Location of tubes in amplifier unit for best reception and freedom from oscillation at 900 kc. . . . After testing tubes place best one in 1st r.f. position, next in 2nd r.f., third in detector socket then, in order, 3rd r.f., 4th r.f. and finally the poorest tube in 5th r.f. When aligning select some frequency above 1,000 kc., about 1,300 is preferable. With oscillator connected to antenna posts adjust trimmers as follows No. 3 first, then No. 2 and finally No. 1. Check back second time. Now connect antenna to selector unit and tune in some station around 1,300 and adjust antenna trimmer. If antennas are changed, re-adjust this trimmer each time.

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This decision gives to Crosley dealers a new contact with their market, a new opportunity for year-round

profit, a new point of interest to bring people to the store, a new possibility for increased sales of Crosley radios and Shelvadors, as well as home laundry equipment, a new kind of crowd-collecting store demonstration.

Match washing machines or ironer against anything, and you will realize that, from now on, your customers need not pay high prices for the best laundry equipment that can be made.

Savamaid Models 61, 62, 63 equipped with gas engine assembly at additional cost.



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De Luxe (Model 63)

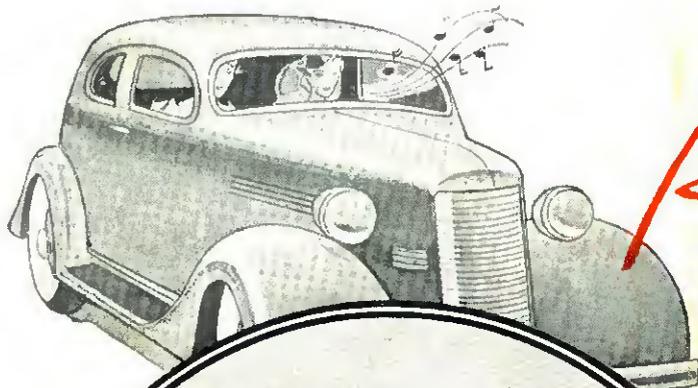
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Featuring the sensational Crosley VELVE-TOUCH wringer that assures full wringing action even when clothes are bunched. No careful feeding necessary. So resilient you can run a long chain through it; so safe it won't break a glass eye-dropper; so positive in action that it leaves no saturated spots. The most interesting demonstration imaginable. Washer has special Mid-zone agitation. Highest quality throughout.

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