

RADIO RETAILING

INC.
SERV
AN
INSTALLAT
SETTIO

HOME ENTERTAINMENT MERCHANDISING



Do You Know This ?

There is a

MALLORY

Replacement Vibrator Available for every Radio Set... At No Greater Cost than Ordinary Vibrators

Service Men now may replace with Mallory Vibrators—the standard of the industry—no matter what the make or model of the auto radio set.

That means better service—greater profit—more satisfied customers—more time saved and a better reputation for the man who does the job. It makes it possible to really build business at the time when the demand for effective service on auto radio sets is growing by leaps and bounds.

Over half of the auto radio sets now in operation are equipped with vibrators made by Mallory. Mallory is the leader—the pioneer in new developments—and Mallory now gives you service such as you never have had before.

Order Mallory Replacement Vibrators from your jobber —Today!

P. R. MALLORY & CO., Inc.
INDIANAPOLIS INDIANA



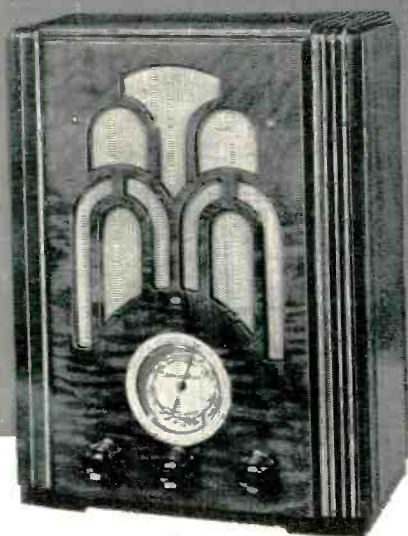
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ATWATER KENT RADIO

PREVIEW

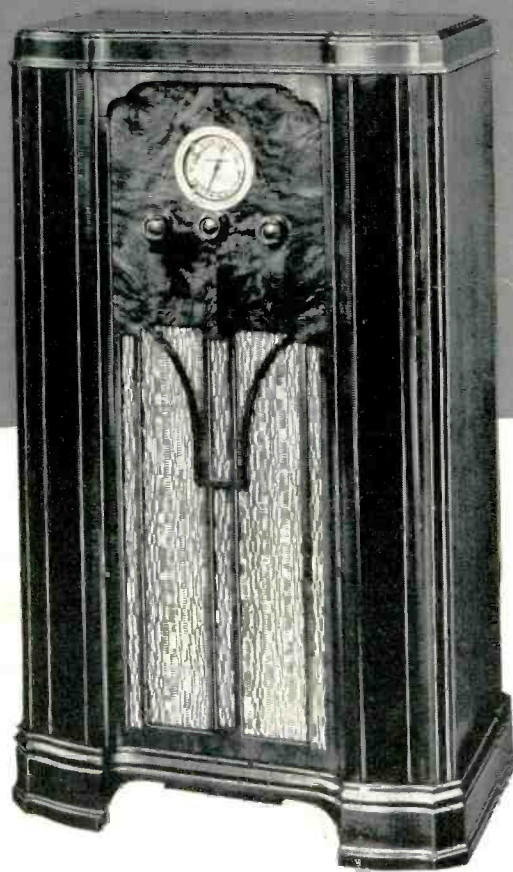
New models! New features! New prices!

The curtain's going up on the most exciting show we have ever put on. New sets, new quality, new performance. Watch these pages.



MODEL 435—(at right)—5-tube A.C. receiver with short wave and standard broadcast for foreign and domestic programs, police, airplane and amateur calls. Range 540 to 1712 kilocycles and 2.3 to 7.5 megacycles. Six tuned circuits. Airplane type illuminated dial. Oversized dynamic speaker. Automatic volume control. Console cabinet of distinguished beauty.

MODEL 545—(above). This same 5-tube chassis available in convenient compact cabinet, beautifully designed and finished with butt walnut front panel and two-toned fluted pilasters.



ATWATER KENT MANUFACTURING COMPANY

A. Atwater Kent, Pres.

PHILADELPHIA, PA.

RADIO RETAILING. June, 1935. Vol. 20, No. 6. Published monthly, price 25c. copy. Subscription rates—United States and Central and South American countries, \$2.00 a year. Canada, including duty, \$2.50 a year. All other countries \$3.00 a year or 12 shillings. Entered as second-class matter April 10, 1925, at Post Office at New York, N. Y., under the Act of March 3rd, 1879. Printed in U. S. A. Cable address "McGrawhill, New York." Member of A.B.P. Member of A.B.C. Copyright 1935 by McGraw-Hill Publishing Co., Inc., 330 West 42d Street, New York, N. Y. Printed by The Schweinler Press, N. Y.

The Best Advice Of 1935

SEE THE NEW

1936 RADIO

LINE BEFORE YOU DECIDE

 **LONG DISTANCE RADIO**

ZENITH RADIO CORPORATION
3620 IRON ST.
CHICAGO, ILL.

"I LIKE A SQUARE DEALING COMPANY"



This Jobber Knows His Business...Read What He Said About Sylvania Tubes

● "Jobbers have to do a selling job as well as a buying job, and I like to do business with a company that realizes this. I like to deal with men who can see my side of the case . . . who know that jobbing radio tubes is not always easy sailing, and who play square with me in good times or bad."

"That's how I look at it, and that's why I like to do business with Sylvania. They have a sales policy that makes sense to me. They've got a good tube . . . a tube dealers can recommend with confidence, and one they can make a fair profit handling."

That's one slant the Sylvania man got when he was out interviewing distributors, dealers and service men. They all agreed that they didn't run risks when they dealt with Sylvania . . . that here was a GOOD, easy-to-sell tube, one that was backed by a square dealing, owner operated company.

If you'd like to know more about Sylvania's sales policies and the real profit that goes to Sylvania dealers and distributors, complete details will be sent you on request. Write to Hygrade Sylvania Corporation, Emporium, Pa.

SYLVANIA
THE SET-TESTED RADIO TUBE

© 1935, H.S.C.

"a work we can unreservedly recommend"
 —*The Electric Journal*

"excellent and authoritative"
 —*Review of Scientific Instruments*



Electron Tubes in Industry

By **KEITH HENNEY**
 Associate Editor, *Electronics*

490 pages, 6 x 9, illustrated, \$5.00

Engineers and manufacturing executives interested in cheapening or quickening industrial processes will find in this book a thorough presentation of the practical aspects of electronics—what the electron tube is doing toward making processes simpler, cheaper, safer, and in making possible new methods of control. The book describes all the various electron tubes that are useful in industrial operations.

The book is specific; it tells what is being done with tubes in industry now and how it is being done. It indicates the possibilities of the extended use of these tubes. In all possible cases the economics of such application is discussed. The book shows how much the electron tube system costs in a given instance compared with other competing systems.

Some of the Applications of Electron Tubes discussed in this book—

- | | |
|------------------------------|------------------------------|
| Vacuum tube voltmeters | Inversion (d.c. to a.c.) |
| Automatic recorders | Rectification (a.c. to d.c.) |
| Telemetering | Welding control |
| Elevator control | Illumination control |
| Color matching | High speed counting |
| Sorting and grading | Register control |
| Door openers | Paper bag manufacture |
| Voltage and speed regulation | Traffic and train control |
| Battery charging | Smoke density control |
| Viscosity tests | Thickness control |
| Precision automatic testing | Humidity control |
| Noise measurement | Chemical analysis |
| Conveyor synchronization | |

"I think that *Electron Tubes in Industry* is by far the finest thing that has ever been written on the subject. It is especially good where it relates to specific uses of tubes. The author has weeded out the theory and put the practical application into a form that will be most useful for industrial engineers who want to apply the art to their own practical purpose."

—R. D. McDILL

See this book 10 days on approval—Send this coupon

McGraw-Hill ON-APPROVAL COUPON

McGraw-Hill Book Co., Inc., 330 West 42nd St., New York City

Send me Henney's *Electron Tubes in Industry* for 10 days' examination on approval. In 10 days I will send \$5.00, plus few cents postage and delivery, or return book postpaid. (We pay postage on orders accompanied by remittance.)

Name

Address

City and State

Position

Company F.R.R. 6-35

(Books sent on approval in U. S. and Canada only.)

A New Leader at \$37.95

The New, Fast Moving Companion of the Popular Emerson Model 6-A at \$44.95 and De Luxe Emerson Model 5-A at \$49.95

Emerson AUTO Radio

Fortified Against Spark Plugs, Road Shocks, Dust, Heat, Cold, Humidity

No Spark Plug Suppressors Required

5-Tube Superheterodyne

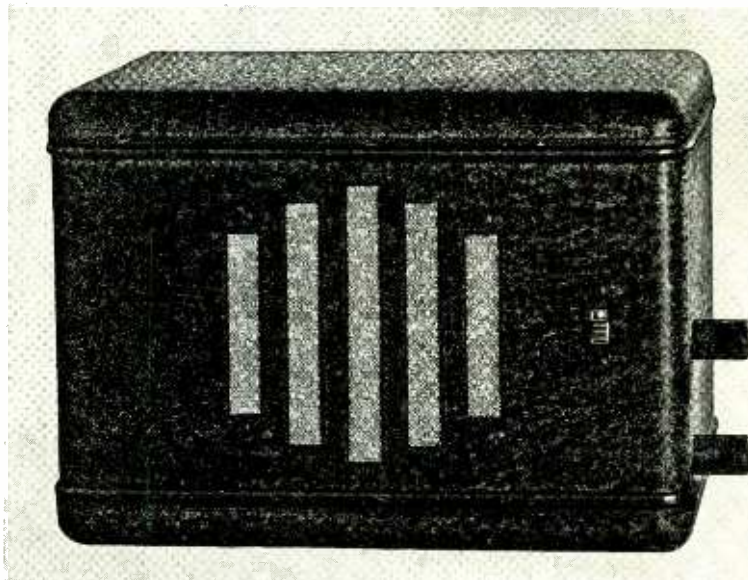
7-Tube Performance

Automatic Volume Control

Tone Control

3-Gang Condenser

Dynamic Speaker



Single-Unit Set For All Makes of Cars Including Steel Tops Easy to Install—Easy to Get At

Low Battery Drain

RCA Radiotrons



Emerson Auto Radio Model 1-A. List Price, \$37.95.

Choice of Mounting Remote Control

On Steering Post, On Instrument Panel or Beneath Instrument Panel

Special—for General Motors Cars

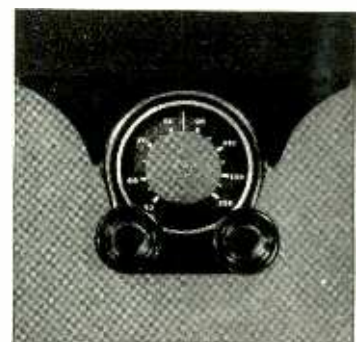
CHEVROLET • OLDSMOBILE • PONTIAC



Mounting plates for instrument panels of Ford—Plymouth—Dodge—De Soto—Chrysler cars, are available at slight extra charge.



Mounted on Face of Instrument Panel



All Emerson Auto Sets are equipped with brackets for mounting on steering post or underneath instrument panel.

New Promotions—New Advertising—New VOLUME and Profit Opportunities

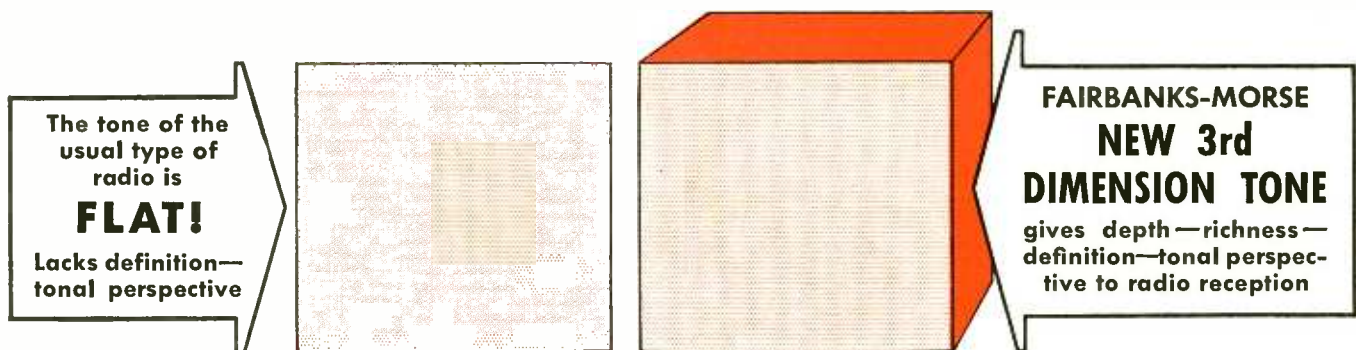
Emerson Auto Radio gives the buyer more for his money than any make on the market. Emerson sales promotion is more powerful—and there is more of it. The demand for Emerson Auto Radio is increasing every day. The Emerson proposition yields a handsome profit to distributors and dealers alike. Write, wire or phone at our expense.

EMERSON RADIO & PHONOGRAPH CORPORATION, 111 Eighth Avenue, New York, N. Y.
Emerson Line also comprises Models for every foreign market. Cable Address: EMPHONOCO, N. Y.

COMING! *The Miracle of Modern Radio!*

NEW 3RD

DIMENSION TONE



Make no commitments until you have seen the new Fairbanks-Morse line of radios...wait until you hear the most spectacular selling feature in radio history

In only a few more weeks, your leading newspapers will be breaking with the most sensational radio news of recent years. Buy nothing until you have all the facts on this revolutionary new Fairbanks-Morse radio. Investigate! Compare!

If the new Fairbanks-Morse line of radios does not offer the most dramatic selling demonstration you have ever heard!

If it does not offer superlative performance with the most superbly styled and smartly designed cabinets you have ever seen!

If it does not offer a complete line at prices that assure you a generous profit!

Don't consider it. But *don't* decide until you have the proposition of an organization which in 105 years has never failed to fill every obligation to its customers.

Wire, phone or write today for full information on the Fairbanks-Morse franchise. Address: Fairbanks-Morse Home Appliances, Inc., 430 South Green Street, Chicago.

Cable Address: FAIRMORSE, Chicago.

FAIRBANKS-MORSE



Radio

Auto Radios • Refrigerators • Washers • Ironers

RADIO RETAILING

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Consulting Editor *Managing Editor* *Assistant Editor*

HARRY PHILLIPS PAUL WOOTON
Art Director *Washington*

JUNE 1935

VOL. 20

NO. 6

A SUMMER “NATURAL”

The Small Set

FOR JULY AND AUGUST

Offer, as a special summer premium, a canvas carrying case for these little sets.

Sell a mantle model as a "companion" set to go with that new auto receiver. When the deal is closed for the motor radio follow thru with a \$20 set to take on auto trips and for hotel, camp and cottage reception.

THE TABLE MODEL — A TWO-USE SET

1. For camps and cottages, June to October.
2. For bedrooms and kitchens, November to May.

**95% OF ALL LISTENERS
ARE PROSPECTS FOR
A SECOND SET**

ALL network advertising records went by the boards last month, Columbia and N.B.C. reporting bigger billings than for any similar time in their history. And both report also, more big time June to September bookings than heretofore. There will be no let-up this summer in the quality and quantity of A-1 broadcasts.

Likewise there will be no let-up in set sales promotional activities on the part of the chain store radio outlets. Take a tip from the big operators. These astute merchandisers will feature the smaller, dual-purpose radios beginning in June. Special window trims and advertising copy is contemplated.

Why?

BECAUSE summer is the logical time to push the table models. "Buy now for your bungalow or back porch—and have a second set this winter for that bedside table or kitchen shelf." This should be the theme of your sales talk.

Here's a proposition that matches summer spending power. Keep your hand in by *promoting* the little set these next three months. Keep in touch with your radio prospects and customers—and the console business will come that much easier the minute circumstances warrant.

He Came to Service



Stayed
..... and earned a \$16

Urging servicemen to sell is like waving a red flag before a bull. They balk, prefer to stick to their tube testing and set analyzing.

Now we fully sympathize with the average repairman's aversion to sales work. After all, many *are* technicians because they have a lively distaste for the merchandising side of business. On the other hand, the hard-pressed dealer must practically insist that his repairmen at least keep on the qui vive for leads. *For the radio repairman has the most perfect entree into the home of any man in the entire appliance business.* To get there, specialty salesmen spend hours pounding pavement and pushing the doorbells of complete strangers. The business of outside selling, such men know, is half over once they get past the door.

There are radio dealers who rely *entirely* upon the efforts of servicemen for new business. If servicemen who will sell cannot be found, then, by gosh, the dealer *himself* will frequently service, so important does he consider the contacts. Obviously, no retailer can ignore this shortcut to selling. Good repairing is important, of course, but after all the sale of new merchandise is the lifeblood of business.

So we say to servicemen, knowing full well that we risk offense to some: Sell if you can and swell your earnings, make yourself invaluable to your employer. But if it simply isn't in you then for heaven's sake carefully question every service customer about appliance needs and sic a store "closer" on them.

Lead-getting is no longer an incidental part of your job. It is a major requirement.

ARMSTRONG'S STATIC CURE

Last month the daily papers, exercising their nose for news, and once again probing a little too far into the future for the radio industry's good, told the public about a new kind of set developed by Professor Armstrong. It would, they predicted, probably rid reception of static and man-made electrical interference once and for all.

They neglected to state that the "Frequency Modulation" system proposed requires: (a) re-design of transmitters, (b) entirely different receiving circuits and (c) operation in the ultra high-frequency portion of the spectrum. The system is sufficiently different to preclude the possibility of accessory "static removers" designed for use with existing sets. Furthermore operation in the vicinity of 7 meters would throw a monkey-

t o **SELL**
Refrigerator commission

wrench into the present broadcast system, particularly the chain hookup idea.

Armstrong's system has not yet been fully explained by the inventor of regeneration, super-regeneration and the super-heterodyne. Engineers who have been given some of the highlights say it has possibilities. But it is at least as far off as Television . . . which should be reassuring enough for any manufacturers, jobber or retailer of radios.

The trade will do well to forget static-less reception—also television—and peddle its papers.

LET THE TRANSITION BE ORDERLY

More and more the evidence shows that the radio industry is accepting the metal tube. Just when it will make its public bow and how extensively will be its adoption is still a matter of conjecture. At this date, however, one thing is certain, the transition from glass to metal will not be accomplished without a certain amount of sales loss in the interim and the customary number of errors in judgment and heart breaks.

Much grief and expense will be saved if the set makers use their heads and take things calmly. There is no need for every model in every 1935-36 line to be equipped with metal tubes—even should these tubes prove to have unusual merit and stamina.

The transition should be undertaken in an orderly and conservative manner. If the majority of the new sets are still equipped with glass tubes so much the better for the continuance of steady business this summer and fall.

Let the set manufacturers advertise these glass tubes sets as an up-to-date product and as offering everything that could be desired, especially in the lower price models. The metal tube set for the time being should be held to a few of the more elaborate numbers.

COLUMBIA TONES DOWN BLURBS

The action of the Columbia Broadcasting System with respect to the future character of its programs and length and nature of their advertising announcements cannot be too highly commended. Long and loud have been the protests from radio dealers and from set owners on these matters. The new Columbia policies, reported in the news pages of this issue, go a long way indeed toward correcting this situation.

This move should do much to stimulate listener interest and to make more desirable than ever the ownership of a good radio receiver.

Again we commend Columbia for its courage and farsightedness. It is a reasonable assumption that other chains and independent stations will not be long in following its example, because the weight of popular opinion and of political sentiment at Washington cannot much longer be ignored.

The Technique of Service

By J. P. Kennedy

The Fensholt Company, Chicago
An Address Delivered Before the IRSM

THE first problem of an advertising agency planning a campaign for a client is to determine how much must be spent for a given amount of business.

20c. PER CUSTOMER From investigations this company has made, it is evident that successful servicemen are spending from 5 to 10 per cent of their gross income on advertising. Successful servicemen spend about 20c. per customer. Here are 22 different ways to do it, divided into six major divisions.

CHARITY Let's start with charity and the part it plays in your advertising plans. Charity which brings you more business is a form of advertising. Charity which makes you no money is philanthropy for which you'll probably get a pass through the pearly gate. I think charity is fine but I like to make it profitable. How can charity be profitable? One of the best means of advertising you can find is the Community Fund Drive. Volunteer your services or loan an amplifier for advertising the campaign. The upper strata of society and professional men take part in these civic projects. Don't think they're big hearted, it's hard work and I've never known a man who didn't hate to go out begging for other people but it's good publicity—they get their names in the paper—they meet the right people.

As some of you know, I've worked my way up through radio service, to my present position. It wasn't by fixing radio sets. Meet people. Do things for them or talk about the things they like to talk about. That's practical charity that brings you good dividends.

PROGRAM ADS Charity can be misdirected and probably the most consistent graft radio servicemen are subjected to is advertising in church or fraternal organization programs. I've talked to many servicemen, I've tried it myself, and I have never yet found any evidence that program advertising was any aid to a radio service business.

PHONE BOOK Your telephone book is probably the best place for a sign. It is in your customers home conveniently near the telephone. There are two type of ads in a phone book. One is the simple business card type, John Jones, Radio Service and the address. The other is a display ad with an illustration, preferably of yourself or your shop and a few carefully chosen words to inspire confidence in the reader that you can take care of his needs. A telephone works 24 hours a day for you. It is good low cost advertising.

OUTSIDE SIGNS A radio shop without a sign is like a Chic Sale bungalow without a door—a very useless institution. Without doubt, Neon outside signs are the popular trend today. Surprising as it may seem to some of you, a good Neon sign can be purchased and operated for two years for a total expense of 5c. a day for depreciation and current.

WINDOW CARDS Window cards, where you have good traffic across past your store, produce fairly good results but they are far more expensive than Neon as they have to be changed frequently. A good sign drawn by a professional will cost from three to ten dollars. One you make yourself will cost about twenty dollars considering the trade it will drive away. Some manufacturers make beautiful window display signs. Get them and use them! I've visited dealer shops where \$50 worth of display material lay unpacked in their back room because they were too lazy to unpack it. I think every

manufacturer should charge for such material and refund the dealer when the dealer sends him a photograph of the window using the material.

VACANT STORES I had a bright idea a few years ago that proved the sourest advertising lemon I ever tried. I rented vacant store windows and displayed manufacturers' advertising helps and my own card. No business resulted from it and one Saturday night I stood at the curb and listened to the comments as folks walked by. They were something like this, "Gee, I didn't know Kennedy went out of business—the store is vacant."

NEWSPAPERS "The most coverage for the least money!" is the slogan of the newspapers and you certainly can reach a number of people. In cities between 2,000 and 200,000 it is fine business.

CLASSIFIED When midget sets first came out and you could sell one a day, I got the idea that these companionable little radios would be just the thing for lonely people who needed some entertainment. So I composed an ad that read like this, "Are you lonesome? Write Box Number 72 Tribune." In two days time I had the names of 261 bachelors, 91 widows, 352 old maids and about 500 dissatisfied wives. Why be lonesome? I didn't sell any midget radios—I guess they didn't want radios, they just wanted to stay lonesome. It did prove that a single classified ad would pull business of some kind so it was logical that radio ads would pull. There are two kinds of classified ads that pay. The simple or original business card announcement with a slogan or a few catchy words and the listing of special bargain merchandise, used sets, etc.

DISPLAY Display advertising, that is space outside of the classified section, is effective. The thousands of merchants who use it day after day know that they get their business that way. You can get business through display advertising but you have to be clever about your ad. It must have a good illustration. A picture of yourself is quite satisfactory if you have a good photographer make it. Don't get a "Four for a Dime" miniature and expect it to reproduce in a newspaper in a way that will do you any good.

The best form of display advertising you can do is cooperative advertising with a manufacturer. When a manufacturer of the tubes or sets you handle runs copy, tie in with it. Buy the space above or below his ad. You can tell the display advertising representative of your paper to call you before every ad by your favorite manufacturer comes up. Look over the proof of the ad and try to compose a good tie-in ad. If the manufacturer is running something like this: "Foot-ball! Is your radio ready? Replace your tubes now!" Your tie-in ad should be, "The following stations will broadcast the games. If your reception is poor call John Jones Radio Service immediately to insure perfect service from your radio." Then list the stations in your range which will handle the games.

ROTO If you're lucky enough to be in a city with roto-gravure sections in the papers and the price is right, get your picture in there with an advertisement for your service at least once a week. Action pictures command attention best. Get a snap of yourself kicking a football, climbing an aerial, or even playing golf. The roto process does not require zinc or copper engravings—they can work directly from a glossy photograph, an advantage over ordinary display.

Advertising

PUBLICITY Publicity is the best advertising you can use. Actually it is a genuine racket perpetrated upon editors by smart advertisers who thus get twice the space they pay for. Of course you must back up publicity with paid space—after all the paper can't run on its subscription income alone.

The way to get publicity is to write it yourself about yourself or your business. I have a scrap book of newspaper clippings of free publicity written while I was working my way through college, every clipping with my name on it, totalling over 200,000 words—about equal to three average novels. Was it worth while? The government thought so, they collected income taxes on the results. Can you do it? You can if you've got two fingers to hit typewriter keys.

Here's the system:—Count the number of letters in a newspaper column—ordinarily it is 35 or 36 characters per line. Type your articles, 35 or 36 characters wide, double space on clean white paper with the date and your name and address at the top of each sheet. Write in the third person, as if it were a reporter writing about you—then you can say all the nice things you wish without seeming egotistical. You're attending this convention—that's news. Send it to the editor with a good photo of yourself.

SAMPLE ITEM "John Jones of John Jones Radio Service, attended the annual convention of the Institute of Radio Servicemen in Chicago over the week end. Mr. Jones reports a number of new developments in radio which will improve radio service procedure, particularly the Cathode Ray tube which are now available to radio dealers for making scientific analysis of radio receiver distortion. With the new equipment, it is possible to improve the average radio receiver sufficiently to extend its period of service several years. Mr. Jones is one of the first to install this equipment, having ordered one of the most advanced types of Cathode Ray Oscillographs while in Chicago."

It's news—the editor has to publish the news else he wouldn't have a newspaper. The article is typed out neater than his reporter would have done it. It just fits his column size. He can send it to the printer without doing anything to it. Editors are the laziest people on the face of the earth—(Ed. Note: And advertising men!). Of course he'll send it to the printer, otherwise he'd have to write some of his own tripe to fill the space.

EDITORIALS One other spot is open for a smart radio serviceman who advertises—that is the editorial page, the page all the right people in town read. All you have to do is compliment the editor on how good a paper he has and how effective your advertising is in it and you'll get a headline on the editorial page—I don't care whether it is the Chicago Tribune or the Higginsville Gazette. Editors are too vain to pass up a compliment from one of their advertisers. Its publicity for you.

DIRECT MAIL Direct mail is effective if you mail the right people. You can pick out of your phone book, all the attorneys, the city officials, the doctors and the leading merchants as the foundation for a mailing list. Also all the customers you regularly or occasionally serve.

LETTERS Letters, if they are interesting to the person who receives them, bring business. The best I ever found was a combination of two elements. With a 69c. camera and some cheap film, I took pictures of the homes of the best people in town one nice Sunday afternoon. The letter to each read



James Kennedy, a contributor to "Radio Retailing" since 1929, first "made" our columns while manager of a radio store in South Bend, Ind. He soon struck out for himself, like the hero of a Horatio Alger, building up the most successful one-man service shop in town. He worked his way through Notre Dame and later taught night-school radio. Always possessor of a highly developed flare for publicity, Jim "graduated" to catalog make-up for Radolek, a leading Chicago mail order jobber. Today he is a radio account executive for the Fensholt Company, Chicago.

like this: "I've always admired your home, Mrs. Collins. This is a copy of a picture I recently took of it. Please call Franklin 3-2414 when your radio needs service." Those letters cost about 12c. each but they brought an average profit of \$5.

SPECIALTIES I never had much luck with jack-in-the-box devices in direct mail. Maybe it is good but who can tell without trying in his own community. It never worked for me.

MANUFACTURERS' LITERATURE Good stuff with your name imprinted on it. Virtually means that the manufacturer is endorsing you as a reliable dealer with whom he has intrusted his product.

ENVELOPE STUFFERS Blotters are the best item for envelope stuffers I have ever used. They last several weeks right near the family check book—they help collections.

NOVELTIES I tried giving away toy balloons one time and didn't do so well. Every time a kid would break his and I wouldn't give him another, he and his family were off me for life.

I once had a good gadget to give away. It was when radio was just starting and everybody tinkered with them. I gave away metal screw drivers with my name and address on them. You know the answer—give a man a screw driver and a radio set, somebody will get a repair job.

PREMIUMS Premiums are just another method of cutting price. You might as well be open about it and cut price as to give away your profits.

CIRCULARS Circulars if not made obnoxious are fair means of advertising. Frankly I think they cost too much for the good they do radio servicemen. The home delivered circular has the best chance. The woman of a house is more likely to read it than the average man. It should be directed toward her, telling that a certain program on cooking or sewing is to be broadcast and if she can't hear it to call you for service.



O ne

BILL BALLIET, Milwaukee, says cold-canvass is "the bunk"



Advertising brings in 90 per cent of this store's business

DOES it pay to cold-canvass for refrigerator business? "No!" says Bill Balliet, general manager of the Jones Appliance Corporation, Milwaukee, "it's too expensive," and "Yes!" says E. Salter, of Salters Electric Shop, Waukesha. "It's the only good check on a territory."

Just as these two dealers, both operating in Wisconsin, disagree, so do many others. The answer seems to be that . . . *one man's meat is another man's poison*. For both stores are operating successfully, despite radically different sales methods.

Let's look over their methods:

BALLIET'S firm sells 70 units in an average month, gets enough volume to be a factor in the Milwaukee area. A consistent newspaper advertising campaign is credited with 90 per cent of his business.

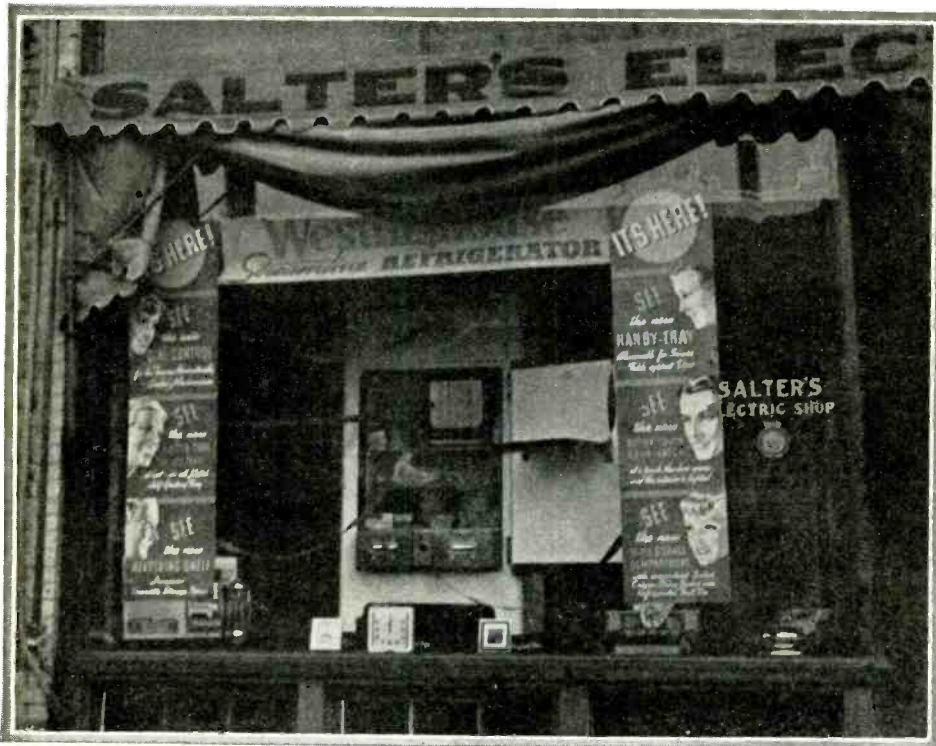
"Our advertising in local papers gets prospects into the store," says Bill, "and then our sales staff does the rest. Our record of sales on first calls is so high that we rarely bother with callbacks. Contrast this with canvassing and I think you will agree that the money spent for newspaper space saves us money in the end.

"We run a 15-inch advertisement every other day. It is usually placed in the classified section as we have found that it pulls best there. Our advertising bill runs about \$300 per month and we think it is reasonable in view of the steady flow of real prospects it brings in. Furthermore, about 50 per cent of our sales are for cash because people who are brought in by advertising are generally better equipped to plank down cash than those high-pressured on their own doorstep.

"Diversification of lines is a necessary adjunct to our type of business. We sell 75 per cent of the people who

Man's *MEAT*...

E. SALTER, Waukesha radio dealer, swears by it



One hundred calls
sell 12 refrigerators,
support this store

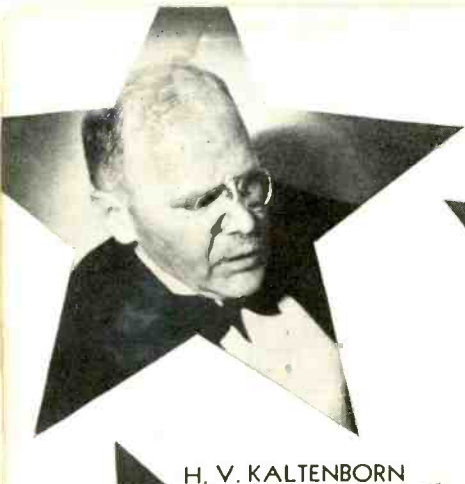
are really good prospects for appliances because we have such a diversified line that they can find something satisfactory in it without shopping around among other dealers. We handle 8 washers, 6 refrigerators, 5 ironers and a cleaner. How can we fail to please?"

NOW, let's review Salter's methods: He obtains practically all of his business by door-to-door work. But, he informs us, "It is necessary to run consistent advertising in order to make yourself familiar enough to local people to get by the door."

Salter has made a checkup of canvassing results. "Out of every 100 calls we obtain 12 sales. The advantage of cold-canvassing lies in the absolute check of our entire territory possible only by this means. Even if we dig up a refrigerator prospect who will not buy for a year

(Please turn to page 34)

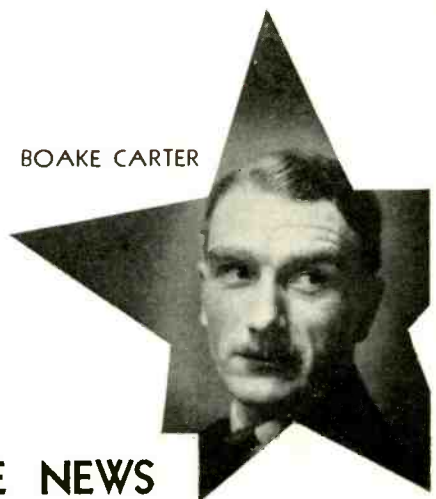




H. V. KALTENBORN

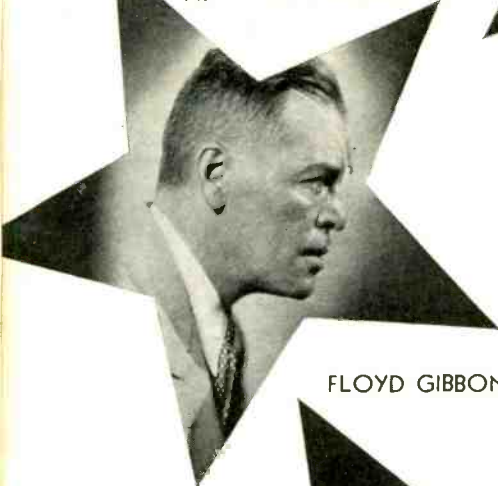


GABRIEL HEATOR



BOAKE CARTER

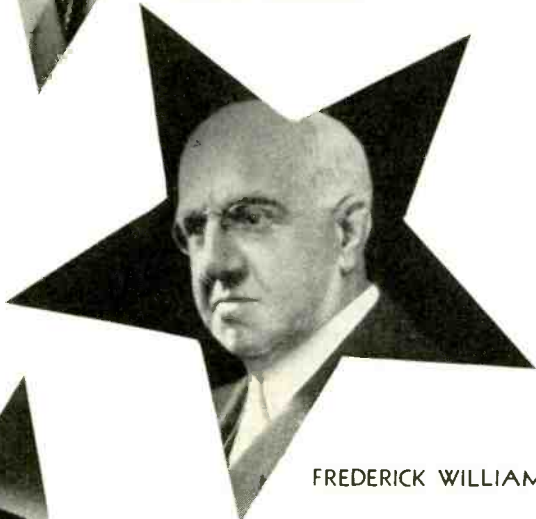
THEY DRAMATIZE THE NEWS



FLOYD GIBBONS



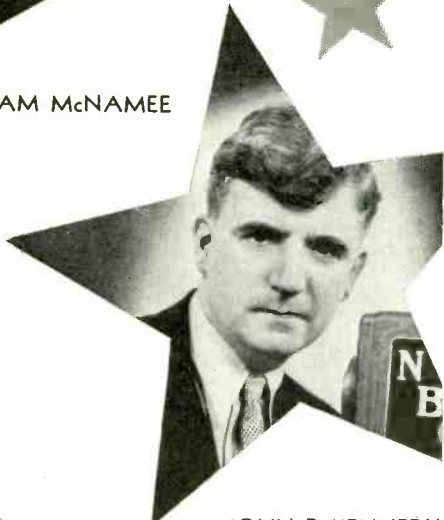
LOWELL THOMAS



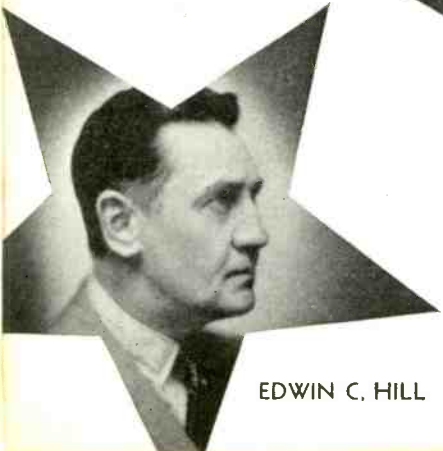
FREDERICK WILLIAM WILE



GRAHAM McNAMEE



JOHN B. KENNEDY



EDWIN C. HILL

Broadcasters

BETTER NEWS SERVICE FOR LISTENERS

SLOWLY but surely the radio is taking over the functions of the newspaper headline. Listeners are coming to demand radio "news flashes"—frequent and adequate—telling about the events of the big world outside.

It is not surprising then to find that the Press-Radio agreement, entered into a year ago, for the purpose of giving radio listeners two belated five-minute installments of news already on the newsstands, is now recognized to be totally inadequate. The Press-Radio news bureau is still operating under the agreement, but two of the important news-gathering agencies on the publishers' side have now announced that they are ready to sell adequate news service to radio stations and advertisers. The Hearst International News service and the Scripps-Howard United Press are thus offering news for broadcasting. The Hearst group furnish their customers with regular news releases; the Scripps-Howard service supplies news continuities specially re-written by local staff men. Meanwhile, the Associated Press is allowing its newspaper members which own broadcast stations to use A.P. bulletins freely for broadcasting.

For a year or more an independent news-gathering organization has also been operating, set-up especially to



WILL HE MAKE IT?

Amateurs take their rare chance at a microphone seriously, as witness the anonymous performer (center) photographed while auditioning for the "National Amateur Night" broadcast. Ray Perkins (left), master-of-ceremonies, apparently is trying to help him reach high G, while Arnold Johnson, conductor, has dropped his baton to listen.

Everyone in radio is wondering what will take the place of the amateur hours when they peter out.

Battle on Many Fronts

furnish adequate news dispatches to radio stations. This is the Trans-Radio Press Service, Inc., headed by Herbert Moore, and tied in with important European news services. Its news periods have been much more complete than the Press-Radio 5-minute snacks, and it has had the distinction of delivering correct reports in the face of the "boners" pulled by Press-Radio in three famous news breaks—the Hauptmann verdict, the Gold Clause decision and the Macon disaster.

And now Trans-Radio has filed suit for \$1,100,000 damages against the American Newspaper Publishers Association charging that the three press associations and the national radio networks are conspiring to monopolize news broadcasting, in violation of the anti-trust laws and the Federal Communication Commission act.

The plaintiffs not only charge violation of the Sherman and Clayton Anti-trust Laws, but appeal for relief under provisions of the Federal Communications Act in the first action of this kind to be instituted.

The defendants are The Associated Press, Inc., United Press Association, Inc., International News Service, Inc., the American Newspaper Publishers Association, Inc., Columbia Broadcasting System, Inc., and the National Broadcasting Company.

But all of these recent moves show that both broadcasters and publishers recognize that the public wants news over the air. Evidently there is going to be more such news, and adequate news service. The listener's home receiver will be the "front-page" of the future!

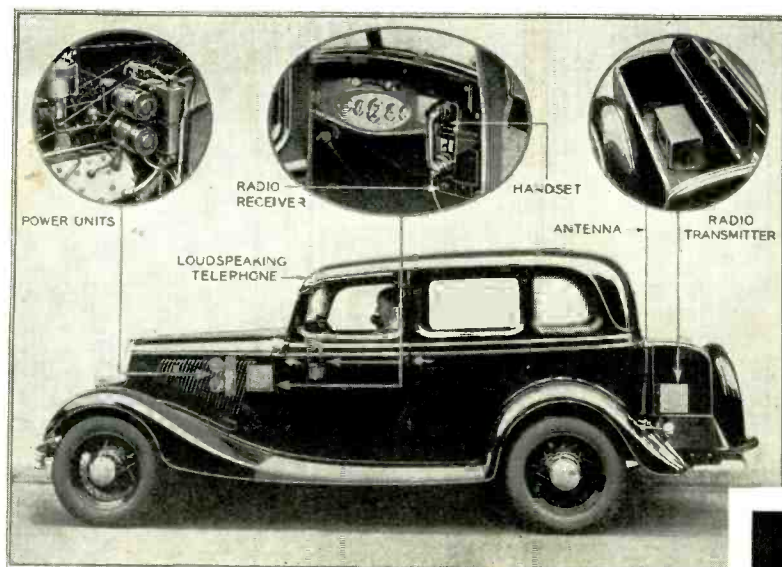
BROADCASTERS MUST WATCH THEIR STEP

In a recent radio speech, Anning S. Prall, chairman of the Federal Communications Commission, told the broadcasters that they would have to exert a great deal more care regarding what material went out on the air, and whether it was such as would be acceptable in the average home circle. Apparently Chairman Prall is out to insist that the canons of good taste and good sense be met in the broadcasts which go into the home.

And on May 21, backing up its warning with definite action, the Federal Communications Commission summoned twenty-one radio stations to show cause on Oct. 3, to prove that their continued operation will be in the public interest. The stations cited to defend their rights to renewal of their broadcasting licenses are: KNX, Los Angeles; WBAP, Fort Worth; WGAR, Cleveland; WBAL, Baltimore; WGR, Buffalo; WHEC, Rochester; WHO, Des Moines; WIOD, Miami; WIND, Gary, Ind.; WIRE, Indianapolis; WJAS, Pittsburgh; WJJD, Chicago; WJR, Detroit; WKBW, Buffalo; WOW, Omaha; WOWO, Fort Wayne; WSMB, New Orleans; WTMJ, Milwaukee; KKRC, San Francisco; FMBC, Kansas City; KNOX, St. Louis.

It is understood that these stations broadcast advertis-

(Please turn to page 34)



SUMMER HAS COME!



It Works Both Ways

This latest development in police communication makes practical two-way conversations. The Bell Tel. Laboratories outfit above operates on ultra-high frequency channels with a power of 5 watts. To talk from car the cop simply lifts the telephone from its holder. Now being installed in Evansville, Ind. and Nashville, Tenn.

Radio Follows the Circus



"Funny Felix," King of Clowns—also head producing clown (whatever that means)—for Ringling Bros. and Barnum & Bailey — listens to the wise cracks of a radio comedian.

Portugal President Praises Pilot

During the recent radio show in Lisbon, His Excellency, Gen. Carmona, paid a visit to the Cardoso Co., agents for Pilot all-wave sets. The General depends largely upon short wave from European countries and the U. S. to keep him in touch with international developments.



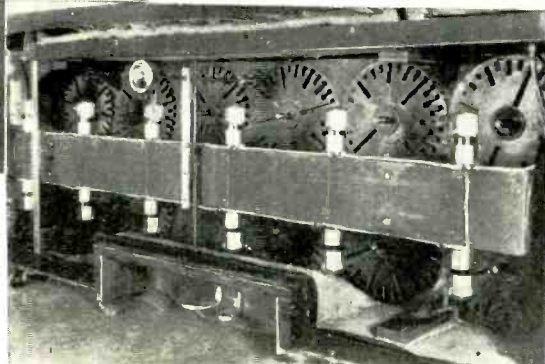
"Cincy" and Her "Pup"

"Cincy," mascot of Powel Crosley's Cincinnati Reds, gives the box scores the once over. "I use and recommend the Crosley "Pup"—a darn doggy set," she says. Jim Bottomley, first base, and Chick Hafey, center field, make the assist.



Photona

Leonard MacClain at the console of the "Photona," the new musical instrument recently invented and constructed for WCAU, Philadelphia.

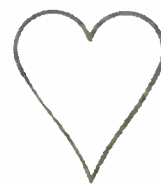


Front view showing the tone-shutter discs in detail. These discs revolve, the light beams flash through the shutters to the photo-electric cell and produce the tones

Sit Up and Take Notice

Two of Tobe's puppy Dachshunds tune in on der Vaterland on a "Browning-35." Deutschmann claims title to being the greatest fancier of this breed in the industry. Now has eight of these elongated pieces of affection personified.

BRIDGE for BUYERS



More than 1,500 women per month take advantage of the Powers Furniture Company's offer of a free room

A Novel Way to Introduce HIGH FIDELITY Radio to Consumers "en masse"



MORE than one hundred women playing bridge . . . minds concentrated. Then—from somewhere—so faintly at first that it's like a sweet fragrance, comes the nicest music imaginable, first from far away . . . now closer . . . closer.

Tense brows relax. The players pause to discover the source of this music, which grows in volume until it would seem that rarely gifted musicians were right in the room.

Slowly, dense black curtains at the extreme end of the room are parted, and behold! Within a brilliantly spotlighted circle, flanked by stately torchiere lamps, is a new de luxe radio model giving a performance such as they had never heard.

The locale is the bridge party room of the Powers Furniture Co., Portland, Oregon, where every day a different women's club has free use of the room for a bridge party for which they may charge admission, if they wish, and keep the entire amount thus earned.

As they pause in their game, the store's hostess and home economist, Helen Kerr, explains about the new, hitherto unattainable, high tone range. Then the game goes on.

In a single day from 40 to 120 women hear such a

concert, which is an original broadcast of Powers, by means of phonograph recordings. More than 1,500 women are thus entertained monthly, as a result of which this new high-powered, ten-tube set is enjoying active selling, despite its high price.

The fact that the Powers Furniture Co. supplies door prizes, and also a delicious dessert luncheon for each of these events, makes the opportunity for the dramatic introduction of a new radio a happy one. During the year or more that these parties have been an institutional feature, business in all lines has shown a marked increase.

The segregation of a valuable piece of selling space on their third floor sales room for the exclusive use of these bridge parties is one of the most important phases of the public relations work which this store now performs as a means of increasing the regular amount of store traffic.

Another important phase of the work, also conducted by Miss Kerr, is a once weekly "Homemaking School." This school is attended by more than sixty members, one from each of the different clubs that play bridge during the year. Miss Kerr also prepares a series of articles for leading community newspapers, wherein topic matter similar to that brought up at the school is handled.



REX L. MUNGER of **LEW BONN** (St. Paul) says he publishes one catalog.

This is sent out to 15,000 amateurs listed in the Call Book, dealers, servicemen, industrial accounts, universities, schools, institutions and experimenters.

Covers northwestern Illinois, Wisconsin, upper Michigan, Minnesota, Iowa, Nebraska, North and South Dakota, Wyoming, Montana, part of Idaho and western Canada.

Quotes some items at list, some at net and some on "divide by two" system.



MORRIS H. WILLIS and **A. F. HORTON** of **SPOKANE** (Left to Right) put out one catalog per season.

They send it to 4,000 dealers, servicemen and licensed amateurs.

Circulation is confined to Washington, Oregon, Idaho, Montana, Utah, Wyoming and Alaska, where salesmen are also traveled.

Re-sale items such as replacement parts are quoted at list and net, testing equipment and amateur equipment at net.

Stocks between 7,000 and 8,000 items.



C. A. ANDERSON of **INTER-STATE** (Denver) says he has just one catalog each year.

It is sent to 12,500 dealers, servicemen and amateurs.

States included are Colorado, Wyoming, New Mexico, Kansas, Nebraska, Utah, Idaho, Montana, Arizona and Texas.

All items are shown at list and a net price index is included.

About 5,000 distinct items are shown in the last catalog and an even greater variety is sometimes stocked.



SAM ROTH of **FEDERATED** (New York) advises that he publishes two catalogs per year.

Both are mailed to 60,000 dealers, servicemen, amateurs and laboratory engineers.

Mailings go to every state in the Union.

Catalogs quote net prices on parts and set circulars quote list. A small pocket-size catalog released a year ago quoted list only.

More than 15,000 separate items are offered.

Mail-Order

MEN

*FACES And FACTS
Behind Their Catalogs*

W. C. BRAUN of RADOLEK (Chicago) informs us that he makes up one complete catalog and several supplements annually.

These are mailed to 25,000 radio dealers, servicemen, manufacturers, a few government and educational institutions and others connected with the industry and legitimately entitled to a discount.

Catalog circulation is confined to 500 mile radius of Chicago and only a few customers are beyond this distance.

The general catalog quotes both list and wholesale prices while the supplements quote list only.

There are about 8,000 items in the general catalog.



ROBERT M. SMITH of **RADIO LABORATORIES** (Kansas City) makes up one catalog and a number of flyers. Also an amateur "bargain bulletin."

A mailing list of 50,000 names is maintained. This includes 25,000 servicemen, radio dealers, amateurs, schools and research laboratories.

These are located in Missouri, Texas, Kansas, Iowa, Colorado, Nebraska, Oklahoma, South Dakota and Arkansas.

The general catalog quotes prices at list. A sheet, which may be torn out, gives net prices.

Data relative to the number of catalogs prepared, customer classification and methods of pricing supplied by jobbers quoted.

Radio Retailing, June, 1935

HOW GREEN BAY, WISCONSIN IS SOLVING THE NOISE PROBLEM

With the movement now afoot for reduction of electrical disturbance, the success of such efforts in Green Bay, Wisconsin, is particularly interesting. This city passed an ordinance several years ago prohibiting unnecessary electrical interference. Now the city electrician spends much of his time investigating complaints. He finds that ignorance by the owner of the equipment producing interference is usually the real cause of trouble.

The local merchants are cooperating whole heartedly by not handling merchandise which will produce interference. All locally owned stores are cooperating.

In one complaint it was found that the complainant had six sources of interference in his own house. This led to a plan whereby the complainant, who was a particularly enthusiastic radio listener, called on every house in the block and obtained a signature on a promise to (1) eliminate all sources of interference in his own house and (2) enter formal complaint against anyone in the block who did not comply with the first point.

This plan has much merit since the range of most interference is so small that it is a neighborhood problem. One willing resident of the neighborhood can usually be found to spend the time to call on everyone in the block. Further, the residents of one block are usually a financially homogeneous group which can live up to a rule which might pinch too hard if applied to an entire city.

NOVEL "PURCHASE INSURANCE" CLUB

May-Stern & Company, Cincinnati, the Crosley distributor for that area, has an interesting radio club idea which is helping to swell dealer sales. All customers who keep their accounts paid up to date are eligible. Members are entitled to 10 privileges, covered by the distributor. These are:

1. In event of death, unpaid balance is canceled; the radio becomes the property of the heirs.
2. If the radio is destroyed by fire, unpaid balance is canceled.
3. Instant replacement of radio if damaged by any electrical disturbance while in the home, within one year of purchase.
4. Privilege to exchange for any other radio within thirty days.
5. Member's tubes will be meter-tested in the store any time within a year from purchase without charge.
6. Radio is fully guaranteed for a year against all defective parts and workmanship. (Except tubes.)
7. Membership in May-Stern's Honor-Roll Club.
8. Tubes guaranteed for 90 days for club members.
9. Radio installed in home and attached to aerial.
10. Ninety days' free service on any radio purchased.

Some of these items are quite usual in the radio business. Others involve some risk. According to Martin Mandelker, general manager, these risks are worth taking to insure prompt payments. The certificate issued to each member is not transferable and is void if the customer falls behind on payments.

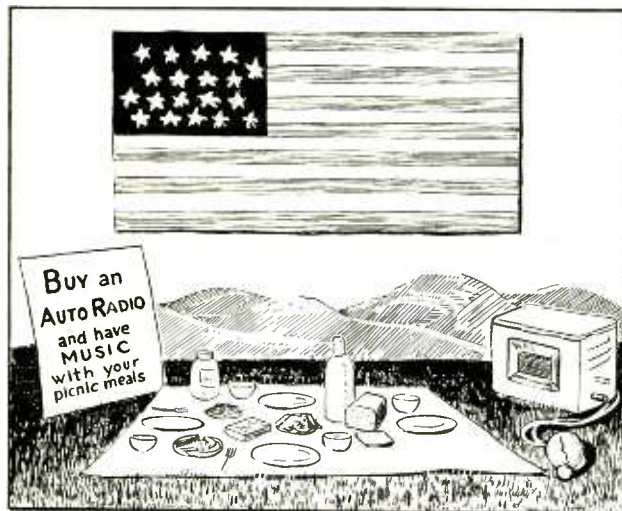
Keep in TRIM



A SET FOR THE NEWLYWEDS

TIMELINESS is a very important factor in drawing attention to your sales trim. Those who pass windows trimmed to match the season or commemorate a national holiday are already in a receptive mood. Their minds have been prepared for your message by concurrent publicity or conversations of like nature.

So trim your windows this month and next in keeping with the trend of events and cash in on a popular interest which has already been created for you.



WAVE THE AMERICAN FLAG

LAST YEAR TUTTLE Brothers, Westfield, N. J., doubled its customary June business because of this *timely* "Rice and Old Shoes" window trim. A brand new radio as the ideal gift for Mr. and Mrs. Newlywed was the central theme. Silver paper lettering, a snow white wedding bell, crepe festoons and a background of light blue provided the necessary atmosphere. Newspaper clippings, picturing local brides, engagement and wedding announcements, and artificial orange blossoms here and there, completed the picture.

HERE'S A MOTOR CAR RADIO SUMMER trim that sold sets for Miller's Radio Shop, Red Bank, N. J. The flag is made of crepe paper. Leave a little play so that the flag will wave realistically when a small fan behind it is turned on. The grass mat in the foreground, with its array of picnic accessories, gives the final touch.

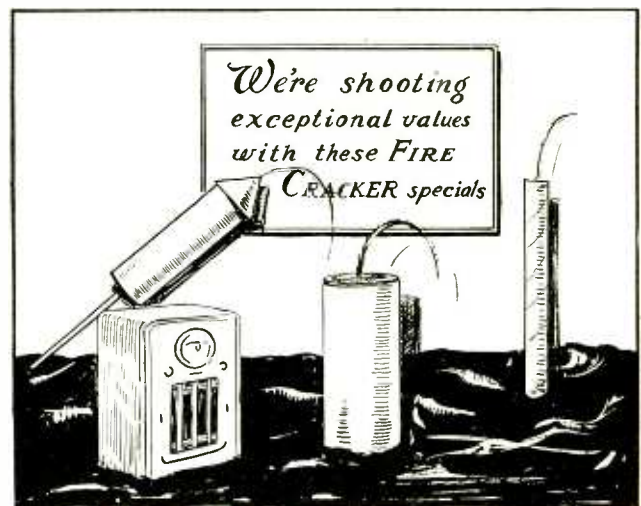
"WE'RE SHOOTING EXCEPTIONAL VALUES with these fire cracker specials. Buy before radio prices

skyrocket again," read the sign in the window of Baker Brothers, Newark, N. J., last "Fourth." The giant skyrocket, roman candle and fire cracker are made with cardboard, covered with colored paper. The fuse is a piece of small rope. "This display certainly pepped up our summer business," states Mr. Baker.

YOUR DISPLAY WINDOW IS YOUR CARD of introduction to the public. It represents at least fifty per cent of the value of your location. Use it effectively or its greatest benefits are lost.

It is agreed that there are four primary factors which constitute a good show window: attention, interest, desire and action. Preferably all four should be incorporated in the one trim. However, this is not essential, especially if a window is built around one central idea as is the case in the illustrated trims. Too many dealers neglect one or more of the four factors for the sake of beauty in the trim. An attractive window is desirable—but not at the expense of "pulling power." And keep the window simple. People should be able to get the story as they pass by.

The three sketches on this page suggest trims whose attention value is secured because of their timeliness.



FIRE WORKS SPECIALS FOR THE 4TH

NEWS OF THE MONTH

Convention to Promote New Products—Cabaret Dinner June 12

New technical developments in radio and national trade promotion will be major topics of the RMA Eleventh Annual Convention at the Stevens Hotel, Chicago, June 11-12.

Final plans for this affair were made at Chicago two weeks ago.

An "RMA Cabaret" Dinner for Association members and guests will be a unique closing feature on the evening of June 12. There will be a radio golf tournament on the following day, at the Calumet Country Club.

A large attendance at the June Convention of the RMA is expected, especially because of the many problems in connection with new radio products which are of much present interest in the industry and the trade. Manufacturers will discuss plans for merchandising and national trade promotion by the RMA on a wide scale.

The RMA membership will also elect a president, directors and other officers of the Association.

The "Cabaret" will be staged in the Tower Ball Room of the Stevens. A dance orchestra and excellent night-club entertainers have been engaged. A cocktail party will precede the dinner and floor program. The invited guests will include ladies and there will be dancing following the floor program. The master of ceremonies and toastmaster will be Paul B. Klugh of Chicago. The entertainment committee in charge of the "RMA Cabaret" is headed by Al. S. Wells and Paul Galvin of Chicago.

**RMA Convention
June 11-12, Chicago
Will be reported in full detail
in next month's issue.**

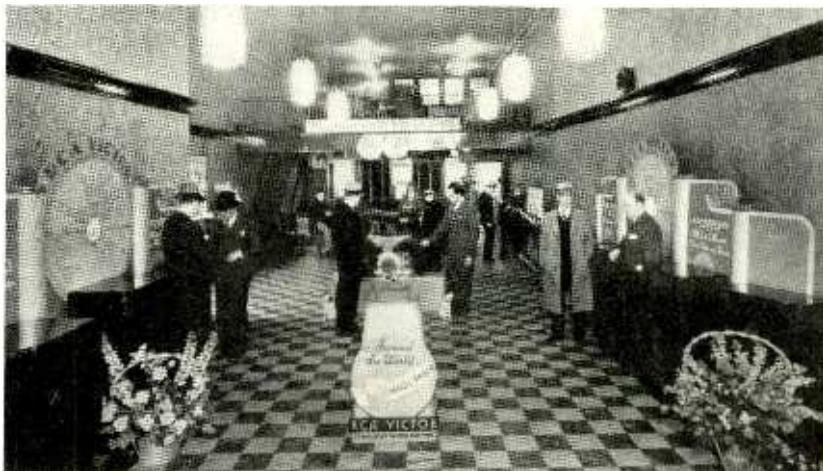
Sherwood Made GSM for Cardwell

Charles M. Sherwood has been appointed general sales manager of the Allen D. Cardwell Mfg. Corp., pioneer radio condenser manufacturer, of Brooklyn, N. Y. For six and a half years, Mr. Sherwood was eastern sales manager of F. A. D. Andrea Co.

Triplett Plans New Factory

Construction of a new factory with 17,000 sq.ft. of floor space is now under way for the Triplett Electrical Instrument Co., Bluffton, Ohio. Employment has been given to over 300 persons by this firm during all the depression years.

Triplett now stands, it is stated, as the world's second largest manufacturer of moving coil electrical testing instruments.



New Quarters of RCA-Victor Distributing Corp., Buffalo

Here are the new headquarters of the RCA-Victor Dist. Corp., in Buffalo, N. Y. Modern as today's college class, neat as a pin—and fitted with every convenience for quick service. Well might the local trade congratulate manager H. P. Fillmore on a good job well done. Note, on the right wall, one of the loud speakers, a part of the P. A. store communication system.

"Open House" at the new address, 769 Main Street, was celebrated the forepart of last month, over 400 dealers partaking of "Fill's" good cheer.

This store, while strictly a jobbing out-

let ("the only exclusively radio wholesaler in western New York"), might well serve as a model for a retail establishment.

In the rear is a "record bar" where customers may play the latest recordings. The sound emerges either from a speaker over the counter or, at a flip of the switch, from one or all of the radio sets on the floor. Here's how its done: "Fill" tapped one of the new RCA phonograph oscillators (No. 9554) onto the common antenna circuit. The record pick-up feeds its signal into this antenna the same as a broadcast signal.

Sprague Electric Now Distributor for Fada in Conn.

The Sprague Electrical Supply Company, with main office in Waterbury, Conn., and branch in Bridgeport, is now representing the Fada Radio and Electric Company in the territory served by these centers. A complete line of stock and fully equipped service departments will be maintained at both places. Fada dealers are requested to get in touch with this well known New England firm as prices and deliveries will be fully commensurate with those enjoyed under the prior direct-to-factory arrangement.

Schneiderhahn Goes Zenith

The A. A. Schneiderhahn Co., Des Moines, announces in a poster sheet-size mailing piece that in the future it will distribute the entire Zenith line of radio products.

Giving as the reason the fact that its midwest dealers expect aggressive leadership on the part of their distributor, "we have concluded to discontinue our representation of the radio line with which we

have been associated for nine years."

This relationship has been terminated with the friendliest of feelings on both sides, we understand. President A. A. Schneiderhahn announces that within a few days its complete 1936 program for the promotion of Zenith sets will be released.

Federal Trade Comm. Clamps Down

Unfair competition in the sale of radio receiving sets is alleged by the Federal Trade Commission in a complaint issued against Harry G. Cisin, of New York City, trading as Allied Engineering Institute.

Cisin is charged with advertising an "All Wave Air Scout Sensationally Priced" radio set at "\$8.50 complete, ready to use with two coils, ear-phone and tubes," when in fact the sets are not all-wave nor sensationally priced.

One of the most alert distributing agencies in the South, Tuten & Long, of Savannah, has arranged to handle Sparton electric refrigerators in that part of the south-land for the Sparks-Withington Company, of Jackson, Mich.

ATWATER KENT FALL LINE TO FEATURE METAL TUBES

Jobbers Convening at Atlantic City Vote Overwhelmingly For This Feature—High Fidelity Models Also Shown—Liberal Dealer Financing Service Available

Atwater-Kent jobbers, attending the company's tenth annual convention at Atlantic City, June 2 and 3, voted almost unanimously for the incorporation of metal tubes in the Philadelphia manufacturer's forthcoming line, were pleased to see six models unveiled at the Ambassador Hotel already equipped with them.

It was stated in open meeting that the dealers want these new tubes, consider them the "hottest" popular feature available for fall promotion. Further, that three big chain retailers plan to feature metal tubes in their fall advertising.

The higher priced models exhibited were equipped with the new type tubes while glass types were retained in the lower priced numbers. Even these, it was inferred, would eventually be designed around the "hard-shelled" tubes when there was good assurance that such tubes

would be available in sufficient quantity to guarantee against production holdups.

Several high-fidelity receivers provided with band width controls permitting selection of the best quality permissible under existing broadcast and electrical noise conditions were simultaneously offered.

The meeting, which included practically every Atwater-Kent jobber, was also pleased to hear the news that the "A-K Hour" of chain broadcasting, promotion of which did much to popularize the brand, would be reinstated this fall with a glittering array of talent.

A feature of the second day was the announcement of plans, in cooperation with the Commercial Investment Trust Corporation, for financing dealer radio paper on unit sales of \$50 or over. Finance charges and other terms will be on an unusually liberal basis.

Time Out For Fresh Air



Snapped on the Boardwalk at the A-K Convention, Atlantic City—H. A. Hosmer, Cambria Equipment Co., Johnstown, Pa., and his little boy James. "H. A." has wholesaled Mr. Kent's radio sets for well on to eleven years.

METAL TUBES IN PRODUCTION

NEWTON, MASS., June 3.—"We are pleased to announce that we are now manufacturing the new type metal tubes. We will be glad to fill orders in reasonable quantities for experimental purposes at \$1 per tube." . . . Raytheon Production Corporation.

Editorial investigation discloses that commercial production of eagerly awaited metal tubes does not necessarily await the delivery of special GE type welding machinery. At least two tube makers, other than RCA, are already turning out samples, using existing equipment and welders obtained on the open market. One promises sufficient production to supply small set makers by July 15. Another guarantees quantity shipments by September, while "The Corporation" has not yet made definite committals.

Small set manufacturers will, we gather have little difficulty equipping their fall lines exclusively with the new "Iron Bottles." Makers with severe production requirements will evidently have to eke out their supply at the outset. With almost the entire tube industry running itself ragged to produce quickly their seems little likelihood that there will be any prolonged shortage.

Set makers everywhere are seen feverishly changing half-completed circuit designs to use the new tubes. But re-design takes time. So, despite promises of early delivery by the tube makers, it appears unlikely that the retail trade will see many sets so equipped before early fall.

Prices are still a mystery. Small producers ready to go and fairly certain of their costs are, evidently, waiting to see how much the "big fellow" will ask.



Also W. L. Coutts, Salt Lake City, and his pal Dick Russell, of Associated Wholesale Electric, Los Angeles. "My average net billing to dealers last year was \$41.15 per set," declares Mr. Coutts. Is this a high record or is it not? Challenges accepted.

Unusually Well Arranged "Radio Corner"



Showing excellent handling of radio department in The Home Store, Dayton, Ohio. A phonographic attachment and special record enables the "Magic Dial" set to tell its own story—including the lure of short wave

Leo Freed in Larger Quarters

Leo Freed, well known New York radio representative, has been forced, by the pressure of volume sales to move to better quarters. Leo may now be reached at 145 W. 45th Street. He handles Gavitt, Ken-Rad, Muter and Operadio products.

A revised edition of "World Short Wave Radiophone. Transmitters" has been released by the Bureau of Foreign and Domestic Commerce, Dept. of Commerce, Washington, D. C., and may be obtained by sending 25c to that address. It lists all the short wave "voice" stations, shows distance ranges of radio waves, international call letters, foreign language alphabets. In other words it contains just about everything a short wave fan would want. 137 pages.

NEWS of the STATIONS

Recent changes in the official set-up of the Federal Communications Commission at Washington, suggest that important revisions in the national radio structure are also contemplated. From such re-allocations, the present radio groups which have rendered yeoman service to broadcasting, may be expected to be less well off than before. New names and new call-letters will probably be appearing on the call-lists. And while all this is taking place, grievous technical injuries may be wrought by officials who have no understanding of radio principles, but very keen appreciation of political horse-trading.

The next few months, therefore, may become a critical time for radio-engineering principles.

The summer of 1935 promises to be a most active one—not only from the viewpoint of future bookings which at this date are up approximately 25 per cent over 1934—but from that of outstanding programs scheduled to continue right through the hot months. To date, 60 NBC sponsors have signed up on an all-summer schedule.

Network rivalry continues as spiritedly as ever. CBS did some justifiable crowing over its exclusive capture of this year's Kentucky Derby—now, for the first time, commercially sponsored. NBC countered, however, with the exclusive broadcasting rights of the Baer-Braddock fight in June—also to be aired under advertising auspices.

The National Broadcasting Company announces the opening of the NBC Artist Bureau offices in Hollywood, where a closer affiliation will be made with the motion picture industry.

Station WJR, Detroit, will become an outlet of the Columbia Broadcasting System on September 29. Known as "The Goodwill Station," WJR operates on a wavelength of 750 kilocycles, 10,000 watts. On joining Columbia, WJR will replace CKLW as the CBS outlet in the Detroit area.

A new radio series devoted to soft and melodious music, presented by an orchestra with a predominance of string instruments, is now on the air over the Columbia network from Mondays to Fridays inclusive, from 7:00 to 7:15 p.m., EDST. It is entitled "Just Entertainment."

Editor's Note: This should be a fine demonstration program to tune in on.

World heavyweight champion Max Baer has returned to the air in the rôle of a private detective with a wallop in a new series of dramatic programs inaugurated over an NBC-WEAF coast-to-coast network on Mondays, at 10:30 p.m., EDST.

Television in France

The Minister of Posts and Telegraphs, France, has announced that regular broadcasting of television pictures will begin approximately June first. These "emissions" will first be made on 175 meters at the rate of 25 images per second, 90 horizontal

lines per image. This is expected to give as good pictures as either the English or German systems. However, the French method will be further improved, in about three months, by increasing the scanning rate to 180 lines. Sending apparatus has been installed on top of the Eiffel Tower.

JVH, Japan, to be Heard in America Daily

A daily short-wave broadcast from Japan, devoted to news and cultural programs, will be inaugurated by the Japan Radio Broadcasting Association for American listeners, according to information revealed by the Consulate General of Japan in New York.

The broadcast will last one hour beginning at 10:30 a.m. on June 1st (9:30 P.M. on May 31st by New York daylight saving time) and daily thereafter at the same hour.

For the broadcast, the transmitter (JVH) with a power of 20 kilowatts at the Nazaki Station of the International Telephone Company will be operated on a frequency of 14,600 kilocycles (10,660 or 7,510 kilocycles under certain circumstances).

IRE at Detroit, July 1-3

The Tenth Annual Convention of the Institute of Radio Engineers will be held at the Hotel Statler, Detroit, Mich., July 1, 2 and 3. Six technical sessions will occupy most of the time. Shopping and sight-seeing tours for the ladies and a banquet Tuesday evening will afford the necessary relaxation. Never have so many recognized technical experts appeared on an IRE program as are this year scheduled. Practically every angle of the applications of the Electronic Arts will be covered.

Cleveland's Service Men Organize

With a charter membership of thirty-five, the Radio Technicians Association, Inc. is now under full momentum in Cleveland, Ohio. Since the granting of its charter, April 13, applications from more than 100 service men have been received. Each

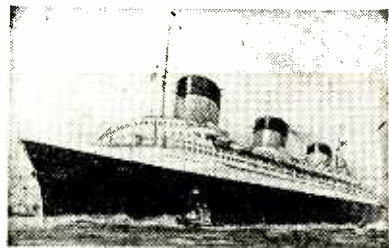
New Managing Editor for "Radio Retailing"

If the masthead of this issue is examined it will be noted that W. W. MacDonald has "graduated" to Managing Editor.

Successively amateur, serviceman, dealer, manufacturer's field contact man, jobber's salesman, Assistant Editor of *Electrical Merchandising* and more recently *Radio Retailing's* Technical Editor, "Mac" brings to his new job a practical knowledge of the industry's problems, both sales and service.

He has been with the McGraw-Hill Publishing Company since 1926, with "time out" for a two-year sojourn in South America.

Radio Goods on Normandie's Bill of Lading No. 1



"Bill of Lading No. 1, Voyage 1, East-bound S. S. Normandie. Held by M. Simons and Son Company, Inc. of New York," reads the document which, no doubt, will be treasured in the archives of this progressive exporter of radio products.

In this shipment will be radio apparatus for Paris made by the following companies: Pioneer Gen-E-Motor; Electrical Apparatus Corporation; Oak Manufacturing Co.; Clarostat and Continental Carbon.

member must sign a contract that he will live up to the Association's rules and abide by a vote of the majority on all decisions of policy. He must also qualify as an A-1 service man.

Elmer Myers is chairman, and J. Robinson, secretary. Address all communications to Mr. Robinson, 1385 West Boulevard, Cleveland, Ohio.

Higher Prices on Emerson Auto Sets

The Emerson Radio & Phonograph Corp., New York City, has established new prices, based on the number of operating tubes in its motor car receivers. Effective May 10, Model 6-A, formerly listed at \$39.95, was priced at \$44.95 retail. Model 5-A, formerly \$44.50, now sells for \$49.95. The new Emerson models are so designed as to make spark plug suppressors unnecessary and are especially fortified against road shocks, dust, heat, cold and humidity.

Milwaukee Dealers Expand Facilities

At a recent meeting of the Wisconsin Radio, Refrigeration and Appliance Association, former president William Seemuth outlined the present set-up of his remodeled store and service plan. Sales and service are entirely divorced under this new arrangement. The 60 members were invited to visit and inspect this store as well as that of the Atlas Radio, Inc., which, according to Sam Shapiro, president, will shortly be greatly enlarged.

Milhender Gets Fada

Joseph Milhender, well known radio distributor operating in the Boston area, has just received his initial stock of "Fada" radio receivers, will have exclusive wholesale rights on this line in eastern Massachusetts and New Hampshire.

Milhender travels ten men in his territory, is now set up to render service both on new "Fada" equipment and sets sold in the past.

Waldorf-Astoria Hotel to Have Largest All-Wave Receiving System in the World



By far the largest all-wave radio receiving system in the world will become a reality at the Waldorf-Astoria Hotel, New York City, when the already elaborate radio system, which the hotel has operated since its opening, is further augmented by short-wave receiving equipment now rapidly nearing completion.

The Waldorf is the first hotel in the country to add short-wave broadcasts to its radio service which is available in 2,000 private rooms and all public rooms.

The new equipment, perfected by the Western Electric Company, will pick up such giant short-wave stations as those in

London, Paris, Berlin, Moscow and Tokio, as well as in Australia, South America and Africa. Broadcasts by police, aviation, government and amateur stations can also be picked up.

The antenna system between the lofty towers of the Waldorf, 660 feet above street level, is here shown. The uppermost strands, including the lead-in wires, comprise the antenna for the new short-wave receiving equipment—three doublets of different length.

The radio and distribution panels for this system comprise an assembly 50 feet long.

COLUMBIA INSTITUTES PROGRAM REFORMS—LIMITS ANNOUNCEMENTS

The Columbia Broadcasting system announces that restrictions on the amount of advertising time in commercial programs will be made beginning July 30. The company also states that no contracts would be made with advertisers of laxatives, deodorants, depilatories and other such articles. A third new policy will be to limit programs for children to a standard, set by "an eminent child psychologist," and an advisory board, which will be acceptable to parents, educators and children alike.

Under the new plan for advertising, commercial announcements, including contests, premium offers and other types of sales promotion material, will be allowed 10 per cent of the total scheduled time of the program, after 6 p.m. During the day, 15 per cent will be allowed.

On the ban on medicines the company took the following stand:

"The Columbia Broadcasting System has concluded, after serious consideration, to permit no broadcasting for any product which describes graphically or repellantly any internal bodily functions, symptomatic results of internal disturbances, or matters which are not generally considered acceptable topics in social groups. This policy will specifically exclude from the Columbia network not only all advertising of laxatives as such, but the advertising of any laxative properties in any other product. It will further exclude the discussion of depilatories, deodorants and other broadcasting which, by its nature, presents questions of good taste in connection with radio listening.

"As to new business, this policy becomes effective on May 15, 1935. As to

existing business it becomes effective as rapidly as present commitments with clients expire."

In the children's program the system listed eight specific treatments and themes which will be prohibited.

Columbia's announcement came as a forerunner to a hearing before the Federal Communications Commission in Washington when plans were considered for greater cooperation among broadcasting stations and educational, religious and non-profit groups in the presentation of programs.

The National Broadcasting Company, largest of radio broadcasters, has had nothing specific to say so far on the action of its strongest competitor, Columbia, other than reissuing its broad statement of Program Policies originally printed January, 1934.

Wurlitzer Closes Coast Stores but Expands in Middle West

R. C. Roling, general manager of The Rudolph Wurlitzer Company, Cincinnati, Ohio, announces that the Los Angeles, San Francisco and Kansas City retail stores ceased operation as of June first. Increasing difficulties of long range management is the reason given. Plans call, however, for expansion of retail activities in all territories east of St. Louis.

Since the new plans and policies of the Wurlitzer Company were inaugurated eleven months ago, the business has shown a satisfactory increase according to recent reports, the first quarter of the current year being particularly gratifying.

MUSIC MERCHANTS MEET IN CHICAGO

Radio Trade Invited to Attend This Convention, July 22-24

An invitation has been extended by the National Association of Music Merchants to radio manufacturers and jobbers to attend the Chicago conclave of the music men, July 22, 23, 24 at the Stevens Hotel. Delbert L. Loomis, executive secretary of the Music Men's Association states that there will be product exhibits in private suites but that no general grouping in Convention Hall is planned this year. Set, tube and parts manufacturers have been extended the privilege of exhibiting their wares and many have already accepted.

This event will be the 34th annual convention of the Music Merchants Association. Edwin R. Weeks is its president.

One of the subjects, scheduled for thorough consideration this year, is whether or not the electric washing machine, refrigerator and other allied products belong in the music store—and if so whether they can be merchandised so as to show a reasonable profit.

Pilot Plans Aggressive Campaign For Domestic Market

Long and favorably known for its outstanding success in foreign fields, the Pilot Radio Corp., Long Island City, N. Y., has now completed its plans for domestic distribution, according to Isidore Goldberg, president of the company and pioneer in radio circles since the early days of 1908.

Exclusive franchises will be granted radio-music merchants whose record for stability and ethical practices justifies such an arrangement. Heretofore Pilot has concentrated on foreign markets "until a way could be found to build solid, permanent national distribution on an exclusive franchise plan." In the opinion of Mr. Goldberg this time has now arrived but Pilot will expand in an orderly and constructive manner.

In each city up to 50,000 population only one franchise will be issued. It is felt that Pilot's extensive experience in developing sets to meet the exacting requirements of the foreign use qualifies it in an exceptional manner to register quality performance with the American consumer.

Among the personnel working with Mr. Goldberg are such well known radio executives as Sylvester Thompson, vice president in charge of sales and formerly sales manager for Kolster, and Milton Sleeper, advertising manager, formerly president of the Sleeper Radio Company.

Kelsey Joins Stewart-Warner

Word comes from the Stewart-Warner Corporation, Chicago, that L. L. Kelsey has joined the sales staff of that organization, reporting to sales manager John F. Ditzell.

For the past two years Mr. Kelsey has been with Zenith, introducing that company's products to the automotive field.

Philco Now Operates Own Branches in Five Key Cities

The Philco Radio and Television Corporation has completed the development of wholly-owned distributing organizations in the Philadelphia and Detroit territories. Philadelphia and Detroit join New York, Chicago and San Francisco in functioning under distributing organizations wholly owned by the parent concern.

An intensive, year-long advertising program in which newspapers will be used "to the hilt" in these reorganized territories was explained during the annual distributors' convention held aboard the S.S. Monarch of Bermuda, May 18. It will be launched about the first week in June.

Thomas Kennally S M for Philco

One of the pleasant surprises of the recent Philco distributors' cruise was the announcement by Laurence E. Gubb, president of Philco Radio and Television Corp., of the appointment of Thomas A. Kennally to the position of general manager of that concern. For the past five years Mr. Kennally has been eastern district manager of the factory organization. A veteran with this outfit since the days when the Philadelphia Storage Battery Co. specialized in storage batteries, he has more recently been responsible for sales in New York State, the greater part of New Jersey and all the New England territory.

O'Loughlin Made Eastern Manager

A well deserved promotion has been awarded Thomas A. O'Loughlin, formerly general manager of the Philco Radio and Television Corp. of New York. Tom became eastern district manager of Philco Radio and Television Corp. of Philco as of May 20. He was honored with a banquet at the Biltmore Hotel, New York City, recently. Sidney L. Cappell, Chicago manager for Philco, journeyed from the Windy City to officiate as toast master.

Aerovox Wins Patent Decision

Aerovox Corporation announces that the United States Circuit Court of Appeals has rendered a decision in its favor in a suit against Aerovox for the alleged infringement of Ruben patent No. 1,891,207. The Circuit Court of Appeals has held this patent invalid. It relates to the use of Ethylene Glycol in the manufacture of electrolytic condensers.

"With this Ruben patent invalid, Aerovox owns the only patents relating to the manufacture of dry electrolytic condensers which have been adjudicated valid by the Circuit Court of Appeals or by any other Court," states President S. I. Cole.

Parts Jobbers Active

Radio parts have become an important factor in jobbing circles, according to Charles Golenpaul who heads the jobber sales for Aerovox Corporation, Brooklyn, N. Y. "Many of the jobbers who heretofore considered the radio parts business as just a matter of accommodation to their dealer and service man trade, are now pushing such items," states Mr. Golenpaul.



Next RMA President (?)

Preliminary gumshoeing uncovers the rumor that Leslie F. Muter, now president of the Radio Manufacturers Association, will be nominated to succeed himself for the 1935-36 term. If Leslie receives the vote it will be a well merited mark of confidence as this Chicago parts manufacturer has carried the affairs of RMA through a trying period

Radio Electric Service Co., Phila., to Hold "Trade Show"

In line with trade shows which have been so successfully conducted in other cities by radio products distributors, Radio Electric Service Co., Philadelphia, will hold open house during the week of July 8-13 at its new quarters, Seventh and Arch Streets. There will be booth displays by some 35 manufacturers whose lines this concern handles. All servicemen, dealers and amateurs are invited to drop in, view the latest gadgets and meet the officers of this progressive outfit in their new surroundings, formerly occupied by Trilling & Montague.

Reinhard Bros. to Represent Zenith in Minneapolis Zone

Reinhard Bros. have been appointed exclusive distributor for the Zenith line covering the states of Minnesota, the Dakotas and adjacent counties. This concern, with main offices at Minneapolis, has long been in the radio jobbing business. Its vice-president H. D. (Ned) Vestal recently returned from several days visit at the Zenith factory in Chicago.

P. W. Peck Promoted

Word comes from E. A. Tracey, vice-president of the Zenith Radio Corp., Chicago, to the effect that P. W. Peck has been appointed southern divisional manager with headquarters in Atlanta, Ga. R. I. MacClellan who has been located in the South for Zenith will handle the territory involving Ohio, western Pennsylvania, Indiana and Michigan.

Radiart Offers Six Month Course

A six months' correspondence course, covering in detail the theory, design and servicing of automobile radio power supply circuits is offered in twelve lessons by the Radiart Corporation, Shaw Avenue at East 133rd Street, Cleveland, Ohio. The only cost to the serviceman is 25 cents. The course, fully illustrated, covers every type of vibrator together with associated circuits.

Lee Has Moved

Lee Robinson, eastern representative for the Standard Transformer Corp. and associate eastern representative for Ken-Rad has moved to 152 W. 42nd St., New York.

What the Smart Radio-Appliance Store Looks Like



Referred to in a Tri-City newspaper as the smartest radio-appliance store in Davenport, the above picture fully justifies this condition. It shows the interior of Willey's, which held open house to celebrate moving to its new location at 182nd Street. Three large sound proof booths for demonstrating radios are on the right. The color scheme is light tan and cream. H. H. Willey, owner, has been in the music business since his early youth. He further celebrated the success his company has had by participating in the Philco cruise for distributors to the sunny, tropical isles of Nassau and Bermuda

**What—A WORLD-WAVE
STROMBERG-CARLSON FOR ONLY \$59.50!**



No. 58-T Triple Range World-Wave. Height, 19 Inches.

NO WONDER she is surprised—and pleased. Never before in the history of the radio manufacturing industry has any radio—possessing the qualities which have placed Stromberg-Carlsons ahead of all others—sold at so low a price. Here, in these new models, is a defiant answer to the challenge of all competition.

The new Stromberg-Carlsons are a revelation to everyone who has turned their dials. Every worth-while foreign and domestic short wave service, as well as the entire broadcast and police range, is covered by the three tuning ranges; with what seems unlimited sensitivity and distance reach. Every program is reproduced with typical Stromberg-Carlson Natural Tone.

Some of the Outstanding Features

Three tuning ranges—(1) Standard Broadcast, 540-1520 kc. (2) High Fidelity, Police, Aircraft, Amateur Ranges, Commercial and Code Stations, 1450-3600 kc. (3) Short Wave Range, 5600-18000 kc. (this includes the 49, 31, 25, 19 and 16 Meter Bands.)

Clover leaf arrangement of coils, condenser and range switch for high sensitivity and keen selectivity.

Large Airplane Type Dial in distinctive Stromberg-

Carlson octagonal design. Range Switch Control Lever indicates range in use.

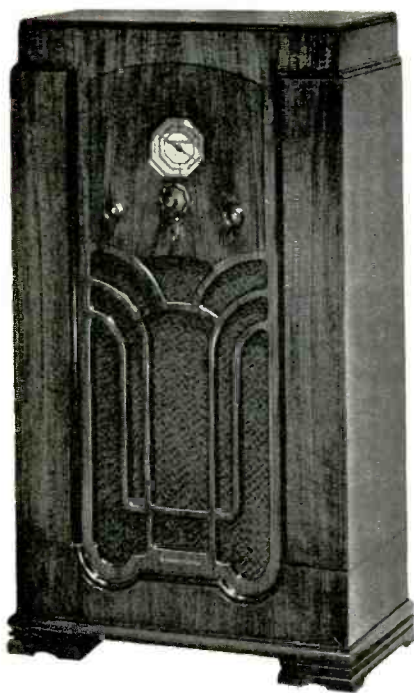
Dual Ratio Tuning Knob permits both standard and band spread tuning.

NATURAL TONE on All wave bands.

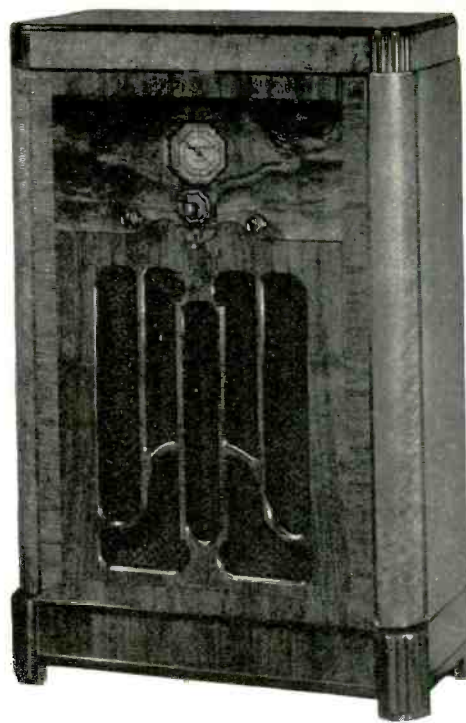
Class "A" amplification.

Striking Cabinet with genuine walnut face veneers in contrasting colors.

Stromberg



Triple-Range
World-Wave
No. 58-L
Height, 36½ In.
\$78.50
East of Rockies



Triple-Range
World-Wave
No. 58-W
Height, 37¼ In.
\$92.50
East of Rockies

An Early Start

FOR STROMBERG-CARLSON DEALERS

These new Stromberg-Carlsons mean immediate business for Stromberg-Carlson dealers. The start of a new line that will boast the longest price range in the industry. There will be a competitive model in every price field. These first extra value models are announced NOW, so that dealers and dealers' salesmen may enjoy a profitable summer radio business.

The Line and Franchise You Want

Every unit of the Stromberg-Carlson line for fall will be as startling in its price class as are these first-to-be-announced numbers. It's a line with which the aggressive dealer can "step out"—protected by:

carefully selected outlets; regulated production to eliminate dumping; careful zoning of trading areas to prevent overcrowding and overlapping of dealerships; adequate discounts on worth-while units of sale.

Prices of Stromberg-Carlson radios range from \$59.50 to \$985 (All prices quoted are East of Rockies).

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

- Carlson

BELIEVE IT OR NOT

\$4 Ad Pulls \$588 in Radio Sales

THIS TWO-COL., 5 INCH ADV., RAN ONCE IN THE EVENING HERALD, MANCHESTER, CONN., SOLD SIX, \$98 CONSOLES FOR ARTHUR W. BENSON. IT COST \$4. NOTE THAT IT IS DIRECTED TO A CERTAIN CLASS OF SET OWNERS. THEY THOUGHT THEY WERE BEING SPECIALLY FAVORED.



DO YOU KNOW THAT-IMITATION GRASS, FOR SUMMERY EFFECTS, CAN BE MADE BY DIPPING SAWDUST IN DARK GREEN PAINT, THINNED WITH TURPENTINE? AFTER THE SAWDUST HAS DRIED, USE IN WINDOW TO SIMULATE GRASS.

NOTICE!

To present owners of Majestic Radios, we are offering for the next 10 days, Special Trade-in Allowances for Old Majestic Sets In Trade for New 1935 All-Wave GRUNOWS!

This is your opportunity to buy an up-to-date Gruno and enjoy the best there is in radio.

NO DOWN PAYMENT!
TERMS—\$1.00 WEEKLY.

Prices Range From

\$22.50 and up

Call 8773

**Benson Furn.
and Radio**

711 Main Street
We Service and Repair All Makes



with apologies to Ripley

RULES FOR CREDIT SELLING

"Business graveyards are full of radio merchants who thought a smile the sole index of a man's reliability." So says an Oklahoma dealer who recommends the following safeguards to credit selling:

The prospect who objects to filling out a written application generally has good reason for so doing. No worthwhile customer is ever lost by asking for complete credit information.

Never extend credit until the application has been completely checked. And always use the facilities of the local credit association, no matter how good you think your own credit manager is.

Identification of the prospect should include the full given name and middle name, not initials. The name of wife or husband is also extremely important.

It is also good practice to secure names of both husband's and wife's relatives.

Check up and see if the prospect moves often. Skips can be avoided by declining to sell too-frequent movers.

Lodge or church affiliations are important, as they indicate permanence of residence.

Don't sell an expensive set to people who earn too little money to pay for it conveniently.

Don't be afraid of turn down poor risks. Let your competitors lose money on them.

Establish credit rules and then never deviate from

them. There is nothing like careful routine in credit selling. Lax methods cannot work as well, even though you are, or think you are, a good judge of character.

IN THE DRIVER'S SEAT

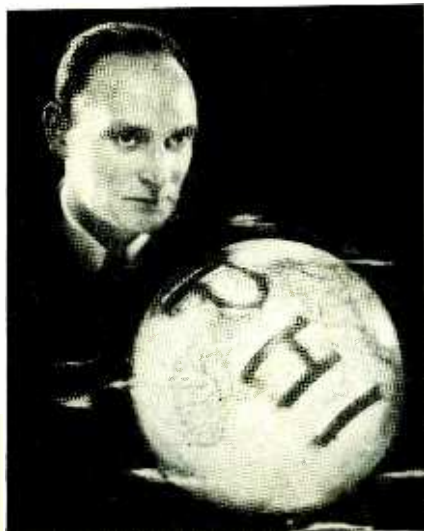
The salesman should let the prospect sit in the driver's seat, says Bob White, of the J. C. Horton Furniture Co., Santa Ana, Calif.

"Too often the salesman seats his prospect several feet from the set he is demonstrating and does all the 'driving' himself, whereas the prospect may want to get *his* hands on the tuning controls. We get the prospect into the driver's seat as soon as possible, let him turn the dials, let him bring in the stations, let him control the volume."

To make this convenient White has placed benches in front of each grouping of three radios. *A person sitting on this bench can conveniently operate any of three sets.*

Of course some preliminary time must be devoted to inspection of various cabinet designs and the prospect must first be placed some distance from the set being demonstrated so he may get some conception of its tonal qualities. But as soon as these two factors are covered, he should be urged to take over the controls himself. The sense of touch is as essential as the senses of hearing and sight in the sale of a radio.

LETTERS



From a Dutch Announcer

Editor "Radio Retailing":

During the summer season our station P.H.I. (Phohi studios, Hilversum, Holland) will broadcast all colonial programs on 16.88 m. During the winter season we have been operating on 25.57 m. The new broadcast schedule is 12.30-15 G.M.T. Tuesday and Wednesday no PHI transmissions.

Instead Philips' Radio experimental station PCJ, located at Eindhoven and operating on 19.71 m. transmits Tuesdays from 8.00-12.00 G.M.T. and Wednesdays from 12.00-16.00 G.M.T. All Wednesday PCK programs in addition to the regular PHI schedule are handled and announced by the undersigned. The PCK transmissions are usually of a jolly and informal character, as of old the "happy station" for the fans. A great deal of mail from listeners all over the world is answered before the microphone and is known as the meeting of the PCK club.

Station PHI, dedicating programs primarily to the Netherlands Indies, will be especially well heard in America on the present 16.88 m. wave length, which was not the case during the winter on the 25 m.

We hope that these particulars will once more point out to you the up-to-dateness and efficiency of Holland in shortwave broadcasting.

EDWARD STARTZ,
Announcer and station manager.

Chameleon Wholesalers

Editor, Radio Retailing:

Please renew our subscription to *Radio Retailing*. It is the only publication in the field which is carrying on the battle for the legitimate retailer.

Now, we have an "ache in our bellies." Our complaint is about mail order competition and it is legitimate. There is, in our estimation, nothing more injurious to the radio dealer than the so called wholesale catalogue house selling through catalogue direct to the consumer. Most of them claim

that catalogues are sent only to members of the trade. This is untrue. Furthermore, while countermen do ask for your name when you come into the store to buy a part they will sell you again and again without checking back to see if you really are in the business.

We try to sell, say, a \$20 transformer at list, adding a modest installation charge. The consumer frequently drags out a catalogue and shows us the item for \$12, which is the wholesale price we pay.

Recently we complained about this to a so-called wholesaler. In defense he right-about-faced and said he was a retailer. But when he buys he is a wholesaler! Talk about the chameleon changing his color to suit conditions!

HERMAN LUBINSKY,
Newark, N. J.

IDENTIFICATION CARD	
Standard Radio Parts Co. 25 North Jefferson St.	
No. <u>563</u>	FREE PARKING
Name <u>R. K. Richards</u>	
Address <u>131 Dean Street</u>	
is entitled to Dealers Prices on Radio Parts. This privilege is not transferable. This card must be presented when making purchase. Standard Radio Parts Co. reserve the right to cancel this card at any time.	
DEALER	SERVICE MAN AMATEUR

EDITOR'S NOTE: Here is how the Standard Radio Parts Co., Dayton, Ohio, protects itself, and its customers, against just this kind of chiseling. The bearer of this card can be requested to sign his name for check up purposes if he is unknown to the clerk.

Firestone Points the Way

Radio Retailing, N. Y. City:

Enclosed is a letter which was mailed by Firestone Tire & Rubber Co. to its dealers throughout the country to invite their dealers to meet or beat the cut prices on

tires advertised by mail order houses, which has been gripping the dealers (large and small) all over the U. S. Of course the mail order houses are a necessary evil and we all have them but perhaps our radio manufacturers and jobbers could help things by giving the dealers a break as Firestone has done.

The mail order menace is a threat to every legitimate radio dealer in our country today and only with articles by men like you and your R.R. can they cope with this deadly menace.

MCCALLA BROS.
Mercer, Pa.

Blames Tube Chaos On Distributors

Editor, Radio Retailing:

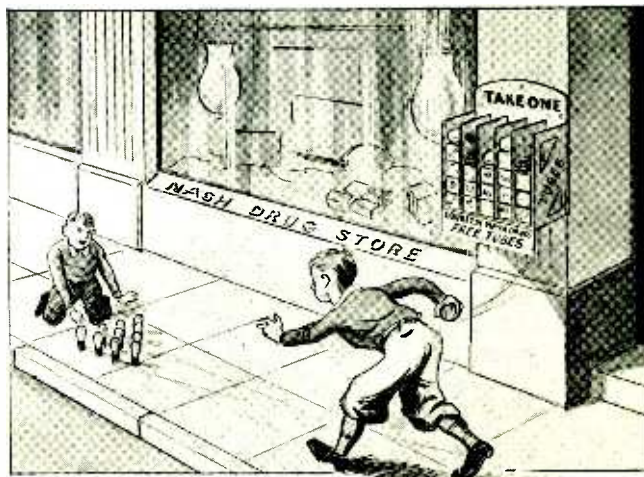
I am glad your publication came right out and gave the highlights on conditions in the tube business. The sum and substance of the whole affair is that these conditions can be laid right at the door of distributors who, in their zeal to move merchandise, sell indiscriminately to everybody.

I am in the radio business and I'll be blessed if I can get drugs wholesale. But the druggist can get tubes wholesale. Neither can I get tires and oil wholesale. But the garage man gets tubes.

The radio man has test equipment for tubes. He is the logical source of supply for radio owners. Drug clerks say: "If it does not fit, bring it back." Garage men say: "If it burned out maybe you made a mistake in the type number." Personally, I have no falling out with outside-the-industry tube sellers. But I can't compete with them as they handle tubes, like postage-stamps, as an accommodation, not to make a profit.

A. HARDY, MANAGER
A. Hardy Company, Baltimore, Md.

Will It Come to This?



NEW MERCHANDISE



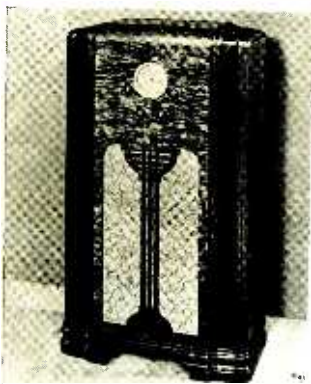
Atwater Kent Model 337

1936 Atwater Kent Radios

Metal tubes in six of the new line of radios of the Atwater Kent Mfg. Co., Philadelphia, Pa., were announced at its convention in Atlantic City this month. Five consoles and one upright table set will use these new tubes. They are: Model 317, 649L, 328L, 810G, 412G, and 337. Where metal tubes have been substituted an additional tube is used. These are priced at, in the same order, \$85.50, \$115, \$105, \$150, \$180 and \$64.50, the latter being the table set. Six, 7, 8, 9, 10 and 12 tube models are included. Other lower priced models will be announced when other metal tubes are available.

Each of these receivers tunes from 540-18,000 kc. and has 11 in. dynamic speaker with the exception of the table set, which uses an 8 $\frac{1}{2}$ speaker, and the 12 tube console, which has an auditorium type speaker (capacity of 17 watts output).

The 8, 9, 10 and 12 tube sets have "Selectivity-Fidelity" switch which, on the "fidelity" position brings out the finer shadings of the sound spectrum, reproducing "side bands," and, on the "selective" posi-



Atwater Kent Model 317

tion, selectivity is made so keen that many more stations can be tuned in with ease and heard with clarity, a valuable aid to the shortwave fan.

The balance of the line consists of the following:

With 4 tube chassis, Model 184 table set, 540-1712 kc., \$27.50.

With 5 tube chassis (6A7, 6D6, 75, 42, 80) there are Model 545, upright table cabinet, 540-1712 and 2300-7500 kc., \$39.90; Model 875F, floor console, 540-18,000 kc., \$67.50; Model 435T, floor console, 540-1712 and 2300-7500 kc., \$57.50; Model 755, upright table set, 540-18,000 kc., \$49.90.

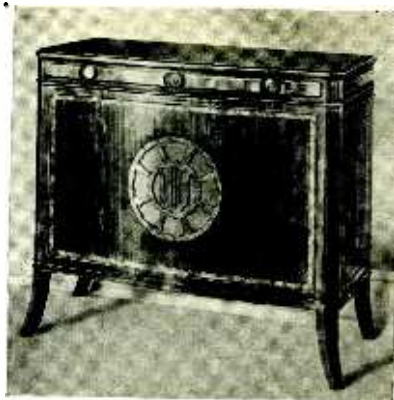
There is also a 5 tube battery set, Model 285QT as a console and 415Q as a compact, using 1C6, 34, 30, 32, 33, tuning from 540-1712 kc., \$54.50 and \$39.90, as well as

a 32 volt model which tunes from 540-1600, 1600-4800, 5300-16,000 kc. The console, Model 565ZF, lists at \$79.90 and the compact, Model 305Z, at \$64.90.

Model 467QH and Model 237Q are 7 tube battery sets, console and compact, tuning from 540-18,000 kc. \$34.90 and \$79.90.

Model 509W is a 9 tube Tune-O-Matic floor console with eleven tuned circuits. It has dual band tuning—540-1600 kc. and 5.5-15.5 mc. This is the model which has an electric clock on the front panel which provides control at quarter-hour intervals. Seven stations (14 programs) can be controlled automatically and pre-selected. \$158.

Model 776 is a 6 tube auto-radio on which no spark plug suppressors are needed on most modern cars. Special dash control mountings available for the majority of cars. \$49.90.—*Radio Retailing*, June, 1935.



Philco Model 660L

line, American walnut, butt walnut, mahogany and East Indian laurel predominate. Novel treatments of inlays, marquetry, and paneling add to their beauty and all "fussiness" has been done away with.

The line ranges in price from \$20 to \$250.—*Radio Retailing*, June, 1935.



Philco Model 680X

New Philco Radios

Announced to distributors attending the annual Philco convention cruise, the 1936 line of radio sets of the Philco Radio and Television Co., Philadelphia, Pa., offers an exceedingly wide range and variety of models. Forty-three cabinet styles include Baby Grands, square table sets, compacts, full length consoles, inclined sounding board models, remote control and chair side models, combinations and the new moderne and all-period furniture creations.

This complete series features an array of American and foreign sets in addition to the American broadcast receivers. Ranging from 4 to 15 tubes and featuring an undistorted audio output up to 15 watts, there are models for every type of power supply: a.c., d.c., ac-dc, battery and 32 volt systems. Of particular interest is the wide variety of battery operated models that furnish both American and foreign reception.

Salient features include:

Program control by which every program is brought to the listener at its best by simply turning the program control to the proper point; automatic aerial selector, precision radio dial, shadow tuning, high fidelity audio system and acoustic clarifiers.

Two models in particular offer unusual convenience. The remote control model has an end table tuning cabinet with the program coming from a separate console type speaker placed across the room. The chair-side model is in one unit. The speaker opening faces the chair and the inclined sounding board is so "stepped back" as to direct all sound up to the ear of the listener.

Among the cabinet designs are two models known as All-Period models because they combine the distinguishing features of various periods of furniture (except moderne) without being definitely of any one period. Dial and instrument panel are concealed beneath the top lid of the cabinet.

In designing and constructing this new

Hammond Pipeless Organ

The "first technically perfect electric pipeless organ" has been invented by Laurens Hammond, head of the Hammond Clock Co., 2915 N. Western Ave., Chicago. This instrument can produce musical sounds impossible to make on any other instrument. It covers the entire range of musical tone color. The mechanical principle of operation is quite similar to that of the electric clock. Will sell for around \$1,250.—*Radio Retailing*, June, 1935.

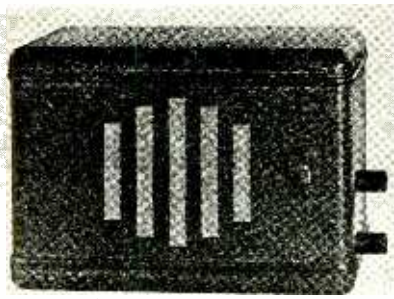


Remler Shortwave Auto-Radio

Short waves down to 6,800 kc. can be received on the new Model 36 auto radio of the Remler Co., Ltd., 2101 Bryant St., San Francisco, Calif. This set features a dynamotor type B supply and is built to withstand hard usage with all the parts of the chassis such as resistors and condensers "platform mounted" which means they are mounted on a bakelite platform securely anchored to the chassis.

This is a 6-tube set using 2-6D6's, 6A7, 75, 76 and 41.

The antenna lead is insulated and shielded. It has an easily adjusted "compensator" which permits "tuning" to meet the variations of each individual car antenna. This feature insures perfect reception with either roof or under-car antenna. Broadcast range 540 to 1,700 kc. short wave 2,200 down to 6,800 kc. The control unit is designed to harmonize with modern car interiors. \$59.50.—*Radio Retailing*, June, 1935.



Emerson Model 1A Auto-Radio

A new five tube car set—using three multi-purpose tubes in connection with non-synchronous vibrator—is the latest addition to the line of auto-radios made by the Emerson Radio and Phonograph Co., 111 Eighth Ave., New York City.

This is a single unit set equipped with traps and filters to eliminate the use of spark plug suppressors. Provision is made for choice of three mountings of remote control.

With the introduction of this receiver, Emerson is also announcing a new instrument panel control mounting for all General Motors cars. This mounting may be used with any of the three sets in the line.—*Radio Retailing*, June, 1935.

Conversion Resistor Plug

A conversion resistor plug intended to replace the ballast tube used in some makes of battery receivers so that these sets may be satisfactorily operated from the Eveready air cell A-battery instead of the dry cell A-battery may be obtained from the following resistor manufacturers: Central Radio Laboratories, 900 E. Keefe Ave., Milwaukee, Wis.; Clarostat Mfg. Co., 285 N. Sixth St., Brooklyn, N. Y.; Continental Carbon Co., Inc., 13900 Loraine St., Cleveland; Electrad, Inc., 173 Varick St., New York City; Hardwick Hindle, Inc., Newark, N. J.; Insuline Corp. of America, 23 Park Place, New York City; Ohio Carbon Co., 12508 Berea Road, Lakewood, Ohio; Ohmite Mfg. Co., 636 N. Albany Ave., Chicago, Ill.; Utah Radio Products Co., 12 Orleans St., Chicago, Ill.; Wirt Co., 5211 Greene St., Germantown, Philadelphia, Pa.—*Radio Retailing*, June, 1935.



Fada Radios

Model 155 "Super Fadalette" table set of the Fada Radio & Electric Co., Long Island City, N. Y., is a powerful five tube a.c.-d.c. superheterodyne with seven tube performance, dual illuminated dials, automatic overload control and full dynamic speaker. This set tunes from 540 to 1750 kc. Dimensions are 11x7x6 in. The price complete with tubes is \$19.99.

Model 166 "Motoset" is a six tube (nine tube performance) superheterodyne, with delayed a.c., six-inch dynamic speaker and plug-in vibrator unit. Three-piece housing facilitates installation and service. Has built-in spark filter to eliminate spark plug suppressors. Dimensions are 9x7x7 in. This set comes in the new "round" shape. The tube line-up consists of 2-78, 6A7, 75, 41 and 84. \$49.95.—*Radio Retailing*, June, 1935.

Radio Retailing, June, 1935

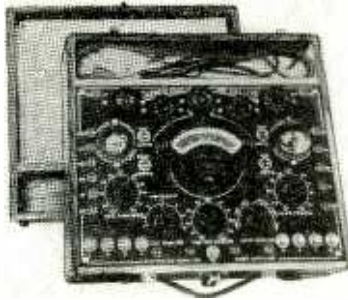
Supreme Testers and Analyzers

The following testers and analyzers are announced by the Supreme Instrument Corp., Greenwood, Miss., for the 1936 season:

Model 89 de luxe tube tester, a six-in-one instrument, which contains many new features, including facilities for testing the new all-metal tubes, including 8-prong types. \$45.95.

Model 339 de luxe analyzer with direct resistance ranges up to 20 megs and self-contained power supply is \$39.95. This instrument virtually spreads the entire circuit of a set out on the analyzer panel like a diagram.

Model 385 Automatic features Supreme's "uni-construction"—that is the engineering of a multiplicity of instruments in one com-



compact unit. The 385 is a combination of the many popular features of the well known 339 de luxe analyzer and the 89 de luxe tube tester. \$77.95.

Model 391 P. A. analyzer is specifically designed to equip the radio-man to cash in on the growing opportunities for service in sound equipment of every character. \$69.95.

Model 339 standard analyzer is priced at \$29.95 including complete accessories, instruction manual, a new tube base selector and free reference point system of analysis chart.

Model 189 signal generator uses an electron-coupled circuit offering excellent dynamic stability. 90 kc. to 30 mc., individually calibrated with guaranteed accuracy of 1/2 of 1%. \$36.95.

Model 89 standard tube tester features Supreme's "Neonized leakage test" and has a new 5-in. full vision easy-to-read meter. It will test all tubes including the new all-metal types, without adapters, and lists at \$34.95.—*Radio Retailing*, June, 1935.

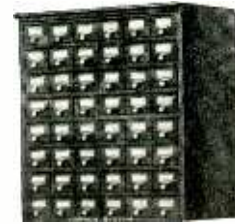
Aerovox Line Noise Filters

A simple and inexpensive means of eliminating line noise interference is offered in the two handy filters developed by the Aerovox Corp., 70 Washington St., Brooklyn, N. Y.

The first filter, in a rectangular metal case, is designed to plug into the usual receptacle, while the screws of the wall plate serve not only to hold it securely but also as the ground connection through the house wiring.

The second filter is a male-female metal-jacketed plug device with side binding post for ground connection. It plugs between attachment plug of radio set or noise producing appliance and the outlet. This type is especially desirable in the case of long extension leads.

Where line noises are severe in character, a more elaborate filter in a large rectangular case is available.—*Radio Retailing*, June, 1935.



Warren Sectional Cabinets

Illustrated is cabinet No. 1548 which will especially interest radio dealers and service men as a place to keep radio parts where they may be easily located and protected from damage. This model lists for \$28.35.

It is only one of a very complete line made by the J. D. Warren Mfg. Co., 1947 Warren St., Montpelier, Ohio.

This company makes a wide variety of "Economical Sectional" cabinets in many sizes which are just the thing to keep repair parts. They are made on the sectional, interchangeable unit system. All cabinets are exactly the same dimensions outside and can be used singly or assembled in any form desired, so that more cabinets may be added from time to time.—*Radio Retailing*, June, 1935.

Electronic Labs. Auto-Radio Vibrator Tester

To meet the demand for an auto-radio vibrator tester which would definitely check vibrator performance and indicate plainly when replacement was necessary, the Electronic Laboratories, Inc., 122 W. New York Street, Indianapolis, Ind., has designed an instrument which can be used on all makes of vibrators.

Compensation for various efficiency ranges is provided. The instrument is direct reading and rates vibrator performance in plain English as either good or bad. Another feature is a frequency indicator lamp that glows if the vibrator under test is producing undue r.f. interference. The tester may also be used to test the buffer condenser used across the secondary of the transformer and type 84 rectifier tubes.—*Radio Retailing*, June, 1935.



Brach Products

A wide variety of radio accessories may be obtained from L. S. Brach Mfg. Corp., 80 Duryea Street, Newark, N. J.

Among the accessories available are: "Vis-O-Glow" lightning arrester, single type, \$1, duplex type, \$1.40; "Storm King" non-air gap radio arrester, single type 50 cents, duplex type, 90 cents; window lead-in \$7 per 100; duplex window lead-in, \$20 per 100.

Brach also makes low loss insulators, porcelain nail-on knobs, porcelain insulators, porcelain insulating tubes, saddle type ground clamps and bakelite insulated screw eyes.

Among the shop accessories also are "Solderall," "Peerless" flux, mouth blow torch, de luxe electric soldering iron, and a "Test-O-Lite."—*Radio Retailing*, June, 1935.



Triumph Condenser Bridge-Analyzer

The components of a radio receiver are its coils, condensers and resistors and as these so often cause trouble, the Triumph Mfg. Co., 4017 W. Lake St., Chicago, has brought out a "Component Analyzer." This model 500 is quite different from other instruments. It tests leakage, breakdown, opens, shorts and power factor of resistors, capacitors and coils and checks continuity to 4 megohms. Measures $10 \times 9 \frac{1}{2} \times 5 \frac{1}{2}$ and is priced at \$19.95.—*Radio Retailing*, June, 1935.

Multitester Model 406

Radio City Products Co., 88 Park Place, New York City, has brought out the Model 406 Multitester for portable service work and laboratory use. The twelve scales on the four essential ranges permit a wide number of tests. A triple range ohmmeter measures the resistance values from $\frac{1}{4}$ through 2,000,000 ohms, in the three individual ranges as follows: 0-2,000-200,000-2,000,000. A tapered rheostat permits smooth zero-adjustment on all ohmmeter ranges. This tester measures $6 \times 8 \frac{1}{2} \times 3 \frac{1}{2}$ in. and is housed in an attractive leatherette covered case. The price is \$19.95; with hinged cover \$21.50; in essential kit form but less batteries, \$14.95; in essential kit form including illuminated test prods and portable hinged cover case but less batteries, \$16.95.—*Radio Retailing*, June, 1935.



Electro Acoustic Centralized Radio and P.A. Systems

The latest developments in centralized radio and public address systems are now available for use in small, medium or large educational buildings at a cost well within prevailing budget limitations.

The newly developed Electro-Acoustic systems Nos. 1, 1A, 2 and 3 were specifically designed and constructed by the Electro-Acoustic Products Co., 2131 Bueter Rd., Fort Wayne, Ind., to meet the exacting requirements of educational buildings. They feature tone quality, simplicity of operation, versatility and sturdiness of construction.

As shown in the illustration (System No. 2), unsightly mechanical equipment has been concealed in a well designed desk which completely houses all control units and power stages. Everything is self-contained—radio, phonograph, room switch distribution system, control units and amplifier.—*Radio Retailing*, June, 1935.



Wilco Portable "Play-Back" Instrument

A compact portable "play-back" instrument for use with 12-in. and 17-in. electrical transcriptions may be obtained from the Wilco Radio Co., 27-26 Northern Blvd., Long Island City, N. Y.

Two black leatherette cases comprise this Model PA-45—one houses the heavy duty, dual speed motor and matched balanced pick-up, while the other case contains the three stage amplifier and electro-dynamic speaker. Provision for input of microphone and radio if required. Price to the dealer is \$74.50, complete with tubes but less microphone.

To meet the demand for a compact, neat-appearing amplifier for use as a record demonstrator and an instrument of entertainment for home, auditorium and for audition work, Wilco has produced Model 24 amplifier. The cabinet is of solid walnut construction, approximately 10-in. high by 14 in. wide by 16 in. deep. It has a two-speed motor for either 33 $\frac{1}{3}$ or 78 r.p.m. records, inertia type tone-arm and pick-up with its associated volume control and two control switches for the amplifier and turntable motor. \$32.50.—*Radio Retailing*, June, 1935.

Electronic Analyzer

The Electron Research Corp., 41 Park Row, New York City, has just announced an "Electronic Resonance Curve Analyzer"—or more descriptively, a cathode ray oscilloscope, equipped with a signal generator, an electronic frequency modulator, a linear time axis, two amplifiers to increase sensitivity in the vertical and horizontal direction, and means of switching direct to the deflecting plates. The sweep oscillator covers from 1 to 250,000 cycles and is continuously variable. The amplifiers have a gain of 30 db. and the frequency response is said to be flat within 2 db. from 15 to 100,000 cycles.

Designed for research as well as service work, the instrument lists at \$98.50 complete with tubes.—*Radio Retailing*, June, 1935.

Raytheon 2A3 Tube

A new improved 2A3 tube, developed by the Raytheon Production Corp., Newton, Mass., possesses double the plate area of the older type. This unusually large radiating surface provides ample cooling, a factor not wholly cared for in the former type.

Class A amplifier systems which have been redesigned to use other tubes on account of the limitations of the old 2A3, can once more make full use of the popular 2A3 type tube characteristics.—*Radio Retailing*, June, 1935.

Amperite Junior Velocity Mike

About the size of a match box, with an output equal to a large velocity microphone, and an output that is constant with any position of the head, the new 7-point junior of the Amperite Corp., 561 Broadway, New York City, hangs like a monocle from the speaker so that it is always the right distance from the microphone. The enthusiastic sports broadcaster and walking after-dinner speaker will find it impossible to get away from this microphone. It can be used as a hand microphone as well. Obtainable with 50 or 200 ohm output impedance, it has the frequency response from 60 to 7,500 cycles and an output of —68 db. on open line.—*Radio Retailing*, June, 1935.



Shortwave Pre-Selector

The Eastern Radio Specialty Co., 1845 Broadway, New York City, N. Y., announces a completely self-powered a.c. pre-selector and pre-amplifier unit designed to precede any shortwave receiver, claiming that its use results in marked increase in sensitivity and selectivity, complete rejection of troublesome "image signals" and a decrease of noise-to-signal ratio.

The device, known as the Peak P-11, is in a sturdy metal cabinet, has an airplane type dial with indirect lighting, requires no plug-in coils and is offered to both shortwave "fans" and amateurs at \$33.—*Radio Retailing*, June, 1935.

Shure Crystal Lapel Mike

A new crystal lapel microphone has been announced by Shure Bros. Co., 215 W. Huron Street, Chicago. The instrument is known as Model 73A and weighs only 1 $\frac{1}{4}$ oz. A special spring clip is provided so that it may be attached to the speaker's lapel. \$25.00.—*Radio Retailing*, June, 1935.



No. 430 Tests Metal Tubes!

THE Model No.430 has five sockets that are flush with the sloping panel. One socket is equipped to test the new 8-prong metal Octal tubes. Another feature of this new tester is the shadow-type line voltage meter . . . located directly above the moving-coil type instrument . . . which tests Good and Bad tube values. Direct reading. Controls are simple and positive in action. This new all-type tube tester makes every inter-element short and leakage test, in a manner instantly convincing to the customer. Removable cover for either portable or counter use.

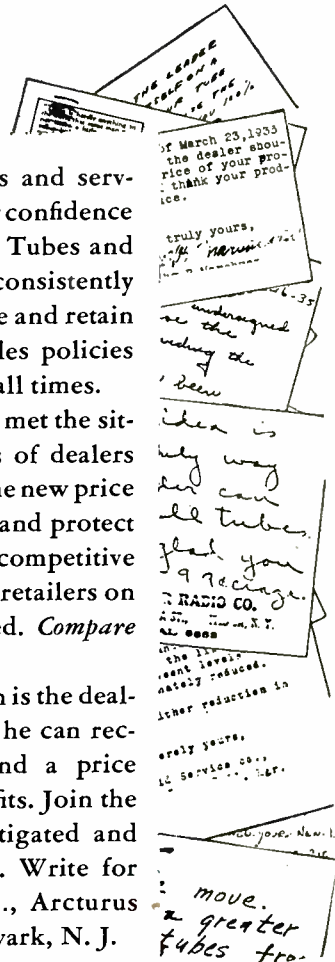
At Your Jobber's

. . . Previous Readrite models can be adapted for testing the new Octal tubes.

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READRITE METER WORKS
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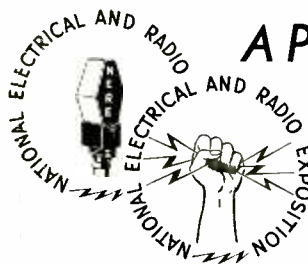
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-say Dealers
and Servicemen



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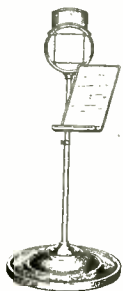
ARCTURUS RADIO TUBES



"Audio-Tone" Service Oscillators

The Audio-Tone Model 30 selective side-band service oscillators have been designed for the analysis and servicing of all modern and high fidelity radio receivers offering a complete frequency range of audio modulation. These service units employ a balanced oscillator-modulator assembly permitting single sideband modulated output at a fixed r.f. The modulation frequency is directly calibrated and continuously variable from 10,000 cycles for the lower sideband to 10,000 cycles for the upper sideband modulation.

These audio oscillators, made by the Audio-Tone Oscillator Co., Springfield, Mass., also have available a complete range of audio frequencies from 60 to 10,000 cycles for the receiver amplifier and speaker testing. This a.f. output is particularly useful for cathode ray analysis work and fulfills the requirements of the usual beat frequency audio oscillator. The net prices range from \$45 to \$53.—*Radio Retailing*, June, 1935.



New Universal Products

Stock model microphone stands from the Universal Microphone Co., Inglewood, Calif. will hereafter be equipped with a detachable lightweight copy holder for attaching announcers' notes, music and lecture memos. There will be no increase in the net price.

Universal is now in production on a dynamic microphone, primarily recommended for use where complete freedom of trouble from rough handling, damp atmosphere and unusual climatic variations make it necessary to utilize a microphone with extreme ruggedness and wide angle pick up.

No. 1078 dynamic matching transformer is also ready for the market.

This company has just re-issued its five meter hand set in eight models. A three-stage class A recording amplifier having an overall gain of 82 db, a frequency range substantially flat from 40 to 8,000 cycles and an output of 12 watts with harmonic distortion of less than 2 per cent is also ready as is a full frequency pick-up for play back of all types of instantaneous records, especially those of aluminum, Silveroid and other semi-plastic substances.—*Radio Retailing*, June, 1935.

Westinghouse Miniature Rectangular Instruments

A line of moderately priced direct current, radio-frequency and rectox miniature instruments designed to harmonize with radio and communication equipment is announced by the Westinghouse Electric & Mfg. Co., E. Pittsburgh, Pa.—*Radio Retailing*, June, 1935.

Shallcross Decade Resistance Box

The 800 Series decade resistance boxes just announced by the Shallcross Mfg. Co., 700 MacDade Blvd., Collingsdale, Pa., are designed to provide the most convenient instrument where a wide range of resistance is necessary and combine the features of reasonable cost, ruggedness, portability and accuracy. Some familiar applications are meter multipliers, bridge arms, determination of replacement resistors in radio sets, electronic tube circuits, etc.

These decade resistances are assembled in an oak box 4½x7 in. having a bakelite panel on which are mounted specially designed rotary selector switches.

Type 825, range 10, (1 + 10 + 100 + 1,000) Total 11,100 ohms, \$30.75; Type 826, range 10 (10 + 100 + 1,000 + 10,000) Total 111,100 ohms \$32.30; Type 827, range 10 (100 + 1,000 + 10,000 + 100,000) Total 1,111,000 ohms, \$33.85.—*Radio Retailing*, June, 1935.



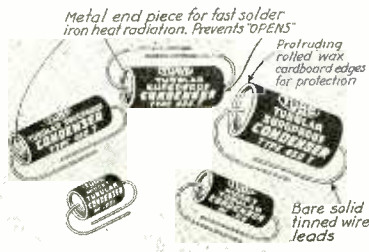
Solar "Perma-Set" Trimmer

Because the drifting of trimmer condenser capacities seriously injured radio receiver sensitivity at times, the Solar Mfg. Corp., 599 Broadway, New York City, has worked on this problem and now announces a new small ceramic base trimmer to eliminate drifting. A feature is that under the pressure of average settings, the top plate has anchorage at both front and rear. Supplied in maximum capacities of 30 mmf. to 180 mmf.—*Radio Retailing*, June, 1935.



Tobe Condensers

A newly designed paper dielectric tubular condenser has just been made available by the Tobe Deutschmann Corp., Canton, Mass. The metal end discs are soldered to the condenser terminals to provide a path for quick radiation of solder iron heat. Other features include: dual impregnation of the entire condenser assembly; extra heavy double tinned wire lead terminals and extremely compact physical sizes.—*Radio Retailing*, June, 1935.



Cornell-Dubilier Transmitting Condensers

A new line of porcelain encased mica transmitting condensers designed for amateur, police and small broadcast transmitters, has been brought out by the Cornell-Dubilier Corp., 4377 Bronx Blvd., New York City. Designated as the Type 86, the line includes thirteen sizes ranging from .00005 mf. to .1 mf. in voltage ratings from 2000 to 12,500 volts.

These new condensers are especially recommended for plate blocking, grid and tank applications. The net prices vary from \$2.25 for a 10,000 volt, .0001 mf. unit to \$6.90 for a 3,500-volt, .05 mf. unit.—*Radio Retailing*, June, 1935.

Electronic Labs. 32-Volt Converter

For the operation of a.c. radios in rural districts, the Electronic Laboratories, Inc., 122 W. New York St., Indianapolis, Ind., has brought out its Model 10 32-volt converter. The specifications are: input voltage, 32 volts d.c.; input current, 4.0 amp. (full load); output voltage, 115 volts a.c.; output wattage, 100 watts.

A new vibrator-commutator circuit makes it possible to introduce resistance in the circuit at the time of the make and break of the contact points and automatically eliminates this resistance from the circuit directly after the contact points have engaged. This does away with any damaging arc at the contact points and lengthens the life of the vibrator.

This converter which lists at \$25 comes in a green crackle lacquer case 4½x6½x10 in.—*Radio Retailing*, June, 1935.

Service Aids

In addition to the line of service cement, kits, insulating cloth, described in this department in March, the General Cement Mfg. Co., Rockford, Ill., also makes an all-wave coil dope for holding all-wave coil windings firmly in place, 50 cents; a cement and solvent kit for speaker repairs, 50 cents; and a kit of colors for painting dial lights to match the colored dials in the new sets (1 bottle each of red, green, blue, amber and solvent) 50 cents.—*Radio Retailing*, June, 1935.



Cornell-Dubilier Capacitors

Three new types of capacitors for power-factor correction applications are announced by the Cornell-Dubilier Corp., 4377 Bronx Blvd., New York City, N. Y.

The box types are individual units ranging in size from 3x7x12 in. to 7x24x12 in. and in ratings from ½ to 10 kva., for voltages between 230 and 575, 60 cycle.

The small rack type, for indoor and outdoor installations, consists of several large capacitors mounted on an angle-iron framework with screen covers.

The large rack type, also for both indoor and outdoor service, is made in sizes, 3 ft. wide and 7 ft. high varying from 3 to 10 ft. deep.—*Radio Retailing*, June, 1935.

More advertising *means* less "Cow-Path Selling"

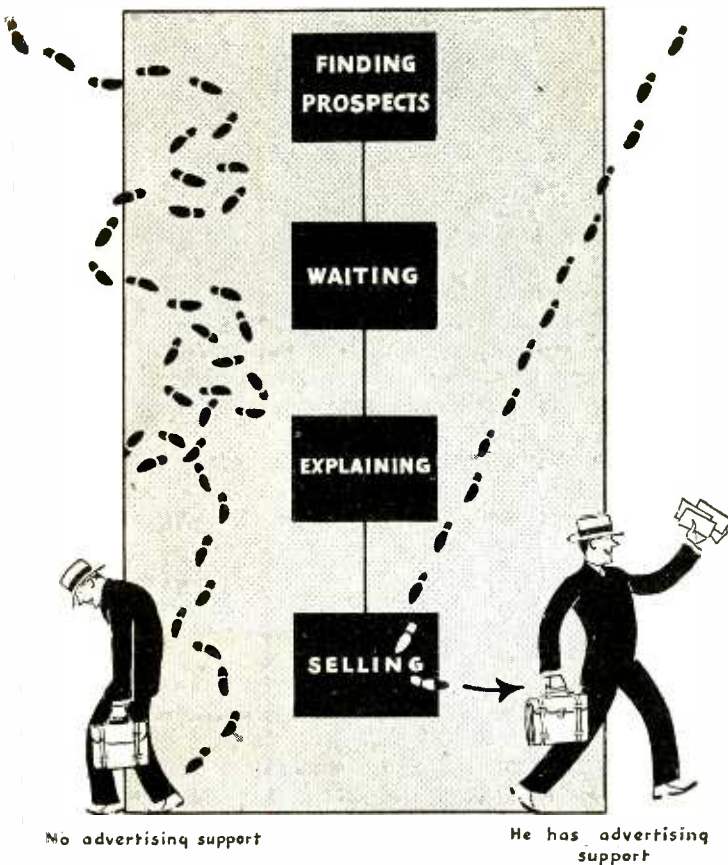
EVEN the best salesman gets the "run-around" when he tries to sell a little-known product. Waiting. Warming reception-room chairs. Trying to see men who "never heard of the company." Trying

to sell men who "don't know the product." Making extra trips to do the "between calls" sales work and good-will building that continuous advertising should be doing for him.

All this adds up to extra sales expense—and fewer sales to show for it. It's the result of making expensive man-power do the work that inexpensive advertising should be doing.

Yes, advertising *is* inexpensive if it tells the right sales story to the right audience, and wastes no money on those who can't possibly buy the product.

If you sell to business or industry, the McGraw-Hill publications will take your story to the key men in any or all of "Industry's 12 Major Markets"—with a minimum of waste circulation. It's a tonic that will boost the efficiency of your sales force and the business of your company. . . . Try it *now!*



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Mining Journal

Engineering News-Record
Factory Management and
Maintenance
Food Industries
Metal and Mineral Markets

Power
Product Engineering
Radio Retailing
Textile World
Transit Journal

Broadcasters Battle on Many Fronts (Continued from page 13)

ing matter regarding an obesity-reducing preparation, Marmola, which had already been the subject of an order by the Federal Trade Commission declaring that this medication "cannot be taken with safety to physical health except under the direction and advice of a competent medical authority." The United States Supreme Court later reiterated the opinion that the product should be taken only under medical direction and advice. According to the Communications Commission, the Post Office Department then denied use of the mails to the product, and its manufacturers agreed to go out of business, but they reorganized and developed a new distribution plan using radio and drug stores.

McCOSKER TAKES ISSUE WITH HOWARD DAVIS

"Radio is as free and untrammled as the ethereal blue," says Alfred J. McCosker, president of the Bamberger Broadcasting Service, Inc., and recent president of the National Association of Broadcasters. Mr. McCosker's statement in behalf of radio was made in reply to allegations by Howard Davis, former president of the American Newspaper Publishers Association, in a recent speech at Waterville, Maine.

"Mr. Davis made some assertions concerning fancied subservience of radio that I cannot permit to pass by unchallenged," states Mr. Cosker. "Mr. Davis said, 'In effect the party in power by invisible pressure and unspoken threat obtains a maximum service on the air and holds opposition to a minimum.'"

"Such an accusation is entirely unjustified. No fair mind should mistake growing pains for decadence. In my experience covering twelve years as operating head of America's leading independent radio station I have never encountered any basis for such allegation. Radio is as free and untrammled as the ethereal blue in the makeup of its broadcasting programs. Broadcasters have never been circumscribed by government censorship."

EDUCATORS DEMAND BROADCAST FACILITIES

By Our Washington Correspondent—Concluding two days of public hearings, May 15 and 16, in Washington, Chairman Eugene O. Sykes of the Broadcast Division of the Federal Communications Commission appointed U. S. Commissioner John W. Studebaker to be the chairman of a special committee whose task would be a continuing investigation of the proper place of strictly educational broadcasts in the general radio program picture.

In its report to Congress, the Federal Communications Commission has already recommended that at this time no fixed percentages of radio broadcast facilities should be allocated by statute to particular types or kinds of non-profit radio programs or to persons identified solely with such activities. The purpose of the present hearings, and of the appointment of a committee to further the study, was, therefore, to determine the extent to which an ade-

quate measure of cooperation might be developed between broadcasters and educational sources under the existing law.

That use of the air for broadcasting is a public resource, far too valuable now to be licensed solely to operators of radio transmitting equipment as such, was the emphatic position assumed by Harris K. Randall, the manager of the Chicago Civic Broadcast Bureau.

Representing the big networks through the National Association of Broadcasters, J. T. Ward, its president, pointed out the current efforts of the industry to find new methods of presenting subject matter; said that the chains had enjoyed the fullest co-operation of numerous educational organizations, associations and authorities in the development of such cultural undertakings.

Following this two-day hearing the Federal Communications Commission recommended to the Congress that present allocations remain in effect. The petitions of the educators for more air time have been taken care of by referring the whole matter to a special committee to be headed by John W. Studebaker, U. S. Commissioner of Education.

One Man's Meat (Continued from page 11)

or more his name is kept on file and when a man is in his neighborhood anyway a callback does not cost much. And if we keep calling this prospect will at least not buy from someone else. When his business is ready we will get it. It is sort of like staking a claim.

"Of course, quite a number of people who can be sold immediately are found on cold-canvass calls. This gives us an immediate return. But the cumulative effect of consistent canvassing is perhaps more important as it is a form of advertising in itself, perhaps the most effective one.

"Canvassing gives our men an opportunity to talk directly to prospects. This makes more of an impression than a mere newspaper ad. And, in addition, our men frequently obtain the names of genuine prospects when calling on people who are not themselves in the market for a refrigerator. They call back on old customers of ours for this purpose, too, and it is an important phase of the operation."

OBVIOUSLY, newspaper advertising is important to both the store-selling operation and to the canvasser. To the first it is essential as the primary source of leads. And to the second it is valuable as a "way-paver" for the men.

Recently, 12 dealers operating in Milwaukee, some canvassing and some abhorring this system, ran cooperative advertising in the local papers. Each ad featured a general message pointing out the advantage of electric refrigeration. This took up about half a page. The remainder of the page was given over to small blocks devoted to the interests of specific dealers.

A clever method of permitting different dealers to plug their particular lines in the ad without taking too much of a crack at others included on the same page was developed. Individual copy read as follows: "Herb Konen likes the Hermetically Sealed Unit." "Eddie Trispel likes the Revolving Shelf." "Bill Balliet likes the Temperature Selector."

So you took a LICKING *this Spring, eh??*

One day last week we had lunch with a friend in the shoe business. The following day we rode home on the train with another friend in the men's clothing business. Both had the same story to tell. Spring business was way off. But, by golly, they were laying their promotion plans right now and were lining up wholesalers and dealers so as to start a smashing early fall sales campaign—much earlier than usual, in order to make the remaining months of 1935 pull their year's sales up to quotas which had been set last January.

As we see it, the radio business is in somewhat the same situation. And smart dealers, distributors and manufacturers are laying plans now to develop sales momentum before the summer is over. In other words they are planning on an extra early fall season.

● *Replacement Parts active*

Reports from broadcasting stations indicate that many fine programs will continue right through the summer months. Which means that dealers will be buying new testing equipment, new tubes, and replacement parts to keep their customers' sets in first class operating condition.

● *New Models coming out*

With many new developments in the industry, such as metal tubes and improved speakers, the sale of new home sets will get under way at an earlier date than usual. In fact, several of the largest manufacturers have already announced their new lines—and more will be announced at any moment.

● *Dealers' Plans under way*

Dealers and distributors are planning right now for both the summer and fall selling seasons. So that it is an unusually opportune time to tell them the story of your new policies and your new products—while they are still open minded and eager to know the facts before making final decisions on the lines they will carry.

* * * * *

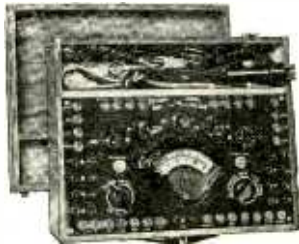
Your advertising message in the July and August issues of Radio Retailing will focus attention on *your* products at a time when 20,000 alert dealers and distributors are actively watching the industry's trend for the coming season.

By letting these key men know what you have that will fit into their *profit* picture, you can quickly improve your distribution set-up and secure an early start for increased sales this fall.

Forms for July close June 28.

Forms for August close July 27.

RADIO RETAILING . . . A McGraw-Hill Publication



SUPREME 339—DE LUXE ANALYZER

A super-analyzer with direct resistance ranges up to 20 Megs, with self-contained power supply and many other features . \$39.95



SUPREME 339—STANDARD ANALYZER

A new Free Reference Point Analyzer—the most outstanding value in the low price field . . \$29.95



SUPREME 89—STANDARD TUBE TESTER

A new low priced Tube Tester, featuring Supreme's famous Neonized leakage test \$34.95



SUPREME 385—AUTOMATIC

A multi-unit instrument, combining features of 339—DeLuxe Analyzer and 89—DeLuxe Tube Tester, plus other flexibility features possible only through Supreme's exclusive uni-contraction \$77.95



SUPREME 391—P. A. ANALYZER
A new analyzer especially designed for servicing sound film equipment and public address systems. \$69.95

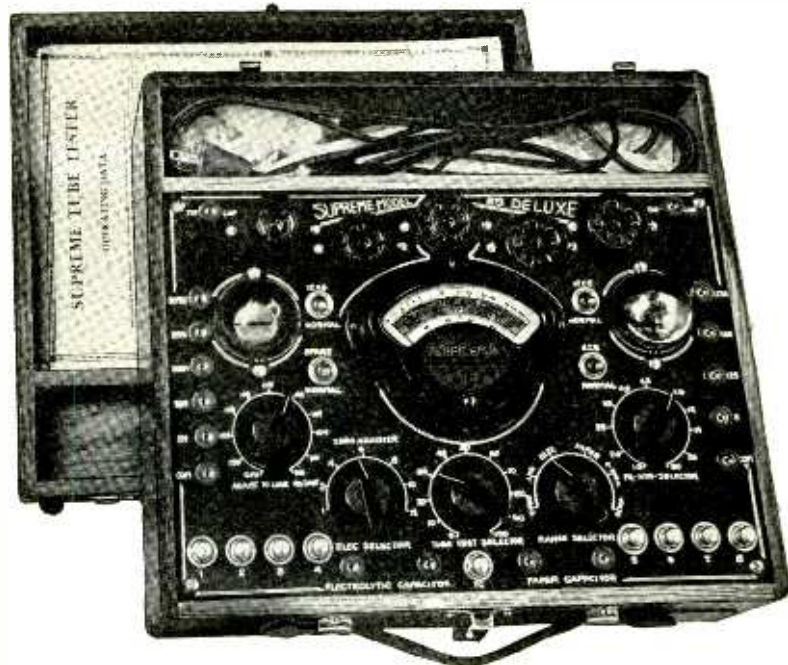
SUPREME 189—SIGNAL GENERATOR

Electron-coupled Circuit. 4 controls, 3 tubes. Completely new design \$36.95

HERE THEY COME!

The Most **SENSATIONAL** instruments in radio —

In last month's magazines Supreme promised instruments of the most startling design for service, speed and precision. Instruments offering many new features, in addition to new all-metal tube testing. We present them to you through your jobber's show rooms, confident that you will find our promises more than fulfilled.



Supreme 89—DeLuxe Tube Tester, \$45.95

Dealers Net Cash Wholesale Price

An outstanding example of Supreme engineering ingenuity. Listen to these features: A general utility tester; a tube tester with English reading scale, testing all tubes including new all metal 8 prongs; Neon tube leakage tester; Neon condenser tester; Electrolytic condenser tester with English reading scale. 4 range volt meter for point-to-point testing; 3 range Ohmmeter and 2 range Megohmmeter. Resistance ranges to 20 Megohms are with self contained power supply.

Wide awake, professional radio-men won't wait a day to enjoy the pride of possession and servicing superiority of the ultra modern Supreme 89-DeLuxe.

Turns Instruments Inside Out

For the first time the service-man can know exactly what he is getting in an instrument before he buys. Send the coupon for the free



Supreme Technical Manual of the Instrument or instruments of your choice. Written by engineers who have done the service-man's work and speak his language, these manuals virtually turn the instrument inside out and through clear, service-man's English and simple illustrations explain every circuit. Instead of advertising catch phrases and sales ballyhoo we are giving you the real dope. Send the coupon now, no obligation.



SUPREME INSTRUMENTS CORP.,
528 Supreme Bldg., Greenwood, Miss.

Send me the complete illustrated Technical Manual on Instruments checked below:

- Supreme 89—DeLuxe Tube Tester
- Supreme 89—Standard Tube Tester
- Supreme 385—Automatic
- Supreme 189—Signal Generator
- Supreme 339—DeLuxe Analyzer
- Supreme 339—Standard Analyzer
- Supreme 391—P. A. Analyzer

Name.....
Address.....
Town..... State.....
Jobber Preference.....

SERVICE SECTION

Conducted by
W. MacDonald

Including
Installation Data

CIRCUITS of the MONTH

Tube's Input Capacity "Frequency Modulates" Oscillator

In order to get a visual picture of an i.f. amplifier's response curve on the screen of a cathode-ray oscilloscope it is necessary to "wobble" the frequency of the test signal about the resonant frequency. This is commonly accomplished by means of a small motor-rotated condenser connected in parallel with a signal generator's main tuning condenser.

Now it happens that when the gain of a triode tube is varied its input capacitance also varies. So if the input capacity of the tube is used as a "trimmer" in parallel with an oscillator's tuning condenser and this input capacity may be varied by changing the tube's gain, frequency-modulation is accomplished electronically. Such a system is used in the Electronic Research Corporation's new cathode-ray "resonance-curve analyzer"—oscilloscope to you!

Figure 1 shows one method of accomplishing this end. The capacity tube's input is connected in parallel with the oscillator grid coil. Part of the associated oscilloscope's sweep voltage, "piped" to the capacity tube's grid through an r.f. choke and blocking condenser, biases the capacity tube and varies its gain. The horizontal axis, or time, is synchronous with frequency change because the sweep circuit oscillator is moving the spot across the screen and at the same time part of this same voltage is varying the oscillator frequency.

Use of a 79 or 53 as a combined oscillator and capacity tube simplifies the circuit and the system used in the Electronic device is shown in Fig. 3. The principle is the same. Inasmuch as the serviceman is usually concerned only in the curve itself and not in the rate at which it is drawn a linear time axis may be dispensed with and one alternation of the 50-cycle a.c. line is used to sweep the beam across the screen and vary the oscillator frequency. The negative alternation is used to bias the cathode-ray tube grid beyond cutoff during the return part of the cycle so that the picture is not seen "going and coming."

Fig. 3 shows the cathode-ray tube portion of the unit. The circuits of Figs. 2 and 3 form the complete job.

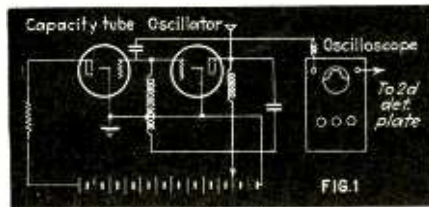


FIG. 1

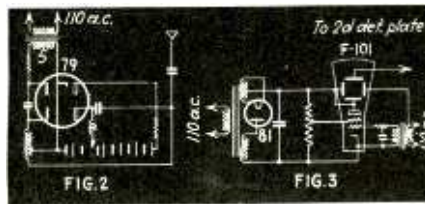


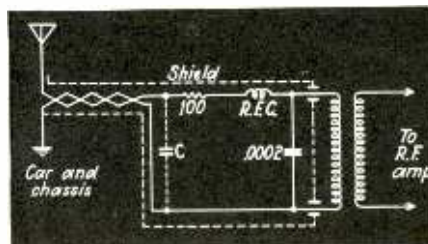
FIG. 2

FIG. 3

Auto Radio Antenna Filter

Several RCA and GE auto sets are now equipped with an antenna band-pass filter arrangement which cuts off response sharply above 1,600 kc. and below 540 kc., attenuating noise occurring outside the usable broadcast band. A few of the models incorporating the circuit diagrammed are: RCA M101, M104, M108 and M109. GE D51 and D52 and others.

Instead of the low end of the antenna coil terminating at a nearby chassis point it is carried forward as one leg of the transmission line to the outer termination of the antenna lead in shield, where it connects to the car frame. This keeps circulating automobile chassis currents out of the receiver input. C represents the inherent capacity of the lead in system and is not an actual condenser. Capacity coupling between transformer primary and secondary is minimized.



More Metal Tubes

Three more metal tubes by RCA out of GE are being sampled by set makers. Add the following tentative specifications to the six appearing in the May issue Service Section:

6L7, Pentagrid Mixer Amplifier

Mixer Operation

Heater voltage (a.c. or d.c.)	6.3
Heater current	0.3
Plate voltage (max.)	250
Screen voltage	150
Control grid voltage (grid 1) (min.)	-6
Control grid voltage (grid 3) (approx.)	-20
Peak oscillator voltage applied to grid 3	25
Plate current	3.5
Screen current	8.0
Plate resistance, greater than	2 megohms
Conversion conductance, greater than	325 micromhos
Conversion conductance at -45 bias on grid 3	2 micromhos

Amplifier Operation

Plate voltage (max.)	250
Screen voltage (grids 2 and 4) (max.)	100
Control grid voltage (grid 1) (min.)	-3
Control grid voltage (grid 3)	-3
Plate current	5.3
Screen current	5.5
Plate resistance	0.8 megohms
Mutual conductance	1100 micromhos
Mutual conductance	21 volts bias on grid 1
12 volts bias on grid 3	10

Pin connections, looking at bottom, reading clockwise after insulated pin locator (pin locator between cathode and shell pins): Shell, heater, plate, grids 2 and 4, grid 3, (next pin omitted) heater, cathode and grid 5. Top cap is grid 1.

The tube has two separate control grids shielded from each other. This design permits each grid to act independently upon the electron stream. Thus the tube can be used as a mixer in superhet circuits having a separate oscillator or for other applications where dual control is desirable in a single stage.

6F6 Power Amplifier Pentode

Class A Amplifier

Heater voltage (a.c. or d.c.)	6.3
Heater current	0.7
Plate voltage (max.)	250
Screen voltage (max.)	250
Grid voltage	-16.5
Plate current	34
Screen current	6.5
Plate resistance (approx.)	100,000
Amplification factor (approx.)	220
Mutual conductance	2200
Load resistance	7000
Total harmonic distortion, per cent.	7
Power output (watts)	3

Electrical characteristics, we note, are similar to those of the 42. Pin connections, looking at bottom, reading clockwise after insulated pin locator: Shell, heater, plate, grid 2 grid 1, (next pin omitted) heater, cathode and grid 3.

WESTON users *Smile* when new tube developments are announced!

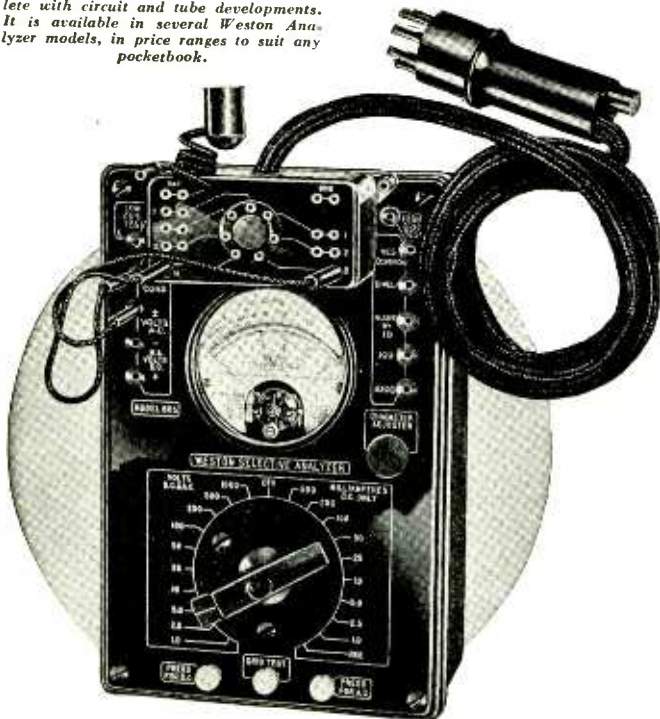
"It is certainly gratifying to me to know that with the introduction of new tubes and new circuits the design of my Weston Analyzer is such that it does not have to be discarded each year for a new device."

Yours truly,
C. J. Kellam
Elizabeth, N.J.

"With the advent of new tubes and eight prong sockets, my Weston testing outfit will still be up to date. Am I tickled with my choice—figure it out for yourself!"

Yours very truly
Frank Mirabella
Brooklyn, N.Y.

The Weston Method of Selective Analysis, introduced over two years ago, is basic . . . and does not become obsolete with circuit and tube developments. It is available in several Weston Analyzer models, in price ranges to suit any pocketbook.



● *It pays to buy soundly engineered test equipment.* The announcement of the all-metal tube has brought this home forcibly to servicemen.

No serviceman who uses the Weston Method of Selective Analysis is faced with the purchase of a new analyzer; nor is the Weston organization faced with the necessity of hastily turning out an expediency job to meet this new tube emergency.

The Weston Selective Analyzer was designed and built from the serviceman's point of view; to provide him with a dependable instrument that would meet all emergencies, and remain serviceable today, tomorrow and even years hence. This is typical Weston engineering.

It explains why Weston instruments are standard not only throughout the radio industry, but throughout the entire electrical industry as well. It offers a sound reason why your instrument purchases should be Weston, for all servicing needs... Weston Electrical Instrument Corporation, 581 Frelinghuysen Avenue, Newark, New Jersey.

WESTON 
Radio Instruments

SERVICE SECTION

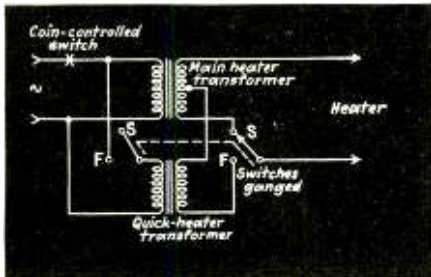
5Z4 Full Wave High-Vacuum Rectifier

Heater voltage	5
Heater current	2
A.c. plate voltage per plate (RMS) (max.)	400
Peak inverse voltage (max.)	1100
D.c. output current (max.)	125

This tube has a double metal shell, the outer one being liberally perforated. Pin connections looking at bottom, reading clockwise after insulated pin locator: Shell, heater, (next pin omitted) plate 2, (next pin omitted) plate 1, (next pin omitted) heater and cathode.

Quick-Heating Amplifier

The Simplex Model 453 coin-operated amplifier is equipped with an auxiliary heater transformer which brings the job up to the operating point quickly. When the ganged switch is snapped to the "fast" position the auxiliary transformer's primary is energized from the line, its secondary is connected in series



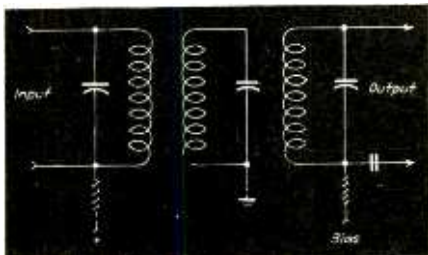
with half the regular heater transformer secondary.

We don't see any indication in the circuit furnished that this process is automatic, the regular transformer cutting in again when plate current rises, but it would be a comparatively simple job to make it so with a simple relay.

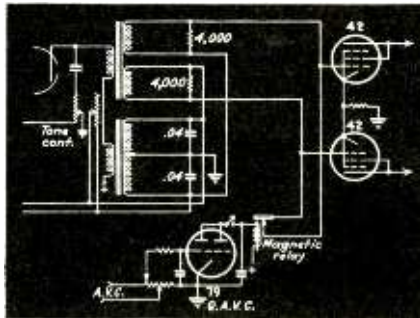
Band-Pass I. F.

Among the many interesting features of the Browning 35 "build-up" allwave kit, using a "Tobe Tuner," is the three-coil, band-pass arrangement used in each of the two i.f. transformers.

By proper adjustment of the trimmers shown in the accompanying diagram it is possible to "blunt-nose" the i.f. response curve for faithful passing of high audio frequencies while still retaining a suitably



sharp selectivity curve. The transformers are pre-tuned for this effect by the manufacturer but adjustments may later be made by the assembler if so desired.



Stratosphere

Zenith's 25-tube "Stratosphere," at once a good radio and good publicity, has so many ultra-ultra refinements that to diagram them all would take up the book for the month. The portion shown illustrates the use of two special transformers between 1st and 2nd a.f. stage and the magnetic relay for silencing reception between stations.

If the transformer setup is examined closely it will be found that the combination works much like a conventional push-pull unit between paralleled 76's in the first stage and push-pull 42 drivers in the 2nd. The lower transformer, however, is "tricked" up, works in conjunction with a section of the tone control.

The 79 q.a.v.c. tube has a magnetic relay in its plate circuit. When the a.v.c. system shoots this tube too much noise its plate current rises, the relay closes and shorts the grids of the drivers together.

Other refinements noted in the Stratosphere are: Adjustment of r.f. stage bias individually for each band. (The band-change switch does the work.) More or less conventional diode arrangement in the a.v.c. tube to prevent overloading. I.f. transformers with mechanically variable coupling, hence control of selectivity and fidelity. Eight 45's (no less!) in push-pull parallel for the final a.f. stage. 99 ohm resistor in each grid lead to eliminate possibility of parasitic oscillation. Two separate power supplies, one delivering plate voltage for the upper chassis and bias voltage for the output stage, the other delivering plate current for the output stage only.

Tap Improves Image Ratio

The control grid of first detector-oscillator tube used in sets omitting an r.f. stage is usually fed directly from the "hot" end of an input coil secondary. In Cros-

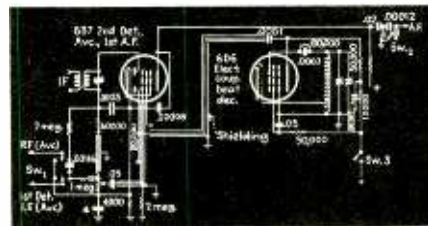
ley's chassis 6V2 (Dual 60) the grid is fed from a tap a few turns down from the extreme end of the coil. Powel's engineers explain that this is done to improve image ratio.

It seems that the effect of the tap is to produce an unsymmetrical selectivity characteristic so that at the point of normal image response (approximately 360 kc. higher than the desired signal in this 181.5 kc. i.f. receiver) this unsymmetrical selectivity curve tends to attenuate any image.

"Communications" Receiver

With the exception of that portion of RCA's Model ACR-136 programmed servicemen will have little difficulty understanding the circuit of this receiver, which is an "allwave" job equipped with a number of refinements useful to the shortwave fan and amateur operator.

The second detector is a conventional half-wave diode affair, a.v.c. voltage being taken from the high side of the diode load



resistor for this initial r.f. stage and from a point farther down on the resistor network for the 1st detector and i.f. stage control. SW₁ permits all a.v.c. action to be cut out and fixed bias substituted when receiving slow-speed code signals.

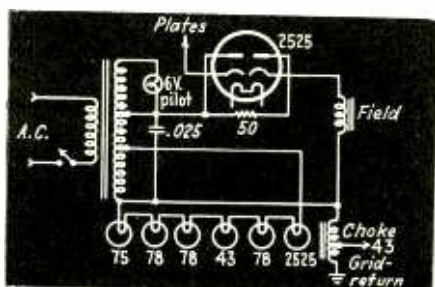
The beat-frequency oscillator is factory tuned to "beat" with the i.f. By turning a small "crowbar" handle affixed to the trimmer in shunt with the oscillator's tuning coil the oscillator may be adjusted above or below the i.f. to a frequency which provides the most pleasing audio beat. SW₂ permits the oscillator to be cut out when listening to 'phones. The 6D6 is electron-coupled to the 6B7 through the .0001 condenser, feeding into the second diode plate circuit.

SW₃ cuts out the .0012, in which case the .02 audio coupling resistor only is in the circuit, raising bass response. This supplements action of the conventional tone control (not shown) when working on certain bands.

TINY CATHODE-RAY TUBES HAVE been used in England as tuning indicators for broadcast receivers. But it's news here that one of our largest set makers plans to equip his fall line with the things, dispensing with moving vane meters, neon tubes and similar devices more commonly used to show resonance.

HOW TO USE YOUR TEST OSCILLATOR AS A GRID-DIP METER

By JACK AVINS



Power Transformer Plus 25Z5

Usually, sets employing a 25Z5 omit the power transformer. Here's Spar-ton's 65T and 66T in which both are used, the tube operating as a "double" (not doubler) half-wave rectifier.

The low end of the transformer secondary is negative and heaters secure operating potential from this point to a tap. High voltage for plate and screen supply is taken between the same negative tap and another nearer the positive leg of the secondary. A 6 volt pilot has two taps all its own near the high end.

Plate and screen supply d.c. is drawn from one of the rectifier cathodes while the field coil operates from the other. The tapped filter choke provides bias for the final audio amplifier pentode.

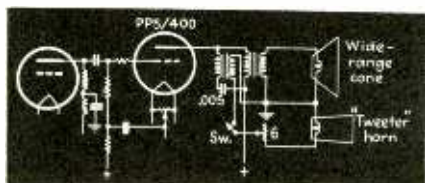
The condenser and resistor shown are there to balance the loads of the two 25Z5 sections and to avoid hum.

"Tweeter" With Fader

Birmingham Sound Reproducer's (British) Model V.S.8 receiver is interesting for its speaker hookup, which possibly sets a good example for American-made sets. In addition to having variable, high-fidelity coupling between i.f. transformer primaries and secondaries (RRDec34) a wide-range cone and a "tweeter" horn are used.

Both units are dynamic types, with their fields hooked up in series. The tweeter's output may be controlled by varying a resistance in series with the voice-coil, or the tweeter may be switched out entirely where brilliancy is not desired.

The lead common to both voice-coils is used simply to permit the omission of one wire between chassis and speakers. Note, also, that a certain amount of discrimination against lows is incorporated in the horn circuit by feeding the tweeter's input transformer primary through a .005 condenser. D.c. to operate the final power stage thus flows only through the primary of the cone's input transformer.



WITH the widespread popularity of all-wave receivers there is a real need among servicemen for an instrument which will measure condensers and coils encountered at short-wave frequencies as well as at broadcast and intermediate frequencies. This article describes the conversion of an all-wave test oscillator into a modified grid-dip oscillator, which will measure capacity, inductance, the resonant frequency of tuned circuits and perform a great many other tests.

Circuit Modifications

In general, the circuit of an all-wave oscillator will follow the outline of Fig.

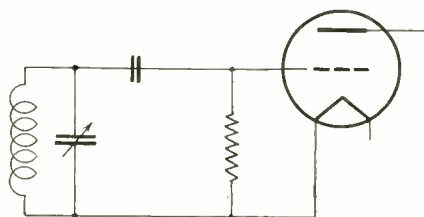


Fig. 1—Grid circuit of conventional oscillator

1. The necessary changes are indicated in Fig. 2 and are as follows: The grid leak and grid condenser are removed, self-bias substituted. Bias is obtained from the voltage drop across the resistor R. A path for r.f. grid and plate current is provided by the by-pass condensers C_2 , which have a capacity of .05 μ fd. This value is not critical.

The grid-dip meter is a 0-1 milliammeter and R is chosen so that the deflection of this meter due to rectified grid current is more than half scale. It is inadvisable to insert the meter at point A since this is a point of high r.f. potential; placing the meter at B would lead to hand capacity effects and would disturb the calibration.

One side of a 50 μ fd. variable midget condenser, C_1 , is connected to the hot end of the grid coil and the other side brought out to an insulated terminal on the panel. In addition, a three position single-pole switch is incorporated in the circuit to permit switching in a standard coil or condenser, the reason for which will be described below.

Measuring Inductance, Capacity

To measure the inductance of a coil, the switch is thrown to the L position.

This places the standard condenser C_1 in parallel with the unknown coil. For all ordinary purposes a regular .0001 mica condenser of reliable manufacture will be sufficiently good to serve as the standard condenser. However, if greater accuracy is desirable the condenser can be obtained to the desired precision. Obviously the resonant frequency of the coil and the standard condenser will depend upon the inductance of the coil—the larger the inductance the lower the resonant frequency. From the inductance scale of Fig. 3 showing the relation between the inductance and the resonant frequency, the unknown inductance is at once found. For example, if when the unknown coil is connected across the standard condenser, the grid meter dips at 1,000 kc., then the inductance is 253 μ h. (microhenrys).

To measure the capacity of a condenser the switch is placed in the C position, thus shunting the condenser with the standard coil. The frequency of the oscillator is varied until a dip is observed, indicating the resonant frequency of the combination. From the inductance scale curve in Fig. 3 which shows the relation between capacity and the resonant frequency, the capacity of the unknown is obtained. For example, if the dip is observed to occur at 1,000 kc., then the capacity is 506 μ fd.

Standard Coil Construction

The construction of the standard coil requires special comment. It has an inductance of 50 microhenrys and consists of about 50 turns on a 1-in. form. After the coil is wound to the approximate size it is placed in parallel with the standard condenser and the number of turns adjusted so that the combination resonates at 2,250 kc., as indicated by the grid dip. The inductance of the coil will then be 50 microhenrys. Of course, a smaller coil form can be used with a corresponding increase in the number of turns.

When the resonant frequency of an external tuned circuit or of a choke coil

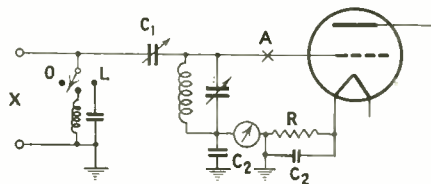
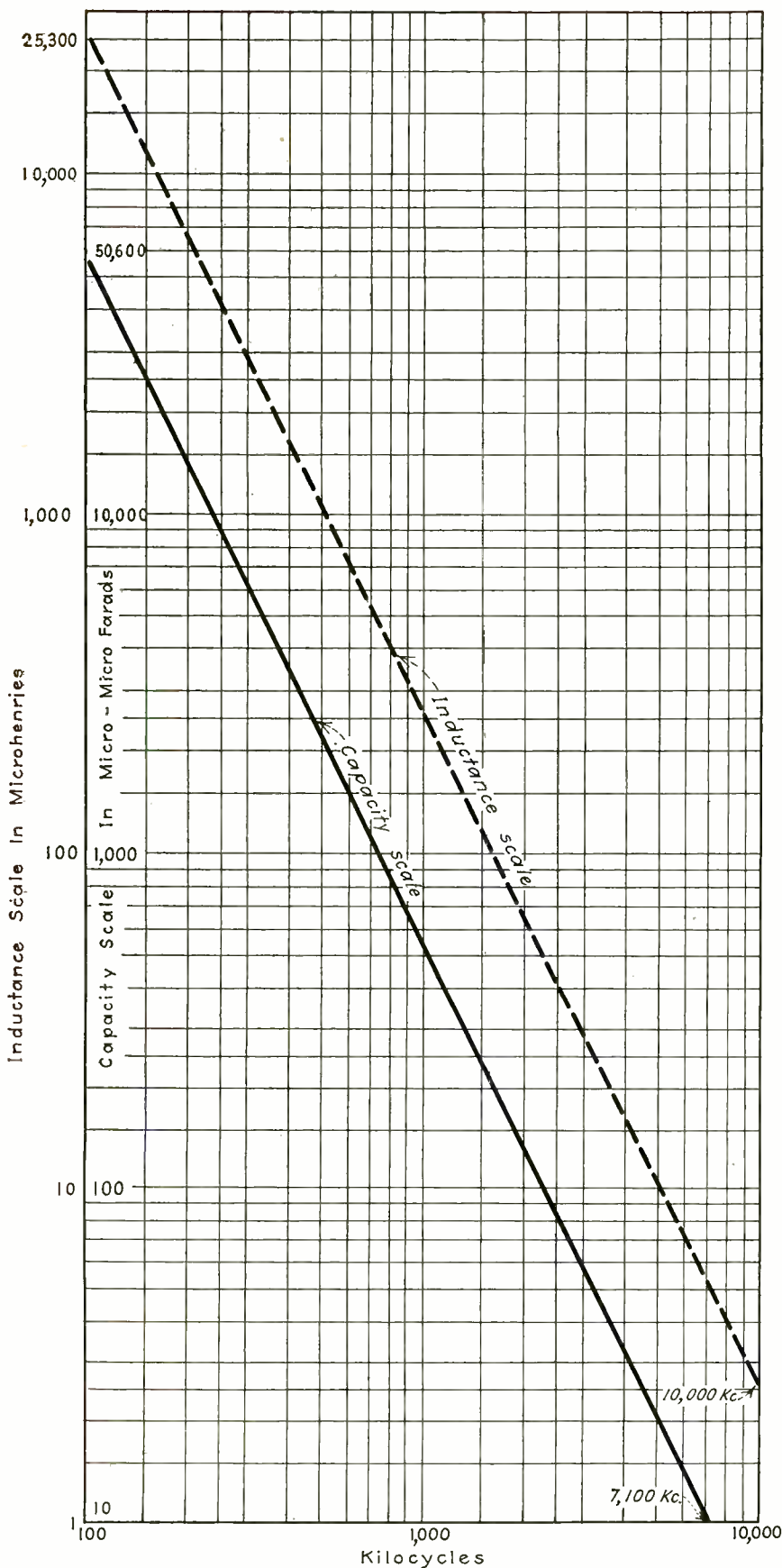


Fig. 2—Modifications for grid-dip indication



is being measured the switch is put in position O and the resonant frequency determined by noting the frequency at which the grid meter dips. The following procedure should be observed whenever determining the resonant frequency. With C_1 at maximum capacity, the frequency of the oscillator is varied systematically until a dip is observed in the grid meter. The capacity of C_1 is then decreased until the dip is just barely noticeable as the resonant point is passed. The frequency of the oscillator is then noted and this will also be the resonant frequency of the tuned circuit.

Since line radiation is of no consequence in the above applications, an a.c. operated oscillator will be feasible and will have the advantage of requiring a less sensitive grid meter. It may be pointed out here that the inductance-capacity calibration curves given in the chart at the left are applicable to any oscillator, whether direct reading or not.

No attempt has been made in this article to cover the many uses for the modified grid-dip oscillator here described. A discussion of additional uses will be found in an article by Kirk in the February, 1935, issue of *Radio Retailing*.

Emergency Heat

By A. L. Cain

When you go out to service a battery radio and need to solder a connection and there is no electricity available for your iron, set afire three or four Hexamethylenamine or "Formin" tablets. They will generate enough heat to permit use of the iron, if it is a small one.

Power Line "Tie-Ins" Cause Noise

By E. A. Wight, Jr.

In many small towns the power companies tie high-tension distribution wires to the insulators with short lengths of the same heavily insulated wire used as a conductor. Thus there is a space twice the thickness of the insulation between conductor and tie-in. Arcing sometimes occurs through this insulation, causing radio interference.

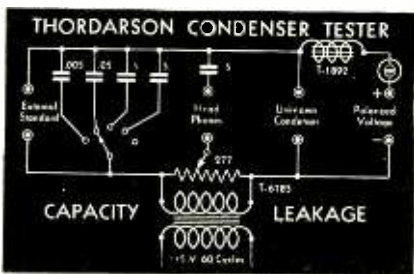
Where it is experienced induce the power company to use bare wire tie-ins contacting the copper of the conductor, if possible. If this cannot be done connect a choke consisting of 75 turns of number 15 single cotton wire on a two-inch tube in the ungrounded side of the line leading to the set and connect two 2 mfd. condensers in series across the line between choke and set, grounding the midpoint.



You Can Build a
THORDARSON

combination

CONDENSER CAPACITY-LEAKAGE TESTER



Measures capacity in microfarads and indicates dielectric leakage with a sensitive neon glow lamp! Measures transformer ratios, resistance ratios, line and voice coil impedance.

Start with the THORDARSON FOUNDATION UNIT!

The Foundation Unit consists of a laboratory style solid walnut portable carrying case, an etched and drilled metal panel with an accurately calibrated capacity and ratio scale with which to measure capacity in all values from 0.005 to 50 mfd., hardware, and complete, detailed assembly instructions. The remaining parts required are standard items. You probably have most of them on hand. You can assemble the Condenser Capacity and Leakage Tester for half the cost of the two instruments purchased separately. The Foundation Unit is available—

At all THORDARSON Distributors

The Servicemen's Guide

How to build the THORDARSON Condenser Capacity-Leakage Tester is one of the many features of the Servicemen's Guide. In addition, the Guide contains manufacturers' trade data never before published, charts, diagrams, data, merchandising information, and instructions for building useful service test instruments. The Guide is not a catalog—no merchandise is listed for sale in it. Price only 10c, postpaid. Send for Your Copy Today!



THORDARSON ELECTRIC MFG. CO.
500 W. Huron St., Dept. K, Chicago, Illinois

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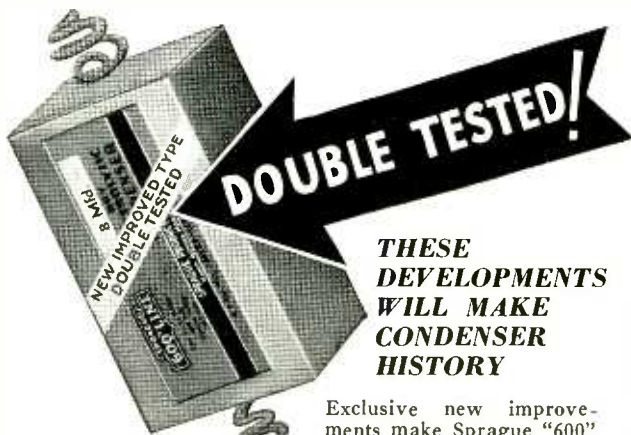
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Phonograph Pickup Repairing

By William Toth

Distortion is usually the complaint on phonograph service calls. The serviceman's first impulse is to operate on the pickup . . . but, a word of caution. Fifty per cent of this trouble is not due to mechanical trouble in the machine, but to worn records, worn needles or loose needles or improper pressure on the tone arm. Carry a good electrically recorded record for test.

If there is trouble not due to the amplifier or speaker, first test the turntable speed. Place a card under a record so that it projects slightly. Start the machine and count the revolutions made by the card, adjusting to 78, or 33½ r.p.m., depending upon the type of record and machine used.

If the speed is ok determine whether high or low notes are missing. If either is absent and the amplifier and speaker are ok, the pickup is probably sour. Generally the armature is off center. Rattles on certain notes or blasting indicates decayed damping blocks as a rule. Vibrating or crackling noise indicates that the base of the pickup around the needle is magnetic and iron filings are probably present. Sharp cracking sounds usually indicate loose connections.

Infrequent use of the pickup results in hardened, unpliant rubber blocks and rubber pivot supports. Hardened blocks usually throw the armature off center. Allowing the pickup to rest on the record when not in use also causes off-centering.

If the armature is found to be off-center remove the outer case of the pickup and the magnet pieces. Mark the magnet for identification with a crayon. A "keeper" should be placed across the poles when the magnet is removed. Now examine the rubber blocks and rubber pivot supports. If possible replace them if they are hardened.

Where it is difficult to replace rubber blocks these can be made of automobile inner tubes and the rubber pivot supports from a baby's nipple cut into strips. If the armature is rusted replace it or soak it in penetrating oil. Always remove this oil before re-assembling, using gasoline or naphtha, as oil ruins rubber.

Now, with the armature adjusting plate screws loose, the metal piece holding the damping blocks is moved until the armature is properly centered between the pole pieces. Judge as well as you can by eye. With the pickup re-assembled test for proper adjustment by placing the finger on the needle, rocking it lightly first from left to right. The sound emitted from each motion should be the same. If the sound is weaker

on one side the screw on the opposite side should be loosened and the rubber pivot or adjusting plate forced closer to the armature.

When removing the pickup assembly from the motorboard do not loosen the pivoted setscrews on either side of the arm. The right way to remove it is to disconnect the output wires under the motorboard, remove the screws holding the base in place and lift the assembly. Lubricate the arm with vaseline. Remove any iron particles present at the base of the pickup with a vacuum cleaner.

Volume Control Lubrication

By Marion L. Rhodes

It is common practice to oil or grease noisy wire-wound volume controls.

A small amount of finely powdered graphite will lubricate and not collect dust. In an emergency the point of a soft lead pencil may be scraped.

Auto-Radio Test Analyzer

By Al Beers

The accompanying diagrams show a "gadget" made in my shop which has proven to be an excellent item for taking voltage and current readings on automobile radios. The entire outfit is incorporated right in the cable itself.

The first diagram, figure 1, is the

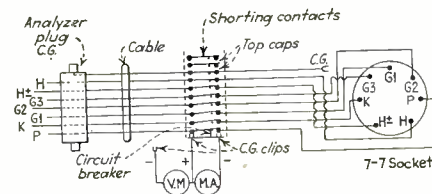


Fig. 1

complete schematic, details omitted. Figure 2A shows the method of obtaining simultaneous voltage and current read-

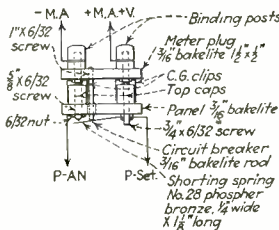
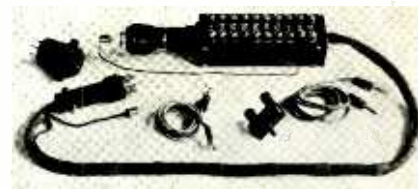


Fig. 2A



ings. The upper drawing of 2B shows a universal adapter consisting of a 4, 5, 6 socket mounted on a large 7-pin tube base. This is inserted in the 7-7 socket

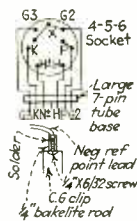


Fig. 2B

of the gadget to test 4-5-6 prong tubes. The lower drawing of figure 2B is the negative reference point plug. Figure 3 illustrates how the gadget is fastened

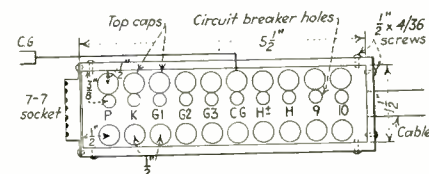


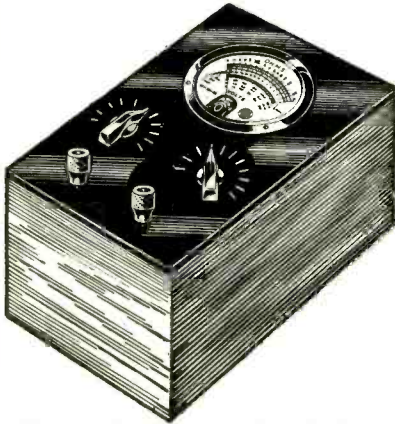
Fig. 3

to the cable and approximate sizes. Material used is as follows: 20 top caps, 3 control grid clips, 4 pieces of 1/8 bakelite, 5 1/2 inches long by 1 1/2 inches wide for top, bottom and 2 sides of gadget, 1 piece 1 1/8 long by 1 1/2 wide, meter plug, 1 piece 1/8 fibre 1 1/8 long by 1 1/2 wide mounted underneath 7-7 socket on socket end, 2 binding posts and necessary screws, nuts and No. 28 phosphor bronze.

The outfit is easy to handle in confined space. The meters can be placed on the front seat of the car out of the way, enabling the user to get in at the "works." Anyone who has tried to juggle a full-size analyzer for such work knows that this is a useful advantage.

The outfit brings voltage and current tests down to as simple a process as could be desired. Say a test is to be made on a 6A7. Connect meters as shown in figure 1, pick out negative leg, in this case K. Connect negative reference point lead to K, analyzer plug in socket of receiver, tube in 7-7 socket on end of gadget. Take meter plug and plug in various circuits as desired, reading volts and mils. simultaneously. Socket to chassis resistance tests are made by switching the voltmeter to ohms and negative lead from K to chassis.

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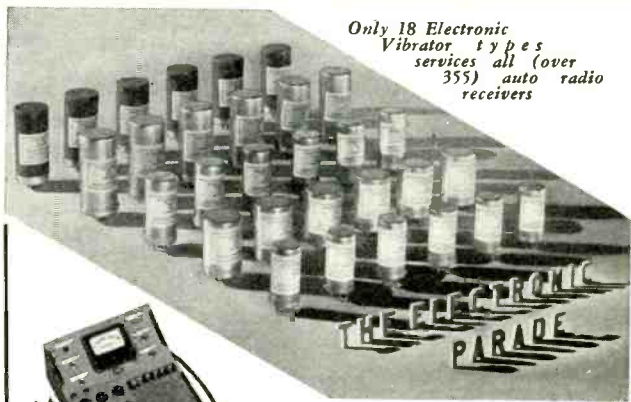
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AMERICAN BOSCH 242, 243. To improve tone and volume . . . Remove the .05 (C23) audio coupling condenser between detector and first audio. Remove the 1 megohm resistor (R11) in the plate circuit of the 56 detector. This leaves two open leads, one from the volume control and one from the 56 plate. Connect them together.

AK 511W TUN-O-MATIC. Automatic feature won't shut off, tuning condensers swing to 1,600 kc. ok, but line is not cut . . . Look at nine point normal, off, and automatic switch at right on front panel. Switching blades are a little too wide and sometimes contact two points at once, preventing opening of the circuit. File blades down a little or replace with later type switch available from factory. No reception . . . Look for leads soldered to tone control switch touching housing of volume control and grounding out. These two are mounted so close together on front panel that sometimes the rubber insulated pieces on the tone control leads slip off from vibration. Slide them back in place or bend leads back. Hum not due to circuit faults . . . May be due to reversal of antenna and ground. 5Z3 rectifier and 2A3 tubes also seem critical. Change them when looking for hum.

ARVIN 35. Poor tone . . . Replace both .01 mfd. audio coupling condensers with mica moulded types of same value.

CROSLEY 122. Type 24 oscillator fails to oscillate at low frequency end of dial and new 24A won't work at all in this dynatron circuit . . . Shunt a 1-watt, 750-ohm resistor across 650-ohm volume control and 24A will go to work.

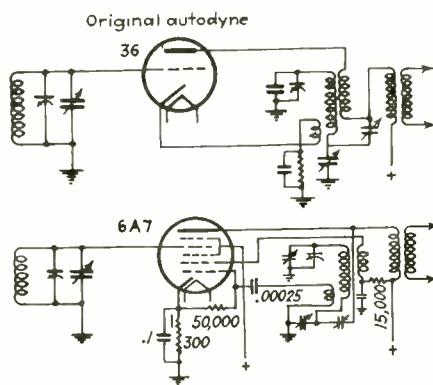
1935 FORD. Inability to quiet ignition noise, despite standard suppression . . . A 1 mike condenser from the hot storage battery connection on the gasoline gauge to ground is essential. Other filtering tricks suggested are: Complete shielding of hot A lead from battery to set and shielded wire from resistor connection on instrument panel to distributor, removing old wire. Ground shield to cowl, engine and body.

GE K50P, K54P, K60P, K65P. Shortwave switch does not fall in place when knob is turned . . . Due to falling out of clip which fits into slot on shaft, holding the shaft in place. Leave out clip and, instead, cut a slot in the end of the shaft so that a floor nail can be fitted into the slot. Solder the nail to the shaft. When the switch is turned the nail will fall against either one side or the other side of the protruding bakelite wall, holding the switch in place in either position.

MAJESTIC 70, 90. Frying noise, sounds like noisy audio transformer but is not . . . Often due to corroded and loose leads in the ballast unit. Take cover off, loosen resistance wire leads, clean them well and replace, tightening contacts well.

MOTOROLA 1935. Installation in 29, 30 and 31 Chevrolets . . . Bond all metal in overhead frame of car, such as the windshield adjustment and corner braces. Run antenna lead in shield to within 6 inches of antenna. Bond antenna lead to dash and dash to bulkhead. Run bond from firewall up right front post to border on top members. Place grounded screen on floor boards and bond motor and all choke and throttle rods running from motor to driver's compartment. If care is taken no suppressors are needed.

PHILCO 14 (Early). 36 autodyne first detector does not oscillate stably at lower frequencies, changing of oscillator coils and bias resistor does not affect permanent cure. Nor does replacement of tube, mica in tuning gang trimmers or



cloth covered wiring . . . Substitute 6A7 for 36, employing new circuit diagrammed. The same oscillator coil is used, but the various windings employed differently. Slight retrimming of all condensers associated with circuit is all that is necessary when revamping has been done.

RCA R28P. Violent oscillation all over dial . . . Probably an open circuited 4 microfarad electrolytic screen by-pass condenser. It is mounted under the chassis in a common container with a second 4 mike unit. Change both to prevent a call back.

RCA R-28. Speaker rattle, sounds live voice coil striking pole, but is rarely this . . . Cone is screwed to speaker frame only at bottom, allowing top part to vibrate against frame on loud signals. Screw top edge of cone to frame with short 4/36 machine screws and nuts. Holes are already in frame, so no drilling is required.

SILVERTONE 1640. Improving tone and reducing hum . . . Use .001 condenser in place of original .003 tone control unit. Replace 100,000 ohm resistor and .1 mike condenser in lead to midpoint of driver tube's gridleak with .5 mike condenser from gridleak midpoint to ground. Use .003 condenser instead of .02 from one leg of power transformer primary to ground. Use grounded electrostatic shield between primary and secondary of power transformer if set operates on 25 cycles. The 60 cycle jobs do not need such shields and if shields are provided they should be disconnected. Replace 8 mike, 475 volt electrolytic condensers with a 14 mike, 440 volt unit. In replacing power transformer use one with a separate filament winding having a 20 ohm adjustable center tap resistor across it for one of the 46 driver tubes. The adjustment is quite critical. To impart greater brilliancy to tone replace auto-transformer found mounted on 12 inch speaker with a new auto-transformer having fewer laminated core sections. Failure of volume control to reduce volume to zero is due to coupling between second i.f. and detector grid leads, under the chassis. The i.f. lead connects from coupling choke and detector grid lead from tuning condenser. Spread these leads far apart.

SONORA. Avoiding high price of replacing special tubes . . . Rewire for 27's in the r.f. detector and first a.f. and a 45 in the output. Place five-prong wafer sockets over regular four-prong types in r.f. sections. Fasten with small bolts. Bring up connections. Carry cathode leads from chassis through holes in rivets holding coils. Make cathode return to powerpack through one side of unused filament wiring. Install new transformer with following specifications: 700-volt c.t. secondary, 2.5-volt c.t. filament secondary and 5-volt secondary. Change bias for 27's to 500 ohms and place grid return to 45 in filament center tap. Discard ballast tube. Job costs less than half the price of new special tubes.

SPARTON 80, 83, 84, 85X, 86X, 104, 835. Improving tone of cabinet models . . . Remove screws holding speaker baffle in place. Insert 3/8 inch spacers under screws, replacing only those at four corners.

ZENETTE A, B, C, D. Erratic operation, squeals, overall efficiency loss . . . Replace 25,000 ohm series plate resistor with same value in 10 watt size. Check all high value resistors in detector plate circuits for 25 per cent change in value, also 1 megohm resistor in first r.f. grid return. If set is radio-phono combination keep wire from phono switch as far away from receiver circuits as possible. Put .00025 condenser from detector choke to ground for greater stability.



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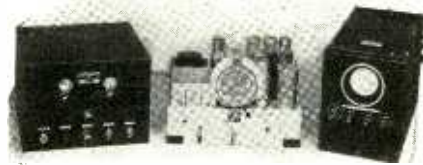
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Service men who appreciate the importance of the correct antenna system in modern short wave reception, report success in all types of locations with this remarkable unit . . . telling us that it improves broadcast as well as short wave reception. Investigate “NOISE-MASTER.”

CORNISH WIRE CO.
30 Church Street
N. Y. City

GET THIS!



20 TIMES MORE SENSITIVE!

NEW DAY-RAD TUBE TESTERS

Makes a super-sensitive test that multiplies both service and tube sales. Catches tube faults missed before. Simple, efficient, compact AND IT TESTS NEW METAL TUBES WITHOUT ADDING ANY GADGETS! Mechanically advanced and a money-maker deluxe.

GET CATALOG! Write for it. Illustrates and explains all new models including NEW SIGNAL GENERATOR (60 to 60,000 KC—5 METERS). Write today.

The RADIO PRODUCTS CO.
125 Sunrise Place Dayton, Ohio

The Fit Still Survive

Did you ever compare the classified section of the 'phone book with the directory of the year before? It's an interesting if somewhat disheartening pastime. You find every year that some merchants have fallen by the wayside. The causes are usually bad management and poor merchandise.

Fortunately each trade has antidotes for business disaster and failure. Not the least of these antidotes are the business magazines of each trade. The editorial pages tell a merchant how to manage his business profitably—the advertising pages help a man buy good merchandise. Try *Radio Retailing* as a prescription. Use its pages as a cure for failure, as a stimulant to business survival.

Radio Retailing

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You can't argue with SALES RECORDS!

The New CROSLY KOLDRINK ELECTRIC BOTTLE COOLER



Only . . .
\$99.50

DELIVERED...INSTALLED...
ONE YEAR FREE SERVICE

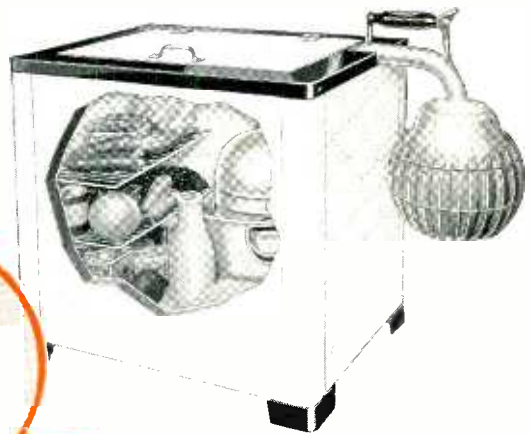
A necessity for restaurants, druggists, hotels, roadside stands, summer camps, groceries—any retailer of bottled beverages. Cuts cost of refrigeration as much as one-half; increases sales by winning popular approval of the drinks. Of particular value to the small dairyman. What a market! No wonder sales are going up and up! No wonder dealers are profiting.

The New CROSLY ICYBALL FOR UNWIRED HOMES

Only . . .
\$59.95

I. F. O. B. FACTORY

Price includes cabinet, stove, icyball unit, stabilizer and tub.



3 AMAZING CROSLY MONEY MAKERS

in refrigeration that have piled sales record upon sales record..Meet every condition..give you a 3-fold market (A) THE WIRED HOME. (B) THE UNWIRED HOME, (C) ROADSIDE STANDS, ETC.

Wherever refrigeration is needed and electricity is not available. For rural homes, dairies, summer camps, roadside stands, boats. Turns heat to ice. Uses only about 2c worth of kerosene a day. Not one moving part. Makes ice cubes. A dependable refrigerator—low in price, economical to use Gives the Crosley dealer a wide, non-competitive market.

For the wired home, the Crosley Tri-Shelvador, the Shelvador, the Table Shelvador . . . 3 types of electric refrigerators for every purse and purpose, featuring the sensational Shelvador that means—more room; things twice as easy to find; offering a value unheard-of in electric refrigeration.

For unwired homes, summer camps, etc., the new Crosley icyball . . . turns heat into ice . . . gives all the food protection that any refrigerator can give for 2c worth of kerosene daily. Also a bottle cooler . . .

For roadside stands, confectioneries, restaurants, hotels, etc., the Koldrink Electric Bottle Cooler.

Thus does Crosley cover all 3 markets. Thus Crosley gives to dealers a 3-fold sales lead. The rest is written in sales records that seem almost unbelievable. From 100% to 1000% greater sales during 1935 than during corresponding months last year. Can you afford *not* to get in on this?

The Crosley Radio Corporation

(Pioneer Manufacturers of Radio Receiving Sets)

Home of WLW—the world's most powerful broadcasting station

POWEL CROSLY, Jr., President
CINCINNATI

Prices in Florida, Texas, Rocky Mountain states and west, slightly higher.

ALL SALES RECORDS SMASHED BY CROSLY SHELVADOR MODELS

. . . DUE TO NATION-WIDE PUBLIC PREFERENCE!

\$79.50 UP



TRI-SHELVADOR

CROSLY SHELVADOR MODELS HAVE SHOWN THE GREATEST SALES INCREASE IN THE HISTORY OF ELECTRIC REFRIGERATION

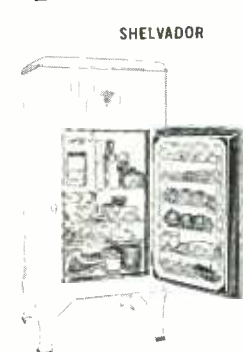


TABLE SHELVADOR

TABLE SHELVADOR . . . 2 models priced from \$79.50 to \$94.50. Uses semi-hermetic rotary compressor. Ideal for small homes, summer camps and cottages.



SHELVADOR . . . 5 models from \$99.50 for 3.5 cu. ft. size to \$169.50 for 7.08 cu. ft. size.



SHELVADOR

TRI-SHELVADOR . . . 3 models from \$139.50 for 4.3 cu. ft. size to \$189.50 for 7.08 cu. ft. size.

Both Shelvador and Tri-Shelvador models have—interior light, flat bar shelves, ventilated front, porcelain interior, lacquer exterior. (Most models available with porcelain exterior at slight extra cost.)

Tri-Shelvador models have, in addition, the Shelvador, Shelvatray, Storabin, and self-closing ice-tray chamber door.

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

NOW... CUSTOM INSTALLATION

**Adds another big selling
feature for General Electric
Auto Radio Dealers**

We don't have to tell G-E Auto Radio Dealers about the sets themselves — you've told us! "What a line!" "Certainly sure-fire selling." "Finest auto radio tone I've ever heard." These are just a few of the comments by dealers.

But now General Electric adds a real selling idea to auto radio merchandising — Custom Installation! These new control units are designed to fit the spaces provided on most of the new cars. Dials, bezels and finish to match the interior decorative scheme of 90% of cars sold! Or if your customer wishes, the streamlined steering post mounting may be furnished.

A COMPLETE LINE

The four new 1935 G-E Auto Radio Models offer the latest features in modern auto radio. Complete shielding, eliminating spark plug suppressors in most cars — unusually low background noise-level, providing noise-free performance—beautiful full-range tone — custom installation — and many other attractive features.

MODEL D-50

Model D-50, for instance, contains all these features in a single unit—and sells for only 44.95 (F.O.B. Factory). It's good to look at — a revelation to listen to—and a cinch to sell! Three other models up to \$74.95 (F.O.B. Factory.)

Investigate the remarkable profit possibilities in G-E Auto Radio! Write today. Address your G-E Auto Radio Distributor or Section R-116, Merchandise Dept., General Electric Company, Bridgeport, Connecticut.

G-E Auto Radio Approved Installation Stations, from coast to coast handle installation and service for G-E Auto Radio Dealers.



GENERAL ELECTRIC

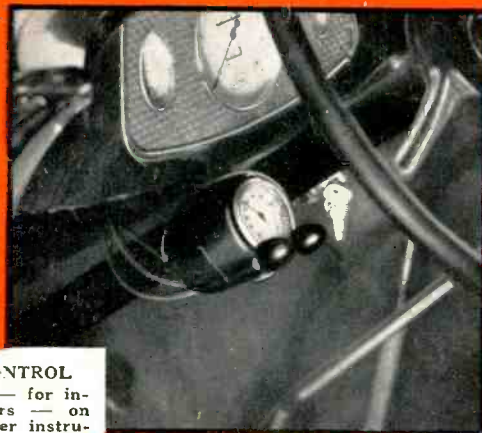
AUTO RADIO

MERCHANDISE DEPT., GENERAL ELECTRIC COMPANY
BRIDGEPORT, CONNECTICUT



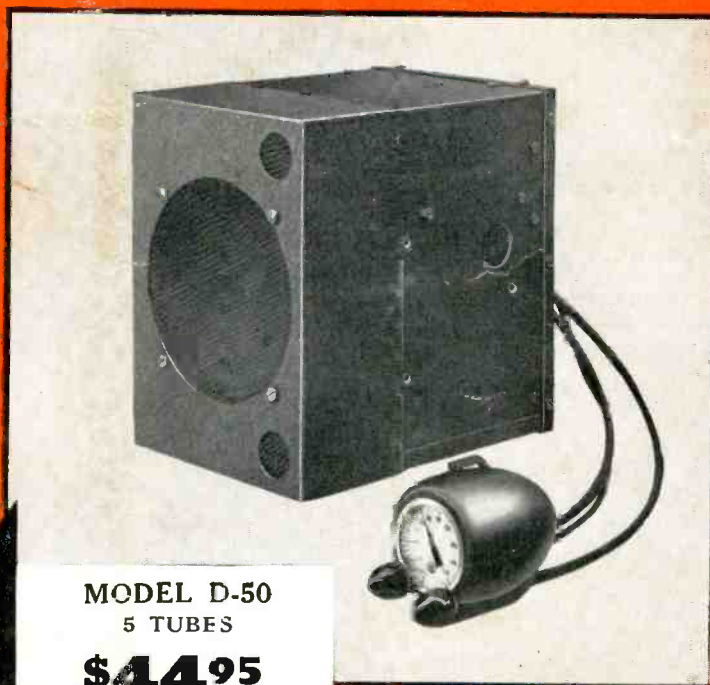
INDIVIDUAL UNITS FOR INDIVIDUAL CARS!

These special remote control units are particularly adapted to Chevrolet, Ford, Cadillac, Plymouth, Pontiac, DeSoto, Dodge, Chrysler, Hupmobile, Oldsmobile, LaSalle.



STREAMLINED CONTROL

Streamlined control — for installation on all cars — on steering post or under instrument board.



MODEL D-50
5 TUBES

\$44.95

F.O.B. Factory