

APRIL, 1936

RADIO RETAILING

INCLUDING
SERVICE
AND
INSTALLATION
SECTION

McGraw-Hill Publishing Company, Inc.

25 Cents per Copy



While the politicians haggle...

CAR-RADIO OWNERS
listen at their ease

GALLOWAY

Featured in This Issue Automobile-Radio

Using The Presidential Situation To Sell More Sets

Precision is a quality you can bank on in all **MALLORY-YAXLEY** Replacement Parts



Only Mallory precision engineering could make possible the small sizes of Mallory Replacement Condensers without loss of quality — sizes exact and without bulge. Only precision engineering could make practical universal mountings for both carton type and round can condensers.



In volume controls—only precision engineering could make possible the development and construction of accurate tapers to service thousands of receivers through Yaxley Replacement Volume Controls.

In vibrators—only precision engineering in producing contacts that meet the exacting requirements of the manufacturers of millions of auto radio sets could develop the highly satisfactory service given by Mallory Replacement Vibrators.



Mallory-Yaxley Precision Engineering is no accident. It is the outgrowth of many years' experience in meeting precision requirements of manufacturers. And it benefits jobber, dealer and service man by providing universal application of parts essential to prompt and efficient servicing.

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

MALLORY

YAXLEY

RADIO RETAILING

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Next Month—

AMERICAN SHORTWAVE

TODAY the bulk of radio sales must be made in a replacement market. But why should Mr. Jones part with his present satisfactory set? What argument will make him spend real money for a new receiver?

The improved shortwave facilities of the modern models is the trade's best answer to these questions.

IN MAY we fire the opening guns in Radio Retailing's editorial campaign of enlightenment along these lines . . . with special emphasis on the desirability of tuning to American shortwave programs.

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McGRAW-HILL PUBLISHING COMPANY, INC.
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<p>JAMES H. McGRAW, JR. Chairman HOWARD EHRLICH Vice-President</p>	<p>MALCOLM MUIR President B. R. PUTNAM Treasurer</p>	<p>JAMES H. McGRAW Honorary Chairman D. C. McGRAW Secretary</p>
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Illustration shows Acoustical Labyrinth in No. 84 Stromberg-Carlson

TO HAVE something that can be seen—something whose value can be shown and understood—that is a great factor in making a radio sale. And here it is, in the magnificent Stromberg-Carlson line—the Acoustical Labyrinth—the most powerful sales weapon yet given to the radio trade.

Nineteen claims granted by the U. S. patent office guarantee the Acoustical Labyrinth exclusively to Stromberg-Carlson. No other make of radio has this feature, or can have it.

Authorized Stromberg-Carlson dealers find it easier to "sell up", to increase their dollar volume, because of the unmistakable superiority in tone of a radio with the "Labyrinth".

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

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

THE ACOUSTICAL LABYRINTH. This exclusive Stromberg-Carlson feature takes the unnatural boom out of radio voices and music, and provides deep bass notes with a new fidelity.

The long, winding passageway of the Labyrinth, lined with a special acoustical material, takes the place of the usual box-like cavity in the cabinet which is the source of the exaggerated boom in the low tones.

The air column of the Labyrinth is so tuned and proportioned that it not only removes this exaggeration, but also greatly extends the range of bass notes that are effectively reproduced.

The volume handling capacity and accuracy of performance of the loud speaker are increased by the provision of an adequate air load.



Stromberg-Carlson

PLAY UP PANELS!

 *it's the short cut to car-radio sales....*

LESS than a \$10. bill sets you up in the car-radio business this season! That's the price of the American-Bosch Custom Panel Display...complete with 7 custom-styled panel mountings that serve 88% of new cars on the road!

It's the smartest selling idea of the year! Set it in your window, or shop, or out in front! Its flashing colors lure the prospect...he sees the actual panel that matches the very car he drives...he can't resist the appeal to play with it...ask you questions...sell himself into a set!

This panel display is the final touch to the unapproached combination offered by American-Bosch Skylark Car-Radio:

- An entirely new conception in chassis design—the double-winged chassis that achieves as much for car-radio performance as the CentrOmatic Unit did for the American-Bosch Home Radio.
- Any type of speaker the customer wants; built-in, overhead or bulkhead.
- Custom-styled panel mountings.
- Metal tube sets or glass tube sets.
- A price range from \$39.95 to \$67.95.
- The American-Bosch Motor-Matic Antenna, for best results in cars not equipped with a roof antenna.

Write or wire for new broadside that tells the whole story...including the colorful, all metal portable demonstration stand...cloth banners and window streamers that sing the Spring song of gaiety...everything you need to compete successfully this season!

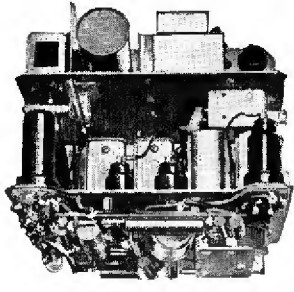


AMERICAN-BOSCH SALES MAKER PANEL DISPLAY

Contains custom-styled panel mountings for 88% of new cars on the road! Displayed in this flashing kit of red, blue and white plus the beautiful finish of panels with their colored controls. Size: only 19" x 18 1/2" x 5". Provided with stock storage space below. Complete with substantial metal easel, seven panel kits with panels and knobs mounted ready for display. Costs nothing beyond cost of panels. List price \$9.80.



MODEL 736—7 metal tubes, and exclusive double-winged chassis illustrated at left **\$59.95**
(Other models from \$39.95 to \$67.95.)



UNITED AMERICAN BOSCH CORPORATION, SPRINGFIELD, MASS. New York Chicago Detroit

AMERICAN-BOSCH Skylark CAR-RADIO

HOW TO MAKE MORE MONEY— Tie-in with RCA Check-Up Campaign IN YOUR LOCAL NEWSPAPERS

Is your radio an old grouch?
Does it grunt and growl and splutter? Then the first thing you need is a \$1.50 Radio "Check-Up"—a standard service that frequently cures it in the operation. Tubes and parts needed are extra, but just what they will cost you start. For curing grouches, get a "Check-Up."

Is your radio weak in the knees?
In other words, does it plod on old tubes? Does it sound awful? No need for that when you can have a Radio "Check-Up" for \$1.50. It includes not only a complete inspection, but the curing of radio's little ills: loose connections, dirty points, etc. Get a "Check-Up."

"DOCTOR for sick radio"
When your radio is sick, a radio doctor just as you need your family physician for real illness. Let an expert do it! Complete Radio "Check-Up," top to bottom, A to Z, costs only \$1.50, plus any tubes or parts that may be needed to put your set in perfect health. Send for the RADIO DOCTOR TODAY.

HAS YOUR RADIO THE WHOOPING-COUGH?
It won't just "wear off" like some minor ills. It needs a complete inspection and the standard cleaning and adjusting operations that every radio requires from time to time. RC... inv... the... tion.

SQUAWKS TAKEN FROM RADIOS
If your radio is a year old or more, very likely it squawks. Any radio develops... unless it is serviced...

A MILLION FOR A CENT!
Like any other modern device, a radio needs service once in a while if it is to work perfectly. Here's the big bargain in radio service—the RCA \$1.50 Radio "Check-Up"—comprising a complete inspection and the minor adjustments that often mean a major improvement in reception. Tubes and repairs are extra, but cost little in comparison with the value of the entertainment they bring. That for pennies a week you get pro... cost millions. Do it now!

DEALER NAME
WE RECOMMEND RCA RADIO TUBES

DEALER NAME
WE RECOMMEND RCA RADIO TUBES

DEALER'S NAME
WE RECOMMEND RCA RADIO TUBES

SEE YOU

ER

THE RCA Check-Up Campaign is now going full blast in local newspapers in over 100 trading centers. Thus the magazine advertising on the Check-Up that has been running since last Fall in the Saturday Evening Post and Collier's is again re-enforced right in your own papers. Already dealers everywhere report enthusiastically on results. They are getting their own Check-Up mats free thru their RCA Radio Tube Distributors to run in their local papers. The Campaign brings them new business on tubes, sets, refrigerators—everything they sell. Ask your RCA Tube Distributor how you can tie-in with the campaign and make it make the most money for you.

*For money-making ideas, attend RCA Service Meetings.
Ask your distributor for dates.*



ARE YOU USING THE RCA SERVICE TIP FILE?

One look at the new RCA Service Tip File, and you'll want it. Contains tips on servicing sets, each tip on a separate card, indexed by make, model, and nature of trouble. Also many shop hints. Worth a lot of money to you in time saved on perplexing jobs. It's yours for less than the cost of the steel filing cabinet alone! Ask your RCA Radio Tube Distributor for details.



Radio Tubes

RCA Mfg. Co., Inc., Camden, N. J., a Service of Radio Corporation of America

HERE THEY ARE!

The Sensational New Automobile Radio Dealers Have Been Waiting For!



MODEL 266—6 TUBE SUPERHETERODYNE WITH PERFECTED METAL TUBE PERFORMANCE

Features . . . Metal Tubes; High Gain Iron Core Antenna System; Low Background Noise; Sensitivity under one Micro-volt; 9 Tube Performance; 3 Gang Condenser; 6 Tuned Circuits; Full Automatic Volume Control; Variable Tone Control; Diode Detection; Electrostatically Shielded; 6½ inch Dynamic in the set Speaker; Illuminated Colored Airplane Dial.

COMPLETE WITH TUBES.....\$52.95

The New

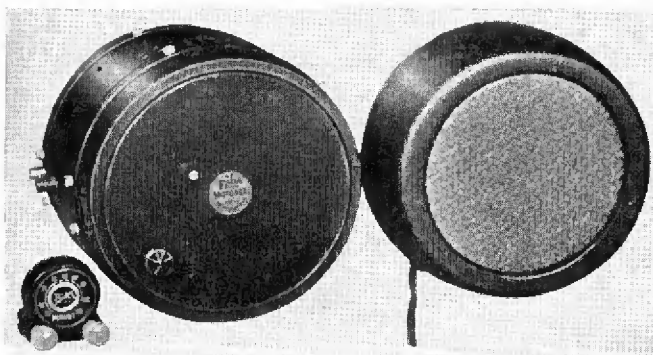
FADA Radio

MOTOSETS

Using Metal Tubes

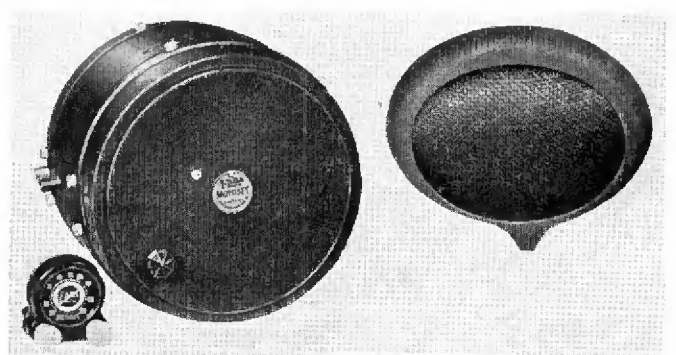
The new MOTOSETS by FADA are here! They offer the car owner distinctive style, unexcelled performance and unequalled value . . . they offer the dealer a greater opportunity to make this a profitable summer. The new matched instrument panel remote control adds to their sales appeal. Check every MOTOSET feature . . . against the entire field . . . you'll find that FADA leads!

Order from your jobber . . . or ask him for complete information about every MOTOSET in the FADA line.



MODEL 266 SD with 8 inch External Dynamic Speaker
Chassis construction identical with Model 266 but with matched Dynamic Speaker unexcelled for tone.

COMPLETE WITH TUBES.....\$57.95



MODEL 266 SG with 5½ inch Overhead Dynamic Speaker
Chassis construction identical with Model 266 but with specially designed header speaker for General Motors cars.

COMPLETE WITH TUBES.....\$54.95

MODEL 266 SF—Special Model For Ford Cars. Chassis construction identical with Model 266 but with specially designed 5¾ inch overhead Dynamic Speaker to fit new Ford cars.

COMPLETE WITH TUBES.....\$52.95

All models obtainable with matched individual instrument panel remote control installations. Complete list prices for every make of car available from your jobber . . . or write direct.

FADA RADIO and ELECTRIC COMPANY
Long Island City, N. Y.

LAUNCHES A NEW AUTO RADIO!

Admiral

A NEW SLANT

ON TONE QUALITY

TONE QUALITY No Auto Set Can Equal!

• Absolutely the "tops" in tone performance... that's Admiral Auto Radio! The large full size 6 $\frac{5}{8}$ -inch Dynamic Speaker is mounted on a pre-determined "slant" and is not parallel to any of the surfaces of the radio cabinet or chassis. Microphonics and resonance are completely eliminated thereby assuring true perfect tone quality equal to finest home radios. Nothing like it before!

Admiral Fits All Cars. The most compact 6-tube Auto Radio ever built... fits any car... leaves plenty of room for largest hot water heater. Control mountings match all instrument panels.

2 TO 7 TIMES THE ANTENNA GAIN!

1/2 MICROVOLT SENSITIVITY

A newly developed "Series-Fed" Antenna Circuit with iron core antenna coil... an exclusive Admiral feature... gives 2 to 7 times the antenna gain. Assures extremely low signal-to-noise ratio and daytime reception in any locality. Permits adjustment to roof type, running board or under car aerial.

Jack Provided for Overhead or Rear TWIN SPEAKER



\$39.50
LIST

TWIN SPEAKER \$6.50

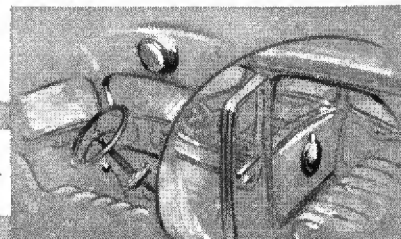
9 TUBE EFFICIENCY! ... 6 TUBE ECONOMY!

Only Admiral has ALL these outstanding features: Powerful superheterodyne circuit... metal tubes... one stage of R. F. preceding first detector... rubber mounted 3-gang condenser... 175 K. C. double-tuned I. F. transformers... 10 K. C. selectivity... new R. F. filament and plate filters... special vibrator "hash" filter... perfected motor noise filter... transformer hum eliminated by exclusive double shield diode-transformer... double-shielded and impregnated power transformer... sturdy easy-to-install single hole mounting... mounts in any one of four positions... only 1 battery connection... only 1 aerial connection.

Dealers! Bring your profit ship home with Admiral Auto Radios. Priced for swift sailing at a liberal profit. Write or wire for details and discounts.

Metal Tubes

CONTINENTAL RADIO & TELEVISION CORPORATION
325 WEST HURON STREET, CHICAGO, ILLINOIS



RADIO RETAILING

*Now You Can Meet Car
Dealer Competition On*

Automobile Sets

WELL over 100 new automobile receivers are now making their bid for public acceptance. They range in price from \$16.95 to \$89.50. For the most part they harmonize with the car fittings and are excellent performers. At the rate these sets already are moving, 1936 will hang up an all time record of not less than 1,500,000 car radios; retail volume, \$75,000,000—a lot of business in anybody's language.

Last year home set dealers didn't get their full share of car radio sales. Why? Because the automobile dealer got the new car buyer with this story: "Our radio plate is designed to match the other panel accessories on this make of car."

THIS year it's a different situation. Thanks to the astuteness of the set builders you too can play up this argument. For you now can display many samples of "matched" control panels to prove your ability to do just as finished a job as the non-radio auto merchant. See our pictorial display of matching plates which follows this page. Show this to your customers.

But, for best results, tie closely to your wholesaler—who should have a complete stock of all plates—and to the best a-r installation specialist in your territory.

Unless you know from experience all the installation quirks—the capacity factor of insulated-roof antenna versus the underslung type, for example—cooperate with someone who does.

AUTO RADIO ANALYSIS

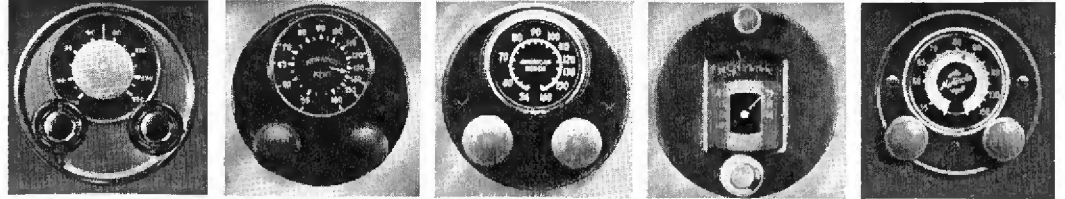
Average number tubes per 1936 model.....	5.9
Minimum.....	5
Maximum.....	10
Number of sets using one or more metal tubes.....	33%
Number of sets using metal tubes exclusively.....	17
Average retail price.....	\$46.25
Minimum price.....	\$16.95
Maximum price.....	\$89.50

For complete specifications covering over 100 new car sets see pages 26 and 28.

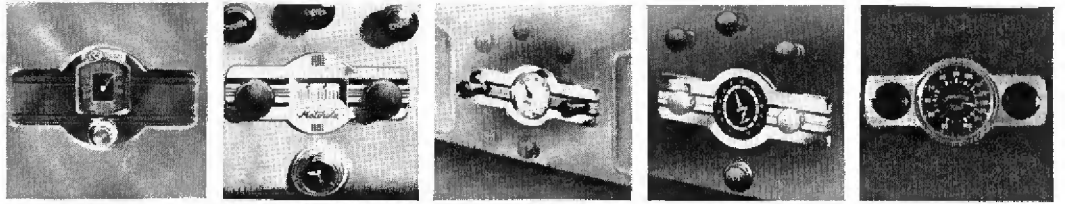
MATCHING the CAR

Variety of Dial-Plates for Popular Automobiles

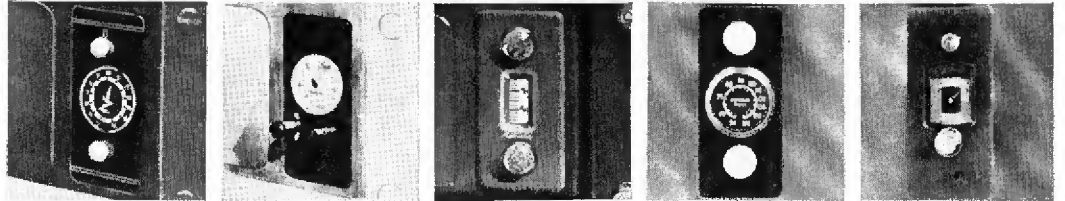
FORD



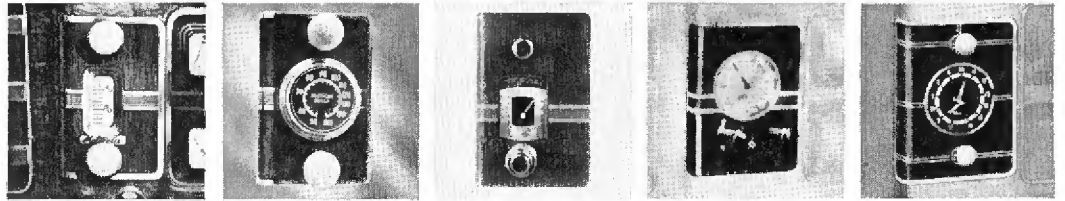
CHEVROLET



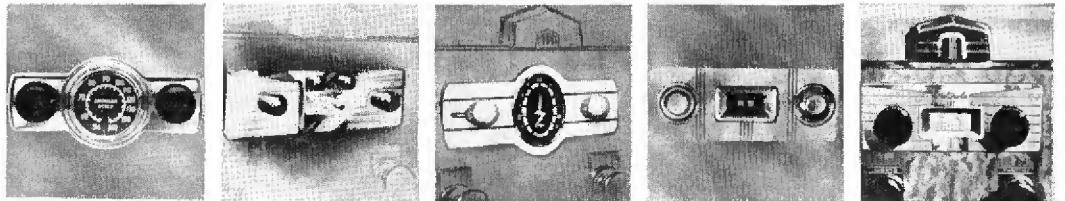
PLYMOUTH



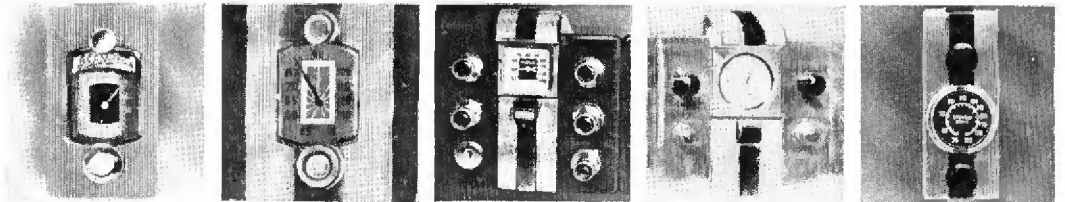
DODGE



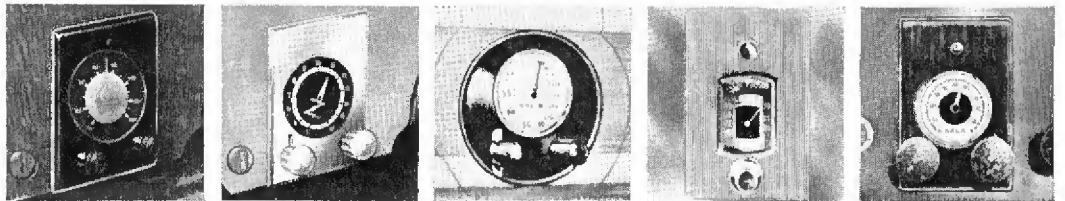
PONTIAC



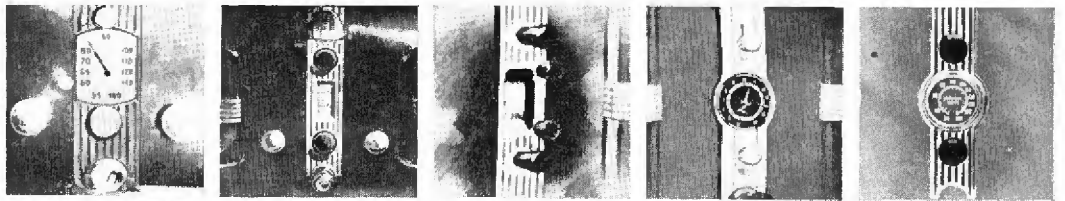
OLDSMOBILE



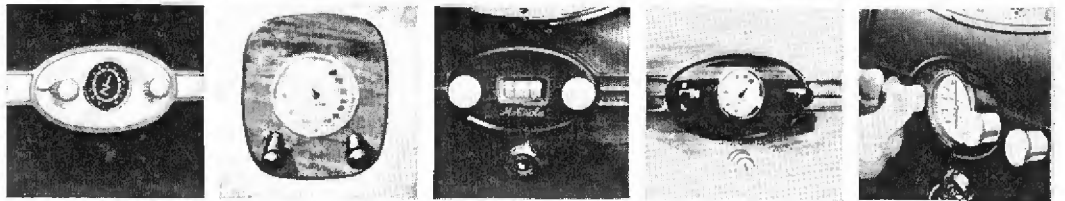
STUDEBAKER



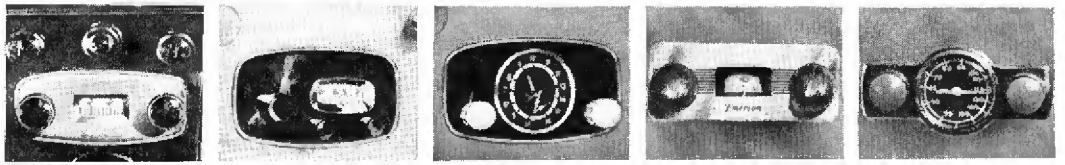
BUICK



HUDSON



CHRYSLER



1936 AUTO-RADIO

Design

"Tailored" controls, ear-level speakers and inbuilt noise-rejecting filters give sales new impetus. Simplification of mountings makes merchandise more attractive to home-set dealers

By

Oliver G. Ayer

EXTENSIVE research and the application of sound engineering principles are gradually solving the problem of ignition interference in automobile radio receivers, without sacrifice in motor performance. Recent developments in both cars and receivers have made the use of spark plug suppressors practically obsolete and have very definitely changed the problems of installation. Welded all steel bodies have eliminated loose body parts which have always been a source of erratic interference radiation and vibrator hash transmission. The closer grouping of ignition circuits and better treatment of high and low tension wiring has materially lessened the actual radiation of spark interference. The almost universal use of noise-rejection filters in the hot "A" line of receivers has erased one large group of interference troubles.

"A" Filters

These filters provide a low impedance path between the "A" lead and ground and a very high impedance looking into the circuits of the set. They are sometimes combined with an isolation network to keep vibrator hash from leaking into the filament and other circuits.

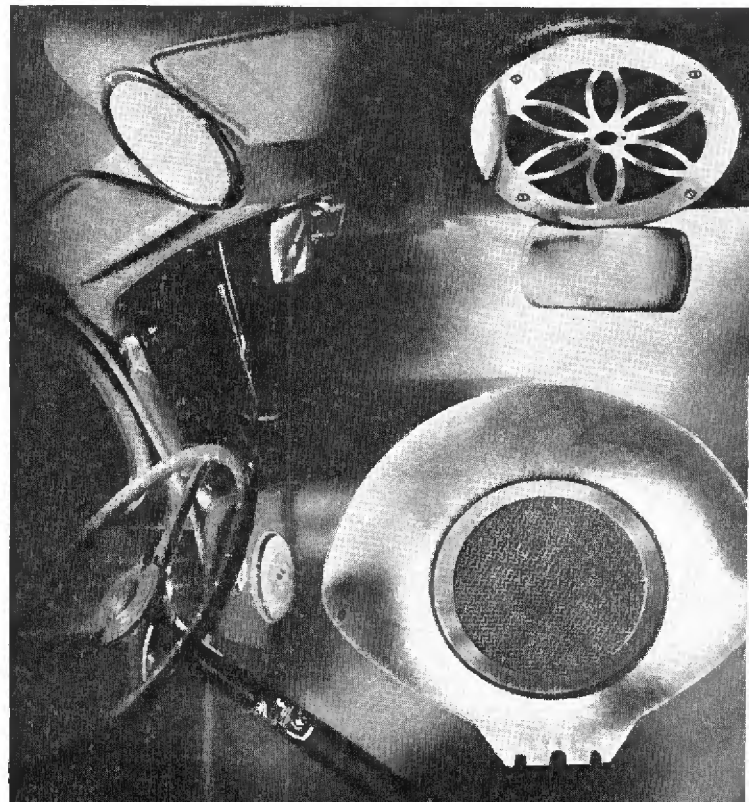
Since the condensers in these circuits are rather large and must be placed where room is available, resulting in long leads which radiate, it has become common practice to provide a small mica bypass condenser on the hot "A" lead as it enters the shield to keep vibrator hash from feeding out on the "A" line, and to keep ignition noise from feeding into the adjacent circuits in the receiver.

As the electrolytic condensers used in the high voltage filter constitute an almost pure resistance at the high radio frequency due to the decrease of the dielectric constant of the film it is common practice to provide a small mica bypass condenser and an r. f. choke at the set end of the "B" filter to keep hash out of the receiver circuits.

The use of noise filters in the aerial leads has become quite general this year. A one or two-section low-pass filter is inserted to reject most of the energy below the broadcast band. Another system follows home receiver procedure by providing a matched low impedance transmission line between the aerial and the receiver. Small high frequency filters are generally used on all other leads that enter the receiver shield, such as pilot light and tone control leads and speaker cables. Most of the new sets are completely inclosed with no ventilating louvres and provide excellent shielding. Direct radiation of heat through the can itself is apparently sufficient for all practical purposes. The covers are grounded either by a multitude of screws or a series of grounding springs to provide a thoroughly shielded chassis.

A very marked improvement in signal to noise ratio and sensitivity has been realized by the use of iron core antenna coils or a series fed antenna or a combination of both. Energy fed the first tube by this combination is considerably higher than with the (Please turn to page 59)

Typical Header-Type Speakers



News and Views

"SPIFFS" SUBSIDIZING OF retail salesmen by manufacturers and distributors intent on securing preference for their line no doubt has stimulated sales in the past but we now sense a smouldering beneath the surface. Cash awards and merchandise prizes granted on a point contest basis in effect put the retail salesman on the manufacturer's payroll. Many dealers are giving such plans the cold shoulder, preferring that their men work only for the store.

Even those manufacturers who, right now, are going over the dealer's head to take salesmen by the hand are not too happy about the circle of competitive awards that has resulted. One concern gives a \$1 spiff. Another raises the ante to \$2. A third bids \$3. Shoppers, employed by a mid-western jobber, pass out dollar bills to clerks who mention this wholesaler's line first.

Where will all this end? Or won't it?

It is our guess that this system is nicking the industry for from two to three per cent of its gross income and that this money, in the long run, could better be employed for consumer advertising and sales helps. What do you think?

* * *

FARM RADIO SALES ARE booming. They started climbing following the introduction of low-priced battery chargers. But in



spite of quadrupled 6-volt receiver business this net-to-consumer policy on the generator has come in for considerable criticism. "It does us out of an extra profit and means a lot of service expense," claim a number of dealers.

Now, from the Tall Corn State, comes some interesting rebuttals. Writes the president of Win-charger: (a) "This plan enables the dealer to beat mail order house com-

petition." (b) "Leaves a wider margin of the farmer's budget to put into the set itself." (c) "Opens the way for the live merchant to properly ask a \$5 to \$15 installation fee and to charge for legitimate service."

* * *

THE FLOODS HAVE HELD up parts makers. Condenser concerns are hard hit as many paper mills in New England are still drying out. Manufacturers out of the danger zone report numerous "second fiddle" orders from set companies temporarily in a jam.

* * *

RADIO VERSUS THE PRESS, as a news communication medium, staged a merry battle last month—



and the broadcasters won hands down. Radio prestige was enhanced tremendously due to the way the stations, running overtime, kept the public informed of the minute-to-minute developments as the flood waters rose and calls for help poured in from hundreds of unfortunates.

* * *

A. G. HULL, TECHNICAL Editor of "Wireless Weekly," Sidney, Australia, was a visitor last week. Stopped off on a jaunt around the world to get the low down on television. Mr. Hull stated that a live Australian radio manufacturer sent out its expert, who returned reporting that practical television would arrive within the next six months. Another competing concern from "down under" dispatched its investigator on a similar mission. He returned reporting that if television arrived with the next 25 years he would be a much surprised man. So Mr. Hull was dispatched on his television investigation to end all television investigations.

Had we known we might have



cabled "Wireless Weekly" to add the six months to the 25 years, divide by two and call it a day.

* * *

AUTOMOBILE AND RADIO manufacturers are working together to find an equitable answer to the ignition noise radiation problem. P. J. Kent, of Chrysler, and J. T. Filgate, of American Bosch, represent respective industries in joint SAE and RMA discussions. L. C. F. Horle, engineer retained by RMA to develop testing devices reports that it is a h--- of a job to design instruments which measure noise output of cars accurately. Yet this has to be done before methods of reducing radiation without putting a crimp in car performance can be found. Popularity of shortwaves is rapidly bringing the situation to a head and imminent transmission on the ultra-high frequencies may give it the final push to convert discussion into action.

* * *

AUTO-RADIO BUSINESS gathers spring headway. But emphasis, so far, seems to be on the cheaper models. "Selling up" is tougher than on home sets. Whether this is because car showrooms are getting the new automobile gravy or because "leader" ads again have deflated the market is hard to decide.

* * *

KDKA CALLING ALL RADIO equipped private cars! Tuning in the other night, when Pittsburgh lay stricken under the turbulent waters of the Ohio, we heard this emergency call from radio's pioneer station. KDKA was transmitting information and asking for help, relying on owners of auto-radio sets to be the messengers in this emergency. The power lines were out of business but auto-radio carried on.

OPPORTUNITY FOR SHORT- wave promotion knocked right at the radio dealer's door last month when severe floods menaced the East and virtually destroyed commercial communication over wide areas. Newspapers such as the *World-Telegram* (New York) not only devoted full pages to the story of amateur activity, telling how stations located in stricken districts were in many instances serving as the only link with the outside world, but steered readers right to their radios by reporting that 'phone (voice) stations operating between 3,900 and 4,000 kc. were maintaining continuous emergency schedules.

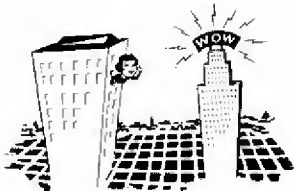
At W2TY we heard a New England operator announce that the local broadcast station was directing rescue squads cruising about the city in commandeered radio-equipped automobiles. An amateur in Detroit got through to W8FRC, Johnstown, Pa., long enough to determine where an emergency plane might land. The air was full of news, from the flooded districts.

To those dealers wide enough awake to grasp this opportunity for shortwave set promotion . . . our congratulations. To those who let the opportunity pass . . . our regrets.

* * *

IN JANUARY "NEWS AND

Views" we advanced the idea that sets deliberately made just sensitive enough to do a job on locals might sell to city-dwellers interested solely



in good quality from the conveniently close chains. Nobody among the home set makers has taken our tip to date but one of the largest manufacturers of auto-radio is supplying 400 receivers of this variety for a fleet of New York taxis. Out the window goes much ignition noise and electrical racket encountered when the cabs dodge traffic under the "L."



THE REPAIR AND NEW SET

business that will pour in when flood rehabilitation gets going will make history. Radios can't stand water. And many receivers close to flood levels, but not actually submerged, also will need attention.

* * *

AUTOMATIC FREQUENCY

control, predicted some months ago in our Service Section, is just about ready to "break." Making it impossible to tune 'way out on the edge of a carrier and so ruin tone, this circuit will see the light of day in several spring-announced lines.

* * *

GROWN SO ACCUSTOMED

to seeing electric refrigerators in radio stores, we missed the dazzling white boxes at Hickson's, Rochester, N. Y. "Why the omission?" we asked.

"Everybody else in town is playing up refrigeration and neglecting radio. That leaves a nice opening for me," replied owner Zanglein.

* * *

IN THE MANNER OF HORA-

lio Alger we give this news note two titles: "Signs of Spring," or, "People We Can Do Without"; referring to (a) automobile salesmen who practically give auto-radios away in order to sell cars and, (b) finance companies that sell auto-radio at cost in order to get more automobile paper.

* * *

A SET FOR SUMMER SALES.

Make it small, light, compact. Should be a battery portable with skip-band tuning. Applications: summer camps, week-end beach expeditions, boats and cars.

Why shortwaves at all? Because out in the sticks the broadcast sometimes goes sour but relay stations come through like a ton of bricks.

QUAINT IS THE CASE OF A midget maker selling in quantity to the chain jewelry stores. Assuming that its outlet would use it to sell up, this manufacturer included a catalog with each set bearing the words, "List Price \$35." Back bounced a telegram: "Please stop putting prices in future shipments. We get \$38 for them."

* * *

DO DEALERS SAY IT WITH

increased sales when distributors, responding to "heat treatment," lop off weak sister outlets? They do—but here's the rub: Just ran across a case in our travels that's a bit discouraging. This jobber divided his retailers by two; gave half the axe. Those remaining increased sales, of course, but not enough to prevent a considerable loss of total volume. Curiously enough, the poorest performers were the very dealers who squawked the loudest about "too many outlets."

* * *

SALESMEN AND DELIVERY

men don't make good installers. A Detroit dealer tells us that he's getting much business from people whose sets were practically "poured in the door" by competitors to save the salary of a good installer.

The days of "haywire" jobs is over. The new multi-wave models *must* be hooked up right—starting with the special antenna.

* * *

EXTRA! MAN BITES DOG!



It's news! And when a longwave station re-transmits American short-wave programs—that's news.

Three eastern stations regard so lightly the cultural offerings of World Wide Broadcasting Foundation (WIXAL, Boston, 6.04 and 11.79 mc.) that they schedule them over their own standard channels.

POLITICAL CONVENTIONS

Seen As
 "NATURAL"
 for
 Summer Pick-Me-Up

Set makers announcing new models in May . . . Brunel Frederick works up practical ad ideas . . . George A. Smith suggests effective, inexpensive windows

CERTAIN to boost listeners interest to fever pitch and already whetting the consumer appetite for radio, the Republican Convention (Cleveland, June 9) and the Democratic Convention (Philadelphia, June 23) are "naturals" for summer sales promotion. Set makers are hopping on this opportunity with both feet, plan introduction of leaders during the month of May and in many instances will flash complete new lines 30 days earlier than usual.

Dealers astute enough to fully appreciate promotional possibilities are already clamoring at distributors' doors for advertising and display material with which to fan this spark into a healthy flame. Those with plenty of "chips" and a good ad-man are planning to splurge in newspapers, direct-mail and windows. And in order to secure the cumulative effect of widespread dealer concentration on this season's best sales bet *Radio Retailing* has paid much wampum to advertising expert Brunel Frederick and window-display specialist G. A. Smith to suggest practical small-space newspaper ads and inexpensive tie-in windows for retailers who must do a job without mortgaging the old homestead.

Neither Frederick nor Smith attempt to lead you by the hand on such details as the placing of periods or semi-colons or the selection of aesthetic crepe-paper colors. We warned 'em off this stuff, told them to supply effective

picture is not the whole meal. It's only the appetizer, and for your purpose, a fine idea is better than fine art. It's the cartoons and comics that hook the attention.

Finally, see that your name, phone and address are made hard to forget. This doesn't mean that an artist should be allowed to twist your name into a pretty pretzel of some sort. Big, bold, clear type is hard to beat.

Give some thought to the medium you will use. A newspaper may reach people too far away to trade with you. Whereas the same message on a post card mailed to your own neighborhood may bring gratifying returns. And your message need not even be printed. Lots of resultful advertising is done on a duplicating machine. The more economical your method is the more you can repeat. A live idea modestly dressed but frequently repeated will get more results than the same idea dressed expensively and sent out only once. The ideal combination is one or two Big Berthas supported by a lot of rapid fire. If you can't afford the big guns, then use a squirrel rifle—but keep on pulling the trigger!

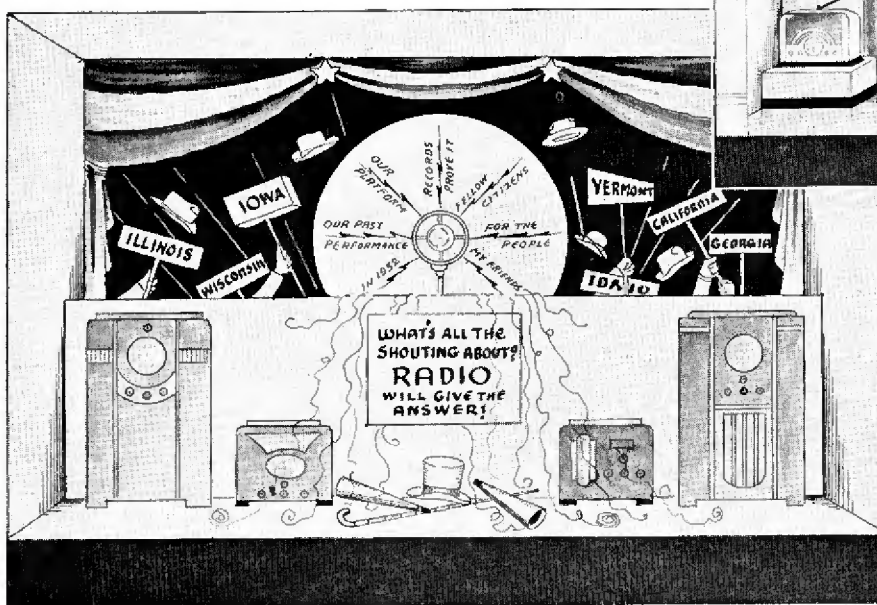
WINDOWS

By George A. Smith

IN TUNE with the atmosphere of the forthcoming campaigns, this action window can be built by any dealer and for less than six dollars. The idea is that right behind the eye-high balcony rail a hot convention is in progress. State banners or political slogans can be seen (presumably held by delegates), hats are being tossed in the air, pandemonium reigns.

BACKGROUND—Flags draped at either side. Fill in with plain drop of dark material. Pictures of candidates or outline of convention hall rafters might be added. Center back is a large bright blue disc of wall board, about five feet in diameter. Saw out jagged slots to represent the electrical action at the mike. Behind each "lightning" flash (cover with red tissue paper or cellophane) place a flasher socket light bulb. Above or below these apertures letter the words that are being fed into the microphone.

About two feet in front of this "spot" place a real microphone.



MID-WINDOW—Get some hats and suspend them in air by black threads. Overflowing the half-height balcony or partition, and extending on floor to front of window, is seen other political campaign paraphernalia, horns, confetti, etc.

TO PRODUCE a good window trim you must start with a good idea. Then be prepared to put a little time and money into it.

Splendid results may be obtained through the use of a couple of sheets of wall board, which may be secured from your local lumber dealer at about four cents a square foot. These can be cut with a sharp knife or saw very easily. Cover with any sort of material or paint in water or oil colors. To keep from warping brace with wooden strips.

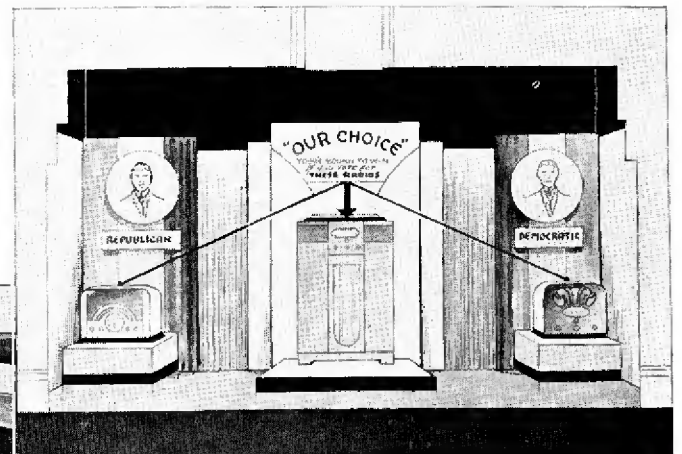
This sketch shows what can be done with two 4x8-foot wall board panels which should not cost over \$5. The center panel is 4 feet wide and 8 feet high. The end panels are 3 feet wide and should be painted in red, white and blue water colors. On these hang enlargements of the Democratic and Republican candidates, mounted on heavy cardboard.

The center panel may be painted a pure white with lettering and strip at either side in blue.

The arrow also is cut from cardboard. It should be fastened to the panel and slanted forward with tip resting on the set.

Two-inch ribbon may be used to guide the eye to the small models. Drapes, between the panels, and platforms complete this illustration of modern window trimming—attractive, dignified and sales compelling.

The number of radios shown is up to you, but don't overcrowd.



A Trim for a High Class Store

Above—Put up a good "front" if you want people to believe in you and your merchandise

This One Will Stop Them

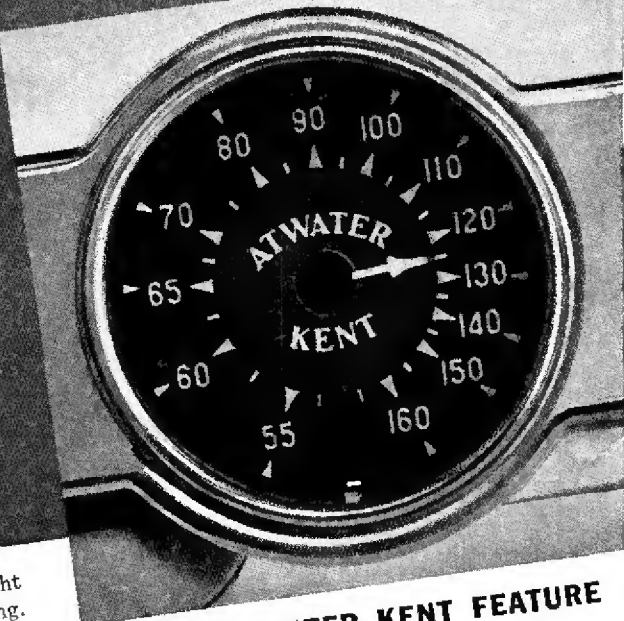
Left—This idea intrigues the imagination; not the least of its attention getters

Only the new 1936

ATWATER KENT

Auto Radio

OFFERS ALL THESE
EXTRA-VALUE SELLING
FEATURES!



ARROW-LIGHT TUNING: The latest Atwater Kent feature mounted right on the instrument panel. Easy to read. Just follow the arrow to perfect tuning.

RUGGED CONSTRUCTION. The rugged chassis construction assures dependable performance under all conditions.

MARVELOUS HOME RECEPTION FROM OVERSIZED DYNAMIC SPEAKERS. The clear rich sound of music or voice from the oversized speakers makes listening identical with home sets.

TAILOR-MADE FOR YOUR CUSTOMERS' CARS. Distinctive remote control plates styled to match instrument panels of thirty-three car models.

BUILT-IN ANTENNA BALANCER. This balancer matches the antenna on the car to produce highest efficiency in sensitivity and volume.

ARMOR-SHIELDED POWER UNIT. Rugged, compact unit totally shielded—new improved vibrator, tube and power transformer.

NO SPARK PLUG SUPPRESSORS. Specially designed circuits with built-in filters eliminate the necessity of spark plug suppressors.

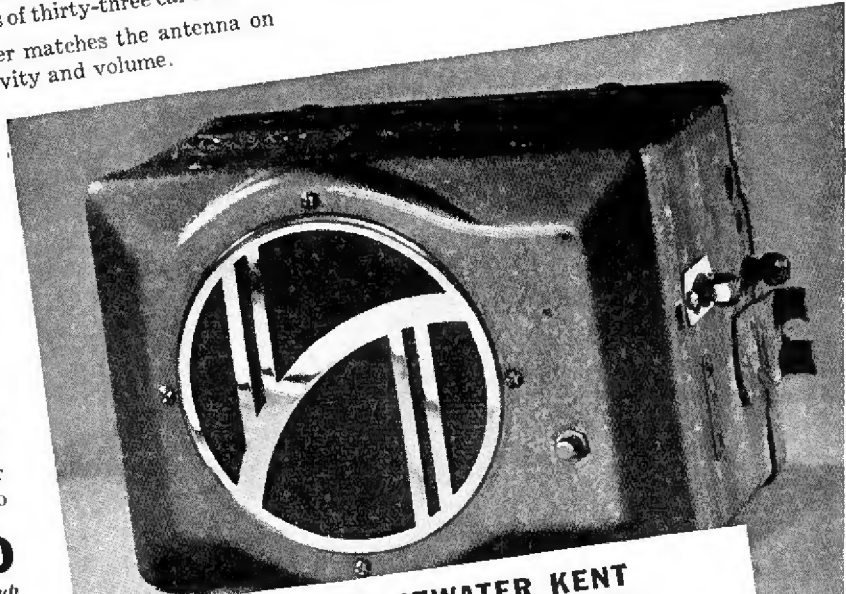
MOTORING SEASON IS HERE! Baseball games are on the air... pre-election speeches... dance bands for the young folks. Never before was there a riper moment for the appearance of the new 1936 Atwater Kent Auto Radio... "today's greatest auto radio value." This is the set your customers have waited for: the greatest Auto Radio ever to bear the name Atwater Kent.

\$39⁹⁰ and up
f.o.b. factory

ATWATER KENT MANUFACTURING COMPANY
A. Atwater Kent, Pres. • Philadelphia, Pa.

LATEST ATWATER KENT FEATURE ARROW-LIGHT TUNING

The lighted arrow marks the station with a new tuning efficiency that assures speedier selection of programs with the finest Atwater Kent tone quality.

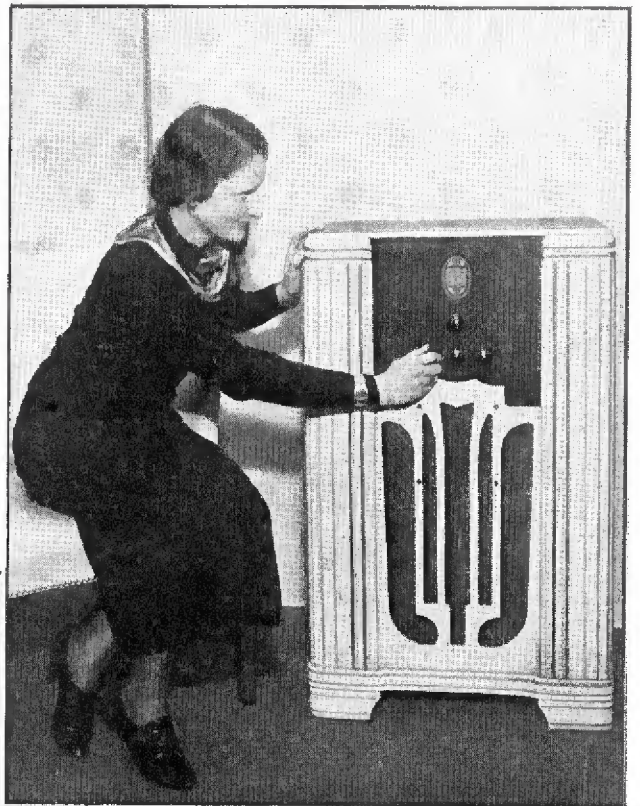


FAMOUS ATWATER KENT PRECISION ENGINEERING

Again Atwater Kent precision engineering does its part in making the 1936 Atwater Kent Auto Radio "today's greatest radio value"... in name and in fact.

Redecorated Cabinets Triple Radio Sales

Color-to-order gives furniture store
something new to talk about . . .
brings as much as \$15 extra



AFTER . . . "Tempo-ized" with antique white and gold

BEFORE . . . A production-line finished console



TABLE MODELSTOO . . . 25 per cent of the re-finishing jobs are midgets,
75 per cent consoles

to the consumer varying all the way from \$3 to \$15, with the average \$5.50. Seventy-five per cent of all consoles and 25 per cent of the midgets sold are now re-decorated. People evidently want individuality in their radio cabinets and are willing to pay for it.

Re-decorating consists usually of simply trimming with antique white enamel and striping with gold or brown, leaving the original finish in contrasting panels (see photos) wherever this treatment is adaptable. Other color schemes are, of course, quite as simple to execute and the customer may specify. Re-decorating is quite profitable to a properly equipped department, states Churchill.

Business today is triple its depression-low and much of the gain is attributed to the "Tempo" campaign. Re-decorated cabinets permit the sale of more sets per home, fitting in particularly well with bedroom color schemes and modernistic furniture. Most important, re-decorated cabinets are so strikingly different in appearance that they constitute an effective spearhead for all advertising effort. Barker's is plugging this angle for all it is worth, using the word "Tempo" in newspaper copy even to the extent of including a box describing the re-decorating service in standard set promotion ads.

LOS ANGELES — Late last year Barker Brothers, house-furnishing store, conducted a "Tempo" show, Tempo being this company's intriguing, copyrighted advertising word denoting modern style and design. T. A. Churchill, buyer and manager of the radio department, was asked to work up a radio tie-in idea, suggested that

standard cabinets be re-decorated to give them the individual "snap" required for the campaign.

"Before and after" radio set displays attracted so much attention during the show, seen by 45,000 people during its run, that the re-decorating idea was continued and today 40 per cent of all radios sold are so treated, extra charge

Split-Payment Plan Aids Farm Dealer

Study of customer's needs avoids necessity for "Fall Credit"

LONGMONT, COLO.—For the radio dealer who sells to farmers the big installment credit-collection development of the year is "split payments," according to Kitley and Billings, one advocate of this plan.

Generally, dealers located in rural areas offer weekly or monthly credit to town people with regular incomes. But sets sold to rural buyers relying mainly on liquidation of fall crops are "Fall Dated." Under the split-payment plan each farmer-customer is carefully questioned to determine just when and from what sources income is derived. Local farmers are pretty sure, for example, of a large beet check in November. But perhaps they are also feeding cattle or sheep and will sell between January and April. Dairy farmers receive income checks from the sale of their products every month of the year. Obviously, fall dating is unnecessary and unwise in such cases.

Where the farmer's income is derived from sale of produce at certain definite times of the year Kitley and Billings makes each individual radio payment coincide with income, instead of offering a sweeping postponement until fall. Twenty-per cent down is required and a schedule of payments worked out for the balance in each individual case. The customer has his own payment date preferences, of course, and it is frequently possible to go part way with him but it has been found desirable in this district to so arrange payments that they return about half the balance due to the firm when beet payments are made.

Among a dozen deals with farmers no two cases are exactly alike as income varies widely from farm to farm. Studies of farm income in Colorado, made by N. L. Nicholls of the implement trade, however, show that in '34 and '35, 40 per cent of farm income

was received during the first six months of these years. The principal income sources are, of course, livestock and crops. But many incidental sources such as custom-plowing, road work, bus-driving, etc., do much to level off earnings and render unnecessary the customary dealer practice of "Fall Dating."

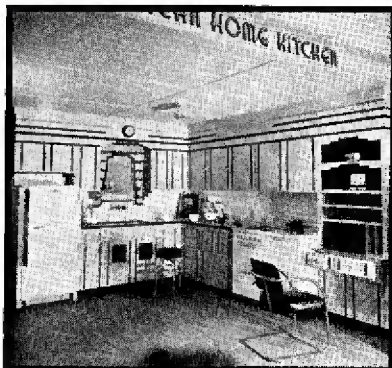
Novel Contest Sells Refrigerators

WASHINGTON — "We run a sales contest for our men every month of the year, feel certain that these liven up the operation and bring real results provided cost is kept to one quarter of one per cent of expected profit," says C. L. McCrea, manager for the National Electrical Supply Company.

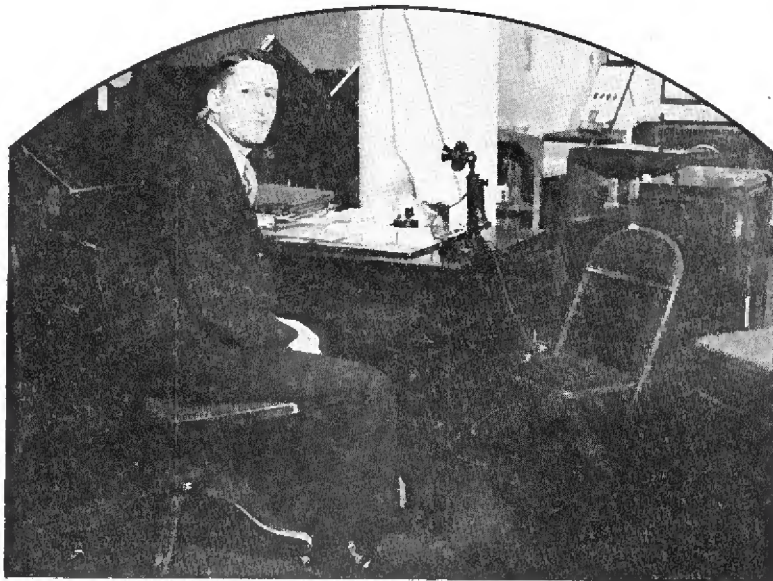
"A recent contest, one of the most effective and inexpensive to date, used clothing as prizes. Cardboard cutout figures representing each salesman on the force were arranged around our retail salesroom. For making certain portions of their quota men received underwear, socks, shoes, shirts, garters, trousers, vest, coat, hat and tie in this order, dressing up their own likenesses as boxes were moved off the floor.

"Did our men work to win complete outfits . . . and how!"

Radio and Appliances . . . NO CLASH



Raised radios down one wall, major electrical appliances against the other and readily movable devices in the center solves double display problem for Empire Electric's new store in Santa Rosa, California. Insert: "Hotpoint" refrigerator glorifies New American Home Kitchen display at rear



SHOWS OLD CABINETS UP — George Hagerman, who prices dazzling trade-ins low enough to prove small trade-in value

Advertising Swats "Free Service"

WASHINGTON—Star Radio of this city has started an advertising campaign to spike "Free Service" offers.

Reads one newspaper ad: "No one ever gets something for nothing The odds are all against you." Another: "We could offer you free radio service but you know, and we know, that it would cost us money Money which we would inevitably have to get from you in one way or another."

Still a third, and longer, advertisement is proving particularly effective, according to M. D. Montague. Here it is, in full:

"Our average expense involved in sending an employee to examine a radio set is \$1. We therefore charge our patrons that amount. We are thus in a position to honestly diagnose the trouble without obligation to the set-owner and without the necessity of finding some difficulty which will require an expensive repair job.

"Many difficulties may be adjusted during such an inspection and in that case are included with the Star Radio Service charge of \$1. When extensive work or replacements are necessary we deduct the service charge from the bill because it may then be included in the normal overhead cost of doing business.

"Another circumstance warranting the service inspection charge is the professional character of our employees. You would not expect a surgeon to give an unbiased diagnosis of an illness if you required him to depend upon an operation for his remuneration, neither can you command competent radio technicians under similar circumstances."

Difficult Trade-In Job Stares Omaha Firm In Face

OMAHA—Coming home to roost is the sad fact that Orchard & Wilhelm has sold some mighty fine radio cabinets to patrons these last five years. Now George Hagerman, head of the radio department, is seeking verbal dynamite that will cause old customers to turn in this cherished furniture which looks too good to let go for a mere 10 per cent.

"Best decoy we have found," says Hagerman, "is a foxy, five-year old trade-in that still dazzles the eyes with its gloss, tagged at \$17.50 on the floor. It dramatically reveals that swank radios of yesterday are but hollow shells, despite

excellent woodwork and appearance."

Sale of 15 radios in one recent week for a gross of approximately \$3,000 gave this concern a whiff of the fact that higher price receivers are once again moving. Average, of course, is much lower, about \$75. The store's leader (Stromberg-Carlson) is moving up.

"No radio should sell for less than \$50," thinks Hagerman, "as credit, checkup, collections, sales effort and service costs just as much on minor as on major items and lower prices cut profit without proportionately decreasing costs."

Ad Discourages Amateur Service

CLEVELAND—L. C. Reedy, of Clark Radio Television, discourages the public from trying to service its own sets, simultaneously gets in a subtle dig at inexperienced, irresponsible competition by taking the chassis of a large, modern receiver out of its cabinet, placing the chassis in his shop window up-ended so the parts and wiring show together with a sign reading: "We Ask You . . . Would you let an amateur tamper with a set like this?"

The stunt is attracting attention, pulling in business and if the sign is hand-lettered costs nothing to try. Especially recommended to servicemen's associations as an idea for a cooperative campaign.



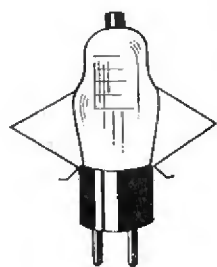
SIGNS MERCHANDISE TESTERS . . . Walk into the service shop of V. W. Hodge, Claremont, New Hampshire, and you will find all service instruments plainly "tagged" with signs. "It helps sell the reliability of our work," says V. W.

ELBOW ROOM



Trade areas are never overcrowded with retail agents for Tung-Sol radio tubes. And the Tung-Sol agent is protected against objectionable types of competition. He has every opportunity to build up his Tung-Sol tube business soundly and permanently, thanks to this "elbow room" policy.

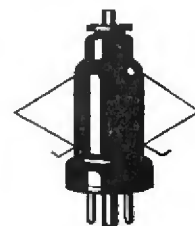
"Elbow room" is but one of the nine Plus Profit Essentials found only in the Tung-Sol line. There are still desirable locations where independent radio retailers and service organizations could qualify as Tung-Sol retail agents. Write our nearest sales office. They will give you details promptly.



TUNG-SOL

Flow radio Tubes

TUNG-SOL LAMP WORKS, INC. • Radio Tube Division • SALES OFFICES: Atlanta
Boston • Charlotte • Cleveland • Chicago • Dallas • Detroit
Kansas City • Los Angeles • New York • General Office: Newark, N. J.





KING of Operadio

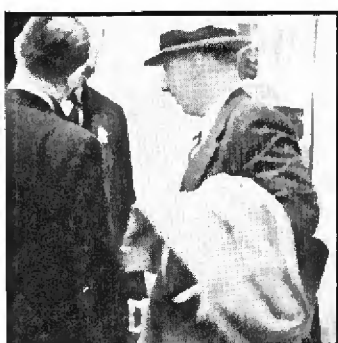
VIC MUCHER, Clarostat

BENKELMAN, Continental Carbon

PIERSON of Jefferson

Shot at the Sherman Shindig

By "Radio Retailing's" Candid Cameraman During Institute of Radio Servicemen's Convention Confabs

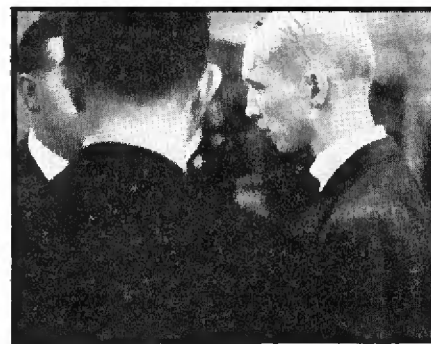


MCCARTHY of Meissner

KAHN Standard Transf.

BUD MATTHEWS, Ken-Rad

BRIGHT, Pioneer

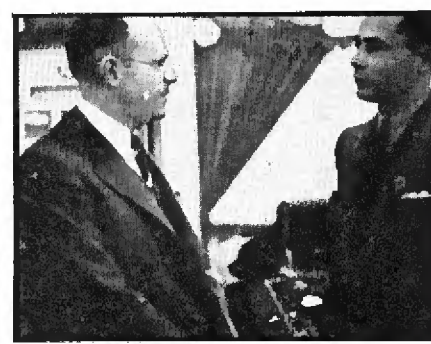


EGLOFF of Gibbs

CARRINGTON, Utah

GUTHMAN of Guthman Coil

OLESEN of Weston



LASH (right) and EGERT of Webster-Chicago

FAIRBANKS, International Resistance Corp.

HAMMERSLEY (left) and HILL (center) Ohmite

MANLEY (left) Radiotechnic and our own Mr. PRATT

FORD

Tailor-Fit matching panel controls available for 1934-35-36 models at no extra cost . . . with Overhead, Separate Case or In-the-Set speakers.

CHEVROLET

Tailor-Fit matching panel controls available for 1935-36 models at no extra cost . . . with Overhead, Separate Case or In-the-Set speakers.

PLYMOUTH

Tailor-Fit matching panel controls available for 1934-35-36 models at no extra cost . . . with Overhead, Separate Case or In-the-Set speakers.

DODGE

Tailor-Fit matching panel controls available for 1935-36 models at no extra cost . . . with Overhead, Separate Case or In-the-Set speakers.

PONTIAC

Tailor-Fit matching panel controls available for 1935-36 models at no extra cost . . . with Overhead, Separate Case or In-the-Set speakers.

OLDSMOBILE

Tailor-Fit matching panel controls available for 1935-36 models at no extra cost . . . with Overhead, Separate Case or In-the-Set speakers.

BUICK

Tailor-Fit matching panel controls available for Buick and other new cars at little or no extra cost.



THE ARVIN PROGRAM IS
Tailored
 TO FIT YOU AS
Perfectly
 AS YOUR
Easter Suit



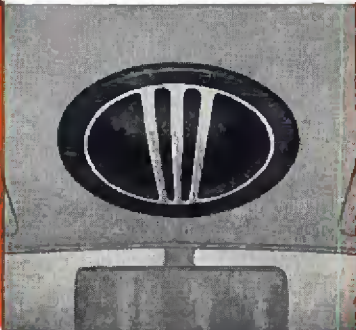
ARVIN
Tailor-Fit
CAR RADIOS



• Your new suit couldn't fit you more perfectly than the Arvin Car Radio program. It's tailored to your desire for sales and profits—tailored to your customer's desire to choose from a wide variety of beautiful models. Arvin gives you everything to sell profitably—three perfected superheterodyne sets with metal or glass tubes—overhead, in-the-set or separate case speakers—matching panel controls that fit perfectly, and at no extra cost—and all the sales helps you need to display, demonstrate and sell more car radios than you ever thought possible before. See an Arvin jobber for full information. NOBLITT-SPARKS INDUSTRIES, Inc., Columbus, Indiana. Also makers of Arvin Radios for the home and Arvin Hot Water Car Heaters.

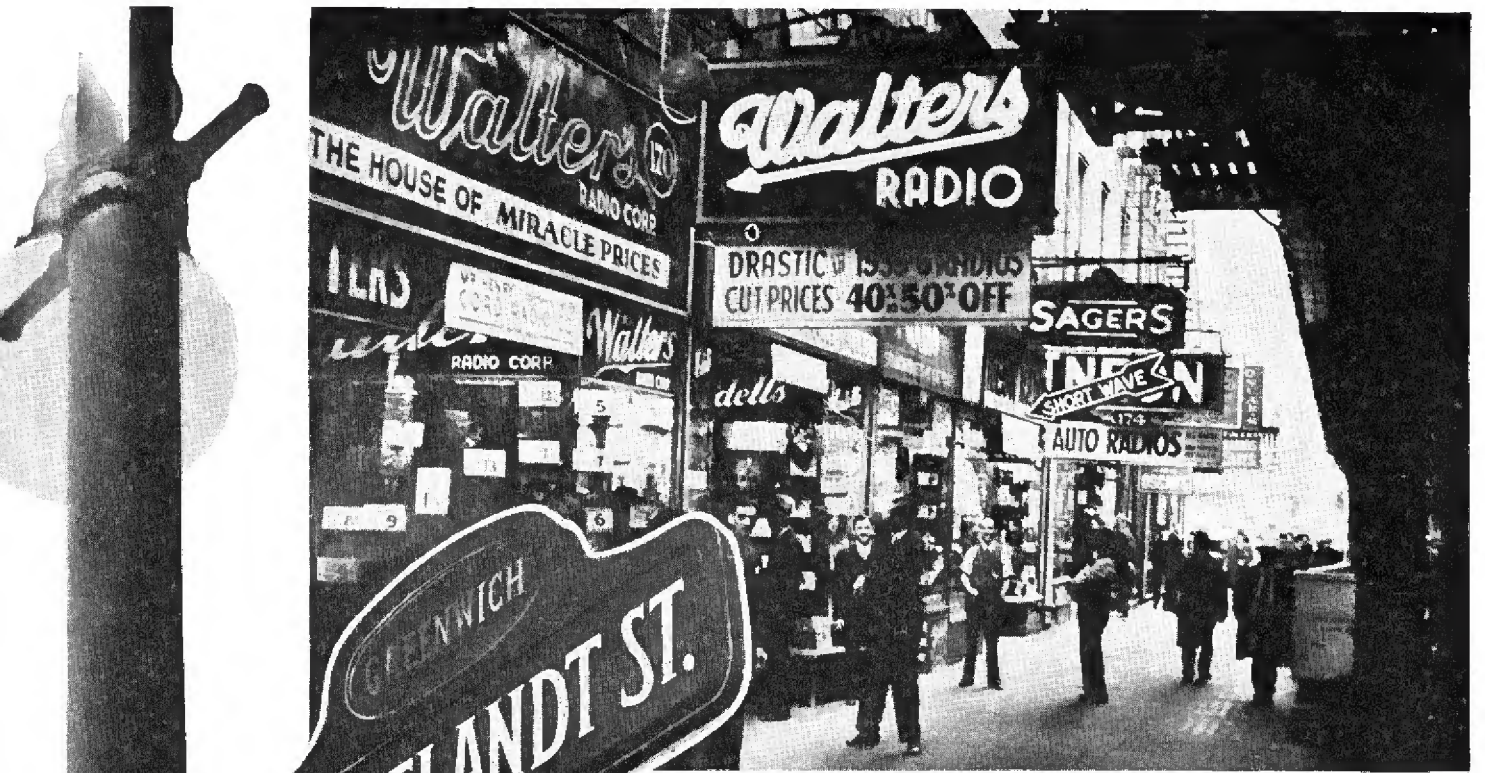
Matching
PANEL CONTROLS

with In-the-Set speaker models for you to sell as low as **\$39⁹⁵**

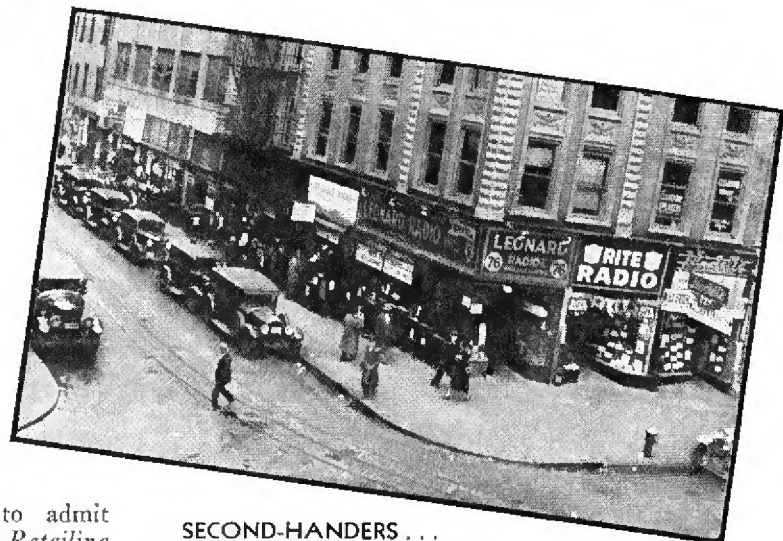


Overhead
SPEAKER MODELS

with matching panel or steering column controls as low as **\$41⁹⁵**



SLASHER-DOWNERS . . . Study in modesty and conservatism in signs



SECOND-HANDERS . . .
Blue sky under the blue sky

1936 A.D. We blush to admit that as early as 1928 *Radio Retailing* predicted the early demise of "Gyp Row." The neat, black-bordered obituary notice, prepared well in advance as is customary in the best publishing circles, has long since been removed from our morgue. For dealers may come and dealers may go but The Street seems to go on forever.

Just the same, because this section is so vicious that it frequently bites itself, we've never stopped wondering what holds it up. Perhaps Joseph Salzman, one of the district's old-timers commissioned to do a little discreet ferreting around for us (report on the opposite page), has the answer . . . *Original Cortlandt Streeters have lit out for greener fields and callow youth is attempting to ghost along on past glories.*



PULLER-INNERS . . . Every store has a man at the door

Gyp Row....

Still There But "Up Against It"

says Joseph Salzman

FIVE years ago I worked as a Cortlandt Street radio salesman. At that time, because I had been there almost since The Street started, I knew nearly everyone on it. The going got too tough and my earnings dropped from an average of \$70 weekly down near the freezing point, so I pulled out.

Commissioned by *Radio Retailing* to spend three days in the district to check its pulse-beats I started out by attempting to locate old friends. It at once became apparent that most of them had departed hence. It is the same old Street but all the faces are different.

Walter Nussbaum, who built the famous Waltham Chain and, in my estimation, really put Cortlandt Street on the map, still has his name in lights—but over a liquor store! At other locations where radio parts once were sold to a hungry mob of set builders, customers now hoist schooners of beer. Nevertheless, the number of stores on Cortlandt Street is about the same as it was in the old days and it might seem that this denotes a continuance of land-office business. But a little research, from which the chart appearing on this page was prepared, indicates that most stores have changed hands and changed names so often that signs are wearing out from repeated application of fresh paint.

Vim started up at 66 Cortlandt in 1924. In '26 the shop was Mars Radio, in '28 Stewart's, in '30 Childs', in '31 West and today Furst's. Number 78 opened in 1924 as Radio Supply, changed in '25 to Perfection, again in '27 to Todd, then to Netson in '34 and finally to Star. Number 72 was originally Rix, then in rapid succession, Redifone, Moore, Modell's and Post. Number 74 started as Cohon & Schier, then switched to Holland, Kent, Cortlandt and Rite. (Ed. NOTE: The author prepared a complete list of name-changes, of which these are but a sample.)

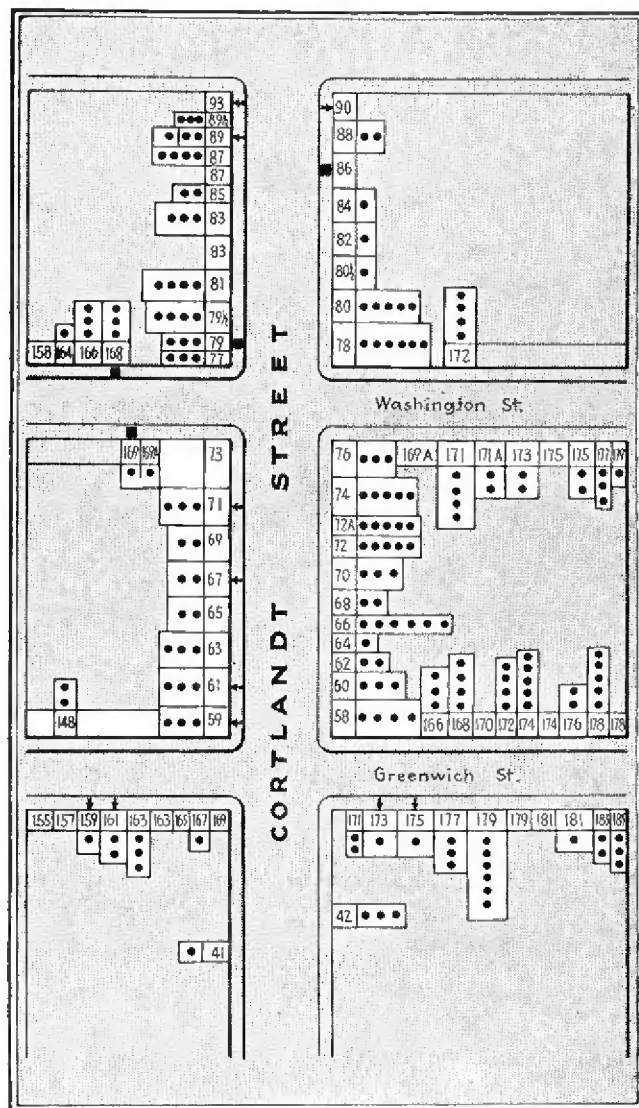
If Cortlandt Street is such a hot place for business why the turnover?

IN MY estimation The Street is up against it. It won't fold up as past glories keep enticing new blood down town but profits are nothing to excite the envy of dealers operating in more reputable sections.

To sell radios in the district today one must have a constitution sufficiently leathery to stand the jolt of unreasonable consumer demands. Shoppers who patronize The Street today ask for fifty to sixty per cent off list, insist that sets be delivered in original factory-sealed cartons together with a one-year free service guarantee. What's the use of going downtown to buy unless one can get real concessions?

Most dealers have had to develop a technique of pulling trade in off the street. Competition is next door.

Thank your lucky stars *your* business is in the "sticks"!



Our Readers Write



ABOUT

- ▶ Time for new model announcements
- ▶ Old-type tubes with octal bases
- ▶ Destructive free service estimates
- ▶ Net price mail-order catalogs

Two Minds

Ray Sutcliffe, Editor:

I think the radio industry has the same advantage to gain by early introduction of models as the automobile industry gained in moving its annual introduction of new models up from January 1st to the early part of November. This extends the selling season. How far forward the introductory date of new models should be pushed is something that is open to question.

Certainly all manufacturers should have new merchandise in the hands of dealers by the middle of June this year.

With the Democratic and Republican National Conventions there is bound to be a tremendous amount of public interest in radio. If dealers have new merchandise you can depend upon them to do a more aggressive selling job.

My own personal observation is that manufacturers have to introduce a complete line of instruments, rather than one or two models at a time. You will remember that in the automobile industry many manufacturers tried to eliminate the introduction of a complete line of new models, changing the models as new developments warranted. However, this plan was not successful and I doubt if it would be successful if followed by a radio manufacturer.

T. F. JOYCE

RCA Mfg. Co., Inc., Camden, N. J.

—Essentially Agreeing

Editor:

This year there will perhaps be an earlier introduction of some models by all manufacturers because of the political conventions. . . . I don't think that full lines will be available early and I don't think new models will be added in December instead of the usual January introduction of sweeteners to avoid the feared January and spring lull.

As regards the introduction of sets spasmodically, at no pre-determined time, I

do not think that this will ever gain favor because it nullifies the opportunity for promotion. The opening of the season is the time to make a lot of noise and then again in mid-season. If the public became educated to think that there was no particular season and that they could buy radio at any old time and still get the latest model then much of the selling urge would be out of the picture.

F. E. BASLER

Atwater Kent Mfg. Co., Philadelphia

Dealers Are Building Padded-Cells Too

Radio Retailing:

The editorial in the February issue ("If Replacement Tubes Go Meta?") was quite interesting. However, your statement that tube manufacturers are about to go crazy is somewhat conservative. I think most of us are already beyond that point!

WILLIAM HEATH

Ken-Rad Corp., Owensboro, Ky.

Demand It of Local Jobbers

W. MacDonald, Radio Retailing:

I have a suggestion to make which I think you might invite comment on in your magazine, namely that all radio jobbers who sell parts and issue catalogs print the dealer's prices in a code which can be easily interpreted, putting list prices so that if anytime a serviceman should have to show his catalog to a prospective customer the customer does not have to know how much profit we make.

I have had some trouble like this in trying to sell a p.a. system to some customers as they found out how much they cost from a competitive catalog and I lost the deal. Let's have some comment on this.

HARRY T. SCHMIDT
Hammond, Indiana

Read Star Radio's Ad On Page 18

McGraw-Hill Publishing Co.:

The thing that is preventing servicemen like myself from making money, more than anything else, is the "free estimate" racket. Cut it out and the reputable serviceman will get his legitimate share of the business. . . .

I have kept a record of phone calls and it shows that 75 per cent of the would-be customers hang up when they find there will be an inspection charge. They hang up before I have a chance to explain what they will get for their money because they have seen free estimate ads. . . .

I am a member of the IRSM. In our local group there are men who give free estimates but when asked about it deny that they practice such tactics, or say it "wasn't supposed to be" a free estimate.

Another troublesome influence is the "hole in the wall" dealer who advertises service at low rates primarily as a means of obtaining leads for new set sales.

I could use a new car in my business. I would like to have some of the latest test equipment. I need more service manuals. But I can't buy any of these things for a long, long time if business keeps at its present low level.

C. E. WEIGEL
Louisville, Ky.

Carolina Cynic

Radio Retailing:

Your article on page 22, January . . . "Fair Trade Act Works" . . . is a good one. I know your magazine *Radio Retailing* is not supposed to be funny. But for me that article by W. A. Cyr was a smile from beginning to end. If the act was not so recent I would think Will Rogers was pulling it on a banquet crowd of chain store operators.

Maybe it was meant to be serious. In

(Please turn to page 40)

PROFITS PROVED POSSIBLE



Model 666

with Belmont's Auto-Radio Line

● Profit is your net gain when all your stock is sold! By meeting every market requirement with the master 6-tube chassis you are never overstocked with a slow selling model. Profits are assured with the fast selling Belmont auto sets.

Model 666 is supplied with a self contained speaker which may be removed in three simple operations and installed in a header mounting available for a slight extra charge.

Model 668 utilizes an external 8-inch bulkhead mounting speaker suitable for large or open cars requiring volume.

Custom-trim tuning escutcheons are available to match popular cars. A few examples are illustrated. With both models there may be sold an extra speaker and a three-point switch that gives the option of using either speaker or both—ideal for taxis and house cars.

Specifications: Same chassis in Models 666 and 668. Uses no spark plug suppressors. Iron core antenna coil matches any antenna. Plug-in vibrator. AVC. TC. Tubes: 6K7, 6A8, 6K7, 6Q7, 6N6, 6X5.

BELMONT RADIO CORPORATION
1257 Fullerton Ave., Chicago, Illinois
Cable address: BELRAD

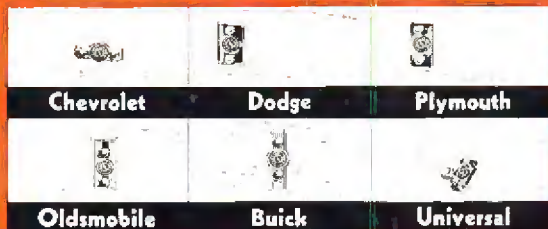
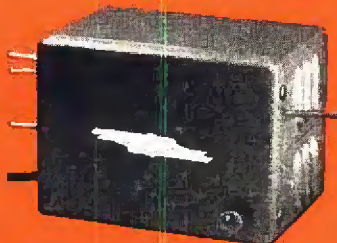


Chassis and tuning condenser float on sponge rubber eliminating road shock and vibration noise.



Model 668 and 8-inch speaker

Belmont Tuning Escutcheons for cars listed below



No Spark Plug Suppressors Required

BELMONT

THE DEPENDABLE

RADIO

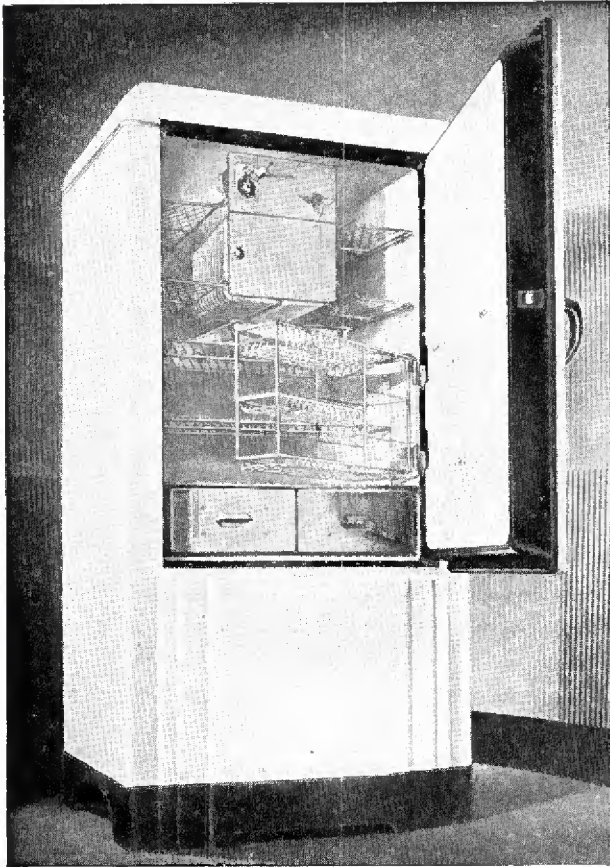
Auto-Radio Specifications

Model	Price (with tubes less inst'n)	Dimensions		Remote Control	Separate Speaker	Eliminator (Type)	Tubes		Battery Drain (Amps.)	Inter- Freq. (KC)
		Chassis	Speaker				Glass tubes—light type	Metal tubes—bold type		
Atwater Kent Mfg. Co., Philadelphia, Pa.										
126	.....	10x7x6½	.....	Yes	No	Vibrator	6	.....	.....	264
136	.....	10x7x6½	.....	Yes	Yes*	Vibrator	6	.....	.....	264
416	.....	10x7x6½	.....	Yes	No	Vibrator	6 metal	.....	.....	264
446	.....	10x7x6½	.....	Yes	Yes*	Vibrator	6 metal	.....	.....	264
*Separate Speakers: S6 (6" Cone), separate mounting—dash or rear. S8 (8" Cone), separate mounting—dash or rear. H5 (5" Cone), header mounting.										
Autoerat Radio Co., 3855 N. Hamilton Ave., Chicago, Ill.										
505	\$34.95	10½x6½x5	.....	Direct	No	Vibrator	6A7, 6D6, 75, 41, 84	.....	4½	456
518	41.10	9½x7½x7½	.....	Yes	No	Vibrator	6A7, 6D6, 75, 41, 84	.....	5	456
618	46.10	9½x7½x7½	.....	Yes	No	Vibrator	78, 6A7, 75, 41, 84, 78	.....	5	175
Automatic Radio Mfg. Co., Inc., 122 Brookline Ave., Boston, Mass.—"Automatic," "Auto Rola," "Airmaster," "Automatic Vision Ray"										
A-5	.....	5x6x10½	.....	No	No	Vibrator	6A7, 6D6, 75, 41, 6Z4	.....	5.8	480
J-50	.....	4x6x9½	.....	No	No	Vibrator	6A7, 78, 75, 41, 6Z4	.....	5.8	480
M-70	.....	7x7x8½	.....	Yes	No	Vibrator	6K7, 6A8, 6K7, 6Q7, 6N6, 6H6, 6X3	.....	6.8	480
J-70	.....	7x7x8½	.....	Yes	No	Vibrator	6D6, 6A7, 6D6, 75, 41, 41, 6Z4	.....	6.8	480
J-60	.....	7x7x8½	.....	Yes	No	Vibrator	6D6, 6A7, 6D6, 75, 41, 6Z4	.....	6.2	480
Jr. Twin-Six	.....	7x7½x8½	.....	Yes	No	Vibrator	6D6, 6D6, 6C6, 76, 41, 6Z4	.....	5.8	.....
Automatic Radio Mfg. Co., 1201 E. Lake St., Minneapolis, Minn.—"Car-Lectric"										
.....	\$34.50	12½x7½x6½	6½ in.	*	No	Vibrator	37, 38, 39, 39, 6A7, 6B7	.....	2.5	175
*Portable 110 AC and 6-volt battery.										
Belmont Radio Corp., 1257 Fullerton Ave., Chicago, Ill.										
566	\$37.00	7½x7x9½	5½"	Yes	No	Vibrator	6A8, 6K7, 75, 41, 84	.....	6.7	465
666	44.50	7½x7x9½	5½"	Yes	No	Vibrator	*6K7, 6A8, 6K7, 6Q7, 6N6, 6X5,	.....	7	465
668	49.50	7½x7x9½	8"	Yes	Yes	Vibrator	*6K7, 6A8, 6K7, 6Q7, 6N6, 6X5	.....	7	465
880	64.50	7x9½x7½	8"	Yes	Yes	Vibrator	6D6, 6D6, 6A7, 85, 76, 76, 6A6, 84	.....	8	465
*Metal glass										
Champion Radio, 14553 Madison Ave., Lakewood, Ohio —										
500	\$43.50	9½x6½x6½	.....	Yes	No	Vibrator	6A7, 6D6, 75, 42, 84	.....	5.5	456
600	49.50	9½x6½x6½	.....	Yes	No	Vibrator	6D6, 6A7, 6D6, 75, 42, 84	.....	5.75	175
Continental Radio & Television Corp., 325 W. Huron St., Chicago, Ill.										
U6	\$39.95	.....	.....	.....	Yes	Vibrator	6D6, 6A7, 6K7, 75, 6F6, 84	.....	.....	175
Crosley Radio Corp., Cincinnati, Ohio—"Roamio"										
A-156	\$39.95	7½x8½x7½	.....	Yes	No	Vibrator	6A7, 6B7, 6D6, 42, 84	.....	6.3	262
A-166	54.50	7½x8½x7½	9½x5	Yes	Yes	Vibrator	6D6, 6A7, 6B7, 76, 41, 41	.....	6.2	262
Emerson Radio & Phonograph Mfg. Co., 111-8th Ave., New York City										
6A	\$44.95	6½x9½x6½	.....	Yes	No	Vibrator	78, 78, 6A7, 85, 41	.....	6.3	172.5
5A	49.95	8x8½x5½	.....	Yes	No	Vibrator	78, 78, 6A7, 85, 42	.....	6.7	172.5
Fada Radio & Electric Co., Long Island City, New York										
266	\$52.95	9½ Dia. x 8	10 Dia. x 5	Yes	Yes	Vibrator	78, 6A7, 6K7, 6Q7, 41, 84	.....	5.8	175
With separate 8-in. speaker, \$57.95; header speaker for Ford overhead installation, \$52.95; header speaker for General Motors overhead installation, \$54.95.										
Fairbanks-Morse Home Appliance, Inc., 2060 Northwestern Ave., Indianapolis, Ind.										
C-6	.....	.....	.....	Yes	No	Vibrator	6D6, 6A7, 6D6, 75, 42, 84	.....	6	177.5
64	.....	.....	.....	Yes	No	Vibrator	6D6, 6A7, 6D6, 75, 42, 84	.....	6	177.5
74	.....	.....	.....	Yes	Yes	Vibrator	6D6, 6A7, 6D6, 85, 41, 6A6, 84	.....	6	177.5
Federated Purchaser, 25 Park Place, New York City—"Aeritone"										
43-D	\$39.90	10x7x6½	.....	Yes	No	Vibrator	6A7, 6D6, 75, 41, 84	.....	4.5	175
42-D	33.95	5x6½x10½	.....	No	No	Vibrator	6A7, 6D6, 75, 41, 84	.....	4.0	175
44-D	47.70	7½x7x8½	.....	Yes	Yes	Vibrator	6K7, 6F6, 6D6, 6A7, 75, 84	.....	5.0	175
Galvin Mfg. Co., 847 W. Harrison St., Chicago, Ill.—"Motorola"										
50	\$39.95	6x10½x7	5"	Yes	No	Vibrator	78, 78, 6A7, 75, 41, 84	.....	6	262
60	49.95	6x10½x7	6"	Yes	Yes	Vibrator	78, 78, 6A7, 75, 6B5, 84	.....	6.5	262
80	67.50	6½x12x7½	8"	Yes	Yes	Vibrator	6K7, 6A8, 6H6, 6C6, 6N6, 6N6, 6Z4, 6K7	.....	8	262
"Golden Voice"	89.50	6½x12x7½	10"	Yes	Yes	Vibrator	6K7, 6K7, 6A8, 6H6, 6H6, 6F6, 6F6, 6Z4, 6C5, 6R7	.....	9	262
General Electric Co., Bridgeport, Conn.										
N60	\$49.95	8½x8½x7½	6½ Diam. x3½"	Yes	No	Inverter Rectifier	6K2, 6J7, 6K7, 6Q7, 6F6, 6X5	.....	7.5	175
Giffillan Bros., Inc., 1815 Venice Blvd., Los Angeles, Cal.										
N	.....	7x7x10½	5"	Yes	No	Vibrator	6F6, 84, 6K7, 6Q7, 6A8	.....	5	460
8X	.....	6½x7½x12	8"	Yes	Yes	Vibrator	6F6, 6F6, 6C5, 6R7, 84, 6A8, 6K7, 6K7	.....	5.5	262
Herbert W. Horn Co., 12th & Olive Sts., Los Angeles, Cal.—"Tiffany Tone"										
537	.....	7x7x10	.....	Yes	Optional	Vibrator	*84, 6F6G, 6A8G, 6K7G, 6Q7G	.....	4.5	462
538	.....	7x7x10	.....	Yes	Optional	Vibrator	* 6F6, 6X5, 6A8, 6K7, 6Q7	.....	4.5	462
639	.....	7x7x10	.....	Yes	Optional	Vibrator	* 6Q7, 6F6, 6X5, 6K7, 6A8, 6K7	.....	5.25	462
*Metal tubes optional.										
Howard Radio Co., 1731 Belmont Ave., Chicago, Ill.										
HA-6	\$44.95	9½x7x7	6½x2½x3	Yes	No	Vibrator	6D6, 6D6, 6L7, 76, 75, 42	.....	6	465
Karadio Corporation, 50-11th Ave. N. E., Minneapolis, Minn.										
65	\$39.50	.....	6"	Yes	No	Vibrator	42, 6B7, 77, 6E7, 84	.....	5.5	456
66	49.50	.....	6"	Yes	No	Vibrator	41, 41, 75, 77, 78, 6F7, 84	.....	6	456
88	64.50	.....	8"	Yes	Yes	Vibrator	6A8, 6Q7, 6C5, 6K7, 6K7, 6F6, 6F6, 6Z4	.....	6.5	262
Sheriff	54.50	.....	6"	Yes	No	Vibrator	41, 41, 75, 77, 78, 6F7, 84	.....	6	456
Lafayette Mfg. Co., 100-6th Ave., New York City—"Lafayette"										
JA1	\$16.95	6x11½x5	.....	No	No	.....	6A7, 6D6, 75, 41, 84	.....	5	456
JA2	19.95	6x11½x5	.....	No	No	.....	6A7, 6D6, 75, 41, 6D5, 84	.....	5	456
1D45	23.45	9½x7½x7½	.....	Yes	No	Vibrator	6A7, 6D6, 75, 41, 84, 6D6	.....	5	175
D46	25.25	9½x7½x7½	.....	Yes	Yes	Vibrator	6A7, 6D6, 75, 41, 84, 6D6	.....	5	175
B90	27.50	7x7x10	.....	Yes	No	Vibrator	6D6, 6C6, 6D6, 75, 41, 84	.....	5	175

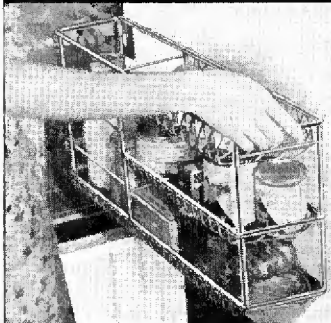
Continued on page 28

SALES DOUBLE

...As Women Discover SAV-A-STEP and SLID-A-TRAY



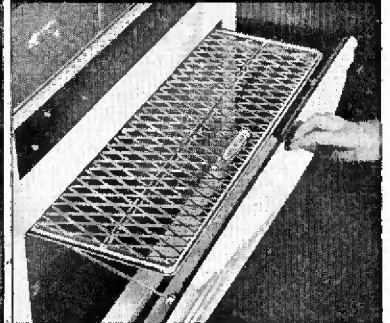
SAV-A-STEP swings on its own hinges—or snaps instantly onto door. Turns rear space into "front" space, giving 1/2 more easily-reached food room.



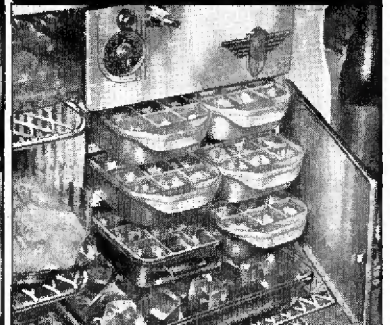
SAV-A-STEP lifts out easily with everything for a whole meal. Saves steps—saves current wasted by repeated opening of refrigerator door.



The hidden SLID-A-TRAY appears at a touch—holds almost a shelf-full of food at once on tip-proof diamond-grid shelving—frees hands for rearranging.



An abundance of ice cubes or frozen dessert is ready in a jiffy with this improved speed-freezer—the first with lighted airplane-dial cold control.



Two Stewart-Warner Scoops Head List of Hit Features That Are Smashing Sales Records for Dealers Everywhere

UP—up—up go dealer sales and profits wherever the new Stewart-Warner is displayed! The word's out everywhere that the hot line this year is Stewart-Warner. *Actual sales* the country over are already more than double those in the same period last year!

Why? Because Stewart-Warner gives you real improvements the housewife can see and understand and use—more of them than any other refrigerator so far introduced. There's SAV-A-STEP—the wonderful food rack that gives 1-3 more easy-to-reach food space than other refrigerators the same size. And SLID-A-TRAY—the bigger, sturdier, hidden rearranging shelf that appears at a touch. And the huge, improved speed-freezer with the first lighted airplane-dial freezing control. And many,

many others that make sense the minute the prospect sees them—without need of arguments or statistics.

Dealers who got aboard early are cheering over their refrigerator sales right now. But it's not too late to give *your* balance sheet a break. Let your Stewart-Warner distributor show you all the good news right now. Learn about the features—the *optional* 5-year protection plan—the amazing economy *facts* that make this refrigerator a hit with buyers. Then learn about the record freedom from service that lets you keep your profits after you make them—and the new finance plan that makes selling easier than ever.

STEWART-WARNER CORPORATION
CHICAGO, ILLINOIS

STEWART-WARNER

AUTO-RADIO SPECIFICATIONS (Continued from page 26)

Model (Name or Number)	Price (with tubes less inst'n)	Dimensions— Chassis	Speaker	Remote Control	Separate Speaker	Eliminator (Type)	Tubes Glass tubes—Light type Metal tubes—Bold type	Battery Drain (Amps.)	Inter- Freq. (KC)
Laurehk Radio Mfg. Co., Adrian, Mich.									
AM-6	\$59.00	10½x7x7	.....	Yes	No	Vibrator	6K7, 6A8, 6K7, 6F6, 6Q7, 6X5	6	175
Melburn Radio Mfg. Co., 2214 So. Hoover St., Los Angeles, Cal.									
50	\$16.95 Net	.....	5"	Yes	No	Vibrator	84, 76, 41, 6A7, 6B7, 6D6	5	465
Noblett Sparks Industries, Inc., Columbus, Ind.—"Arvin"									
18FW	\$39.95	8½x8½x6½	.....	Yes	*	Vibrator	78, 6A7, 78, 75, 41, 84	5½	170
28DM	49.50	8½x8½x6½	.....	Yes	*	Vibrator	78, 6A7, 78, 75, 42, 84	6½	170
33DM	54.50	8½x8½x6½	.....	Yes	*	Vibrator	6K7, 6A8, 6K7, 6Q7, 6F6, 6X5	6½	170
*Available with separate case speaker at \$5.35 extra.									
Peter Pan Radio Co., 1847 W. Adams St., Los Angeles, Calif.									
6	\$34.95	8½x8½x6½	5" and 6"	Yes	No	Vibrator	6K7, 6A8, 6K7, 6Q7, 6F6, 6X5	5.7	260
Philco Radio & Television Co., Philadelphia, Pa.									
816	\$39.95	.....	.....	Yes	No	Vibrator	78, 6A7, 78, 75, 41, 84	.....	260
817	49.95	.....	.....	Yes	No	Vibrator	78, 6A7, 78, 75, 41, 84	.....	260
818	59.95	.....	.....	Yes	†	Vibrator	78, 6A7, 78, 75, 41, 84	.....	260
818K	59.95	.....	.....	Yes	Yes	Vibrator	78, 6A7, 78, 75, 41, 84	.....	260
819	69.95	.....	.....	Yes	†	Vibrator	78, 6A7, 78, 75, 41, 41, 84	.....	260
819H	77.60	.....	.....	Yes	†	Vibrator	78, 6A7, 78, 75, 41, 41, 84	.....	260
Custom built sets also available. †One built in set and one overhead. †One dash and one overhead speaker.									
Pierce Airo, Inc., 510-6th Ave., New York City, N. Y.—"De Wald"									
605	.....	7½x8x7	.....	Yes	No	Vibrator	6D6, 6D6, 6A7, 75, 41, 84	6.25	175
606	.....	7½x8x7	.....	Yes	No	Vibrator	6D6, 6D6, 6A7, 75, 41, 84	6.25	175
607	.....	7½x8x7	.....	Yes	No	Vibrator	6D6, 6D6, 6A7, 75, 41, 84	6.25	175
517	.....	10½x6½x4½	.....	No	No	Vibrator	6A7, 6D6, 75, 41, OZ4	5.50	456
Pilot Radio Corp., 3706—36th St., Long Island City, N. Y.									
605*	.....	8½x7½x7	.....	Yes	No	Vibrator	6D6, 6D6, 6A7, 75, 41, 84	.....	175
*Also available with two tuning bands for broadcast and longwaves.									
RCA Mfg. Co., Inc., Camden, N. J.—"RCA-Victor"									
5M	\$39.95	10x7½x7½	6"	Yes	No*	Vibrator	6A8, 6B7, 6D6, 6K7, 42	6.3	.....
6M	49.95	10x7½x7½	6"	Yes	No*	Vibrator	85, 6A6, 6C5, 6D6, 6A8, 6K7	7.3	.....
6M2	54.95	10x7½x7½	8½x5	Yes	Yes	Vibrator	85, 6A6, 6C5, 6D6, 6A8, 6K7	7.3	.....
*Provision for extra speaker.									
Remler Co., Inc., 2101 Bryant St., San Francisco, Cal.									
36	\$59.50	7x7x11½	6"	Yes	No	Gene-Motor	6D6, 6A7, 6D6, 75, 76, 41	7	250
35	36.90	6½x7x10½	6"	Yes	No	Vibrator	6A7, 78, 78, 75, 41, 84	6	450
37	64.50	7x7x11½	6"	Yes	No	Gene-Motor	6K7, 6A8, 6K7, 6Q7, 6C5, 6F6	7	250
27	49.90	5½x6½x10	5"	No	No	Vibrator	6A7, 78, 6B7, 89, 1V, 84	4	450
Simplex Radio Co., Sandusky, Ohio									
TA	\$32.95	6½x6x8½	5x2½	Yes	Optional	Vibrator	6A7, 78, 6B7, 41	3½	175
Q	39.95	6½x6x8½	5x2½	Yes	Optional	Vibrator	6K7, 6A8, 6N6, OZ4, 75, 78	3½	175
Sparks-Withington Co., Jackson, Mich.—"Spartan"									
D-686	*	10x7½x6½	†5x8½ diam.	Yes	Yes	Vibrator	6K7, 6A8, 6K7, 6Q7, 6F6, 84	6	172.5
H-686	*	10x7½x6½	†2x9 diam.	Yes	Yes	Vibrator	6K7, 6A8, 6K7, 6Q7, 6F6, 84	6	172.5
S-676	*	10x7½x6½	.....	Yes	No	Vibrator	6K7, 6A8, 6K7, 6Q7, 6F6, 84	6	172.5
*Price range \$49.95 to \$55.00, sets not yet priced by model. †Drum. †Header.									
Trav-Ler Radio & Tel. Co., 1028 W. Van Buren St., Chicago, Ill.									
542	\$39.95	8½x6½x11½	5½x2x2½	Yes	*	Vibrator	6A7, 6D6, 75, 6B5, 84	5.8	456
642	44.95	8½x6½x12½	6½x2x3	Yes	*	Vibrator	6D6, 6D6, 6A7, 75, 6B5, 84	6.5	456
*Contained or separate.									
Troy Radio Manufacturing Co., 1142 S. Olive St., Los Angeles, Cal.									
68	\$34.50	10x7x7	.....	Yes	No	Vibrator	6A8, 6K7, 6Q7, 6F6, 84	4.75	465
United American Bosch Corp., N. Main St., Springfield, Mass.—"Skylark"									
536	\$39.95	9½x9½x7	6½" diam.	Yes	No	Vibrator	6A7, 78, 75, 42, 84	6.5	456
636	49.95	9½x9½x7	6½" diam.	Yes	No	Vibrator	77, 77, 78, 75, 42, 84	6.5	175
637	54.95	9½x9½x7	6½x6½x3½	Yes	Yes*	Vibrator	77, 77, 78, 75, 42, 84	6.5	175
736	59.95	8½x8½x6½	6½" diam.	Yes	No	Vibrator	6F5, 6F6, OZ4, 6K7, 6K7, 6A8, 6H6	6.5	175
737	64.95	8½x8½x6½	8½x8½x2½	Yes	Yes*	Vibrator	6F5, 6F6, OZ4, 6K7, 6K7, 6A8, 6H6	6.5	175
738	67.95	8½x8½x6½	9½x9½x5	Yes	Yes†	Vibrator	6F5, 6F6, OZ4, 6K7, 6K7, 6A8, 6H6	6.5	175
*Header speaker. †Bulkhead speaker. Twin speakers available for Models 736 and 737.									
United Motors Service, Inc., 3044 W. Grand Blvd., Detroit, Mich.—"Daleo"									
631	\$39.95	7½x7½x8½	6"	Yes	No	Vibrator	6A7, 6B7, 6D6, 6B5, 84	6.5	262
632	49.95	7½x7½x8½	6"	Yes	No	Vibrator	6A7, 6B7, 6D6, 6D6, 6B5, 84	7	212
633	32.95	7½x7½x8½	5"	Yes	Yes	Vibrator	6A7, 6B7, 6D6, 6D6, 6B5, 84	7	252
634	59.95	7½x7½x8½	8"	Yes	Yes	Vibrator	6A7, 6D6, 6D6, 41, 41, 85	7.25	262
635	69.95	7½x7½x8½	5" & 8"	Yes	†	Vibrator	6A7, 6D6, 6D6, 6F6, 6F6, 85	8.2	262
†2 Speakers, Head and Dash.									
Warwick Mfg. Co., 1700 W. Washington Blvd., Chicago, Ill.									
665	\$54.50	12½x5x6	.....	Yes	Yes	Vibrator	.....	6	175
660	49.50	9½x8x7½	.....	Yes	No	Vibrator	78, 78, 6A7, 75, 41, 84	6	175
560	34.50	.....	.....	Yes	No	Vibrator	6A7, 6D6, 75, 41, 84	3.6	456
550	19.95	12½x5x6	.....	No	No	Vibrator	6A7, 6D6, 75, 41, 84	5.6	456
Westinghouse Electric Supply Co., 150 Varick St., N. Y. City—(Merchandising Headquarters, Westinghouse Radio)									
WR-502	\$49.95	9½" diam. x 7½"	.....	Yes	No	Vibrator	77, 77, 78, 75, 42, 84	6	175
WR-503	59.95	8½x8½x6½	.....	Yes	No	Vibrator	6J7, 6A8, 6K7, 6H6, 6F5, 6F6, OZ4	6	175
Zenith Radio Corp., 3620 Iron St., Chicago, Ill.									
53190	\$29.95	7x9x7	5"	Yes	No	Vibrator	6A7, 6D6, 75, 41, 6Z4, 84	5.6	456
63192	39.95	7x9x6½	6"	Yes	No	Vibrator	6K7, 6A8, 6K7, 6Q7, 6F6, 6X5	6	252½
63191	49.95	7x9x6½	.....	Yes	Yes	Vibrator	6K7, 6A8, 6K7, 6Q7, 6F6, 6X5	6.5	252½
63190	49.95	7x9x6½	6"	Yes	No	Vibrator	6K7, 6K7, 6A8, 6Q7, 6F6, 6X5	6.5	252½
73191	69.95	7x9x6½	.....	Yes	Yes	Vibrator	6K7, 6Q2, 6A8, 6K7, 6C5, 6N7G, 6X5	8.5	252½
Zephyr Radio Company, 11702 Livernois Ave., Detroit, Mich.									
TA	\$40.75	8½x6x6½	5"	Yes	No	Vibrator	78, 6A7, 6B7, 41, V7	3½	456

MAKE PROFITS that "STICK"

Tie-In Your Selling Effort NOW with Today's Fastest Moving Line

Motorola

America's Finest AUTO RADIO

Alert Dealers and Service Men know Motorola to be the fastest selling, most profitable line they handle. Here are a few of the many reasons why: Outstanding Listening Quality: Trouble-Free Performance: Unrivalled Popular Acceptance: Powerful National and Point-of-Purchase Advertising: New Selling Features

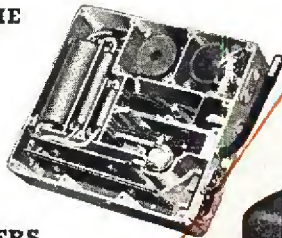
MOTOROLA IS AGAIN A YEAR AHEAD

MATCHES THE DASH OF ALL CARS

Fits Perfectly and Harmoniously . . . Overhead Ear-Level Speakers Where Required.

ONLY MOTOROLA HAS THE "MAGIC ELIMINODE"

Newly Improved . . . This Patented Feature Guarantees Motor-Noise-Free Reception . . . Positively NO SPARK PLUG SUPPRESSORS.



MATCHED TWIN SPEAKERS

Give even distribution of sound to passengers in both rear and front seats. For combined Under-Cowl and Overhead Installation—or else Combined Under-Cowl and Rear Seat Installation.

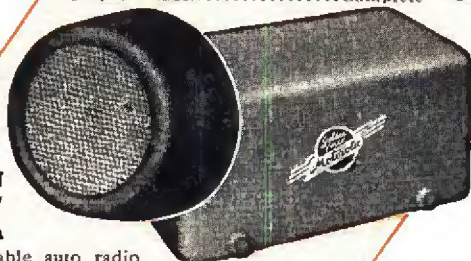
ADJUSTABLE ANTENNA SYSTEM

"Series-Fed" Antenna System—Adjustable for Peak Performance Using Under-Car or Roof Aerial.

Metal and Double Sealed Metal-Clad Tubes. Perfected Automatic Volume Control. Full Variable Tone Control. Uses two 6-N-6 "Booster" High Power Output Tubes.....Complete

"GOLDEN VOICE" Motorola

The most remarkable auto radio ever built. Amplified Delay (not quench) Automatic Volume Control. Full Variable Tone Control. Sensitivity Control. Breath-taking life-like radio reception.....Complete



\$89.50

10 All-Metal Tubes
10" "Golden Voice" Speaker

MODEL "50" 6 TUBES

Big Value Single Unit. Full Dynamic Built-in Speaker. 3-gang Tuning Condenser. Automatic Volume Control.

Complete **\$39.95**

Model "60" 6 Tubes

6" External Speaker

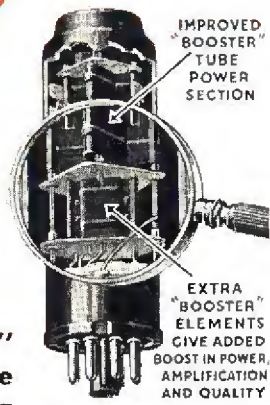
Supreme performance at a popular price. Uses 6-B-5 "Booster" High Power Output Tube, 6" Full Dynamic Speaker, Automatic Volume Control, Tone Control.....Complete. With Optional 8" Speaker, List \$54.95

\$49.95

Model "80" 8 Tubes

8" External Speaker

\$67.50



New "Booster" Tubes Give Super Power

A basic development embodying a new principle in circuit design that boosts power, amplification and quality . . . Plenty of volume to fill car at highest speeds . . . Unmatchable radio reception with Studio Fidelity of Tone.

Installs on "Jiffy" Mounting Bracket Compact . . . Installs Over Steering Post—Easier Than Ever Before . . . Plug-in Chassis.

ASK YOUR COMMUNITY MOTOROLA DISTRIBUTOR FOR DETAILS
GALVIN MFG. CORPORATION • CHICAGO

RCA TELEVISION TESTS DUE SOON—WILL NOT OBSOLETE PRESENT RADIO RECEIVERS

Experimental Transmissions from Empire State Tower, New York, Start This Spring—But Commercial Television is Yet Afar Off—Technical Developments

By Ray V. Sutcliffe

SOMETIME IN JUNE OR JULY there will be inaugurated, atop the Empire State Building, New York City, another phase in television research. Entirely experimental in nature, the fact that this transmission of images will be conducted under the auspices of the Radio Corporation of America may be headlined by many newspapers as signaling the advent of practical television—and again may cause the public to question the advisability of purchasing that new audio receiver, "which will soon be obsolete by this new invention."

These two conclusions are definitely erroneous, on many grounds. In this premise we are supported by the best informed authorities in the industry including RCA itself—see accompanying statement to the trade from the president of the Corporation.

It is the purpose of this article to again review the reasons why commercial television is not just "around the corner" or even down the next street, in order that the radio dealer may prepare himself in ample time to checkmate any adverse consumer reactions and to do business as usual.

The Truth of the Matter

Here is the truth of the situation: In the first place neither RCA nor any other responsible company engaged in building television transmitters is convinced that they have perfected such a device. When it is realized that it took the Radio Corporation over a year to build its one transmitter which goes into operation this June in New

York, and that it will probably take another year to incorporate the necessary changes in transmitters and receivers, from the lessons to be learned as a result of this first experiment in transmitting, via air, to a number of receivers, it is readily realized that the completion of the first commercial experimental step is a matter of many months. For this first experiment approximately 25 receivers will be placed in the hands of engineers within a radius of 25 miles from the Empire State tower.

But this is the beginning only of a long journey which must be completed before television is ready for the consumer and the dealer. Assuming that the engineering problems of transmission and reception are entirely solved, and that an image can be laid down which exactly meets the requirements of the consumer, take a look at the many other factors involved:

1. The establishment of similar transmitting stations in other large cities throughout the United States.
2. The establishment of other transmitting stations in smaller cities.
3. The interconnecting of these stations with costly "coaxial" wire conductors or the development of a radio-relay system.
4. Obtaining the approval of the Federal Communication Commission for the necessary commercial licenses.
5. Manufacturing television receivers at a price that will insure their purchase by the consumer and the actual distribution and retailing of enough of these sets to make commercial television worth while.

6. Securing the necessary investment capital to finance this gigantic undertaking throughout the country.

7. Obtaining suitable talent and enough talent to insure at least six hours a day unduplicated service.

We quote Powel Crosley, Jr., on this point. Addressing 700 industrial executives at Cincinnati recently Mr. Crosley said:

"I doubt that enough pictorial news can be obtained to hold the interest of the public. They'll want to see drama or pictures similar to those in a motion picture theatre. To make one of these television presentations will take months and cost many thousands of dollars."

8. Selling sponsors on an expensive medium to reach a limited (at first) audience.

Exposing a Fallacy

But granting that these bunkers, and others, are surmounted, there remains the fallacy that television will make present-day audio receivers useless. Emphatically, it will not!

It appears highly probable that television, when it comes, will function as an adjunct to the present radio set or may be had (optional) in some cabinet assembly with a synchronized (on different wave length) sound amplifier.

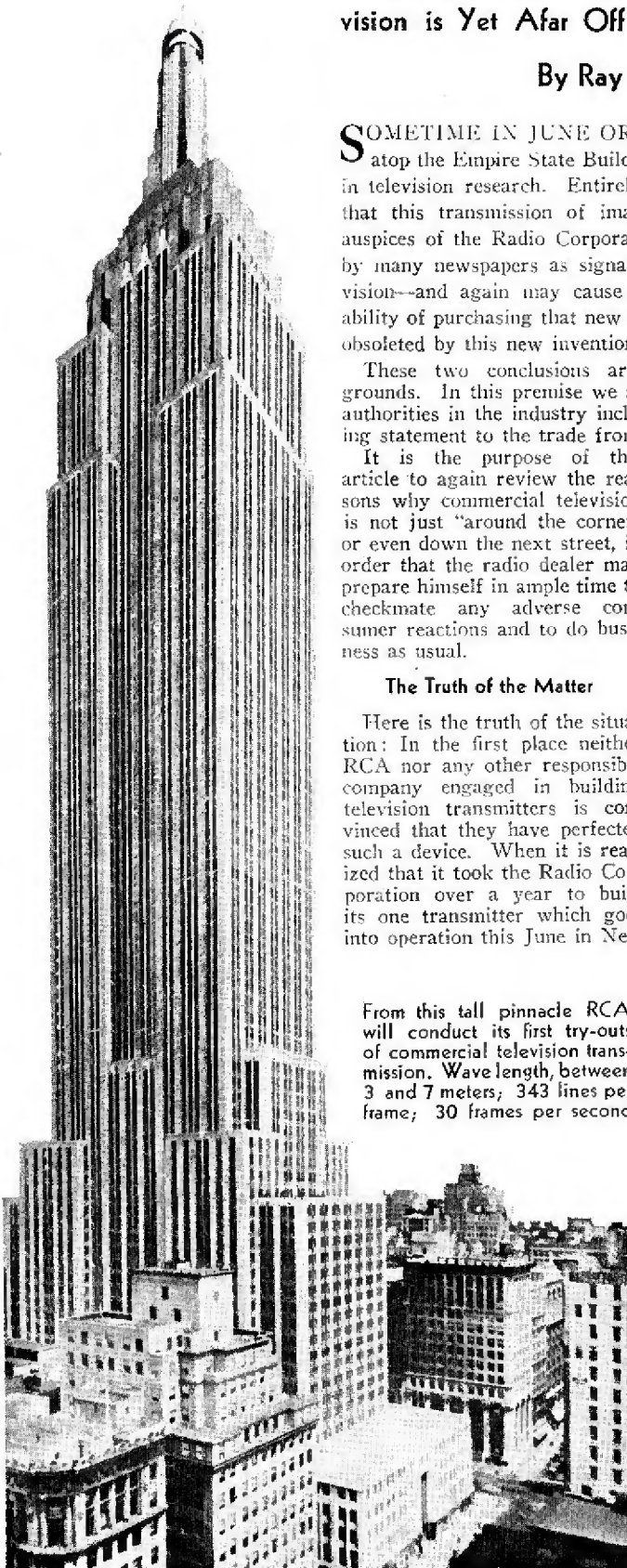
All present indications are that the synchronized audio signals will be transmitted on short wave (probably between 3½ and 7 meters) but many of today's better receivers have a band that covers this—or this band could be added readily. Furthermore, the audio signal quite likely will be transmitted at the same time on a longwave now tunable by the sets in use.

And so for the last time—we hope—we say: television is not almost here and, when it comes, it will NOT obsolete audio receivers which then may be in use!

All this does not mean that television is a hopeless mirage. Not at all! All these problems, here enumerated, are susceptible of solution. They will be solved. But not this year or next.

The introduction of television will be a gradual and a healthy process, extending over a period of years before its use throughout the United States is fully established.

From this tall pinnacle RCA will conduct its first try-outs of commercial television transmission. Wave length, between 3 and 7 meters; 343 lines per frame; 30 frames per second





The Receivers Will Be Located Within This Vision Radius

RCA AND TELEVISION

A Statement To The Trade

By David Sarnoff, President
Radio Corporation of America

RCA is now engaged in a three-point plan to take television out of the laboratory for its first comprehensive field tests. The steps of this plan are to establish a modern television transmitting station, to manufacture a limited number of receivers for placement at strategic points of observation and to develop an experimental program service with the necessary studio technique to determine the most acceptable form of television programs.

Such a broad program of development, which will involve an investment of about \$1,000,000, is necessary because television bears no relation to present day sound broadcasting and requires the creation of a complete system.

Beginning about the first of July we will broadcast visual signals from the tower of the Empire State Building, New York. Just how long this experimental development period will take is impossible to determine but, obviously, it will be a matter of many months.

RCA, therefore, must emphasize that this experimental test does not mean that a regular television service is at hand. This represents merely an essential pioneering stage to estimate and define its possibilities under actual working conditions.

The transmitter will be connected by radio with the television studio, now practically complete in the NBC plant, Radio City, New York.

It will be necessary to coordinate a number of important elements before television on a regular basis of service can be established. For example, it will have to be determined how far the transmitter can send good

television pictures; also with what consistency and regularity pictures may be transmitted with the system in its present state of development. We must investigate and define the possibilities of the television camera for indoor and outdoor pick-up.

These are the essential pioneering stages in the development of an art in which considerable expenditures must be made for research before returns can be expected. As the work goes on, it may be necessary to return to the laboratory, from time to time, to seek the solution to practical problems encountered in the field.

While television promises to supplement the present service of broadcasting by adding sight to sound, it will not supplant nor diminish the importance and usefulness of broadcasting by sound.

Coaxial Cable Being Laid

PHILADELPHIA—The construction of the first long-distance coaxial cable, between this city and New York, started last month. Authorized by FCC in February, the A. T. & T. and the New York Bell Telephone

Company must make this wide band conductor available for the experimental transmission of television signals "to those radio companies interested."

With the aid of repeaters, at ten mile intervals, the full band of 1,000,000 cycles will be available for the exacting requirements of the television impulses.

Farnsworth Power Tube

NEW YORK—Capable of tremendous current amplification in a fraction of a second, the new power tube, developed by Philo T. Farnsworth, may play a big part in the progress of television. "This is especially likely because of this tube's virtually noiseless amplification," states Mr. Farnsworth.

Keep Experimental

WASHINGTON, April 4—Chief Engineer T. A. M. Craven, in a report submitted to the Federal Communications Commission here today, recommended that television be retained on its present experimental wave length assignment basis. Craven suggested a broad investigation to chart a definite, long-time radio policy—necessary by swift technical progress and the effect of television on the broadcasting, existing receiver manufacturing, newspaper and motion picture industries.

The increasing use of "all wave" sets was said to have necessitated a thorough study of high frequencies. This study would enable the commission to act more intelligently on applications to broadcast on these frequencies.

TELEVISION ABROAD

RUSSIA—A Soviet plant has just completed the first lot of Russian television sets — for amateurs. Transmission tests from Moscow were quite satisfactory, it is claimed. Five hundred complete sets have been assembled.

BERLIN—Germany has opened to the public the first long-distance television-telephone service in the world. The line, linking Berlin and Leipzig, was inaugurated by the German Postal Ministry in connection with the opening of the Leipzig Spring Fair.

Recognizable images, somewhat like those of early motion pictures, appeared on an 8-inch square surface during conversation over the cable.

LONDON—B.B.C. hopes that its first station will provide a picture to residents of an area roughly 2,000 square miles; that is, over a circular area 50 miles in diameter.

FRANCE—The long expected Paris television transmitter, which should have been in operation months ago, has been demonstrated to the local press and will start actual operation the latter part of this month. Mounted atop of the Eiffel Tower, it sends on a wavelength of eight meters and radiates an image definition of 180 lines by 25 frames per second.

BERLIN—German postal officials, Feb. 15, transmitted television pictures, via cable, over 250 miles. First time in history, 'tis claimed. Reception satisfactory with 180 lines, 25 changes a second.

AMATEURS TO THE RESCUE

How Licensed Hams Saved Communication Situation During Flood Emergency

Hats off to Dr. Joseph A. Vancheri and an army of other intelligent, emergency-trained sw amateurs who functioned with masterly precision during the flood crises in Pennsylvania and Connecticut! Because W8BWH, Punxsutawney, was strategically located and because Dr. Vancheri is an excellent operator and owns a powerful station, this plant functioned as the clearing house for all amateur messages and calls for help in the Johnstown area.

This voluntary non-commercial service was duplicated as other emergencies arose in the Pittsburgh district, throughout the Ohio Valley and in the New England states.

The story of Hartford, Conn., is a radio drama unparalleled in the annals of the American Radio Relay League. Here the flood waters engulfed thousands of dwellings right at the front door of national headquarters. And here all other communication systems were almost completely inoperative.

When telephone communication failed in Hartford the only commercial lines available were two maintained by the telegraph company—entirely inadequate to handle the situation. At once the central headquarters of the ARRL, West Hartford, were set up as communication headquarters for the entire city. All traffic was put over by amateur radio, on a five-meter network.

Godsend

Here the portability of the small five-meter set was a godsend. Mobile transmission and receiving units were assigned to all key locations. All communications for the Red Cross and various state departments and governmental agencies and other emergency traffic cleared through the office of ARRL. To this heavy burden was later added all the traffic of the public utilities, who were struggling to restore electric power service, their own communication system having failed.

In addition to this local service, more powerful transmitters operating on 160 and 80 meters, both by telephone and code, maintained communication with Boston and New York City, so that a combined long distance and local network of stations was maintained constantly throughout the required time.

Amateurs have made the news before this in connection with disasters but this latest example is the most far-reaching, not only because of the magnitude of the flood, but also because the amateurs were better prepared and were equipped with modern and highly efficient apparatus.

TEXAS is enjoying a real business boom, John J. Hope, credit manager for Crosley, reported on his recent return from a two weeks' trip through the state.

Flood Damage, \$1,300,000

Compilations by "Radio Retailing," based on field reports from McGraw-Hill industrial engineers who personally have surveyed the flood areas, would indicate that the cost of replacing permanently damaged radio sets, dealer stocks, parts and testing equipment will run about \$1,300,000. Of this sum, \$450,000 should be spent by the consumer for new receivers.

Crosley Contracts for New Continental Speakers

CINCINNATI — Crosley Radio Corp. will use in at least one of its new spring radios the recently announced permanent magnet speaker manufactured by Continental Motors Corp., Detroit, Mich.

This is but one instance of the trade acceptance of this new type of speaker which bears all the ear marks of becoming a definite trend in the industry.

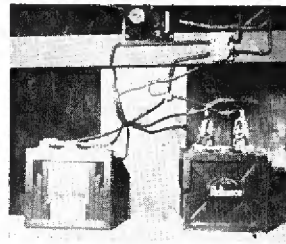
Bowe Moved to St. Louis

ST. LOUIS—The appointment of B. C. Bowe as GE district manager of radio sales, with headquarters in St. Louis, Mo., is announced by manager R. J. Cordiner.

When the radio sales section of GE was formed at Bridgeport in 1930, Mr. Bowe took a prominent part in its activities and has been associated with the radio field ever since.



Cause



and Effect



The electric lamp also works from same batteries. Note large wiring used (middle picture). The meter denotes a 10 amp. charging rate

New Headquarters

CHICAGO — Standard Transformer Corp. is "at home" in its new offices and enlarged factory facilities at 850 Blackhawk St. Quite a gathering of radio notables assembled there last month to wish Jerome Kahn and Stancor good luck.

"No Shortage of P.M. Magnets"



Says D. A. Andrews (left), manager Continental Motors Corp., Detroit, to inquiring set maker. On last month's visit to this plant our own aging eyes noted 16,000 "Permo-Flux" units ready for use in new speakers. Chief engineer Bob Serge (right) approves new set model about to be "P.M." equipped



Sylvania Plant Little Damaged by Flood

EMPORIUM, PA. — The Emporium plant of Hygrade Sylvania Corp. suffered somewhat through flooding of its basement. Quick work of employees saved valuable stock and records with very little loss. Production facilities and tube-making machinery was untouched by flood water and production was resumed as usual after a few days' delay.

Emporium was cut off from communication with the outside world from Mar. 17 to 20. Amateur radio operators, members of the Sylvania engineering department, did valiant service in keeping vital communication open for the company and in providing individuals with service via "ham" stations W80YK and W80YG.

Richardson Resigns as GSM of Crosley

CINCINNATI—Howard E. Richardson, for the past two and a half years general sales manager of the Crosley Radio Corp., announced his resignation, effective Mar. 31.

Mr. Richardson states that this move is made with a view to returning to the distributing field in which he has had many years of experience with some of the nation's leading lines, including radios, refrigerators and washing machines.

GE Sales and Service Branch

NEW YORK—GE has established a factory sales and service branch at 585 Hudson St. Direction of sales will be under Earle Poorman, district manager of Appliance sales, and D. W. May, district radio sales manager, who will continue in their present location at 570 Lexington Ave., New York.

This arrangement is predicated on a recognition of the extraordinary competitive conditions prevailing in metropolitan New York, and the need of extraordinary measures to meet them. It is in no way indicative of a nationwide policy.

Cincinnati Show

CINCINNATI — Fourth Annual Electrical Progress Exposition closed here March 28 in a blaze of glory. More people visited Union Central Annex than any previous event of similar nature ever held in Ohio Valley.

Top promotional feature was a 24-page special supplement of *Times-Star*. If Cincinnati folk are not now radio and refrigerator conscious they never will be.

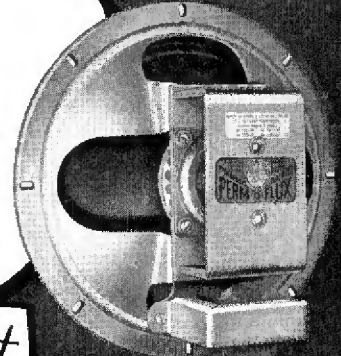
Thank You Gentlemen!

OUT ONLY 60 DAYS!

Already
A SENSATION!

PERM-O-FLUX

PERMANENT
Dynamic  MAGNET
Speaker



A New RADIO Engineering Development

by *Continental Motors*

THE radio industry has given PERM-O-FLUX instant recognition. The announcement of a speaker using a permanent magnet which is efficient and permanent enough to equal or better electro-dynamic speakers of equal size has proved PERM-O-FLUX to be a distinct sensation. Employing a new magnetic material developed, perfected and manufactured in the laboratories of Continental Motors Corporation, PERM-O-FLUX has a source of magnetic energy that is the most



powerful yet known to metallurgical science for radio speaker application.

PERM-O-FLUX also offers a new type of voice coil suspension. Suspended at both ends, the voice coil is held absolutely parallel, eliminating any possibility of rubbing in operation, a patented Continental feature.

Continental PERM-O-FLUX speakers offer true reproduction, maximum efficiency and superior tone qualities in all ranges. Completely dust-proofed, PERM-O-FLUX speakers simplify installation difficulties. In automobile installations, shielding of the speaker is unnecessary.

PERM-O-FLUX speakers have a permanent flux density in the gap requiring no outside energy for field excitation, thereby reducing battery drain.

Now available in many models and sizes. Complete literature furnished on request.

35,000 MAGNETS—This unretouched photograph shows a corner in the magnet department of PERM-O-FLUX Division of Continental Motors Corporation, at their Detroit Plant. In this view are 35,000 PERM-O-FLUX magnets undergoing final inspection.

Continental Motors Corporation

Radio Speaker Division—10801 EAST JEFFERSON—DETROIT, MICHIGAN

FIFTEEN CONFIDENCE BUILDERS

"As a Matter of Fact" Film Talk Highlights
Sales Through Service and "Check Up" Campaign

Since its release, Feb. 24, over 600 jobbers and their salesmen and 16,000 dealers and servicemen have seen, and heard, RCA's "AudiVision" scenario, "As a Matter of Fact." Produced as the lead interest-creator for RCA Victor's Check Up drive, this strip of film stills, with synchronized sound, not only has persuaded hundreds of dealers to get behind this campaign but has educated hundreds of servicemen in the finer points of conduct and follow-through salesmanship in the customer's home.

Here are the fifteen things that serviceman Eddie does to gain the confidence of Mrs. Marshall, thus paving the way for tube, parts and maybe a new set sale later on:

1. Calls up beforehand
2. Takes right tubes
3. Brushes up, at shop, on likely troubles of type of set she owns
4. Arrives on time
5. Explains the why of service charges
6. Cleans receiver cabinet
7. Displays testing equipment
8. Tells why certain repairs must be made in shop
9. Refers to many other sets serviced
10. Compliments her on her choice of set
11. Lets owner see the tube test
12. Doesn't alter meter during comparisons
13. Proves that the new replacements never have been used
14. Reviews diagnosis and work done
15. Arranges for call-back within two weeks

But serviceman Eddie doesn't call it a day at this point. Before he leaves he asks Mrs. Marshall, "Have you heard any of the new 1936 models?" and closes with the suggestion that she stop at the store sometime, no obligation, and see and hear for herself just how good the new sets are.

Eighty prints of this film have been made and over 25,000 copies of its accompanying booklet, "You are the Chairman," distributed.

Radio and Electrical Unions Consolidate

BUFFALO—A single union, to be known as the Electrical and Radio Workers of America, has been formed through the consolidation of the Electrical and Radio Workers' union and the National Radio and Allied Trades. John B. Carey, of Philadelphia, is president.

It is said that the new union represents about 32,000 active members employed by the large radio, refrigerator and electric appliance firms.

IRE Convention Cleveland, May 11-13

The Eleventh Annual Convention of the Institute of Radio Engineers will be held at the Hotel Statler, Cleveland, Ohio, May 11, 12 and 13. Expected attendance, 700; exhibitors, 40; feature, trip through Nela Park.

Clarence Place with Goat

BROOKLYN, N. Y.—Clarence B. Place is now with Goat Radio Tube Parts, Inc., sales department. He was formerly with International Resistance and has been active in radio for the past ten years. Will handle sale of tube parts to receiving tube makers and manufacturers of electronic devices.

Radolek's New Lines

CHICAGO — The Radolek Company, 601 W. Randolph St., announces that its new line of amplifiers and public-address systems is ready for distribution. It is said that this equipment contains many new features not heretofore found in apparatus of a similar type.



Parker H. Ericksen

Ericksen Heads F-M Radio Sales Division

INDIANAPOLIS—Parker H. Ericksen has been appointed sales manager of the radio division of Fairbanks, Morse & Co., with headquarters in this city.

Commenting on this move, general sales manager W. Paul Jones states, "Mr. Ericksen's experience in the radio field will strengthen our plans for the development of our radio activities."

Mr. Ericksen goes to F-M from the Zenith Radio Corp., where he was promotion and advertising manager for a number of years. Previously he was associated with an agency and handled the advertising of an eastern radio manufacturer.

T. J. Manion, Sales Mgr. for Corona, Chicago

CHICAGO—T. J. Manion is now general sales manager for Corona Radio & Tel. Corp. Previous to joining the Corona staff he was sales manager for Echophone. Manion brings to his present connection 16 years' experience in radio and appliance merchandising, states president V. A. Kamin.

Confab Extraordinary Held by Schneiderhahn

DES MOINES—Al Schneiderhahn and his henchmen pulled another gala one-day dealer convention from their bag of tricks here on Saint Patrick's Day. Iowa's Governor and the Mayor of Des Moines honored his assemblage of 500 dealers and their wives with their personal presence. Al's five tent circus was in charge of the following ringmasters:

R. I. Petrie, general sales manager for Leonard refrigerators; E. A. Tracey, general sales manager for Zenith radios; S. E. Crofts, district manager for Superflex oil burning refrigerators; A. W. Altorfer, president Altorfer Bros. and C. C. "Bud" Mathews, general sales manager for Ken Rad Corporation.

Chief Emerson Engineer

Dorman D. Israel is now chief radio engineer for the Emerson Radio & Phonograph Corp. Mr. Israel enjoys a reputation of high standing in



Dorman D. Israel

the industry and has had many years of experience in aggressive research and development work.

Prior to his appointment with Emerson, Mr. Israel was, for many years, top engineer with Crosley. He is a member of the IRE, active on many committees and a lecturer of note.

Flechtheim Expands

NEW YORK—Increased business has necessitated the removal of the A. M. Flechtheim & Co., condenser manufacturers, to larger offices and factory at 692 Broadway.

Angus J. Walker, formerly with the Wireless Specialty Apparatus Co. and the Dubilier Condenser Corporation, is in charge of all engineering and production.

Substantial reductions in list prices of round-can oil-filled transmitting condensers are announced by Aerovox Corporation, Brooklyn, N. Y.

"Boy, I'm Tellin' You, It Works!"



Photo courtesy AudiVision

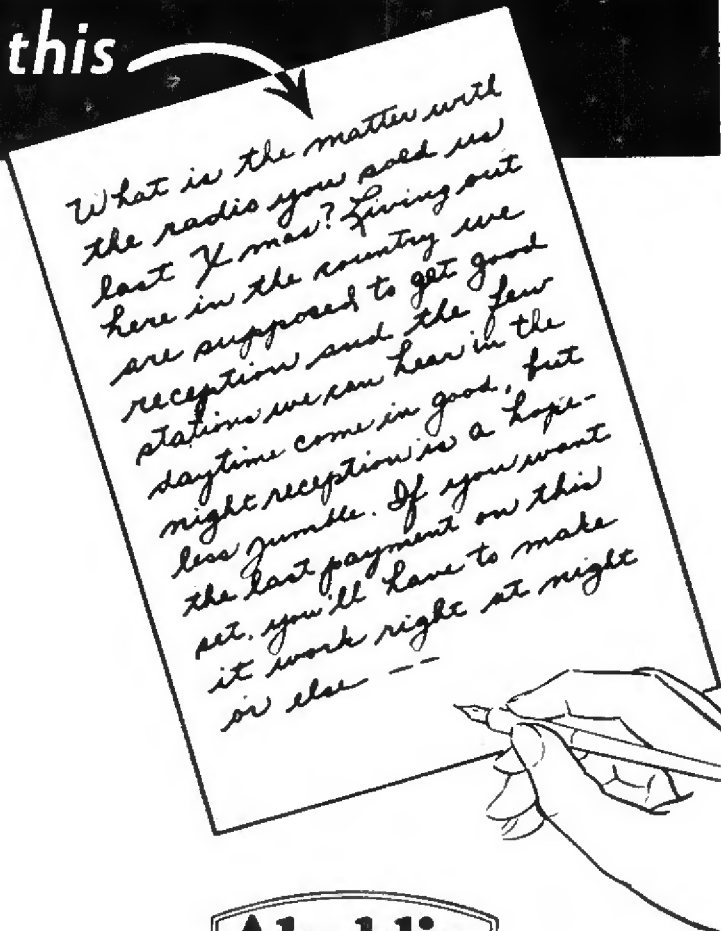
Scene from RCA film talk promoting sales and service "check-up" campaign

At Last! YOU can avoid complaints like this

CONSUMER preference is based on performance. Essential to continued preference for any make of receiver is adequate selectivity and sensitivity. Those receivers, both for homes and in autos, which use Aladdin Polyiron i-f or r-f transformers are building consumer preference for the finer performance made possible by Polyiron.

It is essential that coils having Polyiron cores be built by the men who have pioneered this development and who understand the character of Polyiron. Genuine Polyiron components are made exclusively by Aladdin Radio Industries, thus assuring uniformly high quality which could not be maintained if every manufacturer with coil winding apparatus were permitted the unrestricted use of Aladdin Polyiron.

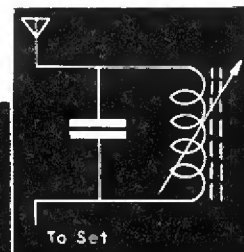
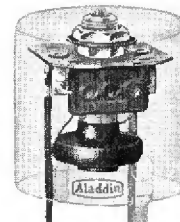
These devices are manufactured under one or more of the following U. S. Letters Patents: 1887380, 1940228, 1978568, 1978599, 1978600, 1982689, 1982690, 1997453, 2002500, 2005203, 2018626, 2028534, 2032580, 2032914, 2035439. Other patents pending.



Polyiron Wave Trap

An i-f rejection wave trap, permeability tuned from 440 to 480 kc, offers permanent relief from commercial interference on these popular i-f channels. Type R4561, Aladdin's new wave trap, is tuned by adjustment of its Polyiron core
Permeability tuning!

Ask your manufacturer to include this item if you are troubled by commercial QRM. Also available from Aladdin jobbers. . . . List \$2.50.



Aladdin

Aladdin Radio Industries, Inc. 466 West Superior Street, Chicago, Illinois

Licencee of Johnson Laboratories, Inc.

Am-Bosch Out With New Car-Radio Sales Plan

SPRINGFIELD, MASS.—An ingenious selling plan, "the answer to the car-radio dealer's prayer," is announced by American-Bosch for its "Skylark" auto sets. The retailer is supplied with a simple kit which displays an assortment of custom panels for practically any car on the road. Colorful and attractive, it is bound to cause the car owner to seek further information.

It is designed for use in the window, store or out front. Has storage space for additional panels. With metal easel and including seven panels, the charge, to cover cost of panels only, is \$9.80.

A complete assortment of selling material is the second value offered. This kit is packed with streamers, banners, sales folders and other displays. Includes also a metal display stand for showing the actual car receivers. This kit is offered at the below cost price of \$3.85.



These panels will take care of 88 per cent of the new cars, states Roy Davey, radio sales manager for American-Bosch

Arvin Signs Watkins

OAKLAND, CAL.—Ed. N. Watkins, owner of the Electric Supply Co., has just completed arrangements to distribute Arvin car radios in northern California.

Mr. and Mrs. Watkins recently returned from a six weeks' trip to Honolulu. Report a surprising amount of activity in auto-radio on "the Islands."

Openshaw With Halson

NEW YORK—Martin Openshaw, well known in the radio export field, has joined the Halson Radio Mfg. Corp. as export manager. "Significant of our expanding business," states the president of this concern.

CHICAGO—Brunns & Collins, 2540 Cottage Grove Avenue, has been appointed distributors for American-Bosch radios in this city. Will distribute both CentrOmatic home radios and Skylark car sets.



FEATURE ARTICLES in the current issues of these three nationally read magazines will be a big factor in stimulating the demand for "swing" records

SWING MUSIC SWEEPS COUNTRY

VOGUE, HARPERS, ESQUIRE, in Feature Articles Help Popularize Recent Recordings—How You Can Cash In on This Wonderful Free Publicity

YOU can speed the tempo of your popular record business by paying attention right now to "swing." Everybody's listening to it, critics are trying to define it, and disc addicts throughout the country are snatching up all the latest "swing" records, thrilling to Benny Goodman's, Teddy Wilson's, Red Norvo's, Fats Waller's, or Duke Ellington's ideas as to how the music should go 'round and around. "Swing" music is all the rage. If you don't know what it's all about see the featured articles in the April issues of *Esquire*, *Harper's* and *Vogue-Vanity Fair*. "Swing" means records sales. Everywhere "swing" is discussed turntables are twirling incessantly these days.

"Swing," of course, is simply "hot" jazz. Most of us have appreciated its finer points for the past ten years. But the record-buying public preferred, first, symphonic Whiteman; then, crooning Crosby and Vallee; and, in order, smooth, insinuating Lombardo, tricky, sophisticated Eddy Duchin, and polished Ray Noble. Only recently have recordings of "jam" sessions and "breakdown" stomps proved commercially exciting. The lads organizing "Hot Clubs" throughout the land, and the national publicity given "swing" music by the newspapers, and now the class magazines, have built up a fad of the first water. Now is the time to make your record counter "swing" headquarters.

How to Cash In

Grab a couple of copies of the magazines mentioned above and make a window display of the articles here illustrated. Have a page or two blown up in large, easily read photostats, and throw in some "swing" records featur-

ing the musicians mentioned in the articles. Run ribbons from the names of titles and artists on the magazine page to the records. Put a combination or two in the background. Run some small ads in your local newspapers. Like these:

READ THE ARTICLES ON "SWING" MUSIC The Latest Craze in April

Harper's—Esquire—Vogue Then come to us and hear the records mentioned by the authors.

HEADQUARTERS for SWING DISCS What do you know about GOODMAN? WALLER? HOT LICKS? TEAGARDENS?

See the articles on jazz in April *Harper's*, *Esquire* and *Vogue*. We have the records mentioned.

All the companies are "swing" conscious. Recent releases have been raved over by "swing" critics. Go to town with these:

ISE A-MUGGIN' Paul Whiteman presenting the Teagarden Boys and Trumbauer Swing Band. *Victor 25273*.

MAD HOUSE and THE DEVIL AND THE DEEP BLUE SEA The old master Benny Goodman and his Orchestra. *Victor 25268*.

MY BLUE HEAVEN and STOMP IT OFF A marvelous vocal refrain in Walter Donaldson's classic. Jimmie Lunceford and his Orchestra. *Decca 712*.

DECCA STOMP and GRAMERCY SQUARE Xylophone playing that will "send" you. Red Norvo and his Swing Sextette. *Decca 691*.

SWINGIN' ON THE FAMOUS DOOR and FAREWELL BLUES Right from the Inner Sanctum, so to speak, of "swing." The Delta Four. *Decca 737*.

BLUE and BUBBLING OVER The greatest "swing" pianist, Earl Hines. *Decca 714*.

I FEEL LIKE A FEATHER IN THE BREEZE and BREAKIN' IN A NEW PAIR OF SHOES Teddy Wilson swingin' the ivories. *Brunswick 7599*.

SWEET SUE, JUST YOU and I LOVE YOU TRULY Try these old favorites on the skeptical. Louis Prima and his New Orleans Gang. *Brunswick 7596*.

WASHINGTON, D. C. — Stewart-Warner Distributors, Inc., has been organized to wholesale S-W products in this area. William Cohen is president and treasurer of the new corporation and will direct sales activities.

RCA Victor Auto Radio

WITH METAL TUBES AND CUSTOM-BUILT CONTROLS

HERE'S the dealers' profit maker for 1936—RCA Victor Auto Radio with metal tubes and custom-built controls.

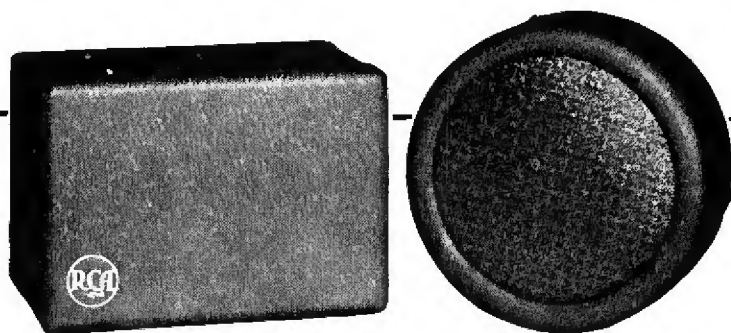
Only three models to stock, but with instrument panel mountings that will enable you to "customize" virtually every car that comes along. And the instrument panel mountings—assorted—are free!

Priced right! \$39.95 for the 5-tube set with Powertron (synchronous vibrator) with 6" built-in electro-dynamic speaker. \$49.95 for the 6-tube and Powertron set with 6" built-in electro-dynamic speaker. \$54.95 for the de luxe two-unit radio with 6-tubes, Powertron and 8" electro-dynamic speaker in separate case. Output as high as 9 watts on the 6-tube sets. Acoustic equalizer. Single stud mounting. Easy to install and service. Provision made on all models for installation of additional speaker—more profits for you!

Backed by a tremendous barrage of advertising—58 powerful stations, coast-to-coast, every Sunday on the Magic Key program—15,000,000 flashes in the SATURDAY EVENING POST and LIBERTY during May—the news of these marvelous new sets will reach every corner of the land.

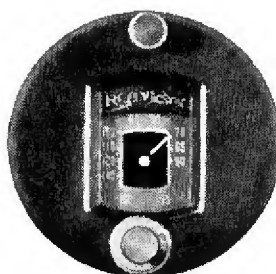
The public will demand RCA Victor Auto Radio this year. Be prepared! See your distributor today!

All prices f.o.b. Camden, New Jersey.

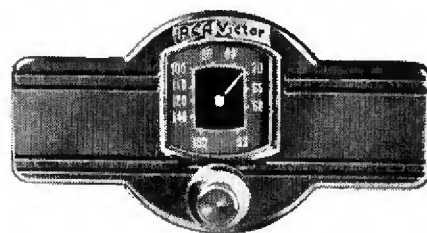


RCA Victor Model 6M2 is the de luxe instrument with separate speaker and Acoustic Equalizer, giving what we believe to be finest tone ever heard in auto radio. Six tubes.

\$54⁹⁵



Ford mounting



Chevrolet mounting

SEE THESE FEATURES

Custom-Built Mountings
5 and 6 tubes, equivalent of 7 and 8
Metal Tubes
Single bolt-in installation
Compact cases
Fine Tone—Acoustic Equalizer
Tone Control
Automatic Volume Control
Extra overhead speakers if desired.

Output up to 9 watts
Powertron (synchronous vibrator)
Suppressors unnecessary on most modern cars
Vibrator and tubes easily removable

NEW RCA Auto Radio Antenna goes under *both* running boards in a jiffy, gives ample signal pick up.

RCA Victor

RCA MANUFACTURING CO., INC., CAMDEN, N. J.

A Service of Radio Corporation of America

FLOOD OF SPRING SEASON REFRIGERATOR BUSINESS

February-March Sales Top All Past Highwater Marks

HOW'S the season opening up? Remarkably well, thank you. This is the general reply of every electric refrigerator manufacturer in the game, reporting a sales increase for the February-March period of from 20 to 60 per cent over that of the same interval last year.

Fairbanks - Morse reports February business 25 per cent greater according to W. Paul Jones, general manager of the Home Appliance division.

Kelvinator gives a 35 per cent gain in all its household appliances over the past five months compared to the corresponding period a year ago.

Stewart-Warner distributors, at Drake Hotel, Chicago, March 20, reported acceptance of new S-W models actually twice that of the '35 line.

Sales manager Taufenbach, Gibson, says his company's orders are double those of last year at this time—plant on 24 hour schedule.

Norge rings up all time record in March, 56,585 units.

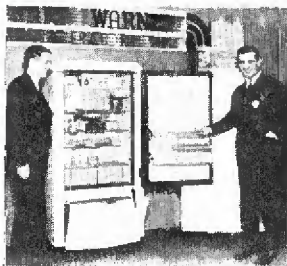
The individual jobbers paint an even more glowing picture.

C. Howard Buchwald, president Lincoln Sales Corp., Crosley distributor for Baltimore, says his sales for February were twice those of his Shelvador sales in February, 1935.

More for the money seems to be the stimulating cause. With one notable exception, retail prices are about the same but streamlined effects, greater capacity, more conveniences and storage bin space are producing results.

The exception is the Sears, Roebuck box for \$149.50. It is a big refrigerator and has eye appeal. Whether the old line manufacturers will have to meet this competition remains to be seen. As yet they are fighting it out on last year's battle lines.

Smile of Health



Governor "Happy" Chandler, of Kentucky, (right) puts on a demonstration of "Sav-a-Step" much to the delight of W. W. Thomsberry, president of the Gas & Electric Shop, Louisville



J. J. O'Neill

O'Neill Heads New Merchandising Division

DETROIT—Announcement by R. I. Petrie, sales manager of the Leonard Refrigerator Company, of the addition of a merchandising division to the company's sales organization marked the inauguration of the "Man Power Program" presented at the company's distributors' convention at Grand Rapids. J. J. O'Neill, formerly manager of the Leonard Department Store Division, heads the new division. Associated with him are six seasoned field men.

In carrying out this program the field men are contacting and training distributors' sales personnel directors and equipping them to enlist and train retail salesmen for dealers.

NEWS NOTES

Doubleday-Hill Electric Company, with offices in Washington, D. C., and branch headquarters at Baltimore, Md., has been appointed distributor for Fairbanks - Morse Conservator refrigerators.

The appointment of the Mississippi Valley Furniture Company, Memphis, and the Keith Simmons Company, Nashville, Tenn., as distributors of Fairbanks-Morse refrigerators has been announced.

An indication of the vast improvement in resort, restaurant, and refreshment stand business is the fact that sales of Crosley "Koldrink" bottle coolers for January and February, were 1,148 per cent greater than for the corresponding period of 1935.

The fourth annual merchandising clinic sponsored by the appliance and merchandise department of General Electric

Company, at Nela Park, Cleveland, was attended by 200 executives and merchandising managers of department stores throughout the country. The program covered subjects ranging from advertising and new merchandising ideas, to guarantees, trade-ins, promotions and market saturation of electric home appliances.

The Bluefield Supply Company has been appointed distributors in West Virginia for Hotpoint electric refrigerators. Clark Hardware & Furniture Company, which operates seven retail stores in the surrounding territory, has been signed up to handle Hotpoint refrigerators exclusively.

GE Broadcast Party

NEW YORK—A new and different type of spring sales meeting was staged by the merchandise department of the General Electric Company, March 30, when a special "radio broadcast convention" was presented over 63 stations. Also sent by SW.

It started at 11 a.m. and was heard by the world-wide sales organization of GE.

Thirteen hundred dealers and salesmen were in the audience at the NBC studios in New York, while other dealers gathered in leading cities throughout the country to listen to the program.

The broadcast marked the opening of the company's spring sales activity on electric home appliances. Immediately following this "sales meeting of the air," the distributors continued with local sales conferences.

Leads 10,000 Salesmen



Maybe it's because he is a direct descendant of John Witherspoon, signer of the Declaration of Independence. Or perhaps it's because he is just a hard-working salesman. Anyway, Charles S. Witherspoon, of Long Island, N. Y., is the leader in dollar volume among 10,000 General Electric refrigerator salesmen. He's "the tops" of the Toppers Club.

During the past six "depression" years Witherspoon's billings were \$1,364,211. His 1935 sales totaled \$314,000.

RR NOMINATES for membership in its PRIME MOVERS CLUB



Frank W. Greusel

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

Possessing a practical grasp of the retailer's problems, dating from 1903 when he founded the Central Electric Co., of Battle Creek, Mich., Frank Greusel has unselfishly striven to improve the merchandising status of every dealer and jobber in the city where he now resides—Milwaukee.

As president of the Wisconsin Radio, Refrigeration and Appliance Association, Mr. Greusel has made this organization an outstanding example of what a trade body should be and do. Its monthly meetings command capacity attendance because the trade gets so much out of them. Last month he was re-elected president of WRR&AA.

His latest service to the retail trade is the organization of the Milwaukee Electric Refrigeration Bureau. Purpose: to promote, through cooperative publicity, a whale of a lot of refrigerator business this spring.

Frank is an enthusiastic worker, a personality whose informality and sincerity inspires the high regard of all who know him—and his friends are legion.

When not busy for the common cause he functions as president of the Maurer-Greusel Company, Crosley distributor, in partnership with Vernon Maurer.

102 Refrigerator Sales in 9 months ... NO SERVICE EXPENSE! ALL PROFIT!

W. H. SHIDMORE, President

JESS McLAURY, Secy.-Treasurer

Electrical Appliance Company
OF WICHITA FALLS
920 SCOTT STREET PHONE 6707
Wichita Falls, Texas

General Electric Company
Hotpoint Refrigerator Division
Dallas, Texas

Attention: L. S. McLeod, Dist. Mgr.

Gentlemen:

On March 15, 1935, we opened our Electrical Appliance Company here. During the balance of the year we sold one-hundred and two (102) Hotpoint Refrigerators. We have not had a service complaint on any one of them. Every one of these owners is a booster.

Your rugged compressor, just made for this climate, enables us to whip competition with the greatest ease. Our success has brought us flattering offers to handle several other well-known lines, but we are so well satisfied that we intend to remain an exclusive Hotpoint Refrigerator outlet.

We have set a minimum performance for ourselves in 1936 of two-hundred and fifty (250) Hotpoint Refrigerators in Wichita Falls, a city of 43,600 population.

To indicate our confidence in your line, we have just spent \$250 for a Hotpoint sign in 14-inch Neon letters.

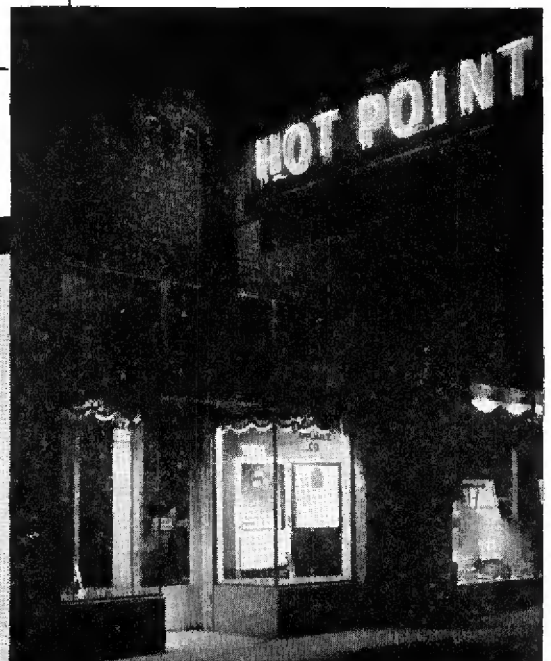
Very truly yours,

ELECTRICAL APPLIANCE CO.
By *W. H. Shidmore*
Manager

HOTPOINT Refrigerator retailers everywhere report increased sales . . . and increased profits. Hotpoint's super-service mechanism reduces service complaints to a minimum. Satisfied, enthusiastic owners become boosters and help sell other prospects. One sale leads directly to another. Hotpoint's twelve models . . . deluxe, standard and Thrifttype . . . with new styling and advanced convenience features . . . gives you a line that meets the needs of every family. Write today for franchise details. Hotpoint Refrigerator Div., Sec. RR4, Nela Park, Cleveland, Ohio.

Hotpoint

MANUFACTURED BY GENERAL ELECTRIC



Our Readers Write

(Continued from page 24)

that case I am just not bright enough to see it. So until I get the static off my line I'll go on grinning.

A. F. ERNEST
Tamassee, S. C.

ED. NOTE.—If you laughed at Cyr then Blackburn, page 8, March, must have rolled you in the aisles.

Still, His Refrigeration Sales Ideas Were Constructive

Editor, *Radio Retailing*:

Enclosed you will find an advertisement taken from the December 7 edition of the *Wisconsin News*, a paper with its main distribution in Wisconsin and upper Michigan. Now, please refer to page 26 of the October issue of *Radio Retailing*. If this is the method (advertising of standard tubes at cut-prices) of business he practices no wonder the Atlas Radio Stores could sell a carload of refrigerators!

What business is it of mine? I am more than 100 miles from Milwaukee and yet people who have seen the Atlas ad come in and insist that I sell tubes at the same prices but that does not work with me. Tubes are sold at list only.

VICTOR VATER
North Freedom, Wis.

No Ads No Symphony, Lady

Radio Retailing:

Please bring about a more rigid censorship of the advertising, the length of time it is talked about. To force us to listen to a long, boring plea about some medicine to prevent what we never expect to have or a re-rehearsed announcement of a name that we already know is just the one unpardonable and despairing regret of radio.

Such glorious broadcasts of the various symphony orchestras is a comfort and will always remain the reason for buying a new radio.

MRS. C. A. B.
Lake Forest, Ill.

We Check, 100 Per Cent

Editor, *Radio Retailing*:

The Radio Industry has given credit to the sales appeal of shortwaves for the large expansion in 1935.

Shortwaves did provide a major stimulus, but here is a warning that I wish to pass on to the manufacturer and the boys who make a living selling radios.

The shortwave buyer is not enjoying all the benefits of his receiver because sales outlets are not giving proper instruction on shortwave tuning.

On a large majority of calls received for service of shortwave receivers I find that the owner doesn't have any knowledge

whatever of the proper way to tune for, or where to tune for, shortwave stations. About the only stations received are those stumbled over while dialing.

I find that new purchasers therefore think very little of shortwave performance. I have experienced this lack of satisfaction not only on sets purchased in stores handling radio as a sideline but also where sets were purchased from outlets handling radio as a major item.

Wise servicemen are building a lot of goodwill by taking time out to thoroughly instruct the owner on shortwave reception. But why must the consumer wait until his set requires service before he can get all the performance that has been built into the receiver?

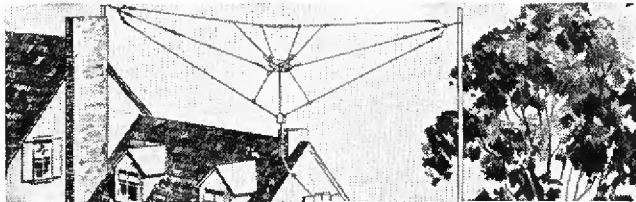
PAUL C. SHEAFFER
Penbrook-Harrisburg, Pa.

Water? . . . Where??

Radio Retailing:

Our December issue of *Radio Retailing* accidentally fell into the water the other day and was so badly damaged that we cannot finish reading it. It contains so much valuable information that we want to keep a copy for reference and the writer would greatly appreciate another copy if you have an extra one available.

BURNS RADIO & ELECTRIC
Memphis, Tenn.



NEW RCA Spiderweb Antenna

Pulls in Double Profits!

Here is a new RCA Antenna System that offers double profits—money made from selling and erecting it, and from selling new all-wave receivers that function with it better than ever before. Functions as an efficient T-type from 140 to 4,000 kc. and as a multiple doubler system from 4,000 to 23,000 kc. Special kit is available, extending range to 70 megacycles with full noise-reducing properties. Supplied completely assembled and soldered. Span required, 38 feet; clearance, 12 feet.

Easy and simple to erect, all-wave results markedly superior. Stock No. 9685 Spiderweb Antenna, \$8.95. Kit Stock No. 9689, \$1.50. Write for details.



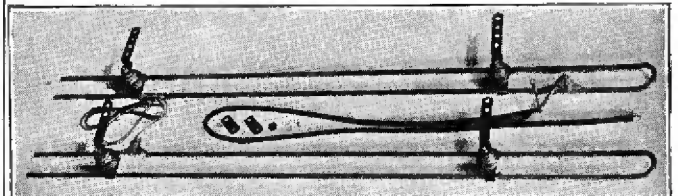
Parts Division, RCA Mfg. Co., Inc.
Camden, New Jersey

RADIO CORPORATION OF AMERICA

HOME RECEPTION IN AUTOMOBILES

with "LONG-RANGE TWINS" Aerials

Sealed in Leak-Proof Rubber



SIX NEW FEATURES ELIMINATE SIGNAL LEAK IN AUTO AERIALS

93% Signal Strength Efficiency according to Certified Laboratory Tests

JUST OFF THE PRESS—Free Copies Available—'AERIAL NEWS' All About NEWEST DEVELOPMENTS In Automotive Antenna. Write for yours today.

WARD PRODUCTS CORP. 2129 Superior Ave. CLEVELAND, O.

To Our Service Readers

You'll find plenty of material in the front of the book that's right down the alley of service men. For instance—
On page 8—1936 auto radio story contains many installation hints.

On page 12—Suggestions for capitalizing on presidential election interest to sell service as well as sets.

On page 16—Sales ideas include suggestions for keeping service records.

On page 20—18 pictures of important men who attended I.R.S.M. Convention.

Reader interest? Plenty. . . . Advertising opportunity? Never better.

RADIO RETAILING

NEW BOOKLETS

BROOKLYN, N. Y. — The Clarostat Mfg. Co., 285 N. 6th St., has just finished compiling data on all receivers manufactured in the last ten years, lists types of volume controls required in these sets in an 80-page book available to servicemen without charge through jobbers or the factory. In addition to volume-control data much practical material concerning both fixed and variable resistors is included in the form of graphs and charts.

Operadio p.a. equipment catalogue No. 10 is off the press. Also covers replacement speakers. A quality job, indicative of the merchandise it presents.

Clough Brengle is out with a new catalogue covering cathode ray and other test instruments. Write this firm at 1134 W. Austin Ave., Chicago.

A 20-page service manual to acquaint radio dealers and servicemen with the business possibilities and profits from the in-

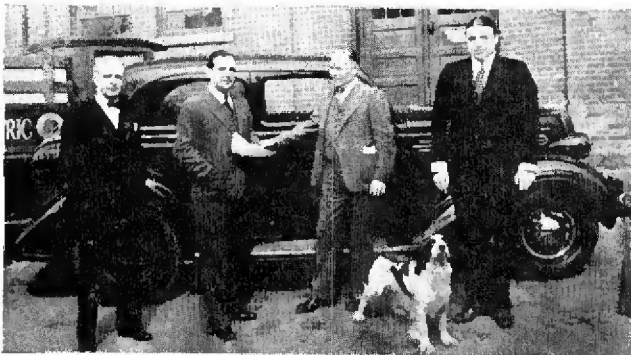
stallation of Winchargers has just been issued by the Wincharger Corp., Sioux City, Iowa.

"SO YOU SELL RADIOS!"
In this little booklet Stromberg-Carlson marshals a convincing array of reasons for specializing on the high priced models.

Latest edition of the House of Radolek is out. "Hundreds of new items for dealers and servicemen," according to this Chicago outfit. Also a 32-page p.a. and receiver section, as well as technical data.

BRIDGEPORT—The General Electric Co. has assigned H. W. Bennett to manage the radio sales activities of the Minneapolis territory and C. W. Griffin to function in similar capacity, for Los Angeles.

R. A. Buescher and John Klenke will headquarter at Cincinnati, Ohio, and Portland, Ore., as district managers.



Hurrah for Champ Horan!

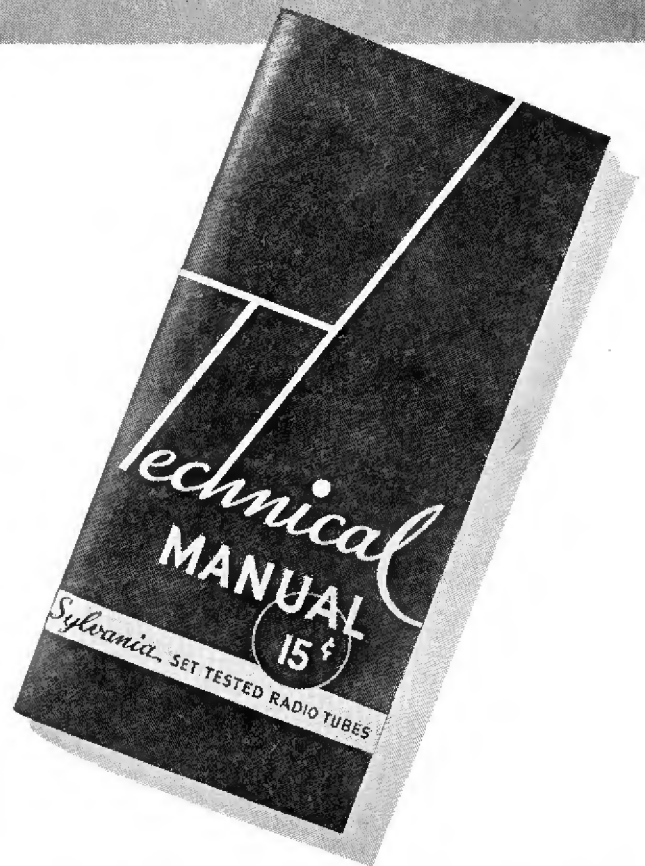
P. D. Horan, salesman for Virginian Electric, Inc., (third from left), Charleston, W. Va., winner of an automobile in the G-E radio "President's Campaign," receiving his award from A. G. Chaffer, district sales manager, Pittsburgh. At left, A. D. Crummet, general manager of Virginian Electric, and extreme right, E. D. Knight, its president.



Phil Paige Gets Plymouth Electric Co. Award

Local Goodrich salesman makes good! Phil Paige (second from left) gets a Zenith for being top man in recent New Haven, Conn., sales contest—while Goodrich local officials say it with smiles

A SENSATION THE SYLVANIA TECHNICAL MANUAL!



IN JUST 30 DAYS . . . THE SYLVANIA TECHNICAL MANUAL HAS CAUSED A SENSATION AMONG RADIO MEN ALL OVER THE COUNTRY!

● And why not? It's the most complete and informative manual Sylvania has ever published! Here are just a few of the features of this book.

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

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

Hygrade Sylvania Corporation, makers of Sylvania Radio Tubes and Hygrade Lamps. Factories at Emporium, Pa., Salem, Mass., and St. Mary's, Pa.

SYLVANIA

RR-46
HYGRADE SYLVANIA CORPORATION, EMPORIUM, PA.

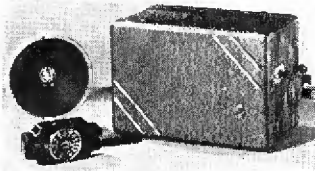
Please send me the new Sylvania Technical Manual. I enclose 15c in stamps.

Name

Address

City State

NEW MERCHANDISE



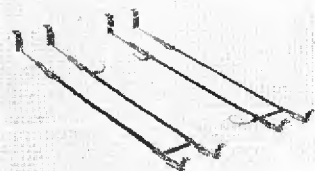
A-K Auto-Radios

Five "styled" compact models, a choice of glass or metal tube models, all-in-one units with self-contained units plus three different separate speakers permitting a wide variety of installations—all are included in the 1936 line of the Atwater Kent Mfg. Co., Philadelphia, Pa. Control panels are available to match the instrument board of 33 leading cars and a universal control is available for mounting on the edge of instrument panel or steering column.

The following sets use 6 glass tubes: 556, self-contained, \$39.90; 126, self-contained, \$49.90; 136, with 5½ in. speaker, \$49.90; with 6½ in. speaker, \$54.50; with 8½ in. speaker, \$59.50. These sets use metal tubes: 416, self-contained, \$54.90; 446, with 5½ in. speaker, \$54.90; with 6½ in. speaker, \$59.50; with 8½ in. speaker, \$61.50.—*Radio Retailing*, April, 1936.

"Inlantenna"

A completely rubberized under-car antenna, carrying the trade name "Inlantenna," has just been announced by the Inland Mfg. Co., Dayton, Ohio. The antenna is a continuous metal strip with rubber jacket bonded thereto making it weather, abrasion and rust-proof. To eliminate directional effects, the Inlantenna is fitted under both right and left hand running boards. No holes to drill—adjustable brackets fit any under-car construction. A sturdy adjustable chain furnishes accurate length and positive lock. Approved and adopted by Cadillac, Chevrolet, Oldsmobile, Buick, Pontiac, Nash, etc.—*Radio Retailing*, April, 1936.



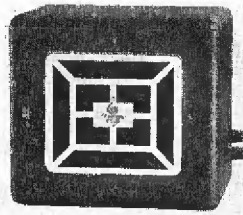
"Tatro-Lite"

The "Tatro-Lite" is designed to charge 6-volt radio batteries and to furnish light for the farm home. This device and one 160-amp. hour, 6-volt battery will operate fourteen house lamps at one time, the bulletin reads. Six house lamps can be in use without running the engine.

Made by Tatro-Lite Co., Decorah, Iowa, it lists at \$69.50.—*Radio Retailing*, April, 1936.

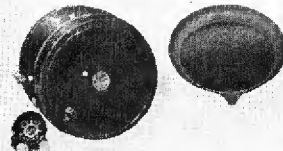
Emerson Model 2A Auto-Radio

A die-cast case, insuring unusual rigidity and avoiding disturbing case resonances, houses the new Model 2A auto set of the Emerson Radio and Phonograph Corp., 111 Eighth Ave., New York. Six tubes are used. Custom made remote controls are available for the majority of the popular cars.—*Radio Retailing*, April, 1936.



Fada Auto-Radios

Four motor car sets are announced for the 1936 season by the Fada Radio & Electric Co., Long Island City, N. Y.



Model 266 is an all-in-one receiver listing at \$52.95.

Model 266D is a two-unit set with separate 8 in. speaker, \$57.95.

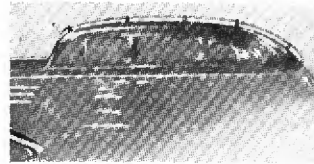
Model 266SF, also a two-unit set, uses header speaker for Ford overhead installations, \$52.95.

Model 266SG, two-unit, header speaker for General Motors overhead installations, is \$54.95.

All sets use one or more metal tubes. Unusually high gain is accomplished through the use of an iron core antenna system. Other features include de luxe and header speaker equipment. Special matched panel equipment is available for all cars. Each unit is of the new drum type with three piece case affording simplicity of installation.—*Radio Retailing*, April, 1936.

Autocrat Tuning Indicator

Any radio with an a.v.c. circuit can be modernized with the tuning indicator of the Autocrat Radio Co., 3355 N. Hamilton Ave., Chicago. This indicator makes use of the 6E5 electron-ray tube. Especially desirable for sets lacking tuning meter, shadow meter, neon tube or other visual tuning indicator. May be installed in about an hour. \$3, complete.—*Radio Retailing*, April, 1936.



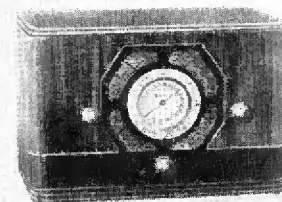
Auto-radio Antenna

The auto antenna of the Northwest Radio Labs., Shelby, Mont., mounts on top of the car on rubber vacuum cup standoffs with aluminum tubing for high conduction. No holes to drill in the top. Designed principally for all-steel turret top cars. Will perform equally well on fabric topped cars. Adds to the streamline appearance. For coaches and sedans, \$7.50; for coupes, \$6.50.—*Radio Retailing*, April, 1936.

Duresite Ballast Tubes

Two new ballast tubes for a.c. receivers, metal-enclosed and equipped with octal bases, have just been announced by the World Bestos Corp., Paterson, N. J. (See Service Section for circuit diagrams.)

Both tubes are 2.87 inches high and use six-prong bases. Dur. 4-5 is designed for use in any 4 or 5 tube standard receiver with or without a pilot lamp; or any combination of 6.3 volt pilot lamps up to four having a drain of not more than 250 ma. each. Dur. 6 may be used in any standard 6 tube receiver with the same pilot lamp combination as above. Should any one or all pilot lamps burn out the set continues to function at normal voltages and if, in error, 250 ma. lamps are substituted for 150 ma. types or vice versa regulation is still properly provided.—*Radio Retailing*, April, 1936.



Pathe Radios

Attractive leatherette cabinets available in shades of either walnut brown or antique white are featured in the line of compact radios of the Pathe Radio & Television Co., 1401 West 11th St., Los Angeles, Cal. This set has "wrist-watch type" illuminated dial, which is enclosed in an embossed metal grille. Uses 5 tubes and operates on a.c. or d.c.; also available with one less tube for a.c. current only.

An a.c.-d.c. 6 tube superheterodyne enclosed in a traveling case covered with the airplane fabric is also made. The cabinet is closed on four sides when not in use and resembles a small traveling case with handle on top. Also available with one less tube for a.c. only.

Pathe makes a portable radio and phonograph in a waterproof leatherette covered case. It is a 5-tube superheterodyne with electric self-starting motor. Plays 10- and 12-in. records. Built-in antenna.—*Radio Retailing*, April, 1936.

Halsion Radios

Three compact sets are announced for the new season by the Halsion Radio Mfg. Corp., 120 E. 16th St., New York City.

"Vision eye" tuning is available in Model 60M, a 7-tube (one metal) a.c.-d.c. three band receiver (16-55, 75-550 meters), \$39.50.

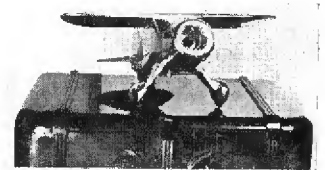
Model 5LX is a 5-tube, two-band set (75-550 meters), \$19.95.

Model 50R, 6-tube, two-band receiver (75-550 meters) also uses the 6K7 metal tube, \$27.50.—*Radio Retailing*, April, 1936.

Aeroplane Cathode Ray Tuning Unit

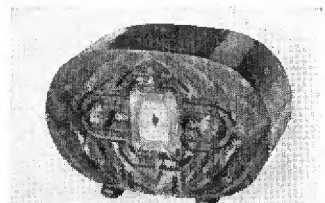
The cathode ray tuning unit of the Empire Radio Corp., 1217 W. Washington Blvd., Chicago, described last month, may now be had in the form of an aeroplane to be mounted on the top of the radio or on a table. Easily connected.

Combines the latest tuning feature with a polished aluminum streamlined decoration for the set. \$5.95 complete with tube.—*Radio Retailing*, April, 1936.



Trav-Ler Radios

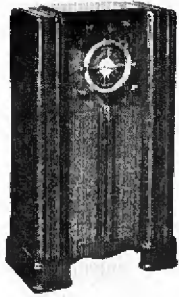
An extremely small 5-tube, a.c.-d.c. radio may be obtained from Trav-Ler Radio & Television Corp., 1028 W. Van Buren St., Chicago, Ill. Its dimensions are 11x6½x5½ and the weight 7



lb. It comes in a two-tone walnut cabinet finished both back and front and lists at \$26.95.

Model 442, illustrated, is a 4-tube t.r.f. set in a cabinet of walnut, \$19.95.

Model 622 is a 6-tube superheterodyne with ballast tube, \$29.95.—*Radio Retailing*, April, 1936.

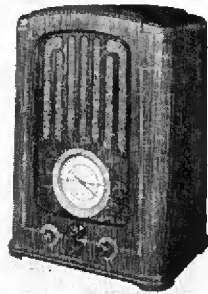


Corona Console

The large, easy-tuning, illuminated dial featured in the line of the Corona Radio & Tel. Corp., 420 N. Sacramento Blvd., Chicago, is incorporated in its new console. Available in a.c.-d.c. or straight a.c. Eight inch speaker. Range, 540-1720 kc. \$39.95.—*Radio Retailing*, April, 1936.

Pilot "250" Series

For wind charger operation, Pilot Radio Corp., 37-06 36th St., Long Island City, N. Y., offers its "250" series—an all-wave radio which operates entirely from a 6-volt storage battery, B and C voltages being furnished by use of a plug-in vibrator. May be purchased with or without Wincharger. Two models available—with 3 bands, 16-550 meters or 4 bands, 16-550 and 750-2,100 meters. Uses 5 tubes. Equipped with phono jack.—*Radio Retailing*, April, 1936.



GE High Fidelity Radios

A 20-tube high fidelity chassis is used in the two new sets the General Electric Co., Bridgeport, Conn., has introduced. The chassis has two entirely separate circuits—one is a highly developed superhet affording reception on five bands covering 140-410 and 540-41,000 kc. and the other is a t.r.f. circuit specifically designed for high-fidelity reception. Metal tubes are used exclusively. Each has two "Stabilized" speakers of the 11 in. size and has a power output of 26 watts undistorted and 40 watts maximum.

Model A-205 is a console and A-208 a radio-phonograph combination with automatic record changer accommodating nine 10-in. or eight 12-in. records and has automatic stop for playing records singly. \$600 and \$750, respectively.—*Radio Retailing*, April, 1936.

Webster Mobile Sound System

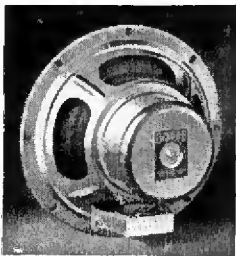
A solution to combination 6-volt d.c.—110 volt a.c. operation is offered with the new 6-volt or 110-volt mobile sound system of the Webster Co., 3825 W. Lake St., Chicago, Ill. Change from one supply to the other is made by simply pulling out the 6-volt plug pack and plugging in the 110-volt plug pack. Adequate volume for large indoor or out-of-door installations. The system includes a Webster phone pickup and electric phonograph turntable.—*Radio Retailing*, April, 1936.



Oxford-Tartak Speakers

Coincident with its move to the new location at 915 W. Van Buren St., Chicago, the Oxford-Tartak Radio Corp. announces the development of a new and improved type of speaker which will answer a replacement speaker problem often encountered.

A new exponential horn has

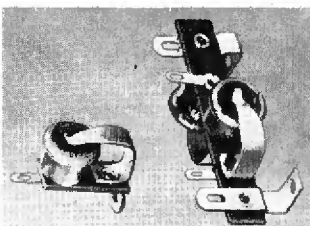


also been designed for use with a special cone type trumpet unit for p.a. work.

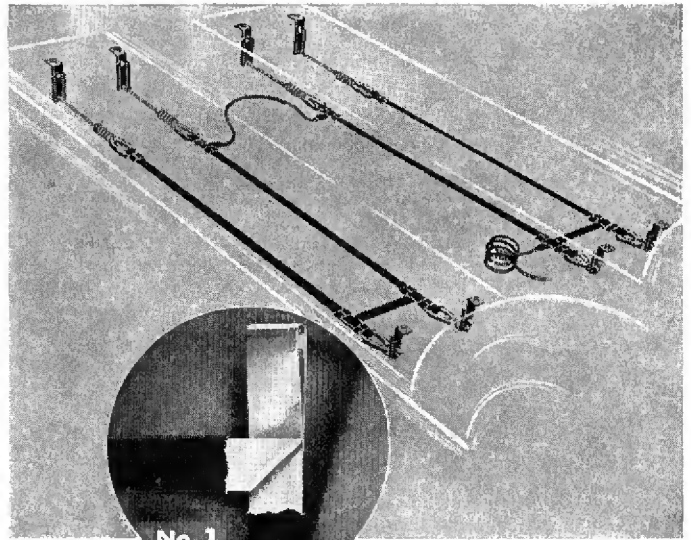
Oxford-Tartak also makes theatre and public address reproducers, console electro-dynamic reproducers, trumpet cone reproducer units, midget and mantel electro-dynamic speakers, replacement electro-dynamics, official "All Star Junior" speakers, magnetics, field exciter units, a "Dynatest" universal test speaker and output and line transformers.—*Radio Retailing*, April, 1936.

Mallory Grid Bias Cell

A potential cell to furnish grid bias for various tubes in the radio receiver may be obtained from P. R. Mallory & Co., Inc., Indianapolis, Ind. This cell, used for several years by radio engineers and manufacturers, is a small acorn-shaped, self-contained device. Its principal use is to furnish bias for the first audio amplifier tube in modern high gain a.v.c. receivers and p.a. units—such tubes as the 75, 2A6, 6F5. It may also be used to furnish initial bias to the r.f., i.f. and converter tubes on the a.v.c. line.—*Radio Retailing*, April, 1936.



COMPLETELY RUBBERIZED UNDER-CAR ANTENNA



No. 1

1 OF 12 EXCLUSIVE FEATURES

Continuous Folded Strip. No Joints. No Leaks. Rubber cover repels moisture.



INLANTENNA

PATENTS PENDING

It's on the New Cars

Here is the most durable under-running board Antenna ever developed. It is weather, abrasion and rust-proof. The continuous metal strip under each running board is completely jacketed with rubber especially compounded to resist moisture and ice formation. Lead-in and cross lead connections soldered, tested and sealed by rubber boots. Insulator links are heavy rubber covered cords. Springs and brackets are rust-proofed. The perfectly shielded lead-in wire and cross lead are heavy duty, low loss insulated.

Grueling tests on automotive proving grounds and by leading radio manufacturers have proved that INLANTENNA's rubber coating is impervious to water, gravel, calcium chloride, salt, tars and oils.

Amazing Reception
INLANTENNA's design and

construction provide better reception, greater sensitivity and remarkable signal pick up under all conditions. It eliminates directional effects—weather and road interference. INLANTENNA installed is two to four inches from any metal.

Easily Installed—No After Service

No holes to drill—adjustable brackets fit perfectly any under-car construction. A sturdy, adjustable chain furnishes accurate length and positive lock.

Adopt INLANTENNA. Leading automobile and radio manufacturers have approved and are using INLANTENNA as the only permanent weather and rust-proof antenna. It comes complete and individually boxed with instructions. Available through your present sources.

THE INLAND MANUFACTURING COMPANY DAYTON, OHIO

A GENERAL MOTORS SUBSIDIARY

RESULTS are proving 'CORONETS' the biggest SALES IDEA the tube industry has ever seen

You're probably asking yourself, "How do these Metal Tubes work in the old glass tube sets?" Space permits only a few comments:

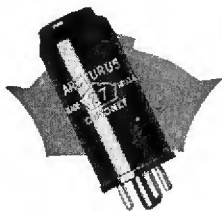
"One 27 'CORONET' in detector socket of Crosley Model 77-1 increased volume and enabled owner to get stations he hadn't heard for a year."^o

"Installing one 24 'CORONET', one 80 'CORONET' and two 51 'CORONETS' in American Bosch Model 205 cut noise inset down 90%."^o

"Replaced two-weeks old glass tubes on Model R-11 RCA with 'CORONETS'. For accurate check sent steady signal through set with oscillator using output meter connected to voice leads on speaker. . . . noticeably increased output and improved reception."^o

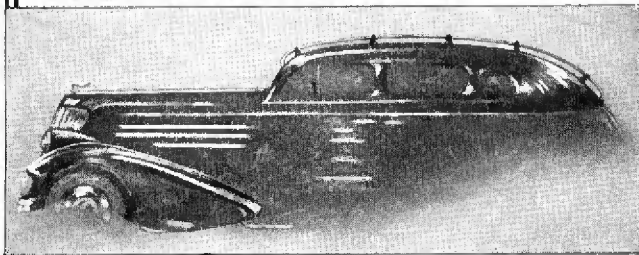
^o Names upon request.

'CORONETS' immediately put your tube business back on a profitable basis. Act now — write for details.



ARCTURUS
'CORONET'
METAL TUBES
ARCTURUS RADIO TUBE CO.
Newark, New Jersey

THE ANTENNA DE LUXE



NORWEST
(STREAMLINE)
TRADE MARK REG.
AUTO ANTENNA
PAT. APP. FOR

**A Car Radio Deserves This Highly
Efficient Auto Antenna**

Adds to the streamline appearance of any car—mounts on rubber vacuum cup standoffs with aluminum tubing for high conduction. No holes to drill in top—increased pickup because of less absorption—low motor noise level obtained by shielding effect of car top—not affected by wet weather—will not short out from ice, water, or mud. Designed principally for all steel, turret top cars and for use in isolated districts where signal strength is low. Will perform equally well on fabric topped cars.

More Distance Less Noise More Volume

List Price { Sedan \$7.50
Coupe \$6.50

NORWEST RADIO LABORATORIES

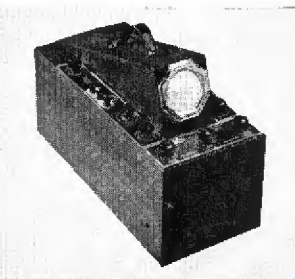
Main Office and Factory: 3454 Fullerton Ave., Chicago
Western Division: Shelby, Montana



"Lifetime" Baffles and Trumpets

A complete line of baffles and trumpets to cover every type of installation is offered by the Lifetime Corp., 1010 Madison Ave., Toledo, Ohio.

Three distinct baffles are made—a 15-in. bell for 6 in. cones; 20-in. bell for 8-in. cones and 32-in. bell for 12-in. cones. In the trumpet field, Lifetime manufactures one of 4 ft. length for medium distance coverage and one of 6 ft. length for use where it is necessary to cover extreme distances at high level. —Radio Retailing, April, 1936.



Triumph Oscillograph

Ease of operation is stressed with the new Model 800 oscillograph the Triumph Mfg. Co., 4017 W. Lake St., Chicago, has brought out. Easy settings, easy reading angle. All "top deck" controls easy to see, easy to set, even to the special viewing angle on the cathode ray tube.

Other features are perfect linearity, extra wide sweep range, horizontal and vertical amplifiers. \$79.50 net.—Radio Retailing, April, 1936.

Microphone Shock Absorber

A shock absorber to screw onto the microphone stand, and microphone itself, has been developed by the American Phenolic Corp., 500 S. Throop St., Chicago. This device absorbs floor vibrations which otherwise would be picked up by the microphone.—Radio Retailing, April, 1936.

Ken-Rad Type 1F4

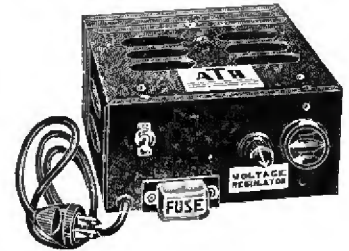
A new low battery drain output tube designed for operation in battery receivers, Type 1F4, is announced by the Ken-Rad Corp., Owensboro, Ky. This tube, which is an addition to the glass line, is somewhat similar to the type 32 but offers certain advantages over the old type.—Radio Retailing, April, 1936.

D. C.—A. C. Inverters

Interference-free, all-wave radio reception, long life vibrators, four point voltage regulators—these are some of the features of the new line of d.c.-a.c. inverters of the American Television and Radio Co., St. Paul, Minn.

Manufactured in 16 types, each equipped with or without built-in filter. For use on d.c. input voltages ranging from 6 to 220 volts d.c. to supply output voltages of both 110 and 220 volts for the operation of standard 110 and 220 volt a.c. radios, p.a. systems, etc.

Standard models are \$18.50, less filter, and \$22 with filter.—Radio Retailing, April, 1936.

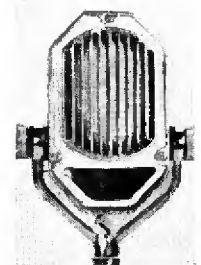


Wirt Resistor Cabinet

With the purchase of an assortment of 100 one-watt R.M.A. color coded carbon resistors, the Wirt Co., 5221 Greene St., Philadelphia, Pa., offers a resistor cabinet of six drawers with four compartments in each drawer. All partitions are removable.—Radio Retailing, April, 1936.

Universal Microphone

A ribbon microphone housed in a new-style, futuristic jet black enamel and chrome polished casing, designed for general all-round radio use may be obtained from the Universal Microphone Co., Inglewood, Calif. \$22.50, plus the plugs.—Radio Retailing, April, 1936.

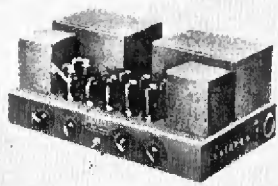


Service Aids

A few of the new items added to the line of service aids made by the General Cement Mfg. Co., Rockford, Ill., include speaker repair cement in tubes, Fibrelloid speaker shims, spaghetti, insulating and dipping varnish, non-slip compound, Grafoline, crystallizing lacquer in colors and color coding kit.—Radio Retailing, April, 1936.

Burgess Batteries

New 7½ volt and 9 volt ignition batteries have been recently announced by the Burgess Battery Co., Freeport, Ill. These will interest owners of gas engines because of the many improvements over the old style Uniplex batteries.—Radio Retailing, April, 1936.

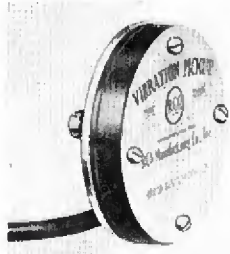


Morlen Metal Tube Amplifier

All-metal tubes are used in all stages of the new P.A. amplifier of the Morlen Electric Co., Inc., 100 Fifth Avenue, New York City.

The circuit is the exclusive Morlen "Power-Driver" system, which gives greater power output over a wider frequency range than any other method, the manufacturer claims.

This amplifier uses two 6F5 and two 6C5 triodes in the voltage amplifier, two 6F6 triodes as "Power Drivers" and four 6F6 output tubes. It will deliver 38 watts normal and 45 watts in heavy-duty speech service. It has dual mixer input and dual output impedance. *Radio Retailing*, April, 1936.



RCA Vibration Pick-Up

Two of the many uses of the new vibration pickup of the RCA Mfg. Co., Inc., Camden, N. J., are study of vibration of motors or parts of motors and remote units, such as control boxes; and locating components of machine causing noise.

By means of this pickup any mechanical vibration or motion may be converted into electrical currents of identical characteristics. If this motion is recurrent in character the resulting electrical currents may be presented visually on a cathode ray oscillograph for study and analysis. The net price is \$20.—*Radio Retailing*, April, 1936.

Raco Transceivers

A 5 and 10 meter transceiver for the "shack" may be obtained from the Radio Constructors Laboratories, 136 Liberty St., New York City. This is a two-tube model using a 6A6 and an 80. The complete kit of parts is \$8.95, crystalline cabinet \$1.50, tubes \$1.10.

Model 504-K, a 3-tube portable 5-meter transceiver, uses two 19's and a 30. This is a battery operated model listing at \$10.95. Cabinet \$1.50; tubes \$1.65. Ten meter coil will be supplied at \$1.25 extra.

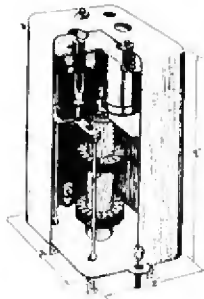
Raco's "twin tube" transceiver has just one tube, a dual purpose No. 19, and is battery operated. Complete kit of parts is \$4.75; cabinet 75c., tube 65c.

All Raco transceivers are available laboratory tested and wired at a slight additional charge.—*Radio Retailing*, April, 1936.

Clough Brengle Unimeter

An improved 5-in. fan type meter making possible a 50% to 100% increase in meter scale length is incorporated in the new Model 85 Unimeter of the Clough Brengle Co., 1134 W. Austin Ave., Chicago.

This convenient point-to-point set analyzer and all purpose component tester has d.c. ranges of 0-15-150-750 volts and 0-1.5-15-150 ma.; a.c. ranges of 0-15-150-750 volts, ohms 100, 20,000 and 2 megs. \$24.95, complete.—*Radio Retailing*, April, 1936.



Meissner "Align-Aire" Trimmer

The outstanding feature of the "Align-Aire" trimmer of the Meissner Mfg. Co., 2315 W. 19th St., Chicago, is that it will have 3600 degrees or ten complete revolutions of tuning, whereas the standard air trimmer unit on the market has but 180 degrees or one-half of a revolution, this company claims. These transformers are made in 175, 262, 370 and 456 frequencies, in both the air-core and iron-core winding.—*Radio Retailing*, April, 1936.

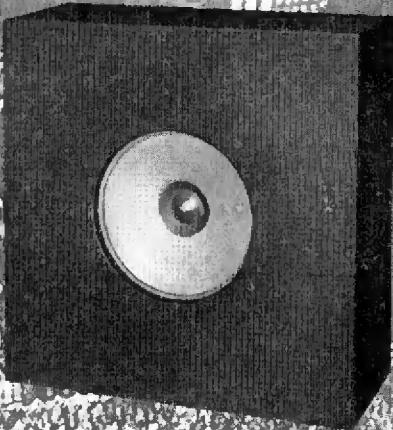
"Washer-Charger"

Owners of motor-equipped washers or other appliances using Briggs-Stratton, Maytag or Iron Horse motors may now charge their radio batteries at a low cost. This is done with the "Washer-Charger" made by the Midwest-Timmerman Co., Dubuque, Iowa.

Plugs in like a light socket—always handy and ready to connect. For example, while doing the washing, the energy taken out of the battery by running the radio, etc., can be replaced. May be installed so radio battery can be charged without removing it from the cabinet.



This device is designed particularly for radio and car batteries, but may also be used in connection with three 2-volt storage batteries of the farm lighting type to furnish light on the farm. \$29.50.—*Radio Retailing*, April, 1936.



Around this great
MAGIC MAGNET SPEAKER
YOU CAN BUILD THE STRONGEST SPEAKER SALES STORY IN YEARS

Word is going round radio circles. "There'll be a big pick-up in P.A. business during this year's Presidential campaign." "'36 . . . the radio election year." "Get ready for political jobs!"

Here is sales opportunity for progressive servicers. And the job with which to grasp it is . . . the Cinaudagraph MAGIC MAGNET SPEAKER! No other speaker in the world has its specific and exclusive money-making sales features. Read—

No. 1 Sales Feature

Requires no electro-magnetic excitation. Utilizes "NIPERMAG," the magic magnet material of Cinaudagraph Speakers. (Not to be confused with other magnetic materials available on the American market). Simplifies hook-up, materially reduces power consumption, (the 12 inch electro-dynamic speaker consumes 25 watts, and the 18 inch electro-dynamic, 75 watts, this power consumption being entirely eliminated by using Cinaudagraph Speakers), effects positive savings in time, and is an emphatic convenience.

No. 2 Sales Feature

Constructed to reproduce the lowest notes of the pipe organ as well as the highest audible frequency with the utmost fidelity.

No. 3 Sales Feature

Supplied in non-corrosive, stainless finish. Is unaffected by the most severe atmospheric conditions and abnormal temperatures and humidities.

No. 4 Sales Feature

Sturdy mechanical construction and stable acoustic characteristics.

No. 5 Sales Feature

Designed to operate within an infinite baffle. Prevents rear radiation and allows only the true undistorted tones to emanate from the front of the speaker.

Get full "dope" on five major engineering developments incorporated in MAGIC MAGNET SPEAKERS. Available in 8, 10, 12, and 18 inch diameter sizes.

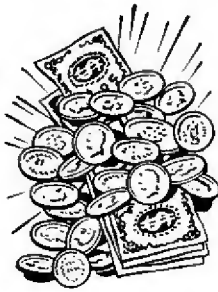
CINAUDAGRAPH CORPORATION

Speaker Division—Dept. R
STAMFORD, CONNECTICUT

CINAUDAGRAPH

For dealers who want
to make more money—

USL



RADIO "A" BATTERIES
- THE USL "INSURED LIFE" PLAN
- AND THE USL PROFIT RANGE
have more good points than a porcupine...



Get all the facts on
the new USL radio
battery proposi-
tion. Write today:

USL BATTERY CORPORATION

Niagara Falls, N. Y.

Oakland, Cal.

Oklahoma City, Okla.



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

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

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

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



Complete Electric Plants

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

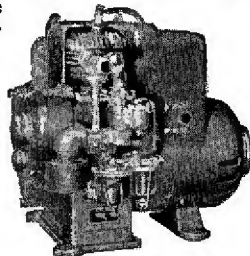
Sizes to Suit Every Purpose

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

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

D. W. ONAN & SONS

433 Royalston Ave., Minneapolis, Minn.



Samson "Safe-Flex" Fan

A revolutionary development in electric fan design and construction is announced by the Samson-United Corp., Rochester, N. Y.

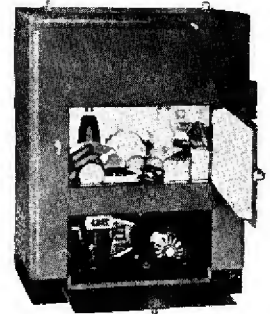
The blades are made of tough, molded rubber and are sufficiently soft to prevent injury to fingers. Thus the necessity for guards is eliminated.

The blades are rigid enough to deliver a steady current of air strongly. In fact the release states it will furnish greater air delivery than conventional type fans of equal wattage. That the fan is noiseless is also a feature.

Comes in two models, the standard in a walnut brown, listing at \$7.95 and the de luxe in pastel green or ivory, priced at \$8.95.—Radio Retailing, April, 1936.

Continental Air Conditioner

A heater-humidifier-air conditioner may be obtained from Continental Motors Corp., 2941 E. Jefferson Ave., Detroit, Mich. The heating element provides for its use as a small bathroom heater, hair drier, etc. By drawing air through a filter of water, the air is cleansed of impurities and the proper amount of moisture is obtained. D.C. or A.C. motor optional. \$12.50.—Radio Retailing, April, 1936.



Pemco Electric Beverage-Food Cooler

Both food and bottles may be kept in the new Pemco electric cooler of the Portable Elevator Mfg. Co., Bloomington, Ill. Holds three cases of bottles in the top and has space for three cases in the bottom or this space may be used for food. Upper compartment may be used wet or dry. Plugs in the light socket and may be instantly adjusted to any temperature. Furnished in three sizes for restaurants, refreshment stands, cigar stores, etc.—Radio Retailing, April, 1936.

Frigidaire Refrigerators

Two lines have been brought out by Frigidaire Corp., Dayton, Ohio, for 1936—one a "Special" series consisting of two models, DRS-5 and DRS-6, 5.1 and 6.24 cu.ft. respectively. These are low-priced models with "Meter-Miser," automatic interior light, hydrator, super-freezer, automatic re-set defroster and many other features.

The regular line is made up of 5 Super models, 4 Master, 3 WP, 2 De Luxe, a De Luxe Premier, De Luxe Imperial, the Koldchest and a D3-36 unit.

The Meter-Miser is standard equipment throughout the line

Crosley "Koldrink"

An entirely new cabinet design and many improved features mark the 1936 "Koldrink" bottle cooler made by Crosley Radio Corp., Cincinnati, Ohio. It has a capacity for about 12½ 12-oz. bottles or 152 6-oz. bottles. \$99.95 f.o.b. factory.

Where desired a Dual Tub providing dual temperature with wet and dry refrigeration may be obtained for a small charge of \$3.95. Where a limited quantity of drinking water is required, the Koldrink may be had equipped with bubbler.—Radio Retailing, April, 1936.



Hickock Appliance Testers

(except d.c. models) and is hidden away in the bottom of the cabinet. Said to use less than half as much current to produce the same amount of cold. All have food safety indicator so housewife may determine instantly the exact temperature of food compartment; valuable storage space has been brought closer to the front; portable utility shelves are included in the Super models; full width sliding shelves in both Super and Master models; all have improved hydrators—two in the Super models; all have automatic ice tray release; Quickube ice trays in the Super and larger models.—Radio Retailing, April, 1936.

To service electric refrigerators, washers, toasters, waffle irons, household motors and radios, a watt meter built to withstand hard portable service may be obtained from the Hickock Electrical Instrument Co., 10514 Dupont Ave., Cleveland, Ohio. This tester provides a reliable method of accurately testing by indicating, watt load, to compare actual wattage consumption with rated specifications. It comes in three models ranging in price from \$17.10 to \$18.30.—Radio Retailing, April, 1936.



Frigidaire Water Cooler

Introduction of a small, low priced water cooler equipped with the "Meter-Miser" refrigeration unit has been announced by the Frigidaire Corp., Dayton, Ohio.

The new cooler comes in two types—bottle and pressure—and is finished in duco bronze with a chromium plated nickel faucet and black porcelain base. The suggested price is \$115.—*Radio Retailing*, April, 1936.

Cornell-Dubilier Products

Three kits of assorted electrolytic condensers are offered by the Cornell-Dubilier Corp., 4377 Bronx Blvd., New York City, each containing a different assortment.

Cornell-Dubilier also has improved its "Quietone" interference filter.—*Radio Retailing*, April, 1936.

Tobe Radio Noise and Fault Locator

A highly sensitive yet compact and truly portable instrument which satisfies the requirements of electrical distribution engineers for reasonably priced apparatus capable of indicating the many points at which extraneous radio frequency fields (radio noises) originate may be obtained from the Tobe Deutschmann Corp., Canton, Mass.

Being entirely self-contained the instrument may be used in any car without special installation provision and may be easily removed for checking the many potential noise sources at points inaccessible to an automobile. \$129, complete.—*Radio Retailing*, April, 1936.



P. A. Attenuator

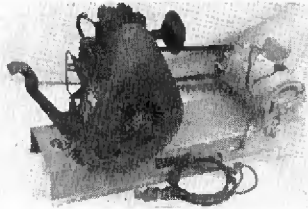
A new improved attenuator especially designed for p.a. and portable equipment is announced by the Tech Laboratories, 703 Newark Ave., Jersey City, N. J. This attenuator meets the demand for a low priced (\$8 list) compact unit of wide range and sturdy construction. It measures only 2 1/4 in. in diameter by 1 13/16 in. in depth and has 22 steps of attenuation covering a range of 50 decibels.—*Radio Retailing*, April, 1936.

Kato Battery Charger

A 6-volt, 20-amp. generator driven by a 1/2 hp. gas engine is a new addition to the line of the Kato Engineering Co., Mankato, Minn. Unit has a reverse current cutout and a switch in field circuit which permits killing generator fields when using engineer to drive other appliances such as washers, separators, etc.

Will charge a 6-volt battery and in addition has capacity to operate 6-volt lights. \$66.

With a 32-volt generator with charging rate of 8 amps., \$84. As a 110 volt a.c. generator, \$94.—*Radio Retailing*, April, 1936.



Ohmite R.F. Plate Chokes

Because of the need for plate chokes capable of carrying a fair amount of current without failure, the Ohmite Mfg. Co., 4335 Flournoy St., Chicago, has brought out a complete line of single-layer wound chokes. These units are wound on porcelain tubes and covered with an insulating moisture-resisting material which holds the turns firmly in place.—*Radio Retailing*, April, 1936.

GE Battery Charging Rack

A new battery charging rack, accommodating any standard wall-model, garage type "Lungar" charger together with four all-rubber trays holding three 6-volt batteries each has been introduced by the General Electric Co., Bridgeport, Conn.—*Radio Retailing*, April, 1936.

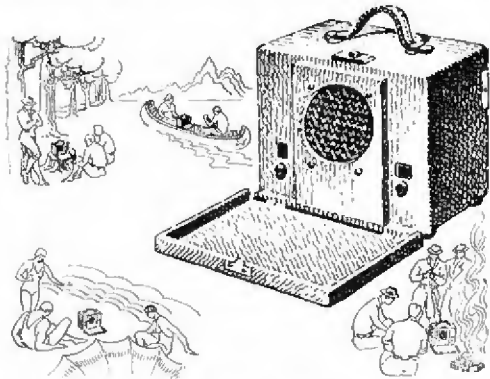
"Kontrol-Kord" Remote Control

A simple remote control to turn the radio off while sitting in an easy chair 20 feet away is made by the C. D. Wood Electric Co., Inc., 326 Broadway, New York City, under the trade name "Kontrol Kord." No tools are required for the installation, which takes only a few seconds.

This "Kontrol Kord" can also be used to turn lamps, fans, etc., on or off from a distance. A real convenience for invalids. Works on both a.c. or d.c. \$1.—*Radio Retailing*, April, 1936.

Lafayette Portable Combination

A seven tube portable radio-phonograph combination completely self-contained and made for operation on a.c. or d.c. may be obtained from the Lafayette Radio Mfg. Co., 100 Sixth Ave., New York City. Any 78 r.p.m. record, either 10 or 12 in., can be played. Comes in a Fabroid case, 27 1/2 x 13 1/2 x 10 1/2 in. Radio receiver covers the 18-56, 67-560 meter bands. \$54.50. Special European model also available.—*Radio Retailing*, April, 1936.



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Outdoor Radio this Summer

This compact portable battery radio with 4-tube superheterodyne circuit weighs only 20 pounds, complete with six inch speaker. Batteries plug in, no wires to connect. Attractive cabinet, choice of finishes.

Write for special Authorized Dealer Franchise covering portable radio and famous Ansley Dyna-phonograph combinations.

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ANSLEY Portable RADIO

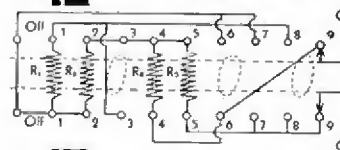
Simplified Decade

Resistance and Capacity

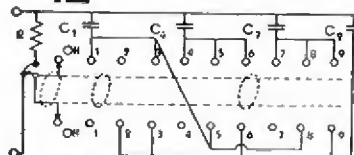
Circuits Use Semi-Precision

CONTINENTAL Carbon

Resistors and Condensers



Four CONTINENTAL Carbon insulated semi-precision resistors per decade do the work of nine in this simplified decade resistance box circuit developed by CONTINENTAL Carbon.



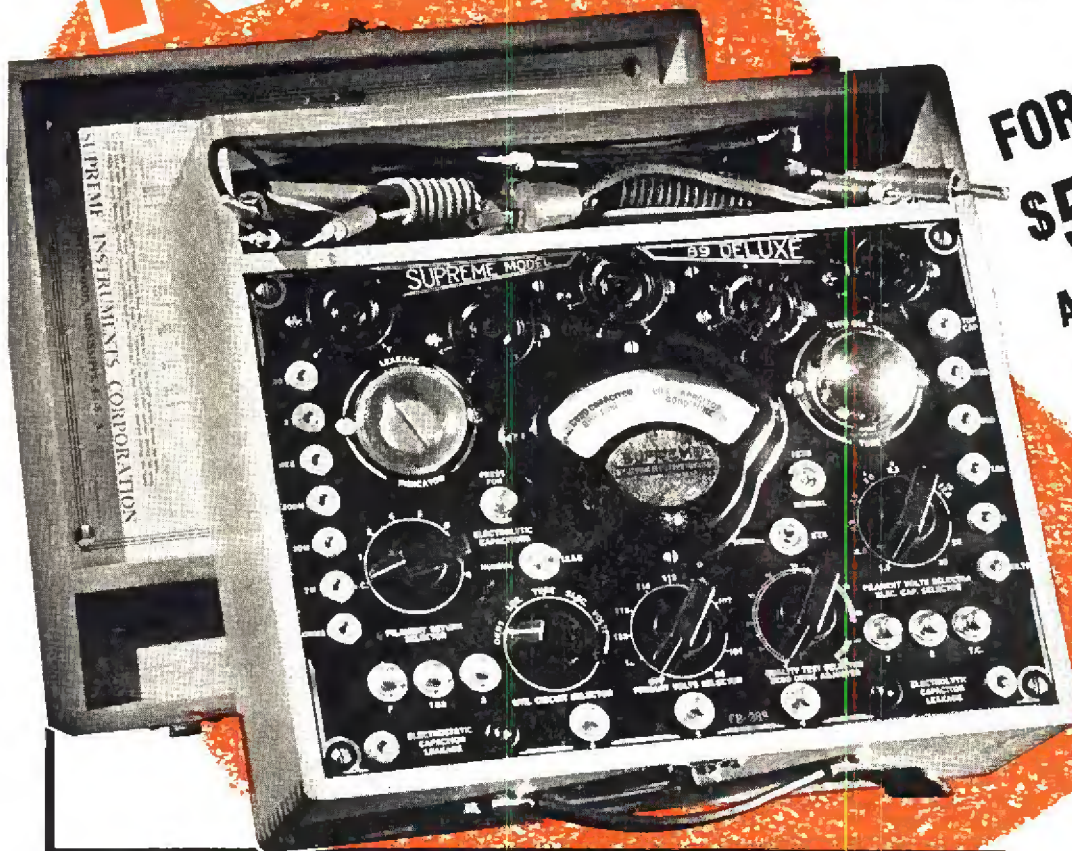
Only four CONTINENTAL Carbon semi-precision condensers required per decade! Build these R and C standards for your lab! Send for your FREE plans and parts list.

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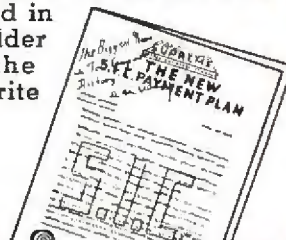
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Model	Cash Price	Time Pay't Price	Deposit	Monthly Payment
385 Automatic	77.95	85.75	8.50	7.72 (10 months)
89 De Luxe	45.95	50.55	5.00	4.55 (10 months)
339 De Luxe	39.95	43.95	4.50	3.94 (10 months)
189 Signal Generator	36.95	40.65	4.00	3.66 (10 months)

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SERVICE SECTION

CIRCUITS of the MONTH

Universal Ballast Tubes

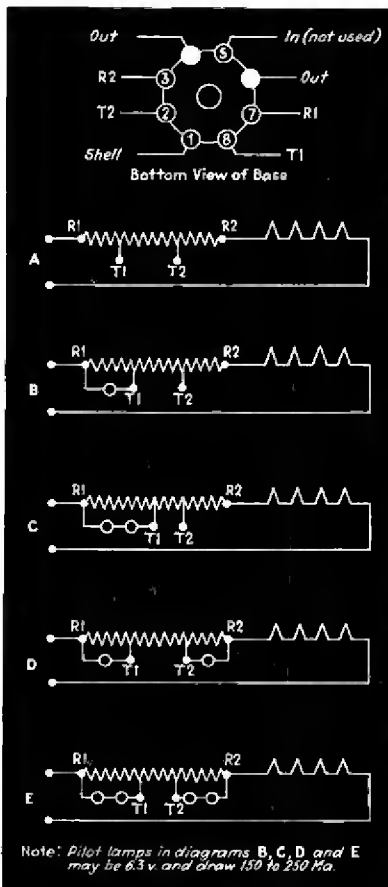
Two new "universal" ballast tubes, metal-enclosed, equipped with octal bases and designed for line-voltage reduction in a.c.-d.c. receivers without external resistance have just been placed on the market by Duresite. The Dur. 4-5 may be used in any 4 or 5 tube standard receiver with or without a pilot lamp, or any combination of pilots of the 6.3 volt variety up to four with a maximum drain of not more than 250 ma. each. This tube can be used in place of ballast types 55A, K55B, K55C, K55D,

L55B, L65C, L55D, 49A, K49B, K49C, L49B, L49C or L49D.

The Dur. 6 may be used in any standard 6-volt receiver with the same pilot light combinations as above. Suitable for circuits using the 42A, K42B, K42C, K42D, L42B, L42C, L42D.

Both tubes are compensated so that they may be used with or without the pilots. Should any or all pilots burn out the set will continue to function at normal voltages. Substitution of 150 ma. lamps in error for the 250 ma. variety will not affect circuit voltages due to this same compensating action.

Diagrams suggest various methods of connection.

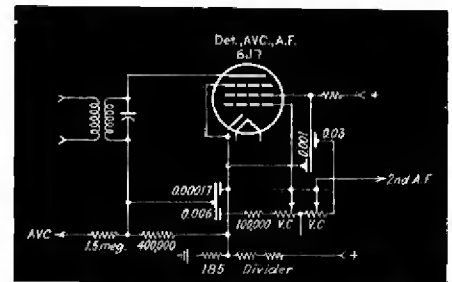


Simplified Police Call Switching

If regular broadcast stations come in weakly at their regular positions on the dial of Stewart-Warner Models 1421 to 1429 while tuning for police calls, don't try to trouble-shoot as this is a normal condition. Only the grid coil of the 6K7 detector-oscillator is made smaller, by a single set of switch contacts, in this simple two-band job, the oscillator simply heterodyning below the incoming signal frequency instead of above it as on the broadcast band.

6J7 As Diode Detector, AVC and Triode Audio

Here's a 6J7 hookup you haven't seen unless a Crosley 555 has been in the shop. The plate and cathode work first as a halfwave diode second detector, audio and a.v.c. voltage developing across the 400,000 ohm load resistor. A.v.c. voltage is passed to the left through a 1.5 meg resistor. Audio goes through the .006 condenser and appears across the 100,000 ohm fixed resistor and left-hand section of the twin volume control. It is picked off by the control



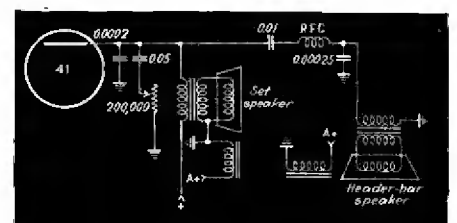
arm, applied to the grid, amplified by triode action and appears in the screen circuit, the screen serving in this case as a plate.

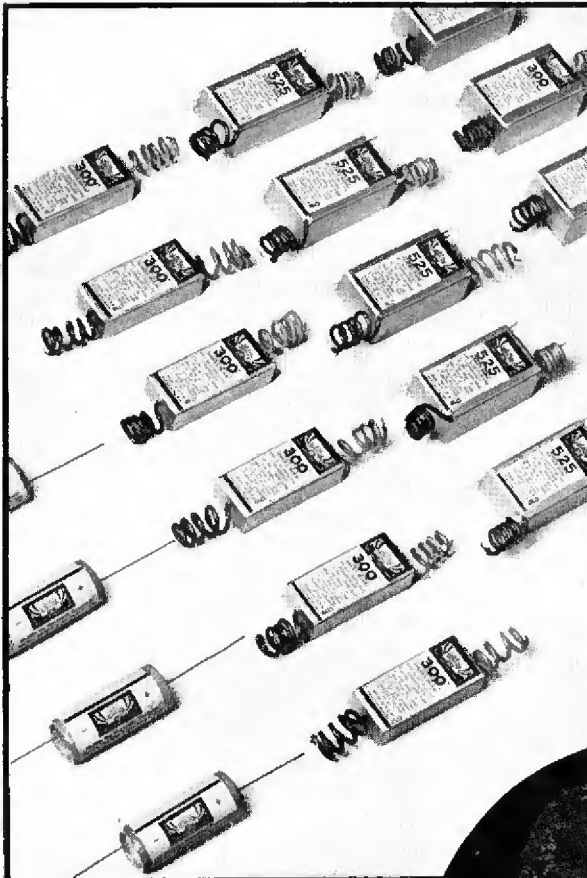
Audio appearing on the screen is picked off through the .03 condenser and applied across the right-hand volume control section. The arm of this section, which moves in unison with the one at the left of it in the diagram, applies the audio, in turn, to the grid of the following second audio triode.

Twin Auto-Radio Speakers

Several auto-radio makes and models just announced use two speakers. A Zenith receiver is designed to use one in the front of the car, the other in the rear. Certain Motorola models are twin-speaker equipped.

The circuit diagrammed is that of a Philco 818 in which two 6-volt field dynamics are used. Plate current for the final audio tube flows through the set speaker's output transformer primary while the primary of the header





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Tiny Silver-coated Cardboard Containers, Equipped with Color-coded Flexible Wire Leads and Mounting Feet

Compact, Dependable and Inexpensive. Excellent electrical characteristics. For use in limited space and tight-squeeze radio service jobs. Adequately protected against humidity. No need for an endless variety of special expensive exact duplicate replacements.

200v D.C. Working Voltage • 250v D.C. Peak Voltage
 SINGLE Section Units: Red Lead Positive; Black, Negative. DUAL and TRIPLE Sections, Separate Units, No Common.

Cat. No.	Cap. Mfd.	Size	List Price	Cat. No.	Cap. Mfd.	Size	List Price
JR-204	4	2 1/8 x 3/4 x 1/2	\$0.65	JR-244	4-4	2 1/8 x 1 1/2 x 1 1/8	\$.90
JR-208	8	2 1/8 x 1 x 3/8	.80	JR-248	4-8	2 1/8 x 1 1/2 x 3/8	1.15
JR-210	10	2 1/8 x 1 x 3/8	.90	JR-288	8-8	2 1/8 x 1 1/2 x 1	1.25
JR-212	12	2 1/8 x 1 1/8 x 1 1/8	.95	JR-2816	8-16	2 1/8 x 1 1/2 x 1 1/8	1.45
JR-216	16	2 1/8 x 1 1/8 x 1 1/8	1.05	JR-2888	8-8-8	2 1/8 x 1 1/2 x 1 1/8	1.90

450v D.C. Working Voltage • 525v D.C. Peak Voltage
 SINGLE Section Units: Read Lead Positive; Black, Negative. DUAL Sections, Separate Units, No Common.

Cat. No.	Cap. Mfd.	Size	List Price	Cat. No.	Cap. Mfd.	Size	List Price
JR-502	2	2 1/8 x 3/4 x 1/2	\$0.65	JR-544	4-4	3 x 1 1/2 x 3/8	\$1.20
JR-504	4	2 1/8 x 1 x 3/8	.75	JR-548	4-8	3 x 1 1/2 x 1 1/8	1.35
JR-508	8	2 1/8 x 1 1/8 x 1 1/8	.95	JR-588	8-8	3 x 1 1/2 x 1 1/8	1.50
JR-510	10	2 1/8 x 1 1/8 x 3/8	1.15				
JR-512	12	2 1/8 x 1 1/8 x 1	1.30				

Type RHM—The most outstanding Midget Condensers

The widely accepted "Handy Mikes"—now available with mounting feet at no extra cost.

Working Voltage 450v D.C. Peak Voltage 525v D.C.

Cat. No.	Cap. Mfd.	Size	List Price
RHM-9010	1	2 1/8 x 1 1/8 x 1/2	\$0.55
RHM-9020	2	2 1/8 x 1 1/8 x 3/8	.65
RHM-9040	4	2 1/8 x 1 1/8 x 3/8	.75
RHM-9080	8	2 1/8 x 1 1/8 x 1 1/8	.95

TYPE JEH, Rated at 150v D.C., 200 v D.C. Peak
 Solve the Many Problems of AC-DC & Midget Repairs

Dual Section Separate Lead Sections, Color-coded, in Flange Type Cardboard Containers, made by the famous "Hi-Formation" Construction. Finest Electrical Characteristics.

Cat. No.	Cap. Mfd.	Size	List Price
JEH-6404	4-4	2 1/8 x 1 1/8 x 3/4	\$0.85
JEH-6408	4-8	2 1/8 x 1 1/8 x 1	.95
JEH-6808	8-8	2 1/8 x 1 1/8 x 1	1.20
JEH-6416	4-16	2 1/8 x 1 1/8 x 1 1/4	1.25
JEH-6816	8-16	2 1/8 x 1 1/8 x 1 1/4	1.35

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Keep your customers satisfied—increase your business—raise your profit—by using Cornell-Dubilier Condensers in your service work!

For quick reference, here is a small listing of economical, compact C-D ELECTROLYTICS. Complete catalog gladly sent upon request.

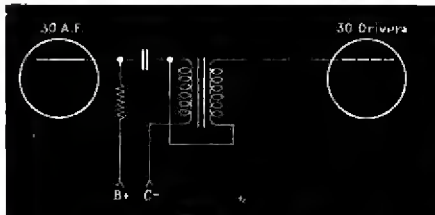
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SERVICE SECTION

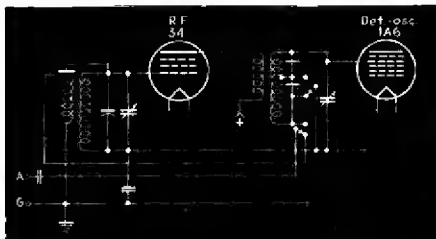
speaker's output transformer is capacitively coupled to the plate circuit and provided with an r.f. choke and .00025 filter to keep radiated noise out of this relatively long lead.

Auto-Transformer Coupling

If you run across trouble in an audio transformer between the 30 first audio



stage and a 30 driver in Crosley's 815 battery job the connections may be puzzling. The first a.f. tube receives plate current through a resistor and only audio reaches the transformer through a coupling condenser. And the unit is used as an autotransformer rather than a straight two-winding unit, giving some transformer action, some impedance coupling action.



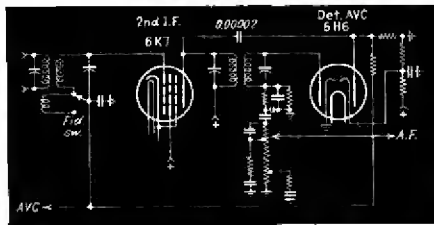
R.F. Cuts Out On S-W

Crosley uses a unique method of cutting out the r.f. stage of Model 605 when the receiver is switched to shortwaves. The unused portion of the 1A6 detector-oscillator's grid coil is connected to the antenna post and serves as an antenna coil in place of the separate winding in the r.f. input circuit used on broadcast.

I.F. Broadener, Non-Critical A.V.C.

Two refinements of interest to servicemen are seen in Belmont's Model 1070, series A chassis. Note the third winding on the i.f. transformer at the left. Switching it in for high-fidelity operation over-couples the transformer and broadens out response enough to nullify the very slight detuning effect which this very small secondary exerts on the tuned grid circuit.

Note, also, that the two diodes of the



6H6 are used separately, one for a.v.c. and the other for detection. A.v.c. r.f. voltage is obtained from the interstage transformer primary while detector r.f. voltage is secured from the secondary. This gives the a.v.c. circuit a broader characteristic than the signal circuit and avoids critical tuning and poor quality which sometimes results where both diodes are driven from the secondary.

"AUDIO FREQUENCY"

FROM RCA TUBE ENGINEERS engaged in the business of mopping up minor design "bugs" in their own sets and those of licensees that unavoidably reach the field we learn that when separate diodes are used in a.v.c. and second-detector circuits and tuning is found to be critical, slight detuning cutting out bass, operation can frequently be improved by feeding the a.v.c. diode from an i.f. transformer primary rather than a secondary. This keeps the signal channel sharp, broadens out a.v.c. action.

WE PICK UP, FURTHER, THE interesting inside story that when it is found impossible to completely cut off volume in sets using multi-purpose tubes as diode second detectors and first a.f. amplifiers this is due to capacitive coupling between diode and output plates. Connect about .0002 from output plate to ground, decreasing the r.f. impedance of the output-plate circuit to a small value. Distortion at some definite low setting of the volume control may, similarly, be due to capacitive coupling between diode plates and control grid. The laboratory suggests connecting .0002 from grid to ground.

POWDERED IRON EMBEDDED IN insulating retaining material has been used for some time in the design of i.f. coils. First extensive use of such cores at broadcast frequencies is seen in new auto-radios, transformers utilizing such cores being found at both r.f. tube input positions and at remote, impedance-matched antennas.

Two per set thus seems to be the average in designs now passing over our desk. Expected improvement in performance: Higher signal gain ahead of the first r.f. tube grid, hence improved auto-radio sensitivity despite general use of under-car antennas. Plus reduced circuit noise.

Sensitivity Increased

Stewart-Warner increases the sensitivity of its receiver Models 1341 to 1349 on shortwaves by utilizing segments of range-change switches 34A and 35C to alter bias and screen grid voltages.

On the broadcast range a bleeder resistor is cut into the screen circuits, reducing voltage and sensitivity. When the switches are thrown to shortwave position this resistor is removed and, in addition portions of the cathode resistors in both the 6D6 i.f. stage and the 6D6 r.f. stage are shorted out, reducing bias and further increasing gain.

Pentodes In Class AB

Public address men and others interested in obtaining a healthy "sock" out of easily driven, small tubes will be interested to know that RCA-Radiotron has made a series of measurements on 6F6's connected to operate as Class AB push-pull pentodes.

The chart printed here gives operating conditions with fixed battery bias and also with self bias and the power output ratings in the next to the last column, at the right, are certainly sump'n! Approximately 8 watts output can be obtained, we understand, before high-order distortion appears and at this output distortion is approximately two per cent.

CLASS AB OPERATION TYPE 6F6 TUBES (PENTODE CONNECTED)															
Driver Stage ¹		Interstage Transformer ²				Output Stage ³									
Tube type	Input-signal volts (RMS)	Plate load ohms	Maximum power output milliwatts	Primary % secondary	Peak power efficiency per cent	Resistance (R _p) of plate supply source ohms	Additional resistance (R _a) of screen supply ohms	Grid supply resistance (R _c) ohms	Grid-input peak power milliwatts	Grid-input peak voltage volts (per tube)	D-C grid current milliamperes (per tube)	D-C plate current milliamperes (per tube)	D-C screen current milliamperes (per tube)	Total harmonic distortion per cent	
6F6	14.5	58500	290	3.33:1.0	40.3	0	0	0*	117	37.3	0.65	17	41	5.5	4.9
6F6	10.1	21800	280	1.54:1.0	73.5	0	0	0*	210	47.4	1.2	17	39	5.5	5.5
6F6	14.6	51100	365	2.59:1.0	47.7	0	0	340	174	53.3	0.9	27	35	5.5	5.5
6F6	10.3	43300	261	1.74:1.0	64.4	1000	2000	340	168	50.5	1.0	27	35	5.5	5.5

*Screen connected to plate
¹Zero-signal plate voltage, 250 volts; zero-signal plate current, 31 ma. self bias resistor, 650 ohms; plate resistance (rp), 2600 ohms.
²Primary resistance, 1000 ohms; secondary resistance, 400 ohms each half, equivalent core loss resistance, 100000 ohms.
³Zero-signal plate voltage, 375 volts; zero-signal screen voltage, 250 volts; plate-to-plate load, 10000 ohms.

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Tests all tubes . . . spare sockets . . . Neon short check . . . cathode leakage test . . . individual tests on diodes . . . point-to-point voltage ranges . . . resistance-continuity features . . . Neon high resistance leakage test . . . positive line voltage control . . . the famous WESTON 301 Meter . . . striking design and finish.

Send coupon for full data on Model 771, and the new WESTON Tube Base Chart.

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581 Frelinghuysen Ave., Newark, N. J.

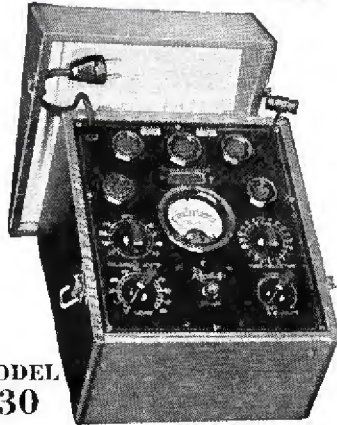
Please send bulletin on the WESTON Model 771 Checkmaster.
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MODEL 430

- ★ Tests all type tubes —Metal, Glass, Glass-Metal.
- ★ Line voltage adjustment.
- ★ Leakage and Short Test.
- ★ Triplett Direct Reading Instrument (GOOD-BAD Scale)

Reliability at Low Cost

An up-to-the-minute 1936 Tube Tester. Five flush mounted sockets provide for all type tubes. The tester operation is very simple and indicates condition of tube for dealer and customer on Direct Reading GOOD-BAD Triplett colored meter scale. The Tester is designed to indicate all inner element shorts and make leakage tests. Complete in attractive, sturdy quartered-oak case. Attractive sloping panel of silver and black. Suitable for portable and counter use. Model 430. Dealer Net Price \$18.00.

Model 431—same as 430 except has Readrite GOOD-BAD meter.

Dealer Net Price\$14.40

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READRITE METER WORKS
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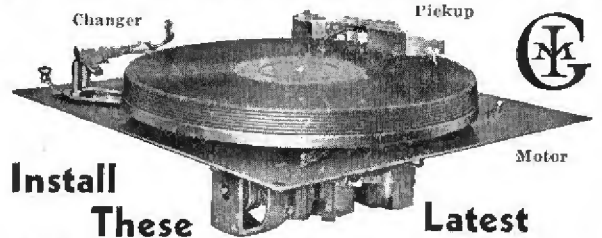
Without obligation please send me more information on
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Two models. Model L, shown here, plays and automatically changes EIGHT 10-inch or SEVEN 12-inch records, repeating last selection. Model K, special for 10-inch records, plays and changes EIGHT: plays 12-inch records changed by hand.

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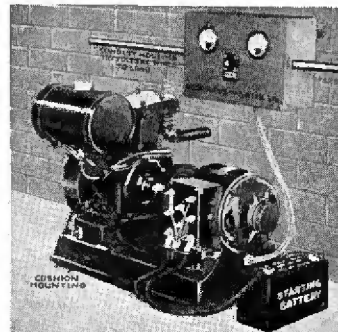


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800 watt 32 volt windmill light plants, \$156.00. Rotary Converters. 6-cell battery charger, wind and engine driven.

SERVICE SECTION

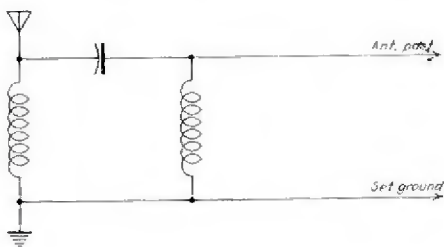
two pins engage when the center shaft is given a full turn.

Place a knob on the inner shaft, after shortening it so that the knob fits close to the front panel, and vernier tuning will be possible for a complete turn, direct gearing taking place as soon as the two pins engage and the hollow shaft turns.

Code-Reducing Trap

By W. Paulus

Certain small model superheterodynes not provided with either an r.f. stage or an antenna wavetraps bring in code interference from commercial stations



operating near the intermediate frequency. This interference can be eliminated by inserting a wavetraps such as the one shown in the diagram in the antenna circuit as shown in the diagram and tuning it to resonance with the unwanted signal.

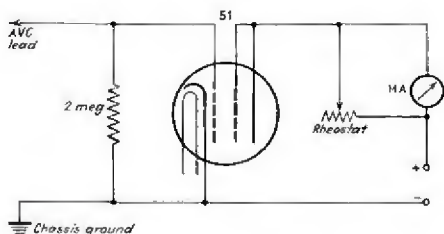
Where cabinets are large enough to permit it I use a set of "Binocular" coils from an old Grebe or Spartan receiver, tuning these with any variable condenser that will resonate the trap at the desired frequency, testing various scrap units until a satisfactory match is found. Compact honeycomb or spider-wound coils and fixed condensers may be used if sizes are selected experimentally. Probably about .0002 would do the job. T.r.f. tuning condensers from old receivers usually hit resonance when used with ordinary t.r.f. coils.

The two coils shown can be inductively related or not. It makes no difference in effectiveness.

"R" Meter for Shortwave Fans

By D. G. Bright

A lot of shortwave listeners become interested in the "R" meter, similar to



those used by amateurs to judge visually the signal strength of received phone signals, if told about it. This device is an easily made accessory quickly adaptable to sets having a.v.c. and can be sold to "fans."

Connect a 51 tube as shown in the diagram, using a 0-1 milliammeter in the plate circuit. Connect the lead marked "a.v.c." anywhere on the receivers a.v.c. buss, ground the lower connection at the left to the chassis, light the tube's filament from an ordinary bell-ringing transformer or a cheap filament transformer and apply high-voltage from the receiver's pack to the binding posts shown at the right.

Adjust the rheostat, for this particular range meter, to 9 ohms, which will give a full-scale meter reading. Sometimes it is desirable to connect the ground point of the device to the cathodes of the i.f. tubes instead of to the chassis. Test for best position.

Relative meter readings will show differences in received signal strengths. The device will also serve as a tuning meter. And it will show up fading visually.

Auto Antenna Lead Breakage

By Paul E. Grivet

Many auto-radio antennas mounted beneath the car suffer from breakage of the lead-in due to vibration. To overcome this ground the lead shielding firmly in a bracket at the junction of the fender and the running board. Replace the inner conductor with a piece of phosphor-bronze dial cable.

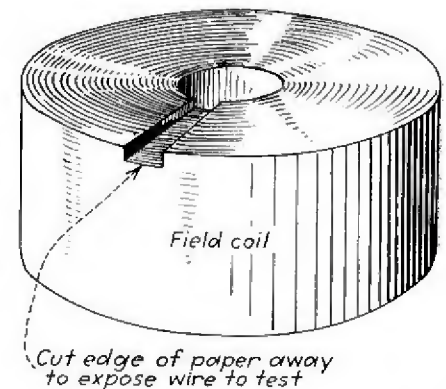
oroughly ground all metal parts. Renew all grounding connections with new clamps on entrance pipe. Ground the neutral side of the line, especially on old, open wiring jobs. Place radio so that shortest possible leads to ground and antenna may be used. Locate it as far away from electric wiring in the floor or wall as possible, particularly if the wiring is of the open type. Run separate circuit to radio in well grounded armored cable or pipe.

Speaker Field Repair

By Merrill Lindley

Obtaining speaker fields for old type sets is sometimes quite a job. Even if one can locate the maker it frequently takes two weeks or more to have the order filled. I use the following method of repairing fields. It works in most cases, saving time and money.

Remove the field coil from the speaker



Oscillograph As Output Meter

By V. W. Hodge

When using an oscillograph as an output meter hook a speaker field-coil to the vertical plates. Place this coil near the receiver's output transformer and flux leakage from the transformer will induce a current in the field-coil and give you a good indication without the bother of using adapters under the output tube or clipping on leads beneath the chassis.

assembly and place it on end on the bench so that the successive layers of wire and paper insulation may be seen. Now, with a sharp knife, cut a narrow "path" through the successive layers of paper from the outside to the core of the coil, as shown in the drawing. Be careful to cut just down to but not through the windings.

Check from layer to layer with a continuity meter equipped with needle point prods until the break is found. Bridge across the layer in which the break is found, with solder. Removal of a layer of wire will not weaken the field enough to produce a noticeable reduction in volume. Nor will it change the overall voltages throughout the set sufficiently to cause trouble.

60-Cycle Inductive Pickup From Rural Wiring

By Frank Miller

In rural districts 60-cycle hum is frequently picked up by receivers due to "haywire" wiring in the building. I find the following remedies useful in bad cases:

Make a metal box large enough to inclose meter and switch boxes and thor-

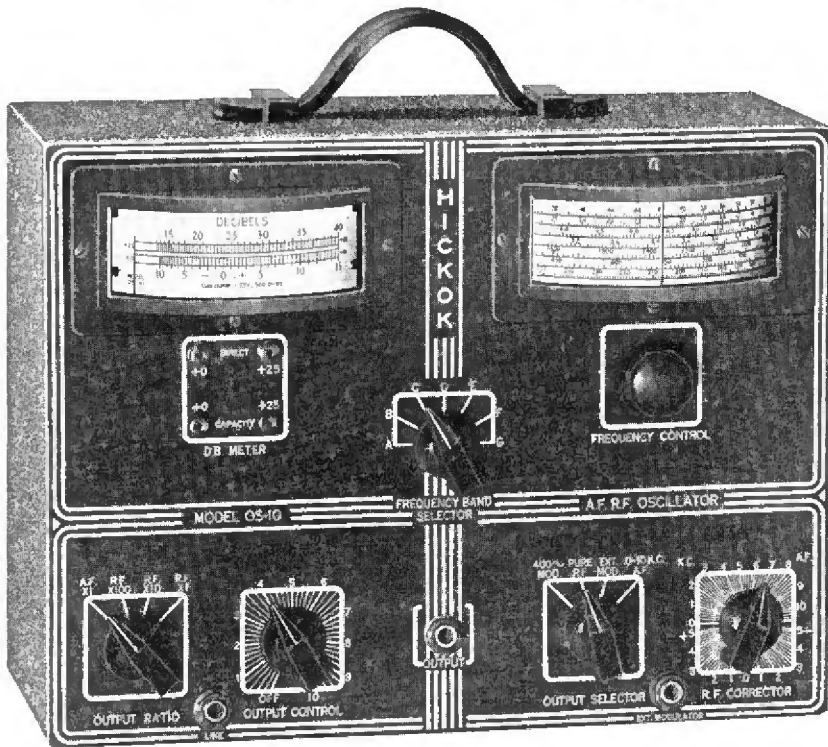
Removing Dial Bulbs

By V. H. Claremont

For those hard-to-get-at dial bulbs wind a few turns of narrow adhesive tape, sticky side out, around the tips of your favorite pair of long-nosed pliers.

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- Large Horizontal Edgewise Direct Reading Frequency Dial, accuracy 0.2 of 1%.
- R.F. Corrector—Insures Precision of R.F. Adjustment and permits micrometer band spreading.
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SERVICE SECTION

TRICKS of the TRADE

AK 40. Oscillation during warming up period . . . Shunt the secondary of the first a.f. transformer with a 250,000-ohm resistor.

AK 246. Set stops playing suddenly . . . Check for poor contact on filter choke, where it connects to plate of first detector 58. The brads that hold the connection on both sides of the coil loosen and corrode.

ARVIN 41, 51. Distortion at low volume control settings, on strong signals . . . Due to overbias of 6F7 grid. Remove 100-ohm resistor from cathode of this tube and connect the cathode to ground through an 800-ohm resistor. The volume control, in other words, should affect bias on the 6A7 only, rather than on this tube and the 6F7 together. The 6F7 should be fixed biased all by itself.

BRUNSWICK 11, 12, 16, 33, 24, 25. Dial slips . . . To correct loosen and remove nut above the center of condenser assembly. This permits removal of the planetary dial arm. Loosen the two screws holding the tuning knob, tone control and volume assembly. Place cardboard spacer $\frac{1}{2}$ in. thick underneath the assembly and tighten again. Replace planetary dial arm.

CLARION 40. Loud "pop" while set is warming up . . . Replace grid resistor of the 47 with a half-meg instead of the one meg unit originally used.

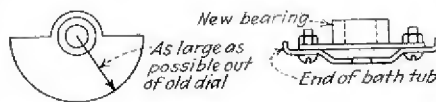
FORD - PHILCO N. No signal, voltages and tubes ok . . . See if padding condenser soldering lugs mounted on tuning condenser frame have punctured through insulating paper glued to fixed condenser can beneath, grounding out i.f. Slip new piece of heavy insulating fibre under the lugs, if this is the trouble, and bend the lugs up.

GE J83. Fading . . . Replace 50,000-ohm resistor under r.f. coil with a 60,000-ohm unit and resolder all oscillator coil connections.

MAJESTIC 50. Replacing dial bulb without removing two knobs, screws and other miscellaneous parts. . . . Remove dial escutcheon held by 4 small nails. Turn dial to 1,500 and remove end screw that holds dial strip. Insert bulb and backtrack process.

MAJESTIC 90. Violent oscillation, especially on high frequencies, when volume is turned up on station . . . Shunt a $\frac{1}{4}$ to $\frac{1}{2}$ mike condenser across each of the r.f. bypasses located beneath the chassis. These are large, inclosed in tin.

PHILCO 20, 70, 90. Tuning shaft wears grooves where bathtub serves as end bearing for rotor . . . The back bearing may be given a new working surface by beating in the end of the tub for about 1/16 inch. The front bearing is not so easily fixed. Take the old dial (a new one is usually needed anyway) and cut out a piece as shown in the accompanying drawing. Drill holes in the



front end of the bathtub (taking care not to damage the stator) and fasten this piece over the shaft in such a position that the shaft runs true and does not bind when rotated. The machine-screws holding this bearing in place must be secured with lock washers. Of course, the rotor and tubes must be removed during all this violent treatment. Greater precision may be secured if the holes in the piece of dial supporting the new bearing are drilled after the part is in place. This can be done by aligning all the parts in their final position and using one or small C clamps to hold the parts while the drilling is in process.

PHILCO JR 81. Oscillation of intermittent nature . . . Replace condenser 3793R, which acts as bypass for 42 output tube and also bypasses one side of the a.c. line.

PHILCO 95. Intermittent reception volume increases to high level and drops back to normal when test instruments shock circuit . . . Look for intermittent trouble in bypass condenser on low side of volume control. The lead to this condenser goes from control, through a cable, and connects to filter block. Cut off wire at both ends where it emerges from cable and resolder a .5 tubular between low end of volume control and grounded lug of nearest trimmer.

PHILCO 11. Set blows fuses and vibrator is found to be ok . . . Check for short between speaker field housing and on-off switch mounted on volume control. Tape section of field close to volume control and also cover switch assembly with insulating material.

RCA-VICTOR R32. Neutralizing adjustments . . . Some of these sets do not have holes in the top of the chassis to permit entry of insulated screwdriver. Sets frequently neutralize perfectly without plate but oscillate all over the place when it is replaced, especially when new tubes have been installed. Most trouble is at high-frequency end of dial. Grasp the rear 26 nearest the 27 detector while the metal plate is off and oscillation will occur. Neutralize while holding this tube, carefully adjusting the neutralizing screw nearest detector, and the set will operate ok when the plate is put in place.

RCA-VICTOR R7. Cracking . . . Frequently due to eyelet in chassis through which grid lead to 24 is brought up. The eyelet is not in any electrical circuit, but when it works loose the capacity of the grid lead passing through it varies with respect to ground. Remove or solder the eyelet.

RCA-VICTOR C11, C13. Intermittent reception, volume periodically rising sharply to nearly full output and then dropping back to normal . . . This is "cut in" rather than "cut out" trouble and to cure it replace audio coupling unit at the front right of dial, looking at the top of chassis. Tone compensation condensers open up. Be sure to get the improved unit for replacement as an original would probably have the same trouble eventually. Do not cut the leads as new leads come with replacement. Unsolder old leads at volume control and tone switch arms.

SILVER MARSHALL 37, 38, 39, 782.

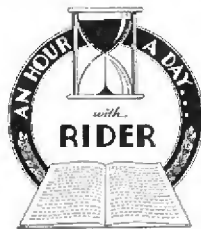
Distortion at low volume level on local signals . . . Replace second 24 from front of set with 35 or 51, change minimum resistor to 100 ohms (on Bakelite strip with one end grounded and other to volume control) and connect a 25,000 ohm resistor between screen of 35 and high voltage side of volume control.

SPARTON 16. Extreme motor-boating . . . Insert a static shield between the oscillator stator and the adjacent r.f. stator on the tuning condenser gang. This in no way impairs performance as far as selectivity and sensitivity are concerned. The undesirable condition is due to r.f. from the oscillator getting to the second detector, blocking the set through a.v.c. action and releasing periodically.

STEWART-WARNER R-136, R-137, R-138.

Insensitive above 12 mc. despite perfect alignment and correct voltages, shadow-meter on last two chassis mentioned contracts as if station was tuned in when set is switched to this high-frequency range . . . Due to stray coupling within set wiring. Sets up spurious oscillation of the 6A8, causing the control grid to draw current, producing an a.v.c. voltage and reducing sensitivity. To eliminate trouble isolate grid return of the 6A8 from the a.v.c. system by returning it directly to ground. The grid coil of this tube is tuned by trimmer condenser 11 in the 136, by trimmer 15 in model 137 and trimmer 16 in the 138, referring to the diagram. Shortwave section is the one wound with heavy, bare copper wire and grid return is at the top, the lead running down the full length of the coil before it is soldered to its terminal lug. The simplest way to isolate the grid return circuit is to cut the heavy coil wire as close to the lug as possible. Be careful not to cut the fine wire from another winding soldered to this same terminal. After cutting the heavy wire merely re-solder it to the grounded, threaded support lug of the coil. Re-align the set after change is made.

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SERVICE SECTION

1936 Auto-Radio

(Continued from page 9)

usual systems. This greatly increased gain ahead of the first tube is responsible for the improvement in noise to signal ratio.

Matching Controls

Custom built controls, the biggest selling feature in years, which are being featured by most radio manufacturers, will undoubtedly be considered a necessary evil by many radio dealers and installation stations. There are several general types in use today. The first is the familiar aeroplane type with both controls located below the tuning dial. The second type, a horizontal arrangement with a control knob located on either side of the tuning indicator. The third type is a vertical one, where a control knob is located above and below the tuning indicator. The last two are equipped with either drum or small aeroplane indicators.

It will be readily seen that it is only necessary to have these three control heads and a complete assortment of adapter plates to accommodate almost any car. One manufacturer has a unique arrangement where the tuning knob and tuning indicator is one small unit and the volume control fitting wanders around to accommodate the different plates. In this case one control unit and the various plates solves the problem. A universal control head designed to adapt almost any set with any gear ratio to almost any dash has been developed by another manufacturer.

Header Speakers

The increasing popularity of ear level reception has resulted in a crop of semi-universal header type speakers. There are two general styles: the actual header speaker which is mounted behind or on the header strip immediately above the windshield, and the large diameter flat ring type which mounts flat against the roof of the car just back of the header strip. In some sets a large dash speaker is used in conjunction with an overhead type.

Under-Car Antennas

The increasing popularity of turret top cars has stressed the necessity for efficiency in under car aerials. The low capacity, ruggedly built bar, double bar or strap type has become almost universal. Ease of installation on existing bolts under the running board, without drilling additional holes is largely responsible for the popularity of these types.

The convertible car still presents an opportunity to provide a very efficient aerial in the roof. When properly done by supplying an additional lining under the entire top and covering this area with Litz wire a surprisingly effective aerial is the result. If the proper workmanship and material is employed the top will fold properly. In the 1936 Dodge the center section of the roof is insulated for an aerial. In the 1936 Lincoln Zephyr the cover of the luggage compartment is insulated for the same purpose. These two aerials are very satisfactory providing their effective capacity is considerably

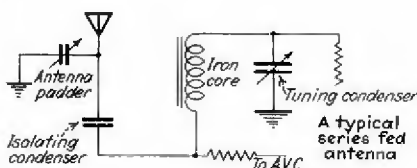
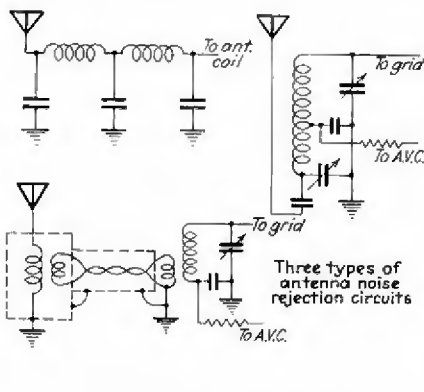
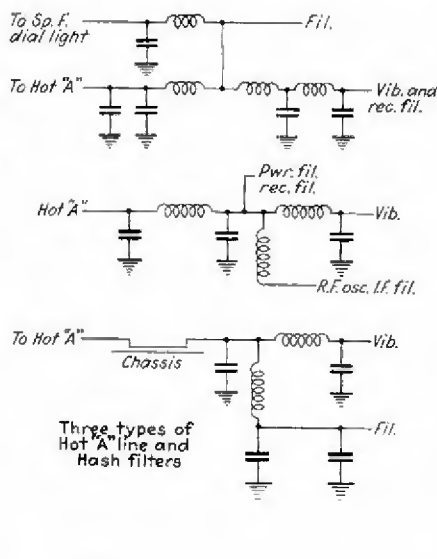
reduced by the insertion of a small condenser in series with the aerial lead.

Mounting Brackets

In mounting receivers over the steering column it has been necessary in many cases to feed the bolts into the receiver from the engine side of the bulkhead, which is a tedious and time wasting system. One manufacturer now provides a jiffy bracket for his sets. This bracket has a heavy multi-contact grounding spring to assure a low resistance receiver ground. It has holes to accommodate the three most widely used drillings. In most cases the new set may be installed without any drilling whatever.

Installation Hints

The installation of new receivers in modern cars, without suppressors, is not very difficult if a few fundamental facts are borne in mind. For instance, it has been found



necessary to scrape the paint from the bulkhead around the mounting bolt holes to secure a good low resistance ground for the chassis. It is also necessary to repaint this area after installation to guard against the ravages of rust.

Custom-built controls are rather simple problems if the instructions are carefully read as each of these units has distinctly different mechanical features.

The treatment of the antenna lead is still one of the most critical points of a good noise-free installation. The most satisfactory solution has been to keep it out of high intensity fields such as the engine compartment unless additional shielding is provided and well grounded to body members that are in turn themselves properly grounded. The shielding should extend well up into the corner post where a roof aerial is available and to within an inch or two of the actual aerial with under car aerials. In turret top cars an antenna lead hole is usually provided on the horizontal portion of the floor, behind the left kick pad and is sometimes plugged by a rubber stopper. The extreme end of the shield should be solidly grounded.

In roof aerial equipped cars the dome light and the steering column are usually the main sources of noise. A condenser on the dome light lead where it enters the post and a good short ground from the steering column to the bulkhead will usually correct these two troubles.

In turret top cars it is sometimes necessary to bond the left front fender to the running board, near the outer edge of running board and solidly ground the exhaust pipe near the rear of the car. It is also necessary to install the static collectors in front and rear wheels on most General Motors cars.

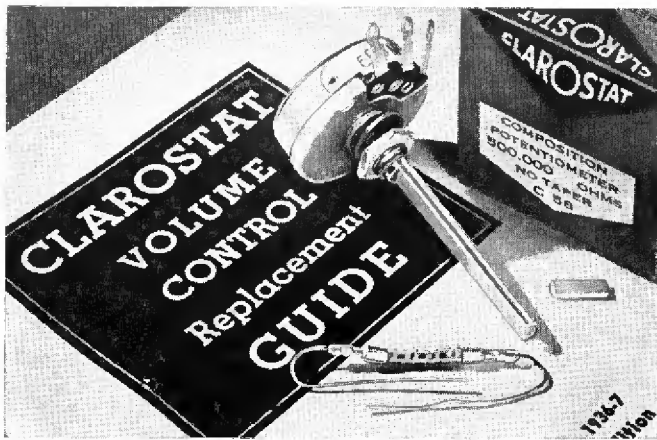
Condensers are usually required on all the electrical gauges such as ammeter, gas gauges, oil pressure gauges, thermo gauges, and of course, the generator and possibly the stop light switch. In all cases the condenser must be put at the source of disturbance pickup.

Sounding Board for Automobile Speakers

For the first time on any automobile, a built-in wooden sounding board is now available. It's built in across the forward section of all Cadillac and LaSalle turret-top roofs and is concealed by the fabric of the headlining. It is constructed of selected three-ply gum wood.

Although the actual dimensions of the sounding board are only 36x14 inches, the engineers point out that the method of installation actually gives it the effectiveness of a board 36 inches square, an area equalled in few home radios.

So startling is the improvement in reception provided by this new combination of speaker and sounding board, that many Cadillac-LaSalle dealers have arranged show room demonstrations in which the speaker unit may be removed from the sounding board to show the difference in tonal reception.



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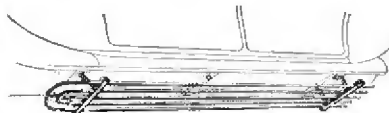
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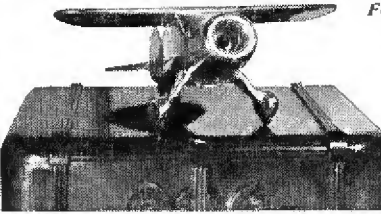
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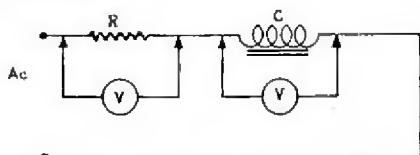
Regular discounts applied—Ask your jobber or send to
EMPIRE RADIO CORPORATION, 1217 Washington Blvd., Chicago, Ill.

SERVICE SECTION

Simple Iron-Core Inductance Measurement

By Earle Travis

Two methods of inductance measurement are described in the following paragraphs. Both require only equipment usually found in the shop.



The first method uses the setup shown in the diagram. C is the iron-core choke of unknown inductance value. R is a resistance whose value is known. 10,000 ohms is a good value. E_c refers to voltage drop across the choke, read with an a.c. voltmeter. E_r refers to voltage across the resistor, read with a voltmeter. L is the inductance in henries.

Use the formula:

$$L = \frac{Z}{376.8 \text{ (for 60 cycles)}} \\ 314 \text{ (for 50 cycles)}$$

$$Z = \frac{E_c \times R}{E_r}$$

A second method uses the same setup of apparatus but a little more figuring. However, it is more accurate because it takes into consideration the resistance of the choke.

$$(1) I = \frac{E_r}{R}$$

$$(2) Z = \frac{E_c}{I}$$

$$(3) X_L = \sqrt{Z^2 - R^2}$$

$$(4) L = \frac{X_L}{2\pi f}$$

Where π equals 3.14, f equals frequency of current used. Note that R in equation 3 is the resistance of the choke under test, read with an ohmmeter.

The inductance of a choke varies both with frequency and with the current flowing through it. So the inductance measured will not be true under all conditions.

It's pretty technical for most servicemen and could scarcely be considered light, frothy reading so we recommend it to public address operators and others who are well up on audio work and have occasion to dig into the technicalities of design details.

Electrolytics in AC-DC Jobs

By B. L. Hinnant

We have four men in our shop and encounter about thirty faulty ac-dc receivers per month. We keep a record of all repairs and checkup indicates that fully 75 per cent of all trouble with sets of this variety is caused by failure of voltage-doubling electrolytic condensers.

Faults encountered generally cannot be detected with the ordinary condenser checks such as the use of an ohmmeter or neon lamp as the trouble usually is a capacity change or an open. Sets having such trouble lack pep or, after a few minutes of operation, become "mushy" with a decided a.c. hum or hash.

There are two quick ways to shoot this trouble. Substitute new condensers right at the outset in such receivers or use a capacitor analyzer. The latter is preferable to avoid the necessity for stocking a wide range of replacements.

Ken-Rad Bulletin

The Ken-Rad Corporation, of Owensboro, Kentucky, has just prepared a 14-page bulletin entitled "The Relation of Modulation Products with Multi-Tone Signal to Harmonic Distortion with Mono-Tone Signal in Audio Amplifier Analysis" and offers to send one free of charge to interested readers of *Radio Retailing* on request.



"MY TIME AND MY REPUTATION ARE ALL I HAVE TO SELL"

says Bill Fixit

"That's why I always use BROWN DEVIL resistors. They never let a fellow down. They cut out the call-backs which cost good money. I'll

never switch from 'Brown Devils'."

"Brown Devils" are wire-wound units coated with a moisture resisting vitreous enamel. At rated wattages, they are guaranteed not to deteriorate, warranted to maintain constant resistance value.

Practical in almost any radio circuit. Solidly anchored 1½" tinned lead wires permit easy installation. 10 and 20 watt sizes in resistance values through 100,000 ohms. Ask your jobber or write for OHMITE Catalog 14.

OHMITE



MANUFACTURING COMPANY

4845 Floumoy St., Chicago, Ill.

Manufacturers of Resistors of All Types

Mr. Paging Serviceman

JUST OFF THE PRESS!

The NEW RADOLEK Radio Profit Guide 1936

SEND FOR YOUR COPY!

The Radolek New 1936 Radio Profit Guide is just off the press... completely revised—right up to the minute. Everything in Radio—at the right prices. Contains over 10,000 individual Radio Repair Parts—hundreds of new items—a complete new selection of Radio Receivers, Amplifiers, Tools, Tubes, Books and Instruments. Everything you need—always in stock—ready for prompt shipment to you. This Big Radio Parts Catalog is FREE. Send for it! Rely on Radolek for Radio. Radolek endeavors to restrict distribution of The Profit Guide to those actively and commercially engaged in the Radio Business. Please enclose your Business card or Letterhead.

RADOLEK

592 W. RANDOLPH—CHICAGO

Send Me The Radolek Radio Profit Guide Free.

Name

Address

Serviceman? Dealer? Experimenter?

TRY SPRAGUES... and note the difference

DON'T MISS THIS!

Hot off the press comes the new 1936 Sprague Catalog brimful of new condensers, new ideas, new low prices, new service helps. Write for yours today! Save time by making duplicate replacements the Sprague Way! Get the new dope on Interference Elimination! See the complete new line of 450 volt condensers—the finest ever! Learn about the new Sprague mounting flange—and countless other features you can't afford to miss!

Remember: No need to check surges with Sprague's. You know they're right.

SPRAGUE PRODUCTS CO.
North Adams, Mass.

SPRAGUE 600 LINE CONDENSERS

AMERICA'S FINEST LINE OF QUALITY UNITS

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SEARCHLIGHT SECTION

FREE BULLETIN

1936 Spring and Summer Catalogue of Radio Sets, Tubes, Accessories, Replacement Parts, Servicemen's Supplies, Testing Equipment, Laboratory Equipment, Amateur Equipment, Experimenters' Parts, S.W. Apparatus, Set-Builders' Kits, Public Address, Technical Books, Tools, Hardware, etc.—64"x94", 140 pages, with "Special Value" inserts. Illustrated, classified, priced and indexed. Write to Allied Radio Corporation, 833 West Jackson Blvd., Chicago, Ill.

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1936
Allied Radio
CORPORATION
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Send me your FREE Spring and Summer Catalog.

Name

Address

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MANUFACTURERS Attention. Factory representative covering Ohio, West Virginia and Pennsylvania desires to represent manufacturers of refrigerators, washing machines, ironers, radio and other electrical appliances. RA-203, Radio Retailing, 330 West 42d Street, New York City.



SOUND - ON - FILM EQUIPMENT

New — Used — Rebuilt
16 mm and 35 mm

Startling low prices on projectors, screens, sound heads, amplifiers, microphones, portable projectors, arc lamps, rectifiers, generators, etc.

Write for details

S. O. S. CORP., 1600 Broadway, New York

Searchlight Rates

SEE HEADING ON PAGE 60
of the
MARCH ISSUE

Radio Jobbers..



BUILD-YOUR-OWN-CATALOG

Give Your Customers a List-Price Catalog . . . They have been demanding it for a long time . . .

You know how effective a good catalog is in pepping up your salesmen, bringing in orders, helping you cover a large territory at less expense. When you learn the details, you will realize that you cannot afford to miss this opportunity for boosting your sales and increasing your turnover.

You, like many other distributors, know that a catalog is essential to your business. The only reason you have not issued your own catalog up to now is because of the tremendous amount of work and expense involved.

Help your dealers and servicemen make a fair profit on the merchandise they sell by issuing a *list price catalog* as a means for them to solicit business.

Through the United "Build-Your-Own Catalog" plan, you can have just the catalog you need—and at very little cost. You will be proud to distribute this handsome book to your customers. It will give you prestige and will immediately place your entire stock before your trade. Every catalog is individualized with a beautifully designed cover which is exclusively your own for your territory and on which your name and address appears.

DON'T LET THE SUMMER MONTHS DIG A HOLE IN YOUR SALES. The live-wire distributor who issues his catalog NOW is bound to keep his sales level up and build a customers' path to his door.

Shipments are already being made to many leading jobbers. **WRITE TO-DAY FOR COMPLETE INFORMATION.**

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| American Phenolic Corp. | Kester Solder Co. |
| American Radio Relay League | Lechner Electric Co. |
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| American Transformer Co. | Leotone Manufacturing Co. |
| Amperite Corporation | Littlefuse Laboratories |
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| Astatic Microphone Laboratory | Mallory & Co., Inc., P. R. |
| Atlas Resistor Co. | Meissner Mfg. Co. |
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| Automatic Electrical Devices Co. | Muter Company |
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UNITED CATALOG PUBLISHERS · INC.

258 BROADWAY · NEW YORK

A Message to: **RADIO DISTRIBUTORS**

Retailers throughout the country are again beginning to feel the pulse beat of a rapidly rising tide in general business.

All field statistics definitely indicate that we have entered 1936 on the crest of a new and stronger sales wave.

Through the advertising columns of RADIO RETAILING — for instance — advertisers are showing dealers how to build greater sales by . . .

1. Tying in with national consumer advertising, special dealer sales helps.
2. Talking product improvements, special approvals, and outstanding features.
3. Selling standard quality, trademarked lines.
4. Out-smarting seasonal consumer buying habits.

These and many more selling points, directed to dealers, are equally important to RADIO DISTRIBUTORS.

Realizing the value of time and reading convenience, to busy sales executives, we are mailing to RADIO DISTRIBUTORS each month a—quick glance—handy reference interpretation of each advertisement appearing in the issue.

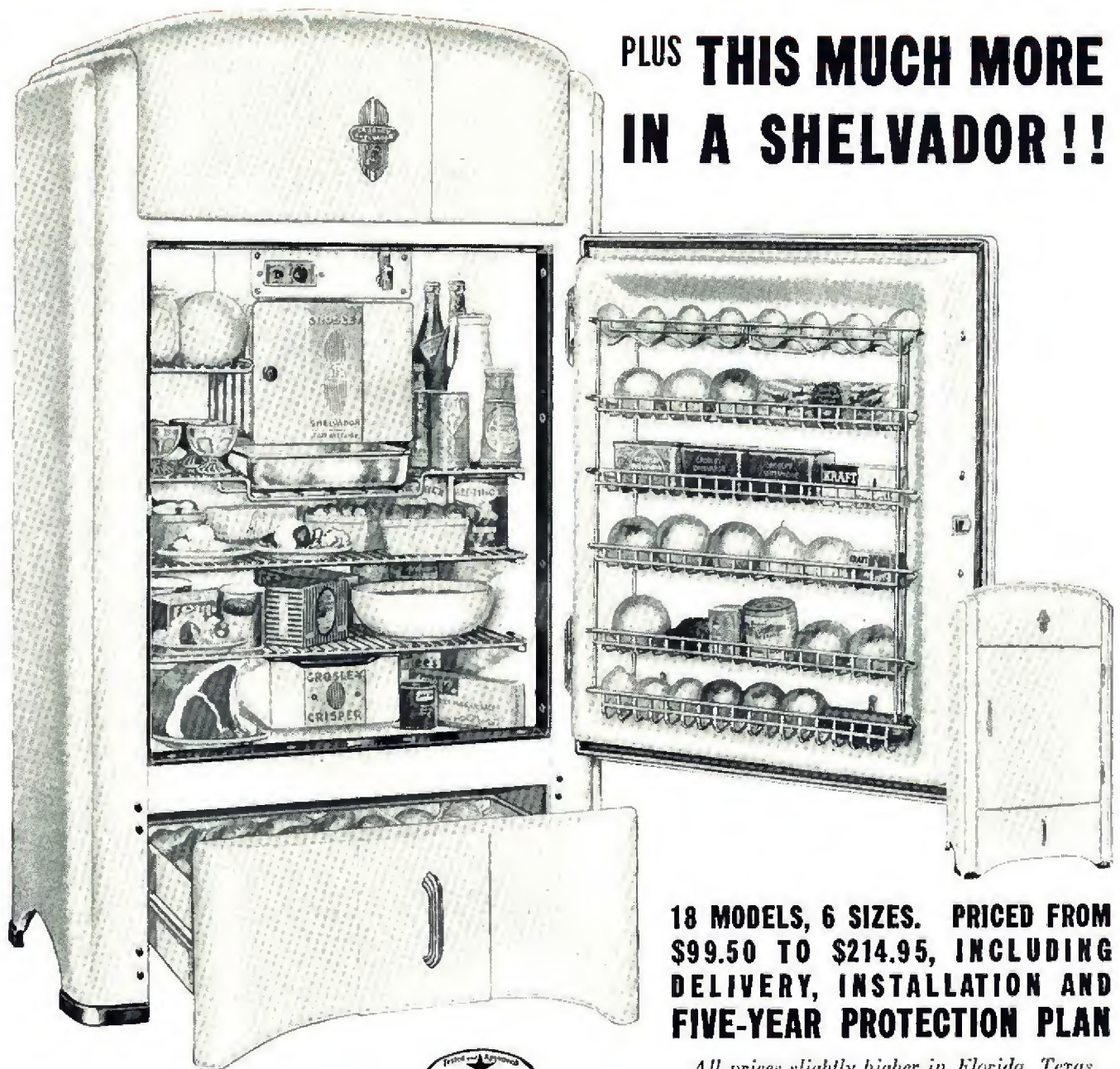
To read this broadside consistently should be part of every RADIO DISTRIBUTOR'S sales activities. Watch for the next issue.



330 WEST 42nd STREET, NEW YORK, N. Y.

***World's Fastest Sales Growth

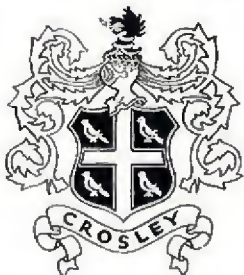
BECAUSE: *World's Most Beautiful Refrigerator*



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IN A SHELVADOR!!**

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*All prices slightly higher in Florida, Texas,
Rocky Mountain states and West.*



CROSLLEY

THE CROSLLEY RADIO CORPORATION, CINCINNATI - POWEL CROSLLEY, Jr., President



A NEW General Electric WINDOW DISPLAY

The G-E Radio Bandmaster goes 'round and 'round pointing out all the features that make sales. Cash registers will ring with the song of profits when the Bandmaster goes into action.

Here's a display that is extremely smart, chock full of real customer appeal. A masterpiece in dramatic selling, so out of the ordinary it strikes a new keynote in selling "right from the window."

Radio dealers who take full advantage of the series of unusually striking sales promotion pieces offered by General Electric will find a new interest and enthusiasm injected into the business of increased turnover, volume sales and substantial profits.

Memo:-

Be sure to get complete information about this display and the General Electric Franchised Dealer plan. See your nearest G-E Radio Distributor, or write to General Electric Company, Radio Division, Bridgeport, Connecticut

GENERAL ELECTRIC

The Original Metal-tube Radio

APPLIANCE AND MERCHANDISE DEPARTMENT, GENERAL ELECTRIC COMPANY, BRIDGEPORT, CONN.