

RADIO RETAILING

INCLUDING
SERVICE
AND
INSTALLATION
SECTION

THE BUSINESS MAGAZINE OF THE RADIO INDUSTRY



On the Farm . . . as in the City

RCA VICTOR HEADS THE RADIO PARADE!



Selling *FAST* on the farm! Model BC6-4 looks and is a lot of set for only \$58.50 (less batteries, f.o.b. Camden, subject to change without notice). Handsome, compact, tuning range 540 to 6900 kcs., which includes the 49-meter band.

Farm radio sales doubled! That's RCA Victor's record for the beginning of the new radio season now in full swing. And it's a record that clearly indicates this is going to be the biggest, most profitable farm set season ever!

It's a record that marches straight and true in the footsteps of the sensational "city" radios—the ones with the "Magic Brain" and "Magic Eye" and RCA Metal Tubes.

Farmers and their families are "all het up" about RCA Victor's big and beautiful 1936 models. They're gazing in wonder as these thrilling sets bring in world-wide entertainment "just as easy as pie." They're highly impressed with the low cost and operating economy of the new models. They're pleased with the wide choice of cabinets and table models, in addition to having their pick of air-cell or storage-battery sets. An intensive advertising campaign in national farm papers keeps our sales story before them all the time—makes them RCA Victor conscious.

And—because of all this—they're BUYING! That's why we urge you—push RCA Victor farm radios—and the farmers will push their money into your hands!



RCA Victor

RCA Mfg. Co., Inc., Camden, N. J. A subsidiary of the

RADIO CORPORATION OF AMERICA

B-e-l-m-o-n-t Spells Profits!

High 'Q' Iron Core Coils!

Iron cores make a high "Q" ratio of inductance to resistance in the i. f. input, permitting a new circuit for band expansion which cuts in at the treble end of the tone control for high fidelity.

Automatic tone compensation, or ATC, is a feature of the volume control. As bass and treble tones are practically inaudible at low volume in a straight line amplifier, the Model 770 has been designed to change the frequency response at low volume, giving the bass its full rich depth and retaining the brilliancy of high notes. Curve A is the full volume output and curve B the low volume characteristic of the Belmont Model 770 radio receiver.



Model 770

A distinctive console receiver styled in graceful modern lines; 38" high, 22" wide, and 12" deep. Frequency range, 18 m. c. to 535 k. c., in three non skip bands. Three metal and four glass tubes, full 10" dynamic speaker, AVC, ATC, band expansion, and m. v. average sensitivity. For 110-120 volt, 50-60 cycle A. C., or other voltages and frequencies on order.

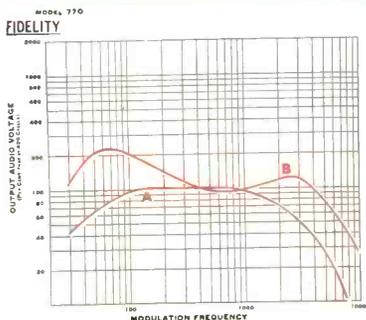
Belmont Radio Corporation
1257 Fullerton Ave., Chicago, Ill.
Cable address: Belrad

It's Sales That Count!

Profits increase with turnover; it is not the net or list price but sales volume and satisfied customers that you want. Belmont receivers are abundant with features which stimulate sales. They are built to stay sold without service!

A beautiful console cabinet, tone that is at once rich with depth and brilliant in quality, hairline selectivity, foreign and domestic reception, simplified tuning, and a price that makes cash sales easy are only a few of the many reasons you should investigate the Belmont.

Radio's smartest dial with diffused lighting makes the Model 770 distinctive in your display of modern radio sets.



BELMONT

THE DEPENDABLE

RADIO



a challenge



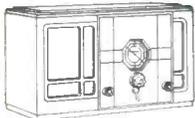
*has—this year—enjoyed a greater
increase in public acceptance than
the product of any other manu-
facturer of radio receiving sets . . .*

**WE CHALLENGE ANYONE TO
DISPUTE THIS STATEMENT**

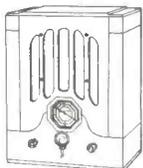
There must be a reason

ZENITH RADIO CORPORATION
3620 IRON STREET, CHICAGO, ILLINOIS

LOOK AT STROMBERG-CARLSON SALES JUMP!



No. 61-H



Nos. 58-T and 61-T



No. 65

Big Sales Increase Means Real Profit for Dealers and Dealers' Salesmen

Good men are *better men* when they are selling a line with the thrill of life in it. The "jump" to Stromberg-Carlson radios this fall is inspiring Stromberg-Carlson dealers' salesmen to new victories everywhere.

—And what a showing!

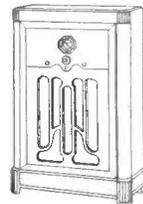
Popular price models which out-do all competition. Seven High Fidelity numbers, more than in any other manufacturer's list. Radios with the already famous and exclusive "Acoustical Labyrinth." Every model in the Stromberg-Carlson line carries a worth-while margin of profit.

The longest price range in the industry, \$59.50 to \$985.00. (Texas, Rockies and West, slightly higher.) *A few territories are still open to live merchants. Write us.*

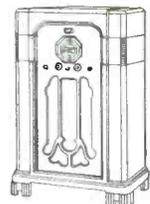
STROMBERG-CARLSON TELEPHONE MFG. CO., 100 CARLSON ROAD, ROCHESTER, N. Y.



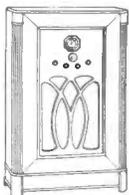
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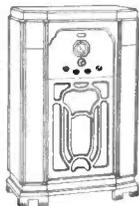
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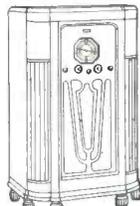
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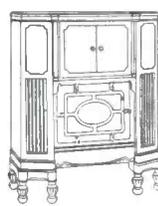
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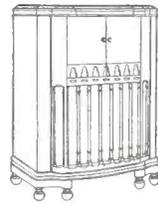
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*No. 84



*No. 70



*No. 72



*No. 74

There is Nothing Finer Than a Stromberg-Carlson

Stromberg-Carlson

**High Fidelity Models*

DYNAMIC POINT-OF-SALE ADVERTISING OF *Emerson* *Radio*

"RE-CREATES THE ARTIST

IN YOUR HOME"

ATTRACTING THOUSANDS OF NEW BUYERS

The "eye value"—outstanding **STYLE**—of Emerson Harmonized Unit Radio, on these **MOVING** displays and against these attractive backgrounds, is stepping up the selling-power of dealers' windows everywhere.

Put them to work in **YOUR** business. Get the details of these and other forceful helps from your local distributor or direct from Emerson headquarters.

Emerson's policy of "promotion where the goods are sold" is jumping dealer sales of the entire line—19 great models, \$17.95 to \$129.95.



Note how this display serves as a striking center piece around which sets may be grouped. Emerson Models illustrated are 106, 107, 111, 109 and 108.

Mirrored Window Feature

For EMERSON "Duo-Tone"
and Other Models

Attractive, substantial combination of hard wood, chrome metal trim and thick mirror. Large round background in cream lacquered plyboard with die-cut lettering and design in contrasting colors and gold. Base of gold finish. (Mirrors reflect rear grille of "Duo-Tone" models.)

Size approximately 5½ feet high, 3 feet wide.

Shipped in individual carton.



Motor Turntable Display

Putting the Emerson "Duo-Tone" Models in Motion!

Attractive red and silver revolving table mounted on highly efficient motor capable of handling fifty-pound weight. An ideal arrangement for demonstrating the identical front and rear grille of the Emerson "Duo-Tone" models.

Dimensions: Turntable 16 inches in diameter, 4¾ inches high.

Shipped in individual cartons.

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

what makes
a tube line
profitable?

Successful Retailers say,

A RADIO TUBE MANUFACTURER MUST PROVIDE...

9 Essentials

IN HIS LINE AND IN HIS POLICIES **BEFORE** A RETAILER CAN AFFORD TO PUSH THE LINE AS..

HIS
"Plus Profit" LINE

This portfolio develops and discusses the nine basic qualifications found to be essential in a tube line. It proves that all nine must be present if a line is to pay the retailer a full profit on every sale while building his business and prestige on a sound and permanent basis.

The Tung-Sol wholesaler who serves your locality has this presentation. It summarizes the experience of thousands of successful radio retailers who wanted to know what makes a tube line profitable.

We feel sure that this tube merchandising analysis will interest you. Go through it with the Tung-Sol wholesaler and discuss with him the possibility of your appointment as an authorized agent. Or, if you will write to our nearest sales office, they will give you details promptly.

TUNG-SOL
Tone-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.

M. L. DAY IS FROM MISSOURI
—and FORGES AHEAD
with **FADA**



All-Metal Tube Sets!

Says he—

"I have been a franchised Fada dealer ever since 1925—this makes the tenth year.

"I like the Fada line of Radios because they last longer—and give better customer satisfaction than any other Radio on the market that I know of.

"I like your new Metal Tube Radios for 1936. I'm selling them and they are making good.

M. L. Day

Owner
 Niangua Telephone Exchange
 NIANGUA, MISSOURI

M. L. Day—
"from Missouri—" owns the telephone exchange in his town. Ten years, satisfying radio customers, make him a pioneer with the stability and judgment that come from experience.



FADA offers a radio for every purse . . . from compact to HI-FIDELITY console . . . straight AC and AC-DC WORLD-WIDE receivers . . . from \$19.99 to \$144.50. Write for Distributor or Dealer proposition.

YOU can forge ahead
with



FADA RADIO & ELECTRIC COMPANY
 LONG ISLAND CITY, N. Y.

ATWATER KENT RADIO

with **NEW METAL TUBES**
and **CONTROL-ROOM RECEPTION**

A MONEY-MAKING LEADER!

It's the popular Model 328 Atwater Kent 8 metal-tube console.

And it's just one of the many new models that make the Atwater Kent 1936 line outstanding in its appeal to the public.

Feature Atwater Kent Radio. Cash in on Atwater Kent sales, advertising and promotion plans. Feature Model 328. Make it your money-making leader of a money-making line.

ATWATER KENT MFG. CO. A. Atwater Kent, Pres. PHILADELPHIA, PA.

THE ATWATER KENT RADIO HOUR SELLS SETS FOR YOU
on Thursday evenings at 8:30 E. S. T. Columbia Coast-to-Coast Network

RADIO RETAILING

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PIPE DOWN, AUSTRALIA

An open letter to O. F. Mingay, Editor, "Radio & Electrical Merchant," Sydney, Australia.

In your admirable magazine, Sept. 13 issue, appears an article under the not too conservative head: "Metal Tube Debacle . . . American Set Manufacturers Up Against It . . . Tube Makers on the Spot." Two letters, written from this country about the first of September are presented as the basis for these rather startling conclusions.

Pardon me, brother editor, if I suggest that you may have been a bit too quick with your trigger finger. Much metal tube history has been written here in America these past two months.

Last week I took a tour through our mid-western states. Dealers reported fairly adequate delivery of sets equipped with metal tubes and their entirely satisfactory performance—with field failures of the new "valve" not greater, sometimes less, than the glass

product. They are waking up to the merchandising possibilities of this type tube, are beginning to push it as out-dating its predecessor, are recognizing that it has several specific advantages.

I concluded my trip with a visit to a large tube plant. Frankly, Mr. Mingay, I too have had my fingers crossed on this m. t. proposition—until I there witnessed a production of 15,000 metal tubes a day; with rejects now so low as to no longer constitute a manufacturing or economic hazard. All major processing problems appear to have been solved. Vacuum-tight welding has now become a routine matter. In fact many engineers and production managers are enthusiastic over the ultimate manufacturing efficiencies of this tube and, I might add, its potentialities for further development.

Lastly, it is not beyond the bounds of probability that some of these days we may see a diode-triode come out in a nice new metal jacket.

Yours in a common cause,
Ray Sutcliffe, Editor.
RADIO RETAILING

THE TWO GREATEST ADVANCES IN RADIO

WILL HELP YOU SELL PRESENT RADIO OWNERS

NEW STEWART-WARNER FERRODYNE

Round-the-World Sets

To Make Money this Year You've Got to Sell Your Old Customers Again!

Radio business is better than ever! Radio owners are giving up old-fashioned sets and replacing them with modern, up-to-the-minute receivers. Like the automobile business, radio is now largely a replacement business.

To build the most profitable volume, you need convincing "reasons why" present owners should buy the sets you are selling. And Stewart-Warner gives you these "reasons." For Stewart-Warner gives you more than just metal tubes, which almost every set has this year. Stewart-Warner gives you the exclusive Ferrodyne Chassis plus metal tubes. And dealers everywhere are getting the business with this new Ferrodyne story.

The Ferrodyne Chassis is no compromise. It's an entirely new *kind* of circuit, exclusively developed by Stewart-Warner to give the listener every advantage of the new metal tubes.

Listen to the amazing Ferrodyne reception. Then look into the Stewart-Warner merchandising program that will help you sell this new line of radios. Sound selling ideas, especially designed for replacement business, are backed with newspaper advertising. And you can have something entirely new—your own local radio program with big-time talent!

You will find that the two greatest advances in radio—the Ferrodyne Chassis and metal tubes—will bring you the replacement business that every radio dealer is out after. So write, wire, or phone today—we'll give you full details.

STEWART-WARNER CORPORATION
CHICAGO, ILLINOIS



5-tube Round-the-World Receiver



7-tube Ferrodyne Table Model



7-tube Ferrodyne Table Model

STEWART-WARNER

Ferrodyne **RADIO**

NOVEMBER

1935

News and Views

PHILCO SETS will continue to use glass tubes, at least till the summer of '36, according to a statement by L. E. Gubb, president of the Philco Radio & Television Corporation.

♦ ♦ ♦

ON THE OTHER HAND a mid-October letter to the parts trade, signed by C. E. Carpenter, sales head of Philco's tube division, announces that a line of "Philco" metal tubes for the replacement demand now is available. They closely approximate, in types and list prices, those metal tubes now in current use. "Please understand that this does not put Philco's endorsement on the metal tube for use in Philco receivers," Mr. Carpenter's letter stated in part. It was felt that this company should give its dealers a complete tube replacement service.

♦ ♦ ♦

AIR CHARGERS are paving the way to profitable battery business. One radio jobber, within a recent 90-day period, grossed \$7,500 on heavy power accumulators due solely to the fact that they were sold as the necessary complement for the wind-operated generator. Prior to taking on the roof-top generator his storage battery sales were nil.

♦ ♦ ♦

TWENTY-FIVE HUNDRED individuals registered at the three-day New York Convention of the Institute of Radio Service Men. This

display of interest in the maintenance end of radio offers convincing proof that the average servicer wants to be both a better technician and a better business man. Throughout the country all signs point to the fact that he is achieving both objectives. The success of last month's affair at the Hotel Pennsylvania has assured its annual "repeat performance."

♦ ♦ ♦

THE SIGNIFICANT feature of the Archbishop of York's address on the World Situation was not published by the American press. That is the fact that the sermon not only was broadcast to the world at the time of its delivery, but that during the succeeding 24 hours an electrical recording of the address was broadcast *five* times over the British short-wave systems. To no other official utterance has the British government—or any other government—ever given so sweeping a circulation.

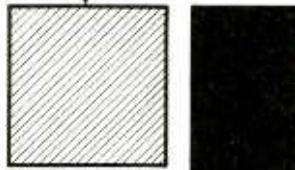
The U. S. listeners who heard that speech received an amazingly accurate advance statement of the policy which the British government has consistently pursued in all its subsequent dealings with the League of Nations.

♦ ♦ ♦

GEORGE PAYNE, FCC, in a recent speech, cautioned broadcasters to improve the cultural quality of their offerings if they would retain their present freedom from strict regulation, warned against "an arrogant assumption of political power."

Our Radioless Rural Market

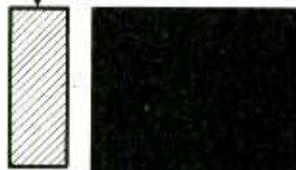
Total Unwired Homes
9,970,000
(Includes farms)



21,030,000 Homes
with Line Power

Total Homes in U.S.
31,000,000

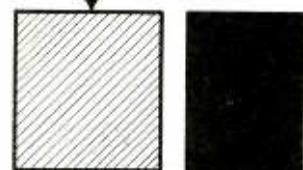
Wired Farms
760,000



Unwired
5,940,000

Total Farms in U.S.
6,600,000

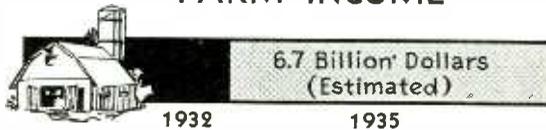
2,300,000
Sets on
Farms



4,300,000 Farms
without Radio

A 65% Unsaturated
Market

FARM INCOME



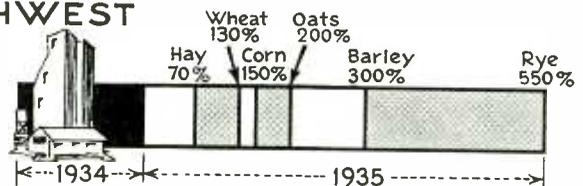
RURAL RETAIL SALES



IN THE NORTHWEST



Hog quotations have more than doubled in 12 months. Every product from butter to bulls is up from 20 to 100 per cent.



Gains ranged from 70 per cent for hay to more than 550 per cent for rye. Wheat shows a 130 per cent advance; corn, 150 per cent; oats, 200 per cent and barley, 300 per cent.

Where Parts Are Purchased

(We surveyed 10 towns—238 dealers and servicemen)

From local jobbers.....	68%	From set manufacturers.....	9%
From parts makers.....	16%	Mail order houses.....	6%
Other sources.....	1%		

GENERAL BUSINESS

Automobile financing.....	80% above '33
Apartment rentals.....	57% of '26 load
House rentals.....	82% of peak load
Residential building.....	2 1/3 greater than '34
Electric refrigerators.....	up 721% from depression low
470,000 new electricity users were added to the power lines during last twelve months	
Broadcast Advertising—Total for first eight months, \$31,615,000.....	18% over 1934

News and Views

FAILURES in the radio field are fewer than formerly, according to Dun & Bradstreet, Inc. Total liabilities (manufacturers, wholesalers, dealers) in 1931 were \$8,186,000; in 1932, \$3,806,000; in 1933, \$5,533,500; in 1934, \$3,148,700 and in 1935 (Jan. to Sept. inclusive) they were only \$443,000.

♦ ♦ ♦

NOW THAT at least one maker of metal tubes actually is stocking certain types, sees the feasibility of producing a diode-triode, is out with a commercially acceptable 5Z4 rectifier and has reduced manufacturing methods to the point where lower production costs are "just around the corner" we are forced—against our wishes—to sound two notes of warning:

1. Metal tube types should be held down—kept within reason.
2. Metal tube prices should be held up—kept above cost levels.

The m.t. slate, right now, is fairly clean. Let's keep it that way.

♦ ♦ ♦

GRANTED THEIR choice of the same make and type of set—either metal or glass tubed—present consumer choice runs about 50/50. Some jobbers, dealers, manufacturers report a 60/40 division.

♦ ♦ ♦

EUGENE FARNY, formerly in charge of radio sales for the Rudolph Wurlitzer Manufacturing Company, is opening a chain of radio and appliance stores in Ohio. Merchandising policies appear to be modeled after those of the old Wurlitzer stores.

♦ ♦ ♦

WORD COMES from Cincinnati (headquarters office) that most of the branch members of the "revised"

Wurlitzer Stores organization—operating under recent drastic modifications of former practices—are doing rather nicely, thank you.

♦ ♦ ♦

A CERTAIN SET manufacturer put 23,500 receivers through the production lines during the week of October 14. Production of sets by all makers is catching up. The delivery jam may be broken by the time Radio Retailing mails.

♦ ♦ ♦

FAR-REACHING changes in the wave-length structure of broadcasting, including the likely authorization of some twenty stations with super-power and the licensing of additional local stations, may grow out of present studies being conducted by the Federal Communications Commission. Any action of this nature would result in a reshaping of the entire broadcasting setup—and should be entered into only after the most careful investigation.

THE REFUSAL of the British Broadcasting Company to re-transmit a speech by Baron Aloisi, the Italian diplomat at Geneva, to American audiences focused world attention on the importance of shortwave transmission in international goodwill or as a medium of disseminating propaganda.

Broadcasters in this country point out that the nations with the most powerful shortwave transmitters hold an advantage in international diplomacy almost equal to that of a trade balance.

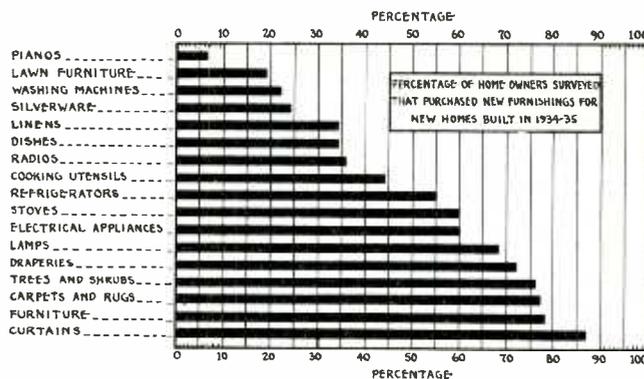
♦ ♦ ♦

REPLACEMENT parts makers are angling for industrial accounts, sometimes with meager results. A certain resistor salesman presented a certain railroad purchasing agent with a \$200 cellar bar, followed up with another peace offering of a \$100 set of glassware for same, only to discover that this client had bought precisely \$180 worth of resistors the year before. By comparison the radio replacement market is still pretty hot.

♦ ♦ ♦

SCRAP THOSE old junk sets, advises a Cleveland dealer. Otherwise, as actually has happened, some smart trader will buy one from you—for \$2—take it to a rival dealer and turn it in for \$20 on a "regardless of age or condition" deal.

36% of New Home Builders Buy New Radios



J. D. Veith, Chicago University, has just completed a study of the buying habits of people who built new homes in 1934-35. He found that 36 per cent of them simultaneously bought new radios, points out that such people rarely use all their old furnishings. Radio did not stand as well up on the tabulation as other modern appliances, indicating a need for more intensive promotional effort

New DEAL New DIAL



Comparative Demo Is Season's "Must"



*st that replacement buyers hear difference between
and new before quoting allowance says*

Leland F. Gray

side by side with their old models. Then they quickly realize that there is as much difference as between a new model and a model T Ford.

They realize, as well as any, that a demonstration policy is apt to be successful unless it is carefully conducted. In our estimation, demonstration is a part of the 1936 radio drive and it is up to the dealer to lead the way. It is up to the dealer to keep costs within

as demonstrated in allowances. It is up to the dealer to put into any demonstration

sale declines. Trades are sold in bulk to an outlet which specializes in their reconditioning and sale to lower classes of purchasers. They bring in from \$1.50 to \$10.

"When cultivating the replacement market," says Gray, "we find that it is wise at this time to concentrate on the better class of homes. The people in the upper middle class group now seem to be in a position to buy good sets and there are enough of them to keep us busy. Our profit margin is kept up when selling this group. Table models are being sold at the present time largely as second sets, for use in bedrooms, dormitories and vacation camps. Margin is enhanced by minimizing trade in-

"Sixty per cent of our radio business was obtained from September to April last year. So we are concentrating on this business during the same period this season somewhat at the expense of

appliances. Positive knowledge that we are selling primarily to replacement buyers is proving particularly useful when wording advertising copy, framing verbal sales stories."

This same store pays from \$60 to \$75 per week for such collection service under the new plan.

Secondly, the dealer's own truck does not have to handle the necessary pickups. A plain, unmarked truck maintained by the central office, takes over this duty.

And, thirdly, the additional one per cent per month interest is returned to the store. With only actual operating expense charged by the central office delinquents do not represent a loss because of the longer time involved and interest charges take care of a large percentage of each store's share of the collection office costs.

Once a week, the dealers meet with Rock to go over operation policies. Collection losses are running less than one-half of one per cent.

Where credit volume is sufficient to maintain such an office any group of radio and allied line retailers would find such a plan workable, thinks Rock. "It is a simple matter," he states, "to figure the costs in proportion to the volume of business which would be given to the central credit office."

Delinquent furniture accounts are also handled by the central office for three of its supporters but the two exclusive radio stores do not share this expense. They pay only their share of the expense involved in radio work.

Co-op Collection Office Saves 5 Dealers 50%

Central office re-finances delinquent accounts, charges 1 per cent per month

DENVER—A cooperative collection office, maintained for the handling of delinquent accounts, saves 20 to 50 per cent in office expense, reduces losses for five of this city's most active retail stores handling radio. The outlets are: Charles E. Wells Music, Knight-Campbell Music, American Furniture, Fred Davis Furniture and D. F. Blackmer.

Under the plan collections average 95 per cent, according to George Rock, office manager. Refinancing, with the addition of a one per cent per month carrying charge, permits new division of payments according to the delinquent purchaser's needs. The additional interest makes up for the delayed receipts of each individual store.

When a customer of any one of the five stores proves unable or unwilling to pay according to the original schedule a letter suggests that the account be discussed with the central office, organized as the National Finance Company. Accounts are turned over to the central office after two payments have been missed. The purchaser is urged to contact this office. Rock works out a revised schedule of payments, the time varying according to the amount still due, with one year set as the maximum. Since faster payments mean a saving on interest the plan favors quick cleanup of overdue sums. If payments are subsequently missed by the re-financed customer he is contacted by phone, given three days' grace. Then a truck is sent for the merchandise.

The total expense of the operation is determined each week. Divided by the number of accounts handled, each store is then billed according to the number of collections the central office is actively handling for it.

The dealers claim three advantages for the system. First, it saves on collection costs. One store with a large credit business formerly found it necessary to employ a manager and two special investigators for delinquent business. In addition, one truck had to serve part time duty and the investi-

gators' transportation had to be provided.

Assuming that there were 16 or more accounts requiring investigation the total individual cost in this case would be:

Two investigators, at \$25 per week..	\$50
One office manager, at \$30 per week.	30
Gas and oil for investigators.....	15
Truck and driver	7.50
TOTAL	\$102.50



METAL TUBE SIGN SWELLING STORE TRAFFIC

Ische Brothers, Milwaukee dealer, known locally by its theatre-size sign, reports substantial increase in store traffic since the public was invited to come in and hear metal-tubed sets. "If you don't think they are the season's best curiosity arouser try a sign like ours," says Gordon Ische

Grocery Store Exhibit Sells 11 Refrigerators

Radio outlet says idea is applicable to other home devices

WASHINGTON—A novel experiment which developed 11 refrigerator sales in a few weeks is reported by the Okay Radio Company. The idea involved a display of boxes in a chain grocery store just across the District line in Silver Springs, Md., and produced two washer sales and a number of radio leads.

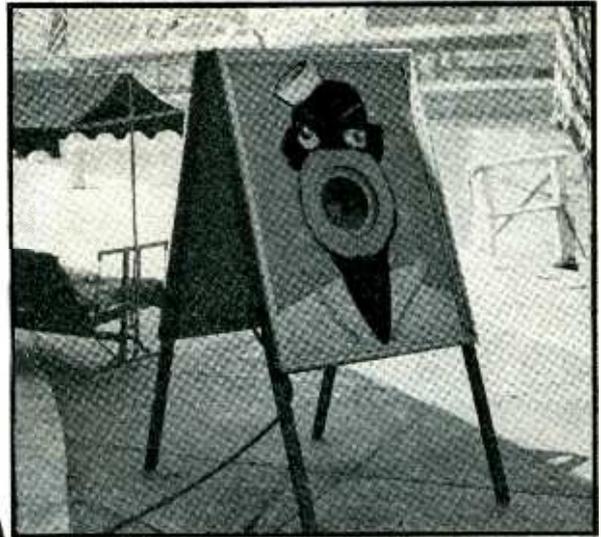
A display of refrigerators was placed in the store, one of the machines filled with fresh vegetables and other perishable foods. A salesman familiar with most of the local residents was in constant attendance. While customers waited for their grocery orders to be completed they were engaged in conversation by this salesman, who stressed the food savings possible by means of electric refrigeration.

According to J. J. Finnegan, Okay manager, the inducement which clinches the bargain with managers of grocery stores is the offering of a \$5 food ticket, convertible only in that particular store, to each refrigerator purchaser during the life of the campaign. The store manager further realizes the value of the free advertising. "More people came into the store because of the little ads we ran in the community paper, which cost us only \$2 per insertion. We also printed and distributed handbills all over the section. In the center of each ad

we illustrated one of our refrigerators (Kelvinator), grouping all around it grocery specials featured by the co-operating store.

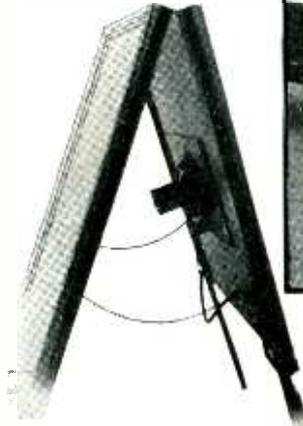
"The success of the experiment is due, to my mind, to the large store traffic attracted by grocery chains. We tried the same plan some time ago in an automobile showroom but it didn't click. There wasn't enough traffic."

When purchases of refrigerators were made an order for \$5 worth of groceries was delivered with the box. At the end of each week the manager of the grocery stores sent these to Washington.



A P. A. MAN SENDS IN THIS ONE

Here's "Sailor Sam," the public-address equipped sandwich man, who sells speedboat rides to Chicago's through travelling the Michigan Avenue bridge. The stunt could be sold to many businessmen who need ballyhoo



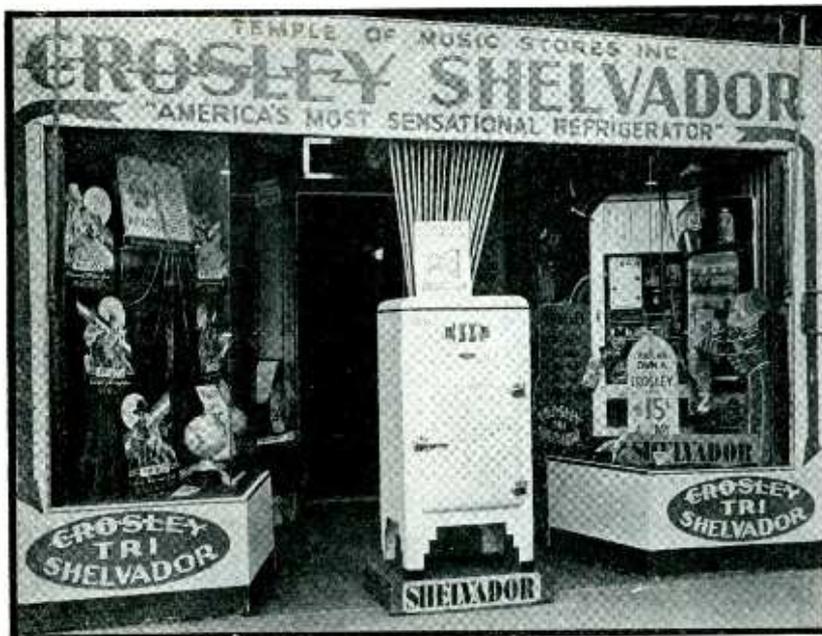
California Music Inaugurates 90-Day Time Plan

Insurance and carrying charge saving appeal sells short terms to trade

SAN DIEGO—By stressing short terms as a means of saving insurance and carrying charges the radio department of the Southern California Music Company, Stuart Ashenberg, manager, is selling 15 per cent of its sets on a 90-day basis.

Under Ashenberg's new plan the customer pays one-fourth down and the remaining 75 per cent in 90 days at the rate of 25 per cent per month. Risk and depreciation in this period aren't considered great enough to require insurance. And, the extra profit obtained by holding terms down more than makes up for the cost of carrying charges.

"If a person has money coming in selling this plan is a simple matter," says Ashenberg. "The saving on a decent console model amounts to enough to sway buyers. And our money is not tied up as long. We find that a lot of people are in the habit of asking for maximum terms when they really have no reason for so doing. Such people readily buy under our new plan."

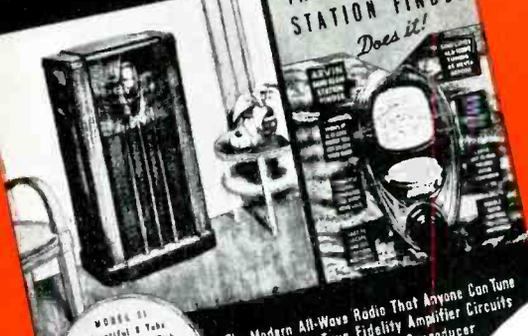


MUSIC STORE'S REFRIGERATOR DISPLAY PULLING

Manager Al Sirota of the Temple of Music Stores, operating in Lynbrook, Hempstead, Freeport and Bayshore, Long Island, sends in this photo illustrating an effective method of expanding a window display by utilizing the entrance-way. It's cheap, effective and doesn't block the door

ALL-WAVE TUNING SIMPLIFIED BY
ARVIN

THE BAND BEAM STATION FINDER
Does it!



MODEL 51
A beautiful 8 Tube All-Wave Console With 12-tube Reprod. Only **\$89.50**

The Modern All-Wave Radio That Anyone Can Tune
A Radio With True Fidelity Amplifier Circuits
Full-Range Dynamic Reproducer
And Many Other Extra Quality Features
Console or Table Models - Glossy or Woodgrain

OTHER ARVIN RADIOS PRICED AS LOW AS \$39.50

ARVIN
Band Beam Station Finder
SIMPLIFIES ALL-WAVE TUNING
Try it

SENSATIONAL NEW
ARVIN
Simplified
ALL-WAVE TUNING



ARVIN BAND BEAM STATION FINDER

SHOWS AT A GLANCE WHAT YOU ARE ON ANY WAVE BAND

MICROCYCLE SIGNAL SEPARATOR FOR SHARP WAVE LOGS

EASY TO LOCATE AND LOG STATIONS ACCURATELY

SIMPLIFIES ALL-WAVE TUNING AS NEVER BEFORE

3 BANDS COVER EVERY BROADCAST SERVICE

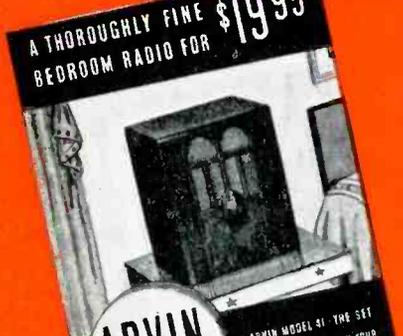
LARGE EASY-TO-READ FIGURES AVOID CONFUSION

DOUBLE RATIO CONTROLS FOR SPEED AND PRECISION

Link Up with
ARVIN
Christmas Merchandising

Here you see a few miniatures of the many Arvin selling helps to boost your Christmas sales . . . an array of beautiful displays, including a large poster reproduction of the Arvin Christmas Gift page appearing in The Saturday Evening Post. All these selling helps are beautifully printed in colors . . . and they're free to Arvin dealers. Take advantage of the opportunity Arvin gives you to increase your Christmas sales and profits. See an Arvin jobber at once. Noblitt-Sparks Industries, Inc., Columbus, Indiana, U. S. A.

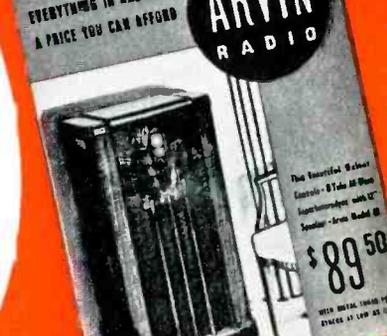
A THOROUGHLY FINE BEDROOM RADIO FOR **\$19.95**



ARVIN RADIO

ARVIN MODEL 41 THE SET YOU WANT UPSTAIRS IN YOUR CHILD'S ROOM OR YOUR OWN

EVERYTHING IN RADIO AT A PRICE YOU CAN AFFORD



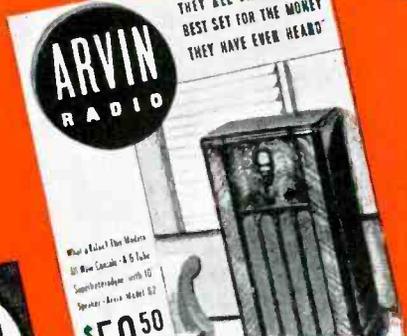
ARVIN RADIO

The Perfect Radio Controls - 8 Tube All Wave Reproducer with 12 Speaker - Arvin Model 51

\$89.50

SEE LISTING THROUGH STORES AT LOW AS

THEY ALL SAY, "IT'S THE BEST SET FOR THE MONEY THEY HAVE EVER HEARD"



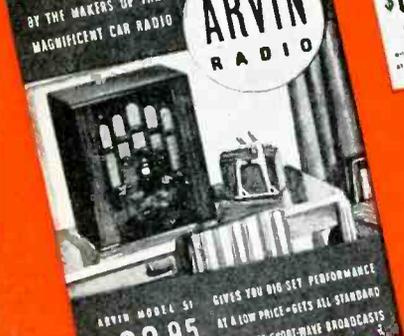
ARVIN RADIO

What a Great One-Wave Radio!
12 Wave Console - 8 1/2 Tube
Super-Performance with 12 Speaker - Arvin Model 51

\$59.50

SEE LISTING THROUGH STORES AT LOW AS \$39.50

BY THE MAKERS OF THAT MAGNIFICENT CAR RADIO



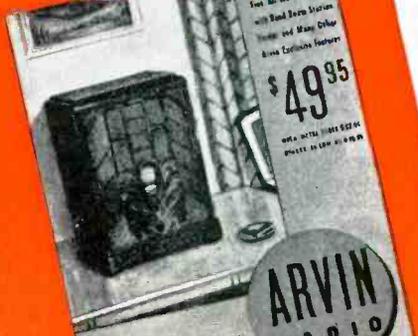
ARVIN RADIO

ARVIN MODEL 51 GIVES YOU BIG SET PERFORMANCE AT A LOW PRICE - GETS ALL STANDARD AND MOST SHORT-WAVE BROADCASTS

\$32.95

SEE LISTING THROUGH STORES AT LOW AS \$29.50

For An Extra Table Top with Band Beam Station Finder and Many Other Extra Features Inexpensive



\$49.95

SEE LISTING THROUGH STORES AT LOW AS \$39.50

ARVIN RADIO

HEAR IT! AND YOU'LL AGREE IT'S THE BEST BUY FOR THE MONEY

ARVIN Gifts



Arvin Car Heaters
This is a new kind of heater that will give you the most efficient heating for the car or home. Imagine the pleasure you can get from the heat of an Arvin heater and satisfaction that will come from an Arvin heater. Arvin Heaters for the car and home. . . . Compare the Arvin heater with those of other makes. You will find that Arvin heaters are the best.

Arvin Room Heaters
This is a new kind of heater that will give you the most efficient heating for the room. Imagine the pleasure you can get from the heat of an Arvin heater and satisfaction that will come from an Arvin heater. Arvin Heaters for the room and home. . . . Compare the Arvin heater with those of other makes. You will find that Arvin heaters are the best.

Arvin Car Radios
This is a new kind of radio that will give you the most efficient listening for the car. Imagine the pleasure you can get from the music of an Arvin radio and satisfaction that will come from an Arvin radio. Arvin Radios for the car and home. . . . Compare the Arvin radio with those of other makes. You will find that Arvin radios are the best.

Arvin Home Radios
This is a new kind of radio that will give you the most efficient listening for the home. Imagine the pleasure you can get from the music of an Arvin radio and satisfaction that will come from an Arvin radio. Arvin Radios for the home and car. . . . Compare the Arvin radio with those of other makes. You will find that Arvin radios are the best.

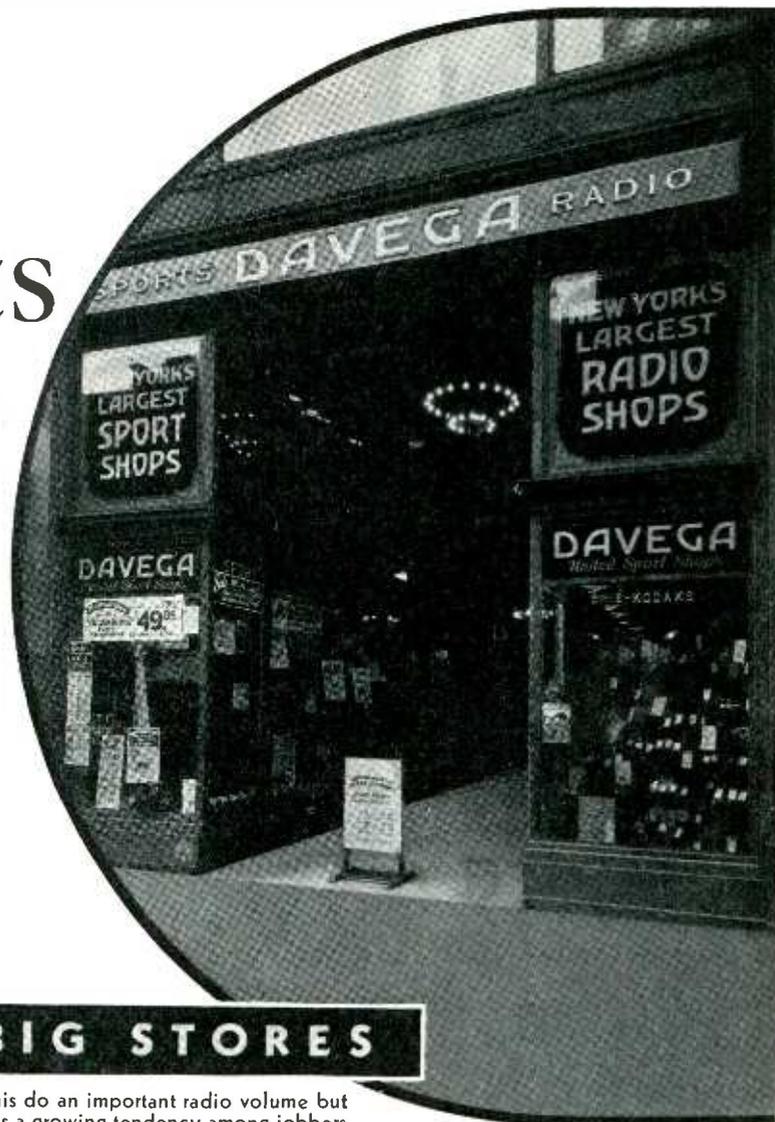
FOR THE CAR AND THE HOME
Give Your Whole Family Year-round Comfort and Happiness

Christmas thrills for the whole family are with each of these Arvin gifts - thrills that carry over into the months and years that follow - comfort and happiness - not for one alone, but for all of you. . . .
● Stop and think of the thousands of hours of job and pleasure you can give your family with an Arvin heater for the car or home. Imagine the pleasure you can get from the heat of an Arvin heater and satisfaction that will come from an Arvin heater. Arvin Heaters for the car and home. . . . Compare the Arvin heater with those of other makes. You will find that Arvin heaters are the best.

MAKE THIS AN ARVIN FAMILY-GIFT CHRISTMAS!

Dual Discounts

Called Season's Major Distribution Problem



BIG STORES

like this do an important radio volume but there is a growing tendency among jobbers to avoid granting them discounts which permit market-disrupting practices

SHALL the manufacturer and the jobber continue to make it possible for the large retailer to crucify the small dealer by granting these big buyers an extra discount?

Last month we asked 400 wholesalers this question: "What is the most pressing problem you will have to face during the next six months?"

The replies are in. They disclose that the chief fly in the ointment (in many cases the only one) is this matter of dual discounts. A majority of the wholesalers are disturbed about this growing trend. Others find it no detriment to the normal conduct of their business, or can circumvent it. In the smaller distribution centers they do not find it necessary to grant any special dispensations.

Detroit offers an interesting case example. In that city, while it is felt that the big downtown stores are losing their position as advertising and sales volume bell wethers, the jobbers are disturbed by the fact that special margins no longer assure special retail effort for any one line. Reason, the big retail outlets get special discount preference from many sources. Often this discount advantage is abused, in the form of too liberal trade-in allowances—price competition in the guise of big offers for that old set, "regardless of condition."

The same is true in Cleveland, although there one courageous wholesaler sticks to his guns—and gets away with it—by insisting that retailers who demand jobber prices must function as jobbers. When they want local delivery service they buy from him at 40 per cent.

Returning to the Detroit situation. Three of the wisest heads in Fordville last month looked into the crystal ball

and told *Radio Retailing* the past, the present and the probable future. They were Charles H. Harrison, General Electric Supply Corporation, the world's first radio distributor; Sam W. Phelps, manager of the Detroit branch of Philco Radio and Television Corp., and A. H. Zimmerman, oldest Zenith distributor, of the Republic Electric Co.

This is what they saw in the crystal ball:

The astonishing Jack and the beanstalk setup that now prevails with nearly every large downtown radio outlet has distributors and dealers alike by the ears. Still it all started out logically.

How Prestige Account Idea Started

Just as a candle has a wick to guide its flame, so must a distributor have prestige accounts to get his product launched and accepted properly in the community. For this the 40 and 10 discount originally given large outlets permitted these stores to advertise, and this advertising benefited the small dealer. In return for the extra discount, the big stores generally agreed to see that 60 per cent of their volume was to be on the generous brand.

Now there was no particular threat to small dealers when this was first started. The longer profit of the big fellows was eaten up by higher expenses. Another thing

“Extra 10’s” to large operators no longer assure sufficient preference for any one line to compensate for upsetting of small dealer’s applegart, say jobbers

the move did was to stymie the private brand because, under this deal, the nationally known set became more attractive.

But with every distributor shooting for the big retail outlet, in no time at all things were running out of bounds. Advertising allowances jumped from 50-50 to 75-25, and in some cases 100 per cent. Discounts stretched until some set makers now quote jobber’s prices to class A dealer accounts.

Now it is obviously impossible for a large downtown store to promise 60 per cent of its total volume to every distributor whose brand sits on his floor. Furthermore, these long discounts have been in effect long enough to be customary. So there has arisen a tendency to penalize any line which does not come across, regardless of volume. For example, floor salesmen receive—

- 1% on merchandise bought at 40 off
- 2% on merchandise bought at 40 and 10
- 3% on merchandise bought at 50 off.

It isn’t hard to see that a salesman will drag a prospect away by the ears from a penalized set, and quite natur-

ally the distributor will wonder at the small business he does with the store.

All isn’t quiet on the Potomac with the distributor or the manufacturer in this new picture. Instead of a 16 per cent profit, the distributor sees himself dragged down to a 5 per cent.

The manufacturer occasionally gets burned himself. In one American city a radio maker who felt that he could plunge with a large downtown store, and get the money back from small outlets all over the state, is said to have spent \$38,000 in cooperative advertising last year. The volume from the store for whom he did the publicity was about \$150,000. He spent approximately 25 per cent for white space and the plan didn’t “jell” with his small dealers at all.

However, a trend has appeared which will probably hasten the day when distributors pull in their horns with large outlets. There is a tendency afoot for giant retailers to take one of their extra 10 per cent discounts and use it in paying finance costs, so as to enable them to sell a radio with no carrying charges at all. The new trend hits the small dealer where he lives, since he cannot meet this competition.

LITTLE STORES

like this, while individually less important than the giant operators, collectively form the backbone of the business, will be cultivated in 1936



Position of Factory Branch

One of the continual topics of luncheon conversation is the question as to whether factories will gradually set up branches in key cities and perform the jobber’s work.

Factory sales managers from far away places envy the big, juicy downtown accounts. Constantly nudging their elbows are superintendents trying to push up volume. A constant threat hanging over the distributor’s head is the fact that he must sell these big outlets, or the factory may do so directly. The thing that gives the factory pause is the realization that the distributor is on the ground doing a twelve-months’ specialty job. An over-the-head sale will mean that the distributor may take on other lines and scatter his efforts. Realization that after all, the smaller, outlying accounts are the profit producers, does much to check ambitions along this line.

The automobile manufacturer is said to have recently discovered that 70 per cent of his business comes from towns of 10,000 and less. The same awakening is coming to radio—the small town and outlying accounts are the profitable ones and the ones worth cultivating.

Instead of scraping the barrel to make it possible for the big downtown outlet to pay floor salesmen 2 or 3 per cent more, there is a tendency on the part of the distributor to spend this money in training the small dealers’ salesmen, giving him window trims, and cooperation that will hop his volume.

The trend in distributing and in factory branches as well has been to stress cooperative advertising, keep contests going and act as a clearing house for dealer promotions. This sort of thing is getting results.

Prestige accounts downtown will always be valuable but not all big downtown outlets are prestige accounts.

(Please turn to page 46)

**10 LARGE
RADIO
MANUFACTURERS
SAY...
WINCHARGER
IS BEST**

These 12 Leading Radio Manufacturers are now offering Wincharger in combination with their new 6-volt farm radios:

- Atwater-Kent Manufacturing Company
- Crosley Radio Corporation
- Emerson Radio and Phonograph Corporation
- Fada Radio and Electric Company
- Fairbanks-Morse Home Appliances, Inc.
- General Household Utilities Company
- Noblitt Sparks Industries
- RCA Manufacturing Company
- Setchell-Carlson Radio Products
- L'Atatro Products Corporation
- Westinghouse Electric Supply Company
- Zenith Radio Corporation

WINC INTERNA

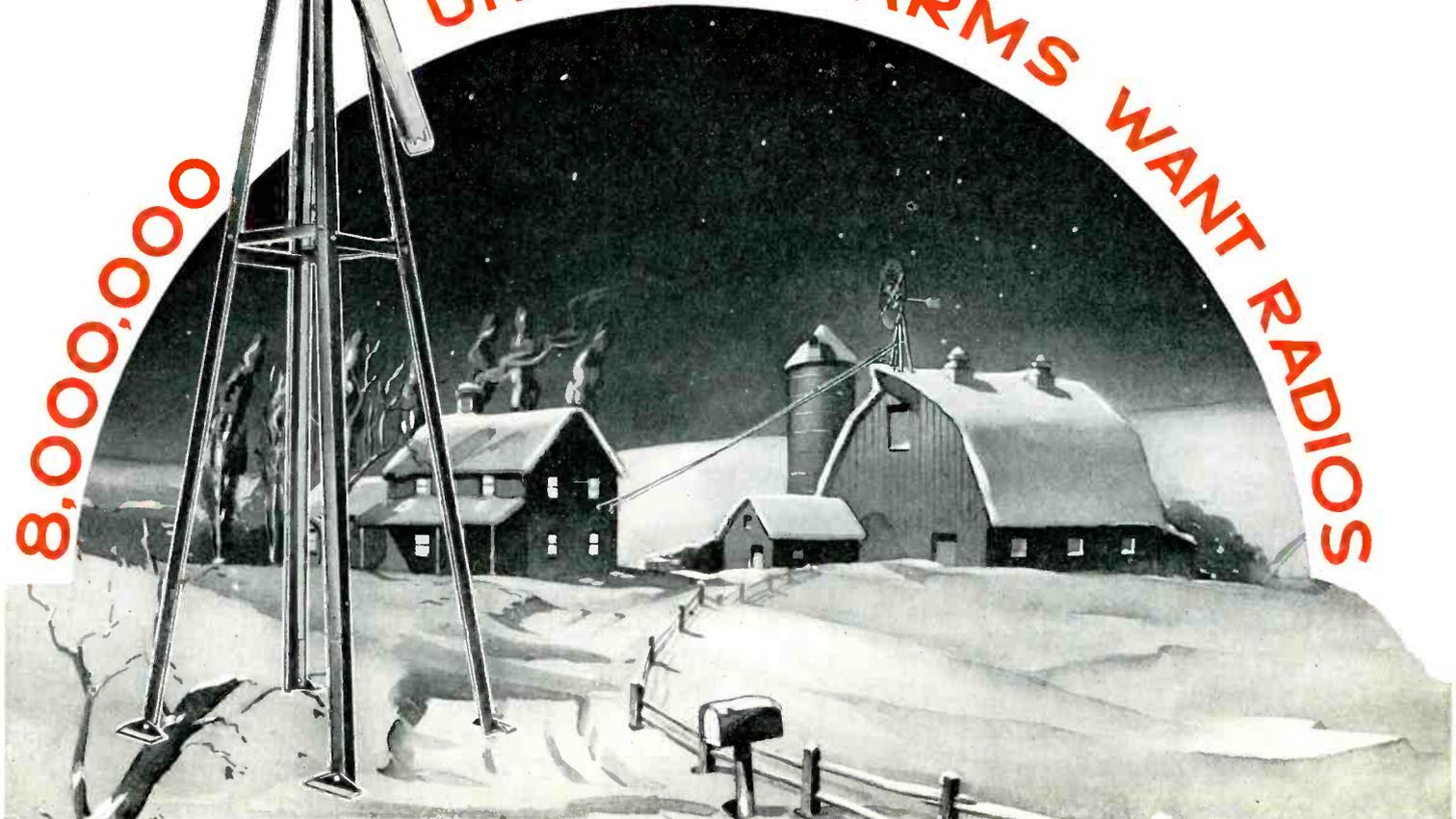
No matter how remote or isolated his home may be, there is no longer any reason why anyone should be denied the pleasure and opportunity for self improvement to be derived from radio. Heretofore, due to the expense and inconvenience of taking farm radio batteries to town for re-charging, and also because of the inefficiency of the farm radio, countless homes in the land were forced to do without the comforts of radio. Wincharger has changed all this. By revolutionizing the farm radio industry Wincharger makes it possible for the farmer to enjoy night and day, city radio performance with world wide reception at practically no operating power cost.

NEW!

Positive
Centrifugal
Airbrake
Governor
(Patent Pending)

UNWIRED FARMS WANT RADIOS

8,000,000



WARGER WINS TIONAL RECOGNITION AS

THE MOST OUTSTANDING 6-VOLT WIND-DRIVEN BATTERY CHARGER

Because Wincharger has a patented Airbrake Governor. This highly efficient governor is operated by propeller speed rather than by the wind pressure method. Keeps propeller speed under perfect control regardless of wind velocity.

Because Wincharger is built for service. The Albers Airfoil Propeller of light wood reinforced with metal is larger and more scientifically designed than the average propeller of this type, giving it sufficient power to start charging in winds as low as 7 $\frac{3}{4}$ miles per hour.

Because the Wincharger Generator is constructed of new material throughout and designed especially for wind charging purposes. Has capacity of 18 amps and starts charging at 340 rpms. Postively not a rebuilt generator.

Because it has the endorsement of ten leading radio manufacturers. The Wincharger takes care of the battery drain, permitting radio engineers to design a 6-volt farm radio equal in performance to the city radio, at an operating cost of 1c a week. Thus it opens up a vast new sales field among 8,000,000 immediate farm radio prospects. Also gives amazing impetus to heavy duty battery, 6-volt lamp, and wire sales. One dealer reports that through the adoption of Wincharger he sold 1,000 heavy duty batteries in 90 days where previously he had sold none.

If you are not already representing one of the above radio manufacturers, get in touch with one of them at once regarding farm radio franchise.

WINCHARGER USES ONLY THE BEST OF MATERIALS

The following are some of the nationally known suppliers of quality materials and parts that go into the manufacture of Wincharger:

- American Brass Company
- American Chain Company
- American Sheet & Tin Plate Company
- Anaconda Copper Company
- Delco Remy Corporation
- Dexter Company
- General Electric Company
- Hoyt Electrical Instrument Company
- Hygrade Sylvania Corporation
- Long Bell Lumber Company
- Missouri Rolling Mills
- Mueller Electric Company
- National Printing Company
- Joseph T. Ryerson & Son, Inc.
- U. S. L. Battery Corporation
- Verstegen Printing Company
- Westinghouse Electric & Mfg. Company
- Yost Superior Company
- Youngstown Sheet & Tube Company

MAIL ME TODAY

Wincharger Corp.

2700 Hawkeye Drive, Sioux City, Iowa

Gentlemen: Please send complete details on De Luxe and Utility Wincharger. Am interested as

Jobber

Dealer

Make of Radio Now Handled.....

Firm Name

My Name

Street

City State



CORPORATION

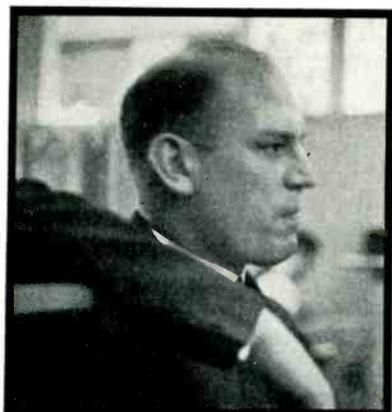
**WORLD'S LARGEST MANUFACTURERS OF
6-VOLT WIND DRIVEN BATTERY CHARGERS**

SIoux CITY

2700 HAWKEYE DRIVE

IOWA

MANUFACTURERS OF 32-VOLT WINCHARGERS SINCE 1927



HIGH RESISTANCE . . .
Fairbanks of International



SATISFIED SALESMANAGER
Cushway of Thordarson



HE WRITES 'EM DOWN . . .
Golenpaul of Aerovox

Men of Parts



EIGHT-MILE SMILE . . .
Adelman of Cornell-Dubilier

"Radio Retailing's" candid camera catches them at the IRSM's New York show



FRIENDLY RIVALRY . . .
Hill of Ohmite (right) and Ehle of IRC



TECHNICALLY, TON-
SORIALLY CORRECT . . .
Flick of Jefferson



KLASS-B KING . . .
Baraf of United (right) and R. C. James

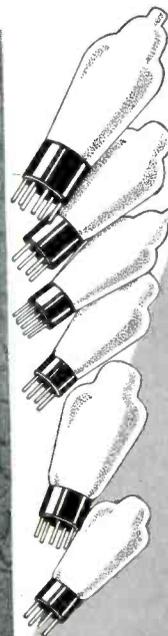
BUSINESS AS USUAL . . .
Tobe Deutschmann



EVERYTHING UNDER
CONTROL . . .
Osmun of Centralab (left)

NOW

THE INTERNATIONAL
KADETTE
Sixty Six



**The Most Sensational
Value In Radio**

A NEW Moderne design with strikingly beautiful cabinet of selected American walnut and band inlay of rich cross-fire oriental walnut. Horizontal grille openings with gleaming control knobs and polished base in black ebony finish lend a modernistic touch now very much in vogue. ♪ Sharply selective, with amazing performance and natural full tone. Two distinct bands tuning 550 to 1600 Kilocycles and 70 to 180 Meters. Fully shielded I. F. transformers; coils impregnated against moisture. Sturdy, rust-proof chassis with two-gang, ball-bearing condenser. Pilot-lighted, full-vision, double-pointer dial; powerful 5-inch electro-dynamic speaker.

Write for full details of complete Kadette line, priced from \$13.50 to \$76.00.

**6
TUBE**

**POWERFUL AC-DC
SUPERHETERODYNE**

- AMATEUR
- AIRPLANE
- ALL POLICE
- STANDARD BROADCAST

List Price Complete

\$19⁹⁵

(Western Prices Slightly Higher)



INTERNATIONAL RADIO CORPORATION

ANN ARBOR • MICHIGAN

*Tell each set
buyer what stations
to tune in for
minimum noise and
fading and unjust
squawks about good
merchandise will
diminish*

By
Edgar H. Felix



THE AUTHOR...with the mobile field-strength measuring instruments used in a recent survey for Station WOR. He drove 6,436 miles, took over 800 readings

DID you ever consider how many different ways a prospective purchaser may view a radio receiver? One prospect may think of a radio primarily as a piece of furniture concealing a device for reproducing music; another the practical embodiment of the magic carpet for bringing in programs from far places; a utilitarian may conceive it to be a means of securing news, quotations and diversion; still another may choose his receiver because of its precision dial and its trick selling-slogan gadgets.

Chart For Estimating Day and									
DAY SERVICE (Radius in Miles)									
Salt Marsh and Salt Water			Level Open Country			Rolling Country Suburban areas			
	Pri. Urban	Pri. Subur.	Sec. Rural	Pri. Urban	Pri. Subur.	Sec. Rural	Pri. Urban	Pri. Subur.	Sec. Rural
LOCAL STATIONS									
100 WATTS									
1500 kc.	6	14	43	2	6	15	2	6	11
1200 kc.	6	15	46	2	7	16	2	7	14
250 WATTS									
1500 kc.	7	20	60	3	9	18	3	7	14
1200 kc.	8	22	65	3	10	22	3	9	17
REGIONAL STATIONS									
500 WATTS									
1500 kc.	12	48	105	6	15	27	5	12	20
1000 kc.	13	51	125	7	21	41	6	18	28
550 kc.	15	57	160	8	32	73	8	27	46
2500 WATTS									
1500 kc.	24	77	154	10	22	36	8	16	28
1000 kc.	27	89	187	12	32	56	11	25	44
550 kc.	28	108	242	16	52	103	16	44	80
5000 WATTS									
1500 kc.	31	95	180	12	25	40	10	19	32
1000 kc.	35	110	215	16	37	63	14	30	50
550 kc.	39	138	255	22	62	120	20	53	94
CLEAR CHANNEL STATIONS									
10,000 WATTS									
1000 kc.	68	170	290	26	53	85	21	40	66
800 kc.	71	187	320	31	68	110	25	52	84
600 kc.	74	210	360	37	90	152	32	69	112
50,000 WATTS									
1000 kc.	110	234	370	37	70	110	29	53	90
800 kc.	118	258	400	46	90	140	37	68	113
600 kc.	131	290	445	60	122	195	48	91	150

Know Your

Perhaps the least considered foundation for the ownership and sale of a radio receiver is its prime function—a device for converting the radio signals available at the installation point into useful sound waves. Without a suitable radio signal, all of the properties endowing a receiver with selling appeal are without use or merit. This real foundation for listener satisfaction—available radio service—is almost invariably taken for granted.

I have spent many years, travelled hundreds of thousands of miles, in every part of the United States for the purpose of determining, by means of field intensity measurements, the extent and nature of radio service offered the listener. Thus I may have an exaggerated idea of the importance of signal levels as the foundation of listener satisfaction. But almost every time I stop to make a measurement within sight of a radio listener, I find myself confronted with a barrage of questions.

“Why does Station WANG come in so poorly on my radio set? What radio should I have bought to bring in its programs clearly?” Or “I get fine reception during

Night Service at Broadcasting Stations

						NIGHT SERVICE
Hilly and Rocky Smaller Cities			High Mountains Largest Cities			
Pri. Urban	Pri. Subur.	Sec. Rural	Pri. Urban	Pri. Subur.	Sec. Rural	
2	4	7	1	3	4	Local stations are generally allocated so close together that they rarely render satisfactory service at night beyond their 2 millivolt, or primary suburban, contour. Exceptions are found when the nearest local on the same channel is more than 200 miles distant.
2	5	9	1.5	3	5	
2	5	8	2	3	5	
2	6	12	2	4	7	
3	7	11	3	4	7	Wide variations exist on regional channels; generally far better west of the Mississippi than to the east. Usual contour protected lies midway between primary suburban and secondary rural day contour. Very few regional stations have an undistorted range exceeding 50 miles at night; many suffer occasional interference under good conditions within 15 or 20 miles of transmitter.
5	11	17	4	6	11	
7	19	32	6	13	22	
5	9	15	3	6	11	
8	14	23	5	9	25	
13	27	48	9	18	31	
6	10	19	4	7	13	
9	15	27	6	10	19	
15	32	63	11	21	35	
12	24	38	7	15	27	
15	28	48	10	18	34	
21	39	66	14	21	44	
16	30	56	10	21	40	
21	39	70	13	26	50	
29	52	92	19	34	64	

Own SIGNAL STRENGTH

the day but at night the receiver is practically useless."

I make it a practice to investigate the conditions which give rise to such inquiries. Several pronounced conclusions are inevitably reached as a result of accumulated experiences of this kind:

(1) Complaints of poor reception are almost invariably blamed upon improper functioning of the receiver and upon the dealer who sold it;

(2) Complaints arise as frequently in areas having ample radio service as in those far from good broadcasting centers;

(3) Unsuitable antennas and poor installation are a frequent cause of dissatisfaction with radio reception;

(4) Listeners generally do not have the slightest notion as to what causes fading, cross-talk or heterodyne interference and feel that the dealer is in some way responsible;

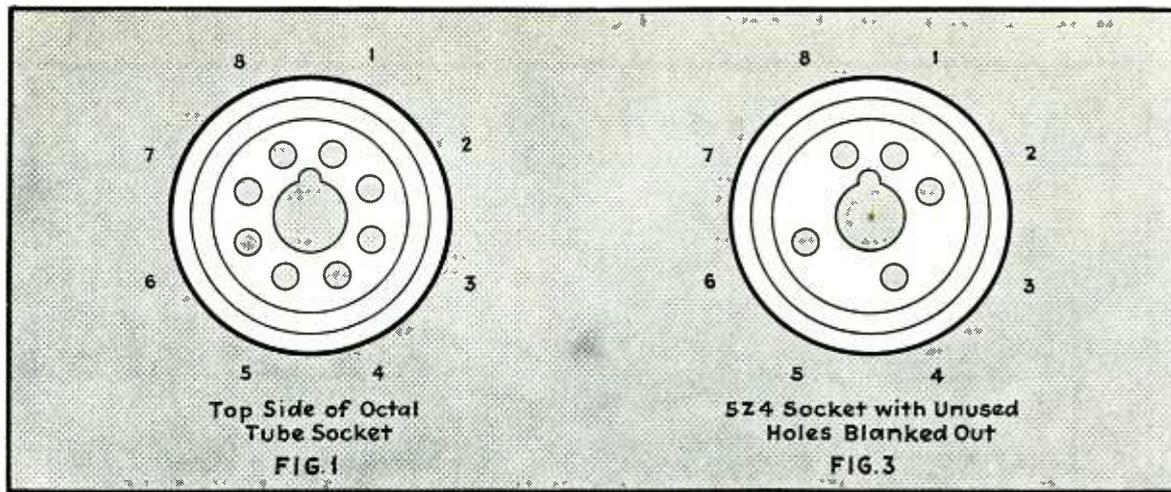
(5) Listeners do not use the best available radio service and are rarely assisted by dealers in assuring the maximum satisfaction and usefulness of their receivers.

Experience shows that dealers are lax in acquainting themselves and their customers with available radio service. Listeners grope blindly through a maze of signals, some of adequate level and stability for good reproduction, others totally unsuited to producing satisfactory entertainment.

As long as a station can be reproduced at full speaker volume, it is assumed to be capable of rendering entertaining service. Any antenna system which brings in enough signal for that purpose is considered satisfactory, regardless of its height or length or the type of lead-in used. Because almost any new receiver has sufficient inherent selectivity and sensitivity to produce speaker volume with almost any kind of signal, the listener is usually left with a wholly unsuitable installation and relies upon any audible station which he happens to like.

A great deal could be accomplished by specific knowledge of the available service of primary urban, primary suburban and rural standards, with a view to encourag-

(Please turn to page 44)



Why Blanked-Out Octal Sockets?

MOST stories begin with "once upon a time." But that presupposes that the event took place in the past. This is an article about what may take place in the future if a condition which has just appeared in the radio industry is not corrected immediately.

We refer to the "blanking out" of holes in the new octal base socket by a few manufacturers of radio sets.

When the octal tube was first announced, many of us (particularly those in the service end of the game and those of us who build test instruments for radio service work) breathed a big sigh of relief. At last we had a socket which would "stay put" and not grow additional "holes" every so often.

As first announced, the new metal tubes were characterized by an octal arrangement of the pins which were separated from each other by angles of 45 degrees, or multiples thereof, so that, let us say, a 7 pin octal base would be so arranged that 2 of the pins would outline

Penny-pinching by set designers could cost servicemen \$150,000 for adapters

By

Samuel C. Milbourne

Supreme Instruments Corporation

one angle of 90 degrees and all other angles would be outlined by the pins as 45 degree angles. It was obvious, therefore, that octal tubes, regardless of the number of pins per tube, could not be fitted into earlier types of sockets; but all octal tubes, regardless of the number of pins per tube, could be fitted into any octal tube socket, just so long as the socket had all 8 holes pierced and separated one from another by $\frac{1}{8}$ of the circumference of a circle, any two holes of which formed an angle of 45 degrees as illustrated in Figure 1.

This allowed for the insertion of any octal tube in this standard socket and also allowed for the insertion of any standard 8 prong analyzing plug or adapter for making the usual routine service tests.

The present set up on octal tube types results in terminal arrangements on each tube as listed in Figure 2.

Tube manufacturers are producing octal tubes with only the necessary number of pins thereon as the additional pins would be of doubtful practical value and would only increase the cost of the tube, the pins being so arranged (as previously explained) that all types of octal base tubes will fit one standard 8 hole socket.

Upon the 8 hole socket depends the complete set-up of selective analysis of radio sets so popular with servicemen today. A standard 8 pin analyzer plug or adapter fits this socket and may be used for analysis work on any octal tube circuit without the bother of changing adapters as the test proceeds from socket to socket in the radio set.

But uniformity is doomed to the advent of the

(Please turn to page 46)

TYPE	PIN 1	PIN 2	PIN 3	PIN 4	PIN 5	PIN 6	PIN 7	PIN 8	TOP CAP
5Z3	●	●		●		●		●	
5Z4	●	●		●		●		●	
6A8	●	●	●	●	●	●	●	●	●
6C5	●	●	●		●		●	●	
6D5	●	●	●		●		●	●	
6F5	●	●	●		●		●	●	
6F6	●	●	●	●	●		●	●	
6H6	●	●	●	●			●	●	
6J7	●	●	●	●	●		●	●	●
6K7	●	●	●	●	●		●	●	●
6L7	●	●	●	●	●		●	●	●
6P7	●	●	●	●	●	●	●	●	●

Pin Arrangement of Octal-Based Tubes

FIG. 2

Can you afford to lose a \$100.00 sale — or a customer?



**SPECIAL OFFER TO
Dealers and Servicemen
FOR NOVEMBER ONLY**



When replacing metal tubes, some "G" types should be shielded. During November, Arcturus distributors will give, free, a kit containing 6 complete sets of "G" shields (form-fitting and self-grounding) with each initial order of \$8.50 list value of Arcturus "G" Tubes. This offer expires Nov. 30 — get in touch with your distributor immediately.



This kit contains 6 complete sets of Arcturus "G" shields.



IN ADDITION to the profitable replacement market that is being created by the huge number of Arcturus "G" Tubes that are being shipped as initial equipment, critical servicemen and dealers more and more are using Arcturus "G" Tubes for replacement of metal tubes.

They know that Arcturus "G" Tubes, built along experience-proved methods, *will* perform efficiently;

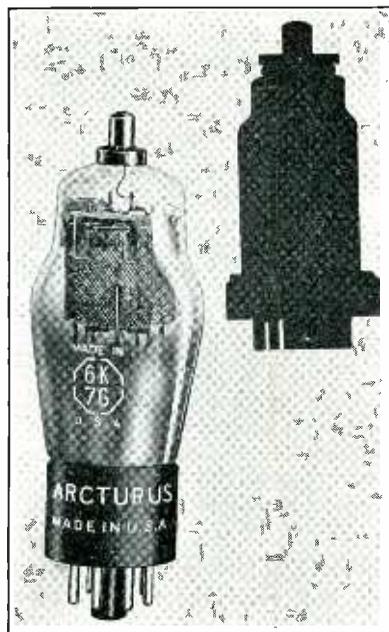
They know that 'service call-backs' won't happen because of tubes;

They know that Arcturus "G" Tubes, identical in characteristics and pin connections to metal tubes, *will do the job better!*

They know that customer satisfaction is insured;

They have no fear of losing a set sale or a customer when using "G" Tubes.

If you are interested in low cost of sales or service and bigger profits, better get the details of Arcturus "G" Tubes from your distributor. *Arcturus Radio Tube Co., Newark, N. J.*



Showing general appearance of the "G" Line Tubes, with all-metal tube base connections and guide pin.

ARCTURUS "G" TUBES

(GLASS COUNTERPART
OF ALL-METAL TUBES)

1. Characteristics identical to all-metal tubes.
 2. Pin connections and base same as all-metal tubes.
 3. Type numbers correspond to all-metal tubes (except our 5Y3 is a counterpart of the 5Z4).
 4. Positively interchangeable with all-metal tubes.
 5. Proved efficiency; built along conventional manufacturing practices; not an experiment.
 6. Available now in quantities.
 7. Currently used as initial equipment by several leading set manufacturers.
- Characteristic Chart sent on request.

ARCTURUS

R A D I O T U B E S

7 Christmas Windows

Practical suggestions for the man who does the decorating

By Ernest A. Dench

EFFECTIVE window displays, always an important aid to store traffic, are especially so just prior to Christmas when people with gifts to buy take their sidewalk shopping seriously. The primary requisite of a good window is promotion of the Christmas Spirit, the secondary objective featuring of your own particular class of merchandise. Don't be hard-boiled about it. People really are sentimental about their purchases at this season.

Of all the displays seen and installed last year the following seven seem to me to be the most effective and the least expensive:

PERENNIAL FIREPLACE

There's nothing so homey as a fireplace. One store built its entire display around one. At the rear and to one side of the window a wooden structure covered with red brick crepe paper, logs, red crepe paper flames and lights simulated the fireplace very well indeed. The comforts of home were suggested by lifelike cutouts of a cat and a dog. The mantel was decorated with a candlestick at each end, bric-a-brac in between. Several holly wreaths, alternated with framed pictures, adorned the rear wall, the middle of which was constructed with a French window effect. A wintry appearance was imparted by attaching pieces of absorbent cotton to a backdrop outside to represent snow. One radio only was placed at the right, with a lighted lamp on a little table nearby. A high grade rug completed the picture.

ANOTHER FIREPLACE IDEA

Another shop simulated a fireplace in very much the same way, placed a bear rug on the floor directly before it. This window had no background in the strict sense of the word, but was framed at the top rear and sides with alternate

strips of red and green crepe paper. The paper, about three inches wide, was slightly twisted.

A frame, or stage, effect was obtained with the assistance of a cross beam at the rear. Crepe paper hung from the top of this beam to the floor. More paper decorated the sides of the beam. The fireplace was inside the stage setting effect. There was a basket of logs, fire-tongs and several cushions beside it. Each side was occupied by a decorated radio model. A sign down front suggested:

"This Christmas give your family a new radio. Transform the long restless evenings into bright home gatherings encouraged by music."

"STRETCHING" THE WINDOW

A third firm deepened its window in order to allow more room for a Christmas display. The extra space gained was graduated backward and upward to produce perspective and the effect of distance. A cave-like aperture was formed in this manner, with three mounds, each covered with absorbent cotton to simulate snow, inside. Three radio models were placed in the respective hillocks, a frosty atmosphere being obtained by means of cold grey-blue drops at the sides and rear. The cave mouth was arched by a number of small holly wreaths, on which the name of the radios was spelled out. Several additional sets were grouped down front.

HARDWORKING SANTA

The fourth window represented the back wall of a red brick house. The drop was made of paper maché. Snow dust covered the roof and top of the chimney, while artificial icicles hung down the sides of the building. In each corner and to the sides were branches of trees covered with artificial snow. Stumps of trees covered with snow dust were at each end of the window. A long sled was placed in the center, a radio placed on the sled. Attached to the set was a

large white card noting the make and price. The rope of the sled was wound around an enormous cut-out of Santa with a pack on his back. He seemed to be pulling the sled, pointed to a show-card telling why the radio displayed was especially desirable.

ANOTHER "CAVE" TRIM

Still another store deepened its window especially for Christmas by removing several of the back panels. Inside this opening were cut-outs of husband, wife and two children, grouped around a tree, beside which was a radio. It was a typical, and good, "surprise" morning display. The rear of the opening was enclosed with beaver board, covered with decorated paper.

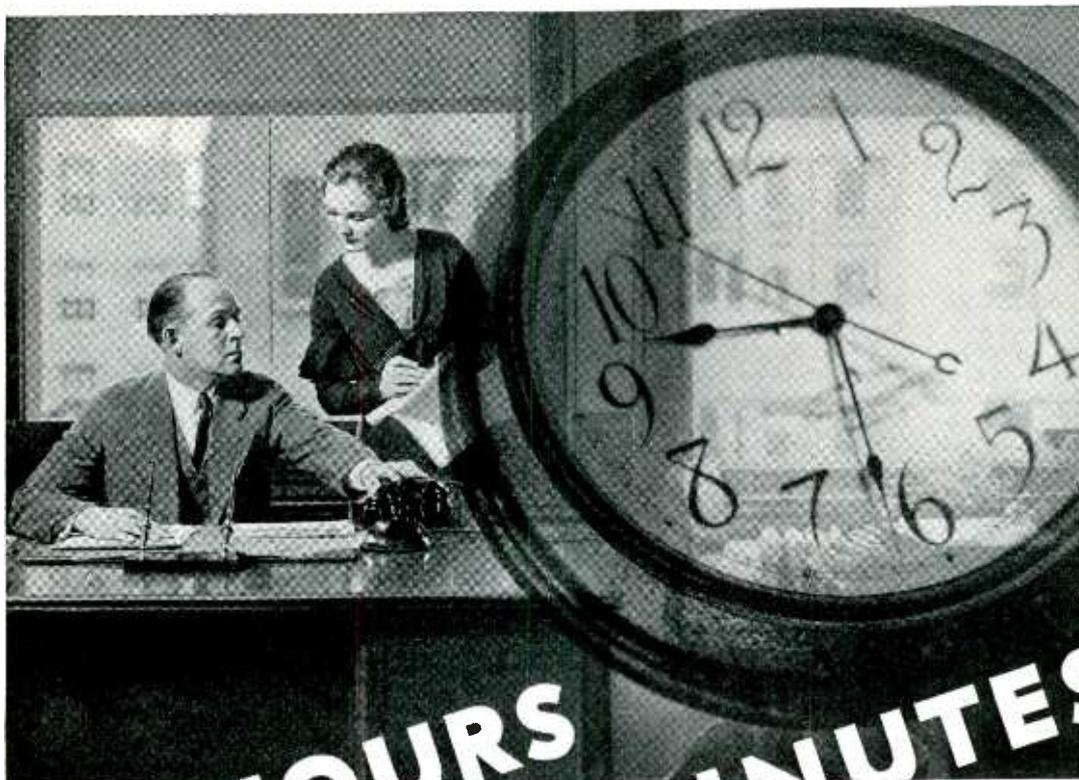
THE POINSETTA SIGN

A sixth store centered its display around a unique sign, suspended from the middle of the ceiling by means of red rope chains. The sign appeared to be a number of poinsettias strung together in a row. The flowers were made of cardboard, with a letter on each flower, so that the name of the radio featured was formed. A large set occupied the right side of the display. A deep border of cut-out cardboard icicles covered with glittering snow dust formed a frame at the top of the window while a border of holly was draped around the bottom and sides. The floor was draped in white.

THIS ONE'S DIFFERENT

The seventh and last store created the illusion of the roof of a red brick house, covered with snow. The rear of the window showed an extra ledge to the house and two chimneys, these extending upward about four feet. They were covered with cotton batting snow.

Above the chimneys and ledge was a strip of blue cloth about four feet wide. Upon this were attached star-shaped photographs of different radio artists. This looked like a bit of night time sky. A radio was placed in the center of the window. A frame of two pieces of stout wood at each side and extending about three feet above the radio (where they were fastened to a cross-piece to give a pergola effect) were decorated in white cloth and twined with green leaves. From this arrangement a poster was suspended by means of red and green tufted ribbon. The poster named and priced the set.



When a Sale waits on a Credit Checkup

CALL TODAY OUR NEAREST LOCAL OFFICE

Abilene ~ Akron ~ Albany ~ Altoona
 Amarillo ~ Asheville ~ Atlanta ~ Augusta
 Bakersfield ~ Baltimore ~ Bangor ~ Bay Shore
 Beaumont ~ Beckley ~ Binghamton
 Birmingham ~ Boise ~ Boston ~ Bridgeport
 Bronx ~ Brooklyn ~ Buffalo ~ Butte ~ Camden
 Cape Girardeau ~ Cedar Rapids ~ Charleston
 Charlotte ~ Chattanooga ~ Chicago
 Cincinnati ~ Clarksburg ~ Cleveland
 Columbia ~ Columbus ~ Cumberland ~ Dallas
 Dayton ~ Denver ~ Des Moines ~ Detroit
 El Paso ~ Erie ~ Florence ~ Fort Wayne
 Fort Worth ~ Fresno ~ Glens Falls ~ Greensboro
 Greenville ~ Hagerstown ~ Harrisburg
 Hartford ~ Hempstead ~ Hickory ~ Hauston
 Huntington, W. Va. ~ Indianapolis
 Jacksonville ~ Jamaica ~ Jamestown
 Jersey City ~ Johnson City ~ Kansas City
 Knoxville ~ Lexington ~ Lincoln ~ Little Rock
 Los Angeles ~ Louisville ~ Manchester
 Memphis ~ Miami ~ Milwaukee ~ Minneapolis
 Mobile ~ Montgomery ~ Montpelier ~ Mt. Vernon
 Nashville ~ Newark ~ Newburgh ~ New Haven
 New Orleans ~ New York ~ Norfolk
 Oklahoma City ~ Omaha ~ Orlando ~ Paducah
 Paterson ~ Peoria ~ Perth Amboy
 Philadelphia ~ Pittsburgh ~ Portland, Me.
 Portland, Ore. ~ Portsmouth ~ Poughkeepsie
 Providence ~ Raleigh ~ Reading ~ Reno
 Richmond ~ Roanoke ~ Rochester ~ Rome, Ga.
 Sacramento ~ St. Louis ~ Salt Lake City
 San Antonio ~ San Diego ~ San Francisco
 San Jose ~ Scranton ~ Seattle ~ Shreveport
 Spartanburg ~ Spokane ~ Springfield, Mass.
 Springfield, Ohio ~ Stockton ~ Syracuse
 Tampa ~ Toledo ~ Tucson ~ Tulsa ~ Utica
 Washington ~ Watertown ~ Wheeling
 White Plains ~ Wichita ~ Wilkes-Barre
 Wilson ~ Yakima ~ Youngstown



Dealers and manufacturers want a Finance Service which moves fast and gets results. That describes C. I. T. Right in your city, or near you, is a C. I. T. Local Office which is a complete financing unit. It will check your prospective customers and report, at no expense to you. It will take your contracts as you make them and promptly give you cash. It will make collections for you . . . tactfully, through trained C. I. T. men who know local conditions.

Only when you have this type of finance cooperation can you be sure that time payments are paying you your full profit.

C. I. T. Plans cover all models of approved types of radios; also mechanical refrigerators and water coolers, electric ranges and electric water heaters. A large percentage of the country's most successful dealers use C. I. T. Service. A phone call to our nearest office will bring a C. I. T. field-man, glad to talk over with you how C. I. T. Service might aid you.

C. I. T. CORPORATION

NEW YORK — CHICAGO — SAN FRANCISCO

A Unit of COMMERCIAL INVESTMENT TRUST CORPORATION
 CAPITAL AND SURPLUS OVER \$100,000,000

INSTITUTE OF RADIO SERVICE MEN HOLD GALA GATHERING AT NEW YORK CITY

Over 2,500 Register During Three-Day
Event—Notable Addresses by Technical Experts

AN OUTSTANDING demonstration of the important place which the service man occupies in the radio industry was given last month at the Hotel Pennsylvania, New York City. With a total registered attendance topping 2,500, with practically every important parts manufacturer present at his booth and with the large lecture room frequently filled to capacity, the Third Annual New York Convention of the Institute of Radio Service Men was a decided success.

Noteworthy was the interest shown in the uses of the new testing equipment, particularly in the talks on cathode ray explorations applied to the new circuits.

E. C. Arnold, national president, of Rochester, N. Y., presided at all the lecture sessions. His introduction of the many speakers was done with tact and understanding of the subject at hand—although he laid it on a bit thick when introducing the editor of *Radio Retailing*.

Too much credit cannot be given to Ed. Mandeville, New York, who was chairman of the arrangements committee. Also to his co-workers. The boys did a fine job. Everything went like clockwork.



**PICK
UPS**

Every lecture session was well attended. Even the morning meetings drew over 100 seekers of information.

The Sales Managers' Club, with a membership of many important eastern parts makers, met (privately) the first day of the convention. We heard that something in the way of important policy changes is in the wind.

Sam Roth, formerly of Federated, was busy fostering his new idea in parts catalog building. Now running the United Catalog Publishers, Inc. The plan is to supply some 300 parts jobbers with stock catalog sheets on the popular lines.

Public-address men and amateurs have gone "nuts" about crystal and velocity mikes. The things are so good that it is hard to think of any other

kind. May we remind our readers, however, that there are still applications in which a good carbon job will do the work and do it without high-gain speech amplifiers. There is a place for all kinds of mikes and sometimes the new ultra-ultra types are *too* good.

Parts Jobbers May Form National Association

NEW YORK—The possibility that early next year may witness the organization of a national association of parts jobbers was seen in the favorable sentiment expressed during the service convention last month. At a meeting of parts distributors, held at the Hotel Pennsylvania, Oct. 25, Maurice Despres presiding, it was voted to call another meeting in the near future to arrange for the holding of a national representation meeting the fore part of 1936—probably at the March convention of the IRSM in Chicago.

Mfrs. Agents Meet

Another group who seized the opportunity afforded by the IRSM convention to hold a get-together was the manufacturers sales representatives. An organization com-



JIMMIE MECK, Clough Bren-
gle, Chicago, and his New York
man Friday, **JOHN FORSHAY**



"WEE"—But Oh My Gosh!

Outstanding features of the Radio Show at Philadelphia were the crowning of Jean McCool as "Miss Radio 1935" and Station "WEE," world's tiniest radio broadcasting station with four one-hundredths of a watt power in contrast to WLW's 500,000 watts. Miss McCool represented Philadelphia in the Atlantic City Beauty Pageant this year. Also present is Andy Stanton, WLW announcer and for seven years manager of the Philadelphia radio show.

mittee was appointed headed by Perry Safler, of Buffalo. Other members are: Dan R. Bittan, L. R. Schench and F. E. Schmitt, all of New York City, and Jack Simberkoff, of Brooklyn.

G-E Service Meetings

BRIDGEPORT—Concluding its current series of service meetings for radio service men and dealers' salesmen, G-E Radio. General Electric's Merchandise Department, Bridgeport, Conn., will conduct meetings in 100 cities over the country from Nov. 12 to Dec. 15. Supervision will be in charge of G-E Radio field engineers.

Tobe Gets RCA License

The Browning-35 and Tobe amateur receiver are now being manufactured and sold under a "kit" license agreement recently consummated between the Radio Corporation of America and the Tobe Deutschmann Corp.

New Emerson Price Tag

NEW YORK—An effective self-selling device is the new identifying and descriptive price tag now being attached to each Emerson set. As a merchandising feature, it gives the retail salesman and customer a quick résumé of all of the outstanding qualities of the set, together with the essential general values of importance to those concerned.



L. BURLINGAME, Supreme
Instrument's on-the-job New
York representative

Radio Products Co. Purchased by Bendix

DAYTON, OHIO—Purchase of the Radio Products Co., Dayton, Ohio, by the Bendix Aviation Corporation of America was announced last month by executives of both companies. As a subsidiary of the Bendix organization, the Radio Products Co. will retain its present name and will continue manufacturing the complete line of service instruments known by the trade name "DayraD."

Radio Products has specialized for eight years in the manufacture of radio service equipment. From its laboratories have come many pioneering achievements, including the English reading scale, the sensitive neon shorts and leakage test, and the dynamic mutual conductance tube checker.

Included in the DayraD line are tube testers, all wave signal generators, radio set testers, and Mult-O-Meters.



Stanley Harris

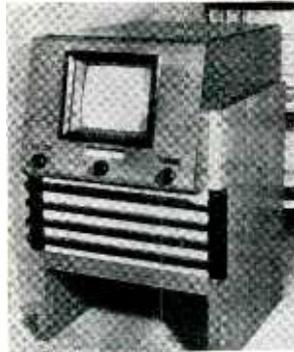
The appointment of Stanley A. Harris as sales representative for Sylvania in the New England territory has been the cause for many congratulations.

"Philco Week"

PHILADELPHIA — Two large broadsides, mailed to its distributors and dealers, have announced "National Philco Week," planned for the period of Nov. 7-16. In the jobber folder there is presented 16 different ways to promote this nine-day campaign.

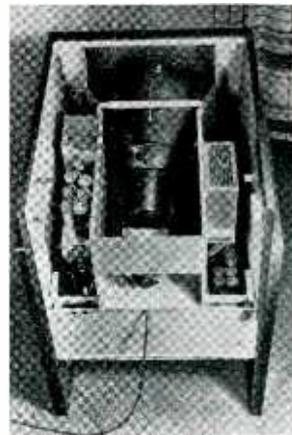
Two newspaper advertisements covering the features and special offers being made available to the prospect for a radio will run in 200 news-

Television by Telefunken



This German sight and sound receiver is claimed as simple to operate as an ordinary set. One tuning dial, adjusted for sound reception, automatically adjusts for best picture reproduction. Knob at right regulates picture for brilliance. Left knob for sound volume. Picture size, 7½ by 10 inches—180 lines, 25 frames per second.

The inside story of the new Telefunken television receiver, interesting because of its arrangement of the different parts. Not found at present in any other television receiver.



papers during the campaign.

Among the consumer inducements to buy are special trade-in allowances and extra easy terms.

Lee McCanne Addresses Notable Gathering

NIAGARA FALLS — Three hundred business men, members of the Lions, Hermes Club, Kiwanis and Rotarians, from both sides of the International boundary, heard Lee McCanne (Stromberg-Carlson) outline the advancements in the radio arts, at the Niagara Hotel, Niagara Falls, last month.

His address covered the present status of radio communication facilities, television and tone fidelity receivers.

S-W Transcriptions

With the advent of the new all-metal tubes and the Ferrodyne circuit, radio broadcasting has become a powerful medium in creating sales for Stewart-Warner dealers. Realizing that the radio business today is largely a replacement market, S-W makes available to its dealers and distributors a series of 15-minute electrical transcriptions, furnished without cost.

MINNEAPOLIS—W. H. Warmington, of Minneapolis, was elected president of the Northwest Radio, Refrigeration and Appliance Association at its annual meeting, Thursday, October 17, at the Curtis Hotel, Minneapolis.

Pocock, Inc., Named Stromberg Distributor

ROCHESTER, N. Y.—J. J. Pocock, Inc., 1920 Chestnut Street, Philadelphia, has just been named distributor of radio receiving sets and accessories by the Stromberg-Carlson Telephone Mfg. Co., of this city, covering eastern Pennsylvania, southern New Jersey and the state of Delaware.

Since 1919, J. J. Pocock, Inc., has been distributor of Frigidaire products in the same district.

"After analyzing the radio field, I decided on the Stromberg-Carlson products, because this concern incorporates the same high business principles in the radio field as Frigidaire Corp. does in the refrigeration market," states Mr. Pocock.

J. F. Kessen Promoted

BUFFALO—J. F. Kessen, formerly with the Cincinnati Wurlitzer office, assumed charge of the Wurlitzer Store, this city, the fore part of last month.

Simplex Sells Roumania

The Simplex Radio Co., Sandusky, Ohio, reports recently receiving an order for 1,000 radio receivers for Roumania through its New York representative, Sidney H. Gatty, 132 Nassau St.

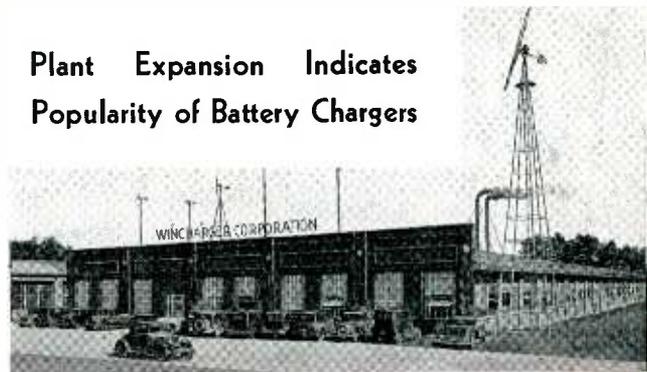
William C. Joy, is now representing the Simplex Radio Co. in the Kansas City territory.

Tung-Sol Campaign

NEW YORK—A market development program on radio tubes, built around a "plus profit" idea, is now in effect with the twofold purpose of obtaining new dealers and helping present Tung-Sol wholesalers to use the selling tools provided to better advantage.

As the result of an extensive survey by Tung-Sol Radio Tubes, Inc., it was decided that a series of monthly drives should be undertaken, coordinating the efforts of all Tung-Sol wholesalers and salesmen to close selected prospects.

Plant Expansion Indicates Popularity of Battery Chargers



Incorporated in 1934, the Wincharger Corp., Sioux City, Iowa, has more than tripled its floor space within the brief span of 12 months. The above factory, with its 30,000 sq. feet of space and equipped for high-speed production, now handles the wind power, 6-volt battery charging requirements of the following set makers: Atwater Kent, Fada, Fairbanks-Morse, Emerson, Grunow, Arvin, RCA-Victor, Setchell-Carlson, Westinghouse and Zenith.

Wincharger is the outgrowth of the Albers Propeller Co., which concern has been manufacturing wind-electric apparatus since 1927.

There's a place for you Don't be left behind... concentrated

TREMENDOUS ADVERTISING BACKS METAL TUBES

48 Radio Manufacturers
now use Metal Tubes

Look who they are:

Arwater Kent Mfg. Co.
Aur-King Products Co., Inc.
Automatic Radio Mfg. Co., Inc.
Baltimore Radio Corp.
Capehart Corp.
Cass Electro Corp.
Clinton Mfg. Co.
Continental Radio & Television Corp.
Corona Radio & Television Corp.
Crosley Radio Corp.
Detroit Radio Corp.
Echophone Radio Corp.

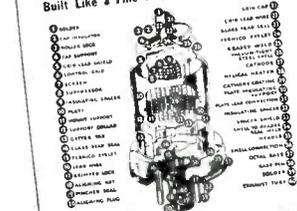
Electrical Research Laboratories (Spartan)
Emerson Radio & Photograph Corp.
Fada Radio & Electric Co.
Fairbanks-Horse Home Appliances, Inc.
Ferdig Mfg. Co., Inc. (Ferdig-Emerson)
Genrad Radio Corp.
General Electric Co.
General Household Utilities Corp. (General)
Gibbler Bros., Inc.
Hollocofers, Inc. (Super Sky Radio)
Malson Radio Mfg. Corp.
Mam Radio Mfg. Co. (Mammy Tone)

Howard Radio Co.
International Radio Corp.
Kingsboro Radio Co., Inc.
La Wall Mfg. Co. (Hush)
Midwest Radio Corp.
Mission Bell Radio Mfg. Co.
Mobil-Sparks Industries (Arvin)
Packard Bell Co.
Pilot Radio Corp.
Radio Products (Avalon)
RCA Victor
Rumler Co., Ltd.

Simplex Radio Co.
Sparks-Whittington Co. (Spartan)
Stewart-Warner Corp.
Stromberg-Carlson Telephone Mfg. Co.
Trevler Radio & Television Corp.
Troy Radio Mfg. Co.
United American Box Co. (Bosch)
United Scientific Laboratories
Worwick Mfg. Co.
Wells-Gardner & Co.
Willingphone
Wilson Gray Corp.

And other manufacturers will shortly offer sets with Metal Tubes

METAL TUBES Built Like a Fine Watch—Sealed in Steel



Be modern—get a radio set with Metal Tubes

The radio industry has enthusiastically adopted Metal Tubes. And there's a reason. Metal Tubes make possible much better radio sets. That is why the overwhelming majority of radio manufacturers have adopted Metal Tubes. They know that the first step in selling a product is to make it as good as it can be made—and no radio today is as good as it can be unless it is built to use Metal Tubes!

This year, more than ever, the public is buying quality radios instead of the merchandise that so many were forced to purchase during the depression.

Metal Tubes are the Sign of an Up-to-date Radio!

Among the milestones of radio progress are: (1) Crystal Detector; (2) Triode Detector; (3) Untuned Radio Frequency Amplification; (4) Armstrong Regenerative Receiver; (5) Loudspeakers; (6) Tuned Radio Frequency Amplification; (7) Cone Speakers; (8) Alternating Current Tubes; (9) Dynamic Speakers; (10) Power Amplifier Tubes; (11) Superheterodyne Circuit; (12) Screen Grid Tubes; (13) Pentode Tubes; (14) Metal Tubes.

This year witnesses the introduction of Metal Tubes, the greatest tube advance in 26 years. Thus 1935 goes down in radio history as offering a new, revolutionary and permanent improvement, already adopted by the vast majority of radio manufacturers. Progress cannot be stopped!

In Metal Tubes you have progress as great as that from the "horseless carriage" to the modern automobile, from the candle to the electric light, from the town crier to the broadcasting station. Visit any radio dealer and prove for yourself that radios with Metal Tubes out-perform anything you have heard in the past!

RCA Metal Tubes have proved a sensation without any direct advertising whatsoever. But we believe a good product deserves to be known and used by everybody. So one of the biggest advertising campaigns the industry has ever known is now telling the American public about the unquestionable superiority of Metal Tubes. A series of full-page, 1200-line and 1000-line ads are running in 103 newspapers in 83 cities. Behind these powerful ads are the weight and prestige not only of RCA, but of all 48 of the leading manufacturers who have adopted Metal Tubes in their sets. The industry is overwhelmingly behind Metal Tubes. The public is demanding sets with Metal Tubes. You can't afford to invest your money in anything else but Metal-Tube sets. Act now—before the pendulum has swung the full arc—before it's too late!

Full-page advertisement which ran in the N.Y. Times and other newspapers Nov. 1—opening gun of a smashing campaign on Metal Tubes in over 100 leading newspapers throughout the country.

Metal Tubes... by 48 leading manufacturers... an overwhelming... industry... Metal Tubes... are meeting... lous products... the band... of the pro... Don't... the benefit... take a chance... and profit... RCA Metal Tubes... The success... never in... from the... built as in... time in h... by G.E. a... Presented... as an "e... a veteran... more pur...

RCA METAL TUBES

RCA Manufacturing Co., Inc., Camden, N. J., a subsidiary of Radio Corporation of America

in the Victory Parade! te on sets with METAL TUBES!

...tubes are over! They are used
...radio manufacturers...
...overwhelming majority of the
...The public is asking for
...tubes and those manufacturers
...ing that demand with fabu-
...duction schedules. Climb on
...wagon and get your share
...of profits that belong to the victor!
...wait. Christmas is just around
...l. You can't afford *now* to
...hance on diminishing sales
...ts. Win with the winner...
...METAL TUBES!
...ccess of RCA Metal Tubes was
...doubt. They were a natural
...e beginning. A radio tube
...t should be built for the first
...istory! Developed
...nd made by RCA.
...l to the public not
...xperiment" but as
...of scores of tests
...nishing than a radio



tube ever encountered in regular ser-
vice... a new champion!

Hailed by the trade press, imme-
diately and enthusiastically indorsed
by a vast majority of set manufacturers,
*yet without a single word of direct ad-
vertising*, RCA Metal Tubes have taken
the set-buying public by storm! With
its instinctive recognition of a great
practical advance and its eagerness to
make use of its benefits, the public
cannot be fooled!

No, there was never a doubt.
Merely a question of time until pro-
duction could begin to catch up
with the staggering demand. Now,
production is up. We are able to
supply most of the needs of our
set customers. And Metal-
Tube radios of 48 leading
radio makers are pouring
off the lines in steady, end-
less streams. A great victory
has been won!



PIONEERING FOR PROFITS

Every industry you can think of has brought
rich rewards to those who pioneered in
producing its products. Pioneering made
this country what it is today, the envy of
the world, the land of opportunity. You
can't stop America, because YOU CAN'T
STOP PROGRESS! Metal Tubes designed
by the famed G.E. laboratories and made by
RCA represent pioneering and progress
both. They are bringing the rewards of
pioneering this very minute to all those
who are alert enough to recognize them for
what they are—the greatest single aid to
set selling today!

METAL TUBES

liary of the RADIO CORPORATION OF AMERICA

Alfred Grebe Dies

Alfred H. Grebe, pioneer radio engineer and manufacturer, died suddenly on Oct. 24, after an operation. He was 40 years old.

Mr. Grebe quite recently had reorganized his old company under the name of the Grebe Radio & Television Corp. and was its president. He was one of the very early manufacturers of radio apparatus—publishing a catalog of radio parts when only 19 years old. He also was one of the first broadcasters, building stations WAHG and WBOQ in 1921. These later were merged into WABC by the Atlantic Broadcasting Corp., which he organized.

Mr. Grebe was born in Richmond Hill, N. Y. On the site of his birthplace later rose the factory where thousands of sets bearing his name were built. "Al," as he was affectionately called by a host of friends, devoted his life to radio in all its branches. Many devices used in today's receivers originated in his laboratory.

He had just completed the 1936 line of new Grebe sets when the end came. The personnel of his new company includes many of his former associates, who will continue with the Grebe Radio & Television Corp. under the active direction of Maurice Raphael, vice-president, and associated with Mr. Grebe for 16 years.

The office of this new concern is at 55 West 42nd Street, New York. Details of the new Grebe receivers will appear in our next issue.

New Fada Jobbers

Further evidences of Fada expansion is seen in the following list of aggressive wholesalers who will push this line from now on:

SCRANTON—Charles B. Scott Co., for the northeast section of Pennsylvania.

OSKALOOSA—The southern Iowa territory will be taken care of by R. F. & W. B. Fitch Co., with offices at 113 North First Street.

HAGERSTOWN—Tristate Electrical Supply Co. will cover western Maryland and the Shenandoah Valley. R. A. Stott is sales manager.

CHICAGO—This important area will be handled, exclusively, by the Metropolitan Electrical Supply Co., 321 South Desplaines Street. Will travel 14 men and maintain service facilities.



An Old Morocco Custom

Where's the next water hole? Chauffeur for Emerson's French Moroccan agent, Coriat & Cie, Casablanca, stops for a look-see.

LARGER QUARTERS

NEW YORK—Two firms, due to increasing business, have found it necessary to move into larger quarters in this city.

As of Nov. 1, the executive offices of the Freed Mfg. Co. will be at 44 West 18th Street. Construction work on the new factory is well along. It will have production facilities three times that of the present plant. A complete line of Freed-Eisemann sets for the the jobbing trade recently was announced.

To meet the demand for its antenna kits and component parts, Technical Appliance Corp. has moved from Long Island City to 17 East 16th Street, New York. Production can be stepped up 300 per cent with the new machinery provided.

SOUTH BEND—Modernistic simplicity characterizes the new wholesale quarters of Cloud Brothers, now at 906 South Michigan Street. Now exclusively wholesale, Ray Cloud distributes Grunow radios and refrigerators, Thor washers and ironers and Electrolux kerosene operated refrigerators.

CHICAGO—Universal Battery Co., having acquired the assets of the Herbert E. Bucklen Corp., of Elkhart, Ind., has moved the latter's manufacturing equipment to this city. The Bucklen outfit claims to be the originator of wind-driven lighting plants. In addition to making batteries and chargers, Universal has a complete line of 32- and 6-volt radio receivers.

CHICAGO—The Ohmite Mfg. Co. is now located in its new building at 4835 Flournoy Street. Twice the capacity of its former plant will assure quick delivery of its well-known line of parts.

En Route

with RVS

Last month's little journey took your roving reporter, via Rochester and Buffalo, into Michigan, Ohio and Pennsylvania. Found general radio conditions just too, too good. Had to pinch myself.

Lee McCanne took me through the Stromberg-Carlson plant. "We've never been busier on radio than right now," he said. S-C makes their own cabinets, has taken high-fidelity up in a serious way—with all the technical trimmings.

Van Buskirk, of Vanbees, Buffalo, thinks the m.t. (metal tube to you) is a good "closer" but a better "puller in." "They are beginning to ask to see it."

Noticed on this trip that more and more of the boys are using the local broadcast service as their No. 1 advertising medium.

Halle Bros., Cleveland, reported their phonograph record business 60 per cent ahead of last year. Wonder if some dealers are losing out by not placing a bet on this horse.

Bill Buescher, same town, is "specializing," with success, on the higher priced consoles and combinations. Last year gave thought to dropping radio entirely. And that's how the wind blows.

Met T. H. White, Atlanta, Ga., representative for Simplex in the latter's office, Sandusky, Ohio. White tells me that down South they use the shortwave bands for daylight reception of American shortwave programs. Daylight reception otherwise not so good.

Reports business at least three times better than last year with cotton and tobacco prices up and the power lines being rapidly extended into the country.

Farm sets, however, are selling like hot cakes.

In this connection Simplex has signed with Pioneer Gen-E-Motor Corp., Chicago and will make available on very attractive terms windcharging generators for Simplex 6-volt battery sets.

White interjected the observation that down his way they are buying radios in order to get the charger and battery for running three or four little 6-volt lights.

Found International (Kadette), Ann Arbor, Mich., also working at top speed—with a new model, out this month, that should pile up the back orders.

Last port of call—Emporium, Pa., where the deer come down from the surrounding mountains and browse in the valleys with the cows. Found Hygrade-Sylvania technicians (over 100 graduate engineers in this one plant, believe it or not) genuinely enthusiastic about the new type tubes. With the major problems as good as licked, they are now giving thought to the future refinements and development possibilities of these (you guessed it) metal tubes.

In London—a town we didn't make on this trip—it's "hire purchase." In our language this means, buying on the time-payment plan.

Metal Tube Display

A counter and window display featuring all metal tubes is announced by Raytheon. Measures 12 by 6 by 18 inches.

Representative types of tubes are illustrated as they might appear in an actual chassis. The customer handles an actual steel tube. Available to Raytheon dealers and service men free of charge.



Helpful Booklets and a New Book on Radio

To provide the most complete line of all types of wire and wire accessory items used by the radio distributor and parts jobber, a revised bulletin is announced by the BELDEN MFG. Co., 4689 W. Van Buren Street, Chicago. Bulletin 6090 includes many new items.

"8,000,000 Jobs for Servicemen" is the title of a new booklet (price 25 cents) issued by the TOBE DEUTSCHMANN CORP., Canton, Mass. It tells service men how to modernize worthwhile but rather ancient receivers "with the Browning 35 and the Tobe super-tuner." Also gives many splendid ideas for promoting and advertising this service.

STROMBERG-CARLSON'S new booklet "How to Choose a Radio," illustrates and covers such subjects as "Natural Tone," "Tuning Ranges," "General Performance," "Sensitivity," "Selectivity," "Volume," "Automatic Volume Control," "Quietness," "Economy," "Ease of Tuning," "Appearance," "Construction."

BAKELITE CORPORATION, 247 Park Ave., New York, and 43 East Ohio St., Chicago, is celebrating its silver anniversary with a de luxe booklet titled "Bakelite Review." Presents many uses for this remarkable material.

ZENITH is out with a smart promotional piece, in silver and black, which not only catalogs its line but illustrates, in large and dramatic pictures, a wealth of special talking points.

For many months SYLVANIA'S service pages in its house magazine, "Sylvania News" have been found worth keeping by service men. Now you may obtain a suitable binder for this growing collection of helps by sending 10 cents to Editor DeVoe, Hygrade Sylvania Co., Emporium, Pa. You will receive the binder with all the past service pages nicely fastened therein.

"MAKING A LIVING IN RADIO," is the title of a new book by Zeh Bouck, published by the McGraw-Hill Book Co., 330 West 42nd St., New York. The price is \$2 and it appears to us well worth it. An impartial and comprehensive survey, discussing the opportunities, remunerative possibilities and probabilities, methods and costs of training, problems of getting a start, etc., in the radio field. Both of the major divisions of radio are covered, the technical—servicing, operating, and engineering—and the non technical—writing, broadcasting, selling.

Radio Retailing, November, 1935

In the Appliance Field

Elec. Appliance Sales Up Three to 64%

Electric household appliance unit volume, so far this year, shows gains ranging as high as 64 per cent over the same period of 1934. Sales of electric ranges top the list with the aforementioned maximum.

Oil burners are up 36%; vacuum cleaners, 30%; refrigerators, 15%; ironers, 13%. Line powered washing machines show the least gain, approximately 3%. On the other hand, gas engine driven washers are 58 per cent ahead of last year—showing the marked influence of better conditions on the farm.

Books by Westinghouse

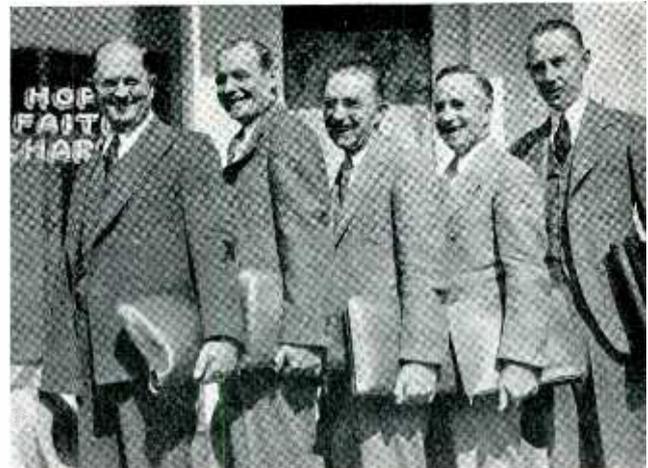
MANSFIELD—The following booklets are just off the press. While they tell the story of Westinghouse products they contain much material of general helpfulness. Just about the snappiest printing jobs we have seen in a long while.

Ice By Wire—The Why and How of electric refrigeration.

All-Electric Kitchen—Beautifully illustrated in full colors.

Air-Conditioned Homes—A de luxe booklet with lots of information.

Write: Westinghouse Electric & Mfg. Co., Mansfield, Ohio. They're free.



Hope, Faith, Charity—Plus

The happy look on the faces of these "Five Horsemen," crack salesmen for the Cooper-Louisville Co., Crosley distributor, Louisville, is not because they have had their sins washed away and their souls saved by the rescue mission whose sign, "Faith, Hope and Charity", looms in the background. It is because this group of go-getting salesmen have exceeded their year's quota on Shelvadors by 122 per cent, with four months to go.

They are (left to right) H. O. Thomas, southern Indiana; J. S. Ditty, western Kentucky and southern Indiana; H. M. Weber, central Kentucky; J. J. Crider, Blue Grass Section; and S. J. Rapier, city of Louisville.

Apex-Rotarex Display

CHICAGO—The Apex-Rotarex Corp., electrical household utilities manufacturer of Cleveland, Ohio, has leased 5,000 square feet of space on the 14th floor of the Merchandise Mart here and will establish an extensive display room and service department.

"Leonard Week"

CLINTON, OKLAHOMA—Successful promotion of a "Leonard Week" through the use of newspaper advertising and window displays by the Gambill Furniture Company resulted in the sale of 12 new and many used refrigerators during the one week.

Featuring the slogan, "It's Leonard Week at Gambill's," newspaper advertisements were run the day before the special sale began, the day it opened and once during the week. Gambill's windows were painted with water colors and models displayed in the window. As a special inducement for people to buy during this week the store gave extras, such as double ice-cube trays, rubber mats, refrigerator sets, water bottles, etc. with each Leonard purchased.

Rupert Gambill, head of the company, said: "This week was second to the largest refrigerator week we have ever had and we are thoroughly convinced that a campaign like this pays big dividends."

The F.H.A. plan has been extended to the point where a washer may now be sold on a minimum monthly payment of about \$4 which allows from 12 to 36 months to pay for it.

Chicken to the Winners, Losers—Beans



Chicken to the winners and beans to the losers, read the menu at the dinner given by Hale Brothers, San Francisco, for their new Frigidaire specialty selling organization.

This organization has established an enviable record. During the first week two of the men made six sales while others made three and four. Yes, there were more chickens served than beans.

News Broadcasts from Abroad

When and Where to Get First Hand Information on Foreign Affairs

SIX, up-to-the-minute news broadcasts—supplied by Reuter's News Agency—are transmitted daily over the shortwave stations of the British Broadcasting Corporation, and may be heard by American listeners. The first starts at 4:45 a.m., EST, (9:45 in London). The second may be heard at 8 a.m., EST; the third at 11:30; the fourth at 5 p.m.; the fifth at 7:45 p.m. and the last at 10:45 in the evening.

For these broadcasts, the British usually use two of their eight frequencies depending on the operating advantages. The eight shortwave frequencies held by the British are:

GSA	6.05 mc.	(49.59 m.)
GSL	6.11 mc.	(49.10 m.)
GSB	9.51 mc.	(31.55 m.)
GSC	9.58 mc.	(31.32 m.)
GSD	11.75 mc.	(25.53 m.)
GSE	11.86 mc.	(25.29 m.)
GSF	15.14 mc.	(19.82 m.)
GSG	17.79 mc.	(16.86 m.)

Germany broadcasts an English news program at 8:15 EST, nightly, from station DJC, 6.02 mc. (49.83 m.). Sometimes this is also heard over station DJN, 9.54 mc. (31.45 m.).

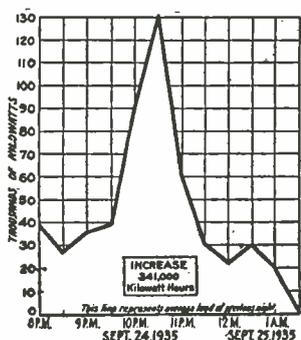
French station, Radio Coloniale, 11:71 mc. (25.63 m.) transmits an English news broadcast at about 7:00 p.m., EST, daily, but the French government has issued no fixed schedule for this bulletin.

The Italian station, 2RO at Rome, 9.635 mc. (31.13 m.), broadcasts an English news bulletin at 6:00 p.m., EST.

From Holland, Station PHI, 11.73 mc. (25.57 m.), broadcasts an English news broadcast at 9:30 a.m.

From Spain come two English news broadcasts daily during the course of an American hour over Station EAQ at Ma-

They Listen. And How!



The above electric consumption chart of the New York Edison System shows how its load increased the night of the Baer-Louis fight.

drid, 9.87 mc. (30.43 m.), from 4:15 p.m. to 8:30 p.m., EST.

The Soviet government has also announced that it is including ten minutes of English news in a program to be broadcast at midnight Moscow time (4:00 p.m., E.S.T.), over Station RNE, 12 mc. (25 m.) on Sunday, Monday, Wednesday and Friday of each week.

The British stations confine their news broadcasts to the English language. Most of the Continental stations issue English broadcasts in addition to news broadcasts in their own tongue.

The news broadcasts from the various European stations are features of formal daily programs prepared chiefly for American consumption. They include music and other entertainment features as well as addresses of particular interest to overseas listeners.



Margaret Speaks

Margaret Speaks, young American soprano, who will continue on the "Voice of Firestone" programs, joining Richard Crooks and Nelson Eddy in the new winter series which commence November 4 at 8:30 EST., and continue each Monday night.

William Bacher Gets Medal

Because the Hollywood Hotel program is one of broadcasting's great shows and because his efforts are in large measure responsible for it, the magazine, *Radio Stars*, awarded its monthly medal for distinguished service to William Bacher, creator of the program.

Via Shortwave

VENEZUELA — Confidence that YV2RC can be heard in the United States "almost like a local" is expressed by Edgar J. Anzola, director of the Caracas station, because of an increase in power and a shift from 6112 to 5800 kc. to get away from the congestion of the 49 meters band.

MEXICO—The new station XBJO, operating on 11,000 kc., is being reported as heard clearly around 9 p.m., EST.

ITALY—The largest Rome station, IRO, is preparing to double its present power of 50 kw. and may go as high as 120 kw. The increased power will be utilized before the end of the year.

SOUTH AMERICA—Several new stations have been licensed to broadcast in South America, according to Joe Stokes, of the KDKA DX Club, and a 25,000-watt, PRG6, operating on 15,000 kc. at San Paulo, Brazil, should command a world audience. HJ4ABD is the call of

a new station at Medellin, Colombia, operating on 49.5 meters or 6,050 kc.

FRANCE—The powerful new short-wave station at Villebon, France, has gone on the air. The station will use 100,000 watts for transmissions above 30 meters and 50,000 watts for others.

PITTSBURGH, U. S. A.—A unique weekly program for short-wave listeners is offered by the KDKA DX Club every Friday night at 12:30 a.m. over W8XK, Pittsburgh (6,140 kc.). Founded by Joseph Stokes, the program carries DX tips and news relative to short-wave changes, special programs and the like. DX fans in 25 recorded countries tune in weekly, according to Stokes.

Ideal S-W Reception

COLUMBUS, OHIO—"Short-wave reception for the past fortnight has been of the excep-

tional sort. The Europeans have been received with volume and clarity little short of marvelous. London, Berlin, Paris, Rome and Madrid have all contributed their share of entertainment. As winter approaches, the fan can expect the Australian and Japanese stations to occupy a part of the spotlight," Percy D. Jones, *Columbus Dispatch*.

Public Wants S-W Programs

WASHINGTON, D. C.—Public interest in short-wave radio and its rapidly expanding use are evidenced by the demand, from newspapers and public, of foreign short-wave programs. One hundred newspapers have been added during the last month to those receiving weekly foreign short-wave programs from the Service Bureau of the RMA. With the additions, there are now over 700 newspapers getting this service.

Listeners' League Grows

The Listeners' League of America has grown to such heights in the few months of its existence that it already is the largest organization of its kind ever to be formed among radio listeners, according to the magazine, *Radio Stars*, its sponsor.

Don't be surprised if some day soon you tune in Mexico, Cuba, Canada, or Puerto Rico only to find you have an American program. The National Broadcasting System has asked permission of the FCC to record such programs and sell them to the countries named.

Why the Gesture?



Alfred J. McCosker, president of the Bamberger Broadcasting Service, uses the new non-directional microphone that has just been made a part of WOR's standard studio equipment.



Radio Dealers Can Sell Car Heaters

The average radio dealer is proving a No. One outlet for automobile heaters, states I. Rosenblum, president of the Arvin-New York Corp. His sales crew, above, discovered this fact when calling on retailers with Arvin's new line of radio receivers.

Seated, L to R: Mr. Rosenblum; Clarence Thourot, F. Milius, Irving Baurmash, Ed. Muller, and sales manager Henry D. Felsen.

Standing: Fred Colwell, Jr., Harry Moran, Joe Winkler, Si. Graubard, Ruth Patt, Sec'y; John Feeley, Julian Goldman, H. V. Wall, and A. M. Wormser

Bruno-New York and Krich-Radisco Entertain

NEW YORK—"What is ahead of American industry is more important than what is behind it," said David Sarnoff, president of the Radio Corporation, in speaking to 1,500 radio dealers of the New York and New Jersey areas, Oct. 8, at a dinner and entertainment at the Waldorf-Astoria Hotel.

Research, in which the United States is leading the world, is paving the way for the industrial revival, Mr. Sarnoff asserted.

E. T. Cunningham, president of the RCA Mfg. Co., also spoke briefly and Gen. James G. Harbord, chairman of the board of RCA, was introduced from the speakers' table.

The dinner, in the Grand Ballroom of the hotel, was sponsored jointly by Bruno-New York and Krich-Radisco, wholesale distributors for RCA, to celebrate the success of the new line of sets and tubes. It was devoted primarily to entertainment.

The acceptance of the new metal radio tubes by the public has reached such propor-

tions, Mr. Cunningham told the dealers, that production has been speeded to capacity in the RCA radio tube factory.

High Fidelity Demonstrated

ROCHESTER—Laboratory demonstrations of high fidelity reproduction staged by dealers and distributors in various parts of the country have proved to be unusually popular with the public, according to officials of the Stromberg-Carlson Co. Recent demonstrations have taken place in Chicago, Kansas City, Niagara Falls, Washington, Philadelphia, Fairmont, W. Va., and Pittsburgh.

Recent developments, working with the microphone, the transmitting amplifiers, the receiving sets and the speakers, have increased reproduction fidelity almost 40 per cent, in the opinion of Lee McCanne, secretary of Stromberg. It is now possible for radio experts to announce that they have equipment which will reproduce satisfactorily every overtone, every high note and every rumble, as perfect as it leaves the studio, he states.

Export Shipments Continue Upward

Export shipments of radio receiving products continue their upward flight. September, '35, topped September, a year ago, by 12 per cent—dollar value of sets, tubes, accessories.

Here are the comparisons:

	RECEIVERS		TUBES		ACCESSORIES
	Units	Value	Units	Value	Value
Sept. 1934	41,877	\$1,138,900	469,500	\$214,540	\$445,500
Sept. 1935	50,275	\$1,255,900	677,000	\$284,700	\$473,500

SPECIFY SYLVANIAS!



Whether you're ordering metal tubes or the standard glass tubes . . . get the best! Specify Sylvania!

● For three years Sylvania has led all other tube manufacturers in supplying glass tubes for original equipment. This recognition by set manufacturers means one thing . . . QUALITY.

And in supplying the new metal tubes to the trade, Sylvania lives up to that reputation. That's why, whether you order metal tubes or glass tubes for replacement, *specify Sylvania!* They are known for their tone fidelity and long life, and *you* will be satisfied, because your customers will be satisfied.

Inquiries regarding tubes for original equipment or replacement will be promptly answered. Take no chances . . . carry Sylvania tubes and be ready to take care of your trade.

Communicate with Hygrade Sylvania Corporation, Emporium, Pennsylvania, for FREE technical supplement on the new metal tubes.

SYLVANIA

THE SET-TESTED RADIO TUBE

© 1935, Hygrade Sylvania Corp.

Records Tie-In With New Movies

CURRENT record releases prove that timeliness is a paramount factor in creating interest and sales. Looking over present and future lists, what could be more timely and desirable than the following?

PORGY AND BESS

George Gershwin's folk-opera. The rage of Broadway. Victor records by Lawrence Tibbett and Helen Jepson. To be announced shortly.

JUBILEE

Music by Cole Porter. All the hits available on Brunswick, Decca and Victor. Paul Whiteman has a medley record containing *Just One of Those Things*; *Why Shouldn't I*; *Me and Marie*; *A Picture of Me Without You*; *Begin the Beguine*; *When Love Comes Your Way*. Victor 36175.

ELEANOR POWELL

Tap-dancing star of "Broadway Melody of 1936." Everyone's raving about the dancing of this winsome, female Fred Astaire, and Victor has her dancing and singing with Tommy Dorsey's Orchestra, playing *You Are My Lucky Star* and *I've Got a Feelin' You're Foolin'*. (No. 25158).

NINO MARTINI

(In "Here's to Romance") is the musical-picture star of the hour. You'll find him on records singing his hits *I Carry You in My Pocket* and *Here's to Romance* (Victor No. 4296) and *Midnight in Paris* and *Mattinata* (Victor No. 4295). Nat Shilkret conducting the orchestra in both numbers.

KIRSTEN FLAGSTEAD

The Metropolitan Opera find of last season makes her first Victor records. Arias from *Tristan und Isolde*, *Tannhauser*, *Lohengrin*, *Die Walkure*. These records will probably go on sale by the time this announcement is published.

Don't you think that if you got out a simple form letter listing the above, everyone of your customers would find something of interest? Entertainment such as the above has a way of selling itself.

TWELVE months ago few persons foresaw the extraordinary amount of push and imagination now being put behind the promotion of phonograph records. Victor's sumptuous *Library of Recorded Music* (selected by a group of

By

Richard
Gilbert



HER TOE TAPPINGS RECORDED

Eleanor Powell, whose sensational tap dancing is the hit of "Broadway Melody of 1936," records the rhythmic reverberations of her clever little toes for posterity.

outstanding critics and musicians) is getting under way with an advertising splurge calculated to startle even the most optimistic of record enthusiasts. Double-spread displays in *Country Life*, *Town & Country*, *Esquire* and *Fortune*, and full-page ads in *National Geographic* and *Stage* have been planned to publicize this special unit—the library of 461 records and the Victor D-22 combination, both of which have been commented on in *Radio Retailing*.

WILL SELL OTHER RECORDS

Whether or not you stock this \$1,550 list unit, your record business is bound to boom from its widespread publicity.

Merchandising helps are supplied every dealer by the manufacturer in the way of direct-mail material. There seems no logical reason why at least one dealer in every town of 10,000 population should not move one of these units. The social leaders of the community will be proud to possess this library and reproducing instrument. Main appeals are to their vanity and desire for "culture." Emphasis on the "culture." Circularize fifty of the foremost \$10,000 per-year income men in your locality. If you have difficulty obtaining the names,

the manufacturers will even supply fifty prospects for you. For, in promoting this unit, Victor has engaged the services of a foremost direct-mail agency.

STOKOWSKI TOUR

Another piece of heavy artillery will be moved into position next spring when Victor sends the Philadelphia Orchestra to a score of cities with the major purpose in mind of stimulating demand for the recordings of this famous orchestra. Thirty-six concerts will be given during an itinerary that will include Hartford, Chicago, St. Louis, Atlanta, Birmingham, New Orleans, Dallas, Los Angeles, San Francisco, Seattle, Portland, Ore., Denver, Salt Lake City, Kansas City, Des Moines, Minneapolis, Milwaukee and Ann Arbor. Dealers in these cities will cash in! If they don't begin building up a clientele now, the mail-order houses in New York and Chicago are going to fill some orders from points south and west. The High Fidelity records of the Philadelphia Orchestra are becoming better known right along, but the forthcoming tour will certainly aid national acceptance of a remarkably alive form of home entertainment.

STEWART-WARNER
SCOOPS REFRIGERATION NEWS

with
SAV-A-STEP



*Biggest Refrigeration
 Sales Feature
 for 1936!*

WATCH FOR ANNOUNCEMENT



UNIVERSAL
5-METER HAND SET

A new, 15 ounce, compact hand set—Designed for 5-meter transmitters and 5-meter transceivers—Highly polished, moulded bakelite units—2000 ohm uni-polar receiver—High output, single-button Universal microphone of 200 ohms—6 ft. 4 conductor cord with colored phone tips—List Price, Single-Button microphone, \$6.00.

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



The Manufacture of
4-PILLAR RADIO TUBES
Presents
 The **SENSATIONAL ACHIEVEMENT**
in Radio

RAYTHEON
METAL TUBES
 ALL TYPES

RAYTHEON PRODUCTION CORP., Dept. A-11
30 E. 42nd St., New York, N. Y.

Please send me items checked:

- TUBE DATA CHART—8th EDITION—free
- "33 DEALS" BROADSIDE (illustrated) free
- METAL TUBE DISPLAY
(illustrated above) free
- TUBE TALKS (Tube Complements)
50c enclosed

Name

Address

\$ 1 for a full year's
subscription to
RADIO RETAILING

12 Big Monthly Numbers

- Just half the regular rate if you send the payment with your order.
(This price good in U. S. only)

USE THE HANDY ORDER CARD ENCLOSED IN THIS ISSUE

- A few minutes a month with Radio Retailing gives you the sales and service ideas that mean EXTRA profits in the radio business!

LET RADIO RETAILING HELP YOU IN 1936



NEW MERCHANDISE

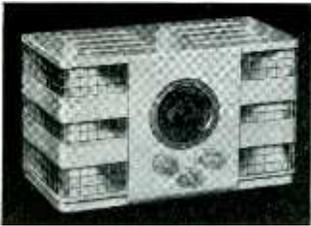


Horn Riviera R & PR

Horn 1936 Line

Something really new in radio design is the round or "tubular" radios and radio-phonograph combinations just brought out by Herbert H. Horn Radio Mfg. Co., 1201 So. Olive St., Los Angeles, Calif. May be had in a black walnut cabinet with fluted segments or in a white cabinet of similar design. It is a 6-tube superheterodyne using all metal tubes and covers from 550-1750 kc. and 5.8-18 mc. As a straight radio the price is \$89.90 and with phonograph adjustable electric turntable the price is \$99.90.

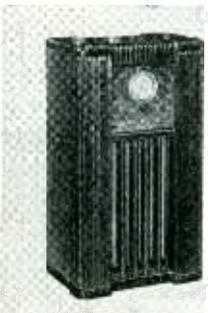
Horn's "mirror" table models



Horn "Mirror" Radio

are also striking in appearance. This set may be had in walnut inlaid with Belgian bronze mirrors; in white antique finish inlaid with blue mirrors, or in pure white with silver mirrors. It is a 5-tube super. \$29.90.

Horn also makes three compact table models, two of which have the "equi-diffusion" type



Horn Model 9MTC

speaker placed at the top of the cabinet. Two get shortwave calls and one is a straight broadcast set. Prices range from \$19.90 to \$34.90.

Two upright table sets are also available both equipped to

receive shortwave calls and use metal tubes. \$49.90 and \$79.90.

Three console cabinets are included in the line and each of these may be had with a choice of chassis. They range in price from \$29.90 to \$159.90.

The "President" is an all-wave set and electric phonograph equipped with automatic changer which will play either 10- or 12-in. records. The radio is remote-controlled from a small tuning unit. \$325.

This company also makes two auto radios with an escutcheon to match the instrument panel of any car. They may also be had with the airplane style remote control. \$25.80 and \$29.90.—*Radio Retailing*, November, 1935.



Case Models 510 and 710

Case Radios

A new cabinet has been added to the 1936 line of Case radios made by the Case Electric Corp., Marion, Ind. With a 5-tube chassis this will be known as Model 515, \$49.95, and with a 7-tube chassis it will be known as Model 718, \$69.50.

Other models in the line include 510, a table model with five tubes, \$39.95; 710, a 7-tube table model, \$55; 715, a 7-tube console, \$79.50; 718, a 7-tube console, \$69.50; 1015, a 10-tube console, \$99.50, and 1017, a 10-tube console with three speakers, \$124.50.

All Case sets are equipped with the "Tell-Time Jumbo



Case Model 1017

Dial." This dial has one-way clock hands moving over a full circle of 360 deg., making tuning in of shortwave foreign stations quite simple. The 8-in. dial face has lateral ray "phantom" illumination. When the set is in operation the glass face glows with a phosphorescent light over its entire surface. The numerals stand out sharp and clear. All Case sets use metal tubes.—*Radio Retailing*, November, 1935.



F-M Model 7146

Fairbanks-Morse 1936 Sets

Third dimension tone is the feature of the new line of radios offered by Fairbanks-Morse Home Appliances, Inc., 430 S. Green St., Chicago.

Both the fundamental tone and overtones are reproduced with greater fidelity, Fairbanks-Morse engineers say, making the 3rd dimension tone unusually life like.

The table models consist of:



F-M Model 11050

4015, 4 tubes, 1 band; 5619, 5 tubes, 2 bands; 6616, 6 tubes, 2½ bands; 7117, 7 tubes, 3 bands; 9018, 9 tubes, 4 bands; 4115, 4 tubes, 1 band; 6416, 6 tubes, 2½ bands.

In the console line there are: 5645, 5 tubes, 2 bands; 6645, 6 tubes, 2½ bands; 7146, 7 tubes, 3 bands; 9047 and 9048, 9 tubes, 4 bands; 11049 and 11050, 11 tubes, 4 bands; and 6445B, 6-tube battery set, 2½ bands. The 6, 7 and 9-tube table models and the 6, 7, 9 and 11-tube console models use metal tubes.

All the table sets are of the upright type and all consoles are of down-to-the-floor construction. Both table and console models are designed along conservatively modern lines.—*Radio Retailing*, November, 1935.



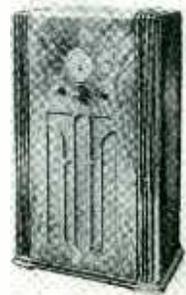
F-M Model 7117

"Universal" 32 and 6 Volt Sets

Seven 32 and 6 volt radio receivers, both console and mantel types, may be obtained from the Universal Battery Co., 3410 S. LaSalle St., Chicago.

The smallest is a 5 tube radio designed to work from a 32 volt power plant. Has illuminated airplane dial and a.v.c.

The 6 tube job is an improved



Universal Models 73A6 & 7332

superhet in a butt walnut cabinet. Both the 5 and 6 tube jobs do not require B-batteries.

The 7 tube radio, with special B power "step up," has three band tuning, full range tone control and a.v.c. Available in both mantel and console type cabinet.

The 6 and 7 tube receivers come in both the 32 volt and 6 volt types with full vision color band selection airplane dial.

Both extended broadcast and allwave models are included in the line. The prices range from \$27 to \$74.

Universal's allwave aerial designed especially for these sets is \$5.—*Radio Retailing*, November, 1935.



Universal Models 7232 and 72A6

Superior Cabinets

A most complete and comprehensive line of cabinets of modern and period design as well as a number of models of conventional design is announced by the Superior Cabinet Corp., 3611 Fourteenth Avenue, Brooklyn, N. Y. Twenty different styles to suit every need are available.—*Radio Retailing*, November, 1935.

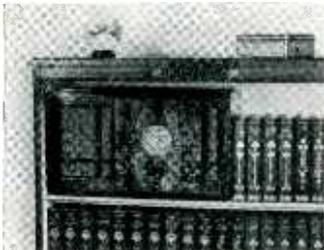
Radio Retailing, November, 1935



Kadette "Sixty Six"

A powerful 6 tube ac-dc set in a cabinet of striking modern design has just been placed on the market by the International Radio Corp., Ann Arbor, Mich. The gleaming control knobs and highly polished base in black ebony finish provides a smart and pleasing contrast to the golden walnut of the cabinet. Horizontal grille openings in a most unusual design lend the modernistic touch.

This set covers from 550-1600 kc. and 70-185 meters. The dimensions are 13 3/8 x 9 x 6 in. \$19.95.—*Radio Retailing*, November, 1935.



S-C "Bookshelf" Radio

The new "bookshelf" table set of the Stromberg Carlson Telephone Manufacturing Co., Rochester, N. Y., is meeting with unusual acceptance. As the name indicates, this set fits nicely on a book shelf—see illustration.

The set is known as model 61-H and uses the new metal tubes and as far as the chassis is concerned is like the other standard models in the 61 metal tube series. The dimensions are 11x19 1/2 x 9 1/2. Wave length coverage is from 540 to 3,500 kc. and 5,600 to 18,000 kc.—*Radio Retailing*, November, 1935.

ICA Adapters for 8 Prong (Octal) Metal Tubes

With the six adapters brought out by the Insuline Corp. of America, 23 Park Pl., New York City, the entire series of ten new 8 prong metal tubes can be tested in existing tube checkers. Also, wherever so indicated, they may be used to replace glass type tubes in the radio receiver with the corresponding metal type tubes.

It has been found necessary to use as many as six adapters to test the entire series of 10 new metal tubes, so that each metal tube may be tested in the socket of the corresponding glass tube to which it is most closely related in the matter of electrical characteristics. The ICA adapters permit wave exact plate, grid and cathode voltages to be applied, with the result that a more accurate check of the tube is obtained.—*Radio Retailing*, November, 1935.

Radio Retailing, November, 1935

Two New GE Metal Tube Sets

Two new radios, a six-tube console and a six-tube table model, are announced as additions to the line of metal tube receivers made by the General Electric Co., Bridgeport, Conn.

Each set has two bands for standard broadcast and short wave reception and is equipped with the new stabilized dynamic speaker and sliding rule tuning scale. Cabinets are modified modern design of hand-rubbed walnut. The two bands covered are 540 to 1800 kc. and 5400 to 18,000 kc.—*Radio Retailing*, November, 1935.



World Radios

A custom built allwave superheterodyne, known as the "583/584" has been placed on the market by World Radio, 1072 Atlantic Ave., Brooklyn, N. Y.

It covers a frequency range of from 17 mc. to 520 kc. or 17 mc. to 140 kc. The circuit uses two oscillator stages and a novel interstation noise suppressor system. One of the features of this set is the "Detector-Light Dial"—a rotating light indicator showing simultaneously the waveband and the presence of the station when tuning the receiver.

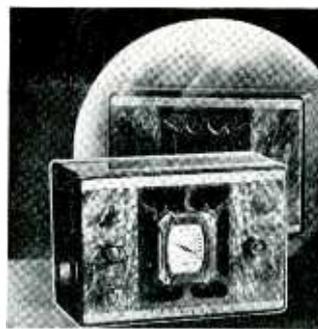
This chassis is available in modernistic table cabinets, low-boy consoles or phonograph combinations.—*Radio Retailing*, November, 1935.



Amperite Line Voltage Control

Complete installation of the self-adjusting line voltage control of the Amperite Corp., 561 Broadway, New York City, can be made in about five minutes. The proper type Amperite is connected in series with the current supply line and mounted anywhere inside the radio cabinet. \$3.

An Amperite for regulating automobile sets is also available at the same price.—*Radio Retailing*, November, 1935.



Trav-Ler Model 41

Trav-Ler Radios

Advertised as the world's smallest radio, the de luxe 4 tube ac-dc set made by the Trav-Ler Radio & Tel. Corp., 1028 W. Van Buren St., Chicago, comes in a smart cabinet finished the same back and front. It has new type illuminated wrist-watch dial. Covers from 175 to 550 meters. \$17.95.

Another popular number in this line is the Model 53 upright table set, three bands, 5 tubes. \$34.50.

The complete Trav-Ler line includes several compact table sets ranging in size from a 4 tube ac-dc model to a 6 tube



Trav-Ler Model 53

upright all-wave job; two 6-tube consoles, all-wave; a 5-tube, 2 volt battery set which operates from B-batteries and air cell or 2 v. storage battery; a 6 tube, 6 volt battery set with synchronous vibrator; and two auto-radios—5 and 6 tubes, \$37.95 and \$42.25.

The home receivers come with both metal and glass tube line-ups. The prices range from \$18.50 for a 4 tube ac-dc compact set to \$63.95 for a 6 metal tube console. The battery sets are priced at \$32.75, \$45.15 and \$61.15.—*Radio Retailing*, November, 1935.

New AK Doublet Antenna Kit

Following the introduction last year of a doublet antenna kit, the Atwater Kent Mfg. Co., Philadelphia, Pa., has announced a new kit at a reduced price. In performance and design it is identical with the former, which will be discontinued. The new antenna, however, is completely assembled to facilitate installation. The parallel transmission lines are soldered to the antenna and the center insulator and porcelain spreaders are attached to the antenna and lead-in.

For sets which are not provided with doublet antenna connections, a doublet transformer is available.—*Radio Retailing*, November, 1935.

De Luxe Model Wincharger

The new 1936 De Luxe Model Wincharger is now ready at the plant of the Wincharger Corp., Sioux City, Ia. It is equipped with an improved generator, designed especially for wind charging purposes and is new throughout, containing no rebuilt parts. The Albers airfoil propeller has been further perfected to get a maximum power and speed from the wind. It is of metal and



wood construction—wood to keep it light in weight and edges reinforced with metal strips to resist rain, sleet, sand or any flying objects in the wind. It is controlled with a flap-type governor which is operated by propeller speed rather than by wind pressure.

This De Luxe model starts charging in a 7 1/2 mile wind and charges up to 18 amperes. In a 10 mile wind it will charge at the rate of 2 1/2 amperes increasing substantially with the wind velocity.—*Radio Retailing*, November, 1935.

Emerson Clock Radios

Something quite new in radio, shown for the first time at the New York Show, is the clock radio of the Emerson Radio and Phonograph Corp., 111 Eighth Ave., New York City. It is finished the same front and back



with a speaker grille on either side. An electric clock is inserted in the panel on one side (see cut) and on the reverse side are the tuning controls and dials.

This is a 6-tube three band a.c.-d.c. superheterodyne set incorporating the Emerson "harmonized unit" principle and the "micro-selector."

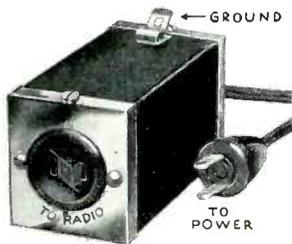
Emerson has also added a table and a console to its line. Model 108 is a 5-tube a.c.-d.c. table set covering from 75 to 200 and 193 to 565 meters. \$24.95. Also available from 193 to 2000 meters.

Model 102, the console, uses metal tubes and has a continuous wave band ranging from 16 to 555 meters. \$89.95. Also available from 16 to 2220 meters.—*Radio Retailing*, November, 1935.



Ace "Governmatic" Wind Charger

Through a special arrangement with the Crosley Radio Corp., Cincinnati, Ohio, the Governmatic wind charger of the Ace Products Corp., Cincinnati, is available to purchasers of any of Crosley's 12 battery receivers, at \$10 f.o.b. Cincinnati. The propeller automatically adjusts itself to strong wind conditions, assuring automatic speed control regardless of wind velocity. An ammeter is standard equipment and shows the amount of charge the battery is taking. There is a cut-out which prevents overcharging of the battery.—*Radio Retailing*, November, 1935.



Miller Line Filter

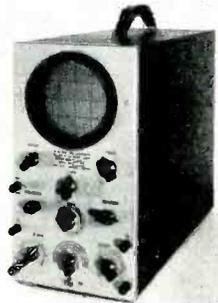
A line filter that employs both inductance and capacity filtering for elimination of noises picked up by the receiver through power lines has been introduced by the J. W. Miller Co., 5917 S. Main St., Los Angeles, Calif. Equipped with approved rubber cord and unbreakable plug, this compact unit may be installed readily on any receiver, standard broadcast or allwave. It is housed in a metal case finished in Kem-Art black with chromium plated ends. The list price is \$4.—*Radio Retailing*, November, 1935.

S-C Antenna Kit

An antenna kit designed to fit the requirements of all its broadcast-short wave radios, as well as radios of other makes, is being marketed by the Stromberg-Carlson Telephone Mfg. Co., Rochester, N. Y. It will be known as the No. 3 antenna kit and will sell for \$7 in eastern United States; \$7.25 at Texas, Rockies and the West. Features stressed by the manufacturer are: super-sensitivity, effective noise reduction; factory assembly, including soldered joints at all outside connections; only a 60-ft. span is required to stretch out the antenna with 75-ft. twisted transmission line connected at center of span. If necessary the antenna may be "bent" to save space.—*Radio Retailing*, November, 1935.

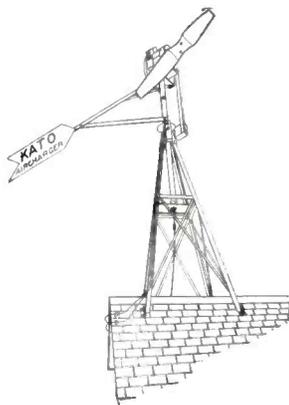
Clough-Bregle All-Wave Signal Generator

A newly announced addition to the line of test equipment manufactured by the Clough-Bregle Co., 1134 W. Austin Ave., Chicago, is the Model 82 all-wave r.f. signal generator listing at \$19.90, net to servicemen. Continuous frequency coverage of all i.f. broadcast and shortwave bands from 90 kc. to 20 mc. is secured through the use of six tuning bands. By addition of the new C-B Model 81 calibrated-sweep frequency modulator, this or any standard oscillator is usable to produce selectivity curve images on any standard cathode-ray oscillograph.—*Radio Retailing*, November, 1935.



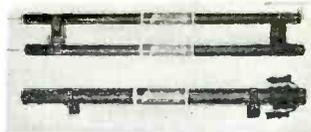
Du Mont Cathode Ray Oscilloscope

A portable cathode ray oscillograph, Model 148, is announced by the Allen du Mont Laboratories, 542 Valley Road, Upper Montclair, N. J. It includes a basically new sweep circuit having a range from 10 to 100,000 cycles per sec., with improved linearity resulting from the use of a current limiting tube. The amplifiers associated with the tubes can be arranged so that a signal of .2 volt gives a deflection of 1 inch.—*Radio Retailing*, November, 1935.



Kato "Aircharger"

For charging battery operated radios, the Kato Engineering Co., Mankato, Minn., offers its "Aircharger." Briefly the specifications are: Big generator—15 amps in moderate winds; self governing; collector ring current take off; roof or post mounting.—*Radio Retailing*, November, 1935.



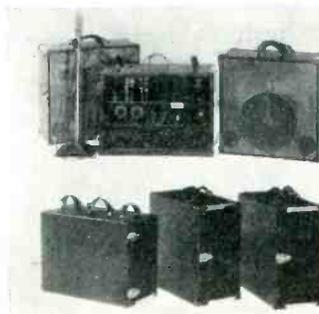
Effarsee Tubular All-Wave Antenna

For either outside or inside installation, the Fishwick Radio Co., 407 E. 8th St., Cincinnati, Ohio, offers its tubular multi-coil all wave antenna. The single tubular model is made in two sizes of single connection, one listing at \$2.50 and the other at \$4. The two lead single tubular antenna is made in two types, the Duplex consisting of alternate pairs of coils capacitively coupled at the inner end. The No. 9 DCC consists of 92 parallel coils with a capacity coupling across all of the coils at the inner and outer end. The double lead models are very useful where interference is bad. The junior twin is \$6; single senior tube, \$4; single junior tube, \$2.50; the duplex \$5; and the No. 9 DCC, \$4.50. Fishwick also offers "picture" antennas. Two types of frame and four different picture are available. \$1.50.—*Radio Retailing*, November, 1935.



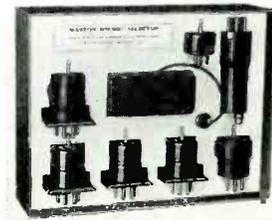
"Segelsound" P.A. Equipment

Three types of P. A. equipment are offered by Segelsound, Inc., 235 Pine St., Gardner, Mass., under the trade name "Segelsound." The "Leader" is \$125, complete with crystal mike and telescoping mike stand. It is a compact 5-watt Class A, 1 unit, 2 speaker system. The "Junior De Luxe" has a 10-watt high gain Class B amplifier. Lists at \$197.50 complete with crystal mike and two dynamic speakers in acoustic labyrinths. Available also for ribbon or sound cell type microphones. The "Studio" model uses a high gain Class A 18-watt undistorted output amplifier, complete with two high fidelity speakers in acoustic labyrinths and 6 cell crystal mike. \$350, complete.—*Radio Retailing*, November, 1935.



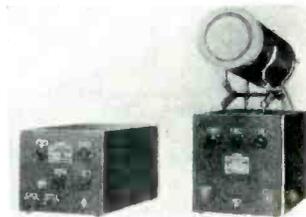
Weston Socket Units

An inexpensive kit containing socket units for the new metal tubes has been introduced to bring previous Weston Socket Selector Sets up to date. Using the new socket units, the socket selector provides a flexible connecting system by which analyzing equipment can be used to meet modern servicing requirements without changes. The new Model 666 Type 1-B Kit provides complete analyzer-connecting equipment for use with 4, 5, 6, 7-prong and 8-prong octal base tubes. This socket selector set, complete with octal tube units, is also now furnished with Weston Model 665 analyzer to meet modern servicing needs. Weston Elec. Instr. Corp., Newark, N. J.—*Radio Retailing*, November, 1935.



GE Cathode Ray Oscillograph

The General Electric Type HC-10-B1 cathode ray oscillograph is suited for the study of recurring waves from power frequencies to several million cycles per second. The Type FP-53 cathode ray tube is used in this oscillograph. The complete oscillograph equipment consists of two units, the cathode ray oscillograph and the time-axis oscillator. Through a compact arrangement of parts a high degree of portability is obtained and the design is such that the instrument is readily adapted to switchboard mounting or general class room demonstration. General Electric Co., Schenectady, N. Y.—*Radio Retailing*, November, 1935.



Hammarlund "Super Pro"

The Hammarlund "Super Pro" 6 tube receiver is designed primarily for amateur, experimental and broadcast reception. It consists of two major units—the receiver proper and the power unit. The standard model is supplied with a regulation telephone relay rack panel with dust cover. The list price including power supply, tubes and matched electro-dynamic speaker will be approximately \$330. A model incorporating the well-known Hammarlund quartz crystal filter circuit will be available at a list price of approximately \$360. Hammarlund also contemplates offering the "Super Pro" in a console cabinet. Hammarlund Mfg. Co. Inc., 424 W. 33rd St., New York.—*Radio Retailing*, November, 1935.

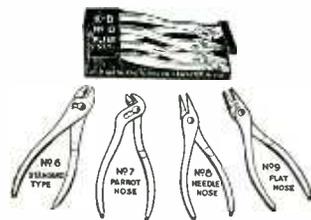
Radio Retailing, November, 1935



Raytheon Filament-Less Rectifier

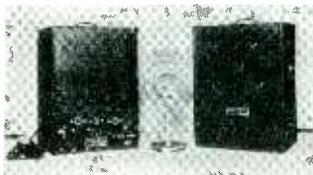
The Raytheon Production Corp., 30 E. 42nd St., New York announces a new gas-filled full-wave rectifier tube known as the 0Z4 at \$1.75 list. Similar in principle to the filament-less types introduced by this producer in 1922, the 0Z4 is designed primarily for automobile radio service, has a metal shell over an insulating glass bulb.

The base is of the octal variety using four pins. Looking at the top of the socket and reading clockwise from the key connections are: cathode, plate, plate, shell. D.c. voltage output is 300 maximum; d.c. output current 30 ma. minimum and 75 maximum; peak plate current 200 maximum; starting voltage 300 minimum and dynamic voltage drop 24 volts average. The shielding and filtering commonly used to eliminate vibrator noise will usually be sufficient to eliminate r.f. noise generated by the tube.—*Radio Retailing*, November, 1935.



K-D Plier Set

A set of four 4½ in. pliers for radio, ignition and electrical work is made by the K-D Mfg. Co., Lancaster, Pa. They are made of special alloy steel, tempered for correct hardness. Rust-proof with a polished silver-like finish. Each of the four tools is of a distinct type—standard, parrot nose, needle nose, and flat nose.—*Radio Retailing*, November, 1935.



Miles P.A. System

A new portable public address system may be obtained from the Miles Reproducer Co., Inc., 112 W. 14th St., New York City. It is available for all currents: 110 volts a.c., 110 volts d.c. and 6 volts (or 12-volt). Also available for 200, 220, 240 volts both a.c. and d.c. as well as 6 volts or 12 volts. The unit is complete requiring

no extra attachments and weighs 40 lb. Has sufficient volume to suit an audience of 2,000 and has provision for extra built-in speakers.—*Radio Retailing*, November, 1935.

"Filtron" Robotrol A-R Radio Noise Suppressor

Auto radio dealers and servicemen will be interested in the new Filtron Robotrol made by the Consolidated Wire & Associated Corps., Peoria and Harrison Sts., Chicago, Ill. This device has not been designed with sole consideration for the radio—the auto ignition system has been taken into consideration, too.

The new Robotrol operates on the phase-inverter principle by which a counter disturbance of adjustable intensity is set up and completely balances out the ignition interference but does not in any way impair the automobile motor efficiency. It entirely eliminates the use of spark plug suppressors. \$2.50.—*Radio Retailing*, November, 1935.



Lafayette 24-Tube Set

A 24-tube superheterodyne, incorporating cathode-ray tuning, and a dual high fidelity speaker system has been brought out by the Lafayette Radio Mfg. Co., Inc., 100 Sixth Ave., New York City.

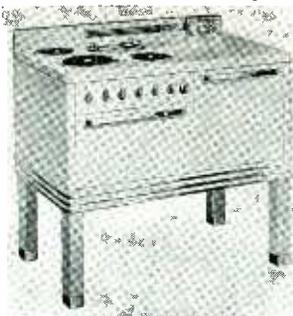
This set consists of two individual units: an r.f. chassis which contains 13 metal tubes, and a separate audio amplifier and speaker unit, which contains 11 glass tubes.—*Radio Retailing*, November, 1935.

"Filtercons"

Man-made static reduction is the object of the seven new types of supply line filter devices developed by the Continental Carbon, Inc., 13900 Lorain Ave., Cleveland, Ohio.

Two designs are specifically for use between radio and power line and are of the plug-in type.

For oil burner motors and noise-producing devices with grounded frames, two filters are provided with mounting straps to be attached directly to the apparatus. List prices range from 40 cents to \$1.50.—*Radio Retailing*, November, 1935.



Hot Point Ranges

Two new Hotpoint ranges, "Dawn" and "New Era," have been placed on the market by Edison General Electric Appliance Co., Inc., 5600 W. Taylor St., Chicago, Ill.

The "Dawn" is a table top model and the "New Era" is the built-to-floor type. The latter also has two large utility drawers.

Both models have the new Telechron motored clock as optional equipment. Both also have three hi-speed Calroyd surface units and one thrift cooker.—*Radio Retailing*, November, 1935.



Eveready "Masterlites"

National Carbon Co., 30 East 42nd Street, New York City, has just announced three new modern Eveready Masterlites—two tubular and one table model, all in chromium finish. A new switch provides steady or intermittent light and a light selector makes possible instant, one-hand selection of either powerful slot-light beam or broad diffused illumination.

The feature of the Masterlite tubular cases is a provision for the attachment of the owner's initials, making them especially acceptable as gifts.—*Radio Retailing*, November, 1935.

Westinghouse Clocks and Lamps

A complete new line of electric clocks has been announced by the Westinghouse Electric Supply Co., 150 Varick St., New York City. The styles range from office to boudoir models.

Westinghouse has also brought out a new line of study lamps built to the exacting specifications of the Illuminating Engineering Society. These lamps are all cast metal from base to holder and prices run from \$6.25 to \$14.95.—*Radio Retailing*, November, 1935.

Rubco Extension Cord

A flexible extension cord, non-fraying and long-wearing, with three-way receptacle may be obtained from the United States Rubber Co., 1790 Broadway,

New York City. This cord is rubber-covered for safety and comes in colors.

This company also makes a replacing cord and a heater cord set, all rubber-covered. Available in colors.—*Radio Retailing*, November, 1935.

Arvin Electric Heaters

Two fan-forced electric heaters carrying the trade name Arvin may be obtained from Noblitt-Sparks Industries, Inc., Columbus, Ind. Both are compact and differ only in size and refinement of detail. Cold air is pulled in from the floor through louvers in the back, then warmed by the heating element and circulated by the motor driven fan. The heating element and motor fan unit are completely enclosed. The induction type motor does not interfere with radio reception.

Model 200 de luxe is \$8.95 and the 100 standard model is \$6.95.—*Radio Retailing*, November, 1935.



Westinghouse Dishwashers

A dishwasher line consisting of one portable and three cabinet models is now being made by the Westinghouse Elec. & Mfg. Co., E. Pittsburgh, Pa.

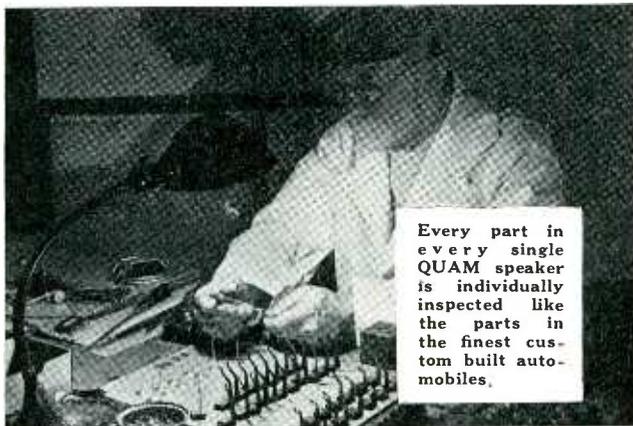
With the exception of the portable model, these dishwashers open at the front, making additional work surface available on the top of the cabinet. The portable model has been designed in a square body so that it will fit into any production line plan in a kitchen or can easily be placed permanently beside the sink for daily use.—*Radio Retailing*, November, 1935.



Mickey Mouse Flashlight

A "Usalite" Mickey Mouse flashlight is being produced by the United States Electric Mfg. Corp., 222 W. 14th St., New York City. This is a 2-cell long range focusing spotlight illustrated in five colors with Mickey Mouse and his pals.

Mickey Mouse batteries to fit not only the flashlights but all toys that require standard size batteries are also made.—*Radio Retailing*, November, 1935.



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Company FRR-11-35

Know Your Own Signal Strength

(Continued from page 25)

ing the listener to rely principally upon signals which his receiver is capable of reproducing with the utmost clarity and freedom from noise and fading. Much dissatisfaction would also be obviated if the dealer erected the minimum antenna justified by the available services, height being more desirable than length.

Signal Strength Needed

The primary service area of a broadcasting station is commonly defined as that within which it is capable of setting up a signal strength of ten millivolts per meter of antenna height. A millivolt is obviously a thousandth part of a volt. Considering the average antenna to have an effective height of four meters, a primary signal produces a modulated high frequency voltage of at least one twenty-fifth of a volt at the receiver terminals, sufficient to override the noise level by a wide margin in practically all populous cities.

In suburban areas, a signal of primary standard is considered to be two millivolts per meter, or one-fifth the city standard. The rural standard, usually termed secondary service, is half a millivolt per meter, or one-fourth the suburban and one-twentieth the urban or city standard. The accompanying table contains all the necessary information for estimating what stations render primary urban, primary suburban and secondary rural service in your area.

Most of the chart is devoted to means for determining the daylight service areas of stations of all classes, power and frequency over various types of terrain. The essential knowledge in estimating the kind of service likely to be available from a particular station during the day is its distance from transmitter to reception point, the type of terrain which the signal must traverse, the frequency and the efficiency. Since the efficiency cannot be determined from the call book, efficiencies are classified according to the average usually obtaining for local, regional and clear channel stations of various powers.

These efficiencies vary considerably. For example, the average regional station uses a quarter-wavelength antenna with a horizontal flat top, while the exceptional well-equipped regional station may utilize a half-wave vertical radiator, which may increase the field intensity shown at the distances specified in the table by 40 per cent.

Using the Chart

To estimate the service in your area, make a list of the six or eight nearest stations, determine their air line distance on a map, list their assigned power, frequency and class of channel. Then look up the nearest equivalent to each station given in the chart and determine whether it delivers primary urban, primary suburban or secondary rural service in your area, using the distances given under the type of terrain involved.

Then evaluate the night service of the stations you have listed by reference to the last column.

In areas remote from broadcasting centers, such analysis sometimes eliminates all but one or two day services from the classification of good night service. The listener is then required to rely upon remote clear chan-

nel services. Since numerous such services are available with sufficient level for speaker reproduction anywhere in the United States, the greatest need for guidance to the listener lies in the selection of remote clear channel services.

Why Nighttime Is Tricky

The familiar increase in night ranges is the result of the formation of a reflecting layer after sundown high in the stratosphere. During the day, all of the energy radiated in vertical directions above the ground continues through space until it is dissipated. At night, most of this energy is returned to earth. On regional channels, distant stations on the same channel then cause interference, generally limiting regional service to smaller areas than are useful during the day.

Since little energy is radiated directly overhead, night reception does not increase near a transmitter. At intermediate distances, somewhere from 50 to 120 miles from the transmitter, however, the reflected sky-wave signal becomes comparable to the ground wave signal. It arrives at varying phase relations to the steady ground-wave signal because of the shifting character of the reflecting layer, producing intense fading and distortion. Just where the intense fading becomes a serious factor depends upon the transmitting antenna, ground wave levels and, to a smaller degree, upon the frequency.

With 50 kw. stations, the fading area tends to range from 80 to 120 miles over good terrain, according to frequency and antenna efficiency. With lower powers and high ground absorption, the fading area is often as close as 50 miles.

At greater distances, the ground wave signal disappears and the angle of refraction from the reflecting layer is more oblique, resulting in much slower-drift fading. Hence the best remote service is not secured from the nearest clear channel stations (unless the reception point is within the daylight primary or secondary area) but from those at least 250 to 400 miles away. This is beyond the intense fading area and still within the range receiving relatively high levels. Efficient high power clear channel stations are often serviceable up to 1,000 or 1,200 miles, but beyond that distance, tend to fade below the noise level quite frequently, so that even the best avc system does not smooth them out entirely.

Many clear channels are clear in name only because of the application of various synchronizing schemes. Such channels are almost invariably limited to their daylight service areas because of selective fading. Clear channel stations of low power are likely to be converted to regional frequencies in the near future. Generally speaking, ten kilowatt clear channel stations cease to be reliable for good reproduction at about 500 or 600 miles, twenty-five kilowatt stations at 850 to 900 miles and fifty kilowatt, at 1,000 to 1,200 miles.

The confusion which exists in selecting clear channel stations capable of the best reproduction arises first from the tendency to rely upon stations heard during the day or those reaching the highest levels, which, in turn, are usually fading the most violently. The dealer can be of the greatest assistance in station selection if he can recommend at least four to six good night services, preferably in the primary area, and in absence of such service, the best remote services not subject to interference or intense fading. It is also advisable to be able to explain why such stations render good daylight service but become unsuitable at night because of interference or fading.

All-Wave Sets



this **ALL-WAVE ANTENNA**

Increase
Your Profits
with **BROWNIE**
ALL-WAVE ANTENNAE

THE surest way to extra profits this fall is to push the Brownie All-Wave Antenna. As a smart dealer, you know that a tremendous market exists for this high grade antenna. Most owners of short wave radios are not getting satisfactory reception. This is largely due to the use of a cheap or inefficient antenna. Now, with the Brownie you can sell a better antenna and make a real profit besides.

Customers Stay Sold

Sell a dissatisfied customer a Brownie and the Brownie will re-sell the set. Repeated tests have proved that the Brownie will out-perform most antennae on the market today—none surpass it either in results or in quality of design and workmanship. For distance and volume, for clarity and freedom from man-made interference the Brownie is in a class by itself.

The Brownie is constructed on the Balanced Doublet System and uses a new type, super efficient matching transformer. Complete with all necessary parts, the Brownie is easily and quickly installed. And back of every antenna is the experience and fine reputation of a long established manufacturer in the electrical field.

Be in a position to cash in on the national advertising campaign, starting soon in *Colliers* and the *Saturday Evening Post*. Remember, when you sell a Brownie you are not only making a handsome profit, but you are "sewing up" a customer for life. Just mail the coupon for our money making proposition.

PORCELAIN PRODUCTS, INC., FINDLAY, OHIO

Mail this Coupon Today

Porcelain Products, Inc. Dept. A Findlay, Ohio

If there's real merit to your antenna, I'm interested. If there's a real profit for me, I want to make it. Rush me your proposition

Name _____

City _____ State _____

My Jobber is _____

Why Blanked-Out Octal Sockets? *(Continued from page 26)*

"blanked out" socket as used by a few manufacturers on their 1936 models.

Briefly, by a "blanked out" socket is meant one in which the holes are pierced for only the actual pins employed by the proper tubes to be used in those sockets. By reference to Figure 3, we see an octal socket for use with a 5Z4 tube. Pins number 1, 2, 4, 6, and 8 are pierced, whereas, pins number 3, 5, and 7 are left blank. This is satisfactory insofar as this particular tube is concerned but leaves the problem of service once more "up in the air" by requiring the serviceman to purchase a special adapter for each group arrangement and number of pins. Where the original idea follows out, that is, all 8 holes being always present in all sockets, the serviceman would only have to invest in the 8 pin plug or adapter which is now included as standard equipment on all analyzers.

Under present conditions, taking into account only those tubes announced to date, he will need three more adapters to take care of present tubes and the possibility of at least two more in the near future.

This simply means that the set manufacturers are forcing the service industry to equip every radio analyzer with these three to five more additional adapters at a cost of at least 75c. each, or a total of \$3.75 for 5 adapters per analyzer at dealers' prices. We can safely assume that there are in use, at the present time, forty thousand analyzers which will now require an investment of \$150,000 in adapters to meet present day requirements due to variations in octal socket piercing.

Surely, it is hard to justify such an enormous burden, both actual and potential, on an integral branch of the radio industry, and all for a very doubtful advantage to the radio public.

"Blanking Out" A Mistake

The argument has been advanced in favor of the "blanked out" type of socket that it will preclude the possibility of the

ultimate owner placing the wrong tube in the wrong socket. As a very famous New Yorker said, "Let's look at the record!"

The type 6A8 and the 6P7 type tubes utilize all 8 pins on the octal base and therefore, in this socket may be placed all of the present octal tubes totaling 12, a possibility of error of 100%. The 6F6, 6H6, 6J7, 6K7, and 6L7, utilize all pins but the No. 6 pin, but this socket will also take a 6C5, 6D5, and 6F5. Of course, the 5Y3 and 5Z4 both fit the same type socket, although not interchangeable with any other socket.

It may, therefore, be readily seen that this would be a very doubtful advantage and hardly worthy of serious consideration. It is the writer's opinion that a system of specialized sockets is also more costly to the manufacturer as separate dies must be used for each type of socket.

There is a certain economic saving by the exclusion of non-used pin contacts, and on this point we are in agreement with the set manufacturer, but insist that all 8 holes should be pierced whether the actual contacts are eventually affixed thereto or not.

No manufacturer of test equipment for the serviceman wishes to profit by the sale of unnecessary adapters to the service industry. We believe that necessary advances in tube sets and instrument design keep the serviceman busy enough assembling up-to-date equipment without making it obligatory for the service industry to burden itself with additional adapters.

We ask the tube manufacturers for the assistance of their commercial engineering department in convincing the set manufacturers that this move is very detrimental to an integral part of their own radio family. While we appreciate that the matter of socket construction is not a serious problem to radio tube manufacturers, yet we believe that they should be as vitally interested in the welfare of the general industry as might be any other branch.

To the set manufacturers, we suggest

that they have not always considered fully the far reaching results of some of their design details. If the set manufacturer is to insist that the public's radio dollar must pay for the present octal socket program, then surely there are going to be fewer productive dollars for all of us to live on if the economic burden and waste incurred by the continuance of non-standardized 8 hole octal sockets is not remedied.

Servicemen Should Kick

To servicemen's organizations, we suggest that this information be studied carefully and taken up in future meetings so that a full understanding of the situation may be realized by all members.

To the serviceman who must eventually bear the burden of this horrible situation, we suggest that he express his protest to the radio manufacturer and to the radio manufacturer's jobber, in an effort to induce standardization of octal sockets with all 8 holes pierced. We ask that he cooperate through his local serviceman's organization also, to protest against the continuance of this arrangement.

When a set is encountered in which all holes are not pierced, we suggest that he either replace this octal socket which has less than 8 holes with an octal socket which has all 8 holes pierced or that he complete the drilling of 8 holes in each octal socket encountered so that it may receive a standard 8 pin analyzer plug.

The only other solution to the problem is for the serviceman to buy special adapters which will adapt standard analyzing plugs to non-standard octal tubes.

In closing, it would seem that the day has now definitely arrived for the radio industry to acknowledge the radio service profession, its needs and problems, and to standardize certain design details to a point that not only the serviceman may do his work as simply, quickly and economically as he has a right to, but also that the cost of service to the set owner may be kept within reasonable bounds.

* * *

Dual Discounts *(Continued from page 19)*

The private brand battle is nearly over. Department stores particularly have seen that nationally accepted merchandise goes better.

Forces Pulling for Correction

But back of the cardboard moon, back of the Barnum & Bailey world created by salesmen, there are very real forces pulling for correction. One is the realization that the small regular discount dealer is the most profitable and most worthy of cultivation in the future. Second is the fact that occasionally a manufacturer produces a

line or number that is naturally hot and whose praises are sung by buyers. When this happens, artificial barriers are swept away, and stores, big and little, must sell it, regardless of discounts.

Here's another case of how the wind blows: A Dayton, Ohio, jobber offered his best retail buyer his choice of an extra 10 or local jobber service. The dealer chose to forego the extra discount in favor of spot deliveries and guarantees.

Safeguards against ultra-discount abuses included the following suggestions: Grant that extra 10 per cent only

when "plus" business and preferential featuring is assured. Refuse regular jobber service to such sub-jobbers. Render every merchandising help to outlying dealers. Don't take too many short-profit "key accounts."

Secondary Problems

Another problem frequently mentioned was the fear that the trade might witness case of overproduction after Christmas—with all that goes with it.

Trade-ins, at present, are being absorbed in their natural market. Three distributors, however, predicted that this state of unsaturation will not last another year—and that when it does end the jobber and manufacturer must be prepared with plans for helping the dealer out.

555, Inc., Little Rock, Ark., suggests that, when that time arrives, the manufacturers might "inflate" their list prices to cover—granting wider discounts to the trade.

Other questions asked and remedies suggested by jobbers were these:

PROBLEM—How can we secure adequate retail representation for the lesser known makes of receivers?

ANSWER—By stressing the many special features of the line, its dollar value and attractive local advertising proposition.

PROBLEM—Our greatest problem is to get the small town, general merchandise dealer to sell and service radios intelligently. *Straus-Frank Co., San Antonio, Texas.*

REMEDY—Trained jobber's salesmen who are given and will take the time to educate the little outlet; who will work with them.

PROBLEM—How can we get sufficient volume sales, at a profit and against the competition of manufacturer-operated branches, to maintain a complete wholesaling operation?

ANSWER—Through diversification, handling allied items, and with a very personalized type of service to dealers.

QUESTION—How can we retain some of our profits while attempting to meet our manufacturer-established quotas?

ANSWER—A very prominent distributor in Chicago gives these safeguards: (1) Keep selling costs within the safety margin—even on so-called "plus" volume. (2) Go wary on too many key-account contracts. (3) Don't fall for phoney promotional deals. (4) Avoid unproductive cooperative advertising.

General Situation Excellent

DESPITE these "pet peeves," general conditions in radio wholesale circles are better than in many years. "Phil" Filmore, RCA Victor Distributing Corp., Buffalo, N. Y., for example, writes: "The situation here is brightest since 1929. The \$150 market is big. The \$185-\$250 demand very good. Cheap merchandise remains on the shelf. The metal-tube picture looks better every day. We are oversold—all we need is merchandise. Dealer credits improving slowly. There are no old models left over."

This optimism is confirmed by many others. Even in New York, the trade's worst (or best) price market, Grant Layng, retail division sales manager for the Crosley Distributing Corp., says: "From all indications we will have one of the biggest years in radio history. But we sincerely hope that manufacturers and distributors will avoid overstocked inventories later on—which will make for another chaotic year in '36."

SAV-A-STEP
SAV-A-STEP
SAV-A-STEP
SAV-A-STEP

Biggest Refrigeration Sales Feature for 1936!

WATCH FOR ANNOUNCEMENT

STEWART-WARNER

Quiet PLEASE!

“NOISE-MASTER”

Makes every receiving set a BETTER set

Electrically AUTOMATIC in operation

List price \$6.75

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

Eliminates static on both broadcast and shortwave bands

CORWICO

QUIET is what the set-owner craves, and here's the way to give 'em what they want. This A.A.K. licensed product, designed and engineered with typical CORWICO thoroughness, needs no manual operation after a qualified service-man has adjusted it. It eliminates noise and improves reception EVERYWHERE. Use it on your next installation!

Write for descriptive literature on this and other CORWICO units.

Cornish Wire Co., Inc.
30 Church Street New York City

WHAT MAKES THE NEW *Triplett* MASTER UNIT TEST SET A *Complete Servicing* LABORATORY?

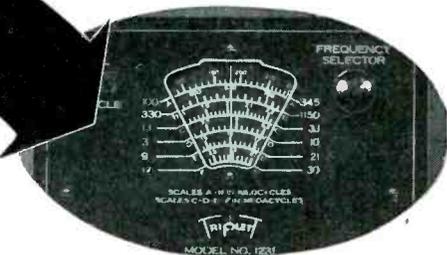
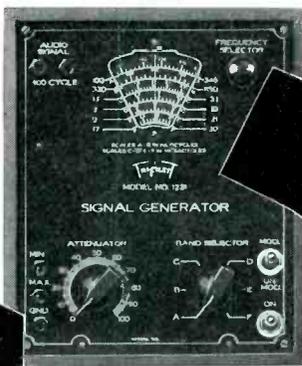
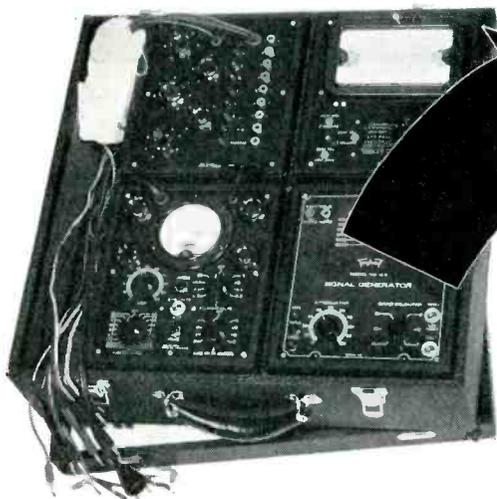
One compact portable case contains the four units necessary for expert radio service work.

Every unit is a Professional's Instrument. Every instrument has exclusive Triplett Features.

Model 1206 Complete with either Model 1231 (D.C.) or 1232 (A.C.) All-Wave Signal Generator. Dealer Net Price \$82.67.

All-Wave Signal Generators
Model 1231 D.C. or Model 1232 A.C. Dealer Net....\$26.67

Note exclusive Triplett feature . . . Direct-Reading Scale . . . Six Bands . . . Vernier. Easy to read . . . Easy to operate . . . Precision built.



The new 1936 Triplett Master Unit Test Set, Model 1206, includes the new Direct Reading All-Wave Signal Generator either battery operated Model 1231 or A.C. operated Model 1232.

This new All-Wave Signal Generator by Triplett marks a great improvement in signal generator design. It is direct reading with vernier and has a single switch with pointer, for setting to any one of the six frequency bands covering all ranges from 100 to 30,000 Kc. All frequencies are fundamentals and fully stabilized. It has perfect attenuation especially low loss switching and all parts are of low capacity. Furthermore, parts are non-hygroscopic and thoroughly shielded throughout. Two jacks are provided for obtaining a 400 cycle audio note.

The four units contained in the Model 1206 Master Unit Test Set as well as the carrying case can also be purchased separately, and the complete servicing laboratory built up over a period of time. The four units are:

- | | |
|---|---|
| Model 1200 Volt-Ohm-Milliammeter.
Dealer Net Price.....\$21.67 | Model 1231 D.C. or 1232 A.C. All-Wave Signal Generator. Dealer Net Price\$26.67 |
| Model 1210-A Tube Tester. Dealer Net Price\$20.00 | |
| Model 1220-A Free Point Tester. Dealer Net Price\$8.33 | Model 1204 Leatherette Carrying Case. Dealer Net Price....\$6.00 |

Write for Complete Catalogue. See them at your jobber.

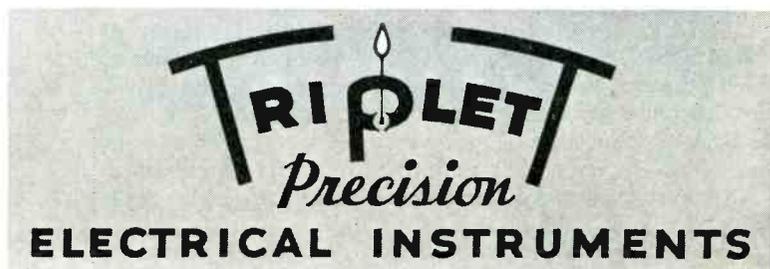
TRIPLETT MANUFACTURES . . .

A complete line of electrical measuring instruments for radio, electrical and general industrial purposes both standard and custom built. See them at your jobbers. If you have an electrical instrument problem write to TRIPLETT.

Mail This Coupon!

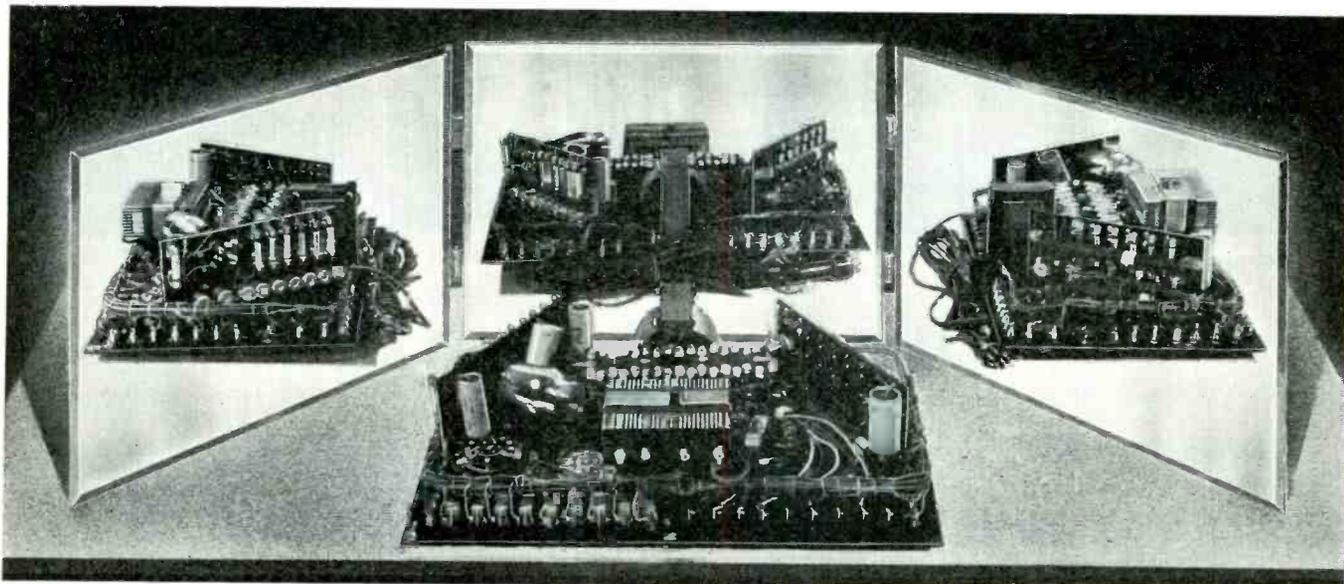
TRIPLETT ELECTRICAL INSTRUMENT CO.
2011 Harmon Ave., Bluffton, Ohio.

Please send me full information on Model 1206 Triplett Master Unit Test Set..... Catalogue.....
Name
Street Address
City State.....

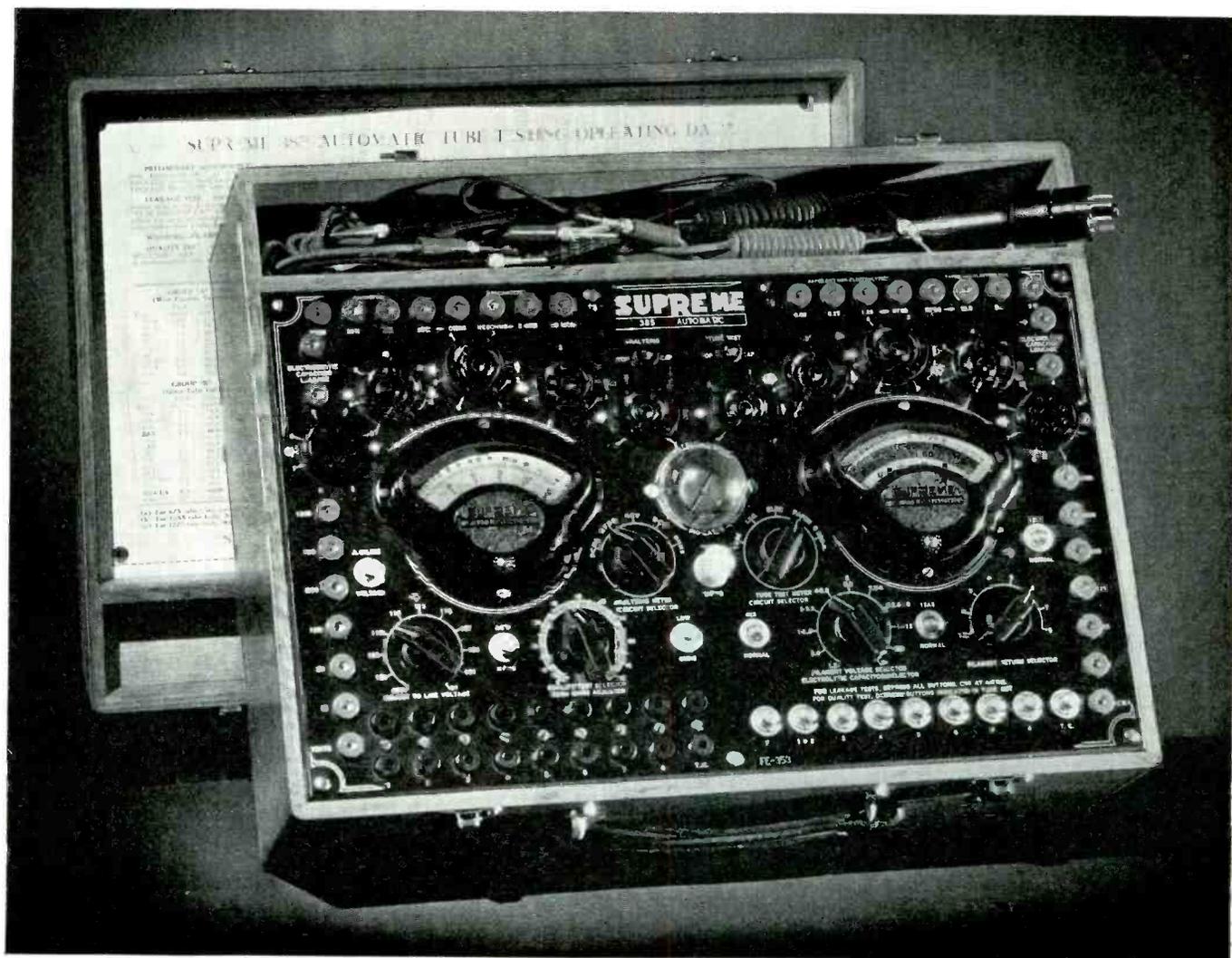


Supreme Instruments Corp., Greenwood, Miss., U. S. A.

● Export Dept., Associated Exporters Co., 145 West 45th St., New York City, N. Y. Cable Address, LOPREH, N. Y. ●



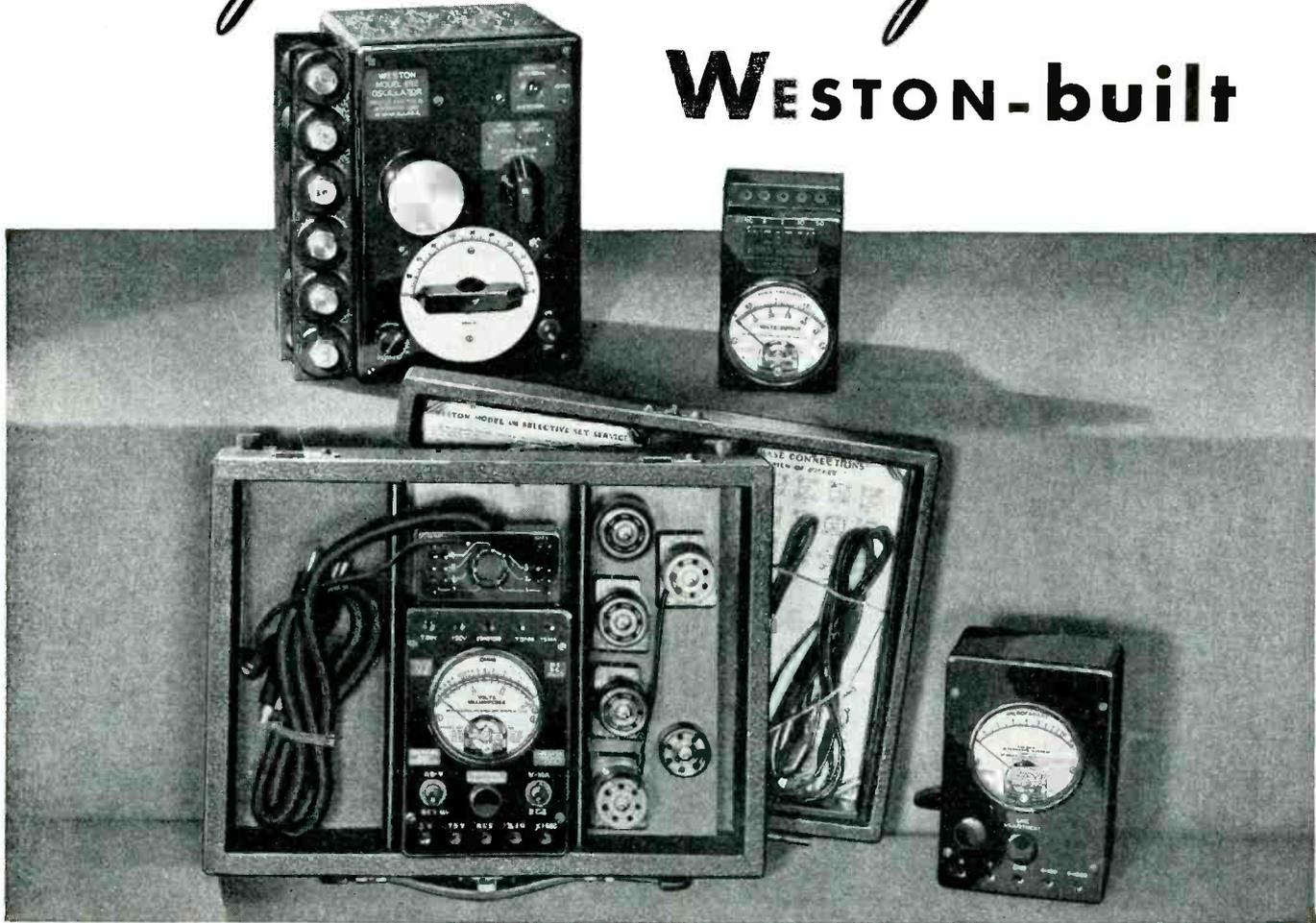
From All Angles . . . Inside or Out . . .
 ● Superb Engineering ● Quality ● Appearance



Write For Catalog ● See Your Jobber

Complete... Inexpensive

WESTON-built



Instruments for profitable servicing

● To servicemen who feel that Weston quality is beyond their means, we present the above group comprising a complete set of Weston instruments for profitable servicing. It consists of Model 698 Selective Set Servicer, which employs the Weston Method of Selective Analysis and is equipped for the new metal tubes . . . the Model 692 Oscillator . . . the Model 687 Output Meter and the Model 780 Capacity Meter. As a servicing group, considering the quality and wide range of usefulness of these instruments, the price is relatively low . . . affording the average serviceman full opportunity to secure the dependability and long life for which Weston instruments are famous. Send the coupon for complete data . . . Weston Electrical Instrument Corporation, 581 Frelinghuysen Avenue, Newark, New Jersey.

WESTON

Radio Instruments

WESTON ELECTRICAL
INSTRUMENT CORPORATION
581 Frelinghuysen Ave.,
Newark, New Jersey
Send me complete data on
Weston Radio Instruments.

C O U P O N

Name.....

Address.....

HOW TO ALIGN A SHORTWAVE SUPER

Too many servicemen are "buffaloed" by the large number of trimmers and padders in modern allwave jobs, lose profitable tune-up business as a result

By O. J. MORELOCK, JR.

Weston Electrical Inst. Corp.



MORE and more receivers of the shortwave type are being placed on the market every day. Lack of sensitivity, not so apparent in broadcast receivers with good local receiving conditions, shows up quickly on shortwave bands where programs emanate from foreign transmitters 3,000 or more miles distant. As these signals are weak, lack of sensitivity is immediately noticeable. By re-aligning a shortwave set in this condition the sensitivity can be increased in many cases several hundred times, causing amazing improvement in the operation.

As approximately 95% of the shortwave receivers are of the superheterodyne type, first consideration should be given to the intermediate frequency amplifier. This section contributes more than half the gain.

Aligning I. F. Section of Shortwave Supers

The alignment procedure on this section of receivers has been discussed quite often. It will be reviewed briefly to make sure that the procedure is carried out correctly.

The oscillator tube must be removed from the receiver or the oscillator tuning condenser must be short-circuited with a clip. The a.v.c. tube should be removed or the a.v.c. lead going to the grid circuits of the various tubes should be short-circuited to the chassis to cut out any automatic volume control action. A well-designed oscillator having constant impedance attenuation characteristics should be connected across the grid of the first detector tube and the chassis of the receiver. The test oscillator and receiver should then be turned on with the former tuned to the intermediate frequency called for by the receiver manufacturer. It should be noted here that the frequency setting of the oscillator should be determined by the curves supplied with it and it *should not be adjusted for a peak indication on the output meter, as this depends upon the present alignment of the intermediate frequency transformers.*

The i.f. frequency padders should be adjusted, starting from the second detector tube and working back to the first detector, using an output meter or an a.c. range on an analyzer connected from

plate to plate of the output tubes. This procedure should be repeated once to make sure that the padders are in exact alignment.

Aligning Lowest Frequency Shortwave Range

Connect the test oscillator to the an-

tenna and ground posts of the receiver. Replace the superheterodyne oscillator tube, or remove the shorting clip from the oscillator tuning section. The automatic volume control tube should still be left out, or the a.v.c. section should be killed by shorting to ground the lead to the r.f. tube grid circuits.

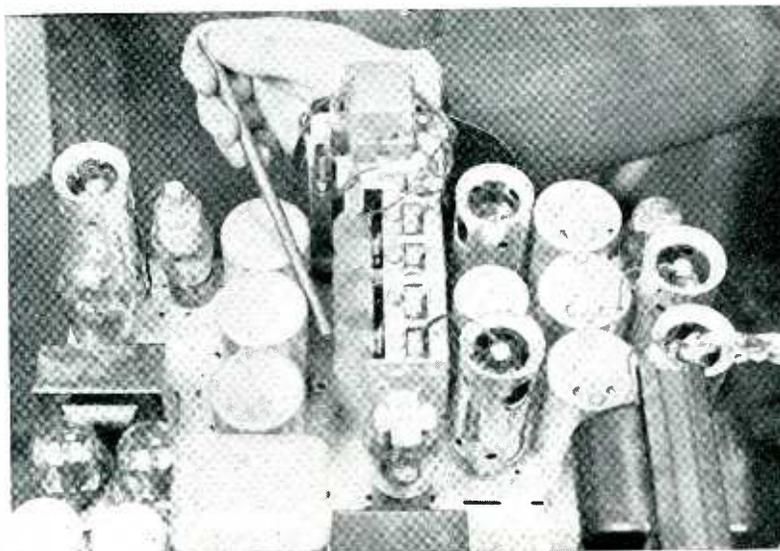
Tune the test oscillator and receiver to a frequency 10% below the highest shown on the receiver dial for this first range and adjust the test oscillator tuning control for a maximum reading on the output meter or analyzer a.c. range.

From the bank of trimmers supplied on most well-designed shortwave receivers pick the shunt trimmers used on the oscillator, first detector and first r.f. stages for this band. It may be necessary to refer to the receiver wiring diagram to locate each of these trimmers. If no diagram is available, touch the trimmers with a piece of metal and note whether or not a change in output reading is obtained indicating that the trimmer is connected in the r.f. circuit at the time.

A typical diagram is shown with the r.f. trimmers for these three circuits indicated.

Unscrew all three trimmers so that the smallest possible capacity is used in each circuit, thus increasing the receiver frequency spread. If, after unscrewing the three trimmers the output meter has dropped to a lower value, re-tune the test oscillator for a new peak indication. Adjust the three shunt trimmers with an insulated screw driver or sharpened fiber rod to give an increased reading on the output meter.

Tune the test oscillator to a point 10% up from the lowest frequency indicated on the receiver dial for this band and locate the corresponding oscillator series padder. This can be distinguished from the shunt padders by noting that it has a considerably higher capacity, in the order of 800 or 900 micro micro



Adjusting slotted end-plates to insure good tracking over the entire band

DAYRAD

Announces!

NEW INDEX SYSTEM

DAYRAD

TUBE TESTER

SIGNAL GENERATORS

With fundamental bands as low as 5 meters

SERIES 58 SET TESTERS

Complete flexibility for all metal tubes

Remember, no special selector switches
are needed for testing metal tubes

MEETS APPROVAL OF ALL TUBE MANUFACTURERS

— WRITE FOR DETAILS —

THE RADIO PRODUCTS CO.

125 Sunrise Place

Dayton, Ohio

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Contractors to the United States Army Air Corps and Department of Air Commerce

SERVICE SECTION

farads. Typical series padders are shown in the diagram at the lower left.

With the test oscillator and receiver tuned for a peak reading on the output meter, adjust this series padder for maximum meter deflection. Next, move the receiver dial approximately 5 kc. to a lower frequency setting. Without changing the test oscillator tuning control re-adjust the series padder at this new position and note the change in meter reading from the previous deflection. If it is found that a higher reading is obtained on the output meter at this frequency, move the dial another 2 or 3 kc. in the same direction and re-align the series padder.

By proceeding in this manner a point on the dial will be found where the series padder aligns the set for the maximum output reading. When moving the receiver dial to a lower frequency setting if it is found that decreased meter readings are indicated reverse the procedure and rotate the dial in the opposite direction. What is actually taking place is the alignment of the r.f. portion of the receiver with the oscillator circuit. As the oscillator frequency practically determines the tuning of the receiver the receiver dial must be shifted each time that the oscillator padder is readjusted.

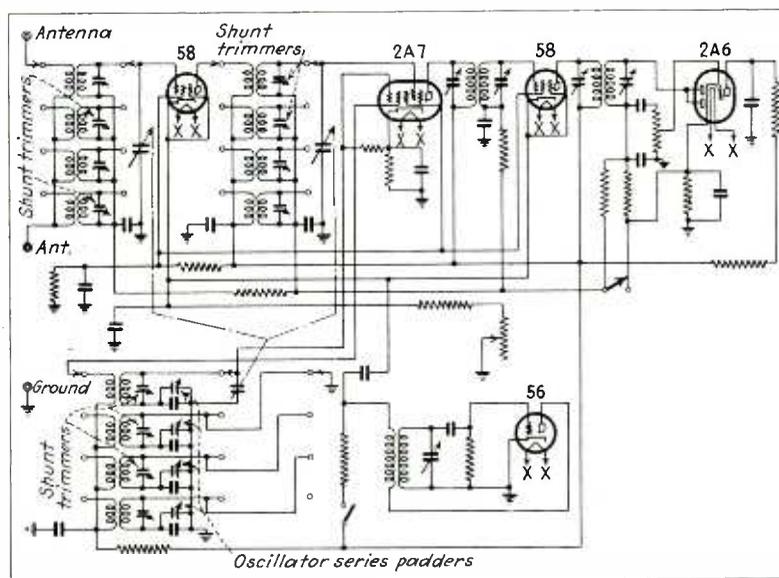
For alignment on this band in the center of the tuning range the oscillator and receiver should be tuned to a definite frequency somewhere near the middle of the band. By adjusting the individual slotted end plates on the variable condenser, alignment can be improved on this portion of the range. In bending the slotted sections use a piece of fiber rod, as shown in the picture, adjusting those sections of the rotor plates that are in mesh with the stationary sections.

This procedure can be carried out in each condenser section, improving considerably the alignment in the center of the range.

If considerable bending is required, it may be necessary to recheck the shunt padder adjustment at the high frequency end of the dial.

Alignment of the Higher Shortwave Ranges

Adjust the receiver for the next higher frequency shortwave band and plug in the required test oscillator coil. Follow the same procedure at the highest frequency end of the dial as covered in the preceding paragraphs, adjusting the shunt trimmers at this point. Note that on well-designed receivers a new group of shunt trimmers is switched into the circuit on each shortwave range. By checking the diagram make sure that these trimmers are associated only with this next higher band and are not connected in the range previously adjusted. Also note that no adjustment should be made on any trimmers previously covered as such procedure will definitely upset the alignment of the lower bands. In adjusting the trimmers be sure to



R. F. section of typical allwave receiver showing trimmer and padder locations

use an insulated screw driver, keeping body capacity at a minimum.

In many cases there are no series padders supplied for the higher shortwave bands, and in these cases adjustment of the shunt trimmers will bring the set into fairly good alignment. If series padders are available, switched into the circuit for each band as shown, the adjustment of these padders should

be carried out in the same manner as the one previously covered.

After completing the alignment be sure the a.v.c. tube is replaced or the short circuit on the a.v.c. control lead to the various grid circuits is released. The receiver is then ready for operation and if reasonable care has been exercised it will be found that an amazing increase in sensitivity has resulted.

SHOP SHORTCUTS

Electric Balance For Radio and Appliance Work

By Charles E. Diehl

For several years I have used a device I call an "electric balance." It has many uses, in both the radio and electrical appliance repair shop. These will be obvious to experienced men.

As the name implies the instrument affords a means of balancing potentials. It is simpler than a bridge, direct reading and inexpensive. One side of the balance is always equal to the other both in resulting potentials and resistances, capacities or impedances. The fundamental circuit is shown in Fig. 1. Here it is seen that any decrease of resistance on either side of the circuit, such as would be caused by moving the contact arm X of the potentiometer, would cause the 10-watt lamps to change relative brilliancy by subtracting potential from the one and adding it to the other. Both lamps at equal brilliancy show equal resistance in arm AX and in arm XB. The potentiometer must, of

course, have sufficient resistance and current carrying capacity to allow application directly across the 110-volt line.

Figure 2 shows the first use of the circuit. This is the easiest and most useful form to make. The rheostat may be any calibrated resistance of about 5,000 ohms and with a current carrying capacity of 100 mils. In measuring an unknown applied at X, which is the pair of test leads, the rheostat indicates directly the resistance of X when both lights are at the same relative brilliancy. Here again the unknown and the rheo-

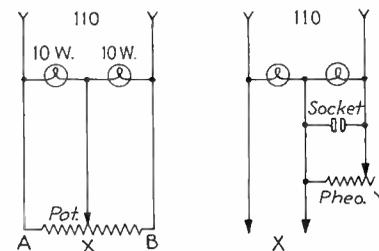


Fig. 1

Fig. 2

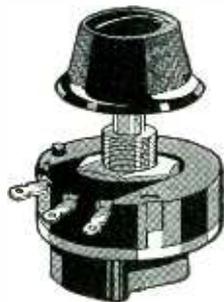


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SERVICE SECTION

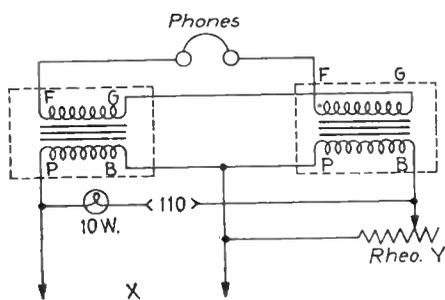


Fig. 3

stat are in series across the 110-volt line and must be capable of withstanding the applied voltage. The limit is then from about 500 ohms to 5,000 ohms.

This hook-up is invaluable for the service man. A good continuity test is provided with the test leads. Any comparison of large inductances, capacities or resistances can be made by merely noting the brilliancy of the lights without an attempt to strike a balance. The resistance of Y can be replaced with an Edison base heating unit of about 660 watts. A socket should be supplied (as shown) to enable use of such a unit. A lamp of large wattage can also be herein used. This makes rapid testing of small arma-

tures possible. The same comparative brilliancy of the two lamps, as the test prods are applied to each successive pair of commutator segments will show a perfect armature. Shorts, or any changes in resistance (or inductance) will change the balance.

Three-phase balance on induction motor stators or rotors, where wound, is as easily shown. Many other uses are found in the shop and the lights become more revealing with use.

In Fig. 3 the balance is shown in its most sensitive form. The two transformers enclosed in the dotted lines are audios of the same design. Almost any pair of identical ones will do. The primaries are connected to the 110 a.c. line and the secondaries are in opposition with headphones to indicate balance. When the rheostat at Y is set to equal any resistance that is to be measured at X the opposing potentials in the secondary cancel and no sound is heard in the phones. The 10-watt lamp in series with the 110-volt line prevents an excess of current flow.

This balance is capable of measuring any resistances desired and can be used to measure condensers and inductances when Y is replaced by standard condensers or inductances. The only limit in this latter case is the size of condenser necessary to pass enough current at 60 cycles to be detected in the phones.

By re-calibrating the rheostat Y and using known condensers and inductances at X, these readings can be directly made by the setting of the rheostat. Very sensitive condenser tests can be made by using 1,000 cycles from an audio oscillator in place of the 60-cycle, 110-volt current. The 1,000-cycle current is equally good for the resistance measurements and has the advantage that too much current cannot be drawn, the note in the phones is more clear-cut, permitting closer balance.

Motor Driven Bench Panel

By H. Borchardt, Jr.

The Walton Radio & Electric Co., of Sabetha, Kan., one of the American Electric Co.'s good customers, has a "honey" of a test panel which moves from end to end of the bench all by itself.

The panel, carrying a complete set of testing instruments, turntable, pickup, mike, tuner and amplifier, as well as the necessary tools, is shown in the photograph. It is equipped with rollers (at the bottom) working in slotted tracks

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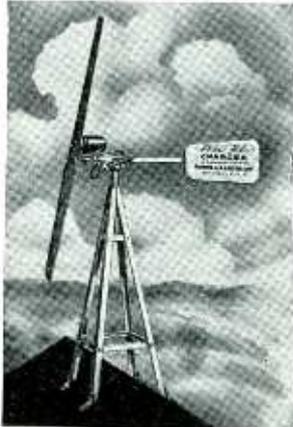
It's a thoroughly engineered device, designed, tested and built under the supervision of the experienced engineers who make the airplane dynamotors used by the leading air lines.

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10	507-391	1225	.40
15	507-392	1000	.40
25	507-393	775	.40
50	507-394	550	.40
75	507-395	450	.40
100	507-331	390	.40
150	507-396	315	.40
200	507-397	275	.40
250	507-332	245	.40
400	507-333	195	.40
500	507-334	175	.40
750	507-335	140	.40
800	507-409	135	.40
1,000	507-336	125	.40
1,250	507-410	110	.40

1,500	507-337	100	.40
2,000	507-338	85	.40
2,500	507-339	75	.40
3,000	507-340	70	.40
4,000	507-398	60	.40
5,000	507-341	55	.40
7,500	507-411	45	.40
10,000	507-412	40	.40
12,500*	507-207	20	.40
15,000*	507-208	18	.40
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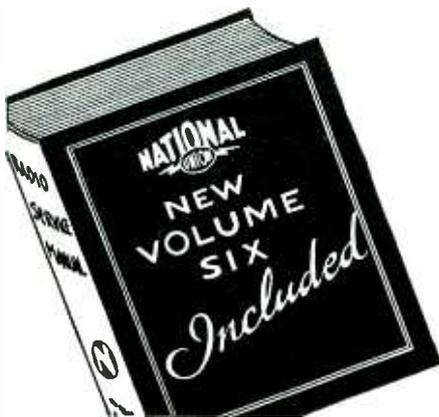
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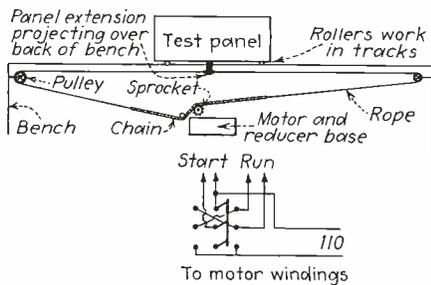
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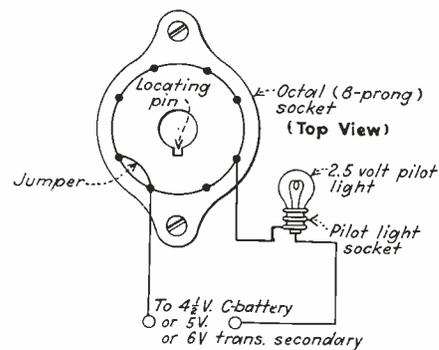
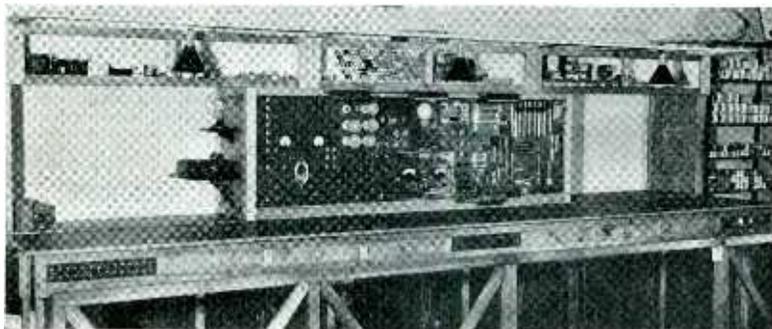


cut into the top of the bench. An electric motor pulls it along, stops it where it will do the most good.

As shown in the diagram, the panel

is provided at the bottom with a center flange, which passes over the back edge of the bench. To this flange ropes are attached and these terminate after passing over pulleys at the sides in a length of chain beneath the bench. The chain engages a sprocket driven by a motor for positive action.

The drive sprocket used reduces to 300 r.p.m. from a 1,750 r.p.m., $\frac{1}{4}$ -hp. motor. The motor is a split-phase machine with four starting and running leads brought out. These are hooked to the switch shown in the lower part of the diagram, which makes it possible to run the motor in either direction. The panel speeds up work.



Metal Tube Heater Tester

By Boris S. Naimark

Because standard pin arrangements are used by the most common types of new metal tubes now available and because all types with the exception of the rectifier use 6.3 volt filaments, it is a simple matter to rig up an adapter which will instantly detect blown filaments or heaters.

The diagram is self-explanatory. Simply plug in the questionable tubes and if the pilot light is illuminated the filaments or heaters are continuous.



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AK 37, 38, 40, 42. Wire on flat-strip volume control breaks . . . Remove control, solder break and bend flat strip in opposite to original direction so that contact arm rides on unused surface.

CROSLEY 42S. Low bias voltage on the detector, distortion . . . Frequently due to leakage between sections of the dual .5 condenser by passing detector and first a.f. bias resistor.

CROSLEY 124-1. Fading, signal returns to normal volume if set is switched off then on again, or if tube is pulled out and then re-inserted . . . Replace condenser block W22412 which contains four .1 condensers.

DELCO 630, 500. Common complaint is lack of reception on stations that are not local, but which should nevertheless be within range . . . Due to blocking of weak signals by noise-suppression circuit. To correct make the following simple wiring change: Remove the wire connecting the ground end of the volume control to the chassis ground. Connect this ground lug of control to cathode of 6D6 tube. In some instances it is found that the above change results in the appearance of vibrator noise not bothersome before. To eliminate it after making the suggested change connect a 100-ohm resistor in series with the 275 ohm common bias resistor for the 6D6 and 6B7 tubes. Put it between the cathodes and the old resistor, re-connecting the bypass condenser across both the old and new resistors. Connect the lead from the volume control to the junction between the resistors.

GLORITONE 27. Installing pilot light . . . Remove chassis from cabinet and note small opening just below volume control and just over the dial. In this opening solder a pilot light socket to the chassis so that the bulb will set over the dial. The chassis furnishes one

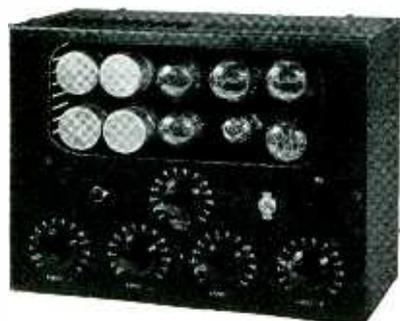
current lead. Carry the other to the proper filament prong of the 45 and install a 1.25-volt bulb.

MAJESTIC 70B. No grid reading on 71's . . . Check pilot light socket. It frequently shorts to ground.

MAJESTIC 290. Volume cannot be cut down sufficiently . . . Look for defective 10-mike condenser from cathode of 57 to plate of 58 noise-suppressor tube. Open circuiting is common.

NATIONAL PFANSTIEL. Frequent trouble in midget model using an 80, 47, two 35s . . . Enamel winding on oscillator coil burns due to insufficient insulation on high voltage lead to coil. Inductance changes, so to be sure to check condition before re-aligning. If found a new coil is advisable.

PHILCO 19. Set dead, voltages ok. . . . Check 15,000-ohm, 1/2-watt resistor on resistor and condenser block. Apparently it changes value badly when current is applied. Replace with 1-watt unit.



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DEALERS! You should know all about this latest development of Webster-Chicago engineers. It's the Four-Position 15-Watt Amplifier. Suitable for four crystal or velocity microphones or three crystal microphones and one phono. input.

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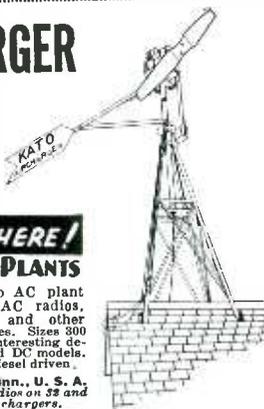


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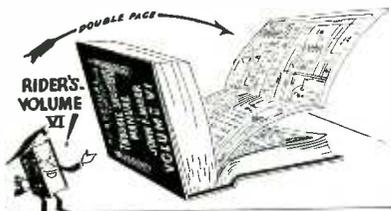
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Parts for PRIVATE-BRANDS

Servicemen continue to write, asking where parts and circuit diagrams for private-brand receivers may be obtained.

We are at present compiling a list but the job is too big to be completed without help. We need your assistance.

Send in the names of companies you are sure of. We will incorporate them in our list, publish it shortly and amend it as names come in.

PHILCO 45. Volume low, all stations otherwise received . . . Check for short between plus terminals of electrolytic condenser, a two 8-mike section job. The two sections sometimes short, cutting out the speaker field current. This short has little effect on the B voltage throughout the set and is often difficult to locate for this reason and because it may be intermittent.

PHILCO 221, 221A, 21, 21A. High-pitched squeal or thin whistle at high volume levels . . . Install a 4-mike filter condenser between the yellow terminal of the condenser block, connected to the

high voltage side of the divider system, and ground.

RADIOLA 80. Poor quality, voltages apparently ok . . . May be due to open in input transformer as the primary is paralleled by a 60,000-ohm resistor which passes plate current to the 27-second detector, despite the opened transformer.

RCA R37, R38. Motor-boating between stations . . . Leave by-passes alone until antenna lead is moved to the 2A5 side of the 2B7 tube.

RCA 140. Distortion, muffled reception at high volume levels . . . Shunt a 40,000-ohm resistor across R13, a 2-meg., carbon-type, $\frac{1}{2}$ -watt unit located in the grid circuit of the 2B7 second detector-a.v.c. tube.

SILVERTONE 42. Unsatisfactory reception between 540 and 950 kc. due to noise and whistling on distant signals . . . Ground one side of the antenna coil to the chassis. This coil is not originally grounded. An external ground to the chassis, also, takes out hum.

SILVERTONE 1506. Volume control acts erratic after replacing shot

second i.f. transformer . . . Change circuit associated with volume control as follows: Remove all old wires from the control. Connect center arm to ground. Connect terminal formerly running to ground through 150,000-ohm resistor to the cathodes of the first detector and i.f. stages, including original resistor in this new lead. Connect arm formerly connected to one end of the voltage divider to the antenna coil. Ground the end of the divider. Leave the screen lead, tapped on the divider, as it was originally.

MAJESTIC 70B. Set crackles and howls when first turned on . . . Check r.f. circuit 26's. Filaments sometimes expand when hot, shorting to grid, opening up again when permitted to cool. Tube testers do not show up the defect.

Ed. Note—When an electrical or mechanical trouble is encountered *again and again* in a certain make or model; when this trouble is *not* readily isolated by routine tube-testing and analyzing, "TRICKS of the TRADE" is interested. Don't send us, please, reports of troubles so unusual that they may never be encountered again. This department is designed to familiarize experienced servicemen with "bugs" of popular sets which might take hours to find.

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SEARCHLIGHT SECTION

(Continued on the following page)

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Of Radio Retailing, published monthly at New York, N. Y., for Oct. 1, 1935. State of New York ss. County of New York }

Before me, a Notary Public in and for the State and county aforesaid, personally appeared D. C. McGraw, who, having been duly sworn according to law, deposes

and says that he is the Secretary of the McGraw-Hill Publishing Company, Inc., publishers of Radio Retailing, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of March 3, 1933, embodied in section 537, Postal Laws and Regulations, printed on the reverse of this form, to wit:

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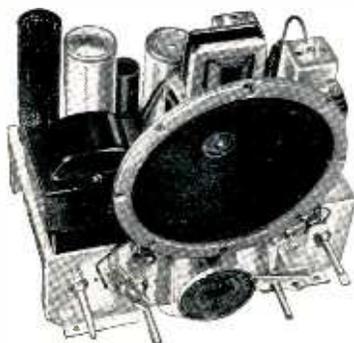


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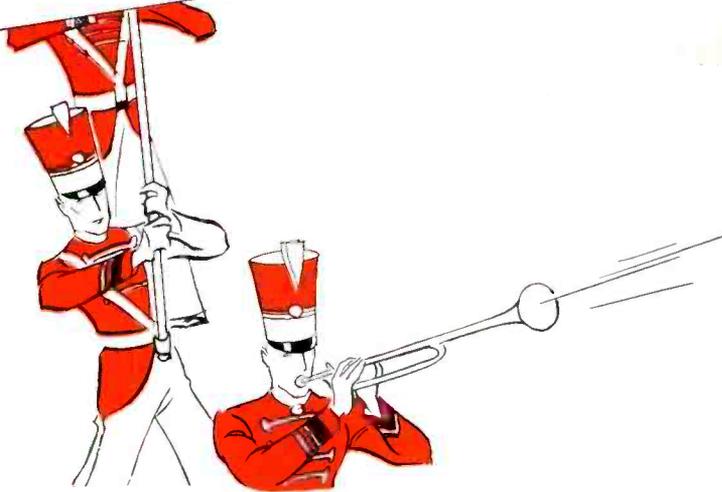
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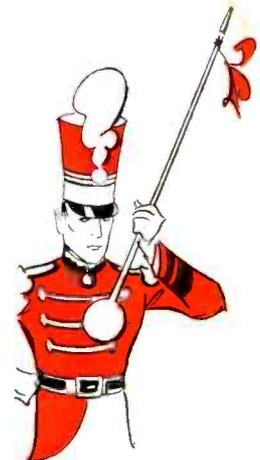
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