

AUGUST, 1933

RADIO RETAILING

INCLUDING
SERVICE
AND
INSTALLATION
SECTION

"I'm telling the world

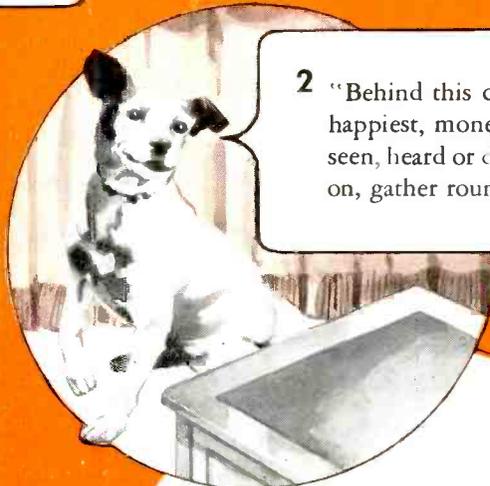
**news you'll be
glad to hear!"**

—Nipper the Victor Dog

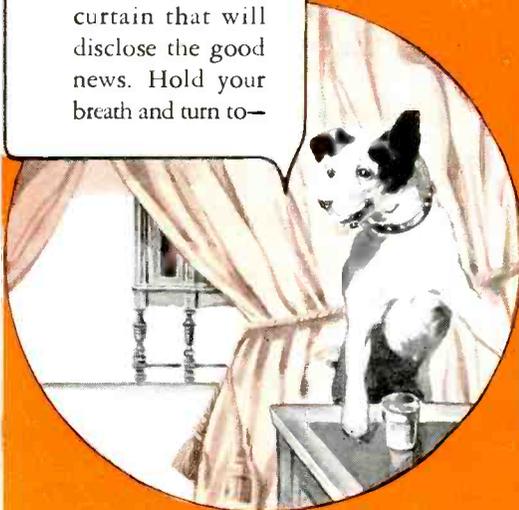
1 "Hello, everybody — specially all you Victor dealers! This fall is going to be an RCA Victor fall because—



2 "Behind this curtain is the hottest, happiest, money maker you've ever seen, heard or dreamed about. Come on, gather round—



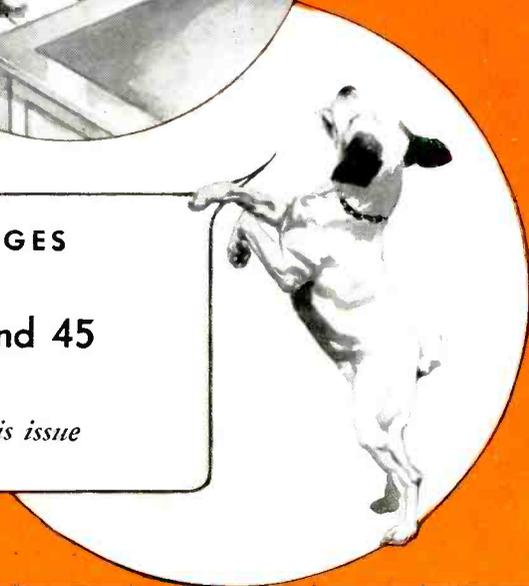
3 "And I'll lift the curtain that will disclose the good news. Hold your breath and turn to—



PAGES

44 and 45

of this issue



LIKE A DELICATE TIMEPIECE



FOR hundreds of years a fine watch has been a symbol of care and precision and accurate workmanship.

Yet, the radio tube engineer knows that his materials are just as fine, his design just as important, his tolerances as close, as those of a timepiece. And that the finished product must be just as reliable.

Every Sylvania radio tube is built with these facts in mind. Sylvania engineering is modern, scientific, constructive. It gave radio a new and efficient group of tubes for automobile receiver use. It adapted these tubes to all other types of service other than dry battery. In both instances it pioneered in radio. And always . . . this

service is at the free disposal of manufacturers . . . to help with circuit problems, design problems, sales problems!

Sylvania quality inspection is also up to the highest and most modern standards. It does more than sort tubes into firsts and seconds. It demands all firsts. It rejects and destroys tubes that are not as good as the best.

There is a reason for these high standards in Sylvania Tubes. The Hygrade Sylvania Corporation is management owned. It is run by men whose only goal is the success of their company and its customers.

Hygrade Sylvania Corporation,
Emporium, Penna.



Sylvania

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

THE SET-TESTED RADIO TUBE

© 1933, T. H. S. C.

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PROOF

that ZENITH is the "Hottest" line in radio



MODEL 755

8 tube advanced type AC superheterodyne circuit. *Shadowgraph Tuning* . . . automatic volume control . . . 8 inch dynamic speaker . . . dial calibrated in kilocycles . . . tuning range 1750 to 535. Cabinet is 6 legged console of graceful design. Front panel of butt walnut with Pilaster panels of butt walnut. Top arch of California maple burl, 40" high; 24½" wide; 14" deep.

MODEL 705

6 tube advanced type AC superheterodyne circuit. Automatic Volume Control . . . Vernier Tuning . . . Dynamic Speaker . . . dial calibrated in kilocycles —tuning range 1750 to 535 . . . gets police calls! Cabinet has beautifully figured butt walnut front—genuine imported marquetry inlay with top border finished in maple burl—solid walnut top—fluted ends. 8½" high; 15¼" wide; 6½" deep.



MODEL 706

A cabinet of modern design. 6 tube advanced type AC superheterodyne circuit. Automatic volume control . . . Vernier Tuning . . . dynamic speaker . . . dial calibrated in kilocycles —tuning range 1750 to 535 . . . gets police calls! The cabinet is of solid walnut with butt walnut panel. 8½" high; 15¼" wide; 7½" deep.



MODEL 711

6 tube advanced type AC superheterodyne circuit. *Shadowgraph Tuning* . . . automatic volume control . . . dynamic speaker . . . dial calibrated in kilocycles —tuning range 1750 to 535 . . . gets police calls! Entire cabinet of beautifully figured butt walnut . . . gold plated metal trimming inlay . . . border of genuine imported marquetry. 8½" high; 16" wide; 6½" deep.



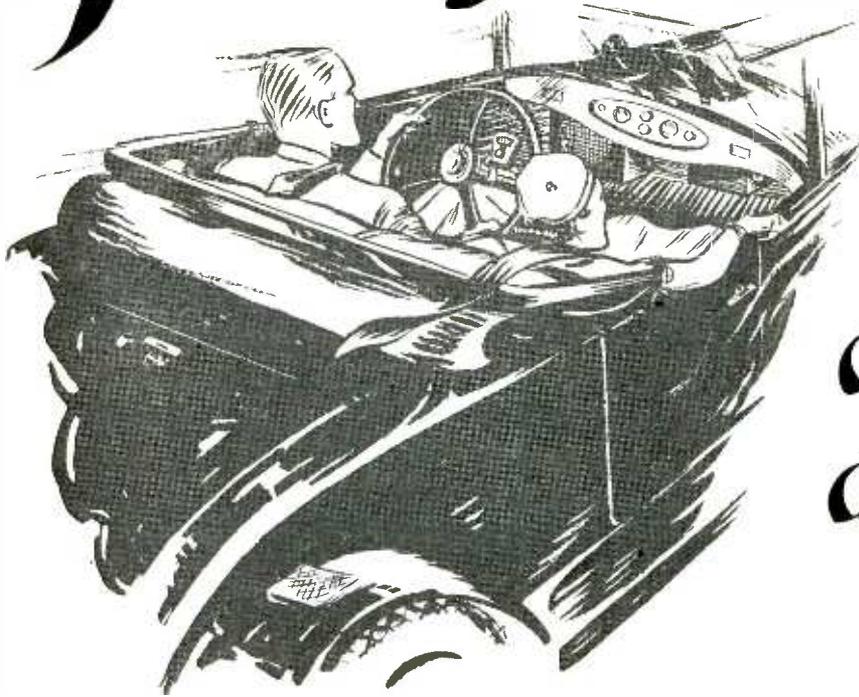
Scranton distributor reports landing 63 new dealers in past 3 weeks and 26 dealers in Pennsylvania sell average of 4 Zeniths a day for 3-week period.

Record-breaking repeat orders are coming in by long-distance and telegram from dealers throughout the nation.

This is not "advertising copy." It is fact that we urge you to act on. Study the features given under the illustrations. Order quickly from your Zenith distributor. Rising commodity costs forced a 5% to 10% advance in prices on July 24th. Beat the next advance.

ZENITH RADIO CORPORATION
3620 Iron Street • Chicago, Illinois

Performance



is the
feature
of this new
automobile
Radio!



Stromberg-Carlson
Speaker



Sub-midget Speaker used
in one-unit auto sets

250% Greater Active Speaker Area. Size of speaker is all important for tone quality and volume. Only a full-size electro-dynamic speaker like the Stromberg-Carlson can give fine audio performance.

SUPERHETERODYNE CIRCUIT.

6 TUBES—including new multi-purpose types.

VERY SENSITIVE—gets a wide range of stations.

LONG RANGE AUTOMATIC VOLUME CONTROL—maintains signal at a constant level.

SPEAKER CONTAINED IN WOODEN BOX which is an acoustically correct baffle.

Built with the ruggedness of Stromberg-Carlson radios for government aircraft and police cars.

*T*HERE IS big demand for a quality radio for motoring . . . one that will compare favorably with a fine radio in the home. At last there is such a radio! The new Stromberg-Carlson Automobile Radio gives topnotch performance, brings intense satisfaction to motorists on the move. It gives clear articulation on speech and good reproduction of music and has volume to surmount high speed noise. It will operate under the difficult reception conditions an automobile radio must encounter.

Some of the features that go to make this radio the superb performer that it is, are listed at the left. It is from these, beautifully balanced in a high engineering achievement, that comes the performance which makes radio a-wheel worth while. This new automobile radio is exactly what you would expect from the makers of the radio whose slogan is, "There is nothing finer than a Stromberg-Carlson."

Price, East of Rockies, \$69.50

STROMBERG-CARLSON TELEPHONE MANUFACTURING COMPANY, ROCHESTER, N. Y.



1894

Stromberg-Carlson



1933

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



Today's Profit Makers!

new

STEWART WARNER

Dual Harmony

HARMONY TO THE EYE • HARMONY TO THE EAR

RADIOS

Present

A REAL REASON FOR BUYING!

● You face a "show me" public today. People won't give up the old set and buy a new one unless you can show them a radio that offers something they want and are not now getting.

These New Dual Harmony Radios offer women just what they have been hoping for—a radio that doesn't look like a radio—a great radio concealed in fine furniture. All the beauty and utility of furniture by master designers, plus the finest radio entertainment, is now available at one cost.

These new radios in Louis XV Bookcase, French Commode and Duncan Phyfe Table models are priced as low as \$39.50. Illustrated above is the French Commode. Radio is in upper half behind drop door. Lower half has two convenient drawers. With 10-tube superheterodyne radio and twin speakers, only \$69.50. Same cabinet with 6-tube radio only \$55.50.

"WORLD-WIDE" RADIOS—"MIDGET" RADIOS—"AUTOMOBILE" RADIOS

In addition to Dual Harmony Radios, Stewart-Warner's 100% line offers radio merchandise in styles, prices and for uses that enable you to cash in on every possible prospect. The new "Magic Dial" Round-the-World Radio—mysterious—fascinating—thrilling—offers the last word in World-

Wide Reception. The new Stewart-Warner Companion Sets are high grade miniature superheterodyne radios in novel book form or in smart walnut cabinets. And the new, simplified, single unit Auto Radio, designed by Stewart-Warner automotive and radio engineers, offers the finest reception on the road. Each and every one of these gives your prospect a "real reason for buying." Send for complete information today!

All prices slightly higher in the West

FOR THE FACTS Mail This Coupon



Dual Harmony Duncan Phyfe Model



Book Model Companion Set

"Magic Dial" Radio for World-Wide Reception



New, Simplified Auto Radio

STEWART-WARNER CORPORATION

1826 Diversey Parkway, Chicago

Please send me full information on your new Radio Lines featuring Dual Harmony Models.

Name _____

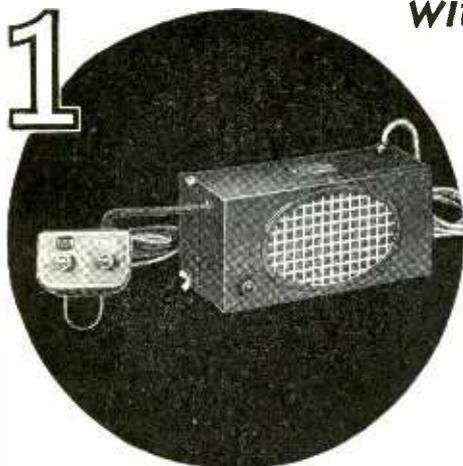
Address _____

City _____

State _____

GIVE YOUR SALESMEN 3 TIMES THE SELLING POWER

with



LYRIC RADIOS

Sell Lyric Radios! For honest workmanship, reliability and quality of tone, you know as every other dealer knows, that Lyric Superheterodynes cannot be surpassed by any radio built today. Lyric gives you a complete line from a 4 tube mantel model

to the phenomenal 13 tube Lyric S-130 to meet all preferences and all sized purses. The model at the left is the new Lyric Cruiser — a truly sensational 6 tube superheterodyne auto set . . . with electrical remote control.



MOHAWK REFRIGERATORS

Sell Mohawk Refrigerators! The rapidly-increasing popularity of Mohawk Refrigerators is explained by the fact that they are exceptionally well-designed, beautifully proportioned, with flush doors on De Luxe Models; and all are equipped with the famous *Duozone* Unit. By providing

two separate refrigerating coils—one for cooling food storage, another exclusively for freezing, the Duozone Unit greatly improves refrigerating results, and adds to the refrigerator's efficiency in the preservation and protection of foods.



MOHAWK WASHERS

Sell Mohawk Washers! During the depression, thousands of women have worn out their old washers. Thousands of new washers are needed. To enable you to meet that demand Wurlitzer offers you a line of five

splendid washing machines—4 wringer types and an exceptionally fine Spinner Model. All models embody special clover-leaf agitator and corrugated rubbing board tub. Priced for today's buyer . . . with an honest profit for the dealer.

here's the idea . . .

Business is definitely "looking up", bringing alert dealers an opportunity to reap some real profits. So Wurlitzer offers you not one, not two . . . *but three* door-openers to every home — Lyric Radios, Mohawk Refrigerators and Mohawk Washers . . . with all-year sales appeal! Naturally with this 3-way proposition, you'll get preferred service from Wurlitzer — and that means co-operation that makes sales!

Get started on the road to new profits . . . *Mail the coupon today.*

Rudolph Wurlitzer Manufacturing Co. ★
North Tonawanda, New York.

Please send me complete information on your 3-Way Selling Plan:

Dealer

Address

MAIL COUPON FOR WURLITZER 3 POINT SALES PLAN

Majestic says:

HERE ARE 1933's ULTRA-SMART ULTRA-SMALL HOME RADIOS

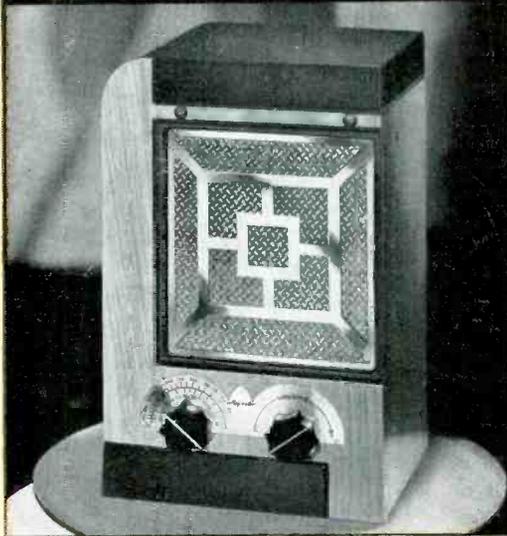
NOW you can see and hear for yourself what a truly fine radio a 4-tube superheterodyne can be—if Majestic builds it!

These new Majestic Style-Built models give 6-tube performance. Sensitivity and power output are exceptional, and tone quality is astonishing for so small a receiver. Important quality features are Majestic Spray-Shield tubes and full super-dynamic speaker.

A switch is provided so that the receiver may be operated on the regular broadcast band, or switched over to receive all Police Calls and cover the Amateur, Commercial, Marine and Aircraft channels up to 3500 kilocycles. Both models incorporate the same chassis.

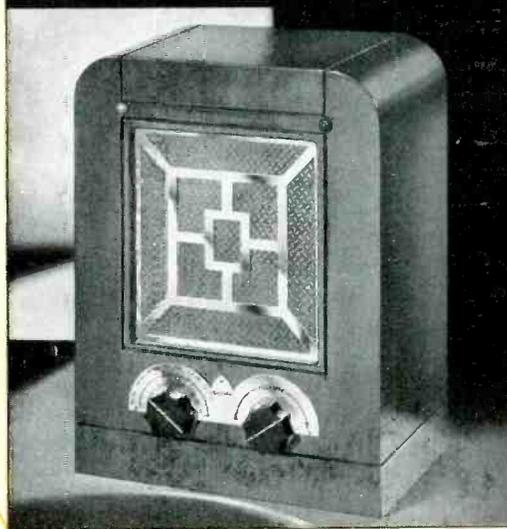
We urge you to inspect these remarkable new models at your earliest opportunity.

DUO-MODERN MODEL 49



This smart cabinet with its fine design, interesting two-tone finish (natural and "ebony" contrasting), and gleaming aluminum grille produces a most attractive effect. Dimensions: 11 inches high; 7 inches wide; 5 $\frac{3}{8}$ inches deep.

DUO-CHIEF MODEL 44



Either Model

\$21.⁵⁰

*Slightly Higher
on West Coast*

A simple, beautiful cabinet with rich brown-walnut finish on quarter-sliced red birch. The polished metal grille adds distinction. Dimensions: 11 inches high; 8 $\frac{1}{4}$ inches wide; 5 $\frac{3}{8}$ inches deep.

GRIGSBY-GRUNOW COMPANY, 5801 Dickens Avenue, Chicago

FIRE AND THEFT INSURANCE

ALSO LIGHTNING, WINDSTORM, CYCLONE, TORNADO, AND EXPLOSION

FREE

ANOTHER MAJESTIC EXTRA!

WITH EVERY

Majestic

TWIN-SIX AUTO RADIO

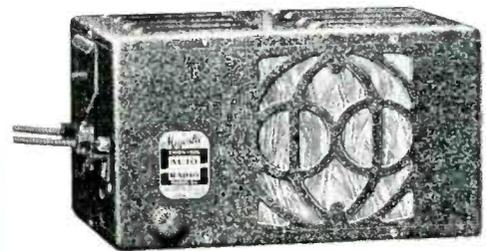
FREE INSURANCE FOR ONE YEAR after date of installation! That is the sensational offer that is *adding* speed to the speedy sales of Majestic Twin-Six Auto Radios now being reported from every territory.

This insurance, which would cost the motorist several dollars, is given FREE with every Twin-Six billed to Majestic distributors and dealers *at the list price of \$44.95*. It is placed with one of America's largest and strongest old-line companies, the Phoenix Insurance Co., Hartford, Conn.

Now it is *easier than ever* to sell America's finest auto radio—Majestic Twin-Six—the 6-tube superheterodyne with 6-inch dynamic speaker. Write or wire your Majestic distributor for full information about this opportunity for profitable sales volume *now*.

\$44⁹⁵

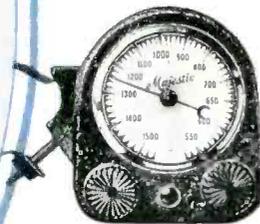
Complete with tubes, suppressors, and condensers. Federal tax paid. Slightly higher on West Coast.



6-TUBE SUPERHETERODYNE
6-INCH DYNAMIC SPEAKER

All-electric; all-in-one; 8-tube performance; tone control; automatic volume control; Majestic Spray-Shield tubes; Majestic colorful tone.

With the New
AIRPLANE DIAL



This oversize, illuminated dial on steering column is graduated in kilocycles. Easy to tune. Pilot light shows if set is on. Removable shut-off plug locks receiver.

GRIGSBY-GRUNOW COMPANY
5801 DICKENS AVE., CHICAGO



BALBO GETS EMERSON RADIO TWO KINGS OF THE AIR MEET!



General Italo Balbo receiving an EMERSON RADIO from Peter Cuce and Ralph B. Austrian, General Sales Manager of the Emerson Radio and Phonograph Corporation.



I'm only a Little Radio . . . but I got a Big Reception!



Emerson Model AW-250 . . \$25
Other Emerson Universal Compact Models . . . \$17.95 to \$32.50 List

You can hardly blame me for being puffed up a bit! For General Balbo has taken me back to Italy with him. I, the little wonder of the air waves, was delighted to meet General Balbo, the Big man of the Air. After all, we have a lot in common. Balbo's genius synchronized the movements of a vast fleet of airships, clear across the waves of the Great Atlantic. Emerson's genius, expressed in me, the Emerson Radio, synchronizes all the wave-lengths, short and long, and produces for you the greatest music, the most important news, of all the world. And so, General Balbo, I salute you as a comrade, as a colleague. I thank you for the Big Reception you gave this Little Radio . . . and hope you enjoy me, as so many millions of Americans do!

Emerson

"The Handful of Radio that Plays Anywhere"

Factory and General Offices: 641 SIXTH AVENUE—NEW YORK, N. Y.



The New

STEWART-WARNER

Simplified AUTO RADIO

**SIMPLE TO INSTALL
SIMPLE TO OPERATE**

**Has All These
Outstanding
Features:**

New, Smart, Distinctive Remote Control with indirect illumination. Mount on Steering Post or Instrument Panel.

Single Unit—ALL electric—No B Batteries.

Automatic Volume Control. Tone Control.

Special "Open Road" Dynamic Speaker.

Complete Unit easily installed under cowl and connected to control knobs with "no lost motion" flexible cables.

**DESIGNED BY GREAT AUTOMOTIVE
AND RADIO ENGINEERS, BUILT AS
AN AUTO RADIO SHOULD BE BUILT**

Simplified

**—for easy installation
—for easy operation
—for QUICK PROFITS**

Here is an auto radio such as only Stewart-Warner's long automotive and radio experience could produce.

The small, compact, powerful 5-tube "superhet" circuit combined in one unit with speaker is easily installed under cowl.

\$39⁹⁵

COMPLETE

The control panel with indirect illumination dial—is clamped to the steering post. Designed in harmony with the finest speedometers. All control knobs are connected to the set with slender, flexible "no lost motion" cables.

See this set—hear it and you will know why stocking it means quick, easy money for you. Send coupon for full details; also merchandising facts on the complete line including Dual Harmony radios, World-Wide "Magic Dial"—and high grade superheterodyne miniature radios in novel Book forms and smart midget Walnut cabinets.

STEWART-WARNER CORPORATION, 1826 Diversey Parkway, Chicago

RR-9A

I am interested in your new Stewart-Warner Auto Radio. Also send me information on your complete line for 1933.

Name

Address

RADIO RETAILING

HOME ENTERTAINMENT MERCHANDISING

—O. H. CALDWELL, *Editor*—

RAY V. SUTLIFFE, *Managing Editor*
W. W. MACDONALD, *Technical Editor*
T. H. PURINTON, *Assistant Editor*

M. E. HERRING, *Publishing Director*
HARRY PHILLIPS, *Art Director*
P. WOOTON, *Washington*

It's UP to YOU

RADIO is no longer a novelty. And radio receivers have ceased to be "demand" merchandise. From now on, therefore, interest in programs and in the buying of sets must be *created* and *sustained*.

By cooperative action only can this be accomplished. So it is an excellent omen that the radio industry has started a great concerted selling movement for this fall. Surely 1933, with its return of purchasing power, is the appropriate time.

The September Prosperity Campaign and the October week of broadcast features are excellent starters. And behind these plans the entire industry is wholeheartedly uniting in a manner exceeding all expectations. Of course it is not to be hoped that results will be perfect. But certainly these September and October joint efforts will point the way for future cooperative activities which are absolutely necessary.

THE PROGRAMS of October 2-7 will be outstanding events. But above all they will be designed to build an *appreciation* of the real worth of broadcasting and of the wonderful things the listener gets at such a slight outlay.

Radio dealers and jobbers are not being forced into this campaign. They can take it or leave it. Nor are they being handed a full-blown bonanza on a silver platter. Each business man who expects to get something out of it must put his best efforts into the campaign in his own community.

The manufacturers and the broadcasters are doing all they can to make these projects successful. But, in the last analysis, the success of the Radio Prosperity Campaign will depend upon the individual efforts of the dealer—whose job it will be to bring radio's inspiring story to the ear of the consumer.

Dealers, it's up to you!



Entire Industry Backs RADIO'S



RADIO'S first cooperative sales campaign—enlisting the substantial support of every branch of our industry, including the broadcasters—is off to a flying start. Judging by the hundreds of letters of appreciation, endorsement and declarations of active participation now pouring into campaign headquarters, next month's *Radio Prosperity Campaign* will be markedly successful.

Have you written for your copy of the "Rebuild Prosperity" booklet? That's the first thing to do. Then read carefully the pages which follow this article, pages which give many suggestions for active local participation.

The campaign is admirably timed to take full advantage of the first return of buying power and

AS WE GO TO PRESS

- ☛ *Organizational plans all perfected*
- ☛ *Display and sales promotional materials available*
- ☛ *Dealers, jobbers, manufacturers swinging into action*
- ☛ *Whitehorne addressing group meetings in key cities*
- ☛ *Special broadcasting programs for Radio Progress Week, October 2-7, take shape*

of the beneficial operation of the Radio Industry Code—now well along toward final acceptance.

Objections, quite naturally, have been voiced with respect to the amount of actual benefit which may result from a cooperative, concentrated sales drive during September.

But these objections fade into thin air once the complete concept of this movement is realized and its future possibilities grasped. Buying power is increasing. The real sales competition this Fall will not—and must not—be within the industry; rather we must unite to again bring radio before the public eye, to the extent that the radio industry will capture its full share of John and Mary's dollar. For the average American family will shortly be spending more for the comforts of life, and for some of its luxuries, than at any time during the past three years of self-denial. Hence the timely wisdom of this campaign to induce the public to spend its money for *radio*.

Prices are going up and the cut throats are on the run. For this latter condition, all credit to the National Recovery Act and to those individuals in the radio industry who have labored long hours to formulate the RMA Code and that of the radio wholesalers, both of which are now under consideration at Washington.

This campaign is going over. Already there's plenty of genuine evidence to support this contention. For example:

PHILADELPHIA votes \$3,000 for local publicity during Radio Prosperity month

CONNECTICUT organizes a State Executive Committee to distribute display materials and help dealers and jobbers in every town and city get organized

DIRECTOR WHITEHORNE personally addresses well attended meetings in Hartford, Boston, Rochester, Buffalo, Cleveland, Chicago, Minneapolis, Kansas City, St. Louis, Cincinnati and Pittsburg. Will make another trip to key cities during August

MANUFACTURERS MAY RAISE BROADCASTING FUND. For the first time in radio history a common fund, for the promotion of special programs, sponsored by the radio industry, is in the making. It is hoped to raise \$50,000. Already two well-known concerns have each subscribed \$5,000

MANUFACTURERS AND JOBBERS have agreed to assume the responsibility of seeing that

PROSPERITY

Campaign

the display materials will be adequately distributed
COMMITTEES ORGANIZED in 47 cities
as of August first—and a full month yet to go before the opening gun is fired

INQUIRIES for full details pouring into campaign headquarters

What the Broadcasts Will Be Like

An advisory committee, to work with the broadcasting chains and with the radio manufacturers and program sponsors in the development of special air events during Radio Progress Week, has been appointed. Its personnel is as follows: H. H. Kynett, chairman of the Radio Division of the American Association of Advertising Agencies; William Paley, President of the Columbia Broadcasting Company; John Royal, Manager of Program Development for the National Broadcasting Company; Judge Van Allen, attorney for RMA, and O. H. Caldwell, former Radio Commissioner and Editor of *Radio Retailing*.

This committee feels that it is yet too early to talk definitely about any feature events which are under consideration. Suffice it that every effort will be made to stage programs throughout the week which will be so unusual as to attract nationwide attention and discussion.

While the final event, Saturday night, October 7, will assume, for example, the proportions of a monster banquet in honor of an internationally known radio personage, the primary consideration will be that of developing in the public mind a better appreciation of all that radio may be made to mean in the home and of the vast amount of care and work that must precede the final presentation of a program.

It is likely, therefore, that the listener, that week, will be permitted to peek—or rather to hear—behind the scenes, to be present at a program rehearsal, to sit in while the vast mechanism of a modern symphony orchestra is unfolded. Also to listen to air orders, directing a trans-continental plane in its flight. Special thought will be given to the broadcasting, at suitable times, of programs calculated to help dealers demonstrate the tone

quality of the modern console. Sponsors of nationally known products will be asked to adapt their feature program that week to the spirit of "radio's progress."

And last, but not least, it is hoped to be able to go before the broadcasting fraternity with a substantial sum of money to help finance a part of the extra expense which will be involved. This real evidence of willingness, on the part of the radio set, tube and parts end of the industry, to match its dollars with those of the broadcasters will, it is felt, result in a series of program events never before equalled.

"I have just finished two weeks of barnstorming," writes Director Whitehorne, as we go to press. "In every case the distributor will set up the committee to promote this campaign locally.

"If the purpose of this Radio Prosperity campaign is to stir up enthusiasm among distributors and dealers and get them selling radio vigorously this fall—and I think it is—this campaign is going to work. They all say: 'Just what we need and now's the time.'"

WHAT TO DO . . . NOW!

- ❑ *Write for the Plan Book . . . Address: RMA Radio Prosperity Campaign Committee, 330 West 42nd Street, New York City*
- ❑ *Study the possibilities of the Radio Prosperity Campaign as it can be made to put money in your cash till*
- ❑ *Take the initiative in calling the radio jobbers and dealers in your town together to plan the details for local sales activities*
- ❑ *Perfect your own plans for an intensive sales drive to start September 1*

There's not a day to lose! Every spare moment, from now until Friday, September first, will be needed to perfect your local sales campaign plans—individually and in cooperation with the other dealers and jobbers in your town. For this United Industry's first

RADIO PROSPERITY CAMPAIGN AND RADIO PROGRESS WEEK

begins to look like a ten strike. The following practical suggestions are by no means all the things that may be done. Local conditions and your own personal experience will suggest other and better ways to start the Fall season with a burst of selling effort never before equalled.

What JOBBERS Should Do

UPON the distributor will rest the chief responsibility for originating and maintaining the local campaign ideas, effort and enthusiasm. Here's an opportunity to actually *do something* definite to help your dealers sell more sets and accessories this fall. Therefore study the following, necessarily limited list of things to do, carefully. Other ways to "put punch" in your dealers' sales plans, during the next 60 days, will suggest themselves once you take off your coat and get to work.

1. Sit down with your salesmen and work out a program of your own to capitalize the Radio Prosperity Campaign and Radio Progress Week through increasing the sales of your dealers. But first "sell" your own sales organization.

2. Get in touch with your manufacturers to find out what they are going to do and how you can make the most of the cooperation they offer.

3. Get in touch with other local distributors and take the initiative in setting up a local campaign committee that will organize this Rebuild Prosperity Program in your trading area.

4. Develop your own campaign throughout your territory, town by town. Plan how to interest and sell each dealer on the campaign idea, throughout the area covered by your salesmen. Write all your dealers about it.

5. Work out a program of advertising to support your dealers during the campaign.

6. Offer special campaign prizes to the man who does the best job in organizing his dealers for the September Drive, in personal sales and for the best idea for your company campaign.

7. Show all dealers the value of tying the store into the campaign by featuring the display cards, posters, model markers, signs and labels prepared for national use. Determine how much dealer help material is needed for each store and prospect list.

8. Schedule a regular program of dealer visits that will take you into the store of every dealer you sell before August 15—for check back purposes.

9. Visit personally the broadcasting studios in your territory and discuss with station managers the mutual advantage of a close cooperation between the studio and the local dealers.

10. Follow up those dealers who have not responded. Keep them in touch with the progress of the local campaign and get them into contact with the nearest campaign committee. Make sure that every dealer has an ample supply of the campaign display and advertising material.

11. Help organize meetings of dealers in each community or a mass meeting at the central distributing point, about the middle of August, to get the local plans squared away to hit the line hard on September first.

12. If new models of your line are to be featured see that dealers plan to hold new model exhibitions during September. Arrange with local broadcasting studios for appropriate programs for the occasion and invite local artists to be the guests of honor to meet your customers.

13. Make your dealers appreciate the unusual opportunity that Radio Progress Week broadcasts will bring them. When the detailed news reaches you of the features which are to be incorporated in this broadcasting review, as the pro-

grams are built up and scheduled on the national networks and by the local stations, get the word to your dealers with enthusiasm and tell them how to use these features in their selling.

14. Renew the pressure upon every dealer through your salesmen, by phone and letter, during September and the Radio Progress Week in October. Impress upon them that they need not let down in their selling when the special broadcasting week is past, but keep up the pace and capitalize the unusual popular attention which has been captured by continued advertising, canvassing and merchandising.

RADIO DEALERS ... Individually and Collectively PLAN NOW

SUCCESS of the fall drive depends upon the initiative of individual dealers. The *Prosperity Month* campaign and special week of broadcasts are excellent sales tools but they won't, in themselves, sell merchandise. This the trade must do, using the programs and new models as entering wedges.

Local campaigns need not be expensive. It's a matter of effort rather than money. And there is no hard and fast campaign plan which dealers must follow. Here are some suggestions. Use those you think will work in your territory, or revamp them to suit local needs:

1. Secure a complete set of *Prosperity Month* and *Progress Week* window display posters, model markers, stamps and direct-mail circulars.

2. Decorate your window and store with this material. Mail the circulars to your best prospects or have salesmen distribute these on their calls. Supplement the circulars with printed or mimeographed sheets of your own, if you think a personal message will help.

3. Feature a "history window" using trade-ins. Show the advance in radio design since early days. Demonstrate these sets in comparison with new models in your store.

4. Tell the local papers about the campaign and get them to give the special programs editorial space. When

preparation month

the programs are available these will be legitimate news.

5. Service and repair sets in the front window during the campaign.

6. Run a door-to-door tube testing campaign, carrying impressive equipment during the drive. People who know a national radio week is in progress will be inclined to permit such tests.

7. Demonstrate in the front window the methods used in studios to make program "prop" noises. Use a public address system to amplify these effects.

8. Rig up the store with photo-electric cells to do all sorts of scientific tricks. Hold open house and label the store, "House of Magic."

9. Put police calls and foreign short-wave broadcasts on the front-door speaker during the campaign. Call attention to these broadcasts with a sign.

10. Run a trade-in campaign during the month, using special inducements.

11. Where you can't close sales in advance of the special broadcasts install sets on demonstration for one or two nights of Progress Week. Call back while the programs are in progress and sell.

For Servicemen

THE campaign is not limited to dealers who sell sets. Service organizations should be able to increase business by tying in. And servicemen working for dealers can increase the business booked by their department. Servicemen are urged to tell their customers the *Prosperity Month* and *Progress Week* story. Here are a few things that might be done:

1. Test and match tubes in preparation for the special broadcasts and winter reception. Substitute new, modern tubes or older types where this is possible with improvement in reception.

2. Renovate existing antenna systems. Pretty-up wiring inside homes. Make customers feel that this work is done at special prices during the national radio campaign.

3. Locate and clear up sources of electrical interference both in and out of homes. Local newspapers will give this work publicity during the campaign, especially if asked to do so by advertisers.

4. Install modern accessories such as tone-control, automatic volume control, inter-station noise suppression and visual

tuning. People who can't buy new sets will want to hear the special broadcasts at their best.

5. Clean and "balance" receivers in preparation for the broadcasts.

6. Install extra speakers for remote use, or to give twin-speaker tone equivalent to the performance of new receivers dealers will be simultaneously advertising.

7. Refinish cabinets, removing scratches and nicks.

8. Electrify old auto receivers by installing modern B-eliminators.

Talk about the special broadcasts whenever out on a service job. The object is to get everybody possible interested in radio early in the fall and then, by stressing the *Progress Week* programs, new 1934 models and the upward tendency of prices, to induce them to buy during the campaign. Appeal to

their patriotism. Many people will buy earlier than they intend to, if they are told that by so doing general prosperity is advanced.

COOPERATIVE effort is, of course, more effective than individual effort and in the larger cities where this is possible the Campaign Committee is encouraging such organization. Find out if a local committee has been set up to push the *Prosperity Campaign* and work with his committee. Get in touch with your leading distributors. In many cases these distributors will be the moving spirit of the local campaign.

If a local meeting of the trade is planned, be on hand at that meeting and fit yourself into the picture.

If you think that cooperative effort is practicable in your town and no committee has been set up get in touch immediately with Earl Whitehorne, Radio Prosperity Campaign, 330 West 42nd Street, New York, and ask him for help. He will tell you how to organize.

Enlist the Cooperation of Your LOCAL BROADCASTER

IF RADIO dealers stopped selling sets the broadcasters also would have to quit. On the other hand, if there were no programs there would be no market for receivers. This close interdependence is well known, yet, as Mark Twain so aptly observed about the weather, nothing is ever done about it.

This campaign provides an ideal opportunity to get better acquainted, to help each other to better business. For the more sets in use, the better the quality of sets in the home, the greater will be the station program audiences and total listening hour "circulation" to sell to prospective sponsors.

We wonder if the average station manager fully realizes that the radio dealer is, or should be, his best friend? Does he stop to think that the radio salesman is the only direct point of contact between the station and the station's customer, who is the set owner? Does he realize that a radio dealer's ballyhoo, or lack of it, can popularize or kill a program?

And does the dealer realize the value of being friendly with the local station program director, of knowing what's ahead in the way of feature program events and of getting air publicity occasionally? Radio dealers who have made broadcast talks on the value of keeping one's set in condition or of

exchanging it for an up-to-date console, invariably report this a form of advertising par excellent.

All of which leads to the thought that now, during this September campaign, is the time to get close to your blood brother—the broadcaster.

Here's examples of the sales possibilities of such a tie-in:

LOS ANGELES—Last December, local trade raised \$4,000 which financed six half-hour programs daily for 30 days over L. A. territory stations. Got 12 announcements a day of direct benefit to its radio sales campaign. Stressed quality in radio, uses for a second set, value of having sets "retuned." Gave "tube talks," etc. Also ran super-programs with a 4-station hook-up. Also personal store appearances of broadcast stars.

CINCINNATI—Dealer arranged to have regular feature program, on local station, broadcast from his store. Provided seating accommodations for fifty and lets his guests (prospects) meet the performers.

HARTFORD—Local station manager interviewed by Prosperity Campaign committee and plans to present special programs in tune with key thought of featuring Radio's progress and interesting future.



Cast your eye over these display cards, posters and business building circulars — richly done in black, red and gold. Properly used they'll prove the best advertising you can do this fall.

If your town has appointed a local campaign committee, requisition your supply through this source. Otherwise phone your jobber. He will see that you get a dealer allotment. Or write your manufacturer.

Arrangements have been made whereby the set, tube and parts makers are supplying their trade with this material . . . the best kit of tools ever devised to sell *real radio* and a true appreciation of all that a good set and today's sterling programs will mean in the American home.

Also available from:
Campaign Headquarters
Radio Manufacturers Association
330 West 42nd Street, New York City

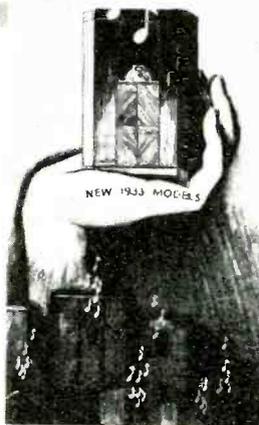
EACH STANDARD PACKAGE WILL CONTAIN: One large display card . . . Two window or store posters . . . One decalcomania sign . . . Ten model or price markers . . . 100 folders on new sets . . . 100 folders on reconditioning sets . . . 100 auto-radio mailing pieces . . . one sheet of newspaper mats . . . one Plan Book.

Special Campaign Promotion Materials

Now Available

DEMONSTRATE
DEMONSTRATE
DEMONSTRATE

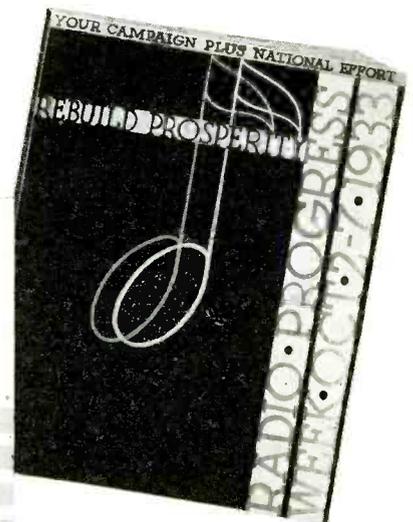
It is important to the radio retailer that he should be able to demonstrate the value of his product to the consumer. This is especially true in the case of the new 1933 models. The retailer should be able to show the consumer the difference between the old and the new. This can be done by demonstrating the new 1933 models. The retailer should be able to show the consumer the difference between the old and the new. This can be done by demonstrating the new 1933 models.



SELL THE VAST IMPROVEMENT OF MODERN RADIO RECEPTION

AGAIN we say!

- SELL NEW SETS
- RECONDITION OLD SETS
- SELL AUTO SETS
- REPLACE WORN TUBES
- SELL SUPPLEMENTARY SETS



CAMPAIGN PLAN BOOK

Included in each allotment of display materials will be found one of these comprehensive and beautifully gotten up Plan Books. Packed full of tested selling ideas, designed to tie in with the logical activities of the September Sales Drive and the Gala Week of Special Programs which immediately follows it, October 2-7.

A PERSONAL WORD *from the* CAMPAIGN DIRECTOR

DURING his great appeal to the millions who were listening to him over the radio the other night, President Roosevelt aptly told the story of Andrew Jackson. When he died someone asked "Will he go to Heaven?" And the answer was, "If he wants to." The president continued that when he was asked if the American people could pull themselves out of the depression he answered in the same way, "They can if they want to." Whenever any body asks me whether we can really put the dealer back on his feet with this campaign, I use the President's text and say, "We can if we want to," and that is the simple truth.

Nothing is going to stand between the radio dealer and prosperity this fall but himself. At the moment he is discouraged. The hard times beat him down. Unemployment, bank failures and universal fear stopped family spending and price cutting took the blood out of his heart. He hasn't been selling radios and he has gone to flirting with strange blondes—refrigeration, oil burners, all sorts of lines—to take his mind off his troubles and make a little money. Now business recovery has set in. Family spending is steadily growing and radio is coming back this fall with a rush. For radio offers the American home the thing it wants the most. The average family doesn't realize it. And nobody is telling them. After four years of penny pinching we are all of us casting off fear and beginning to buy those good things of life we want most. And the decision in most homes lies between an automobile, a refrigerator, an oil burner, travel, clothes and radio. But America has begun to take radio as a matter of course.

John and Mary in their average home are forgetting what radio offers them. How it enriches their lives with its bountiful contribution of laughter, melody, romance, drama, sports, knowledge and news,—all free to all who will receive it. And nobody has been impressing upon them the fact that modern radio equipment is as much improved as the modern automobile, and that if they would enjoy the perfection of the

modern broadcasting art, they must recondition the old neglected set or buy a new one.

That's what the Radio Prosperity Campaign is for. The September sales drive will demonstrate the greater enjoyment that a modern set will give in the home, the pleasure that an auto set proves. Radio Progress Week will open the eyes of America anew to the beauty, richness and delight which modern broadcasting presents to anyone who will select intelligently from the wealth of progress available. This appeal to the American home is going to influence hundreds of thousands of families to buy a radio this fall instead of something else. And the radio dealer, serviceman, distributor and manufacturer will find his old prosperity has returned.

IN CHICAGO, Minneapolis, Kansas City, St. Louis, Detroit—in New York, Philadelphia, Hartford, Boston, Rochester, Buffalo—in Portland, New Orleans, Houston, the radio distributors have discussed this national program which the Radio Manufacturers Association has initiated in behalf of the whole industry. And they have all done the same thing; they have said, "Let's go!" And they have set to work to organize the campaign locally. They have done it for the simple reason that it means money in their pockets. That's why the Radio Wholesalers Association has officially endorsed it and the National Federation of Radio Associations. Day by day the word comes from additional distributing centers that more meetings have been held, more committees formed. The virtue of this campaign is in the fact that it simply organizes the established distribution of the radio industry. It raises a new banner. Rallies the radio army in a new forward drive with new courage and confidence and gives everybody new tools and new power to help him sell. And on top of that it will capture the attention and interest of the American public by its great demonstration of broadcasting while the selling is done. It will rebuild the prosperity of the radio industry this fall. And you can have your share of it—if you want to. EARL WHITEHORNE.

The Trade Endorses Radio's Prosperity Campaign

ON ROAD TO RECOVERY

We have every confidence that we are on the road to recovery. Radio dealers should do everything possible to feature radio products this September.

*M & H Sporting Goods Co.
Philadelphia, Pa.*

WE'VE ALREADY STARTED IT

In my neighborhood we radio dealers already are working in harmony—to our mutual benefit. I am looking forward to this revival of a tone conscious buying public this fall, with low prices less a lure. We've already started our co-operative plans.

*Aaron Music Shop
Brooklyn, N. Y.*

A VACCINATION OF HONEST SELLING

The public is confused by gyp sales tactics. This should be corrected by a vaccination of honest selling.

But first manufacturers and jobbers should pick out permanent dealers who will stick to their line and learn how to sell it on merit.

For ourselves, during this campaign and during Radio Progress Week we plan to promote our franchised line high, wide and handsome by every means we can invent.

*Canton Radio & Supply Co.
Canton, Ohio*

BRING OUT NEW MODELS FOR CAMPAIGN —THEN STICK TO THESE FOR EIGHT MONTHS

In the writer's opinion, if the manufacturers can have the models out in time to tie in with the September campaign it would be a great help to dealers if they, the set makers, can agree on continuing with these same models for at least eight months. When a distributor can go to a dealer with such a story the dealer will spend more money advertising a promoting radio merchandise.

*Cain Radio Co.
Jacksonville, Fla.*

Prices Hit New Lows



Competitors Cut Prices



Manufacturers and Jobbers Double Cross



but

Mac



they buy from me they know they are getting real merchandise, I don't like midgets and have time and again swung a customer over to buying a large set by explaining to him his advantage of getting a man-sized radio.

My service department is my greatest asset. It has led to my store customers who, although they might have preferred another product, have bought the type I handled simply because of the service advantage attached.

LIKE every other dealer I have had my share of several of the unpleasanties of the radio game, and the way I handle them might give others an idea.

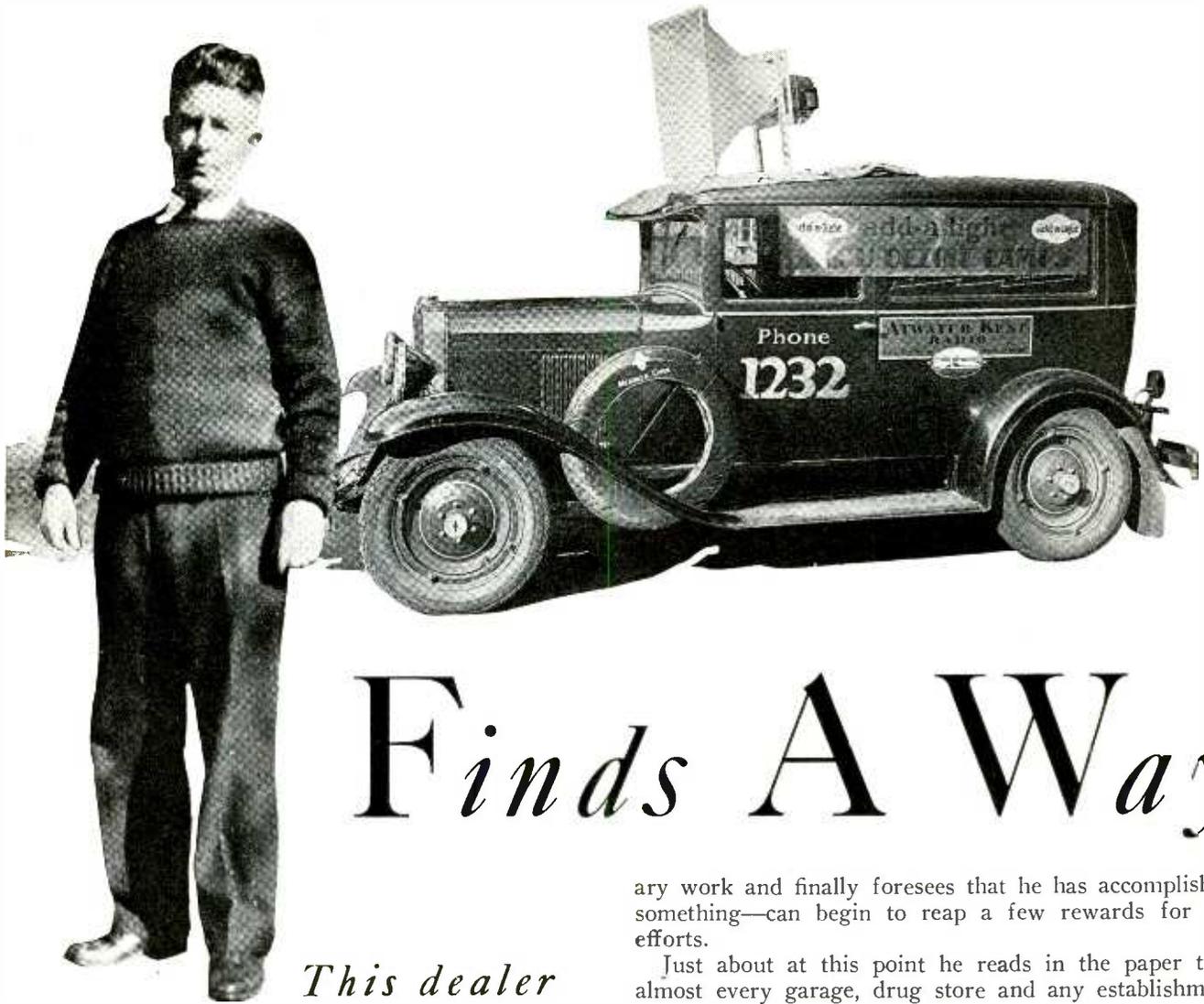
I "fight fire with fire." If I have a prospect and offer a reasonable allowance for the old set and my competitor offers twice as much, I assure myself that there is a sale I do not want. However, before I quit I intimate to the customer that her old set is worth even more than my competitor offered and that I believe he would allow more. The customer of course holds out for the big trade-in and my greedy competitor generally sells his merchandise at a loss, in addition to having his money tied up in a used set, which won't bring more than one-quarter of the allowance made on it.

At first this method may not seem a very lucrative way of getting rid of this menace, but it isn't long before the competitor realizes that in order to get the benefits and full profit in radio he must get the list price and be reasonable with his allowances. Not since radio began has there been such a thing as harmony and cooperation among the dealers in any locality, and the only way to combat the situation is to fight right out in the open. If they can't be made to stick to the rule, at least I get the satisfaction of knowing that they are giving away their merchandise.

MORE power to merchandisers of the caliber of James H. McDermitt, Meriden, Connecticut. Mr. McDermitt, who believes he was the first dealer in his state to specialize in radio, is still in the ring and going strong. He doesn't waste much time complaining about past and present conditions—perhaps because he is so busy devising ways to overcome them.

But let "Mac" tell the story in his own, dealer to dealer, language:

I am a small-town dealer. I don't sell all the radios in my city, but when I sell, I sell at a profit. I have always carried standard lines of merchandise, high class products, and have trained my customers to expect nothing but the best when they come to my store. When



Finds A Way

*This dealer
has been selling radio
For Every Purpose
since 1925 — He's
weathered all storms*

TIME and again the "little fellow" dealer doing a live-wire business has been used to good advantage by the manufacturer and then left holding the short end of the rope. The manufacturer, through the distributor, approaches the dealer with his line of merchandise and offers a big advertising campaign with all the trimmings and all kinds of protection and exclusive propositions if he will only take on the line and get it going in his locality.

Verbally, he paints a regular masterpiece of what a rosy picture it will be if the dealer will only say yes. The dealer agrees and the advertising comes—and goes. The manufacturer settles back thinking his work well done, highly pleased that he's succeeded in letting the public know about his product, and the dealer is left with a stock of merchandise he's got to get out and sell. He does all the roughing and pioneering, familiarizes the public with the merchandise, stakes his own reputation by backing it up 100 per cent, does all the mission-

ary work and finally foresees that he has accomplished something—can begin to reap a few rewards for his efforts.

Just about at this point he reads in the paper that almost every garage, drug store and any establishment that's scraped up enough room for a display is advertising what should have been his exclusive merchandise and cashing in on all the hard work and time spent by this lone dealer. Where is the exclusive proposition which was to be his?

When this happened to me the old saying of "Sauce for the goose, etc.," decided me to stock up with as many of these sets as I knew I could get rid of and wait until they all got in the swing. Then I slashed prices and spoiled what would have been a beautiful picture if the distributor had not become so greedy. *Then I threw the line out.*

The distributor forgot that he was tickled pink to have me take on the line in the beginning, and his desire to sell a few more sets immediately, which would have come my way had he only been a little patient, caused him to throw all promises to the winds and bungle up the works.

The manufacturer and distributor, while they do the advertising, forget that it's up to the dealer to convince Mr. John Public that this certain manufacturer's product surpasses all others. It's the dealer who sells the goods and he's got to have the cooperation of the manufacturer if he wants results.

IT IS my aim to keep my name before the public eye at all times. Therefore, I always endeavor to show the very latest developments in this mystifying radio business. I have staged several television demonstra-

(Please turn to page 21)

RMA Submits Radio Code

*A 36 Hour Week for Processing Employees—
Minimum Wage 40 Cents—43 Printed Pages of
Regulations Now Before General Johnson*

ACTING as a Radio Emergency National Committee for the radio industry, the Executive Committee of the Radio Manufacturers Association, on July 29 submitted to the National Recovery Administration its "Code of Fair Competition."

The Code, comprising 43 printed pages, is made up of ten pages of general provisions for administration and operation, with supplementary chapters covering radio and television receiving sets, tubes, parts and accessories, loud-speakers, sound-distribution equipment and fixed condensers. These chapters are followed by exhibits of uniform standard agreements (A) between



W. L. ALLEN
*Deputy, NRA, before
whom, in conjunction
with Deputy White-
side, the Radio Indus-
try will appear for its
Code hearings*

manufacturers and distributor; (B) between distributor and dealer; and (C) between manufacturer and dealer.

Responsibility for the administration of the Radio Code is placed in the hands of the Radio Emergency National Committee, made up of the R.M.A. executive committee.

Cost of production, as used in the Code, is defined as embracing cost of selling, advertising and administration, and all other expenses of every kind and character which the manufacturer shall incur in the operation of his business, unless excluded or otherwise defined in supplementary chapters of the Code.

The provisions of the Code, it is specified, must not be used, interpreted or applied in such a manner as to

1. Permit or promote monopolies or monopolistic practices.

2. Eliminate or oppress small enterprises, or operate to discriminate against small enterprises.

Wages

Employees in the radio industry shall have the right to organize and bargain collectively and shall not be re-

quired, as a condition of employment, to join company unions, or to refrain from joining unions of their own choosing.

Employers shall comply with the maximum hours of labor, minimum rates of pay, and other conditions, as prescribed by the President of the United States. No one under 16 years of age may be employed. The minimum wage for processing and labor operation shall be 40 cents per hour, unless lower on July 15, 1929, and in no case less than 30 cents per hour. Casual employees and learners, not exceeding 5 per cent of the payroll, may receive 80 per cent of the minimum.

To all other employees, except commission salesmen, the minimum wage shall be \$15 per week, with office boys and girls, learners and casuals receiving 80 per cent of such minimum.

Processing employees shall not work more than 36 hours per week. Other employees, except executive, administrative, research, engineering, and supervisory employees, and travelling and commission salespeople, shall not work more than 40 hours per week.

Special provision is made, however, for peak conditions of operation necessary in radio production and also for emergency operation—such excess operation to be reported monthly to the National Committee.

Shall Not Sell for Less Than Cost of Production

No manufacturer in the radio industry shall sell any product for less than the cost of production, as defined in the Code. Each manufacturer may add to the cost of production, as so defined, such amounts or percentages as he may deem advisable to constitute the net prices or list prices of his products, which prices shall be national, and apply whether sold within the state where such manufacturer is located or elsewhere, in order that the interstate commerce of such manufacturer shall not be unduly burdened or affected by intrastate sales.

In determining his price, no manufacturer shall discriminate between his various types of radio products, in allocating overhead for production, selling, advertising and administration.

No manufacturer shall effect or conceal price discriminations, by the payment, allowance or acceptance of secret rebates, commissions, credits or discounts, whether in the form of money, services, allowances or any other form.

For purposes of administration, the radio industry is departmentalized as follows:

1. Radio receiving and television set division
2. Radio tube division

3. Radio parts, cabinets and accessories division
4. Radio loud-speaker division
5. Sound-distribution equipment division
6. Fixed-condenser division

Other divisions may be established, with the approval of the National Committee and the executive committees of the established sections, which committees are made up of the executive committees of the various RMA divisions. Each division will be self-governing and independent, setting up its own administrative agencies. If, however, at any time the manufacturers of a division fail to conform to the provisions of the Code, the national executive committee is empowered to administer the Code for that division.

The provisions of the Code and its chapters, are, upon approval by the President of the United States, binding upon all manufacturers of radio products covered.

Shall Furnish Statistics

In order to provide data for the administration of the National Recovery Act each radio manufacturer shall furnish to the national committee statistical information on subjects of

1. Capacity
2. Production, orders and shipment during the month
3. Inventory of finished merchandise on hand at

end of month, including merchandise in hands of distributors

4. Number of persons employed, wages, earnings and hours worked

5. Net or list prices in effect at time of report

Actual collection of this data will be delegated to a designated firm of certified public accountants, employed by the Radio Manufacturers Association, who will be obligated to disclose totals, but no individual figures.

Where the cost of executing contracts entered into in the radio manufacturing industry prior to the approval of the Code by the President are increased by the operation of Recovery Act, the Radio Emergency National Committee is designated as a tribunal to assist in reaching adjustments, sitting with a representative of the National Industrial Recovery Administration.

Allowances and Discounts Specified

The chapter relating to receiving sets, classifies the various types of receivers, and specifies the allowances and discounts which may be granted. Thus advertising and sales promotion allowances to dealers shall not exceed 3 per cent of the net selling price. Discount allowances to dealers, based on total annual volume of purchases, shall not exceed an additional 5 per cent to dealers purchasing \$25,000, or 10 per cent to dealers

(Please turn to page 21)

Wholesalers Also File Code

*But Every Radio Jobber in Country MUST
Join RWA AT ONCE If It Is To Be Made
Operative—Digest of Chief Provisions*

UNDER the impetus generated at Chicago in June—when it was seen that a separate code for the “distributive” branch of the industry would be necessary so that radio dealers and jobbers might register their needs at Washington—the mighty task of formulating such a document has gone steadily forward. Benjamin Gross, Gross Sales, Inc., New York City, was elected chairman of the Radio Wholesalers Association Code Committee. Serving on this committee are: James Aitken, Toledo; Frances Stern, Hartford, Conn.; Harold Wrape, of St. Louis and David Trilling, Philadelphia.

It is not possible to reproduce the specific wording of the many clauses in this code. It first must be presented before General Johnson and Deputy Allen. It may be stated, however, that it is eminently fair to all parties concerned—manufacturers, jobbers and dealers. It was drawn up only after many hours advising with the members of the RMA code committee. It was filed at Washington, August 3, in conjunction with the code of the set, tube and parts makers.

At special meetings of the radio wholesalers of the New York trading area and of the New England States, much emphasis was placed, by Mr. Gross, on the imperative need for every radio jobber in the country joining, at once, the Radio Wholesalers Association (111 North Canal Street, Chicago, Illinois). Dues are \$25 a year.



BEN GROSS
*Chairman of the
RWA Code Com-
mittee*

“It is essential that your committee be in a position to inform the Government that the code as submitted represents the organized interests of at least 85 per cent of all those in this industry,” Mr. Gross explains. “Furthermore, radio dealers should organize. They should form local associations and communicate with the National Federation of Radio Associations, 111 North Canal Street, Chicago, for the purpose of affil-

iating with this central clearing house of dealer-jobber interests. Quick action is imperative.

"To every radio distributor in the country I reiterate; it is not only vitally necessary but it is **demand**ed that you associate your concern **at once** with the RWA if this code be considered seriously at Washington as representing the organized thinking of a substantial majority of all the radio jobbers of the United States.

"Another reason for organizing is that this code must be administered locally. Under the provisions of the National Recovery Act this function is put up to industry itself, backed by the legal arm of the Government. Without a strong local radio organization, with its code administering Executive Committee, the many needed benefits of our code will be lost. Also it is high time we were properly represented at Washington and before the councils of the Radio Manufacturers Association."

Following, is a digest of the chief provisions and basic features of the code, as filed at Washington August third. This code may be supplemented by local, non-conflicting district codes. If approved by the Government any violation of any code provision carries with it on conviction, a fine of \$500 for each offense and for each day such violation continues, as well as possible imprisonment as a misdemeanor.

(a) Each Distributor is required to file with the Local Executive Committee in his District, a schedule of the list prices and discounts of all merchandise he sells.

(b) The disposal of dropped lines and surplus stocks, close outs, etc., will be handled under the supervision of the Local Executive Committee.

(c) Pricing schedules will be based on a definite minimum gross profit to the distributor on every item as well as a definite gross profit to the dealer on every item.

(d) The reduction of these prices from the Distributor to the Dealer by any subterfuges whatever is prohibited. This should eliminate a great many of the present abuses and discriminations.

(e) The schedule will also have to set forth the full details of co-operative advertising plans, if any, which plan will have to be adhered to strictly.

(f) A joint distributor and dealer advertising Censorship Committee is provided for in each locality for the administering of a Code of Fair Advertising.

(g) A credit and financial information interchange is provided for in each local district whereby the many unfair practices in financial transactions will be eliminated.

(h) The definite responsibility for service is set forth.

(i) The supply of radio sets to be used as gifts with other merchandise is prohibited.

(j) The sale, by distributors, at retail or the supplying by Distributors of merchandise at wholesale discounts to service dealers or anyone else not regularly engaged in retailing is prohibited.

(k) Consignment of merchandise for any purpose is prohibited.

(l) Hours of business for distributors is set at five, eight hour days with Saturday closing compulsory.

For the Dealer Divisions

(a) Advertised price of an item is its list price, and cash sales must be made at no less than the advertised price.

(b) The offering or giving of gratuities in any manner and description is prohibited.

(c) Definite deferred payment carrying charges are provided for, as well as minimum down payments and minimum individual installment payments.

(d) Maximum trade-in allowance is fixed at a given percentage (10%) against the Advertised Price.

(e) Numerous unfair trade practices are prohibited among which are the supplying of merchandises to non-franchised

dealers; the use of fictitious list prices is prohibited; the advertising of products which the dealer has not available for demonstration and sufficient quantity for sale purposes; to make disparaging comparative demonstrations; to accumulate the product of the manufacturer or distributor for the purpose of disrupting orderly processes of merchandising; to remove or deface identification labels or serial numbers or imitating of trade names. The fixing of a maximum, free service period of 90 days; supplying of the same type and make of tubes as furnished with the receiver originally also is provided for.

(a) *The Code of Fair Advertising* will provide for the true rebuilding of public confidence in radio and radio merchants. All misleading and ambiguous statements, exaggeration or unreasonable claims are prohibited.

(b) All confusion as to model illustrated and price applying thereto is prohibited. Also the make and model number of all sets illustrated will have to be indicated and the prices guaranteed correct.

(c) Advertising 'no interest' charges is prohibited.

(d) Advertising of used sets, repossessions, etc., will have to be clearly defined in the advertisement.

(e) Ambiguous references to the amount of trade-in allowances prohibited.

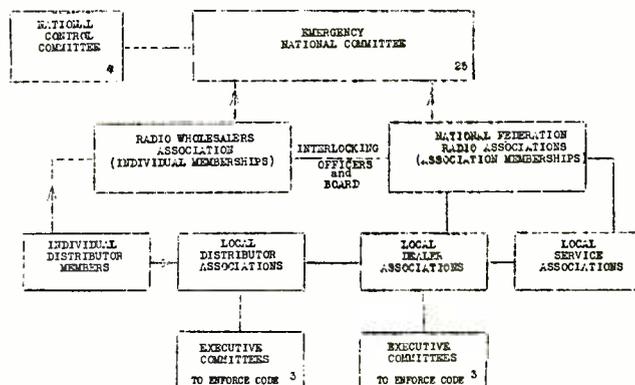
(f) The advertising of a chassis in a cabinet other than that supplied by original manufacturer will have to be clearly defined in the advertisement.

(g) Ambiguous statements or figures out of keeping with the code limitations regarding amount of down payment or the deferred payments are prohibited.

Provision is made for a National Statistical and Sales Data Survey as a guidance to general industry practices, as well as uniform accounting practices.

The application of regulations locally will be put in the hands of a local Executive Committee with considerable power to demand and enforce compliance with the Code.

Organization Chart, Distributive Divisions



Note—This code is not final. It is subject to revision and undoubtedly will be materially altered before its final acceptance by the Government. In its present state, therefore, it represents not a promise but rather the formulation of a *hope*; a presentation, in other words, of what the industry needs.

It also should be noted that the RMA Code is replete with many clauses widely changing merchandising practices in the interests of jobbers and dealers. Among these features are two outstanding provisions. One is for a special trade agreement, under Section 4 of the NIRA, providing uniform contracts between manufacturers, distributors and dealers, definitely establishing standard discounts, etc. in the marketing of receiving sets. The other clause, initially applying to sets, would establish a scale of minimum, but not maximum, prices for chassis based on a weighing of production costs.

The Radio Manufacturers' Code (Continued from page 19)

purchasing above \$100,000. Such allowances may be shared but not duplicated by the manufacturer and distributor.

The chapter on radio tubes provides that for a period of one year from adoption of the Code, no new radio receiving tubes will be introduced, except for experimental purposes, by the radio-tube industry, without the approval of the executive committee.

In the standard uniform agreement exhibits, schedules of discounts to distributors and dealers are presented as follows:

Manufacturer to distributor, on each set selling for a list price of

\$30 or less.....	40 and 15%
\$31 to \$50, inclusive.....	50 and 5%
\$51 to \$100, inclusive.....	50 and 10%
\$101 and over.....	50 and 10 and 5%
On each part for set.....	50 and 5%

The distributor also agrees to observe the following schedule of discounts, which controls the sale of sets and parts sold by manufacturers direct to dealers (as covered in Exhibit C):

\$30 or less.....	36%
\$31 to \$50, inclusive.....	40%
\$51 to \$100, inclusive.....	40 and 5%
\$101 and over.....	40 and 10%
On parts.....	40%

The RMA code for the industry was approved by the Association's Board of Directors, at an emergency meeting held in Washington, July 27. It was filed with the

Government within 48 hours because of serious new problems facing employers and labor following the launching of the NRA voluntary code plan. RMA had planned originally to submit the code to its members and the industry at large before filing. There will be ample opportunity, however, for its consideration and the registering of suggestions before its final approval.

Immediate application of the RMA code's labor provisions, which, it is estimated, would give work to 10,000 more radio factory employees and increase the industry's annual pay roll by \$3,000,000 was asked.

Note that the code creates a Radio Emergency National Committee, composed of chairmen of the RMA Division, with broad powers to administer the national code, both for members and non-members; anyone engaged in radio manufacture.

The Committee is given extensive powers to enforce all provisions of the code, including sales below cost of production, and all receiving sets below the proposed weighted average prices.

The radio industry having submitted its Code, subject to a revision, a public hearing date will be set by the officials of the National Recovery Administration. At this hearing any interested person may appear and present discussion, provided he has in advance submitted a brief of the points he proposes to cover. Hearings on radio will be held under the jurisdiction of Deputies Allen and Whiteside, acting jointly.

Following the hearing, the Recovery Administration will present the Code, as revised, to the President for his approval. When so approved, the Code becomes binding on all members of the radio industry ten days after it has been approved by the President.

Mac Finds a Way (Continued from page 17)

tions. These are always well attended. My public address system is responsible for a great deal of my advertising in addition to being a regular moneymaker, jobs varying from \$10 to \$150.

The Home Progress Expositions, for which I had the contract for showing television and installing our amplifier system at all its expositions in Connecticut, is an indirect cause for many out-of-town people stopping at my store.

Another idea for publicity is to amuse early theatre-goers by having a direct hook-up between the theatre, via telephone wires, and my store microphone and amplifiers. I entertain them while they wait for the show to commence, with musical selections played at the store. This coming season I plan to feature local talent on these store-to-theatre broadcasts.

We have equipped several inns and night clubs with electrically controlled phonographs with remotely controlled speakers in the booths and rooms. We are submitting specifications to large home owners for having their homes equipped with remote control speakers, which will enable them to have their music anywhere they may chance to be in their spacious homes.

We have set up our power amplifiers with *properly matched* pick-up and *properly matched* dynamic speakers

specially for *reproducing phonograph records*. The results are so realistic as to be very gratifying to the music-lovers and have resulted in a large field for the sale of phonograph records and a sure sale of this type of equipment for their homes.

I have done extensive advertising featuring my guaranteed perfect installations. Lately I have been charging 50c. each time my competitor, through lack of his own equipment, has brought tubes, etc., for me to check on my test board.

Now that the RMA is endeavoring to promote *Radio Progress Week*, it seems the dealer should register some of his wants. What is the radio manufacturer going to do about this dishing out of models every time some engineer has a new idea? As has happened in the past some of the new models were worse than the previous ones. There are thousands of dealers who will agree with me, and it's time that they got down to business, putting out one line of new yearly models that are the real stuff and not such cheap merchandise at \$24.50.

Now that the *Prosperity Campaign* is in view, I hope the manufacturers will have foresight enough to sense the reasons for higher priced merchandise, so that the dealer will be able to capitalize on the seven million obsolete sets that will be staring him in the face.



"COLD TOWEL, SIR?" A cold towel after a shave means a satisfied customer, says E. S. Kerr, who operates the Dayton-Biltmore barber shop, Dayton, Ohio. Another market for electric refrigerators. Note the "masked marvel" in the background.

Set Your Watch by Big Ben

A Miami, Florida, dealer attracts attention to his store, as a center for short-wave radio, by advertising in the local papers:

"Come in at Seven, Tonight, and Set Your Watch by Big Ben, London, England"

With one of the regular short-wave receivers on sale in the store he gets London regularly. Every evening finds a little group of interested short-wave listeners, who become prospects for short-wave sets as the clerk brings in "Big Ben," as well as Paris, Berlin, Rome and Madrid.

Prize Winner Advocates In-the-Home Testing

How do the "tube contest" prize winners get that extra volume that commands national recognition? "By testing tubes in the home," declares H. G. Overbeck, of the Sechler Electric Company, Denver, Col., in his recent letter, which won first prize money in Hygrade Sylvania's contest. "With time on my hands, I went out and canvassed, using the tube testing idea as my entrée. For this, of course, a portable tester is indispensable.

"A surprisingly large number of people are afraid to change their own tubes, when replacements are needed. Probably this fear is the factor that makes the tube check canvass such a success.

"System," Mr. Overbeck continues, "is the next important thing. I recommend the use of three forms: (a) A tube sticker, to carry firm name, etc., dates sold and tested and a line on which to write conditions at time of test; (b) A gummed label to stick inside the

Mid-Summer

SALES

*August is the time
cial stunts for that*

tested set to carry dealer's name and telephone number. Thus the customer has *two* reminders when he again needs radio service. And (c) a test record card, to facilitate 'tuning up' the set and to provide a workable follow-up record. It not only is necessary but has a favorable effect on the customer.

"The results of the test of the tube in each socket should be noted on this last form. Notate S (satisfactory), D (doubtful) or U (unsatisfactory). In another vertical column enter the changes caused by shifting tubes or substituting new ones. This is very important. It may look like red tape but, in the long run, it will save time and cut out the guesswork."

Leaves Substitute Set When Making Repairs

E. W. LeRoy of Alhambra, California, insists that his servicemen leave a midget in the home whenever they take away a customer's set for repairs. "Why not keep this small set for your boy's room or sun-porch now that you have it?" is a line that has sold many of the substitute receivers.

"Don't leave a used model in the home," says LeRoy. "The idea is to select a small set for which the prospect has a genuine need and then leave it long enough for him to become attached to it."

Displays Autographed Photos of Radio Stars and Announcers

Station stars and popular announcers are, as a rule, glad to mail their *autographed* photographs to radio dealers who write a personal letter of admiration requesting them, states James McDermitt, Meriden, Connecticut.

"Explain that these pictures will be prominently displayed in the store, and that many radio owners and prospects for sets will view them. Such a showing creates confidence in the dealer's standing," concludes Mr. McDermitt.

DON'T FORGET—that the automobile section of the daily and Sunday newspaper is the place to advertise auto-radio sets and service.

Suggestions

I D E A S

to plan those special
September Campaign

ONE DOLLAR
radio service

• WE TEST
1 SPEAKER
2 CHASSIS
3 GROUND
4 ANTENNA
5 ANALYZED
SOLDERED
CONNECTIONS
6 TUBES
7 FREE DIAL
LIGHTS
8 MINOR
REPAIRS

Star
RADIO CO.
409 11th ST. N.W.
phone DIST. 4700

CALLS HIS SHOTS—
Star Radio Company, Washington, D. C., solves the problem of the high cost of newspaper advertising by running 50-line copy which tells the reader, 365 days a year, exactly what he gets for the dollar service charge. Note the nine specific items on the adv. here reproduced.

"The real objective is to keep our name before the public," states President Wallick. "We use the radio page, the logical place to advertise this dollar service. The bulk of our summer business is coming from trying to sell an auto-set on every service call."

How Bass Makes Money On Trade-ins

"There's money to be made in trade-ins, if you know how to do it," writes B. O. Bass of Lamoni, Iowa. "I rejuvenate them on a semi-production basis, keeping the average cost of repair parts down to 50 cents and labor time to 2 hours and then re-sell at a profit.

"Manufacturers' close-out stocks of parts such as a.f. transformers, speaker units, matched r.f. coils, volume controls and by-pass condensers are used. This makes a typical battery set job cost, say, 18 cents for a transformer; speaker unit, 25 cents; coupling coil, 10 cents. Five and six tube all-electric models of early vintage rarely require more than a filter condenser or volume control.

"I keep a good rebuilt battery set on the shelf as a standard of comparison. Sets that come in as trades are checked against this standard, r.f. and a.f., in a quick routine that localizes defects. Necessary repairs are made and the cabinet is carefully polished. Then the sets are re-sold for as much as \$25. People who come in to have small, cheap sets repaired are the best prospects. I sell them a re-conditioned trade-in which originally cost somebody two or three times as much money as their own set. The excellent cabinets of older models make selling easy.

"I have frequently made more money during the month on trade-in re-sales than on either new set sales or repair work."

Radio and the Jobless

"I can't stand it any longer. I can't get along without radio, and I've simply got to have my set fixed." This statement was made to a radio dealer the other day by a laborer who is working every other week, and on half-pay, at that.

The moral is obvious: with hours of idle time on his hands, the intelligent worker of today must have some diversion—and radio fills this need to perfection. That is why every dealer should study his market for reconditioning sets and should include in that survey the dwellings of the most humble, as well as of the well-to-do.

There's Strength in (A-R) Numbers, Says Hatry and Young

Hatry & Young, Hartford, Conn., have sold many car sets these past six months. Contrary to one school of thought, Mr. Young finds that a display of an ample variety of makes helps this game along.

"It makes an impressive display, stops them at the front door and pulls them in," he declares.

Note the six-way switch for quickly cutting from one make to another. All the sets here shown are hooked up. Thus the customer can compare tone quality and performance.



Meet the "EXPERT"

USING the Jobber's Salesman to Build Dealer Business

By "Steve" Vradelis

WE sell a radio to a local family. A few days afterward I stop in at the house with a representative from our jobbing firm. "This is an expert from the factory, Mr. Schmalz," I explain. "He wants to look over the installation and see that everything is all right."

Customer Schmalz is all cooperation. The house is ours. He is thrilled pink to know that the factory takes such an interest in him. The set is swell. Does he have any complaints? Why, of course not. The reception is great. Does he know of any of his friends who might be interested in buying a set? Why, yes, and he names several.

If factories and jobbing firms would cooperate more with the dealer in supplying men to call on customers with the dealer or his salesman in the above manner after a sale has been made, more sets would be sold.

We know, for we use this device to boost sales. It is a simple thing, but it works like magic. It stops complaints, flatters the customer and induces cooperation. The expert need not be a salesman, but he should know his stuff. Oftentimes the customer will call him aside and ask him questions about the set—to check up on our statements. And hearing from him a repetition of what we said will act as a tonic on the customer's enthusiasm. The result will be some valuable word-of-mouth advertising.

When prosperity began coming back early this summer, we found our sales mounting, and trace a large part of the sales increase to the customer satisfaction we have built over a period of years. Our radio sales in June totaled 27 new sets, with a dollar volume of \$1,780. This in a city of 30,000. We employ no outside salesmen, but do practically all selling in the store. Most sales are made through satisfied old customers, or stopping the shopper by showing him that he can have confidence in us.

Our selling technique is simple. It is backed of course by high-grade service. In fact, instead of selling sets, we sell radio service and radio reception. We sell the house, instead of the set. We give it to the prospect in this way.

"When you go to the doctor and pay \$1 for a box of pills, you are not buying medicine, but investing in the skill of the doctor and his ability to cure you. When you have a few dollars to lay away you don't shop all over town, but hit on a bank in which you can have confidence and put your money in it. Now when you spend \$100 with us for a radio, instead of buying a cabinet with some mechanism in it, you have invested \$100 with us to get the programs that are coming over the air."

Vradelis Bros. Inc.
29 S. BROAD STREET
PHONE 1213

Radio Purchase Guarantee
For Your Protection, CAREFULLY READ the explanation of the GUARANTEE of your radio

This Radio is Guaranteed by Vradelis Bros. Inc. to be free from defects in material and workmanship for a period of ninety (90) days from the date of sale. Should any defect or defects become apparent within the period of guarantee, Vradelis Bros. Inc. will effect the necessary repairs or replacements, free of charge, to this radio.

TUBES ARE GUARANTEED

by us for a period of ninety (90) days with a provision that they (tubes) retain the serial number also socket number and have covers from removed or scratched by anyone other than an authorized representative of Vradelis Bros. Inc.

**DO NOT TAMPER WITH SET OR TUBES
FOR SERVICE CALL VRADELIS BROS. INC.**

We have at your company our service department, equipped with trained men ready to render our service. Your request for advice, regardless of the nature, will be accepted and handled by us FREE OF CHARGE. FOR A PERIOD OF ONE YEAR, providing such service is not abused. If your radio requires the replacement of a tube or tubes or a part or parts pertaining to the mechanism AFTER A PERIOD OF NINETY (90) DAYS FROM THE DATE OF PURCHASE we will make a charge for the individual or respective materials used.

RECEPTION OR VOLUME

of distinct broadcast for stations is not guaranteed by us on any radio receiver regardless of make or price. The securing of distinct and reception depends upon elements entirely beyond our control, such as static, weather conditions, location of the radio, the possibility of electrical interference, plus skill and patience on the part of the individual operating the radio receiving set. If any of the above conditions exist after the radio has been installed by us we will not be responsible, and will expect the fulfillment of your contract.

AN EXCHANGE PRIVILEGE

is carried with this guarantee on the radio purchased, for the selection of any other radio sold by Vradelis Bros. Inc. reasonably equal in value to your original selection. Your exchange privilege is for a period of 3 Days only, which expires on.....1933.

The above guarantee and conditions is a complete summary of the policy followed by Vradelis Bros. Inc. No salesman, service man or representative for Vradelis Bros. Inc. has the privilege or authority to add in, take away or alter this guarantee.

VRADELIS BROS. INC.
29 SOUTH BROAD ST.
MIDDLETOWN, OHIO



PETE, STEVE
AND JIM

have used this purchase guarantee effectively for four years. "It helps fix in the customer's mind the idea that the firm backs up all promises. It is read over carefully to the customer when the sale is made."

But the customer may say, "Why should I spend \$100 for a radio when I can get one for \$18.75?" We reply: "When you pay \$18.75 for a set you've bought just \$18.75 worth of radio reception but when you pay \$100 you have secured \$100 worth of reception and service." This takes the customer's attention off of price.

We issue a guarantee to build up his confidence in us, which is duly signed and backed up. We don't make any wild promises. But first find out what the customer wants—what he expects in the way of reception and service. Knowing this, we supply the set and the brand of service that will satisfy him. And this satisfaction breeds sales.

News of the Month

August, 1933

New York, N. Y.

ELECTRICAL SHOW SEPT. 20-30

Plans Perfected for Madison Square Garden, New York, Exhibition of Radio Products and Household Appliances

Three full years of progress in the electrical and radio industries will be shown in the 1933 National Electrical Exposition scheduled for Madison Square Garden, New York City, from September 20 to 30. There have been no major or public shows in these allied fields since 1929.

"The most interesting and educational show in the history of radio is now assured," was the opinion expressed by Irving Sarnoff, in behalf of the Electrical Association of New York, sponsor of the exposition.

"For the first time these allied interests of radio and electricity have teamed up to exhibit their new developments and styles, both commercial and scientific, to the interested public at just the right time to most benefit manufacturer and dealer," Mr. Sarnoff continued. "In my opinion the coming show not only will mean much to the radio buying public, which for the past two years has not been afforded the opportunity to see the new styling and developments in radio sets and equipment at a big exhibition, but its success is going to mean much to dealers and manufacturers."

According to Joseph Bernhart, manager of the National Electrical Show, more than 60 per cent of all available space on the show floors has already been contracted for. Many of the exhibitors have nation-wide radio programs and for their benefit, as well as for the broadcasting of special programs now being arranged by N.B.C., Columbia and other radio groups, two completely equipped studios will be erected.

Invitations have been extended to the New York Police Department to show its newest equipment in short wave radio communication to squad cars, police aeroplanes and harbor boats. Also to the United States Army and Navy to

demonstrate means and methods employed for radio signaling and sound and sight detecting on land, sea and air.

To further stimulate attendance the newest in radio and electrical aeronautical devices for the safety and comfort of passenger and private air travel will be shown. Devices such as were used by General Balbo to direct and safeguard his Italian air armada on its recent trans-oceanic trip, by Wiley Post on his record-breaking round-the-world flight, and the newest radio-electric navigation instrument to be taken by Roger Q. Williams in his projected New York-Rome-Athens-Dublin-Chicago scientific serial survey and research flight—all will be exhibited.

The management also announces that the admission will be 25 cents, with tens of thousands of tickets to be distributed by the exhibitors, which Mr. Bernhart believes will assure a record-breaking attendance at Madison Square Garden.

Essex Radio Equipped

Hudson Motor Car Company, Detroit, and Grigsby-Grunow Company, Chicago, will make joint capital of the fact that the Essex Terraplane is the first car to include a radio set as standard equipment.

A Radio Prosperity Campaign Suggestion—Hold an "Open House Week" with Personal Appearances of Radio Program Artists



Showing the crowd that assembled one afternoon this spring at the Kraus Radio Company, Cincinnati, to hear radio performers from WLW broadcast from the store



Vive Italo!

We hope General Italo Balbo allowed for extra cargo on his return trip to take care of the many gifts he received in America.

Here he is accepting an Emerson radio from Pietro Cuce, one of the craftsmen who worked on this special job, while Ralph Austrian, Emerson executive, watches.

Burns, Merchandising Manager for RCA Victor Company

M. F. Burns, formerly Division Sales Manager at Chicago, for RCA Radiotron Company, Inc., and E. T. Cunningham, Inc., has been appointed Merchandising Manager of the RCA Victor Company, Inc., with headquarters at Camden, New Jersey. Among Mr. Burns' more important duties are the administering of sales policies and the supervising of trade relations.

Edward Wallerstein, formerly with the Brunswick Record Company, has been made Manager of Record Sales.

Muir a Deputy Administrator

General Hugh S. Johnson, Administrator for the National Recovery Act, has appointed Malcolm Muir, of New York, a deputy administrator. Mr. Muir's appointment represents a horizontal cross-section of industry due to his intimate acquaintance with the problems of the capital goods and machinery groups as chief executive of the McGraw-Hill magazines, among which **Radio Retailing** is numbered.

Mr. Muir is a past president of the Associated Business Papers and a member of the National Committee for Industrial Rehabilitation.

Earl Brower at Seattle

Earl Brower has established his headquarters at Seattle, Wash., as West Coast manager for the Sparks-Withington Co., of Jackson, Mich. His new responsibilities place him in charge of distribution of all Spartan products in the far western states.



DETECTOR

Reads His Mail

ANOTHER MAY EXPEDITION D. W. May, New York, plans another dealer hegira. This time to the Century of Progress Exposition in Chicago. Train leaves New York, Sunday, September 10, with stop overs at Niagara Falls and a midnight sail in both directions from Buffalo and Cleveland.

MAJESTIC MARDI GRAS Grigsby-Grunow did itself proud, July 5, at a monster Majestic dealer reunion, Hotel Drake, Chicago. Over 2,000 guests enjoyed the banquet and a program of super-features, not the least of which was a parade of 30 international beauties including Miss Majestic.

PRICES The following, from a Majestic bulletin edited by Harry Alter, furnishes plenty of food for mental mastication: "And in connection with July 1st price advances, let me point out that these raises in list price are not more than 10%—just a start of what is bound to follow—only the result of raw material advances. But as soon as the Industry Control Bill starts to operate, and as soon as we have shorter working hours and higher wage scales, then you will see prices go up at a rate that will make our present price advance appear insignificant. The entire refrigeration industry and the entire radio industry anticipate substantially higher levels of prices on all finished merchandise. These higher levels will be obtained by successive price increases."

JOHNSONBURG RADIO CORP. Announces the appointment of A. E. Lyle as chief engineer of this well known tube concern.

AUTO-RADIO A telephone survey of many auto-radio distributors in the eastern part of the United States shows demand, as we go to press, ahead of the first flush of spring buying by 15 per cent. In other words, auto-radio is still on the up. Average price, not installed, \$50. It has been a great season for motor car sets and the end is not yet.

"Travelling salesmen insist on radio in their cars. Business men, family men and those of ordinary means, as well as the wealthy, have been bitten by the bug."

REFRIGERATION Mid - summer sales drives on electric refrigerators are popular this year. Kelvinator announces a summer campaign. "There will be no let down this summer," says sales manager Jud Sayre.

Frigidaire, through district meetings, launched on July 7 a national sales contest with all the trimmings and announced a new model. 500 daily newspapers will be used. Also a 13-time radio program over a 54 station network to follow the Old Gold broadcast on Wednesday nights and the Chesterfield program on Friday nights. As statistics show that 21% of all refrigerator sales are made during July and August, this policy seems well timed.

AUTOMOBILE THEATRE The first Drive-In Theatre in the world, where motorists and their guests can see and hear motion pictures without leaving their cars, has been opened in Camden, N. J. The ushers in this unusual theatre have been equipped with bicycles to enable them to cover the ground without becoming footsore. There are seven rows of vertically inclined grades insuring uninterrupted vision regardless of cars arriving or leaving their places in front aisles. A 60 ft. screen is used.

BOOM NEWS The hourly rated and piece-work employees of R.C.A. Victor got a 10 per cent wage increase, effective July 24.

The number of workers at the Rochester plant of Stromberg-Carlson increased 25 per cent last month, as this concern's new car set got into production. S-C also jumped wages—12½ per cent. It reports that its higher priced radios are in strong demand.

FROM DUBUQUE "Just a line to let you know how things are stacking up in this neck of the woods. The car radio business is hot stuff around here now and the best part of it is that 70 per cent of my sales have been to farmers, who I didn't consider as prospects at all and who, up until a short time ago, you couldn't sell anything to at any price. Auto car radio is certainly a 'New Deal' for the dealer.

"All in all, if the factories watch their step and do not come out with too cheap a car radio and if they and the tube manufacturers don't come out with a new model or a new tube every month, I believe the radio dealer can take a new lease on life again."—FRED EVEN, Dubuque, Iowa.

SOUND BUSINESS Jack R. Bates, Texas representative for Webster Electric Company of Racine, Wisconsin, reports much activity in Texas on sound amplifiers. One jobber, George W. Sumner &

Company, Dallas, has made twelve theatre installations in the last sixty days.

ZENITH PRICES Effective July 24, Zenith Radio Corp., raised prices on its new line of Challenger sets. The highest advance is not more than 10 per cent; minimum, 5 per cent. Higher cost of labor and materials the reason.

A CODE FOR SERVICEMEN A "code of fair competition" to govern the radio service industry has been drafted by the Institute of Radio Service Men, Chicago. Terms will be defined and educational and accounting standards presented.

2 MILLION IN TAXES During the first year's operation of the Federal 5 per cent excise tax on radio products, the industry has paid \$2,206,763 to the government. This is much less than the original estimates of the Treasury Department, then placed at 10 million.

IRSM to Hold "Rebuild Prosperity" Convention in New York, Oct. 2-4

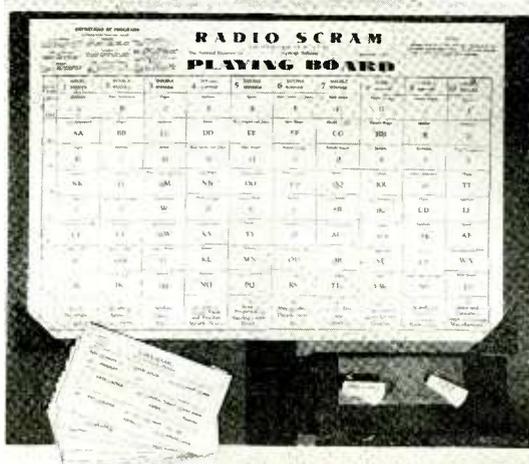
Plans for the "Rebuild Prosperity" convention of the Institute of Radio Service Men, to be held at the Hotel Pennsylvania in New York City, October 2-4, are well under way. The three-day meeting, the first to be held on the east coast, will combine an exposition with technical sessions.

The success of the first convention of the Institute, held in Chicago last winter, at which time 52 exhibitors occupied the entire amount of space available and which was attended by service men from all parts of the country will have an important influence upon the forthcoming meeting.

"Bud" Matthews GSM for Kenrad

KenRad Corp., Owensboro, Ky., has made C. C. Matthews, formerly manager of the radio department of Kiefer Stewart Co., Indianapolis, its general sales manager.

"Bud," as he is known to a host of friends, has had wide experience in the radio and electrical appliance business and has a splendid reputation as a merchandiser.



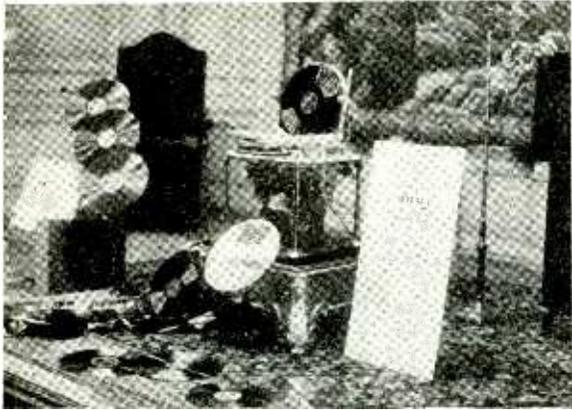
"Radio Scram"—

It's a Game

Radio Scram is played with the aid of any radio set and the equipment furnished with this game. The equipment, incidentally, consists of a large playing board and a generous supply of cards and tags of various colors and with various program and other designations printed thereon.

Can't attempt to describe it here but suffice it that it's brand new, ties in with radio and is guaranteed to become as popular as fig saws and roller skates.

For the real low down write National Factories Co., 807 Cuyahoga Building, Cleveland, Ohio.



Plenty of "Change" Here

As many as forty people at a time stopped before Lyon & Healy's windows last month to watch the action of this capehart automatic record changer, the most expensive of the record player type ever displayed by this pioneer music firm. The success of this motion window lead Lyon and Healy to show it in two other greater Chicago stores.

WORLD'S LARGEST PA JOB AT FAIR

The largest P.A. system ever assembled blankets the 424 acres of A Century of Progress, Chicago. One hundred and eighteen speakers are employed. Six hundred miles of buried wires carry the 1,350 watts of audio power. At every point in the Exposition grounds the music and the announcements may be heard.

Five different programs may be given simultaneously in different parts of the Exposition. Loud speakers of the system that may be interfering with a musical or other event may be temporarily patched out. The three control rooms employ seven announcers and 25 operators, the largest staff of any single radio P.A. station in the world.

The primary purpose of the public address system at the Fair is entertainment and news service. The system can be connected directly with any outside station but in most cases the national services have brought in their own pick-ups to cover news. Much of the music is brought in from the outside. Electrical transcriptions and programs originated by the Fair public address system also are used. The Fair itself is a field of musical novelties.

Emergency calls for visitors have been limited to serious necessities. Code

message system is used for official messages to the Fair public service staff. At a special musical note the Fair police and guides come to attention to hear a code message which follows. In this way a drive may be cleared for an ambulance without undue excitement. When the Exposition fire department has been called out to extinguish a rubbish smudge behind a building the public address system has prevented alarm by giving the explanation as soon as the fire engine's siren was heard.

The system was installed by the Electric Acoustic Corporation, of Fort Wayne, Indiana.

1932 Radio Sales by Months

Prepared by the Market Analysis Department of "Radio Retailing"

MONTH	MFG. %	JOBBER %	DEALER %
Jan.....	9.1	9.1	12.4
Feb.....	8.7	10.8	8.8
March.....	5.3	9.5	10.1
April.....	3.1	5.4	6.7
May.....	2.6	2.7	3.3
June.....	6.1	6.1	2.8
July.....	5.2	4.4	3.7
August.....	8.6	4.6	5.9
Sept.....	13.0	12.7	7.6
Oct.....	14.6	13.8	11.1
Nov.....	14.5	11.9	11.6
Dec.....	9.2	9.0	16.0

DISTRIBUTOR APPOINTMENTS

ATWATER KENT—Sampson Electric Co., Chicago, to cover Chicago territory.

SOLAR—Superior Sales Corp., Los Angeles, new sales representative for California, Nevada and Arizona. L. F. Schwamb is in charge as district manager.

ZENITH—Winne Sales Co., Minneapolis, will handle Zenith in the Minnesota section.

TUNG SOL—Raleigh Hardware Co., Beckley, Persinger Supply Co., Williamson, and the Groseclose Auto Electrical Service, Bluefield, all of W. Va., are the three latest appointments by Tung Sol. Looks like West Virginia will be well covered.



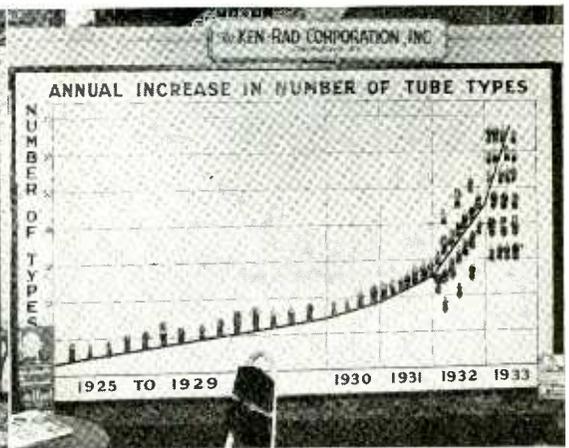
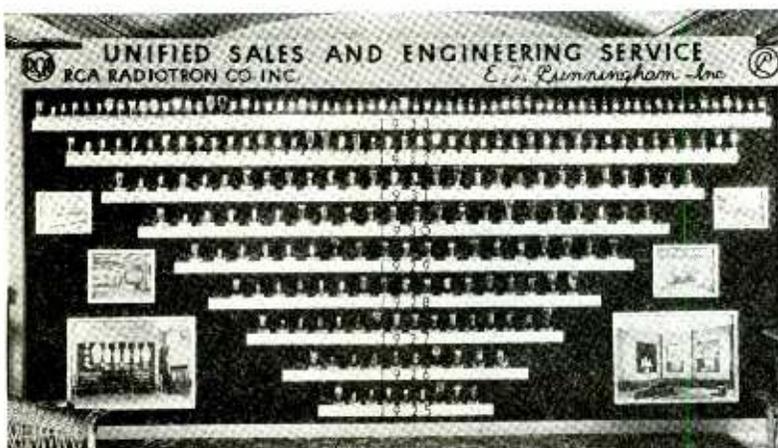
Mr. Fix-it Saves the Price of a Service Call

Courtesy "Sylvania News"

RELAY LEAGUE CONVENTION

The Central Division Relay convention of the American Radio Relay League will be held in Chicago, August 3-5. Will be under the auspices of the World's Fair Radio Amateur Council.

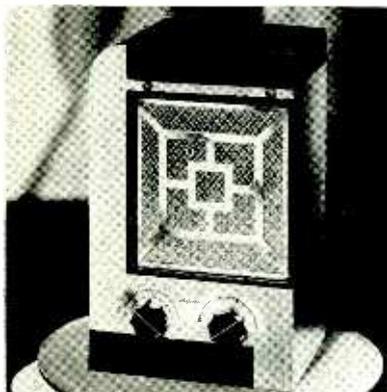
Increase in Tube Types Graphically Portrayed



These exhibits, at the 1933 convention of the Institute of Radio Engineers, Chicago, present, in startling fashion, the rapid growth of new tube types since 1930. The display on

the left was by RCA-Radiotron, Inc., Harrison, New Jersey, that on the right by the Ken-Rad Corporation whose business is located at Owensboro, Kentucky.

NEW MERCHANDISE



Majestic Model 49

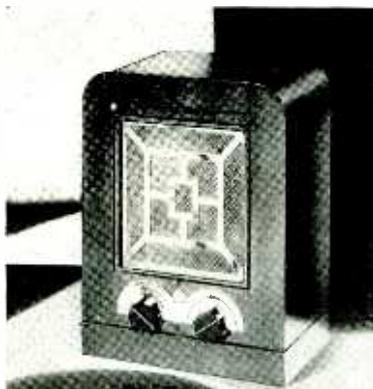
Majestic Modernistic Midgets

Two new four-tube table models of ultra-modern design have just gone into production at the plant of the Grigsby-Grunow Co., 5801 Dickens Ave., Chicago. They are the Model 44, "Duo-Chief" and the Model 49, "Duo-Modern." The same chassis is used in each. The tube complement is as follows: 6A7S for detector and oscillator, 6F7S for i.f. and second detector, 41 output and 6Z5 rectifier.

A two-position switch is included to cover, in addition to the regular broadcast band, the 1480-3500 kilocycle wave lengths.

Model 44 comes in a cabinet of quarter-sliced red birch with an all-over finish of brown walnut. The grille is ornamented with a highly-polished aluminum design. Dimensions 11x8½x5½ in. \$21.50.

Model 49 is also made of quarter-sliced red birch with a two-tone finish in natural and ebony. Dimensions 11x7x5½ in. \$21.50.—*Radio Retailing*, August, 1933.



Majestic Model 44

Upco Pick Up

Both the old and new records (78 and 33½ r.p.m.) may be played with the balanced pick up of the Upco Engineering Laboratories, 254 Canal St., New York City. This company also manufactures a complete line of pick ups to meet manufacturers' special requirements and special types for portable combinations as well as radio and phonograph console styles.

In addition Upco builds special recording equipment for aluminum or celluloid recording and produces recording heads for both processes.—*Radio Retailing*, August, 1933.

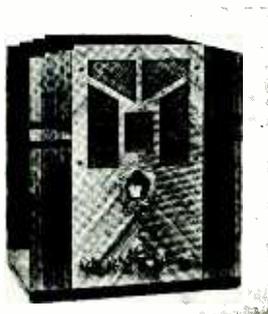
Zenith Models 715, 702, 288

The Challenger, Model 715, of the Zenith Radio Corp., 3620 Iron St., Chicago, is a midget in a cabinet of maple burl. It is an eight tube superheterodyne with shadow-graph tuning, a.v.c. and 8 in. dynamic speaker. \$42.95.

A short wave receiver, Model 288, is also ready. This set operates on a wave band of from 12 to 560 meters and is equipped with a.v.c., sensitivity control and noise reducer, all-purpose oversize power transformer for operation on all cycles and all voltages, and uses the new 59 7-prong tube.

This set is housed in a European style modernistic cabinet of butt walnut with black lacquer trim.

In addition there is a 5 tube, long wave a.c.-d.c. compact receiver, Model 702, operating on a wave band of 200 to 600 and 1000 to 2000 meters.—*Radio Retailing*, August, 1933.



Zenith Model 288

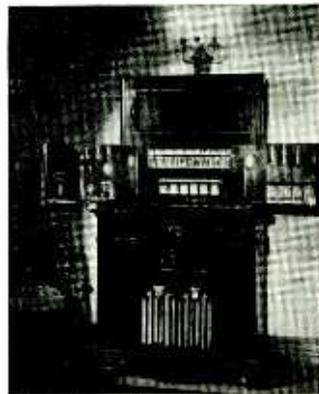
Tube Checker

Radio City Products Co., 48 W. Broadway, New York, is making the Model 303 tube checker to test all tubes without adapters. Equipped with 4, 5, 6, 7, 8 and 9 prong sockets. Second plate button for testing both plates of all rectifiers, \$18.75 to dealer.—*Radio Retailing*, August, 1933.

Sparton Models 61 and 62

Two small portable receivers have been added to the Sparton radio line, according to an announcement from the Sparks-Withington Co., Jackson, Mich. They are designated as Compact Models 61 and 62 and are priced at \$24.95 and \$30, respectively. These sets are five-tube superheterodynes and get short wave reception from 200 to 60 meters.

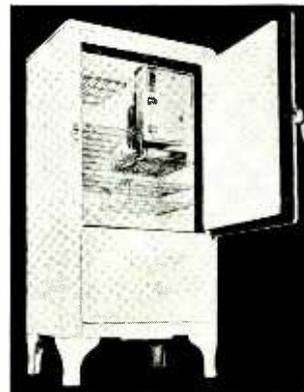
Model 62 is equipped with a handle for convenience in carrying. Both cabinets are of hand-rubbed butt walnut with marquetry inlay.—*Radio Retailing*, August, 1933.



Radiobar

A combination radio set and bar, known as the "Radiobar," is being manufactured by the Radiobar Co. of America, 3584 Wilshire Blvd., Los Angeles, Calif. It may be had in different models, all cabinets being walnut with carvings of solid walnut. The radio receiver supplied is either an all-wave RCA licensed set or a Philco radio. The prices range from \$119 to \$295.

The illustrated Model 210B, \$295, is equipped with 24 topaz glasses, chrome plated combination spoon and measuring cup, bottle opener and corkscrew, six topaz decanters, 41-oz. cocktail shaker, large ice container, refuse container, tray, stainless steel knife and two electric lights. Space is provided 12 bottles of ginger ale.—*Radio Retailing*, August, 1933.



Grunow Refrigerators

With the introduction of its "Progress" line the Grunow Corp., 4127 George St., Chicago, offers the trade three new electric refrigerators. They are known as Models 50-G (4.5 net cubic feet storage capacity); Model 60-G (5.5); Model 70-G (6.8). All three are of the same general appearance outside, the principal difference being in the interior storage capacity, the number of ice cubes and the shelf arrangement.

Each contains the standard over-size refrigerating unit using Carrene.—*Radio Retailing*, August, 1933.

Westinghouse Mercury Switch

A new line of single pole, single throw switches, a.c. or d.c., made with nominal ratings of from 3 to 50 amp., is announced by the Westinghouse Lamp Co., Bloomfield, N. J. Contact is made by impact between 2 pools of mercury within refractory chamber encased in heavy glass walls.—*Radio Retailing*, August, 1933.

Supreme Diagonometer

A new series of the Diagonometer AAA-1 which will be called the "Master Series" is announced by the Supreme Instrument Corp., Greenwood, Miss. This instrument tests all tubes including the newest types without adapters and is adjustable to varying power supply potentials. Tubes can also be tested from the sockets of operative radios. The patented multimeter circuit is calibrated with a full wave crystalline rectifier unit for accurate measurements of:

MA. ranges 0/2.5/10/25/100/250 M. A. and 0/2.5 amperes; A.C.-D.C. output ranges 0/2.5/10/25/100/250/1,000/2,500 volts; Capacity ranges 0/0.01/1.0/10 mfd.; Ohm ranges 0/500/5,000/50,000/500,000 ohms; Megohm ranges 0/5/25 megs.

All readings made directly on meter dials—no charts.

The Supreme "free reference point system of analysis" is still further improved in the Master Diagonometer so that all point-to-point analytical measurements are made by the use of plainly marked switches.—*Radio Retailing*, August, 1933.



Waco Home Lamp Assortment

As a "filler" line for radio dealers, the Wabash Appliance Corp., 456 Johnson Ave., Brooklyn, N. Y., offers an attractively packaged assortment of bulbs containing two 25 watt, two 40, one 60 and one 100 watt, inside frosted lamps, listing at \$1.25 to retail at \$1.—*Radio Retailing*, August, 1933.



Ansley Radio Dynaphone

The universal a.c.-d.c. "Radio-Dynaphone" made by the Ansley Radio Corp., 240 W. 23rd St., New York City, may be had in both the portable and home cabinet models.

The portable model folds up into the small space of 13x14x7½ in. and weighs only 22 lb. It carries 8 records, either 10 or 12 inch.

The home model comes in an oriental walnut cabinet, 16x13x10 in.

The Radio-Dynaphone incorporates a five tube superheterodyne radio using a 77, 78, 43, and 25-Z-5, dynamic speaker, individual tone and volume control.—*Radio Retailing*, August, 1933.



Fansteel Balkite Battery Charger

To keep the automobile battery charged sufficiently to take care of radios, heaters and other electrical accessories now on cars, the Fansteel Products Co., Inc., North Chicago, Ill., has brought out the "Balkite" battery charger. It is small and compact (8x7½x5 in.) and comes ready to hang on the wall, or place on a bench.

Two cords are provided one to plug into the car and the other into the electric light socket. No clips to bother with—car plug is polarized so it cannot be connected backwards.

It can be plugged in at night and the battery is up by morning. Charging starts at 2½ amps. and tapers off as battery comes up. This battery charger employs the Tantalum Rectifier principle.—*Radio Retailing*, August, 1933.

Weston "Selective Analyzer"

The new "Selective Analyzer" made by the Weston Electrical Instruments, Newark, N. J., makes use of the standard analyzer plug but brings back the several circuits to an external "socket block" which can be mounted on any multiple range combination volt-meter-milliammeter-ohmmeter. Readings are taken by plugging the meters into the desired jacks on the special socket by means of short, flexible leads, which means that there is no limit to the various combinations of readings which can be had.

The plug and socket combinations, known as "Tube Selectors," are made individually in 4, 5, 6 and 7 prong combinations. While they will function with any measuring instrument including older analyzers, they have been designed particularly for use with the Model 665 Selective Analyzer



which has 10 ranges of A.C. and D.C. Volts from 1 to 1,000, 9 ranges of current from 1 to 500 milliamperes D.C., 4 resistance ranges up to 1 megohm and 2 values of grid shift voltage for tube testing.

The tube selectors may be obtained separately.—*Radio Retailing*, August, 1933.

Fuse Retainer

Developed to meet the demand of manufacturers of auto and battery operated radio sets for a fuse mounting that would not take up any additional room in the set and still be readily accessible for servicing and renewals has resulted in the announcement by the Littelfuse Labs., 1772 Wilson Ave., Chicago, of the No. 1061 fuse retainer. This fuse retainer is hung directly in the line between the storage battery and the radio power supply.

A tension spring furnishes perfect contact at all times to the fuse which is fully protected by the fiber casing. It takes a 3 AG type automotive fuse or instrument Littelfuse.—*Radio Retailing*, August, 1933.

Acme Neon Vacuum Tube Tester

The Acme neon vacuum tube tester of the Acme Mfg. Co., Inc., Miamisburg, Ohio, is designed to test all tubes up to and including the small base seven prong tube.

Through control knob No. 1, it is possible to put any desired filament voltage on all eight sockets. The No. 2 knob is a shunt resistor across the neon tube to change the characteristics of the neon tube to get English reading.

No. 1 switch is used to get a check on duo-diode and class B tubes. No. 2 switch is for all tubes with control grid at top.

The neon tube acts in the manner of a meter except instead of a needle indicator a column of light travels upward along the cathode indicating clearly on the English reading scale the exact condition of the tube being tested. This tester is flexible and may be kept up to date by new charts giving proper settings for new tubes.

Price of model A is \$16.75.—*Radio Retailing*, August, 1933.



Molded Carbon-On-Bakelite Volume Controls

Smooth action and absence of noise is claimed for the new molded carbon-on-bakelite "Ex-Stat" replacement volume controls offered by the Tilton Mfg. Co., 15 E. 26th St., New York City.

Available in ranges from 500 ohms to 1 megohm, with uniform resistance or standard tapers, these controls are said to be impervious to humidity, change in value due to wear or "pitting," which so often causes volume control dead-spots. The units are designed for single-hole mounting, have the conventional three soldering lugs and will safely dissipate 2 watts.

List price, \$1. With built-in a.c. switch, \$1.50.—*Radio Retailing*, August, 1933.



Storage Compartment for Majestic 700 Refrigerator

A new accessory which every housewife will welcome—a vegetable storage compartment of 1 cu.ft. capacity, which can be quickly and easily installed on any model 700 Majestic refrigerator has been announced by the Grigsby-Grunow Co., 5807 Dickens Ave., Chicago.

This compartment is inserted between the base of the refrigerator and the legs. It will be sold as an accessory only and cannot be shipped completely assembled with the Model 700. This vegetable storage compartment is not refrigerated, of course.—*Radio Retailing*, August, 1933.

TUBE TIDINGS

August, 1933

E. T. Cunningham, Inc.—RCA Radiotron Co., Inc.

Harrison, N. J.

900,000 Visit Radio Exhibit First Month

Illinois Central Head Writes Praise in Letter to Sarnoff

"Why, day in and day out, is crimson-carpeted Radio Palace the most crowded of the World's Fair premier exhibition buildings?"

So runs the first paragraph of an article on the RCA Exhibit, in the July 9 (Sunday) edition of the Chicago Tribune. And the writer goes on for half a page to explain the merits of the exhibition.

No doubt about it, RCA Hall, in which the Cunningham and Radiotron exhibits play an exceedingly important role, ranks as the ace commercial attraction at the Fair. According to John K. West, RCA Exhibits Manager, 900,000 persons were drawn to this enthralling "radio palace" during the first month of the Fair. This is one-third the total paid admissions of 2,700,000. At this rate, between ten and fifteen million people will see the exhibits during the show.

Outstanding in drawing power are the

Tube Companies Promise Vigorous Support of Radio Revival Campaign

New Portrait



Col. Louis McHenry Howe, Secretary to the President, entered the Portrait Hall of Fame recently when he sat for Mrs. Leonobel Jacobs, of New York, painter of Presidents and other important personages.

The political expert is heard on the Sunday night program of RCA Radiotron-Cunningham, over an NBC network. To the long list of newspapers reporting each broadcast is now added the important United States News, edited by David Lawrence.

Commercial announcements are selling millions of listeners on the importance of buying Radiotrons and Cunningham tubes.

RCA Radiotron Company, Inc., and E. T. Cunningham, Inc., will play a vigorous role in the "Rebuild Prosperity" Campaign sponsored by the Radio Manufacturers Association this Fall, according to C. R. King, General Sales Manager.

"We will do everything in our power to further the success of this excellent campaign," said Mr. King. "Each Fall we present a sales campaign that is designed for the times and thoughtfully worked out to provide dealers and distributors with maximum benefit. This year we have an idea that is especially forceful.

Bigger and Better

"We are not sufficiently advanced in our plans to make them known as yet, but dealers and distributors may rest assured that they will be apprised of the details in plenty of time to get in the thick of the concerted R. M. A. offensive. Those who are familiar with our Fall Campaigns in the past will know that we are to have a campaign second to none when we say it will surpass previous efforts in originality, in the calibre of promotion material, in advertising, and in productive results."

The "Rebuild Prosperity" Campaign is to be an organized effort on the part of the entire radio industry—manufacturers, distributors, dealers, and service men—to rebuild sales by putting the spotlight on radio just as the country-wide buying wave which is expected to follow the National Industrial Recovery Act gets under way.

"Undoubtedly," said Mr. King, "the campaign presents the most unusual opportunity of the past four years for radio tube sales."

ILLINOIS CENTRAL SYSTEM

L. A. DOWNS

CHICAGO July 5, 1933.

Dear Mr. Sarnoff:

One exhibit at the World's Fair in which a considerable time can be profitably spent is that of the Radio Corporation of America, and the size of the crowd which throng it is clear testimony to its public appeal.

Of particularly absorbing interest, of course, is the space devoted to the manufacture of radio tubes. Despite its vast progress in recent years, radio is still pretty much of a novelty to a good many of our people, and the intricate manufacture of the basic part of a radio set has much fascination.

The "pictures" of the sound waves also draw well, as do the talking dog, the rescue at sea, the theater and the display of old and new radio equipment. Not a corner of the display is lacking in interest, which probably accounts for the fact that visitors tend to linger—a sure proof of the success of my exhibit. Congratulations to you and your associates.

Sincerely yours,

Mr. David Sarnoff,
President, Radio Corporation of America,
New York City.

two Cunningham-Radiotron features, the Cathode-Ray Oscillograph, showing how a radio set works, and the complete tube manufacturing unit. Spectators stand four and five deep watching the flashing fingers of skilled operators bring perfectly fashioned radio tubes into being. Many of these onlookers stand before the rail, fascinated, for a half hour or more at a stretch, attendants report.

Prominent persons in many fields have been outspoken in their praise of the RCA exhibit. The communication of L. A. Downs, President of the Illinois Central Railroad, is shown.

Unquestionably, RCA Radiotrons and Cunningham Radio Tubes are receiving a bountiful measure of favorable publicity from the Fair. Dealers and distributors are again urged to be sure to visit the exhibit and call personally on the management for any assistance they may require.



CHICAGO IDYL

E. W. Getke (Metropolitan Supply), Dick Graver (Cunningham-Radiotron District Manager), Frank Burns (formerly C-R Division Manager at Chicago), and William Coleman (G. E.) relax on a local course.

Ed Hughes Heads Amateur Radio Division

E. C. Hughes, Jr., an engineer who has demonstrated his ability in sales as well as in technical work, has been placed in charge of the new Amateur Radio Division of RCA Radiotron, a department devoted entirely to radio tubes for amateur use, reads an announcement by C. R. King, General Sales Manager.



E. C. HUGHES, JR.

"Ed" Hughes, a graduate of Rensselaer Polytechnic Institute, is working on a number of new plans with a view toward giving the radio "ham" a

more complete technical service, and particularly toward developing a more attractive sales set-up on amateur types.

While Ed, through several years of experience with G. E. and RCA Radiotron, is quite capable of holding his own in any discussion of the deeper mysteries of radio tubes, he expects to enlist the aid, not only of the general Cunningham-Radiotron laboratories, but of such radio experts (most of them "hams") as J. L. Reinartz, Bob Burnap, Linwood Lessig, Lee Waller, John Hirlinger, and Ed Spitzer—and thus provide the amateur with the latest information on any phase of the subject.

Scheduled for "Radio Stars," Fan Magazine

Tonight
DOUBLE THE PLEASURE
OF YOUR FAVORITE PROGRAM!

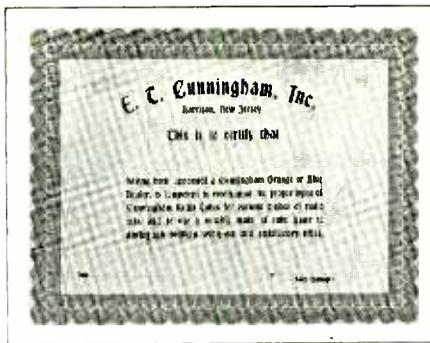
Get all the full rich tone with the world's finest radio tubes

The new radio tubes that have made it so easy to enjoy Cunningham Radio Tubes and RCA Radiotrons bring back the thrill of radio — give you a new listening pleasure you never knew existed. For more, ask your dealer for the

Cunningham
RADIO TUBES
RCA RADIOTRONS

This full-page advertisement in October "Radio Stars" will be the first of a series of 13 Cunningham-Radiotron ads in that up-and-coming young radio fan magazine, according to T. F. Joyce, C-R Advertising Manager.

Radio Stars has 250,000 regular readers. The October issue, double size and on sale through 100% more outlets, should produce exceptionally good results, Mr. Joyce believes—especially since it coincides with the Radio Prosperity Drive. The advertising in Radio Stars is but a small part of a comprehensive Radiotron-Cunningham advertising campaign designed to build sales and profits for Cunningham and Radiotron dealers.



The Bright Ideas Always Seem So Simple

Lloyd E. Brasher, New Orleans, when repair work was falling off, started out to drum up new business by house-to-house tube testing. He discovered that his Cunningham Orange Dealer Certificate made a very effective door-opener.

Now he keeps the certificate neatly clipped to a letter file folder and shows it the minute a door is opened. He finds that the impressive appearance of the Certificate commands attention at once, and then creates confidence as his prospect reads it.

NEW

Characteristics Chart — A completely revised and improved Technical Data Chart, covering all types of Cunningham Radio Tubes and RCA Radiotrons, has been prepared by the Commercial Engineering Section. Size, 22 in. by 17 in. Single copies free on request. Quantities, \$1 per 100.

Tubes Required by Popular Makes of Auto Radios. This sheet being sent with GOOD NEWS. Additional copies free.

Tube Numbering Explained

R. S. Burnap, Commercial Engineer of RCA Radiotron-Cunningham, explains the new tube numbering system as follows:

"Type numbers for new tubes are now being assigned in accordance with the new system adopted in the early part of 1933 by the Radio Manufacturers Association. A new system was required because practically all of the available two and three digit numbers had been utilized.

"The new system, which provides for future expansion of tube types, ordinarily requires only three symbols to identify a tube.

"New type numbers are formed according to the following simple rules. The first numeral indicates the filament voltage in steps of one volt. For instance, 1 is used for voltages below 2.1; 2 is used for voltages between 2.1 and 2.9 inclusive; 3 for voltages between 3.0 and 3.9, inclusive, et cetera. The digit 1, rather than the digit 2, is used for the 2.0-volt types in order to separate the 2.0- and 2.5-volt tubes. Thus, the 2.0-volt 1A6, and the 2.5-volt 2A5.

"The letter is used to distinguish the tube type and is assigned, starting with A, in alphabetical sequence. In the case of rectifiers, however, the assignment is made, starting with Z, in reverse sequence.

"The final numeral indicates the number of useful elements brought out to terminals. Thus, the 2A5 has five such elements, a heater, a cathode, two grids, and a plate.

Larrabee Moves to Chicago, Territory Expanded

F. H. Larrabee, former C-R Western Division Manager with headquarters in Kansas City, will henceforth make his office at 520 North Michigan Avenue, Chicago, Ill. "Mizz's" territory has been greatly enlarged.

Having at one time covered the entire country east of the Rocky Mountains for E. T. Cunningham, Inc., Mizz found the stretch from Kansas City to the coast rather confining.

"Mizz Larrabee's added responsibilities come as a recognition of the splendid work he and his organization have performed," a Cunningham-Radiotron official stated. "Those who have not had the pleasure of working with Mizz will find him a hard-headed Down East (Maine to you) Yankee with even more horse sense than the late Calvin Coolidge. Behind that Yankee mask you will find a prince of a fellow and a 'swell' sales manager."



F. H. LARRABEE

Stevens, Kolshorn Figure in Sales Shift



F. P. STEVENS

Franklin P. Stevens, RCA Radiotron representative in the Atlanta District for five years, has been transferred to the Cunningham-Radiotron Home Office in Harrison, N. J., where his sales prowess and proven knowledge

of dealer-distributor needs will henceforward be devoted to developing sales promotion plans. Henry Kolshorn, well known to the Southern trade, has taken over Mr. Stevens' duties in the New Orleans territory.



HENRY KOLSHORN

RCA-1A6, C-1A6 Announced

The 1A6, a pentagrid converter with 2-volt filament, has recently been announced to receiver manufacturers. This new tube is intended for combined use as an oscillator and mixer tube in battery receivers designed for its characteristics. Deliveries will start when equipment using this type is in the market. List price is \$1.75.

"While these rules assist to some extent in classifying tubes by filament voltage and function, the significance of the individual symbols will in most cases be inadequate to identify the specific features of a tube."

The Iconoscope

Zworykin's television tube improves transmission. Complex problems of commercial reception no nearer solution

IN JUNE, at the Chicago convention of the Institute of Radio Engineers, Dr. Vladimir K. Zworykin (RCA-Victor) described a new television tube . . . the "Iconoscope." Newspapers, aware of public interest, printed his talk, expanded liberally on the subject. And dealers everywhere have since asked: "Does this portend the early introduction of commercial television?"

Here are the facts. The Iconoscope is useful in transmission. With it objects may be "televised" without special lighting, moving beams or "pencils" of light focussed on the subject, confining "banks" of photoelectric cells and without rotating discs or drums. Pictures may be scanned for transmission, indoors or out, very much as a motion picture camera does the job. Unquestionably, it is a step forward.

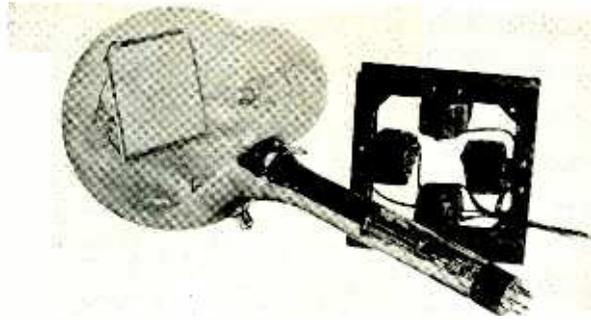
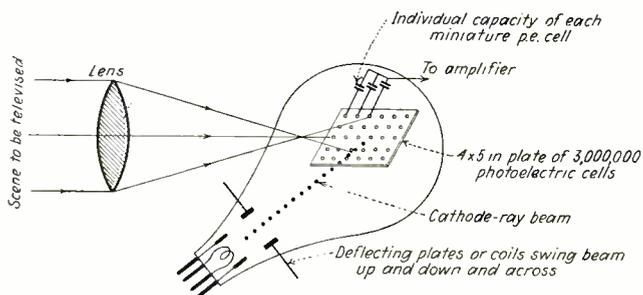
But there are other transmission problems yet to be solved. Broadcast channels must be found (ultra-short-wave transmission still appears probable, with large central transmitters and local relay stations feeding the light-like signals to local areas), expensive transmitting equipment must be purchased and erected, initial program costs subscribed to. Simplified scanning, however important, is but one phase of the problem.

And the Iconoscope does *not* simplify reception. Receivers used in connection with its transmissions will probably incorporate cathode-ray tubes of the type with which dealers are already familiar. They must be made to provide a picture sufficiently large and clear to hold consumer interest at a cost which does not place television in the millionaire class.

Television may, or may not, be "just around the corner." Certainly, development of the Iconoscope does not immediately clear the path of all, or even the most difficult obstructions.

How It Works

The Iconoscope is really a cathode-ray tube (electrical scanning device) and bank of photoelectric cells (light-to-electron translating device) in the one glass envelope.



(Top) The tube itself and deflecting coils

(Below) The complete pickup camera and amplifier

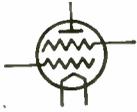
In one end of the 16 by 8 inch tube is a 4 by 5 inch photo-sensitive screen made up of 3,000,000 minute photo-cells, 10,000 per square centimeter. (The cells are said to be drops of "Willemite" on a silver-backed mica strip.) In the other end of the tube is a hot cathode designed to throw a beam, or "spot" of electrons, on the screen and deflecting plates or magnets which, when properly connected to external oscillators, can swing the scanning beam across the screen in either direction.

Now, a picture is focussed on the photo-sensitive screen by means of a lens just as it would be on the ground-glass or film of a camera. Each of the 3,000,000 photo-cells forming the screen accumulates a capacity charge equivalent to the amount of light reflected from its particular part of the picture, holds or stores the charge until contacted by the swinging electron beam generated by the cathode-ray portion of the tube. When so contacted the cells discharge to associated amplifier circuits.

It can be seen that it is thus possible to make the photo-cell-condenser discharge, which depends upon the intensity, light and dark areas of the picture, control the signals emanating from the transmitter. They are re-converted into a picture on the fluorescent screen of a cathode-ray tube at the receiver.

Pictures with as many as 250 lines per square inch are possible.

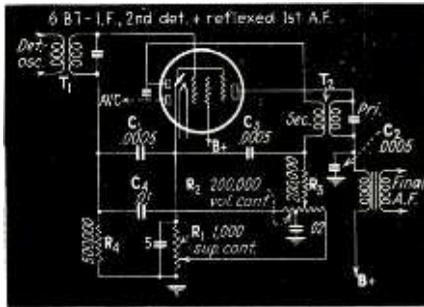
SERVICE AND INSTALLATION SECTION



CIRCUITS of the MONTH

Suppression Control in Diode Detector Circuit

In Emerson's new model 678 auto-radio a 6B7 duo-diode pentode provides i.f. amplification, half-wave detection, a.f. am-



plification (reflexed), noise suppression and a.v.c. (Wiring associated with the a.v.c. plate is not unusual and is here omitted).

I.f. input is applied by T_1 to the pentode portion of the tube C_1 , constituting a short return to cathode. Plate current flowing through cathode resistor R_1 furnishes fixed self-bias while screen and cathode grids are connected in the usual manner. Amplified i.f. appears in the plate circuit, flowing through the primary of T_2 and returning to cathode through bypass C_2 . It is applied to the diode detector input by the secondary of T_2 , C_3 serving as return to cathode.

Rectification takes place between diode and cathode and a.f. currents developed flow through the secondary of T_2 , R_3 , R_2 and R_1 to cathode, these resistors forming the a.f. load. A.f. is picked off one end of the volume control and reflexed back into the pentode input circuit through C_4 . Amplified a.f. thus appears in the pentode plate circuit and flows through the a.f. transformer primary in an amount dependent upon the setting of the volume control arm.

Noise suppression control is accomplished by varying the detector diode plate bias in a novel manner. R_1 , although furnishing fixed bias for the pentode, provides variable bias for the detector. Pentode plate current flowing through the resistor produces a voltage drop which is not variable insofar as the pentode itself is concerned because current flows through the entire resistor irrespective of the tap position. But the small diode plate, returned to cathode through a movable arm on R_1 , may be

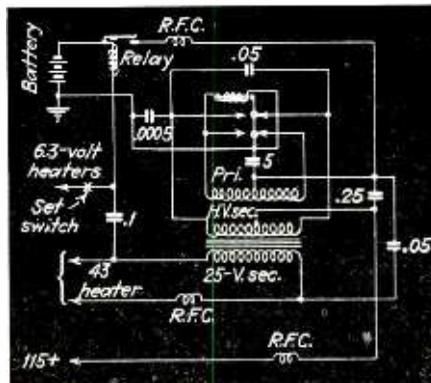
made more or less positive with respect to cathode by utilizing any desired part of this drop.

Movement of the tap thus controls the half-wave rectifier's cutoff point, or the input signal level at which it begins to operate, providing good suppressor control.

B-Eliminator Furnishes 25 Volts A. C. to 43 Heater

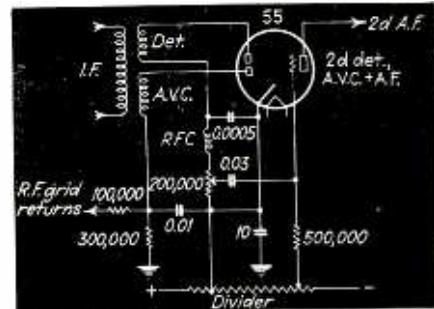
The transformer of Lyric's "Autodapter" fullwave vibrator-type B-eliminator designed for use with a.c.-d.c. models U50 and U500 when these are installed in cars is equipped with two secondary windings. One winding is a conventional center-tapped affair which furnishes high voltage, mechanically rectified and filtered, to the plates. The other is a 25 volt source of raw a.c. for the heater of the 43.

Both models are equipped with 7-prong connector sockets to which heater terminals are carried. Normally, all heaters are connected in series but when the plug of the Autodapter is inserted the 6.3 volt tubes are operated directly across the battery in parallel while the 43 receives heater current from its special transformer winding and the 25Z5 is shorted out.



Independent Detector and A.V.C. Circuit for 55

Use of the two diode plates of a 55 in independent a.v.c. and detector circuits, which permits control over a wide range



of signals without sacrifice of desirable detection characteristics, is now favored among designers of smaller chassis. Typical of such systems is the 55 circuit of Majestic's new model 460 chassis.

I.f., applied by the upper secondary coil from the one diode plate to cathode through a .0005 mfd. by-pass condenser is half-wave rectified, a.f. developing across the 200,000 ohm volume control from which the a.f. triode grid of the tube is fed through a .03 mfd. capacity. I.f. is kept out of the audio circuit by an r.f. choke.

I.f. is also applied simultaneously from the other diode plate to cathode through a 300,000 ohm load resistor by its own, individual coil. Rectified d.c. signal voltage appears across the resistor and is applied to r.f. grids through a 100,000 ohm r.f. filter resistor.

New "Selective Analysis" System

Weston's new "Selective Analyzer" system (see page 29) involves the use of two separate units: (a) a "tube selector" equipped with tube socket, connector plug and cable and (b) a separate multipurpose meter, which may be the company's model 665 or equivalent existing equipment. Plug, cable and tube socket are, in other words, "divorced" from the measuring instrument which does not in itself suffer from obsolescence.

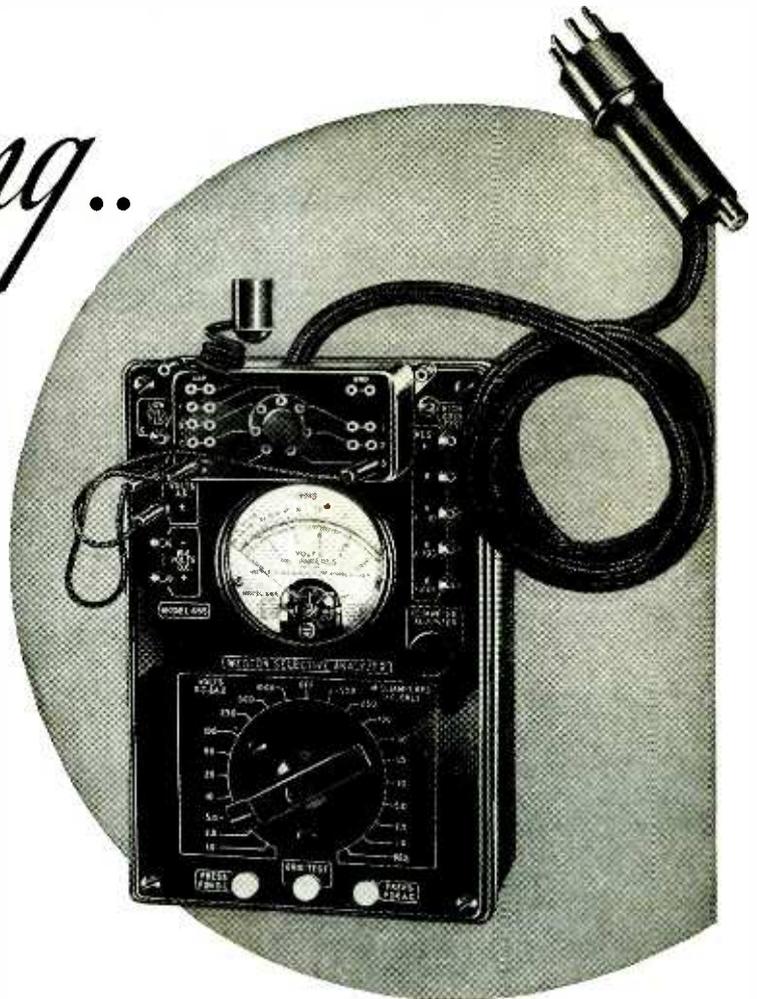
Cable wires are connected to the tube socket prongs of the selector unit through special two-hole jacks. Voltage measurements are made without opening set-to-tube leads by plugging jumpers into the outside holes of the jacks associated with the desired elements. Current readings are made by plugging the jumpers into

Announcing..

the
WESTON METHOD
of
SELECTIVE ANALYSIS



**ANALYZER OBSOLESCENCE
 IS BANISHED!**



NO LONGER is there the slightest need for worrying about Analyzer obsolescence. Weston has found the solution, providing a design which is always up-to-date regardless of tube developments. It's a method of Selective Analysis involving the new Weston Model 665 Selective Analyzer and suitable Tube Selectors.

Weston Model 665 Selective Analyzer contains all the necessary voltage, current and resistance ranges. Tube Selectors to accommodate 4, 5, 6 and 7 prong tubes are provided. You merely attach the proper Tube Selector to the Selective Analyzer. Next insert the plug into the tube socket of the radio set. Then by plugging into the proper jacks, voltage, current and resistance may be read in any part of the entire network leading to the tube socket.

The Weston Model 665 Selective Analyzer with Tube Selectors truly is universal in its capacity to analyze radio receivers. New tubes merely mean a new, inexpensive Tube Selector. That's how obsolescence is eliminated. Return the coupon today for complete information . . . Weston Electrical Instrument Corporation, 581 Frelinghuysen Avenue, Newark, N. J.



MODERNIZE YOUR ANALYZER
with Weston Socket Selector Units
 Your present Analyzer can be brought up-to-date and kept that way by means of the new, inexpensive Weston Tube Selectors which can be used with all models and makes of Analyzers. Return the coupon for descriptive bulletin.

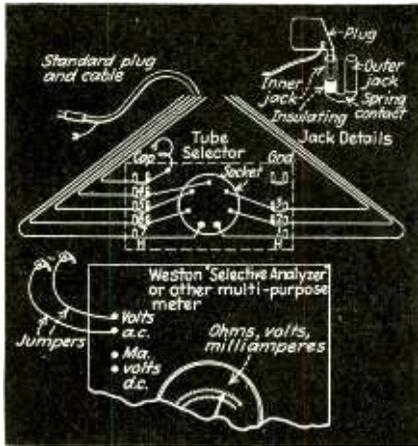
WESTON
Radio Instruments

Weston Electrical Instrument Corporation,
 581 Frelinghuysen Avenue, Newark, N. J.
 Please send bulletin describing Model 665 Selective Analyzer and Tube Selectors.

Name _____
 Address _____

both holes of the proper jack, insertion of a plug in an *inside* hole opening the set-to-tube lead and permitting insertion of meters in series.

To take a plate current reading on the selector shown, for example, the jumpers



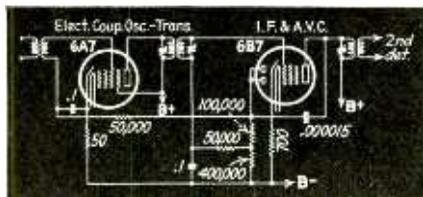
from the external milliammeter are inserted in both No. 2 jack-holes. To take a plate-to-cathode voltage reading they are plugged into the outer jack-holes of No. 2 and No. 6. Flexibility is, obviously, practically limitless.

Tube selectors having 4, 5, 6 and 7-prong sockets are available.

A.V.C. Varies Amplification of "Translator" and I.F. Tubes

In Colonial models 250, 279 and 300, a 6A7 functions as electron coupled first detector and oscillator while a 6B7 duo diode pentode operates as i.f. amplifier and a.v.c. control. The a.v.c. system is interesting in that the diodes of the 6B7 are used to automatically adjust the sensitivity of the pentode in the same glass envelope and also that of the "translator" portion of the preceding 6A7.

I.f. is applied to the control grid of the 6B7 through an input transformer, amplified and passed to the second detector through an output transformer in the usual manner. Part of the amplified i.f. current is, however, fed back to the two paralleled diode plates of the tube through a .000015 condenser. Rectification of this current between diode plates and cathode causes d.c. to flow through the 100,000, 400,000 and 700 ohm resistors, producing voltage drop in these units. The diode plates thus become more positive with respect to ground as stronger signals increase drop. The translator grid return of the 6A7 is connected to the diodes through a 500,000 ohm filter resistor which prevents the pas-



sage of i.f. back to this tube, hence is biased in proportion to signal strength.

The pentode portion of the 6B7 is simultaneously automatically biased by virtue of its grid return to a point between the

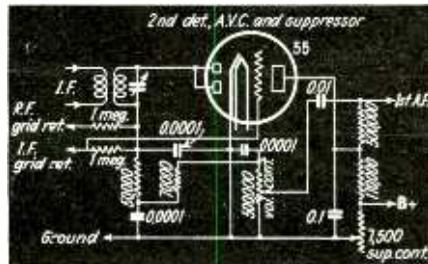
100,000 and 400,000 ohm resistors, through a 500,000 ohm filter. The 50 ohm unit in the 6A7 cathode circuit supplies fixed or "residual" bias while the 700 ohm unit performs the same function for the 6B7.

A.V.C. Controlled Noise Suppressor System

In the new Lyric SA91 superhet the diode plates of a 55 are used in a half-wave second detector and a.v.c. circuit while the triode elements of the tube automatically vary first a.f. stage bias to give interstation noise suppressor action.

50,000 and 70,000 ohm fixed resistors and 500,000 ohm volume control are series-wired in the diode circuit. D.c. voltage proportional to signal strength appears across all three and is applied to r.f. and i.f. grids through 1 megohm filter resistors, giving conventional a.v.c. action. The control grid of the 55 derives its bias from the a.v.c. system. The plate circuit of the tube includes a resistance which is also in the grid circuit of the first a.f. stage and also the noise suppressor control, which is really a section of the voltage divider.

When no signal is being received no voltage is developed in the a.v.c. system and consequently there is no bias on the control grid of the 55. This permits current to flow in its plate circuit, which builds up a high bias voltage across the 170,000 ohm resistor and overbiases the first a.f. grid, reducing its amplification. When a signal is picked up voltage de-



veloped in the a.v.c. circuit biases the suppressor tube and stops its plate current flow. This removes blocking bias from the a.f. stage.

Two Volt "Pentagrid Converter"

The 1A6 is a new pentagrid converter, or electron coupled oscillator-detector tube of the filament type designed for use in battery operated superhets. The basic circuit is similar to that suggested for the 2A7 (RR40Mar) and 6A7, differing only in the value of the various component parts and the absence of indirectly heated cathode. Characteristics, for converter service, are:

Filament voltage	2.
Filament current	.06
Plate voltage	180.
Screen voltage	67.5
Anode grid	135.
Control grid	-3.
Oscillator grid resistor (ohms)	50,000.
Plate current	1.3
Screen current	2.4
Anode grid current	2.3
Oscillator grid current	.2
Total cathode current	6.2
Plate resistance (megohms)	.5
Conversion conductance (mhos.)	300.
Conversion conductance with -22.5 volts on control grid	4.

"AUDIO FREQUENCY"

TALK ABOUT YOUR SMALL tubes! RCA has developed socketless triodes and tetrodes about the size of the kid's marbles for use on ultra shortwaves down to 40 centimeters. Elements have been reduced in size by a factor of 10 in order to minimize spacing and cut inter-electrode capacitance. Mutual conductance and plate resistance remains about the same as in larger tubes, but, of course,



RCA's ultra-shortwave tube (actual size)

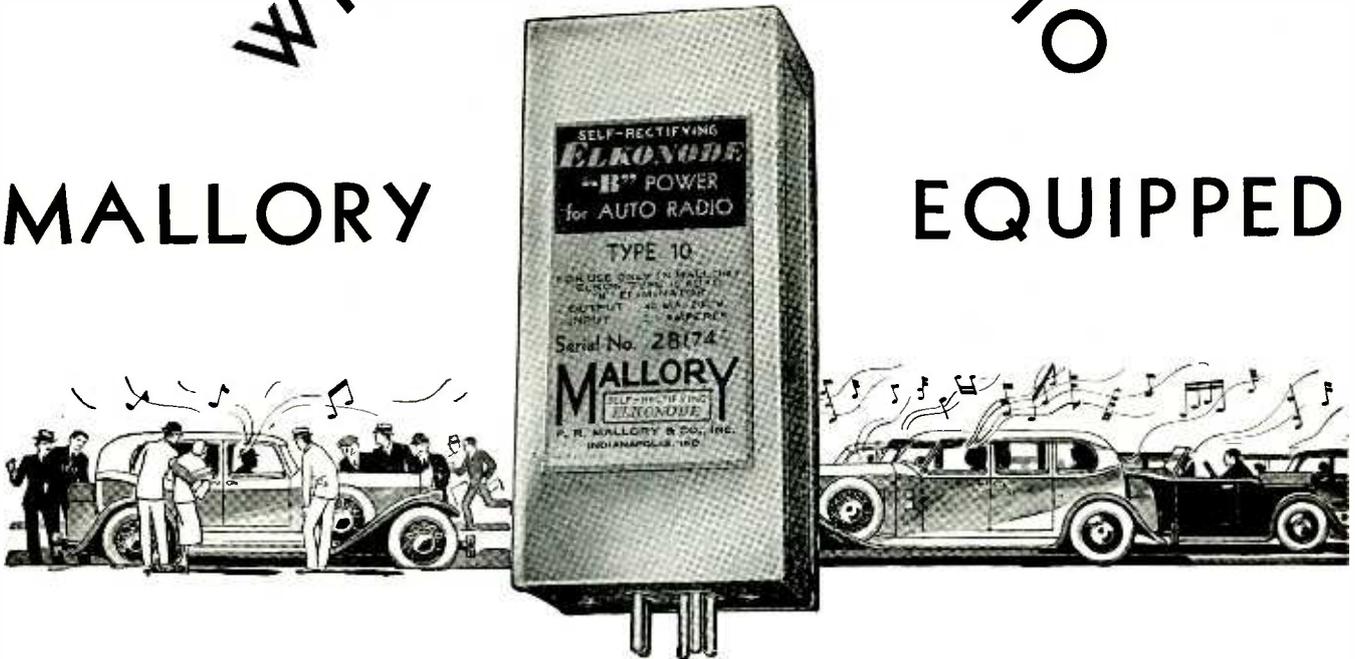
power output is limited and the midget bottles are chiefly useful at r.f. Don't worry yourselves into a lather about them, you broadcast boys. They are experimental types for use in the receivers of Zworykin's television system. (Described on page 32).

"TWEETERS," TINY LITTLE HORNS good at high frequencies, and "boomers," big dynamic cones with faithful bass characteristics, are seen in the laboratories of several companies interested in stirring up a "back to good tone quality" movement. One prominent experimenter is working with crystal speakers in conjunction with special, high grade amplifiers mounted in acoustically engineered cabinets. Something may come of all this activity.

H. F. OLSEN OF "THE CORPORATION" created a lot of interest in Chicago recently by telling the sliderule boys about a proposed new speaker design. Dynamics fall down, he explained, for two main reasons. Cones must be quite rigid in order to move the necessary air column at low frequencies and if built that way usually lack the required flexibility at high frequencies. In addition, the impedance of the voice coil goes up sharply as frequency rises, eventually getting out of step with output tube impedance. Mechanically and electrically, therefore, speakers are often deficient in the upper register. Olsen suggests that a flexible "crimp" be put right around the voice coil form and the coil wound in two sections, one on each side of the crimp, one of the sections being shunted by a low capacity condenser. It is his theory that the speaker will work in the normal fashion at low frequencies, the condenser bypassing very little energy around its coil section and the flexing of the crimp being insignificant when compared with the large cone movement. At high frequencies, he contends, the condenser will "short out" one coil while the other, lighter assembly drives the cone, flexing at the crimp.

"FERROCART." A SORT OF METAL-impregnated paper made in Germany, is being introduced here for use as i.f. transformer core material. It makes possible smaller, lighter, more selective, higher gain units because of its excellent permeability characteristics. Several manufacturers are playing around with the product.

WHEN AUTO RADIO is MALLORY EQUIPPED



It Performs!

The Mallory Self-Rectifying Elkonode is a quality performer. It has made possible the all electric auto radio that gives the fine reception you expect. Built into the all electric automotive radio, the self-rectifying Mallory Elkonode rectifies current without a rectifying tube. It provides much greater efficiency . . . reduces costs through elimination of tube and other parts . . . lessens battery drain . . . and is silent in operation.

More than half the auto radio sets on the road today are Mallory equipped . . . a tribute to Mallory's success in leading the way for auto radio development. What's more, Mallory equipped sets have been performing from the start . . . once on the road, the set keeps running.

Mallory Elkonodes for replacement are available. If your jobber cannot supply you, write to the factory.

P. R. MALLORY & CO., INCORPORATED
Indianapolis, Indiana

"B" ELIMINATORS

MALLORY
ELKONODES

ELKONODES

Transformers & Chokes

How to test them for opens, shorts and "crosses".

Importance of wire and core size, insulation.

By O. A. PEARSON

Manager, Thordarson Electric Mfg. Co.

A TRANSFORMER is one of the best known pieces of electrical apparatus. It has no moving parts, no bearings or brushes, no parts which wear out. Properly constructed it will last a lifetime. Transformer engineering is one of the simplest forms of electrical engineering. At the same time, it is one which is most highly developed. The efficiencies engineers obtain from transformers today in some applications approach 98.5 per cent.

It may be well for the serviceman to be somewhat familiar with the factors which govern the design of transformers.

Power Transformer Design

Power transformers are usually designed to operate on a specific voltage and frequency. The most common is 115 volts and 60 cycles. A transformer designed for this line voltage will usually operate satisfactorily up to 125 volts. Of course, variations of primary voltage are reflected in the secondary voltage delivered by the transformer and it is well to design the primary winding so that high line fluctuation will not result in too high a secondary voltage. For this reason, some manufacturers have the transformer primary wound for 120 volts.

The matter of frequency is important as it determines the number of turns which must be applied to the transformer primary as well as the core dimensions. A transformer that is designed to operate on 50 or 60 cycles will not give satisfaction on 40 or 25 cycles and should never be used on a lower frequency than that for which it is designed. A 25 or 40 cycle transformer will operate on a higher frequency but will not give complete satisfaction because the copper losses will be excessive, but it will work without harm to the transformer.

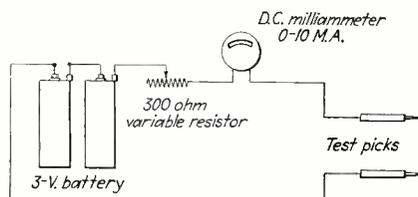
In practice, the primary winding is usually located on the inside of the coil although in exceptional cases the primary and the high voltage winding may be inverted.

If a static shield is to be provided it is usually placed between the primary and the adjacent winding. The static shield serves to eliminate line voltage disturbances from modulating the signal of sensitive receivers. In some cases it may have a tendency to reduce oscillation.

The high voltage winding is wound next to the primary. This winding consists of many turns of relatively fine wire. As a matter of economy, it is desirable to keep the length of this wire at a minimum so generally this winding

is placed near the inside of the coil. It is usually tapped at the mechanical center, the inner half having a shorter mean turn than the outer half. For all ordinary purposes this is quite satisfactory. A transformer with an electrically balanced secondary would have the two sections of the secondary wound in pies and the start of each coil joined to form the center tap. This method would be costly and is not warranted.

A method of winding the secondary which gives the effect of a static shield without an actual shield is known as the "inverted" method. Here the start and finish of the coil are joined to make the center tap and the winding is parted and insulated in the center to provide the



Note: Measurement of high resistance may require higher voltage battery and a higher value resistor

Fig. 1—Continuity meter for transformer tests

two plate leads. The high potential parts of the coil are thus separated from the primary by one half of the coil and the center tap, which is effectively at ground potential, is next to the primary.

The design of the secondary, as to the size wire and turns, is dependent upon the type of rectifier, the drain and the nature of the input filter circuit. For a condenser input the DC voltage from the filter circuit will be higher than with a choke input. The efficiency of a full wave rectifier of the 280 type is approximately 65 per cent. To determine the number of watts in the high voltage winding a rule of thumb method is to multiply the DC volts times the DC volts times 1.5. For instance, a high voltage winding delivering 350 volts and 100 mls would be $350 \times 0.100 \times 1.5 = 52.5$ watts. To obtain the AC voltage of the transformer high voltage winding on each side of the center tap the drop through the rectifier tube must be considered as well as the loss in the filter circuit. With an 80 rectifier the AC voltage per plate, with a condenser input of approximately 8 microfarads, should be about 110 per cent of the DC volts at the filter. With a mercury vapor type rectifier, where the drop through the tube is constant, the AC volts per

plate with condenser input is about 90 per cent of the voltage at the filter. With choke input on a mercury vapor type rectifier, the AC voltage is about 110 per cent of the corresponding DC.

The filament windings of a transformer are applied over the primary and high voltage secondary. The filament winding for the rectifier does not ordinarily carry a center tap, it being satisfactory to connect the filter to either side of the winding. The winding to supply current to the heaters and power tubes usually does carry a center tap for the purpose of reducing hum from modulation of the signal by the frequency of the supply voltage which might take place from an unbalancing of the return.

The wattage of the filaments is very simple to calculate. It is the product of the volts times the current in amperes.

After the wattage of each of the secondaries of the transformers has been determined the sum will dictate the size of wire which must be used on the primary of the transformer, as well as the dimensions of the core.

Determining Wire and Core Size

The size of wire on all of the windings is determined by the current each must carry. In larger designs it is practice to use 1,000 circular mils per ampere. As the transformer design becomes smaller this allowance can be reduced because the ratio of radiating surface to losses becomes greater, and there we have a reason for transformer burnouts. "Losses." If the wire used is too small, for instance, only allowing 500 circular mils per ampere, the copper loss in the winding will be so great that the wire will heat to an excessive degree. It may become so hot that the insulation between turns or between layers will become charred and worthless. The result is a burnout.

With the transformer in place in the cabinet and under the worst operating conditions, that is, high primary voltage and little ventilation, the temperature rise of any winding should not exceed 50 deg. Centigrade as measured by the change of resistance method. This method is to measure the resistance of each winding accurately with all parts at room temperature, then after operating the set for about eight hours at full volume to measure the resistance of each winding again. The hot and cold resistance are used to compute the temperature rise in the following formula:

$$\text{Temperature rise } ^\circ\text{C} = \frac{\text{Resistance hot} - \text{Resistance cold}}{\text{Resistance cold}}$$

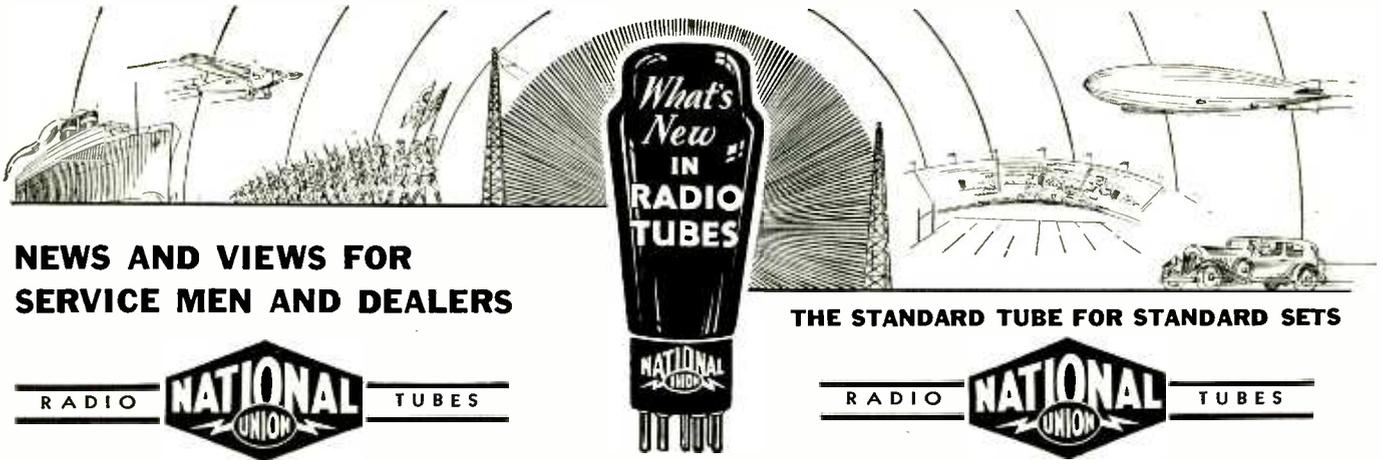
$$\text{times } (234.5 + \text{Temperature of room } ^\circ\text{C}) = \text{Degrees Centigrade}$$

This method measures the actual tem-

Article Number 3

SELECTING REPLACEMENT PARTS

This is the third of a series prepared to help servicemen select repair parts for fitness and quality (Electrolytic Condensers, RR41Mar, Fixed Resistors, RR41May), Paper Condensers will be discussed in an early issue.



NEWS AND VIEWS FOR SERVICE MEN AND DEALERS

THE STANDARD TUBE FOR STANDARD SETS

DEALER PROFITS RISE AS NATIONAL UNION BOOSTS TUBE PRICES TEN CENTS

Move to Protect Service —Dealer Business—Quality



H. A. HUTCHINS

National Union Radio Corporation of New York has taken a definite step to protect the profit margin of its service dealers and assure the continued superiority of National Union tubes in a list price advance of ten cents per tube over the general level. Regular dealer discounts of 40-10% shop equipment offers and other sales features are retained.

H. A. Hutchins, General Sales Manager, states that the program is the result of intensive field study carried on by National Union for more than a year—

"After interviewing hundreds of dealers and service men and tabulating thousands of questionnaires since early 1932, we raised prices in answer to overwhelming demand," said Hutchins. "It must be remembered that the majority of National Union tube replacement sales are made by radio servicemen and service dealers whose selling costs are necessarily high. These accounts must maintain a decent profit margin to cover operating expenses. Radio tubes are the biggest source of revenue to the service dealer. We have felt the public needs competent service and is willing to pay a fair price. In addition, service outlets must be assured of consistently high quality to be able to fully guarantee their work. In our opinion these dealers merit help to protect their position."

"We recognize that selling prices had slumped below the margin of safety, a condition which inevitably leads to cutting costs. As a direct result any or all of a number of abuses result:—cutting factory wages; use of inferior materials, elimination of essential engineering talent; lowering of inspection standards; limiting replacements. In brief, unsound methods designed to make tubes cheaper."

"We refused to compromise with National Union superior quality."

National Union has prepared a brief outlining reasons why National Union is the most profitable tube on the market. A copy will be sent to any dealer writing to National Union Radio Corporation of N. Y., 400 Madison Avenue, New York, N. Y.

Simply ask for "Eleven Reasons Why."

TRADE HAILS PRICE RISE

The favorable reaction of the trade to National Union's list price rise is indicated by excerpts from some of the hundreds of letters received at the National Union New York Office since the announcement.

"Your new list with higher prices is fine. Now we can sell more National Union tubes because we say they cost a little more but are worth it. We advise customers to buy cheaper tubes if they can't afford the best."
—J. H. R., Va.

"We are closing out—tubes as quickly as possible and will show an increase in tube business in a short time. We believe that National Union's effort in behalf of jobbers and dealers deserves this support."
—J. C. H., O.

"I want to congratulate your company for sponsoring the first constructive price change the tube industry has experienced for two years past."
—L. R., N. Y.

"Again I congratulate you for raising the prices. I hope it will be 10% instead of 10c per tube. More power to the National Union tube corporation."
—A. O. R., Md.

National Union jobbers stocks are complete — all types at all times!



N U's Engineering Chief

DR. RALPH E. MYERS

DR. RALPH E. MYERS was born in Wooster, Wayne County, Ohio. He was educated at Akron High School, Buchtel College, now the University of Akron and the University of Pennsylvania. He holds the degrees of B.S., M.S., and Ph.D. He is a member of the American Institute of Chemical Engineers, American Institute of Electrical Engineers and American Chemical Society. Previous to his present connection with the National Union Radio Corporation as Vice-President in Charge of Manufacturing and Engineering, he installed the Electro Chemical Engineering Course at Penn State College (1904-1909), was Chief Chemist of Westinghouse Lamp Company (1909-1912), Chief Engineer in Charge of Research and development of Lamps, Radio Tubes, Power Tubes and miscellaneous vacuum devices of Westinghouse Lamp (1912-1930). He developed and patented the process of oxy-annealing of tungsten and molybdenum and the use of magnesium with oxide coated filaments. He manufactured the first Type 227 tubes and developed manufacturing methods for coated filament tubes.

He is at present living in East Orange,

N. J., where he enjoys his hobbies of golf and bridge. For further information see "Who's Who in Engineering."

NEW! AUTO RADIO MANUAL

In response to a demand for an Auto Radio Service Manual, National Union has procured such a book for its dealers. Diagrams and service notes on old as well as new sets, installation data, noise suppression information, characteristics of B eliminators are included in contents. Write for details of free offer.

NO HIDE 'N' SEEK FOR NATIONAL UNION

You haven't time to play the game of "Hide 'n' Seek" . . . when you need tubes you want them without delay . . . it will pay you to ask your National Union jobber FIRST . . . all tube types kept in stock at all times for your convenience. . . .

OWN METERS, MANUALS FREE!

Why don't you join the thousands who are getting fine equipment for their service business, Free, the easy National Union way? Service men who tie up with National Union profit through the sale of tubes whose high quality stands undisputed and at the same time procure valuable business assets in meters and service manuals at no cost. Let's get together. Send coupon.

NATIONAL UNION OFFERS

You can get an Oscillator and Output Meter, Four Service Manuals, Unameter (Tube Tester), Supreme Model No. 333 Combination Set Analyzer and point-to-point Resistance tester, Readrite Tube Tester, Bench Kit box and Hickok Ohm-Capacity-Voltmeter. Equip your shop the easy National Union way. Small deposit on some items.

Note: All offers subject to withdrawal without notice. Send coupon NOW!

National Union Radio Corp. of N. Y.
400 Madison Avenue, New York City
 Sirs: I am interested in following equipment: Supreme 333 Unameter Readrite Tube Tester Oscillator & Output Meter Service Manuals Ohm Capacity Bench Kit

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CITY STATE

perature of the wire within the coil, which is impossible by any other method. Any "hot" windings are immediately detected. Normally, a transformer which is too hot to hold in the hand is too hot to give service.

All the heat may not have its source in the windings although after a long period of operation the windings give a good indication. Some of the heat may come from the core. If the core is inadequate, of poor grade steel or if the flux density is too high, the losses will be excessive and will result in more heat which must be dissipated somehow.

It is possible to reduce the number of turns in a transformer by increasing the cross section area of the core. A good design apportions the amount of copper and iron to achieve the greatest efficiency with the lowest cost of materials used.

Underwriters have control over the characteristics of those sets which are submitted to them for approval. These sets must comply with their temperature rise limits, have their live parts protected and must be proof against fire. One requirement, for instance, is that the power transformer shall be totally enclosed so that the volume of gases, which might be generated within a transformer housing, will be so small that all explosion hazard is eliminated. They also test the wiring to see that no ineffective rubber wire is permitted adjacent to parts where the temperature exceeds 90 deg. C.

Radio power transformer efficiency need be of little concern to the service man.

Audio Transformer Design

Audio transformers are considerably more difficult to manufacture and have consequently lent themselves to further specialization. The fine wire and multiplicity of turns make them virtually an instrument. Much care and experience is needed in their manufacture. The steel used in audio transformers is a high grade silicon sheet of very low loss. It is worked at a very low magnetic density in order that the transfer of the small energy of the audio circuit will be efficiently transferred and not lost in the transformer. Some special core materials require heat treatment after fabrication as the shock of punching destroys the magnetic properties.

The coils are multiple wound on automatic machinery which feeds the No. 40 or finer wire onto the winding arbor in exact layers. Both primary and secondary coils are usually of the same size wire. In order to get as many turns on the coil as possible, the paper separating the layers is usually only one half thousandth of an inch thick. When completed the individual coils are separated and leads are attached. A sealing tape is applied to the joint where the fine wire is soldered to the lead wire to protect against mechanical injury and to eliminate any pockets where moisture can collect. Nothing but pure resin flux is used in the soldering operation. The coil, when finished, is vacuum impregnated in wax and the ends of each coil sealed with compound.

Audio transformers are wound in many different ratios. In the old days of low gain tubes and R.F. circuits, it was common to have ratios as high as

1 to 10. At present, most audios find their application in pushpull circuits where the overall ratio is 1 to 2 or 1 to 3. By keeping the ratio low it is possible to increase the number of primary turns and have it measure high in inductance. The higher the primary inductance the better coupling medium it becomes and the more uniform response it will have. The response in an audio system is, in the main, dependent upon the audio transformers or the coupling means used. By response we mean the fidelity of reproduction in terms of electrical energy. This response is ordinarily pictured on a logarithmic curve on which the response in terms of voltage is pictured at various frequencies. These curves generally start at 60 cycles and picture the voltage gain up to frequencies of 7,000 to 10,000.

Sometimes these curves are expressed in decibels plotted against the frequency. A curve, expressed in decibels, is generally flatter than a curve expressed in voltage gain. Both curves mean the same thing, however, and as long as every audio system is compared by the same method, the same results will be obtained. In measuring response, it is common practice to set up a complete amplifying system with the transformer to be measured coupled into position between a pair of tubes. One or two volts is impressed across the input tube and the output voltage resulting from the complete system is measured at the plate of the output tube. In making a response curve, instruments which do not impose a load on the audio circuit must be used. The input voltage is varied in frequency so that the response at all frequencies can be plotted.

Chokes are used in most radio receivers, either in the filter circuit or in the coupling system. They serve to retard the flow of an alternating current causing it to flow more readily through some inter-connected circuit. When used in filter circuits they must have a carrying capacity equivalent to the current requirements of the receiver. The real rating of the choke is its inductance. The chokes commonly used in filter circuits generally have a rating of from 10 to 15 henries. In order to hold this inductance constant with varying current and to prevent the iron in the core from becoming saturated from the DC passing through the winding, it is necessary to use an air gap in the assembly. This is a separator ordinarily placed between two sections of the iron core and serves to maintain a uniform space between the two sections. The drop in voltage across a choke is comparatively small but a choke must be well insulated from ground for the potentials supplied by the power transformer.

Filter Choke Design

In most filter circuits the chokes are designed so that they do not saturate with the DC current flowing. However, in Class "B" filter supply circuits, it is an advantage to have the opposite characteristics. In Class "B" circuits the plate current varies from a small value to an extremely high value, the average current being comparable with the ordinary radio set. In order to prevent the supply of voltage from varying inversely in proportion to the current drawn, filter chokes are designed deliberately to satu-

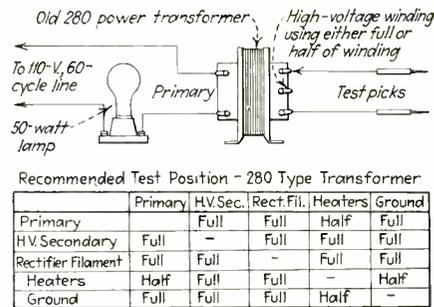


Fig. 2—Tester for "crosses" or grounds

rate at the higher current values. With the choke saturated by DC current it is not as effective for AC and the consequent voltage drop across the choke is smaller than at lower currents.

Testing Power Transformers

A power transformer is a brute which does not know its own limitations. A transformer, not like a gasoline motor which lays down if an overload is applied, continues to try to carry a load regardless of how much in excess of its rating this load is. Therefore, if, through some defect in the wiring or the associated parts of the receiver, the windings of a power transformer become shorted, it is to be expected that the power transformer will burn out. If it does, it can be detected by the peculiar odor which always accompanies a burned out transformer. There seems to be no other smell just like it.

Every service man is capable of making tests for plate voltage. Should tests lead him to suspicion the power transformer the method to proceed to isolate the trouble is as follows: Remove all of the tubes from their sockets including the rectifier. If an AC voltmeter is available, the open circuit voltage of each winding can be measured. It will be found that the open circuit voltage will be from 5 to 10 per cent higher than the corresponding voltages under load. If no AC voltmeter is available it will be necessary to make a series of tests. With an ohmmeter or a continuity meter such as shown in sketch (Fig. 1), check from terminal to terminal of each of the windings of the power transformer. An open in the transformer winding will, of course, show zero (0) reading on the test meter. If test shows all the windings are continuous, apply 110 volts 60 cycles to the primary. If the transformer is shorted, the transformer will draw excessive current, and emit smoke.

A final test would be for crosses between windings. For this test it is necessary that the power transformer be disconnected from any of the associated apparatus. Then, using an old power supply transformer as a source of high voltage as pictured in the sketch (Fig. 2), test from winding to winding and from winding to core. The lamp in the primary circuit of the test transformer serves as a protection device and as an indicator which will light up if there is a cross or ground.

Testing Audio Transformers

If an audio transformer is defective,

Centralab's famous Trio



Centralab Fixed Resistors

Baptised in Fire at 2700 degrees. Unaffected by heat or humidity. The resistance material and the ceramic protective covering are baked together, as one.



Centralab Motor Radio Suppressors

Unlike most suppressors CENTRALABS do not take heavy toll of gas . . . you don't need to pay a "gas" penalty with CENTRALAB Suppressors. Unaffected by motor vibration.



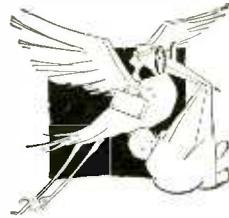
Centralab Replacements Volume Controls

In a class by themselves. For smooth, silent service they have no equal, always use Centralabs in preference to "just as good" controls. They cost no more.

Whether for original equipment or for replacements insist on CENTRALAB . . . for CENTRALAB products are measured in terms of Quality and Performance rather than in terms of low price. At jobbers and distributors everywhere.

CENTRAL RADIO LABORATORIES
MILWAUKEE, WISCONSIN

Centralab



TWO NEW IRC SUPPRESSORS



"MCB" CABLE
END TYPE

Especially adapted for Buicks and other cars having recessed spark plugs.



"MCA UNIVERSAL"
CABLE END TYPE

Superior for either spark plug or cable installations on all cars except those having recessed plugs.

"MCA" FORD TYPE
Special resistance value as specified by Ford.

IRC now offers Metallized Suppressors specifically designed for quicker installation and more dependable operation on every type of motor radio job.

Like their companions in this famous suppressor family, these new units are molded into solid, vibration-proof construction without springs, rivets, steel wool or other intermediate parts to loosen or corrode.

See the complete IRC line at your jobber's—make sure of getting exactly the right type of suppressors for every job.

List Price **21c Net**
35c. each All types

Buy 'em in Hand Combination Kits

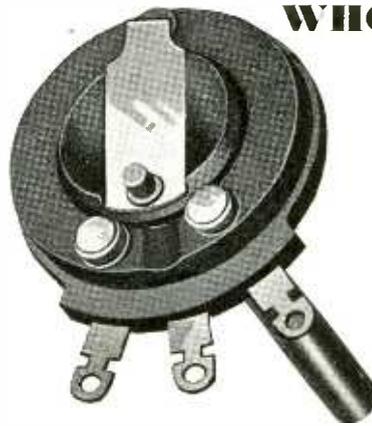
IRC Suppressors are sold singly or in the NEW COMBINATION KITS containing both suppressors and condensers for 4-, 6- and 8-cylinder motor radio installations. Keep several Kits always on hand—be prepared for any job.

INTERNATIONAL RESISTANCE CO.

2100 Arch St. PHILADELPHIA, Pa.
In Canada, 74 Wellington St. W., Toronto, Ont.

MAKERS OF METALLIZED, POWER AND PRECISION WIRE WOUND RESISTORS

WHO'S RIGHT?



"TOO different . . . too costly to make . . . too good" . . . authorities said of the "Molded-Carbon-on-Bakelite" EX-STAT volume control. But service men who know that good parts and honest work *pay*—are proving them wrong! What do *you* think? Get new EX-STAT replacement manual that explains diagram. Also lists essential volume control data for 1763 set models. Post card brings your copy FREE.

TILTON MFG CO.
19A E. 26th St.,
New York

Tip On Clipping

Each month *Radio Retailing* in its "Service and Installation Section" runs a column called "Tricks of the Trade" in which service men contribute troubles likely to be encountered in particular brands of radio sets and how these troubles can be remedied. Several service men have written us that each month they clip out these little articles, paste each item on a filing card and then keep an alphabetical file of cards. Other service men may find this tip a good one to follow. . . .

the fact can be detected in the response of the radio set. The defective transformer, even if operative, will cause the output to be noisy and subject to motor-boating and constant fading. A means of testing for trouble here is the use of the ohmmeter. With the adjacent tubes removed from their sockets, test the individual windings of the transformer for continuity. An audio transformer, because of its many turns of fine wire, will have a high resistance. The primary generally ranges from 1000 ohms up to 5,000 ohms. The secondary, according to turn ratio, may vary considerably more.

Be sure to test each section of a tapped winding. A small difference in resistance will exist between the two halves in an input pushpull secondary because these windings are generally tapped at the mechanical center. It is only a difference of the mean turn for each half. A short circuit on an audio transformer, is extremely hard to detect. As a matter of fact, a short circuit of 15 or less turns will not noticeably effect the response of an audio transformer. Some audio transformers are designed with a single shorted turn of heavy wire in order to improve their characteristics. The only time the transformer becomes inoperative because of a short is when a large section is shorted. This can be detected on the ohmmeter. An audio transformer, to give good service, should be well insulated from ground.

The presence of moisture in the windings and around the terminals will materially lower the insulation resistance and effect the response of the transformer. Commercial audio transformers are vacuum impregnated to obviate difficulty from this source. The presence of moisture in the winding may cause an electrolytic action at the joint between the fine wire and the lead wire. This is especially true if soldering compound is used in making the connection. It is extremely difficult to repair a winding of an audio transformer. Even a most experienced operator can only expect to recover a portion of the transformers worked on.

Output transformers are subject to the same rules as applied to audio trans-

formers. Generally, however, output transformers are wound of considerably heavier wire than audio transformers and there is less chance for trouble in their windings. Output transformers have applied to them a full potential of the output tubes. Therefore, their insulation must be of good value. A test for the insulation would be the lamp tests outlined above. In replacing an output transformer, attention must be paid to getting a correct ratio in order that the output tubes may be correctly matched with the speaker.

Testing Filter Chokes

On chokes, the chief source of trouble results from grounds. By the use of the transformer test lamp outlined above, the choke can be tested to determine if either of its terminals or its windings have become grounded. Chokes sometimes become noisy due to loose laminations. This noise does not effect the electrical properties of the choke but it is most annoying because it will modulate reproduction coming from the loud speaker under certain conditions. If the choke is provided with a clamp, it is only necessary to take up on the screws a turn or two or if it is encased to fill out the frame with suitable spacers. Sometimes filling with a high melting point compound, such as that used to fill power transformers, is helpful in silencing a choke.

The serviceman today is called upon to replace transformers in receivers of every type and description. Many of the sets are orphans, others are private label sets and still others are borderline sets. His problem is to service these sets quickly and efficiently and be able to guarantee his work. He has his choice of using factory duplicates or universal replacement transformers. The universal replacement transformer enables him, with a small investment, to carry a representative stock of transformers with which to service 90 per cent of the receivers.

A good guide for the serviceman would be to use the products of reputable manufacturers as his assurance of continued success in the service field.

AUTOMOBILE BATTERY GROUNDS

P = Positive battery terminal grounded to chassis
N = Negative battery terminal grounded to chassis

	1929	1930	1931	1932	1933
Auburn.....	P...	P...	P...	P...	P
Austin.....			P...	P...	P
Blackhawk.....	N	N			
Buick.....	N	N	N	N	N
Cadillac.....	P	P	P	P	P
Chandler.....	P				
Chevrolet.....	N	N	N	N	N
Chrysler.....	P	P	P	P	P
Continental.....					N
Cord.....		P	P	P	P
Cunningham.....	N	N	N	N	N
De Soto.....	N	P†	P	P	P
De Vaux.....					N
Dodge.....	P	P	P	P	P
Duesenberg.....	N	N	N	N	N
Durant.....	N	N	N	N	N
Elcar.....	N	N			
Erskine.....	P	P			
Essex.....	N	N	N	N	N
Ford.....	P	P	P	P	P
Franklin.....	P	P	P	P	P
Gardner.....	P	P	P		
Graham.....	P	P	P	P	P
Hudson.....	N	N	N	N	N
Hupmobile.....	P	P	P	P	P
Jordan.....	N	N	N		
Kissel.....	P	P			
La Salle.....	P	P	P	P	P
Lincoln.....	N	N	N	N	N
Marmon.....	P	P	P	P	P
Marquette.....		N			
Moon.....	N				
Nash.....	P*	P	P†	P§	P'
Oakland.....	N	N	N		
Oldsmobile.....	N	N	N	N	N
Packard.....	P	P	P	P	P
Peerless.....	P	P	P	P	
Pierce-Arrow.....	P	P	P	P	P
Plymouth.....	P	N	P	P	P
Pontiac.....	N	N	N	N	N
Reo.....	N	N	N	N	N
Rockne.....				P	P
Roosevelt.....		P			
Stearns Knight.....	N				
Studebaker.....	P	P	P	P	P
Stutz.....	N	N	N	N	N
Viking.....		N			
Whippet.....	P	N			
Willys.....	P	N	N	N	N

Courtesy MoToR

*Standard 6 has negative ground.
†6 has negative ground.
‡Twin-ign. 6 has negative ground.
§6-60 and 8-70 have negative ground.
¶967 and 970 have negative ground.
'Big 6, Std. 8 and Spec. 8 have negative ground.

SHOP SHORTCUTS

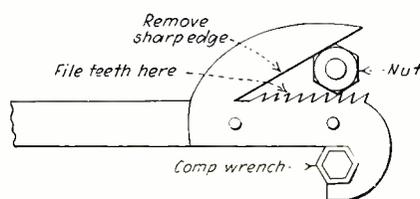
Can-Opener Alligator Wrench

By B. O. Bass

An excellent alligator wrench can be made from the ordinary garden variety of can-opener. Remove the knife edge of the opener and file teeth in the straight side of the jaw as shown. If the angle between the jaws is about 38° the wrench will handle nuts between 1/4 and 3/8 in. overall. The bottle-opener hook on the other side of the opener can be filed to take a fibre wrench shaft, forming a 90° wrench useful in tuning stubborn compensators.

The alligator is a fine tool for tightening volume control bushings and shaft bush-

ings on set controls without removing the chassis from the cabinet. A can-opener with a long, thin handle which will fit between chassis and cabinet should be selected. Or, the head of the opener may be removed by punching out the eyelets and another shaft substituted.



Adapting the 2A3 to Old Circuit

By J. P. Kennedy

The new 2A3 power amplifier triode may be substituted for type 45's in push-pull p.a. amplifiers without much trouble. Little gain in volume is noticed but about three times as many speakers may be used.

It may be necessary to bring new leads from the filament transformer in parallel with the originals in order to heat the tubes without introducing too great a voltage drop. And in some cases it will be necessary to replace the filament transformer with a huskier unit in order to avoid overheating.

It is also advisable to substitute an 83 or

BETTER TESTER
for Every
ANALYZING REQUIREMENT

Readrite

TESTER No. 711

HERE is a practical and flexible three-meter instrument that serves every possible analyzing requirement. It makes servicing easier, quicker, more profitable. It gives all the information any service man or dealer needs to know for servicing sets.

Furnished with a practical selector switch, the Readrite No. 711 instrument tests voltages and resistances at set sockets. In addition, voltage, resistance and capacity tests are available through the meter jacks. This unit will handle the most advanced circuits and the newest tubes. Sturdily and accurately built, it will give long, accurate, trouble-free service.

Equipped with the new Triplett D'Arsonval Voltmeter, which has 1000 ohms per volt resistance. The readings are 0-15-60-300-600 volts—0 to 300,000 ohms covering a complete range for testing control grid, screen grid, cathode and plate voltages. The ohmmeter reading is secured with a $4\frac{1}{2}$ volt battery. Additional resistors can be furnished, which, with additional batteries will bring readings up to any desired range.

YOUR JOBBER CAN SUPPLY YOU

...at the dealer's net price of \$22.50. See him today, or send coupon for descriptive catalog.

READRITE METER WORKS
79 College Avenue Bluffton, Ohio

Send Coupon for Quick Facts!

READRITE METER WORKS
79 College Ave. Bluffton, Ohio.

Gentlemen:—Please send me catalog on Readrite Tester No. 711, as well as information concerning your other servicing instruments.

NAME

STREET ADDRESS

CITY STATE



GIVE SERVICE . . .
with a **SMALL INVENTORY**

Here is the Best Volume Control Proposition on the Market

Here are the reasons why!

1. Over 400 "exact duplicate" controls in the "X" SERIES.
2. Yet with SIX controls in the original AD-A-SWITCH SERIES 477 sets can be serviced.
3. By combining controls in both lines any requirement can be met with minimum stock investment.
4. CLAROSTAT with its two separate lines offers the widest range of replacement controls to choose from.
5. CLAROSTAT CONTROLS are inseparable from Quality Service Work.

CLAROSTAT "X" line has over 400 controls to choose from—exact as to electrical overall resistance, taper, bushing, shaft length, and will fit into exact space in set.



CLAROSTAT AD-A-SWITCH line comprises the maximum utility with minimum stock investment. Series W (Wire Wound) obtainable from 50 to 50,000 ohms. Series C (new composition element) obtainable from 10,000 to 5,000,000 ohms. Both lines obtainable in all tapers—insulated shaft $1\frac{1}{2}$ " long. Wide use is indicated as follows: W-28 will service 128 sets; C-28, 106 sets; W-29, 77 sets; C-59, 66 set, etc., etc.

New Control Replacement Guide Upon Request

CLAROSTAT Mfg. Co., Inc.

287 North 6th Street, Brooklyn, N. Y.

"AD-A-SWITCH" was originated by Clarostat

Composite Testimonial

Radio parts manufacturers, considering the "Service and Installation" Section of *Radio Retailing* as a trade advertising medium, may be interested in this composite testimonial compiled from just six typical letters recently received from our readers—almost every mail brings an unsolicited bouquet for our editors and their work:

"Certainly would hate to miss a single copy, as I read it thoroughly each month. By all means keep up the 'Tricks of the Trade' column. My service department has used the information in the Service Section numerous times. Thank you for the useful and instructive information you have published. You've done a nice service to public address men. *Radio Retailing* is improving."

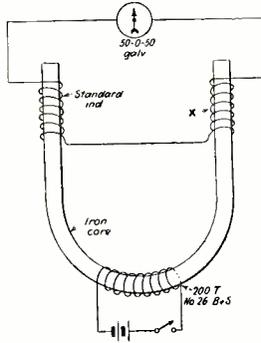
If you have a quality replacement part, an instrument or a service to sell to radio service men and service managers, you'll get their interested attention through advertisements in *Radio Retailing*.

a 5Z3 for the original rectifier. Output transformers designed for type 45 tubes and weighing about two pounds are quite suitable.

Inductance Matcher

By M. Chernow

A handy inductance matching device, used chiefly on production lines but also valuable in the service shop, is shown in the attached illustration. If both coils are

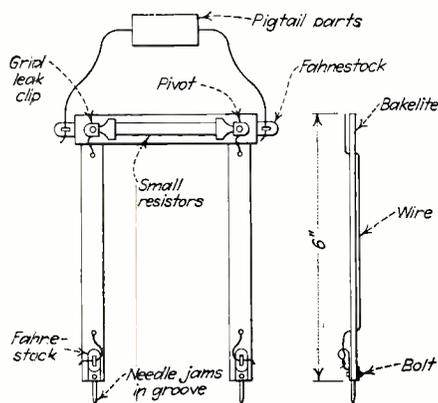


alike the meter will show no deflection. Differences will be indicated by deflection to right or left of the zero calibration.

Handy Test "Bridge"

By William Brown

I have made a "U" shaped test "bridge" that comes in handy when making substitution tests of resistors and condensers.



It is made of three pieces of bakelite or hard-rubber, four fahnestock clips, two grid-leak clips and two phonograph needles. The illustration is self-explanatory.

Grigsby-Grunow has just released a 96-page booklet that is very much worthwhile having in the shop. It contains circuit diagrams of every Majestic receiver ever made, complete with the values of all constants, net replacement parts prices, alignment and other pertinent servicing data. Write to 5801 Dickens Avenue, Chicago, for one, or ask your local distributor, mentioning *Radio Retailing's* "Service and Installation Section."

"TRICKS of the TRADE"

PHILCO 5. No volume, eliminator output only 95 volts. Push down on upper vibrator contact so that spacing is equal between armature and both contacts. Erratic vibrator action. Make sure resistor across contacts is 50 ohms. Buzz, for which vibrator is not responsible. Replace 2A7.

RCA M34, GE B40. Speaker rattle or sizzle. Try centering cone. Remove from case and look for filings at pole pieces. If there is no hole in screen for centering punch one $\frac{3}{8}$ before re-installing as drawing speaker up with nuts on face of chassis may twist frame and throw cone off center. If voice coil glue loosens don't try repair. Replace. Vibrator works ok but set is dead. Place paper scraps between all contacts and check from each high side to ground on chassis. Shorts indicate blown condensers across contacts. If found, replace vibrator base. If no blown condensers check for one between B plus lead on speaker (2nd from right looking into back of set) and chassis ground. If dead short is found trouble is usually in intermediate cans shorting to coils or blown 4 nuke in pack. To insulate cans, glue cardboard discs inside covers. Rattle. Tighten eyelet in center of speaker screen. Unstable vibrator operation. Check small rivets holding armature to channel section of springs and tighten by pounding if loose, removing armature for job. Field current and pilot current on but tubes don't light. Poor soldered joint between snail r.f. choke L12 and field wire lead.

MAJESTIC. Models using pilot as resonance indicator. Set dead or distorted. Look for open or shorted winding on center leg of indicator transformer in r.f. and i.f. plate circuits. Replace. For temporary repair short out winding by bridging two outside terminals and using 3.2 volt pilot.

STEWART-WARNER 950 SERIES. Burned out volume control. Measure voltage across control and if in excess of 70 replace 20,000 ohm, three watt resistor with new unit.

MAJESTIC 66. No screen voltages. Check 10,000 ohm resistor just below 6E7 and 6C7 and if burned out replace with one having higher wattage rating. Plate and screen voltages below normal. Check center tapped filter choke (underneath set about an inch away from the A battery female cable connector). If grounded side is open or partially open there is no grid return to ground for the output tube and lack of bias boosts plate current to point where drop through choke becomes abnormally great.

AK 83, 85. Poor tone, low volume and little response with tone control turned to bass. Look for open r.f. choke in pentode control grid circuit. Analyzers miss this one.

US WASHINGTON 34. Intermittent reception. Change 200,000 ohm grid filter resistor between 35 grids and a.v.c. tube plate to 100,000 ohms.

AK. Noisy wire wound volume controls. Clean contact arm and winding with alcohol. Using No. 1 soft lead pencil, fill in spaces between windings at contact edge until surface appears level and smooth.

STEWART-WARNER 950, R100. Poor sensitivity and low volume. Check red resistor 66326 for low value or charring. This resistor shunts r.f. plates to minimize effect of variation in plate current when different tubes are used and if low increases load and reduces screen voltages.

SPARTON 89A, 79A. R.f. oscillation in serial numbers using 485 tubes. Re-adjust trimmers to exact resonance. If trouble persists replace .5 m.f.d. B bypass in r. f. amplifier with .25 mfd., 400 volt tubular unit. Some late chassis have it.

RADIOLA 21, 22. Apparent short between red and maroon B plus lead and chassis. If short develops when tube is inserted and disappears when the tube is removed from 22 sockets look at plate prongs to see if these touch chassis. Screws holding sockets down loosen due to speaker vibration and sockets shift.

CROSLY 601. Filament rheostat shaft shorts to metal panel, heating wire and destroying fiber insulation without damaging wire itself. Equip shaft with insulating bushing, fill in between wire turns where charred with heat resisting cement and pulverized asbestos, smearing mixture on wire to hold it firmly. When dry, scrape mixture from contact surface with knife.

SPRAY SHIELD TUBES. When using these to replace other types be sure tube does not touch metal can or other projecting metal as this grounds cathode and removes bias.

PHILCO 5. Frying or crackling in early serial numbers. If not in eliminator remove grid clip from 6A7 cap and remove lead from clip. Using same size stranded wire with good insulation wind r.f. choke of five turns on clip, reconnect lead. For obstinate cases wind thirty turns number 16 solid, cc wire around pencil. Withdraw pencil and place choke so formed in A lead between low voltage r.f. choke and heater terminal of 84. Keep choke in the vibrator section of base. Solder and tape splices. Late serial numbers have these chokes.

MAJESTIC 90. Carrier hum. Remove receptacle plate on floor outlet from which set gets power and fasten ground lead to Gem B box by means of mounting screw. Such a ground is a positive remedy where iron conduit is well grounded.

1933 PONTIAC. On this and all other cars having shielded lead down right side post and requiring set installation on driver's side carry extended antenna lead in shielding under floor boards rather than under dash to complete noise suppression.

1933 CHEVROLET. Remove ignition coil from bulkhead and fasten to motor using valve inspection plate bolt.



Here's RCA Victor's

Here's a chance for real profit! This new set gives you an opportunity to gather in some real cash. You make as much from the sale of one R-280 as from half a dozen midgets!



Look over these extra features:

1. *Sensational new Tonalite Control* . . . four illuminated controls to assist the ear in obtaining flawless tone.
2. *"B" Amplification* . . . for power without distortion . . . and a *two octave* increase in music range.
3. *Tone Equalizers* for elimination of cabinet boom or resonance.
4. *Full Range Automatic Tone Compensation.*
5. *Dual Tuning Range* for "police" broadcasts.
6. *8-Inch Corrugated Cone* for big output.
7. *Superb Cabinetry* . . . a beautiful walnut tambour console encasing the ultra-modern chassis.

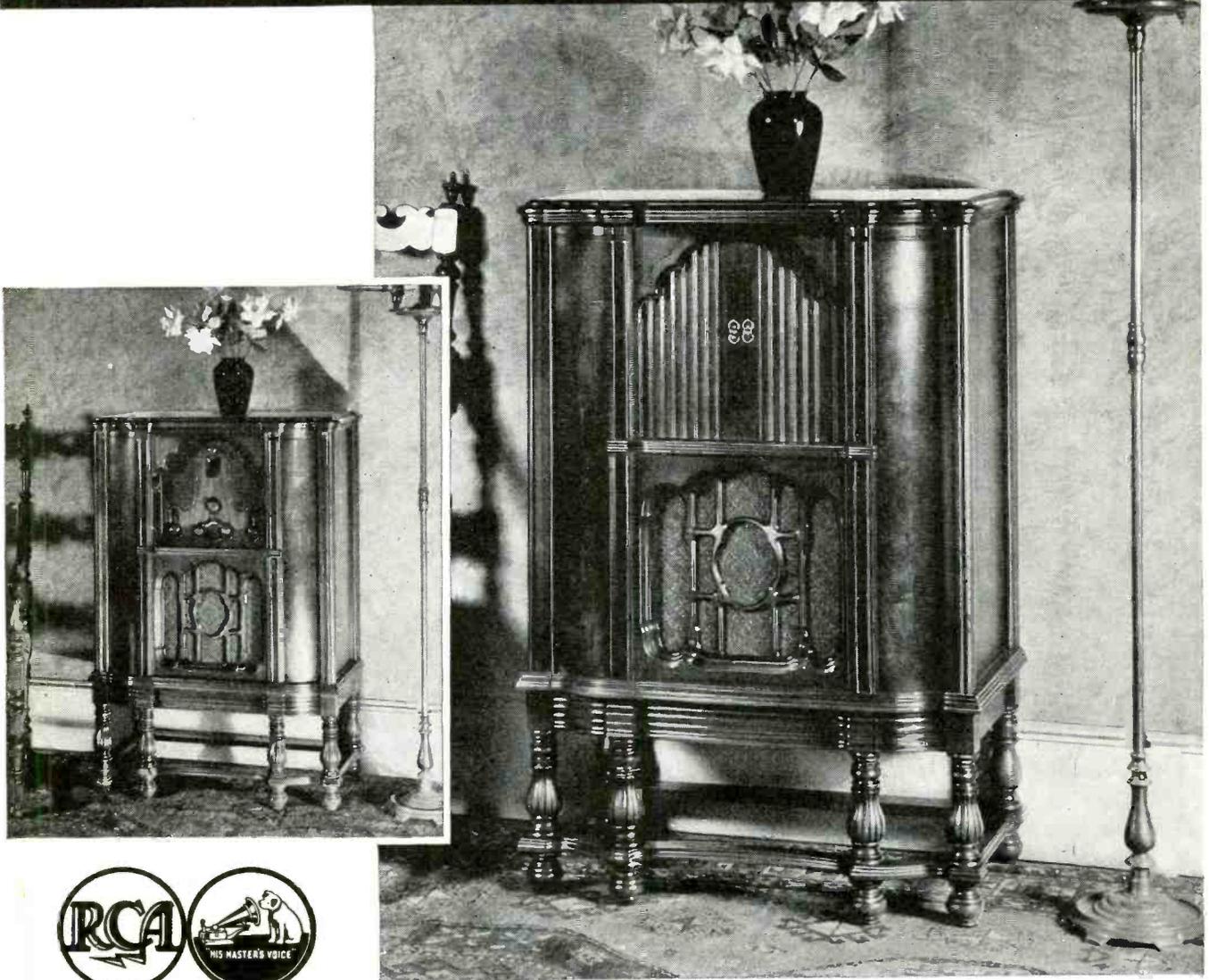
There's your "lucky seven" features. R-280 is going to sell—and sell well! The price? That's the most sensational news of all!

Don't be without a complete stock...write

Radio Headquarters!



Masterpiece for Fall!



RCA Victor

PHONOGRAPHS • RADIO COMBINATIONS • VICTOR RECORDS

RCA Victor Co., Inc.
"RADIO HEADQUARTERS"
Camden, New Jersey
A Radio Corporation of America
Subsidiary

wire or phone your RCA Victor distributor

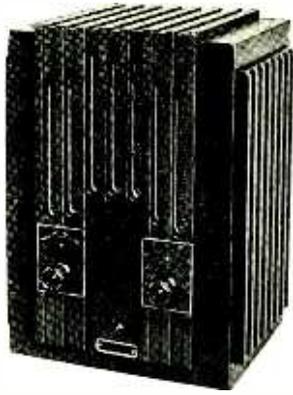
*The First Ace in a
NEW DEAL . . .*



. . . by HALSON

SALES FEATURES

- New Cabinet Design by a Leading Stylist
- Big Set Performance due to New Circuit Design
- Sufficient Output & Jack Provided for Remote Speaker Operation
- Rich Tone due to Full Dynamic Speaker with Full Field Excitation



This receiver is the pioneer sales value of the NEW DEAL HALSON line. This line is styled and engineered to provide quick sales response and dealer profit. The complete line will be announced shortly to tie in with the September Sales Drive of National Radio Progress Week.

Write NOW for details of the NEW HALSON FRANCHISE in your territory.

SPECIALISTS IN PRIVATE BRAND MERCHANDISE

Halsen Radio Manufacturing Corp.

45-51 Lispenard Street, New York City

1 Month to Labor Day

Sweltering in the heat, we looked at the calendar and were amazed to note that Labor Day was only a month off. Labor Day is the wind-up of Summer vacations—thank heavens—and the beginning of Fall campaigns in the radio and allied industries.

The September issue of *Radio Retailing*, and succeeding issues, offer splendid opportunities for manufacturers to start dealers and distributors off on particular Fall and Winter selling campaigns.

In years past, *Radio Retailing's* September and October issues have contained aggressive advertising from practically every leading appliance manufacturer. 1933 with its increased opportunity for genuine sales growth will be no exception.

Radio Retailing
a McGraw-Hill publication

Reflections on the New Population Figures

SOMEHOW we get the notion that government statistics are dry and uninteresting. Yet every once in a while Washington releases a statistic or two that just demands attention. For instance: the Bureau of the Census found out that the population of the United States was 122,775,046 on April 1, 1930. Now the Bureau comes along with its estimate that on July 1st of this year there were 125,693,000 people living in the nation. That's an increase of nearly 3,000,000 men, women and children in three years—"depression" years at that.

It's something of a shock to learn that the population of the country had the temerity to increase at the rate of a million folks a year, right through the depression. And yet it did—that fact is inescapable.

WHAT do these three million additional people mean? Dismiss the first gloomy reflection that there are just three million more mouths to feed. Reflect that somehow these three million people are going to grow up and want things. Where necessary, they'll work to satisfy their wants. And more important still, their wants will be far more elaborate than our wants. Home radio, electric refrigerators, auto radio, oil burners, talking home movies, air conditioners—these things will be but the common necessities of this next generation that's starting its progress thru life.

OUR predecessors as home entertainment manufacturers, distributors and dealers helped make our market today by turning the luxuries of our parents into our necessities. Ours is the equally feasible job—and profitable opportunity—of making the radio, home entertainment and allied specialties of today the absolute necessities of tomorrow. Fortunately, too, the job pays dividends frequently and consistently. It took only ten years to put a radio into 17,000,000 homes. The job of selling five million electric refrigerators has taken only a little while longer. And ahead of us is an opportunity to do any equally worthwhile job with auto radio, automatic musical instruments and things now considered extravagant luxuries but which will be demanded by the million boys and girls born each year.

Radio Retailing

—a McGraw-Hill publication

AMERICAN-BOSCH VIBRO-POWER RADIO

We're Back of You, R. M. A.!

THE Jubilee program of the R. M. A. is the most hopeful and helpful inspiration that the radio world has ever known. The radio industry has struck a new pace.

United American Bosch is unstinted in its wholehearted support of this program. Our Engineering Department has created new developments. Our stylists have produced masterpieces which have set a new tempo. Our Advertising Department has planned the largest American Bosch national advertising campaign in many years.

Before the end of the month the complete new Vibro-Power Radio program will be ready. Write for the Vibro-Power 1934 Program—heralding the new era, acclaiming a new deal, celebrating the new prosperity on the threshold of which the radio world stands today!

"Reach for the Joy of Living—with Radio"—reach for the joy of new profits with Vibro-Power Radio.

UNITED AMERICAN BOSCH CORPORATION

SPRINGFIELD MASS. Branches: New York Chicago Detroit

Manufactured under Patents and Applications of R. C. A.



“Radio Retailing” believes manufacturers will find provocative these three paragraphs reprinted, by permission, from a booklet, “What makes a business grow?”, issued by Batten, Barton, Durstine & Osborn, Inc.:

“ A growing business has always something on the fire for tomorrow. A stagnant business pathetically clings to the illusion that tomorrow won't really happen—that it's just an abstraction about which restless sales and advertising people are always dreaming.

For example, there are rumors about that there may be more business next fall. All we know about it is that people who will be buying this fall are making up their minds now. Comparatively little money is spent on impulse. A sale is usually the culmination of months or years of slowly forming desire.

Perhaps the most serious error in selling is to withhold advertising until the buying season actually has arrived. ‘Our best month is October,’ says the manufacturer. ‘Start the advertising then.’ But by that time most people will have decided what they want and will buy. The advertiser who enters the field at the last moment has little chance to influence selection.

”

SEARCHLIGHT SECTION

EMPLOYMENT and BUSINESS OPPORTUNITIES—SURPLUS STOCKS—DISCONTINUED MODELS

UNDISPLAYED—RATE PER WORD:
 Positions Wanted, 5 cents a word, minimum \$1.00 an insertion, payable in advance.
 (See § on Box Numbers.)
 Positions Vacant and all other classifications, 10 cents a word, minimum charge \$2.00.
 Proposals, 40 cents a line an insertion.

INFORMATION:
 Box Numbers in care of our New York, Chicago and San Francisco offices count 10 words additional in undisplayed ads. Replies forwarded without extra charge. Discount of 10% if one payment is made in advance for four consecutive insertions of undisplayed ads (not including proposals).

DISPLAYED—RATE PER INCH:
 1 inch \$7.50
 2 to 3 inches 7.25 an inch
 4 to 7 inches 7.00 an inch
 Rates for larger spaces, or yearly rates, on request.
 An advertising inch is measured vertically on one column, 3 columns—30 inches—to a page. Radio Retailing

Radio
 Manufacturers
 Jobbers
 Dealers
 Contractors
 Merchants
 Commercial
 Depts.

(of Central Stations)

their
 Sales Managers
 and Salesmen

and all others associated with the merchandising of radio apparatus or service.

Employers
 and Employees

Buyers
 and Sellers

You can reach them all through the
 SEARCHLIGHT SECTION

Searchlight Advertisements are quick acting. They usually bring prompt returns. There is no better way to reach the men of the radio field at small cost.

For Every Business Want
 "Think
 SEARCHLIGHT
 First"

SPECIAL NOTICE:

To the Radio Industry

Advertising in connection with legitimate offers of surplus stocks and discontinued models of radio merchandise is acceptable in this section of "Radio Retailing."

Extreme care will be exercised by the publishers to prevent the use of advertising in the Searchlight Section to encourage price cutting on current models of merchandise or equipment. Nor will advertising which invites violation of the dealer's contract with the manufacturer be acceptable.

All merchandise offered in the Searchlight Section must be accurately and fully described and must be available on order.

Tremendous Savings on Sound Equipment. Buy from the World's Largest Suppliers.



Exceptional Bargains in New, Used, and Rebuilt Motion Picture Apparatus. Recent Government Surplus and Liquidation of other manufacturers such as PACENT, POLYMET, ROYAL AMPLITONE, CINEPHONE, TONEOGRAPH, BIOPHONE and others, now offered to our trade.

S. O. S. CORPORATION
 Dept. R.R., 1600 B'dway, New York, U.S.A.
 Cable Address: "SOSOUND" New York. All Codes.

ATTENTION! DEALERS, JOBBERS RANGE BURNERS, \$6.50
 Complete. Approved and 5-year guaranteed. Write at once for protected territory.
LAFAYETTE OIL BURNER CO.
 28-30 Portland St., Boston, Mass.
 Dept. D. SALESMEN WANTED

1763! for SERVICE men
 Brand new EX-STAT replacement manual gives correct type volume control instantly, for 1763 set models. Most complete listing ever compiled. Copy FREE to dealers and qualified service men. Send postcard today to
TILTON MFG. CO.
 19 E. 26th St., New York, N. Y.

DEALERS and SERVICE MEN
 Genuine Grebe factory made parts in stock for all model Grebe receivers manufactured prior to 1933. Power transformers for sets using from 4 to 12 tubes. Also audio transformers and filter chokes. Write for descriptive data and parts price list.
GREBE RADIO SALES & SERVICE CO.
 137-28 Jamaica Ave., Jamaica, N. Y.
 (Owner former Gen. Fact. Mgr. of A. H. Grebe & Co., Inc.)

REPRESENTATIVE AVAILABLE

LIVE-WIRE MERCHANDISER formerly associated in the New England States desires manufacturer's connections for electrical and radio products either as a manufacturer's representative or as a distributor. We have a two-story brick building which we own and which can be used as a show room and warehouse. Communicate with George J. Rheuban, 301 Stambaugh Bldg., Youngstown, Ohio.

AGENTS WANTED

EARN from \$1 to \$5 an hour extra without interfering with your present employment. Whether office man, salesman, technical man, foreman or worker you can make ready cash quickly and easily each week showing our lists of business and technical books to fellow employees and others. You recommend them, we do the rest. No experience required. Complete equipment free. Write Tom Crawford, Dept. R.R., McGraw-Hill Book Co., 330 West 42d St., New York City.

RADIO DEALERS and SERVICEMEN:

We offer you a Service that has a national reputation for its Completeness, Speed and Reliability.

INVESTIGATE IT!

Send today for your copy of our big, new catalog—**THE 1933 PROFIT GUIDE**, the most complete index to Radio Replacement Parts, Repair Materials, Specialties and Public Address Equipment ever published! It features:

6,000 Radio Items
 embracing practically everything needed for the servicing of any standard Receiver.

Dependable Quality,
 goods that will really stand up when put to the test of actual service.

Lowest Wholesale Prices
 ever quoted, quality of merchandise considered.

Overnight Service
 within 500 miles of Chicago, proportionately swift service for those outside this zone.

The RADOLEK Co.
 603 West Randolph Street, Chicago

Gentlemen:—I am a Dealer Serviceman . Please send the New Radolek Profit Guide immediately and put me on your mailing list to receive your literature regularly.
 Name _____
 Address _____
 City _____ State _____
 Please attach coupon to your letterhead or enclose your business card. We sell only to the trade.

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The Greatest AUTO RADIO

NOW
consumes less current!
than ONE headlight ♦

Always a leader, De Wald again pioneers with a full toned, six tube superheterodyne that takes no more from the battery than one headlight.

High gain Superheterodyne—100% Automatic Volume Control—Low Current Consumption—Hairline Tuning—Distortion-proof reception—console toned dynamic speaker—positive remote control. Illuminated dial—Lock Switch. Fully enclosed, size 9¼" high x 7½" wide x 6½" deep, using new tubes, 78, 6A7, 85, 37, 41, 84. Three holes to drill, two wires to connect—that's all to install.



\$49⁵⁰
COMPLETE

Get Your Profits With

DEWALD

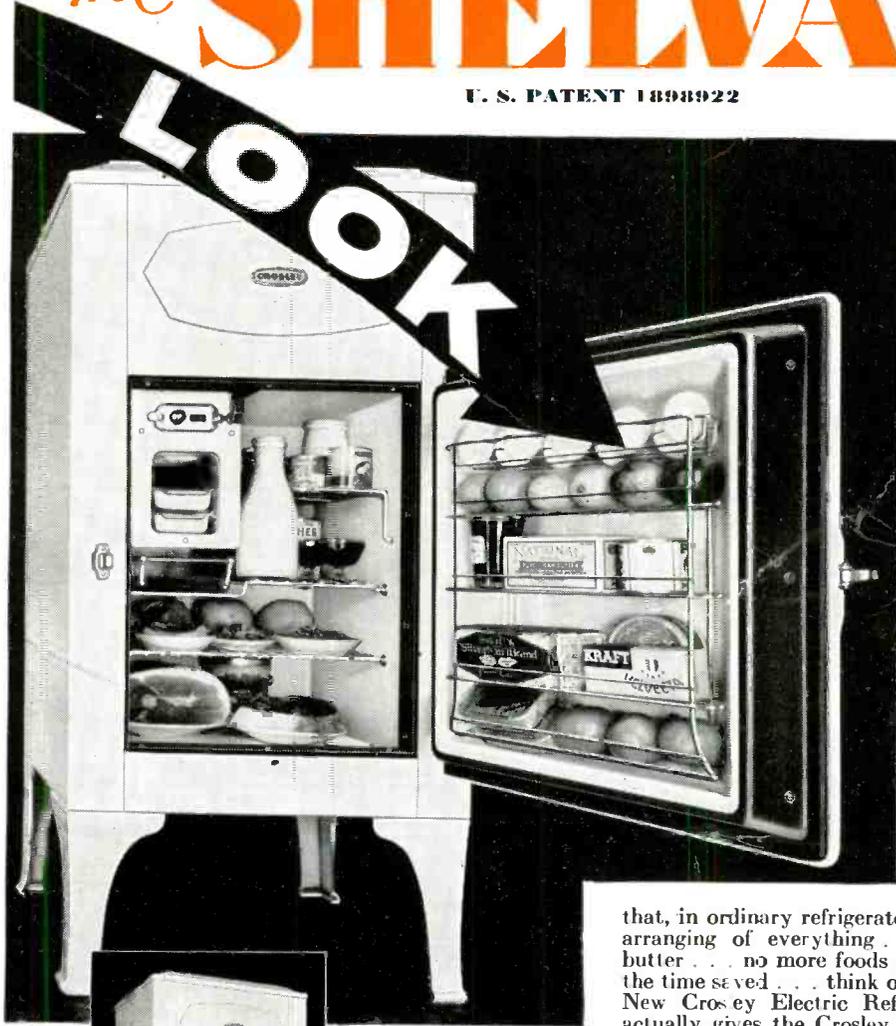
SIX TUBE MOTORTONE

A Product of

PIERCE-AIRO, Inc., 520 Sixth Avenue, New York
PACEMAKERS IN RADIO FOR TWELVE YEARS

The SHELVADOR

U. S. PATENT 1898922



An Electric Refrigerator with Shelves in the door for eggs, butter, bacon, and other small articles

\$89⁵⁰
DELIVERED
INSTALLED
ONE YEAR
FREE
SERVICE

An exclusive patented feature found only in

the New
CROSLEY
Electric
REFRIGERATOR

Just open the door . . . and THERE it is! Here in a nutshell you have the newest and most important improvement in refrigerator cabinet design since the invention of the ice box. Now . . . no more reaching . . . no more searching for the little things

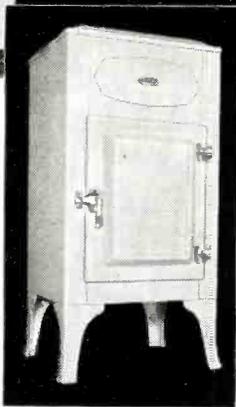
that, in ordinary refrigerators, are so hard to find! No more disarranging of everything . . . no more sleeves dragged through butter . . . no more foods leaking through the shelves. Think of the time saved . . . think of the increased "usable" capacity of the New Crosley Electric Refrigerators with Shelvador. Shelvador actually gives the Crosley Electric Refrigerators greater capacity than their ratings indicate by increasing their "usable" capacity. Try to put everything that goes into Shelvador on the shelves of an ordinary refrigerator, and you'll be amazed. An orange takes as much "shelf room" in the ordinary refrigerator as a bottle of milk. In the Shelvador it takes only the space of an orange.

Only Crosley Electric Refrigerators can use the Shelvador, for it is an exclusive patented Crosley feature. For anyone to buy a refrigerator without Shelvador is to deny himself a great convenience and time saver as well as to buy something already outdated. When people see it they quickly realize that they ought to replace their present refrigerator.

The added convenience of Shelvador costs nothing. Even if the New Crosley Electric Refrigerators did not have this feature, they would still be the world's outstanding refrigerator values at the new low prices. With Shelvador, Crosley Electric Refrigerators go so far beyond ordinary values that there is nothing with which to compare them. They are famous for trouble-free operation, quietness and convenience.

Three sizes to meet every home requirement . . . each size with more "usable" space because of Shelvador. And remember . . . insulation is not sacrificed in the Shelvador . . . the exterior of the door is extended to permit the use of a standard thickness of insulation.

See your Crosley distributor. Examine the Shelvador. Instantly you will see its advantages. Instantly you will realize why the New Crosley Electric Refrigerators are sweeping competition before them.



Model D-35
(Illustrated above)

3½ cubic feet NET capacity; 8 square feet of shelf space. (N. E. M. A. rating.) Has two ice trays, each tray with a capacity of 21 ice cubes—42 cubes in all. Additional space provided for an extra single tray or double depth tray. 3 inches of insulation at top, sides, bottom and door. Dimensions: 50½" high, 23¾" wide, 24" deep.

Model D-45

(Not illustrated)
4½ cubic feet NET capacity; 10.6 square feet of shelf space. (N. E. M. A. rating.) Has three ice trays, each tray with a capacity of 21 cubes, 63 cubes in all. Additional space provided for an extra single tray or double depth tray. 3 inches of insulation at top, sides, bottom and door. Dimensions: 56½" high, 23¾" wide, 24" deep. **\$99.50**

Model D-60

(Not illustrated)
6 cubic feet NET capacity; 11.5 square feet of shelf space. (N. E. M. A. rating.) Has three standard size ice trays, each tray with a capacity of 21 ice cubes, 63 cubes in all, and one double depth tray, which is very desirable for freezing desserts. 3½ inches of insulation at top, sides, bottom and door. Dimensions: 57½" high, 29½" wide, 25¾" deep. **\$130.00**

Remember the inside of the Shelvador is recessed to provide for the shelves. The exterior of the door is bulged outward actually improving the appearance of the refrigerator and providing space for even more insulation than in ordinary doors.

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

Montana, Wyoming, Colorado, New Mexico and west, prices slightly higher
The Crosley Radio Corporation - Cincinnati
POWELL CROSLEY, Jr., President. Home of "the Nation's Station"—WLW

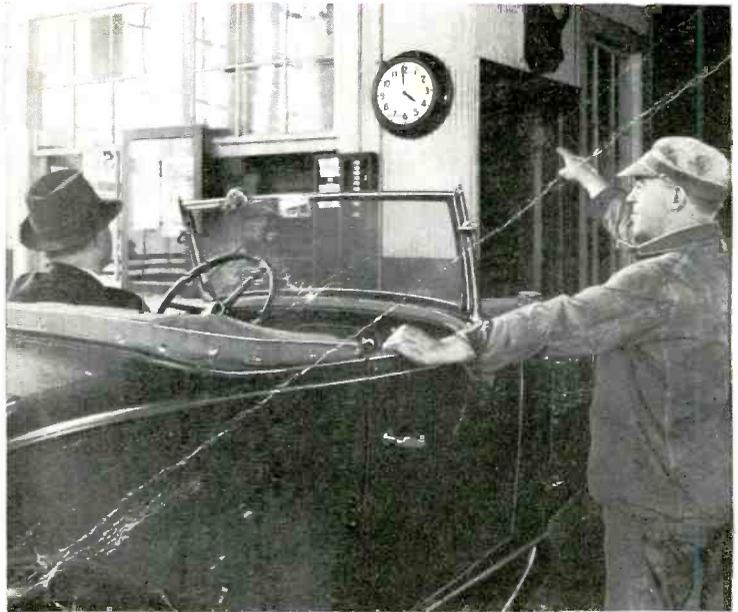
CROSLEY

Electric
REFRIGERATOR
WITH SHELVADOR

U. S. PATENT 1898922

R HUDGENS
% SPARTA MFG CO
SPARTA TENN

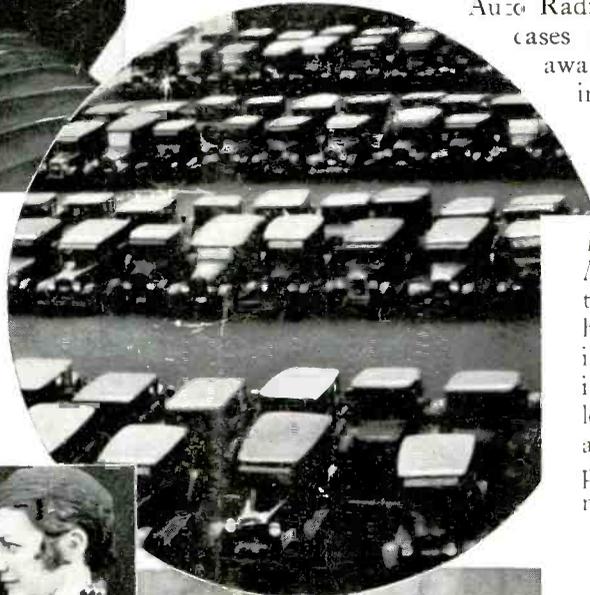
12



Car Made Musical In Jig-Time—Installing the new G-E Auto Radio is so easy that in many cases your customer can drive away listening to his new radio in less than an hour. One-bolt mounting—only two electrical connections.

A Sensationally Low-Priced Auto Radio

General Electric's new Auto Radio, which is priced to retail for only \$39.95. It's a real G-E—with real G-E tone.

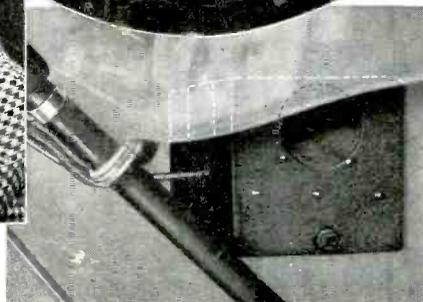


Wide Open "Quick Money" Market—Only about 1% of the autos in America now have auto radios. The growing popular demand for these instruments makes the new low-priced G-E Auto Radio an especially promising profit-maker in this virgin market.



A Powerful New Circuit

The new G-E Auto Radio has a new hook-up which makes its 4 tubes give the performance of 7.



An Almost Invisible Entertainer

The new G-E Auto Radio is so wonderfully compact that it's never in the way and it's almost completely out of sight.



The new low-priced G-E Auto Radio described on this page can steer many new and profitable customers your way.

For complete details, write today to Section R-448, General Electric Co., Merchandise Dept., Bridgeport, Conn.

GENERAL  ELECTRIC
AUTO RADIO