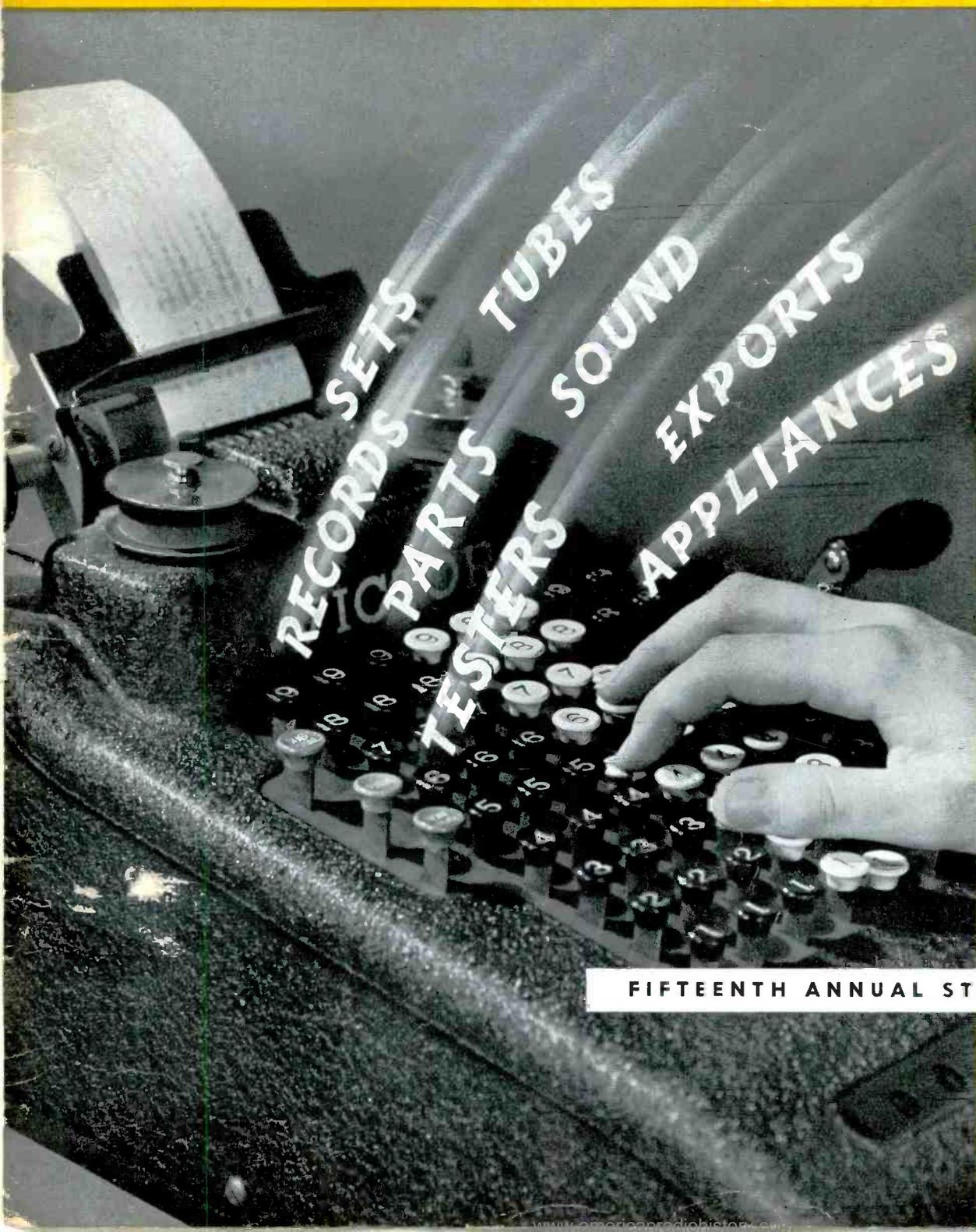


RADIO

*and
Television*

RETAILING

JANUARY • 1940



In This Issue

1939 SALES ESTIMATES

NEW YEAR PROSPECTS

FUTURE PLUS MARKETS

TIPS ABOUT BUYING

TUBE TEST AMMUNITION

CONSOLE COMBINATIONS

CABINET FIRST AID

AUTO RADIO HINTS

SOUND IN THE NEWS

SELLING REFRIGERATION

CAR ALLOWANCE SURVEY

and other features

FIFTEENTH ANNUAL STATISTICAL NUMBER

A
McGRAW-HILL Publication
Price 25c

"THE FIRST ISSUE IS WORTH THE COST OF THE ENTIRE SERVICE!"

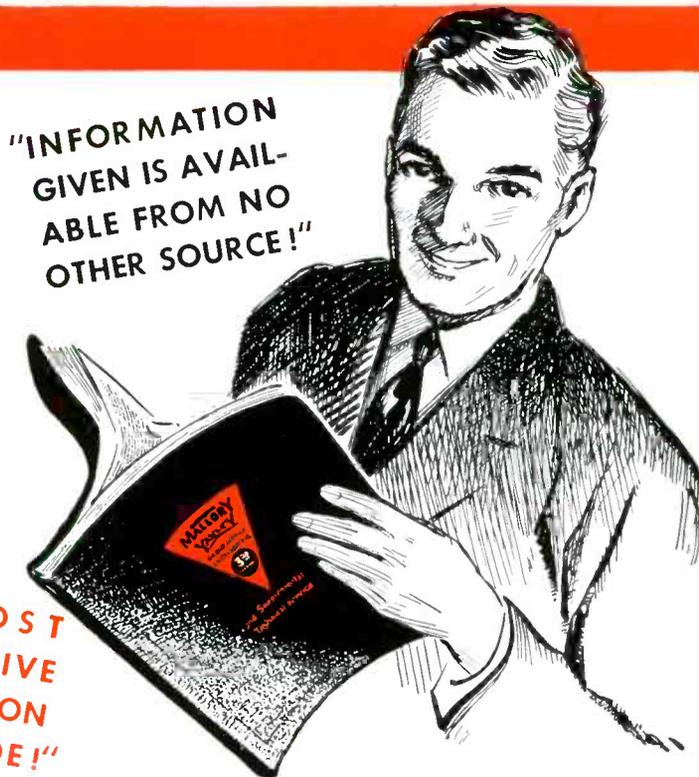
"KEEPS GETTING BETTER WITH EACH ISSUE!"

"EVERY RADIO SERVICE MAN NEEDS IT!"

"BEST LOW-COST TECHNICAL SERVICE I'VE EVER USED!"

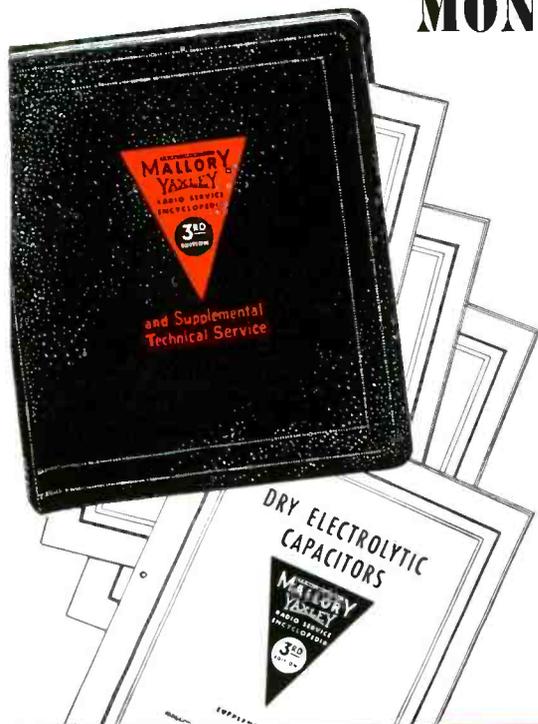
"I'VE SAVED PLENTY OF TIME AND MONEY WITH IT ALREADY!"

"THE MOST EXHAUSTIVE COMPILATION EVER MADE!"



Comments Like These Prove Its Value

MALLORY Supplemental MYE
MONTHLY TECHNICAL SERVICE



The Supplemental MYE Technical Service is "going like a house on fire." Radio service engineers, eager to keep abreast of current developments, tell us that every issue helps them solve problems not covered by any other service regardless of cost.

The first 4 issues, already published, contain: (1) Combined Tube Characteristics with complete tube charts. (2) Complete engineering data on Dry Electrolytic Capacitors. (3) Useful Servicing Information. (4) New Receiver listings covering all sets from June to December 1939.

A few copies of the first 4 issues in attractive leatherette, 3-ring binders are still available. Eight equally valuable issues; one a month right through the year are still to come.

HOW TO GET IT: obtain the complete service by sending in your check or money order for \$1.50 direct to us. Or . . . you can save 50c by having your Mallory-Yaxley distributor order the service for you.

Whether you are a service engineer, student, "ham" or experimenter you can't afford to be without this Mallory monthly technical service.

Order Today from Your Mallory-Yaxley Distributor—Save Money!

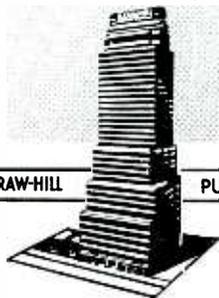
Use **MALLORY** REPLACEMENT CONDENSERS...VIBRATORS

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

Cable Address—Pelmallo

Use **YAXLEY** REPLACEMENT VOLUME CONTROLS

RADIO and Television RETAILING



A McGRAW-HILL

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JANUARY 1940

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SALES STATIC . . . Frankly, Mr. Peabody—I wouldn't be too optimistic!

These **NEW**
STROMBERG-CARLSON THE



Here are new interim values that add fresh vigor to the volume and profit possibilities of the Stromberg-Carlson line!

There's the new 430-MM finished in mahogany, and the new 420-J, a 7-tube table radio in a stunning modern cabinet. To round out Stromberg-Carlson's complete line of automatic combinations there is the 430-PF in an Authentic Salem Chest design and the magnificent new 460-PF in Authentic Chippendale.

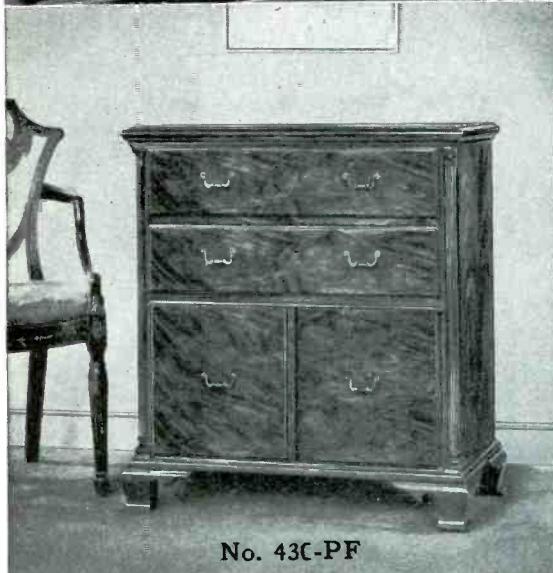
If you are a Stromberg-Carlson dealer you will profit immediately from the sales of these new standard radios and from the sales that Frequency Modulation broadcasting will create, for *Stromberg-Carlson also brings you a complete line of radios with the FM, Standard, and Short Wave bands.*

LOOK AT THIS FM LINE! There's the popularly priced No. 455-M console, the 455-PL automatic radio-phonograph, and the No. 480-M deluxe console with Coaxial Dual Speaker System. In addition, there's the Frequency Modulation band table radio, the 425-H, which may also be used to convert any standard console into an FM radio.



No. 420-J

4 NEW STANDARD MODELS



No. 430-PF



No. 460-PF



No. 430-MM

THERE IS NOTHING FINER THAN A

Stromberg

45th ANNIVERSARY MODELS MAKE LINE FOR VOLUME and PROFIT in 1940

and FREQUENCY MODULATION IS HERE too!

**BETTER TONE
LESS NOISE
NO INTERFERENCE**

If you want to jump ahead with Frequency Modulation, get set with Stromberg-Carlson — the FM line that's lengths ahead from the very beginning. The patented *Labyrinth* and *Carpinchoe Leather Speaker* in all these new Stromberg-Carlson FM consoles make it possible to capture the marvelous extra fidelity of FM broadcasts. They add *Super-Hi-Fidelity* to staticless reception of FM programs.

... AND THE LABYRINTH PUTS FREQUENCY MODULATION RIGHT DOWN STROMBERG-CARLSON'S ALLEY!

4 NEW FREQUENCY MODULATION MODELS



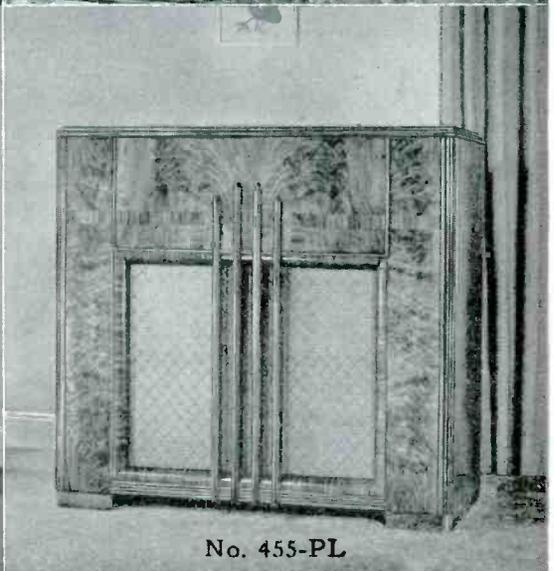
No. 425-H



No. 455-M



No. 480-M



No. 455-PL

Stromberg-Carlson *Mail this Coupon*

Stromberg-Carlson Telephone Mfg. Co., 251 Carlson Road, Rochester, N. Y.
Send full information on Radio's Profitable Volume Line.

Name _____
Street _____
City _____ State _____

“Rain-In-The-Face”
might have been
Liquidated *by Radio*

Misled by faulty information from his scouts, General Custer was trapped in ambush at the junction of the Big Horn and Little Big Horn rivers on June 25, 1876. Modern communications might have prevented this tragedy. Scouts

could have reported the vast number of Indians present under the command of the Chief, Rain-In-The-Face, and stayed Custer's attack. Custer could have sent word back to the main army of which he was the advance guard.



How the Family of RCA would save Custer



WHEN General Custer arrived at the junction of the Big Horn and Little Big Horn rivers, he'd send up scouting planes immediately. Pilots noting the vast numbers of the enemy, would report back to Custer by means of a light efficient airplane radio transmitter designed in RCA Laboratories built by the RCA Manufacturing Company, one of the members of the family of the Radio Corporation of America. General Custer would, of course, abandon his intention to attack. Using portable RCA broadcasting equipment

he'd radio back to the main army for help, and dig in to await rescue.

Word of his plight would be broadcast to the whole nation by the two great NBC networks which provide the broadcasting service of the Radio Corporation of America. Forty-three foreign nations would listen via RCA Communications, the world-wide radio message service of RCA.

Tens of thousands of listeners would sit glued by their RCA Victor Radios. And shortly motion picture audiences throughout the world would see and

hear talking pictures describing the rescue of General Custer . . . the scenes voiced by the RCA Photophone Magic Voice of the Screen.

Naturally there would be a great rush on Victor Record Dealers for Victor and Bluebird Records of patriotic character. And Americans everywhere would play these records on RCA Victrolas.

. . . Since, fortunately, no American General is now in need of rescue . . . RCA stands ready to serve the American people in every other respect in every field of radio.

Trademarks "RCA Victor," "Victor" Reg. U. S. Pat. Off. by RCA Mfg. Co., Inc.



Radio Corporation of America

RADIO CITY, NEW YORK

RCA Manufacturing Co., Inc.
Radiomarine Corp. of America

National Broadcasting Company
R.C.A. Communications, Inc.

RCA Laboratories
RCA Institutes, Inc.

A Frank Statement

About Kelvinator's Radically New 1940 Program That Makes Possible Sensationally Low Prices . . . And Greater Profits for Dealers

BY FRANK R. PIERCE, General Sales Manager
Kelvinator Division, Nash-Kelvinator Corporation



I KNOW you will be surprised when you see the prices printed on these pages.

A few days from now they will be published across the country. But before that happens, I want to explain them to all retailers of mechanical refrigerators—because there is not one of you who won't be affected, no matter where you may be located.

Those who built our industry—the dealers—have been waiting for several years for some manufacturer to have the courage to give them a program which meets today's conditions in the refrigeration business.

In a word: Kelvinator's prices and products for 1940 are part of a single broad-gauge program . . . representing radical changes in fundamental policy . . . one that is sound as a dollar from start to finish . . . a program that has these objectives:

- 1 To protect and stabilize the profits of Kelvinator dealers.**
- 2 To meet the competitive price situation in the electric refrigeration business today.**
- 3 To step up to the replacement**

business by providing specific products with margins adequate for the dealer to sell this business at a profit.

4 To limit the number of dealers in each community so that sufficient volume is possible, at recommended prices, for dealers to make a profit.

5 To reduce the dealers' investment by reducing the number of models.

In a nutshell, we expect this program to result in increased volume and profits for our dealers and ourselves.

This program is—very candidly—one of the most far-reaching plans ever adopted in an industry. But before I go any farther, I want to make one thing clear. Not only has it been accomplished without a penny's reduction in dealers' retail profits—but without a single compromise in the quality of our product. As a matter of fact, dealers' profits are higher; and the products the best we've ever built.

I think that every dealer who has ever wished for lower prices is entitled to know how Kelvinator was able to put this program into effect:

Briefly, here's what we have done:

- 1 We've concentrated 96% of our production on the big 6 cubic-foot size models, and larger, that people really need. That lets us lower the price some.**
- 2 In anticipation of greatly increased sales, we've doubled our production schedules and passed the manufacturing savings on.**
- 3 We've cut our cost of selling—so we can lower our price still further.**

In addition, we have cut our own manufacturing profit per unit in anticipation of greater sales.

And . . . to further simplify dealers' price problems . . . in all states east of the Rockies, we are paying the freight, on carload shipments to destination, and also absorbing the L.C.L. delivery cost from zone or distributor warehouses in excess of 50 cents CWT. This is to permit advertising nationally of suggested retail prices for delivery in the consumers' kitchens.

Now please take a look at the pictures and specifications of the Kelvinators we're selling at these prices.

LOOK AT THE SIZE

LOOK AT THE NAME

LOOK AT THE PRICE

BIG
6 1/4 CUBIC FOOT
Large
"Family-Size"

NEW 1940
KELVINATOR
from the oldest
maker of electric
refrigerators

\$119.95*
Delivered in the Kitchen
with 5 Year Protec-
tion Plan

KELVINATOR SS-6. Compare with \$150 refrigerators. 6 1/4 cu. ft. Bright Permalux exterior. Porcelain-on-steel interior. Stainless-steel, high-speed Freezer with white Permalux-finished door. 2 extra-fast Freezing Shelves. 9 lbs.—84 ice cubes. Kelvin Cold Contro . Tempered glass. Cold Storage Tray under freezer. Interior Light. Powered by famous cost-cutting Polarsphere sealed unit. Kelvinator's price only **\$119.95***

THE BEST KELVINATORS EVER BUILT NO PRIOR-YEAR MODELS

You will note first of all that price reductions apply to the whole Kelvinator line . . . from the base-price model right up to the de luxe models. Reductions range from \$30 to \$60, as compared with last year's prices.

Next thing is: every Kelvinator here is a new 1940 product. There isn't an obsolete last-year model in the line.

Our idea of meeting low-price competition is *not* giving our dealers a year-old model, with probably shorter discounts. Instead, we're starting our dealers with a clean, *new* stock.

And these Kelvinators are remarkable in another respect. You've heard of "bargain" refrigerators before. This isn't it. You've probably had to contend with stripped-down, second-line products. You won't find them here.

Let me repeat: *these are the finest Kelvinators we know how to build—*

1940 models every one. Starting with the fine, big, six-cubic-foot models, and working right on up through the big de luxe jobs, they surpass any Kelvinators ever built before.

I can't stress this too strongly.

Take our Model SS-6 for 1940, selling at \$119.95.* If you'll examine it carefully, point for point, I know you'll agree you've never seen a current model made by a nationally-known manufacturer within thirty or forty dollars of its price!

Try to match its specifications and you'll see what I mean. Every Kelvinator is powered by the big Polarsphere sealed unit. We don't use a cheaper, weaker unit in our low-priced models. I think you know about the reliability of this unit. Of *all* the 1939 Polarspheres in use all over the world less than 1/2% have been replaced for mechanical reasons. I believe that's an industry record.

Other basic features are of the same

high quality. Cabinet is welded-steel and finished in Permalux outside . . . all Porcelain-on-steel lining within. Insulation is the best.

Yes—it's a big, solid, fine-looking refrigerator. And any dealer will say—it has the features that *sell*.

But it's only the beginning of Kelvinator's great 1940 line. Every model in the line has "step-ups" in features that make "selling up" natural, logical and easy.

EVERY FEATURE OTHERS OFFER PLUS OUR OWN EXCLUSIVES

And when you handle that beautiful de luxe job . . . Model HD-6 . . . for only \$209.95*—you have a refrigerator nobody's competing with.

With the new "Moist-Master" humidity system and all those other features you can see on the next page—it's the last word in fine refrigeration.

I want you to check this when you look at the pictures. And note that the price is what you used to sell "standard" models for.

Just count them. Five big "sixes". Prices from \$119.95* to \$209.95.* Compact three and four-footers, too (but it's just as easy, now, to sell a "6") and 3 eight-cubic-foot models.

Can you imagine what Kelvinator dealers will do with products and prices like these?

I'll tell you. They'll stop worrying about competition in any shape or form. They'll sell Kelvinators at a profit and lots of 'em. I don't believe they'll find it necessary to cut their prices to meet competition.

TWO VAST MARKETS ARE NOW WIDE OPEN TO KELVINATOR DEALERS

But . . . far beyond "meeting competition" . . . Kelvinator dealers will also cut straight into two vastly broadened markets.

One is the replacement market. You know scores of families right in your own neighborhood who are still getting along on worn-out, noisy, wasteful or undersized mechanical refrigerators.

As a matter of fact, there are at least *four million* families like that in the country.

When you go into that market with the 1940 Kelvinators especially designed and priced for that market . . . when you show them the bigger, finer, refrigerator with every modern convenience . . . when you prove it costs many dollars a year less to run—*that replacement business is yours.* And you

can afford to trade at a profit because the prices and margins are there to help you trade.

And then there's that vast low-income market adequately provided for with models selling this year from \$30 to \$60 less than similar models in 1939. Only this year they are better looking and have more salable features.

You'll be able to sell a Kelvinator—a big, genuine 6¼-cubic-foot model . . . with Kelvinator quality through and through . . . for little more than the price of a good icebox. Further, for those who want additional equipment, convenience and de luxe features, Kelvinator has four more "Sixes" at prices that will fit their pocketbooks.

HEAVY ADVERTISING CAMPAIGN

I think you'll agree . . . this is a great product story. Actually, it is one that others have wanted to offer for years. And now Kelvinator does it.

But we're not just letting our 1940

product "sell itself". We're going to spread the news big—and spread it *now*.

In a few days, newspaper ads in large, dominating space will carry Kelvinator's story to local markets clear across the country.

Close on their heels, full-page color ads will break in national magazines.

You'll see "Look at the Size" . . . "Look at the Name" . . . "Look at the Price"—*everywhere*.

POWERFUL PROMOTION BACKING

I'll venture to say that our coming Spring Showing Activity will bring you the greatest rush of business you've had in years.

We'll be backing you with a great new Direct Selling Program and complete sales training helps from the Kelvinator National Salesmen's Institute.

Kelvinator's own finance company . . . ReDisCo . . . has even worked out a brand new "5-Sixes Plan" to make

it easier for you to buy—so you can start selling quicker.

Frankly, I think this is the most far-reaching program any manufacturer will offer this year. It's not only a matter of products, prices, margins, prepaid freight, new advertising, and new sales methods. In fact, it's a *whole new way of doing business and making money*.

HOW TO GET FULL FACTS

If you are not a Kelvinator dealer, the only way to realize what this revolutionary program means is to get in touch with us through your nearest distributor or factory branch.

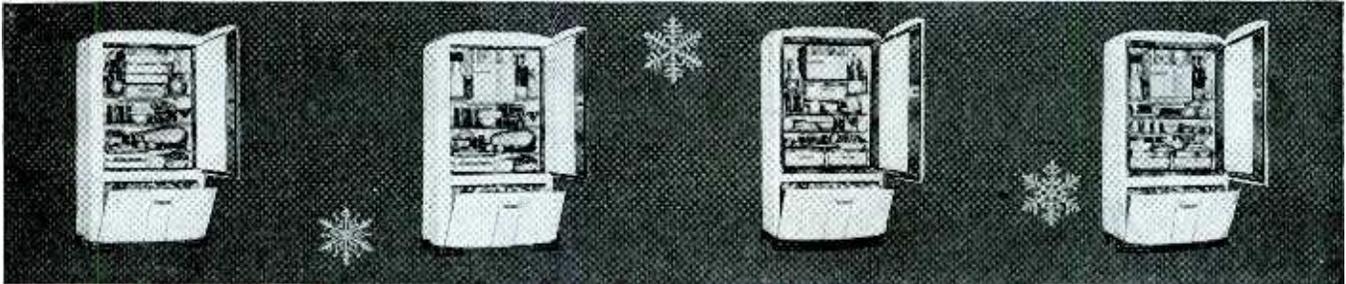
Or, if you like, communicate with me direct.

Frank P. Perci

General Sales Manager
KELVINATOR DIVISION

Nash-Kelvinator Corp., Detroit, Mich.

*Prices suggested are for delivery in the Kitchen with 5 Year Protection Plan. State and local taxes are extra. Prices are slightly higher west of the Rockies.



KELVINATOR S-6. Compare with \$180 refrigerators. 6¼ cu. ft. completely equipped model. Gleaming Permalux exterior with Porcelain-on-steel interior. Sliding glass covered Vegetable Crisper. Deep, sliding, moonstone glass Cold Storage Tray under Freezer Vegetable Bin. Removable half-shelf next to crisper. Stainless-steel freezer with door, 2 extra-fast Freezing Shelves, 8 lbs.—64 ice cubes, new type Ice Trays, Kelvin Cold Control. Powered by Polarsphere sealed unit. Interior Light. Kelvinator's price only **\$139⁹⁵***

KELVINATOR HS-6. Compare with \$230 refrigerators. A new 6 cu. ft. Kelvinator with the "Moist-Master" System that maintains higher humidities, decreasing the loss of moisture from foods. Permalux exterior and Porcelain-on-steel interior. Meat Compartment built in the freezer unit behind freezer door. Sliding, glass covered Vegetable Crisper. Vegetable Bin. 2 extra-fast Freezing Shelves, 8 lbs.—64 ice cubes, new type Ice Trays. New, flat, disc-type Kelvin Cold Control. Powered by Polarsphere sealed unit. Interior Light. Kelvinator's price only **\$169⁹⁵***

KELVINATOR R-6. Compare with \$210 refrigerators. 6.5 cu. ft. Twin Sliding Crispers with glass tops. Sliding, Porcelain Cold Chest. Vegetable Bin. Sliding adjustable Shelves. Twin dome Lights. Stainless-steel Freezer with door, 2 extra-fast Freezing Shelves, 8 lbs.—72 ice cubes, built-in Tray Lifter and built-in Speedy-Cube Release. Double-size Ice Tray for frozen desserts. Kelvin Cold Control with automatic return from defrosting. Powered by Polarsphere sealed unit. Kelvinator's price only **\$179⁹⁵***

KELVINATOR HD-6. Compare with any refrigerators from \$230 to \$300. A new, 6.1 cu. ft. de luxe Kelvinator with "Moist-Master" System. Twin Sliding Crispers with glass tops. Vegetable Bin. Meat Compartment built in the freezer unit behind freezer door, 2 extra-fast Freezing Shelves, 8 lbs.—72 ice cubes with built-in Ice Tray Lifter and Speedy-Cube Release. New, flat, disc-type Kelvin Cold Control. Twin Dome Lights. Polarsphere sealed unit. Permalux exterior. Porcelain-on-steel interior. Kelvinator's price only . . . **\$209⁹⁵***



KELVINATOR S-8. Compare with \$220 refrigerators. A big 8.2 cu. ft. refrigerator with 16.3 square feet shelf space. Has Stainless-steel freezer with white Permalux-finished door. New type ice trays freeze 12 lbs.—96 cubes. Sliding glass covered Crisper, Glass Cold Storage Tray, Vegetable Bin. Automatic Interior Light. Beautiful Permalux exterior, stainless Porcelain-on-steel interior. Powered by Polarsphere sealed unit. Kelvinator's price only . . . **\$189⁹⁵***

KELVINATOR R-8. Compare with \$250 refrigerators. 8.2 cu. ft., 16.3 square feet shelf space. Built-in Tray Release and Speedy-Cube release, 12 lbs.—108 ice cubes. Stainless-steel Freezer with new full height door. Twin glass covered Crispers. Twin dome Lights. Sliding porcelain Cold Chest, Vegetable Bin. Kelvin Control with Automatic return from defrosting. Sliding Adjustable Shelves. Powered by Polarsphere sealed unit. Kelvinator's price only **\$209⁹⁵***

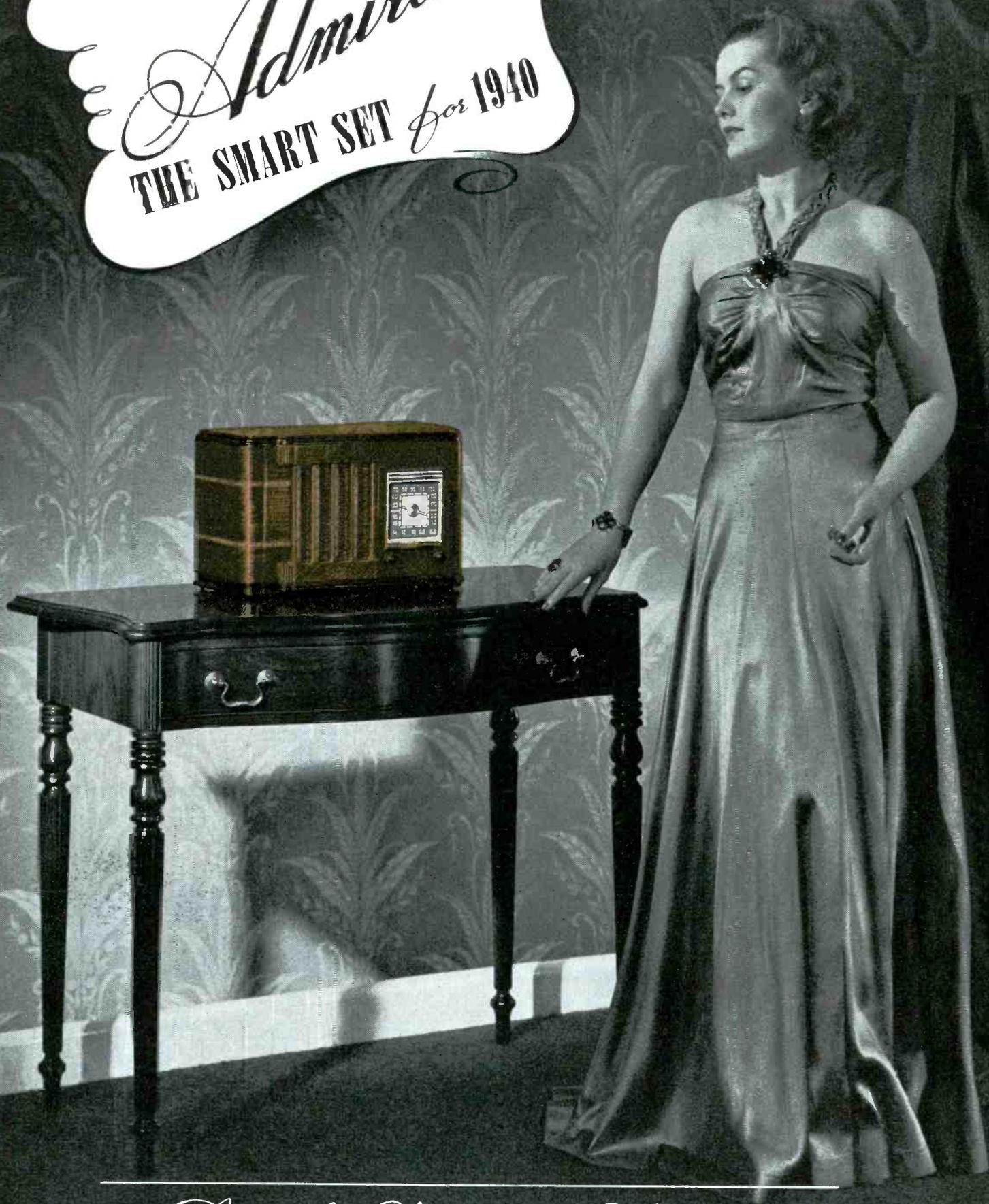
KELVINATOR HD-8. Compare with the finest refrigerators at any price. A new de luxe 8 cu. ft. model completely equipped including "Moist-Master" System. 15.9 square feet shelf area. Twin Sliding Crispers with glass tops, Twin Dome Lights. Meat Compartment built in freezer unit behind door, built-in Ice Tray Lifter and Speedy-Cube Release, 12 lbs.—108 ice cubes. New, flat, disc-type Kelvin Control. Vegetable Bin. Polarsphere sealed unit. Kelvinator's price only . . . **\$239⁹⁵***

INCREASE YOUR PROFIT IN 1940 WITH KELVINATOR'S ASSOCIATED LINES

We honestly believe that Kelvinator's new Electric Ranges, Washers, Ironers and Water Heaters will make Kelvinator the "standard" name of 1940.

Every one of these great Kelvinator products has the looks, the features, and the fine engineering of a real quality line. Why not find out about this chance to enlarge your profits?

Admiral
THE SMART SET for 1940



Sets the Vogue in Wood

NEW R. F. CIRCUIT INCREASES SENSITIVITY SEVEN-FOLD



13-C5—Mahogany **14-C5—Ivory**
5-tube AC-DC superhet in plastic cabinet with carrying handle. New low current drain tubes give 6-tube performance. Has P.M. speaker, Aeroscope, television sound. 540-1730 K.C.



20-A6—Walnut **21-A6—Ivory**
6-tube AC-DC superhet. Has new R.F. circuit, Aeroscope, "Sofglo" dial, A.V.C., P.M. dynamic speaker, television sound connections. Tunes broadcast and police bands.



22-A6—Walnut **23-A6—DeLuxe Walnut**
6-tube AC-DC superhet in wood cabinet. Has new R.F. circuit, Aeroscope, "Sofglo" dial, A.V.C., P.M. speaker, television sound connections. Tunes broadcast and police bands.

THESE SHORT WAVE RADIOS GUARANTEE FOREIGN RECEPTION



15-B5—Walnut **16-B5—Chartreuse-Ivory**
5-tube AC-DC superhet in plastic cabinet. Two bands (535-1730 K.C. and 16-49M). Has built-in antenna, "Sofglo" dial, A.V.C., P.M. dynamic speaker, television sound connections.

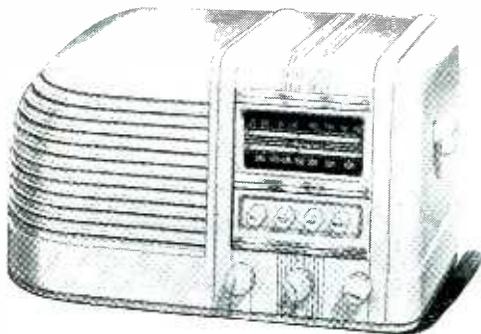


17-B5—Walnut wood cabinet with handy carrying handle.
5-tube AC-DC superhet. Two bands (535-1730 K.C., 16-49 M). Built-in antenna, "Sofglo" dial, A.V.C., P.M. dynamic speaker, television sound.



18-B5—DeLuxe walnut wood cabinet—the style leader!
5-tube AC-DC superhet. Two bands (535-1730 K.C., 16-49 M). Built-in antenna, "Sofglo" dial, A.V.C., P.M. dynamic speaker, television sound.

ADMIRAL RADIOS SET THE VOGUE IN DELUXE WOOD CABINETS



396-6M—Walnut **397-6M—Ivory**
398-6M—Onyx
6-tube AC-DC superhet in plastic cabinet. Two bands. Has stage of R. F., Aeroscope, A.V.C., automatic tuning (4 push buttons), tone control, electro dynamic speaker, television sound.



399-6M—Walnut (wood)
6-tube AC-DC superhet in walnut (wood) cabinet, 2 bands. Has stage of R.F., Aeroscope, A.V.C., automatic tuning (4 push buttons), tone control, electro dynamic speaker, television sound.



25-Q5—Walnut wood cabinet.
5-tube AC-DC superhet. Has 4 automatic tuning push buttons, Aeroscope, A.V.C., airplane dial, P.M. dynamic speaker, television sound connections. Tuning range 540 to 1730 K.C.

SENSATIONAL ADMIRAL VALUES!

**SINGLE BAND
ADMIRAL RADIOS**
(540 - 1730 K.C.)

\$9.95
AND UP

**TWO BAND
ADMIRAL RADIOS**
540-1730 (Broadcast) and
5.62-17.1 Mega (gets all
the 19-31-49 Meter Foreign
Reception)

\$12.95
AND UP

CONTINENTAL RADIO & TELEVISION CORP.
3800 W. Cortland St., Chicago, Ill. Export Office: 116 Broad St., New York, N.Y.



Again Emerson



Built-In Loop Antenna

EMERSON SILVER JUBILEE MODEL 330

No Outside Aerial or Ground Needed

AC-DC Superheterodyne with "Miracle Tone Chamber" • Automatic Volume Control • Large Electro-Dynamic Speaker • "Eye-Ease" Dial and many other advance 1940 features.

SALES—When you Need Them Most!
January and February Promotion—in Celebration of Emerson's 25th Anniversary

With crowd-stopping window streamers, window and store displays, special price tags, wall broadsides, newspaper advertising and other helps, YOU can use this outstanding promotion to stimulate your entire business.

Retail prices of the Emerson "SILVER JUBILEE" Models featured in this promotion will definitely be restored to the original list and so advertised after the limited SALE period. Only a limited quantity is available for this event. Get ALL of the facts and—CASH IN!

Telephone, Write or Wire your EMERSON Distributor NOW!

LIST PRICE \$19⁹⁵
To Retail at
\$9⁹⁵
FOR A LIMITED TIME ONLY

(Prices Slightly Higher in South & West)



EMERSON RADIO AND PHONOGRAPH CORPORATION • NEW YORK, N. Y.
"World's Largest Maker of Small Radios"

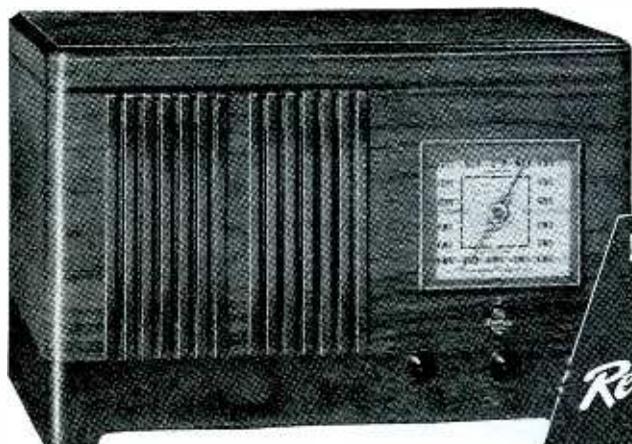
Stimulates Sales!

Featuring a **\$10.00** Retail Saving

In a Great "Silver Jubilee" Promotion

CELEBRATE WITH EMERSON! A limited-period—limited-quantity—SALE of three new 1940 "SILVER JUBILEE" Models, featuring a \$10.00 retail saving on each set. A \$19.95 (list price) Model to retail for \$9.95—a \$29.95 (list price) Model to retail for \$19.95—a \$39.95 (list price) Model to retail for \$29.95! Ask your Emerson distributor Now for details of this most startling, most constructive mid-season promotion ever offered to the radio trade—

Backed by the Most Intensive Advertising and Sales Promotion Campaign in Emerson's History!



EMERSON Silver Jubilee Model 331

Standard Broadcasts—All Police Bands—and American and Foreign Short Wave • AC-DC Superheterodyne with "Miracle Tone Chamber" • 8-inch Electro Dynamic Speaker • Automatic Volume Control • "Eye-Ease" Dial • Handsome hand-rubbed walnut cabinet.

(Prices Slightly Higher in South & West)

LIST PRICE ~~\$29.95~~
To Retail at **\$19.95**

EMERSON Silver Jubilee Model 332

EUROPE DIRECT! Paris • London • Berlin • American and Foreign Reception • AC-DC Superheterodyne with "Miracle Tone Chamber" • 8-inch Permanent Magnet Dynamic Speaker • Automatic Volume Control • Tone Control • "Eye-Ease" Dial • Television Terminal • Handsome hand-rubbed walnut cabinet.

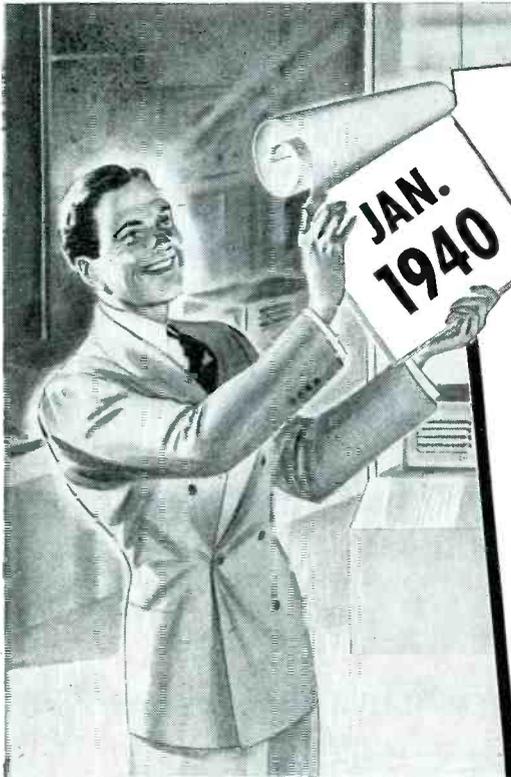
LIST PRICE ~~\$39.95~~
To Retail at **\$29.95**



Telephone, Write or Wire your EMERSON Distributor NOW!

EMERSON RADIO AND PHONOGRAPH CORPORATION • NEW YORK, N. Y.

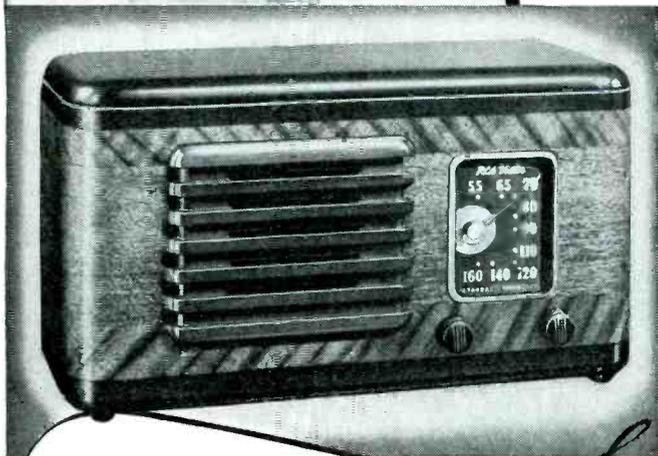
"World's Largest Maker of Small Radios"



Get off to a Big Start with these **RCA Victor LITTLE NIPPERS!**

Begin the New Year with a bang! Feature these brand-new RCA Victor Little Nippers and you will start your 1940 sales the *profit* way! Because these splendid big little

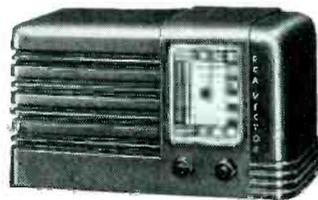
radios are the sort that sell themselves! Low in price, sparkling with beauty and little wonders in performance—they are “just what we want” to your prospects!



**Finished back makes this set
a beauty from any angle!**

Model 46X3 is ideal for desk and table use where it may be seen from any side because its delightful cabinet of rich woods and selected veneers has a finished back. Other features of this fine instrument include Built-in Magic Loop Antenna, 5 RCA Victor Tubes (7-tube performance), Pentode Beam Power Output for greater volume and purer tone, Plug-in Ballast Resistor, Underwriters' Approval. AC-DC operation.

For finer radio performance—RCA Victor Radio Tubes



Model 45X1. Extra large, Edge-lighted Dial... Pentode Beam Power Output for greater volume, purer tone... AC-DC operation... 5 RCA Victor Tubes, 2 double-purpose, giving set equivalent of 7-tube performance. Mahogany plastic cabinet. Available in Ivory as Model 45X2.



Big set features in Model 45X13 include Built-in Magic Loop Antenna... Easy-reading, clock-type Dial... Super-sensitive Electro-dynamic Speaker... Superheterodyne Circuit with Power and Selectivity. Beautiful cabinet constructed of fine woods and veneers.



Model 45X11 has Built-in Magic Loop Antenna... Easy-reading clock-type Dial... Electro-dynamic Speaker... selective Superheterodyne Circuit. Rich Mahogany plastic cabinet with easy-grip, plastic knobs. Also available in Antique Ivory plastic cabinet as Model 45X12.



This brilliant Model 46X13 tunes in Standard Broadcast, Police, Amateur and International Short-wave Bands. Beautiful wood cabinet, extra large Built-in Magic Loop Antenna and super tone make it a natural seller!

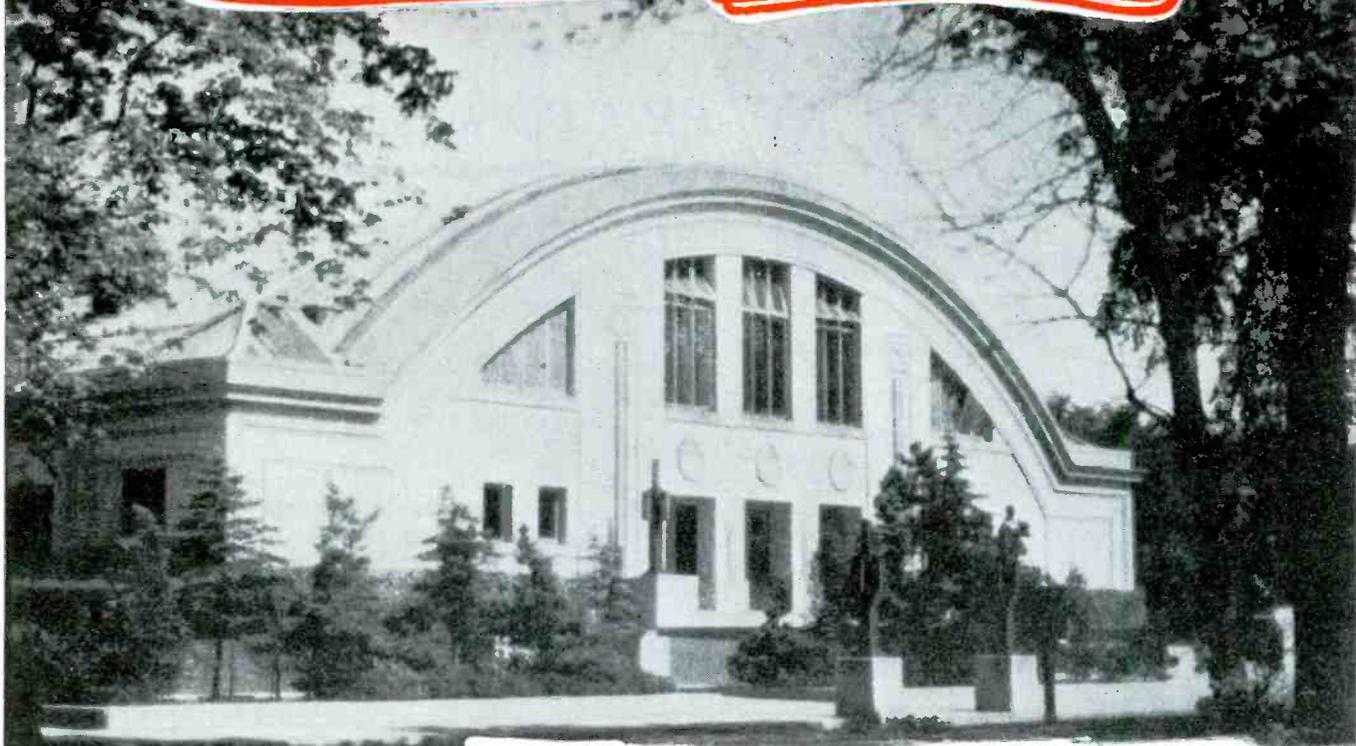
Trade-mark "RCA Victor" Reg. U. S. Pat. Off. by RCA Mfg. Co., Inc.



Model 46X11 tunes in Standard Broadcast, Police, Amateur, International Short-wave Bands. Handsome plastic cabinet. Remarkably good tone. Also available in Ivory as Model 46X12.

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

always *Thrills* at
**NORTHWESTERN
 UNIVERSITY GAMES**



**... and a highly efficient P. A.
 system is one of the reasons**

Northwestern, one of the great Universities of the nation, is famed for its high standards in every phase of its activities. And this is reflected in its top notch teams in various collegiate sports.

In Patton Gymnasium, the fastest, hardest fought college games seen anywhere take place. Here the roar and din of the huge crowds give its P.A. System the hardest test imaginable. Yet it functions perfectly. That's because the tubes are good—the very best. RAYTHEONS are used!

Remember—these are *stock* RAYTHEONS, the kind that thousands of servicemen and dealers use for replacements on the toughest jobs or in the little radio in the home.

Their long life of outstanding service makes satisfied customers and attracts new ones. And, equally important, their dependable performance attracts big tube users, like Northwestern . . . replacement business you couldn't get with inferior tubes. So business grows! Profits, too! Yet RAYTHEONS cost no more!



RAYTHEON

NEWTON, MASS. • NEW YORK • CHICAGO • SAN FRANCISCO • ATLANTA

"WORLD'S LARGEST EXCLUSIVE RADIO TUBE MANUFACTURERS"

Introducing for you

5

RECORD SMASHING WESTINGHOUSE RADIOS



MODEL WR-272 L

A beautiful two-band AC set with 6 station push-button tuning, built-in loop antenna and 6" electro-dynamic speaker. Includes 2 double-purpose tubes.



MODEL WR-173

AC or DC plastic. Electro-dynamic speaker. Built-in loop antenna. Two double-purpose tubes included.

DESIGNED for eye appeal
EQUIPPED for advance performance
PRICED for fast Profits



MODEL WR-676

A strikingly finished portable radio. Operates on batteries or on AC or DC current. Loop antenna and 5" speaker.



MODEL WR-375

The New Year's greatest console value. 3-band set with 12" electro-dynamic speaker, six-station push-button tuning, and special rotatable loop antenna.

MODEL WR-168 A Walnut AC-DC model with 5" dust-proof dynamic speaker, built-in loop antenna, and edge-lighted glass dial.



The 1940 Westinghouse radio line was a record-smashing series! New, all-time-high sales records were established. Factory and distributors' stocks were cleaned out! And orders for more radios are still pouring into headquarters!

This unprecedented demand for Westinghouse radios proves one point—the public demands *real radio values* . . . radios that stand-out in styling, performance and price!

To maintain this position Westinghouse now announces 5 new models. Here again are radios that lead in EYE-APPEAL. Exclusive designs. Exquisite, matched grain veneers. Master cabinet craftsmanship. All create favorable customer reaction.

And, they're packed with features to talk about. Their outstanding PERFORMANCE will back up your sales story with convincing proof.

As to PRICE, you be the judge! Every model is a price leader in its class. And you'll be enthusiastic about the profit margin. Complete details are available at your Westinghouse Distributor. Why not phone him NOW?

LISTEN TO THE NEW WESTINGHOUSE COAST-TO-COAST BROADCAST

On January 25th, Westinghouse goes on the air with a coast-to-coast radio program. Tune in "Musical Americana," NBC Blue Network, Thursdays, 8 P. M. EST; 7 P. M. CST; 9:30 P. M. MST; 8:30 P. M. PST.

Westinghouse Precision RADIO

Faith in RADIO

AS WE PASS another milestone in the quickening pace of radio, it is gratifying to note a McGraw-Hill parallel to the industry's progress. . . . fifteen years of unbroken leadership on the part of RADIO and Television RETAILING.

McGraw-Hill's faith in radio as an essential industry needs no reiteration, no retrospect. The immediate opportunities which the industry offers are so prolific, its ultimate promises so manifold, that our confidence in the future of radio is greater than ever.

Who could question the future of an industry that continues to sell millions of sets year after year? Who could justify talk of saturation when the industry constantly produces new things which the public wants? Who can say that the product we now know as a radio set may not yet evolve into something different in form, in usefulness, in price?

The outlook for 1940 merely deepens our confidence in the profit possibilities which the immediate future holds for radio manufacturer, distributor, dealer and serviceman. The certainty of other major developments within this field, too, emphasizes the opportunities which RADIO and Television RETAILING will continue to have of serving the industry with vision, courage and sincerity.

TO ASSURE that the readers of RADIO and Television RETAILING receive an editorial service that will keep in step with their growing needs, W. MacDonald has been made Editor of the paper, effective with this issue. (He succeeds O. Fred. Rost, who has been made Editor-Manager of *Wholesaler's Salesman*, another publication in the McGraw-Hill group). With this issue, also, Lee Robinson becomes Manager of RADIO and Television RETAILING, whose advertising sales he has directed for the past two years.

Editor MacDonald, who first joined this publication in 1926, combines both merchandising and technical interests in a background which includes experience as a radio retailer, as field engineer for a manufacturer, and as a jobber's salesman in the early days of radio. He still constructs and operates amateur transmitting equipment as an active hobby. He spent two years in South America studying radio and other business possibilities there. During the fourteen years he has been on the editorial staff, "Mac" has been successively Assistant Editor, Technical Editor, Associate Editor and Managing Editor.

With this issue, therefore, we place the conduct of the paper in the hands of Editor MacDonald, and of Manager Lee Robinson, confident that they and their staffs will maintain the same high level of service to reader and advertiser which has characterized "RR" for the past fifteen years.

Howard Ehrlich

Executive Vice-President
McGraw-Hill Publishing Company, Inc.



**Only RCA Offers You All Three
Test Equipment...
Receiving Tubes...and Power Tubes**



*"They're the Big Three
in our Business"*
...says John Stern of Radio Electric Service Co.,
in Philadelphia, Pa.

"Our customers never let us forget it either. The call for RCA merchandise wrapped up in the RCA Franchise means big volume profitable business year in and year out. You can't do a complete business in the fields of test equipment, receiving tubes, and power tubes without an RCA Franchise."

WHY IT PAYS YOU TO GO RCA ALL THE WAY!

Only RCA offers you all three...Test Equipment, Receiving Tubes, and Power Tubes. And smart merchandisers, like John Stern in Philadelphia, are quick to agree that RCA offers you the best in all three.

And here are the reasons! RCA has more service experience in every field of radio and sound than has any other organization. This enables RCA to design test equipment which answers every need in the field. Obsolescence is minimized because RCA makes the trends in radio...and knows far in advance what the trends will be.

RCA developed the receiving tube

business...and no one else has caught up yet. Never forget this fact... the tubes America knows best are easiest to sell.

Not only does RCA offer types of Power Tubes that no one else makes...

but RCA also knows the tube requirements of transmitters as few can because RCA makes Transmitters.

When you think it over, you can't help but agree with John Stern... the RCA Franchise covers the big three in profits. It Pays to Go RCA All the Way in Test Equipment, Receiving Tubes, and Power Tubes.

Over 335 million RCA Radio Tubes have been purchased by radio users... in tubes, as in parts and test equipment, it pays to go RCA All the Way.



Tubes and Test Equipment
RCA MANUFACTURING CO., INC., CAMDEN, N. J.
A SERVICE OF THE RADIO CORPORATION OF AMERICA

RADIO *and Television* RETAILING

AHEAD

in
1940

ASSOCIATION Execu-
tives review industry's
achievements, discuss new
year objectives

SUGGESTS UNITED RADIO FRONT

In the radio industry 1939 was marked by widespread recognition of the community of interest shared by radio dealers, servicemen, jobbers, manufacturers and broadcasters.

I think it might be wise for Radio's United Front to set up a long range achievement objective . . . not only a radio in every home, but a radio for every member of the family, a radio in every automobile, every bus, every railroad passenger

1939 PRODUCTION ESTIMATES

(All figures in these pages include export unless otherwise stated)

SETS *

9,100,000 Units
(519,000 Exported)

\$285,000,000 Value
(\$31 Average Price)

1,800,000 CONSOLES
4,825,000 COMPACTS
475,000 COMBINATIONS
(240,000 Table Types)

850,000 BATTERY PORTABLES
1,150,000 AUTO RADIOS

* Estimated manufacturer shipments
Values estimated at list prices

1938

6,980,000 Units
(482,000 Exported)

\$240,000,000 Value
(\$34 Average Price)

1,540,000 Consoles
4,180,000 Compacts
350,000 Combinations
910,000 Auto Radios

CARS WITH
RADIO
6,800,000

HOMES WITH
RADIO

(One or more)
28,700,000

ACCESSORIES...PARTS...ALLIED PRODUCTS... Sold in 1939

RECEIVING TUBES

90,000,000

(Initial.....55,000,000)

(Replacement..35,000,000)

1938

73,500,000

(Initial.....43,500,000)
(Replacement..30,000,000)

REPLACEMENT PARTS²

Including Amateur
and Experimental

FIXED CONDENSERS..\$1,250,000

CONTROLS.....\$ 525,000

RESISTORS.....\$ 410,000

TRANSFORMERS...\$1,400,000

VIBRATORS.....\$ 900,000

²Estimated at manufacturers' selling prices

1938

Fixed Condensers..\$1,400,000

Controls.....\$ 475,000

Resistors.....\$ 390,000

Transformers...\$1,300,000

Vibrators.....\$ 750,000

RECORDS

50,000,000

1938

36,000,000

RADIO TEST EQUIPMENT

\$1,700,000

Estimated at dealer net prices

1938

\$1,500,000

SOUND APPARATUS[†]

COMPLETE PORTABLE SYSTEMS..\$2,750,000

COMPLETE PERMANENT SYSTEMS. \$2,000,000

INTER-COMMUNICATORS.....\$ 700,000

INSTANTANEOUS RECORDERS..\$ 750,000

(Exclusive of recorders in home radios)

[†]Estimated at retail selling prices

1938

Complete Portable Systems..\$2,500,000

Complete Permanent Systems..\$1,700,000

Inter Communicators.....\$ 625,000

Instantaneous Recorders..\$ 580,000

HOME ELECTRICAL SPECIALTIES ^φ

(from *Electrical Merchandising*)

REFRIGERATORS...1,840,000

WASHERS.....1,320,000

CLEANERS.....1,409,500

IRONERS..... 115,000

RANGES..... 340,000

^φ Domestic sales only

1938

Refrigerators..1,240,000

Washers... ..1,031,353

Cleaners....1,305,873

Ironers.... 110,540

Ranges.... 275,000

coach, every airplane, in every classroom, and wherever people congregate.

To this end NAB pledges its cooperation.

NEVILLE MILLER
President

National Association of Broadcasters

LISTS REASONS FOR OPTIMISM

The position of radio in American life reached new heights last year, in its service to the public, wider usefulness, and in technical improvements. The European war, bringing its drama direct to the home, increased public consciousness of the essential service which radio now gives to mankind, and the radio industry took long steps toward future fulfillment of broader usefulness.

Public interest in radio was reflected in 1939 production of over 9,000,000 receiving sets, breaking all records. This was more than double our production of a decade ago, in 1929. How the radio industry has faithfully performed its public service as an industry is marked by the greater value built into receiving sets sold at lower cost. The average retail price of receivers in 1929 was over \$100, while this year, with all the improvements of a decade incorporated, the average cost to the public has been brought close to \$30. This has left the average manufacturer, however, and the industry largely in the position of profitless prosperity. Increased competition and value being built into all radio products, together with increased material and labor costs, plus a crushing burden of taxation, are combined to a point of utmost gravity for the future of the industry and its potential service to the public.

Introduction of regular television programs in New York last spring and of the new and popular portable receivers were features of radio merchandising in 1939. The automobile receiver also was increasingly popular, and many new tubes, of near-miraculous performance, were introduced. There was increased use of two, three, and more radios in the home, and a sharp upsurge in purchasers of combination

phonograph radios and records. The popularity of American radio, always a world's leader, in foreign countries, was not halted during the early months of the war but rather increased through diversion to Latin American and neutral countries.

For 1940 there is the present prospect of indefinite radio drama from abroad, increased purchasing power at home, and the Presidential election campaign which has always brought larger sales volume.

The industry, especially in the new sphere of ultra-high frequencies, will continue its advances in scientific developments from our laboratories which insure future substantial additions of "Radio's Riches" to the public, with some measure at least, it is hoped, to the industry.

BOND GEDDES
Executive Vice President
Radio Manufacturers Association

SEES ALL-INDUSTRY COOPERATION

At this time of the year we all reflect with interest on our accomplishments during the past twelve months, with particular reference to how these may affect our progress during the year ahead.

It has been particularly gratifying to the members of the Sales Managers Club to watch the growth and expansion of our industry organizations. This is especially true since we feel that the progress has been good and that we have had at least a part in helping all phases of our industry.

The organization of the radio parts jobbers and the growth and improved position of the radio servicemen's Association gives promise of a smoother course during 1940. With the servicemen's Association functioning smoothly, with the jobbing Association well organized and in good hands, with the cooperation of the Radio Manufacturers Association and the Sales Managers Club, industry problems can be dealt with quickly.

Speed and smoothness within an industry make for better business and, in turn, better sales and better profits.

The Sales Managers Club plans to continue actively working with

the other Associations to the end that our industry will be active, pleasant and profitable.

H. W. CLOUGH
Chairman
Sales Managers Club (Western Group)

PREDICTS INCREASED PUBLIC CONFIDENCE

The year just passed has seen many important new steps taken to further stabilize the radio servicing business.

Public confidence in radio servicemen is now increasing. Prices commensurate with necessary ability, knowledge and equipment have been established and the whole year just passed has been characterized by a tendency among servicemen to more closely study the business side of their operations.

We are looking forward to good business during 1940. With a definite sales promotion campaign planned and with the national elections in the immediate offing we are very optimistic regarding prospects for all radio servicemen during the year.

GEORGE DUVALL
President
Radio Servicemen of America

RECOMMENDS COST STUDIES

The year 1939 marks an important milestone in the progress of parts wholesalers toward greater stability and profits.

Given the opportunity for wider service due to the increased use of radio, jobbers were quick to take advantage. Better business was reflected in a larger volume, permitting necessary improvements in accounting control and increased sales promotion.

Through improved accounting knowledge was gained a new understanding of the true cost of doing business; through more sales promotion greater attention was given to new markets which could be served by parts wholesalers. The development of industrial sales through qualified technical sales-

(Continued on page 77)

RADIO...plus

MAJOR objective of the radio industry for 1940, and we'll debate the point if there are by chance still dissenters, is upping of the average unit sale from manufacturer right through middleman to dealer.

If the number of units sold as well as their average selling price can be raised . . . and steadily improving economic conditions make this seem possible . . . so much the better. But more profit per sale is the mark to shoot at and this year it is within range.

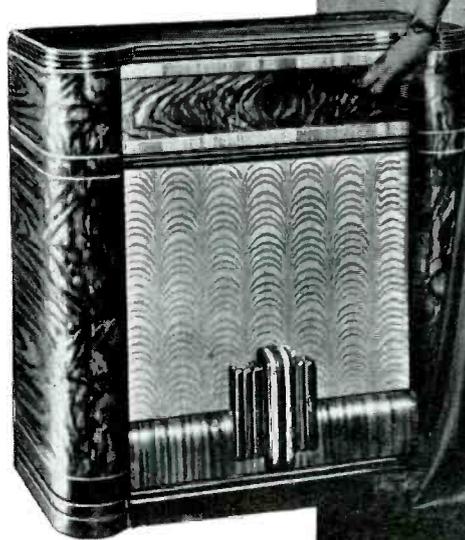
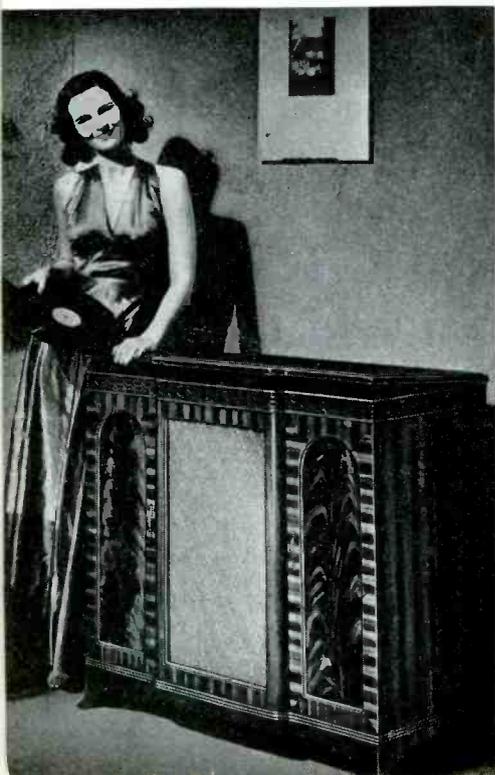
The job won't be done with mirrors. It will take merchandise. And many believe that the key to the situation may well be console type phonograph-radio combinations.

Manufacturers are guessing that this will be a combination year and are backing their gamble with many new machines even now coming on the market to sweeten the winter profit picture. That it is a good gamble seems indicated by figures hot from the statistical mills showing phonograph record sales up in 1939 to a new high and the ceiling still, apparently, unlimited.

Sentiment for concerted industry

GENERAL ELECTRIC

H-118



ADMIRAL

392-7C

effort in the direction of upped average unit sale has been steadily growing for some time but, apparently, could not gather speed until the price depths had been thoroughly plumbed. That this latter method of bolstering business, while perhaps unavoidable in lean times, cannot build long-term profits has now been thoroughly demonstrated and, with few exceptions, a trend in the opposite direction is noted.

Combinations, it is pointed out, are particularly suitable as shock troops packing initial wallop necessary to capture the class market once more. Inclusion of record-playing mechanisms with good ra-

dios provides a plus entertainment feature that is beautifully tangible to the layman, often not too easily parted from more money for straight radio refinements even where these do extend the set's usefulness or materially simplify its operation.

Up near the head of a list of reasons behind the console combination's impending renaissance, too, is an undercurrent of feeling that furniture appeal may in the immediate future once more exert sales magnetism to some extent forgotten when compacts grabbed the spotlight. Furniture appeal, it happens, may

** Table type twin instruments were pictorially reviewed in the October issue.*

MAGNAVOX

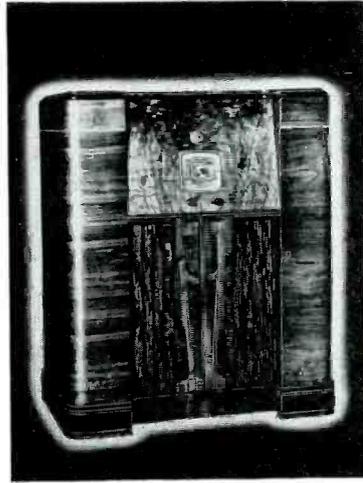
Belvedere

SENTINEL

204-ACE-CB

CROSLLEY

639M

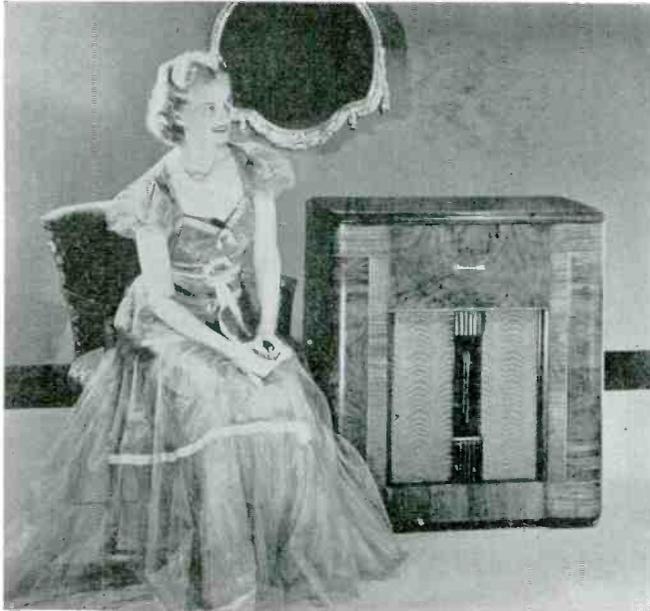


RADIO and Television RETAILING, JANUARY, 1940

CONSOLE COMBINATIONS LIKE THESE, already sweetening the winter market, may be key to higher 1940 unit sale*

FARNSWORTH

AK-59



RCA VICTOR

U-46



PHILCO

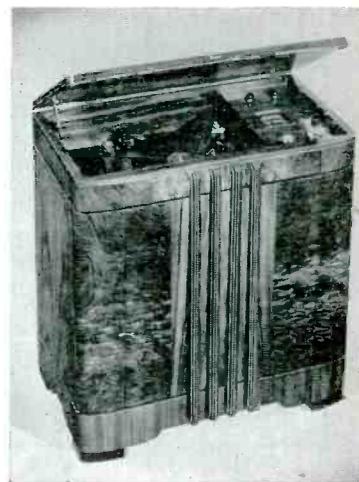
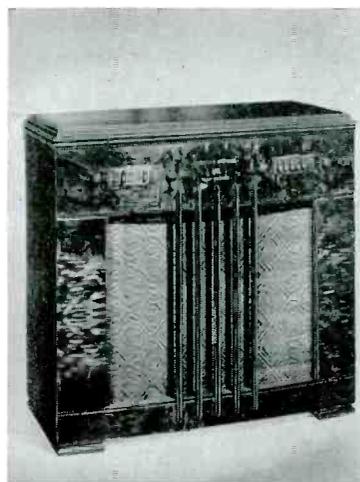
508

STROMBERG-CARLSON 460-PF

STEWART-WARNER 01-6C9-AC

EMERSON

CG-294



ANSLEY

Coventry

HOWARD

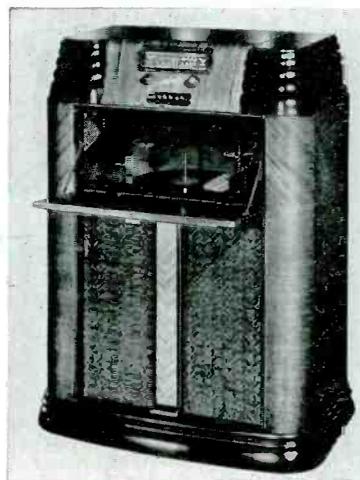
308-APC

MAJESTIC

2C60-P

FADA

64-APC



Many People Become Tone-Conscious The Moment They Play Classical Recordings



BELMONT



WESTINGHOUSE

WR474

793

SPARTON

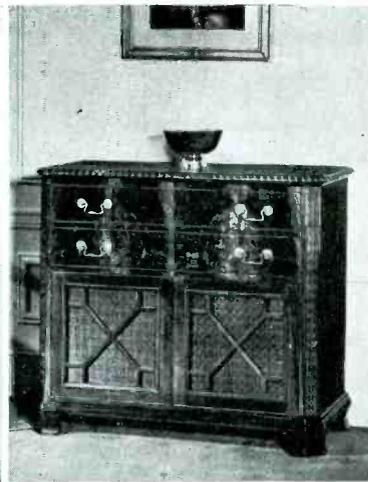
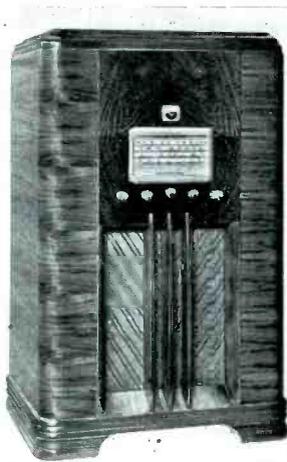
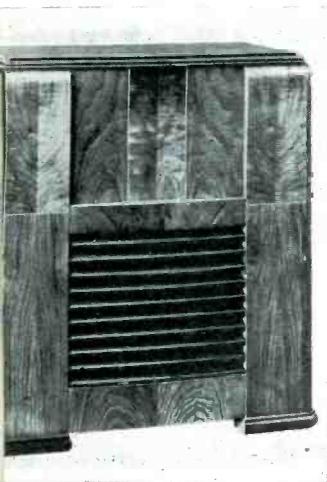
770-PA

DE WALD

1004D

CAPEHART-
PANAMUSE

Chippendale



be most readily worked into combinations carrying sufficient profit margin to absorb good design and cabinetry costs. And provision for record storage, masking of surface scratch as well as the general contour of such necessarily large units furnishes a real challenge for designers, whose efforts may be convincingly pointed to later when the merchandise is actually in the presence of the ultimate purchaser.

Beautiful Buildup

A more beautiful build-up than record-playing accessories and, more recently, table-type phonograph-radio combinations have provided for the ultimate in merchandise at present offered by the industry would be hard to imagine.

The first, an accessory, has introduced records into many homes without them since the early days of the radio business, by sheer price appeal. When the radio with which such a player is used is replaced, as it inevitably must be, what could be more natural than the purchase of one big instrument combining both functions? The second, capturing the imagination of the market in a single season, certainly paves the way for still larger combination models when the desire arises for larger baffle areas, as it frequently does among record addicts.

Curiously, many people who have
(Continued on page 77)

WILCOX-GAY

Recordio

ANDREA

10E8

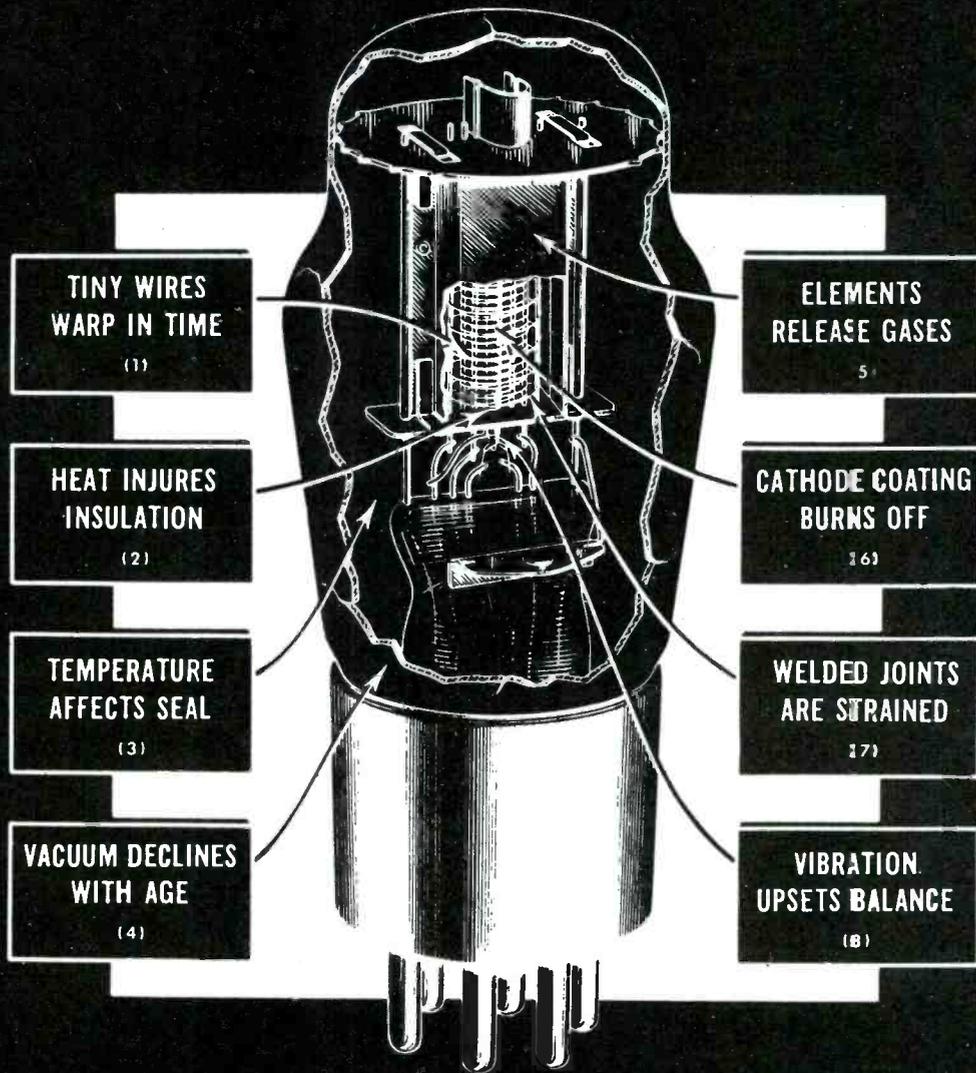


TUNGSTEN · GLASS — SOME MATERIALS USED IN RADIO TUBES: — SILICON · ZINC

MARBLE DUST · WOOD FIBER · STRONTIUM NITRATE · LEAD OXIDE · ZINC OXIDE · LAVA · MICA · TIN · SODIUM CARBONATE · SODIUM NITRATE

CALCIUM ALUMINUM FLUORIDE · RESIN (SYNTHETIC) · ETHYL ALCOHOL · PORCELAIN · POTASSIUM CARBONATE · BAKELITE

Why Tubes should be tested every six months



TINY WIRES
WARP IN TIME
(1)

HEAT INJURES
INSULATION
(2)

TEMPERATURE
AFFECTS SEAL
(3)

VACUUM DECLINES
WITH AGE
(4)

ELEMENTS
RELEASE GASES
5

CATHODE COATING
BURNS OFF
6

WELDED JOINTS
ARE STRAINED
7

VIBRATION
UPSETS BALANCE
(8)

- 1 Grid wires are sometimes much smaller than a human hair
- 2 Some insulation operates at incandescent heat
- 3 Glass and wire must expand equally when heated
- 4 Inside air pressure is 1/100,000,000th that of outside

RADIO and Television
RETAILING

- 5 Power output tubes operate at several hundred degrees
- 6 Variation in cathode coating less than 0.00007 ounce
- 7 Constant expansion and contraction with temperature
- 8 Construction still delicate despite best possible design

See Your Dealer Twice a Year

LEAD ACETATE · MALACHITE GREEN · GLYCERINE · ZINC CHLORIDE · IRON SILVER OXIDE ·

ULTRA HIGH FREQUENCIES

TRADE TIE-IN — Early example of how dealers may harness frequency modulation to build store traffic is this photo (reproduced actual size) of a Scarsdale window, attached to all mail sent customers of Radio Home Service Company



ALTERNATELY afraid something will or something *won't* come along and disturb its now largely replacement market is the radio trade.

The first fear complex is understandable for the replacement market is a good one, with enough second set business to keep it sweet and the spectre of saturation fading each year in the face of continued high unit sales. The second is equally understandable because the replacement market is not so profitable that the industry cares to ignore new and potentially powerful initial equipment prospects.

Thus the trade wants its cake and wants to eat it too. It wants new things to insure future growth but wants them brought along slowly enough to avoid affecting the replacement market one jot. Obviously this is not in the cards. Every business has to take some replacement market disturbance in order to open up new initial equipment markets.

Into Our Lap

Fortunately, developments now in the wind on the ultra high frequencies must fall in our own waiting lap. Radio manufacturers will make the merchandise, radio jobbers will distribute it and radio dealers will retail and service it. It is not a question of "oldtime iceman reestablishing himself in a strange new business or losing his livelihood to purveyors of mechanical refrigeration." Coming expansion of broadcast services on the hitherto virtually unused ultra shortwaves will require no such radical merchandising readjustments for us.

Of even greater importance is the certainty that because of complicated human, economic and technical problems such developments will of necessity become major merchandising factors slowly enough to avoid even temporarily serious disruption of business already on our hands.

Case in point is Television. No one questions its ultimate importance. Yet it has been a disturbing factor in the market for years and

LATEST F.C.C. FREQUENCY MODULATION REPORT

Experimental Licenses Issued (7)

			(mc.)
CONNECTICUT (Meriden).....	WDRC, Inc.....	W1XPW	43.4
DIST. of COL. (Georgetown).....	Jansky & Bailey.....	W3XO	43.2
MASS. (East Springfield).....	Westing. Elect. & Mfg.....	W1XSN	42.6
NEW JERSEY (Alpine).....	Edwin H. Armstrong.....	W2XMN	42.8
NEW YORK (Albany).....	General Electric.....	W2XOY	43.2
" (Yonkers).....	Carman R. Runyon, Jr.....	W2XAG	117.19
" (Schenectady).....	General Electric.....	W2XDA	43.2

Construction Permits (13)

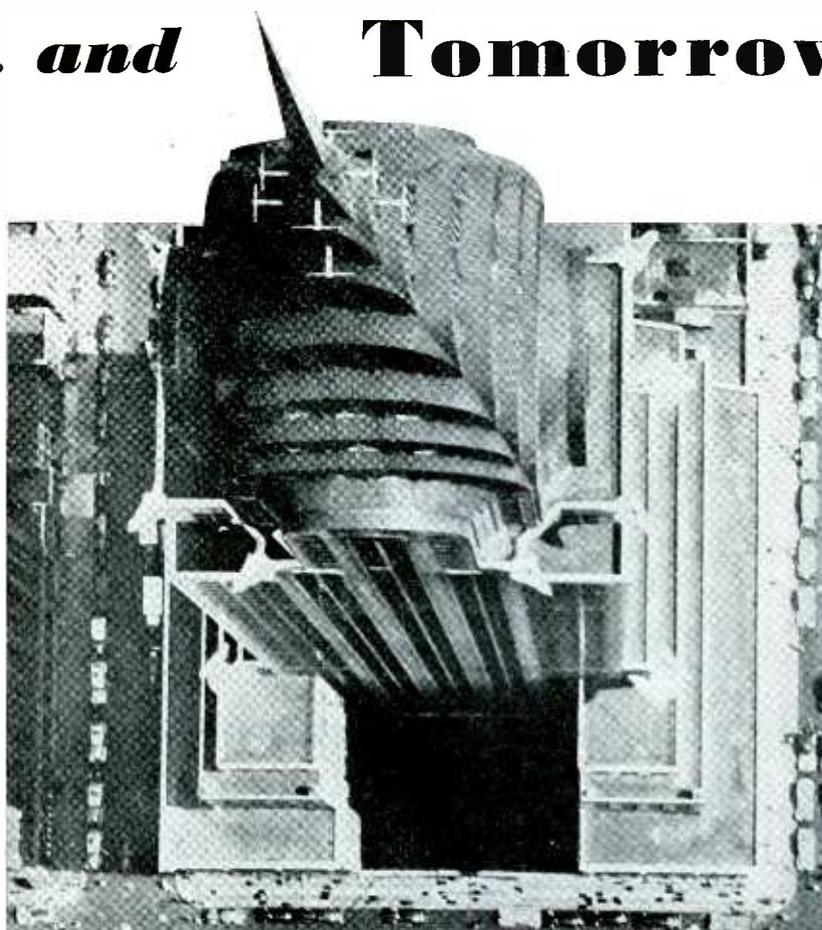
CONNECTICUT (Avon).....	Travelers Brcdstg.....	W1XSO	43.2
MARYLAND (Bethesda).....	McNary & Chambers.....	W3XMC	42.6
MASS. (Boston).....	Westing. Elect. & Mfg.....	W1XK	42.6
" (Holden).....	Worcester Telegram.....	W1XSQ	43.4
" (Paxton).....	The Yankee Network.....	W1XOJ	43.0
NEW JERSEY (?).....	Bamberger Brcdstg.....	W2XWI	43.4
NEW YORK (New York).....	John V. L. Hogan.....	W2XQR	43.2
" (New York).....	National Brcdstg.....	W2XWG	42.6
" (Rochester).....	Stromberg-Carlson.....	W8XVB	43.2
" (Rochester).....	WHEC, Inc.....	W8XAD	42.6
OHIO (Columbus).....	WBNS, Inc.....	W8XVH	43.0
WISCONSIN (Milwaukee).....	The Journal.....	W9XAO	42.6
" (Superior).....	Head of Lakes Brcdstg.....	W9XYH	43.0

Applications Pending (19)

CALIF. (Los Angeles).....	May Department Stores.....		43.0
GEORGIA (Atlanta).....	W. J. Holej.....		43.2
ILLINOIS (Chicago).....	Zenith Radio.....		42.8
MAINE (Portland).....	Portland Brcdstg.....		43.4
MASS. (Boston).....	Boston Edison.....		43.2
MISSOURI (Kansas City).....	Midland Brcdstg.....		42.6
" (St. Louis).....	Star-Times Publ.....		43.0
NEW HAMP. (Sargents Purchase).....	†The Yankee Network.....		42.6
NEW JERSEY (Alpine).....	†The Yankee Network.....		43.0
NEW YORK (Binghamton).....	Hewitt-Wood Radio.....		42.6
" (Marshall).....	WIBX.....		43.4
" (Syracuse).....	Onondaga Radio Brcdstg.....		43.0
" (?).....	Central New York Brcdstg.....		43.2
NORTH CAR. (Greensboro).....	North Carolina Brcdstg.....		42.6
OHIO (Dayton).....	Miami Valley Brcdstg.....		42.6
PENNA. (Allison Park).....	Westing. Elect. & Mfg.....		42.6
" (Philadelphia).....	Pennsylvania Brcdstg.....		43.4
" (Philadelphia).....	Westing. Elect. & Mfg.....		42.6
RHODE IS. (Providence).....	The Outlet.....		43.4

† Request permission to operate on commercial basis.

. . . and Tomorrow's Market



BOMBSIGHT VIEW OF COLUMBIA'S CHRYSLER TOWER TELEVISION ANTENNAS Surrounding the spire are eight horizontal radiators strikingly shown by this Fairchild aerial photo. Over them, New York's long awaited W2XAX, working above 56 megacycles, is now sending test patterns

By W. MacDONALD*

last season undoubtedly caused some radio prospects to hold off buying. But no one has even hazarded a guess as to how much radio business it actually did sidetrack. And the fact remains that in 1939 unit radio sales exceeded 1938 totals.

Television Properly Slow

Television, as saleable merchandise, will grow somewhat in stature this year and yet we see little risk in predicting that it will affect radio sales less in 1940 than in 1939 while proceeding at an orderly pace toward its goal. Practically certain now is a reduction in price, which will help it along to some extent in that direction. Increased and improved program service (considered by many to be the real bottleneck) will undoubtedly be furnished. As an auxiliary service to aural radio it will in

*Editor

some areas be more interesting than last year but in none a dominating factor from the standpoint of sales.

Avoiding speculation relative to the speed at which television will henceforward grow, radio dealers would do well to answer consumer inquiries by simply offering to sell it to those that have the price, live in areas satisfactorily served by transmitters and interested to the point of purchase by experimental programs at present available.

Television, now on its commercial way, need no longer be thought of by the consumer as something the radio business is keeping up its sleeve. The sleeve is now rolled up.

Now Frequency Modulation

Latest phantom feeding the radio trade's fear complex, also cutting its teeth on the ultra highs, is Frequency Modulation. Not quite so

universally accepted from a technical standpoint as television, its efficacy as a means of reducing noise and obtaining higher fidelity at more economical power levels is nevertheless widely appreciated.

Here again we say that whenever and however and wherever it develops as merchandise that may be sold at retail to the average American consumer the present radio manufacturers will make it, the present radio jobbers will distribute it and the present radio dealers will retail and service it.

While frequency modulation will naturally disturb the replacement market even this year to some extent, it is felt that such disturbance can scarcely constitute the difference between a profit and a loss in 1940. And there is some reason to believe that early sale of frequency modulation receivers may compensate for what little regular radio business we lose during the initial development stages to a greater extent than television has so far.

Will Also Take Time

Regardless of what advantages frequency modulation may possess it cannot spread overnight across the country on any scale comparable with present day longwave broadcasting service. Like television, it will take time to grow into widely saleable merchandise, much more time than rumor circulating throughout the trade would seem to indicate.

Refraining from any technical comparison of frequency modulation and conventional amplitude modulation (a course strongly recommended to all merchandisers who might better leave such things to engineers at this stage of the game) it is still possible to convince yourself that frequency modulation can scarcely come fast enough to cause serious merchandising trouble by asking and then answering two simple questions. . . .

Granting that frequency modulation transmissions reduce or even completely eliminate noise (which is

(Continued on page 78)

Again *Farnsworth*



▲ Model BT-20. A marvel of radio design and engineering. Magnificently styled in plastic. An AC-DC 6-tube superheterodyne circuit. 2 bands. Automatic volume control and Built-in-Tenna. An eye-catcher that will move in large volume with minimum selling effort.



▲ Model BT-22. An ideal number for your hottest table model bracket. 6-tube AC-DC superheterodyne circuit. 2 bands. Built-in-Tenna, and push-button tuning for four stations—everything your customers want in a table model.

THE tremendous public acceptance of the Farnsworth Line last Fall was not a matter of chance.

For the Farnsworth organization had been picked from the leading executives of the entire radio industry. Years of experience backed their judgment in anticipating markets . . . in creating the Farnsworth Line . . . and in developing a sound merchandising program to move it.

Farnsworth Radios were winners . . . outstanding buys in the radio business.

Forward with Farnsworth in '40

Today, Farnsworth is far in front again . . . anticipating public taste at the strategic moment by adding new models to its comprehensive line. A number of these smart new models . . . together with *proved sellers* of the past season . . . are shown here. Look them all over. They're going to move fast because they're what your customers want.

They follow the Farnsworth policy of working from *the dealer's point of view* . . . giving him new merchandise at the strategic time when he can use it . . . and putting more dealer profit back into the radio business. See your Farnsworth distributor immediately. Get the details of the profitable Farnsworth program for the months ahead.

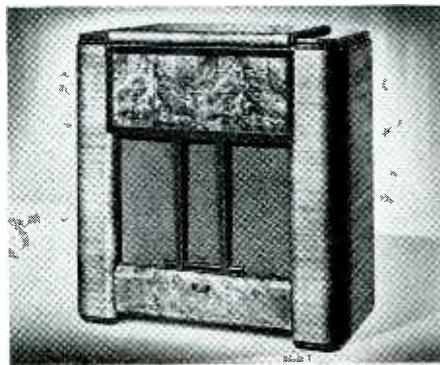
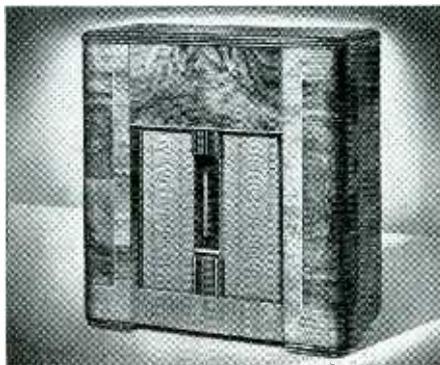
Farnsworth Television & Radio Corporation, Fort Wayne and Marion, Indiana

FARNSWORTH ALSO LEADS IN THE COMBINATION FIELD

Model AK-59. This beautiful radio-phonograph combination proved to be the hit of the season. Plays 10 twelve-inch or 12 ten-inch records automatically. 7 tubes. 2 wave bands. Built-in-Tenna. Push-button tuning. Television-sound connection. And priced to *sell on sight!*

Model AK-86 is another "hot" model in the Farnsworth "step-up" combination line. Charming cabinet. Plays 10 twelve-inch or 12 ten-inch records automatically. Drawer for records. 8 tubes. 3 wave bands. Push-button tuning. Television-sound connection. A big bargain.

Your hard-to-please customers—those who want the finest, will buy the authentic Chippendale period design of radio-phonograph model AK-96. Plays 10 twelve-inch or 12 ten-inch records automatically. 10 tubes. 3 wave bands. Push-button tuning. Television-sound connection.



Anticipates Popular Demand



It's still the greatest value in radio. Model AC-70 has proved it's the best bargain in the business. Here's a real traffic producer . . . priced to compete with anything on the market in its class. Read over the features that make it a lot of radio for the money: A distinguished cabinet. 8 tubes. 3 wave bands. Flo-Lite dial. Shielded rotatable Bilt-in-Tenna. Automatic volume control. 12-inch electro-dynamic speaker. Phonograph and television-sound connections . . . all at a price that says "Buy me."



Model BC-81 in tune with the times—a new note in cabinet design, packed with eye-appeal that makes it the show spot in any line-up of radios. 8 tubes. 3 bands. Automatic volume control. Continuously variable tone control. Shielded rotatable Bilt-in-Tenna. 12-inch electro-dynamic speaker. Phonograph and television connections. See it, hear it, and you will sell it.

Model BC-102. Massiveness combined with dignity in cabinet styling for those who want a big package—big in appearance, big in value, and outstanding in performance. 10 tubes. 3 bands. Shielded rotatable Bilt-in-Tenna. Automatic volume control. Continuously variable tone control. 12-inch speaker. Television and phonograph connections. Even its low list provides a wide margin for trade-ins—a natural step-up model.



INCREASED SALES

Don't ALWAYS Produce

INCREASED PROFITS

IN EVERY BUSINESS there is a certain volume which can be handled most efficiently and most economically

HOW often you hear a dealer say "If I could increase my sales enough, I could make some *real* money in this business."

And he's right, but when you start out to "buy volume," it's better to know what you're doing, than say "I kiss your hand, Madame" to Lady Luck.

In *every* retail business certain expense is incurred *everyday* when the door is unlocked, and it goes on day by day regardless of the amount of sales.

When sales go up, this fixed expense takes a smaller percentage of each sales dollar, and so leaves more for profit.

In most cases a dealer can handle from 20 to 30 per cent more business without increasing his facilities or his personnel, *if the business comes to him.*

But that is "where the shoe pinches."

To get more people to come to your store, some inducement must be made, either in stronger advertising, special sales events, or reduced prices. And these all increase expense.

If it *costs you more to get the increased sales* than the additional profit resulting from the sales, you have gained little or nothing. You may even lose.

When you "go after" volume it's a mighty good idea to plan carefully, and know what you're doing.

Let's look at some typical expense figures:

Annual Sales.....	\$15,000	% of sales
*Salaries—Owner	1,245	8.3%
Salaries — Sales and Service	1,800	12.0
*Rent	450	3.0

Advertising	240	1.6
*Heat-Light-Phone	225	1.5
Service-Delivery	330	2.2
Interest - Insurance - Taxes	345	2.3
*General	235	1.6
Total	4,870	32.5
Expense—fixed in dollars	2,155	14.4
Expense — varies with sales	2,615	18.1
Cost of Merchandise..	9,000	60.0
Gross Profit.....	6,000	40.0
Expense	4,870	32.5
Net Profit.....	1,130	7.5

Notice, that the items starred (*), are those expenses which do not increase with sales, and they total 44.4 per cent of the total expense, 14.4 per cent of sales.

Cost of Merchandise at 60 per

Second of a Series About

Modern Management Methods

NEXT MONTH: "How to Match Wits With the Chains"

cent indicates that most merchandise is sold at list price, with about 10 per cent trade allowance.

Advertising is very low.

Certainly this sales volume has not been forced, much more volume can be had.

We know from long experience that—

10 per cent price reduction

should increase sales 15 per cent.

15 per cent price reduction should increase sales 25 per cent.

20 per cent price reduction should increase sales 33½ per cent.

The average dealer can handle 20 to 30 per cent increase in sales without fixed expense increase. So let's see what happens when we get 33½ per cent increase in unit sales, say by reducing prices.

Though selling and advertising costs might easily go up, we will hold them at the same percentage of sales for purposes of the example.

First let's cut price by 20 per cent—

Sales go up 33½ % to	\$20,000.
Cost of Merchandise becomes...	15,000 or 75% of sales
But increased volume gets a 10% better price—so we save.....	1,500 or 7.5% of sales
Gross Profit is now	6,500 or 32.5% of sales
Fixed Expense remains	2,155 or 10.8% of sales
General Expense goes up to.....	3,620 or 18.1% of sales
Total Expense is now	5,775 or 28.9% of sales
Net Profit is.....	725 or 2.6% of sales

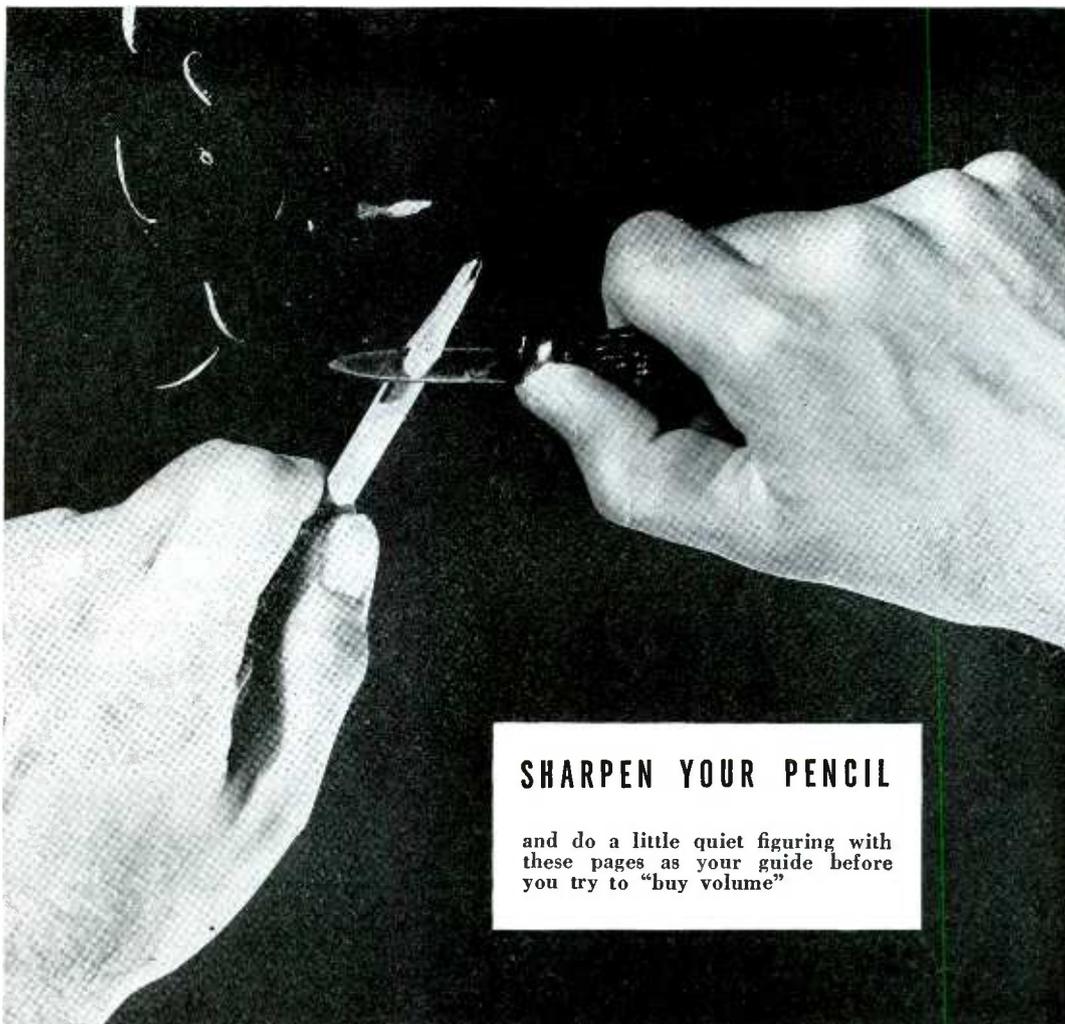
What has happened?

Expense has gone down from 32.5 to 28.9%—a drop of 2.6%.

Sales have gone up 33½%.

But a more significant answer simply is that when we cut prices by 20%, we raised the cost of merchandise from 60 cents out of each sales dollar to 75 cents of each dollar.

Suppose we got a 10 per cent better discount for quantity buying. That only brought our merchandise cost down to 67.5 per cent, which



SHARPEN YOUR PENCIL

and do a little quiet figuring with these pages as your guide before you try to "buy volume"

is still an *increase in cost* of $7\frac{1}{2}$ cents on every sales dollar.

We *saved* 2.6 per cent in expense, but *lost* $7\frac{1}{2}$ per cent in merchandise cost, and that's a *net loss* of 4.9 per cent anyway you look at it.

We bought a substantial sales increase, but we *paid too high a price* for it.

Easy to Fool Yourself

When you begin thinking of "going after volume," take out your pencil and figure.

Take your own operating figures. See just what expense is fixed.

How much more business can be handled before store facilities and personnel have to be increased.

How much better you can buy.

How much more you will have to spend for advertising.

What you will do with your trade-ins, to get your cash out of them.

How much you can reduce your

prices, before you take it out of your profit pocket.

Figure these factors carefully, accurately, for if you're wrong, you have fooled yourself, and taken money out of the bank.

It is true that

1. Sales volume is an important factor in profits.

2. Expense to sales ratio declines as sales go up.

3. Expense is paid with margin.

4. Margin is the difference between the selling price and the cost of your merchandise.

5. When you cut price you also cut margin, unless you can effect an equivalent reduction in the cost of your merchandise.

6. Less than half of your expense is fixed.

7. Too many dealers pay too high a price, when they buy volume.

In every business there is a certain sales volume which can be han-

dled most efficiently and most economically.

That is an important thing for every dealer to *know* about his own business.

There is also an amount for advertising, wisely spent, which produces the best sales response for dollars spent.

That's the amount to *know and to spend*.

There is also a price level, a markon, a discount from list, which, together with the preferred sales volume, will produce the maximum margin, and result in the best profit.

That is a vital factor to know.

If you don't know these vital profit-making triplets in your own business, then your profits are based upon luck and "Lady Luck" is very fickle. She loves you today, but kisses another tomorrow.

And that's no way to run any business, or let any business run you.

UTAH *PLUS*



COMBINING TWO OF THE MOST SPEAKER



G. Hamilton Beasley
President

In announcing the association of Peter L. Jensen with the time-proved Utah organization, the consequent benefits to manufacturers, sound-men and service-men are undoubtedly obvious. Users of all types of speakers for original equipment or replacement requirements have long recognized the respective advantages and superiority of speakers bearing the Utah trademark and those carrying the name of this speaker pioneer.

Utah's background of 18 years of speaker designing, engineering and manufacturing skill will be

ENLARGING THE ORGANIZATION RADIO INDUSTRY



J. W. Caswell
Vice-President



W. Dumke
V.-P., Charge of Prod.



H. S. Neyman
Secretary & Treasurer



O. F. Jester
General Sales Manager



W. A. Ellmore
Chief Engineer



J. M. Hume
Sales Engineering

UTAH RADIO PRO

820 ORLEANS STREET

Canadian Sales Office—414 Bay St., Toronto, Canada

VIBRATORS • TRANSFORMERS

PETER L. JENSEN



OUTSTANDING NAMES IN HISTORY

reinforced by the experience in speaker development and improvement which has won world-wide acclaim for this radio speaker authority, now a member of the Utah staff.

It is a foregone conclusion that Utah's policy of aggressive research and product development will be maintained—that Utah products will continue to keep abreast of all industry developments—that Utah will serve you better than ever before.

(Signed) *Hamilton Beasley*
President, Utah Radio Products Company



Peter L. Jensen
Vice-President

WHICH FURNISHED THE 5,963,621 PARTS DURING 1939



F. H. Wilke
Sales Engineering



R. M. Karet
Sales



D. H. Caswell
Sales



R. H. Hutmacher
Sales



P. H. Heckendorn
Sales



F. E. Ellithorpe
Sales

DUCTS COMPANY

CHICAGO, ILLINOIS

Cable Address: Utaradio Chicago

SPEAKERS • UTAH-CARTER PARTS

UPS SALES 27%

1

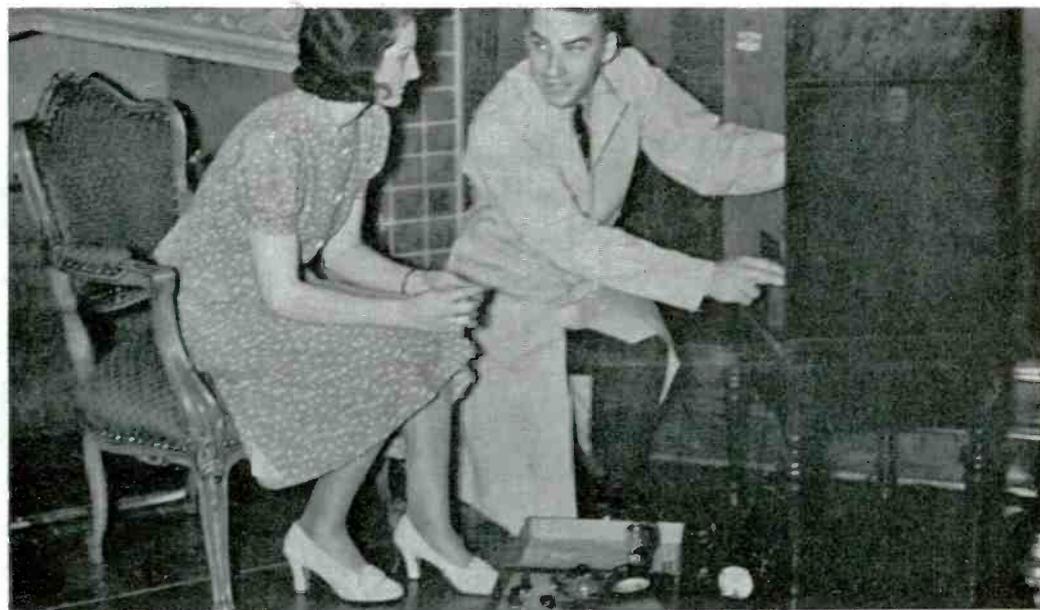
PUTS RECORDS TO WORK—Buyer Henry E. Tague checks every call for service, furnishes salesmen with facts concerning the set's age, make, original price and present credit standing of the customer. Following up after the serviceman, men so fortified sell 27 per cent of all service customers within four months. Semi-annual mailings are made to customers from whom the store has not heard



System used by Grunbaum of Seattle to move more new sets through service customers and replacement tube buyers explained

2

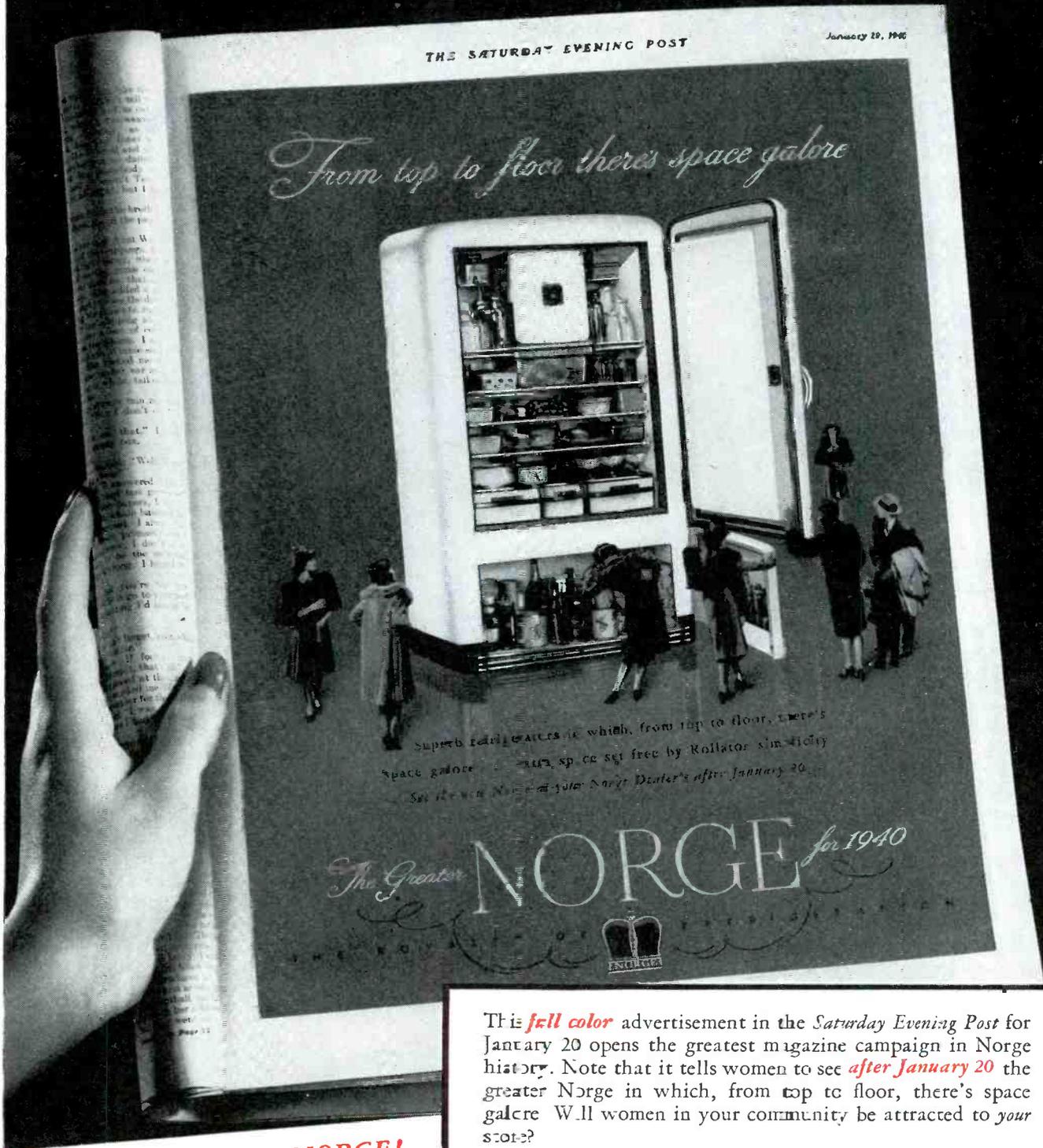
REPLACES RE-SOLD TRADE-INS—Grunbaum sells used sets in order to keep its trade-in investment down. Within the 30-day guarantee period, however, the store offers to apply full purchase price against that of a new radio. Ninety days after a used set purchase the customer receives illustrated circulars on new sets and many become repeat buyers



3

TUBES ARE THE TIP-OFF—To ten per cent of all people who bring full sets of tubes to the store for testing new receivers are sold within six months. The trick is to be sure they stay long enough to examine new models and then to follow them up by mail and in person if the types brought in for check indicate an old set

Will this be *your* advertisement?



Many dealers have gone NORGE!

There still may be an opening in your community . . . an opportunity to be with Norge in 1940. For complete information, wire or

Sign and mail the coupon today!

This **fall color** advertisement in the *Saturday Evening Post* for January 20 opens the greatest magazine campaign in Norge history. Note that it tells women to see **after January 20** the greater Norge in which, from top to floor, there's space galore. Will women in your community be attracted to *your* store?

NORGE DIVISION, BORG-WARNER CORPORATION
670 East Woodbridge, Detroit, Mich.

Without obligating me in any way, let me have complete information about Norge for 1940.

Name _____

Address _____

City _____ State _____

RR-102

REFRIGERATION ?

If Not . . . Why Not?

HERE, solemnly states salesman-author Oden, is a story which should subtly sell more radio dealers the idea of handling boxes. Somewhere, he says, he has heard that such suggestions should always be carefully, cleverly, cannily sugar-coated.

Never, the Editors aver, has he ever heard this from us. Because we too feel that "the taking on of refrigeration would be the finest, the most progressive, the most sensible, the most business-like and least doubtful step many radio dealers could possibly take."

We let Oden, self-styled master of subtlety, tell you why . . .

LAST month we talked about the salesman's fancy and how it turns to selling boxes in the spring, but turns to getting ready to sell them long before that. Then I got to thinking about the dealer—the radio dealer who *doesn't* sell refrigeration. This month I think we should talk to him.

The idea, of course, is to get him to take on a line of boxes. That's the fundamental idea behind this article. But I heard somewhere that such suggestions should be sort of subtle. And so, always willing to conform to any conventionality, I shall be very subtle:

I think that taking on a line of refrigerators would be the finest, the most progressive, the most sensible, the most business-like, and the *least* doubtful step many radio dealers could possibly take.

I want to tell you why I think so. And in telling you why, I will not be telling you anything which isn't already common knowledge in the home specialty field. Radio dealers already selling boxes will verify everything I say. But I am writing on the assumption that there are radio dealers, not selling boxes,

* Philadelphia, Salesman.

By CASWELL ODEN*

who may not be entirely familiar with the points I am going to discuss; so here, briefly, I submit the reasons why I think you should sell refrigeration:

Trade-in

Many people believe their old radios are worth a lot of money in trade. *You* know this. But they seldom expect to get much of an allowance for an old ice box—and sometimes they don't expect to get anything. Any refrigerator salesman or dealer will tell you this.

In the first place, this gives us a proportionately larger net profit on the box—when we *do* make a sale. But do I have to remind any radio dealer of the part this *expectation* on the part of the public often plays in our *chances* of making a sale?

Service

When something goes wrong with a radio, we send our *own* serviceman on the call. When something

goes wrong with a box, we generally just reach for the telephone. We call the distributor and tell him to get somebody out there in a hurry. "And what's the matter with your boxes anyway?" we *rub it in*, jokingly—just to make sure that he doesn't forget that he ought to be glad we're carrying *his* line.

There are two points where you definitely have an important edge. Now let's consider taking them on. Maybe you have the idea that boxes are hard to sell, that there is not in your organization the necessary "sales fire-power."

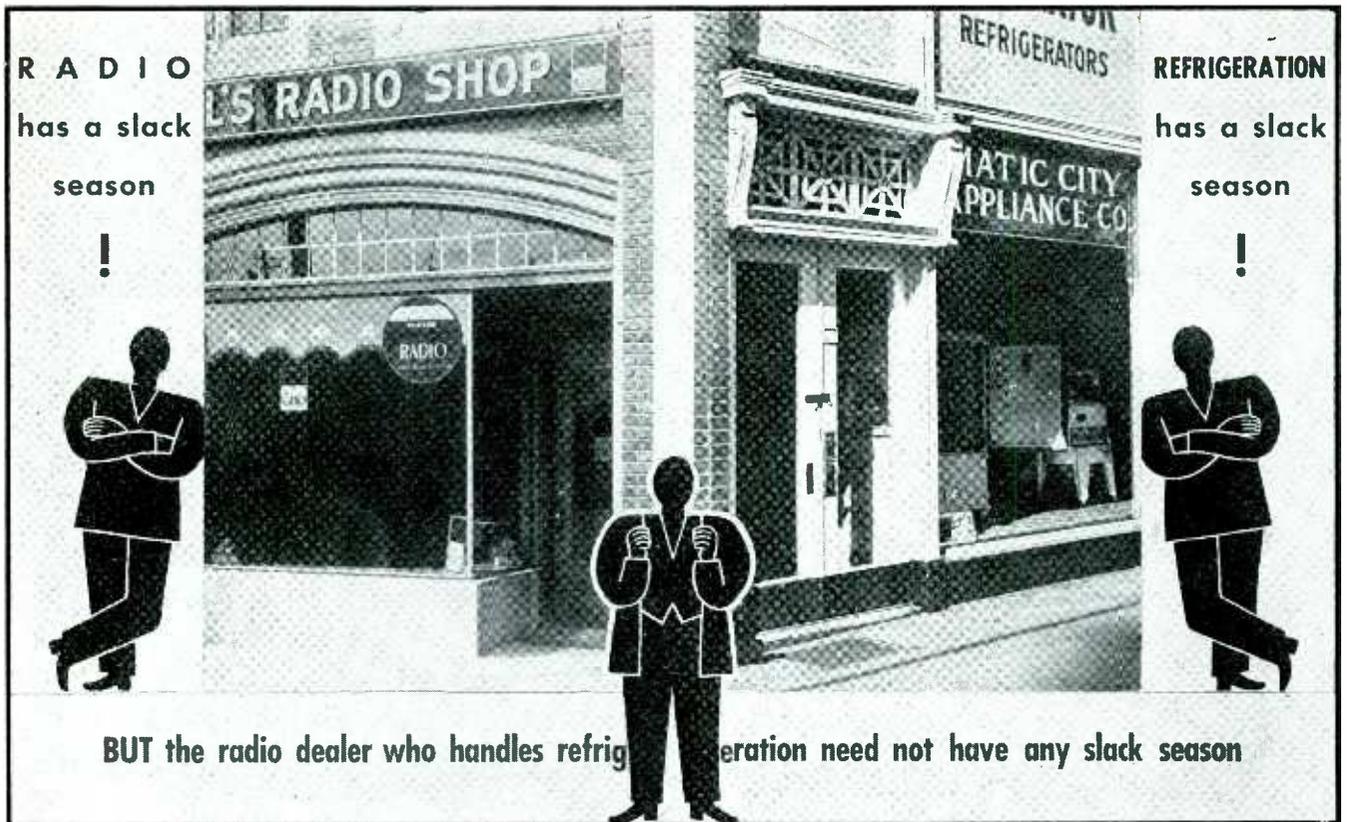
Salesmanship

I have already pointed out, by exposition, by illustration, even by diagram, that a box is easier to sell than a radio. They would be easier to sell even if the radio market were *not* a replacement one. They would not, however, be easier to *get the order* for—because people buy entertainment whether you sell it to them or not (if they don't already have it).

It happens, however, that today the radio market *is* a replacement one. We don't sell radios today; we replace them. And *replacing* this entertainment device requires a mighty fine salesman. In fact, it requires two salesmen (for best results). One to place several radios on trial every day with some of the most beautiful selling you ever heard. Another to call back and just squat there in the house, selling himself, until the prospect simply can't resist giving *him* the order. In spite of the fact that she already has a radio. In spite of the fact that

THIS is Exactly the Time

To make the most of refrigeration's spring and summer peak the spade work must be done in January and February



she is going to have to *pay* for this new one if she buys it.

Replacing radios requires salesmanship, of the highest order. If you or your salesmen can replace radios—for anybody but people who approach *you* for that purpose—you would certainly be a humdinger with boxes. Because there you would have something to *sell*, not replace. And, in addition, you would have something which *can* be sold.

Place of Business

This depends upon what we're talking about.

Are we going to wait for business to come to us? Then we need a lot of things. Good location in a business district. Clean, attractive store. Displays . . . *tricky* displays, to make people stop and look in the window. Advertising. In the newspaper. Over the radio. You know all this, don't you? You've read, before, about all the different things you need to sell boxes.

So what? You need the same things for the *radio*, too—under the *same circumstances*.

But do you have any men to go

out and *find* business—radio business? If so, then given a hole in the wall somewhere. . . .

Seriously, any store where you are selling radios is just the store for refrigerators. Even if it is just a repair shop with a test table and a couple of radios—it's still a good place *from which* to sell boxes.

You wouldn't like to bring anybody into such a place, to look at a box? You wouldn't have to, if you didn't want to. About nine out of ten box prospects can be sold from a picture. And the other one . . . you or your men can take him into the distributor's and sell on his floor.

Honestly, I'm not trying to be funny about all this. Right now I'm thinking about the guy who has one box on the floor of his brother's tailor shop—and six outside salesmen working for him.

Ask *yourself* a question: If tailors and undertakers and tire dealers and grocers want to sell refrigerators—is there any reason why a *radio* dealer shouldn't want to?

Believe it or not, you don't need as *large* a store to sell boxes as you need to sell radios. When we're

selling radios, right, we place a lot of them on trial—and consequently we need a big stock on hand, which takes up space. Boxes can be, and in many cases are, delivered direct from the distributor—and that doesn't take up *any* space in your store.

Store? If it's large enough to sit down in while you fix up contracts, and has a telephone in it so you can call the distributor and arrange for deliveries—then you're all set to sell boxes!

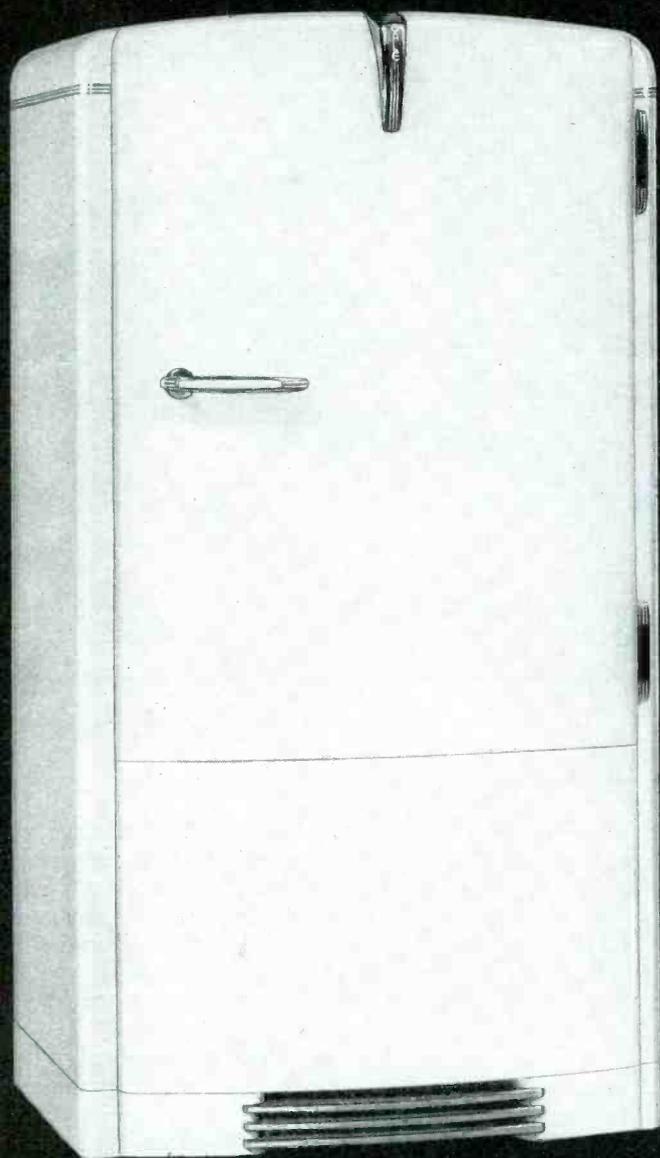
Seasons

I've already pointed out, recently, from both the salesman's and the dealer's point of view, that the larger number of items we have to offer, the more business we get. But let's say you don't want a department store.

All right. Radios and refrigerators should still go together. Each has a slack season—but at different times. Put the two together—and each item offsets the slack season of the other.

And as for *you*, the dealer, you won't have any slack season at all!

GET VOLUME WITH **GALE**



The 1940 GALE De Luxe 6

IF YOU ARE LOSING sales to price competition . . .

IF YOU ARE SELLING no-profit leader models

IF YOU ARE LOADED with too much inventory . . .

YOU NEED GALE! This year Gale gives you more than ever! A dynamic 1940 line of striking beauty — a revolutionary new merchandising plan — and the profit-building direct-from-factory sales policy!

VOLUME MARKET! Of course, today's buyers are price minded! They know values. They compare features. They demand quality. Gale refrigerators are superbly designed and built. They are priced to build sales against any competition.

FULL PROFIT! The Gale policy assures you a full margin of profit on EVERY GALE refrigerator you sell. There are LEADERS in the Gale line but not LOSS LEADERS!

UNHEARD-OF FLEXIBILITY! You can do things with the Gale line that you can not do with any other. You actually stock fewer refrigerators yet have more models to show your prospects! Think what that means in profitable turn-over!



EVAPORATORS are offset to provide maximum, usable space. 9-point illuminated cold control dial. Modern plastic trim.



MEAT KEEPER is BIG: Holds 12 lbs. of meat or TWO dressed chickens! Durable white porcelain with plastic handle.



ICE CUBES are made in abundance by the super-powered Gale! Quick Release type ice cube trays give new convenience!



VEGETABLE BIN is the simplest, handiest you've ever seen! Metal grid slides out for easy cleaning. Dulux finished.



EQUALIZER adds to 'Mechanical Iceberg's' amazing efficiency — reduces operating costs. It's an exclusive GALE-built feature!



SLIDING SHELVES make everything readily accessible in GALE refrigerators. Special telescoping design — won't stick.

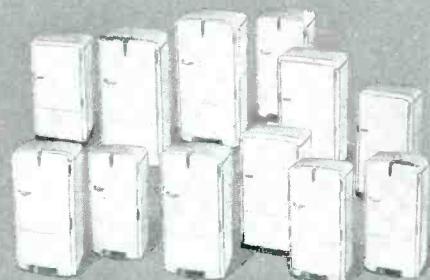


MECHANICAL ICEBERG UNITS! You will be tremendously enthusiastic about the GALE 'Mechanical Iceberg' units! These super-powered units are marvels of precision manufacture—silent, economical and efficient. Available in either the CONVENTIONAL open or the HERMETICALLY sealed design.

REVOLUTIONIZES Refrigerator MERCHANDISING

GALE "KIT PLAN"

- Cuts your investment in **INVENTORY!**
- Gives you **MORE MODELS** to **SHOW**
- Takes the **GAMBLE** out of buying
- Makes **YOU** the tough competition
- Builds **VOLUME** and **PROFITS**



YOU SHOW PROSPECTS THIS DYNAMIC LINE OF 12 MODELS

... BUT YOU STOCK ONLY THESE



"GALE SELLS DIRECT FROM FACTORY TO DEALER"



Q. What is the Gale "Kit Plan"?

A. A simple, practical plan whereby you can show **TWELVE** refrigerators but stock only **SIX** plus necessary kits.

Q. How Does Gale Procedure Differ from Others?

A. Gale refrigerators are shipped to you with nothing in the food compartment except evaporator and shelf hangers.

Q. What is a Kit?

A. A kit is a set of food compartment equipment including the shelves, ice trays, hydrators, etc., necessary to completely equip a refrigerator.

Q. How Does the Gale "Kit Plan" work?

A. By stocking only one refrigerator of a given size and several different kits, you convert that refrigerator from one price class to another by simply changing the kits.

Q. How long does it Take to Change Kits?

A. One kit may be taken out and another placed in the refrigerator in about two minutes. No tools of any kind are needed.

Q. How Much Can I Save on Inventory?

A. That depends on the sizes you stock. With the 6 ft. DeLuxe you can order one refrigerator and four kits—giving you the equivalent of **FOUR** 6 ft. models to show—for only about **50%** more than the cost of **ONE** refrigerator.

Q. How Does It Simplify My Buying?

A. The Gale "Kit Plan" takes the gamble out of buying. By ordering **SIZES** you know you will need plus an assortment of inexpensive kits you can easily determine exactly which models are most popular with **YOUR** trade.

Q. How Does the "Kit Plan" Help Me Sell?

A. 1. By giving you more models to show. 2. By making it possible for you to meet any **PRICE** or **FEATURE** competition **INSTANTLY**. Whether you are a large or small volume refrigerator dealer, the Gale "Kit Plan" will decrease your costs of doing business and make **YOU** the tough competition.

GALE UNDERSTANDS WHAT DEALERS WANT!
You make your full margin of profit on every sale. And, there's no battle over quotas—no high pressure from the factory—**BUT**—all the help and cooperation you need. We sincerely believe that the GALE franchise is the fairest, squarest that can be written. See if you don't agree! See GALE at the show—write for details.

GALE PRODUCTS
Division of Outboard, Marine & Manufacturing Co.
GALESBURG, ILLINOIS

GALE Products
1627 Monmouth Blvd.
Galesburg, Ill.
Gentlemen:

I'd like to know more about the 'Kit Plan,' the Gale line and your dealer proposition. Please send full details, without obligation.

Firm Name.....

Address.....

City..... State.....

By.....

PHOTO Shorts

Pictures by
NAOMI SWETT GRAY



1

CANNY GROUPING STARTS SALES LOOPING—Table models are displayed in a room "salted" with \$75 consoles and the latter are always demonstrated as part of the standard solicitation. 70 per cent of all people who buy in this bailiwick fill logical needs with compacts but 15% of the buyers who first ask to see table-types sign up for larger

2

SELL-UP STRATEGY, ONE STEP HIGHER—Prospects for consoles at about \$49.50 are immediately shunted to another room, find themselves far from immune to the suggestion that they spend just a few dollars more for swankier models up to \$139.50, shown in the same area. 35% are stepped up

3

COMBOS FOR THE MAN WHO LOOKS LIKE MONEY—To still another room go people who express interest in sets at about \$100. Here, they find types at that price, plus combinations above \$150. 70 per cent spend between \$150 and \$200 while 5 per cent with combinations in mind when they enter wind up between \$200 and \$450. (Record sales add 20 per cent to Hopper-Kelly's gross)





6 STEPS

that boost unit sale, preserve profit for Seattle's Hopper-Kelly Company*

* Buyer Tom Carmichael says 35% of volume is obtained from consoles and combinations above \$100, 45% from sets over \$50.

4

TRADE-IN "BONEYARD" KEEPS PROFITS SWEET—Allowance is limited to 10 per cent of each new set's list. Most convincing argument for man who thinks his heirloom worth more is trip to this basement boneyard, where he is likely to see one or more like it gathering dust

5

HAMMERING INITIAL SALES COST DOWN — Three-way approach avoids home demonstrations. Salesmen point out: (a) That any set purchased may be returned for full credit within 30 days against purchase of similarly priced or better model. (b) That the store's stock of five major lines assures customer satisfaction under this plan and, (c) That this policy eliminates the necessity for palming off on any customer a demonstration-worn radio

6

BUILDS BUSINESS YEAR 'ROUND WITH PORTABLES—Battery carryabouts are pushed throughout the winter to students, travelers and second-set buyers. Buyer Carmichael considers them unique in that they rarely kill a "fixed-spot" sale, build store-traffic. (Portables accounted for 8% of the company's gross in their first year on the market)



**Now—the Most
SENSATIONAL NEWS
IN REFRIGERATION
Is Ready!**

**PHILCO
REFRIGERATOR
for 1940**

*The Most Profitable
Franchise of the Year!*

Philco All Year 'Round for Profits All

PHILCO DISTRIBUTORS NOW IN CONVENTION

Right now, Philco distributors from all parts of the country are attending the biggest Mid-Winter Convention in Philco's history, at Palm Beach, Florida, and Coronado, California. There, for the first time, they are seeing the sensational new 1940 Philco Refrigerator . . . getting the full story of the greatest refrigeration line ever to greet the eyes of the trade.

And what a story it is! A completely new refrigerator that smashes all tradition . . . that brings to the buying public a new idea of refrigerator service and value. An advertising, promotion and merchandising program that sets a new pace—a *Philco* pace—in refrigeration. And a dealer *contract* that offers a balanced, permanent, *All Year 'Round* source of profits!

Your Philco distributor will be back home in a few days, bursting with the news and primed to give it to you in his local dealer meeting. Don't fail to attend and hear first hand the most important refrigeration profit story of 1940.

*Be Sure to Attend
Your Local Meeting!*

Year 'Round

HOME RADIO • AUTO RADIO • TELEVISION • PHONOGRAPHS • RADIO TUBES
PARTS • REFRIGERATORS • AIR CONDITIONERS • DRY BATTERIES

How to Figure CAR ALLOWANCES

By **FRED MERISH***

COMPENSATING salesmen and servicemen for the use of their own cars on company business is a problem to many retailers.

Our research on this subject among radio and appliance dealers discloses that 40 per cent pay no car allowances at all. Of the remaining 60 per cent, breakdown shows that:

- 65 per cent pay a flat rate per week or day
- 30 per cent pay a flat rate per mile
- 5 per cent pay actual car expenses

The average daily allowance is \$2, weekly allowance \$10. The average flat rate per mile is 4¢.

So Much Per Day, Week

Among dealers paying flat rates per day or week, we find that figures are set arbitrarily in 80 per cent of all cases. But we also learned that about 70 per cent of such dealers employing more than one outside man frequently experience dissatisfaction due to territory variables.

A man who covers 500 miles weekly resents the fact that another covering 300 receives as much allowance. A man working an outlying or rural section does more driving than one working a closely-knit territory where he can park his car in a neighborhood and canvass on foot.

We find there is a trend, where paying daily or weekly allowances, to consider the mileage covered and territory and vary allowances accordingly between men to keep peace. Those who have already adopted this change state that it has eliminated discord.

Flat Rate Per Mile

When paying a flat rate per mile dealers do not always compute actual mileage costs from week to week. Most of them use an average figure.

To get this figure, the general method is to compute the gas, oil, tire upkeep and repair cost (vari-

able expenses) and then add depreciation, garage rent, license and insurance (fixed expenses). Depreciation is estimated at 20 per cent of new car cost (average new car cost estimated at \$1,000).

Dividing this total expense figure by 20,000 (considered a good average annual mileage) gives the flat rate per mile allowed the salesman for car compensation.

Here is an example:

Gas (20,000 miles—15 to gal. @ 18¢)	\$140
Oil (1 qt. to 5 gal. gas—267 qts. @ 25¢)	67
Tires (4 tires—20,000 miles)	50
Lubrication	15
Repairs (10% of car cost)	100
Garage rent	60
License	10
Insurance (fire, theft, liability)	50
Depreciation	200
TOTAL	\$692

In this case the dealer could allow a flat rate of 3.5 cents per mile, arrived at by dividing \$692 estimated yearly cost of operation by yearly mileage.

It may seem that this computation is high for some cars and low for others but, in the long run, it averages up fairly well.

Only 5 per cent of those dealers contacted on this field study pay actual car expenses.

In such cases, a report form is filled out, giving mileage per day,

territory or route covered and general car expense paid, in detail. Speedometer readings appear on this report.

Such expense charts are kept in a binder and checked up from time to time to note excessive expense items or unwarranted general increases in operating costs.

Some Clever Variations

Some dealers use the car allowance as a sort of bonus. If a salesman sells a certain quota of radio, electric refrigerators or sound products, the car compensation is allowed. If he falls under the quota, he receives no car compensation.

Some dealers gear car allowance to sales volume. For example, a \$2 allowance for every \$100 in sales closed, the ratio depending upon the individual proposition.

Still other dealers interviewed split car expenses with men, usually 50:50, but here too most dealers absorb all the expense if the salesman reaches a stipulated quota of sales.

The bane of all sales managers and dealers is the salesman who purposely skips a follow-up in an outlying section merely because the call is so far away that he doesn't care to pay for car mileage.

Three PRACTICAL PLANS

Among dealers who make such allowances (60%):

65% Allow an Average of \$2 a Day (or \$10 a Week)

30% Allow an Average of 4c a Mile

5% Pay Actual Car Expenses

Some gear allowances to sales quotas . . . Some split cost 50:50

* Special Correspondent



SOUND SAFARI SAILS—To Africa via China and India went Dave Griffin (left), assistant and RCA-equipped sound movie truck. President of Rochester, Minnesota's World Travel Club, he will record folklore and customs, messages from missionaries, later lecture in hometown schools

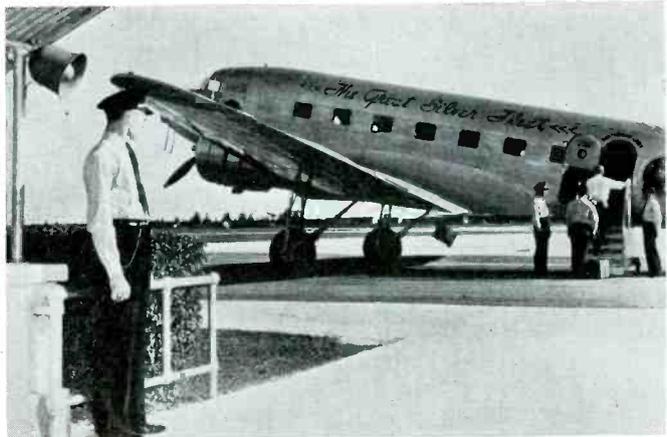


DON'T DOUBT YOUR EYES—Barney Morrow's pride and joy is this locomotive body equipped auto chassis. It startles San Francisco, plugs Mission Electric's sound and auto radio and service business. Expensive, Morrow yet calls this chassis best promotion scheme he has ever used

SOUND *in the* NEWS

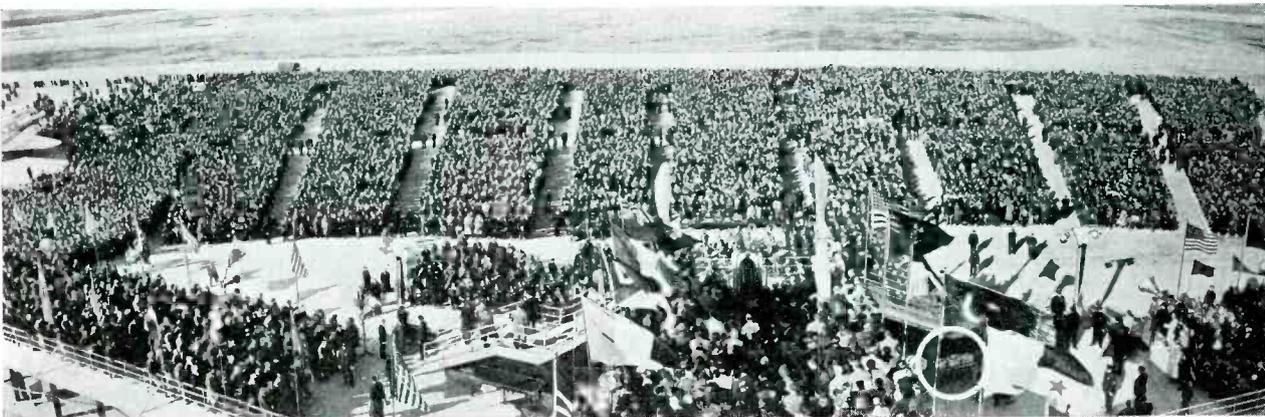


DOUBLE-DUTY WINDOW—Slick idea is installation of complete recording studio in main display window by Blaney Music of Concordia, Kansas. Inexpensive drapes deepen it to provide room, shut off the store interior while artists work



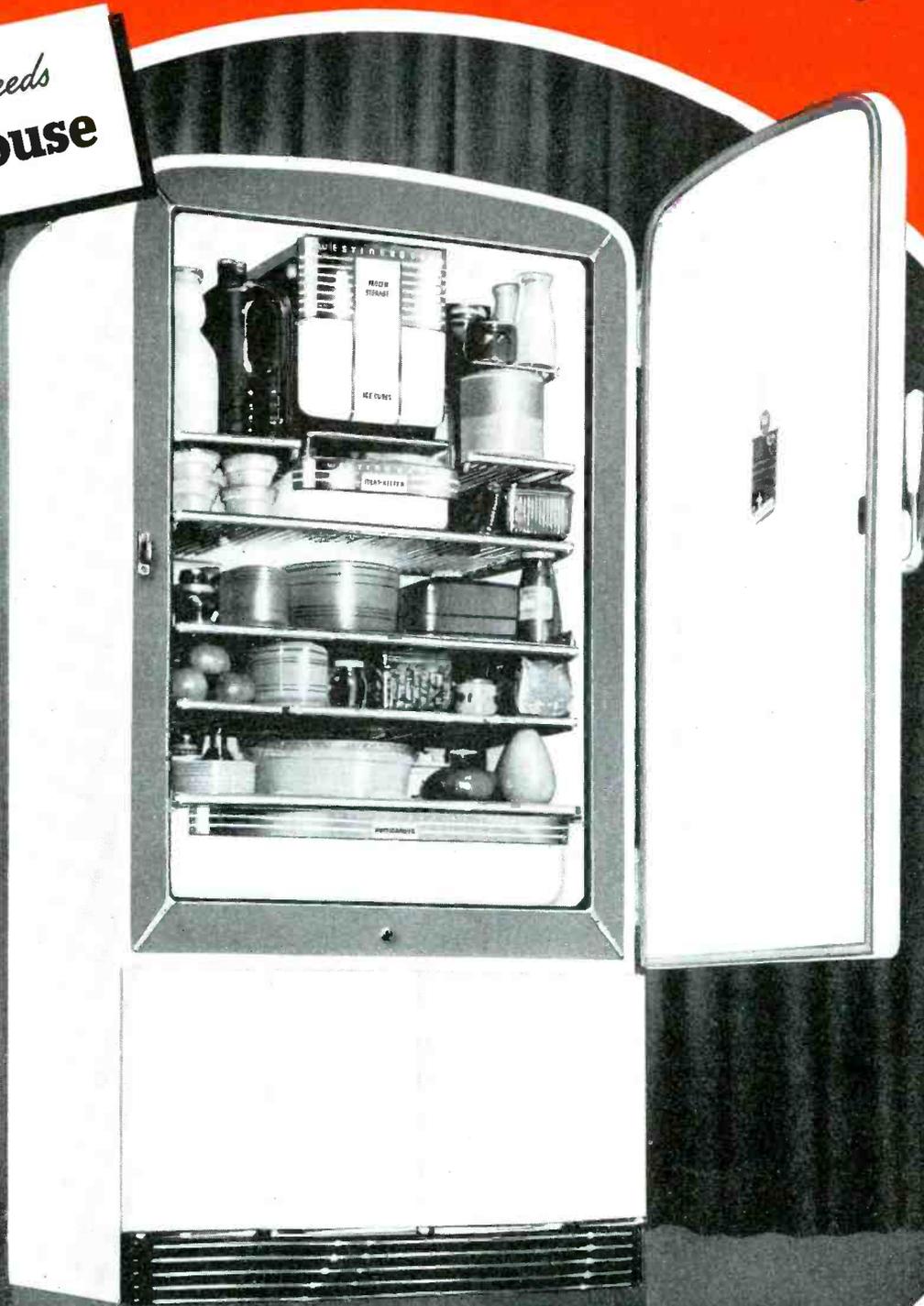
AT WORLD'S BIGGEST AIRPORT—When New York's LaGuardia Field (below) was dedicated 325,000 spectators turned out for the speeches, heard them through two 100-watt Lafayette amplifiers (a third was held in reserve) and eight Cinaudagraph air-column speakers

SOUND FOR THE SKYWAYS—To the Electrical Equipment Company of Miami went the job of installing sound equipment and Atlas marine midget speakers and horns in Eastern Air Line terminals. Here's one announcing the departure of an airliner



FASTER FOR '40

Every house needs
Westinghouse



Westinghouse

"The Line of Least Resistance"

! NEW!

1940 PACEMAKER with Exclusive TRU-ZONE COLD

the SUREST, STEADIEST food protection
temperature control in any home refrigerator

... plus striking new beauty in interior design ... adds up to a new sales-winning combination for 1940



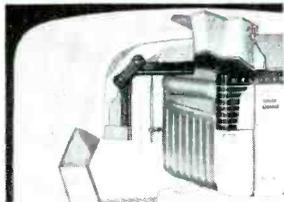
TRUE-TEMP CONTROL lets user dial exact temperature—holds it true no matter how hot the kitchen gets.



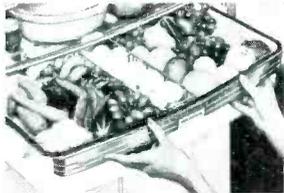
HUMIDITY FOR MEATS averages 85% in the big new sliding MEAT-KEEPER with crystal clear window-front.



FROZEN FOODS in liberal quantities can be safely stored in the double-height top compartment of the Super Freezer.



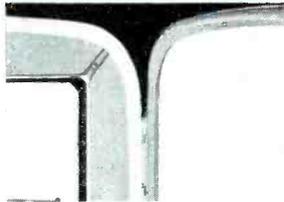
FIBERGLAS INSULATION is 10% more efficient than previous insulation—holds its efficiency for life.



HUMIDITY FOR FRESH FRUITS AND VEGETABLES averages 90 to 95% in the big glass-top Humidrawer.



MILK AND VEGETABLES are protected by extra cold but not freezing temperature in the large milk compartment.



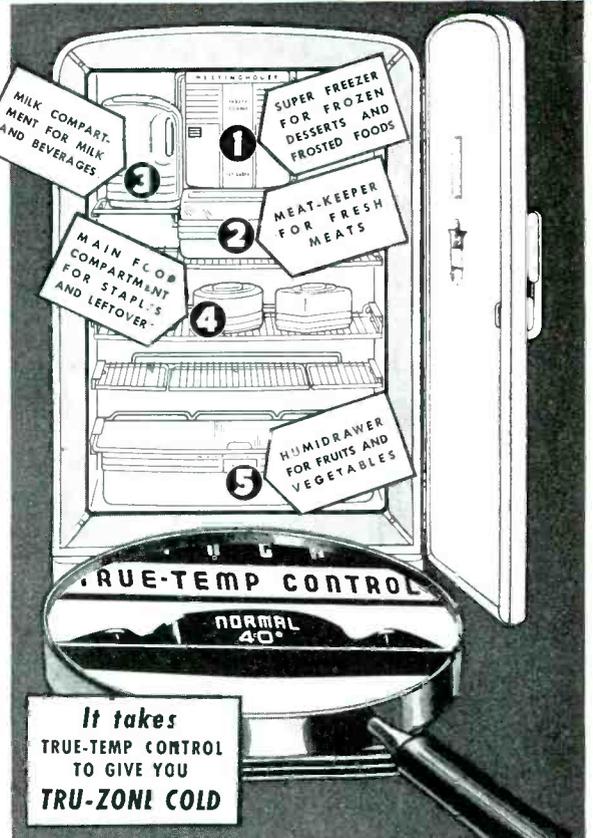
MICARTA DOOR LINER is 6 times more resistant than steel to heat penetration—combines lightness with rigid construction.



LEFTOVER DISHES of Peasantware are Hall Oven China. Set includes 2 leftover dishes, 1 butter dish, 1 water server.



LOW COST OPERATION is big sales advantage with the famous Economizer Sealed-in Mechanism, improved for 1940.



It takes
TRUE-TEMP CONTROL
TO GIVE YOU
TRU-ZONE COLD

Refrigerators



FASTER FOR '40..

WESTINGHOUSE ELECTRIC & MANUFACTURING COMPANY

MANSFIELD, OHIO

ACCENT ON

AUTO RADIO

BIG YEAR predicted. Days of difficult and dirty installation over. Radio dealers should go after lion's share

MORE auto radios were sold in 1939 than in any previous year. Every fifth car on the road now carries a radio to keep its passengers in touch with the news, and their favorite programs.

Some radio dealers don't sell auto radio, handing much of this profitable business to the car dealer and other "outsiders."

Of course, if a dealer's radio business is so good that he doesn't want any more, it's all right to let the other fellow have it, but that's the *only* reason a radio dealer should turn his back on auto radio business.

Every indication is that new auto radio sales records will be made in 1940.

More cars will be sold.

More people want radio in their cars.

25,000,000 cars do not have radio.

Only one in four new car buyers have a radio installed when they buy the car.

Here is a vast market, with increasing demand, ready to be sold.

And the radio dealer can best sell it.

Use Registration Lists

Buy your local car registration lists, which shows year and model of the car as well as the name and address of the owner, and follow them up by phone, mail, and personal call.

These car owners also have radio in their homes, and are good pros-

pects, too, for home radios, appliances and service.

They are well worth your selling attention.

Most people would rather buy their auto radio from a radio dealer, and will if you make it easy for them to do so.

You can "make it easy" for people to buy their auto radio from you, by carrying an assortment in your stock, by displaying them, demonstrating them in your own car, and by telling people you have auto radio, letting them know they can depend on you for *all* their radio needs.

Business Belongs to You

Modern auto radios are easier to install.

Installation is quicker than in the older models.

Antennas are easier to connect and more efficient.

Sets themselves have refinements such as push button tuning, higher sensitivity, much better tone, are far and away superior values to any of their predecessors.

You can *sell* the 1940 auto radio.

But not much of it will come to you.

You'll have to go after it, with consistent sales promotional work, sell the idea of auto radio, and sell yourself as the place to buy all radio, because you know radio. That's your business.

Four of every five cars in your neighborhood are prospects, and one

in every four new cars will buy an auto radio in 1940.

This business belongs to the radio dealer.

The radio dealer knows radio, sells radio, services radio.

The car dealer doesn't really want to bother with radio. Very few car dealers will install or service the radio they do sell.

They farm this work out to radio dealers, to installation and service specialists.

They take the profits—you take the work—why?

Only because in the early days of auto radio, installations were difficult, noise suppression was a headache, and high current drain brought irate customers on your neck, with dead batteries, stalled cars, and poor radio performance. And you said

(Continued on page 59)

REASONS FOR RENEWED EFFORT —

More cars will be sold in 1940

More people will want sets in their cars

The market is nowhere near saturation

Radio is your business, and

It's a sideline with all others

PROFIT WITH

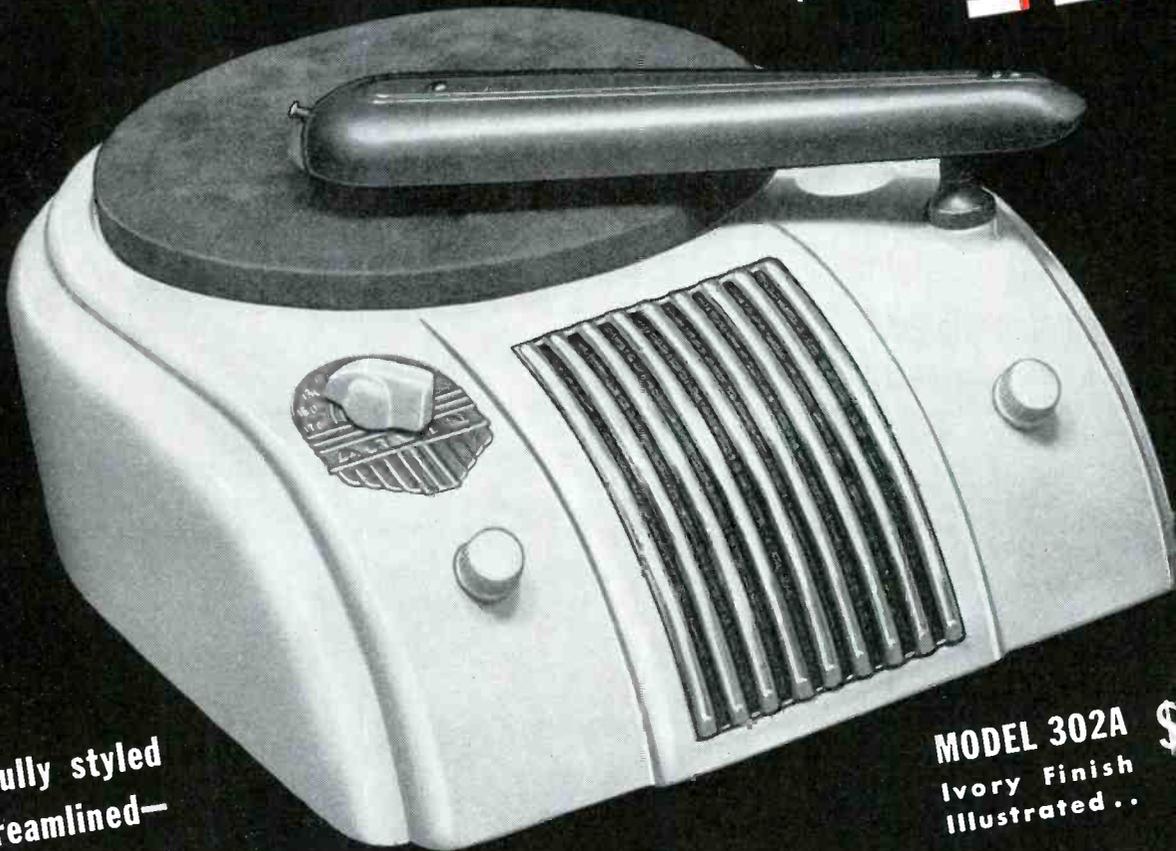
ARVIN

HOT NUMBERS

Radio-Phonograph Combination

MODEL 302
Deep Brown
Finish

\$14⁹⁵



Beautifully styled
and streamlined—
with performance
to match its striking
appearance

MODEL 302A **\$16⁹⁵**
Ivory Finish
Illustrated..

Never Before Have You Had A Value Like This to Offer!

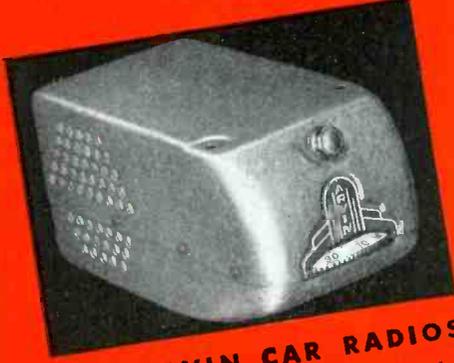
Four-tube radio (including rectifier) with power output of 2.25 watts.
Self-starting phonograph motor with constant speed of 78 r.p.m.
Unbreakable case. Model 302 finished in deep brown with

ivory trim—Model 302A in ivory with chrome trim.
Permanent magnet speaker with special audio system built-in for surprising tone reproduction.
Single control for volume of both radio and phonograph.

Play 10" and 12" records or brings in radio broadcasts with fine, rich tone.
Attached aerial for radio. 20 feet long.
Carrying case for radio-phonograph and records only \$2.95 extra.

NOBLITT-SPARKS INDUSTRIES, INCORPORATED, COLUMBUS, INDIANA

All prices slightly higher in West and extreme South.



NEW ARVIN CAR RADIOS

MODEL 510, a compact but powerful superhet with illuminated thumb-wheel dial for fast, easy tuning. Easily installed under instrument panel of all cars. Marvelous performance—exceptional value **\$14⁹⁵**
MODEL 610 with 4 push buttons add thumb-wheel dial tuning **\$17.95**
Remote Control Models with matching dials for instrument panel as low as **\$29.35**



ARVIN MODEL 402A

A small but mighty AC-DC radio, illustrated at left. Unbreakable cabinet, ivory finish (Model 402 Walnut), 20-ft. aerial attached **\$6⁹⁵**
MODEL 502A larger, more powerful superhet. Illuminated dial **\$9⁹⁵**
MODEL 602 in plastic cabinet with carrying handle. Built-in aerial and tone control. An extra-fine table set **\$16⁹⁵**
MODEL 802 battery-electric (AC-DC) portable, illustrated at right. Complete with batteries **\$24⁹⁵**
MODEL 803—Same as above, except Underwriters' approved for 110 AC or battery operation **\$26⁹⁵**





VICTOR RECORDMEN—*Frank B. Walker* (center) RCA-Victor v. p. in charge of record activities, ok's sample pressings as *Wallace W. Early*, record sales manager (left) and *Charles O'Connell*, manager of repertoire, look on

1940 Air-Trade Joint Promotion Planned

RSA to work closely with broadcasters, local trade, promoting joint interests

CHICAGO—Local chapters of Radio Servicemen of America, Inc., will work closely throughout 1940 with members of the National Association of Broadcasters, set and parts distributors, in the promotion of joint interests, according to RSA executive secretary, Joe Marty, Jr.

In January and February, says Marty, a Radio "Sunshine" Program will be staged, commemorating the 20th anniversary of radio listening as we know it today.

In March, April and May the campaign will keynote the slogan: "Keep Your Auto Radio in Repair."

In June and July it will tie up with the big political conventions.

In September the "Curtain Raiser" promotion used last year (reported in detail in the December issue) will be revived.

From October 10 to November 5 the National Elections will provide the central campaign theme.

And from Thanksgiving through Christmas there will be a special jointly promoted Holiday Radio promotion.

RSA participation will in all cases, according to Marty, be arranged by local chapters rather than the headquarters office.

RCA-Apex Export Agreement

CAMDEN—RCA Manufacturing Company and the Apex Electrical Manufacturing Company have just signed an agreement under which RCA will act as exclusive Apex products distributor in all foreign markets except Canada.

The agreement comes at the end of a year when Apex washer sales increased substantially over the previous 12 months.

On the Newsfront

21 New Tele Tickets Asked

Granting of licenses by FCC would swell total to 44

WASHINGTON—As of December 7 (latest report) the Federal Communications Commission had on hand 21 applications for television broadcast station licenses. The waiting list at that time included:

Don Lee Broadcasting, San Francisco.

Journal Company, Milwaukee.

Crosley Corp., Cincinnati.

Earle G. Anthony, Inc., Los Angeles.

May Department Stores, Los Angeles.

Allen B. DuMont, Washington.

Allen B. DuMont, New York.

Television Productions, Los Angeles.

Leroy's Jewellers, Los Angeles.

Travelers Broadcasting, Avon (Conn.)

Metropolitan Television, New York.

Kansas State College, Manhattan (Kan.)

Midland Broadcasting, Kansas City (Mo.)

Bamberger Broadcasting, New York.

Grant Union High School, North Sacramento.

WDRC, Inc., Meriden (Conn.)

R. B. Eaton, Des Moines.

Columbia Broadcasting, (Port.) New York.

WCAU Broadcasting, Philadelphia.

Farnsworth Television, Fort Wayne.
Balaban & Katz, Chicago.

Television broadcast stations already licensed include: W2XAX (New York), W6XAO (Los Angeles), W2XVT (Passaic), W3XPF (Springfield, Penna.), W9XAL (Kansas City, Mo.), WIXA (Bridgeport), W2XB (Albany), W2XD (Schenectady), W2XH (Schenectady), W1XG (Boston), W9XAK (Manhattan, Kan.), W2XBS (New York), W2XBT (Port, Camden and New York), W3XE (Philadelphia), W3XP (Philadelphia), W9XG (West Lafayette, Ind.), W2XDR (Long Island City), W3XAD (Port, Camden), W3XEP (Camden), W10XX (Mobile, Camden), W9XK (Iowa City), W9XUI (Iowa City) and W9XZV (Chicago).

Fourteen New NRPDA Members

NEW YORK—From Arthur Moss, executive secretary of the National Radio Parts Distributors Association, comes word that 14 new members have just been added to the Association's rolls.

In eastern Pennsylvania J. R. S. of York; Kratz of Norristown; M & H; Consolidated Radio; Herbach & Rade-man; and Eugene G. Wile of Philadelphia have joined. In New England Ware Radio of Brocton; Electrical Radio of Cambridge; Springfield Radio of Springfield; Pittsfield Radio of Pittsfield; Wm. Dandreta of Providence; A. W. Mayer; Radio Shack; and Radio, Wire, Television of Boston have signed.



REASON TO BE PLEASED—Radio Parts Manufacturers National Trade Show directors (Left to right) *Osmun, Berard, Kahn, Prince, Shure* and *Hathaway* note with pardonable pride that booth reservations for the June shindig at the Stevens in Chicago already total 60, better by 25 per cent than at this time last year



POWERS IN SPEAKER FIELD—(Left to right) Utah's president *G. Hamilton Beasley*, newly elected vice president *Peter L. Jensen* and general sales manager *Odin F. Jester* snapped during an early three-cornered confab

Jensen Joins Utah

Elected vice president January 2. Executive staff otherwise unchanged

CHICAGO—From G. Hamilton Beasley, president of Utah Radio Products Company, comes word that on January 2 the Utah board of directors elected Peter L. Jensen vice president. Other Utah officials and department heads continued in their usual capacities.

Jensen, a pioneer in the radio industry, founded the Magnavox Company in 1911 and the Jensen Radio Manufacturing Co. in 1927. Upon his election Utah's general sales manager, Odin F. Jester, issued the following statement: "Utah welcomes the opportunity to give greater service to the radio industry through the added services of Mr. Jensen. With an optimistic attitude toward 1940, Utah is stepping up activities for the year." (Utah is understood to have shipped more than 5,500,000 parts in 1939.)

Gen-Ral Now Muter Division

CHICAGO—On January 1 the General Manufacturing Company became a division of The Muter Company. Address is now Gen-Ral Coil Division, The Muter Company, 1255 South Michigan Avenue.

Eveready Ad Execs Shifted

NEW YORK—A reorganization involving sales, advertising and promotion personnel is announced by the National Carbon Company, maker of "Eveready" batteries.

R. P. Bergen, former assistant of J. M. Spangler (general sales manager) and H. M. Warren, former advertising manager, are now assistant sales managers. J. M. Meldram, member of the advertising staff for the past two years, has

been made manager of the firm's recently organized advertising and sales promotion division. A. H. Housman and H. A. MacMullan, for several years associated with the company's advertising and sales promotion, are now assistant managers of that division.

RMA Offers Weekly Shortwave Logs

WASHINGTON—To member manufacturers RMA has just offered weekly logsheets of foreign and domestic shortwave programs at cost. Members are being urged, in turn, to make these logsheets available to their distributors and dealers to give further stimulus to shortwave listening already at a highpoint due to interest in war news.

The logsheets are not available to the trade direct from the RMA but must be obtained from manufacturers.

Philco Tube Prices Changed

Revisions made January 2 second in six months

PHILADELPHIA—Further simplification of the Philco tube structure was announced to distributors and dealers late last month (became effective January 2) by James M. Skinner, Jr., manager of tube sales for the Philco Radio & Television Corporation.

Said Skinner: "Revision of Philco's tube price structure is the second in six months and was prompted by the addition of a number of new types, our desire to cooperate with the industry in standardizing all tube lines. Philco has always been among the leaders in any move to stabilize the tube price structure in the industry. The standardization undertaken by industry cooperation is proving the wisdom of such a move."

RMA Convention Dates Set

WASHINGTON—The Sixteenth Annual RMA Convention will be held concurrently with the National Radio Parts Show, in the Stevens Hotel at Chicago June 11-14.

RMA's banquet will be held on the evening of June 12 (Wednesday) and its industry golf tournament June 13 (Thursday).

Caphart Leaves Wurlitzer

NORTH TONAWANDA—Homer E. Caphart, for over six years vice president of the Rudolph Wurlitzer Company and one of the best known executives in the music and allied industries, has resigned. Not ready at presstime to divulge future plans, Caphart inferred that he would make a further statement within 60 days.



INAUGURATE DETROLA BROADCAST—In Los Angeles last month Detrola's distributor, dealers, Mutual Network men welcomed *Fulton Lewis, Jr.* and his new airways commentary for this line. (Back row, left to right) *Ray Lyman, T. E. Conner, O. Daybrook, Lester Franklin, Harris Swimmer, Robert Applegate, Paul Colt, Eugene Flynn, Henry Gerstenkorn* and *Arthur E. Pitcher*. (Front row) *Ray Harding, Claude Fulton, Sydney Gaynor, L. H. Brown, L. G. Fisk* and *Brooks White*.

HERE'S THE LINE THAT Makes Sense for '40

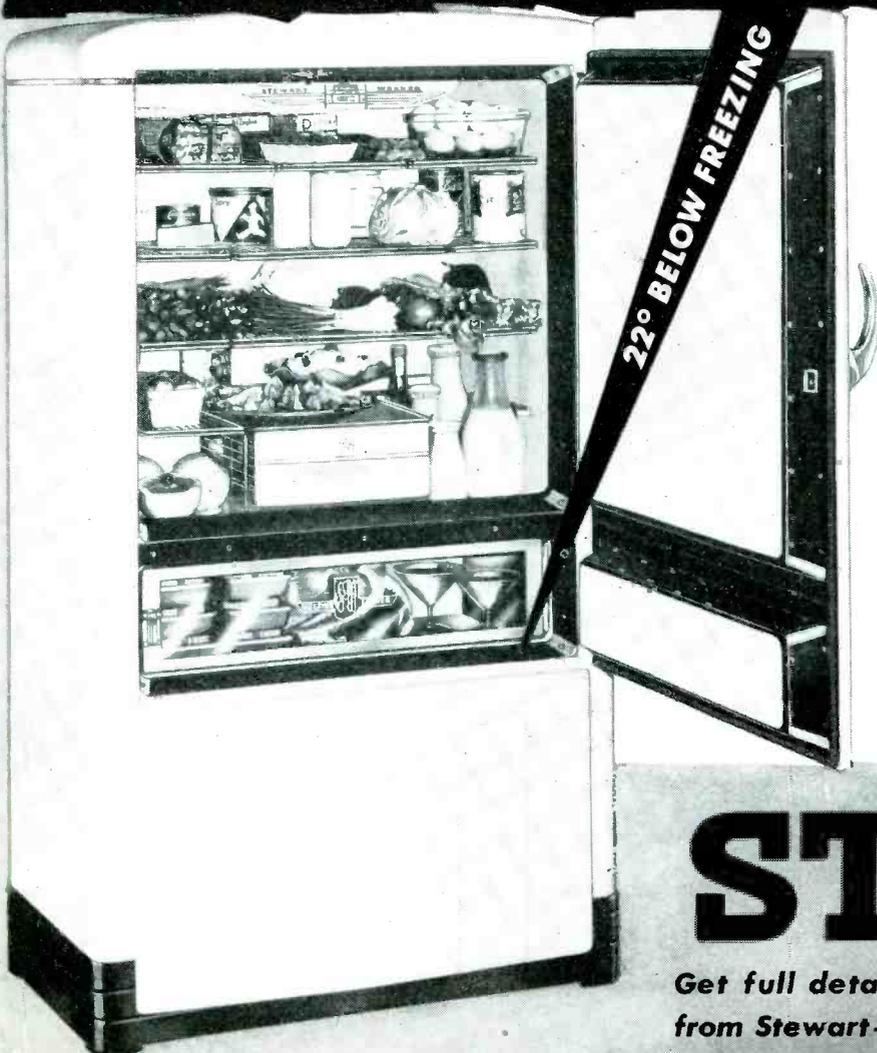
REFRIGERATORS featuring the most important food-and-money-saving development in years! Lower-priced refrigerators with an utterly new convenience and utility story! Still lower priced models that set a new high in value for price-minded buyers! They're all here in the line that makes the most sense for 1940! . . . a streamlined line with only 8 models—with features balanced against price in a way prospects can understand. A perfect

step-up story between every model makes it easy to maintain a remarkably high average gross!

Best of all, the line is literally motorized all the way from factory to the prospect's kitchen by smart, sound finance plans so revolutionary in details of operation that they pack brand new selling force—and by entirely new merchandising aids and plans you can't have with any other line!



**A BUSHEL OF ICE CUBES . . .
OR 50 POUNDS OF FOOD—
in the
BIG FREEZING LOCKER
ALONE!**

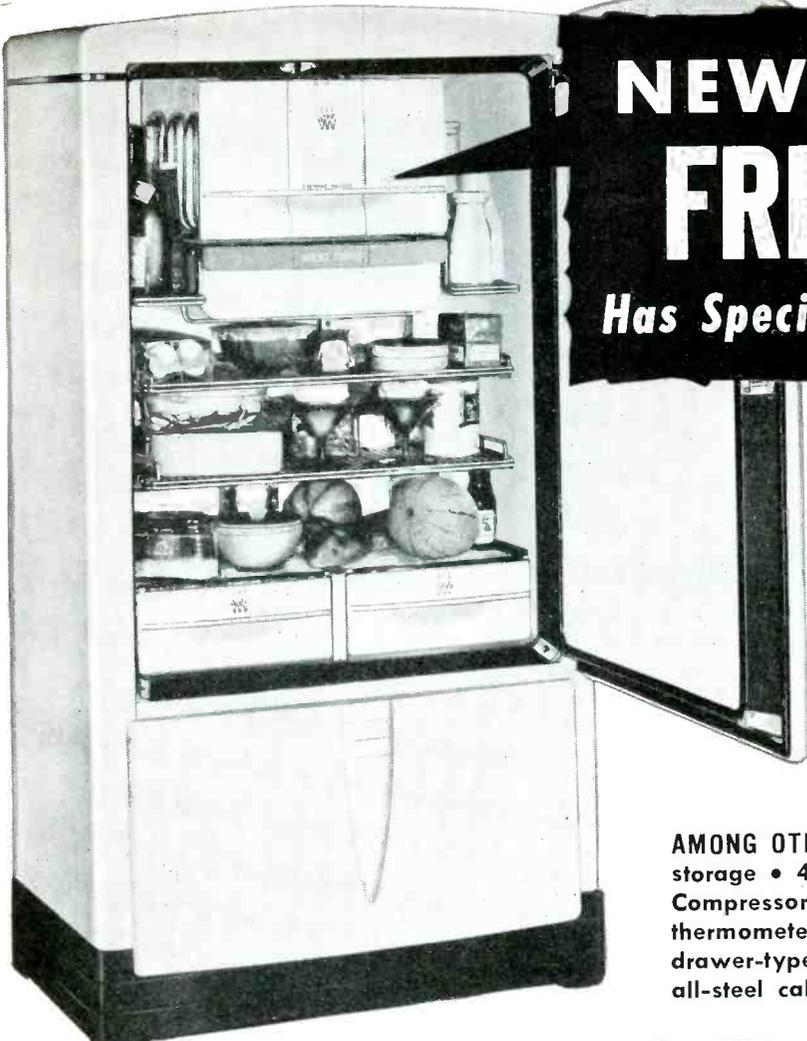


PROSPECTS agree that these Stewart-Warner Dual-Temp Refrigerators are as far ahead of the conventional electric refrigerator as the conventional models are ahead of the old-fashioned ice box! And only Stewart-Warner can offer prospects the five great improvements in these Dual-Temps—proved and improved through a full year of selling!

- **KEEPS FOODS GARDEN-FRESH FOR WEEKS!** Steady 22-below-freezing cold in the huge Freezing Locker gives utterly new protection . . . keeps fruits and vegetables for weeks at the very peak of sweet, tender ripeness . . . keeps meat, fish and fowl amazingly long . . . freezes ice at record speed . . . makes quantity buying at big savings really practical!
- **NEW RECORD ROOMINESS!** Actually holds as much food as most refrigerators sizes larger . . . because there is no bulky evaporator cutting shelves in two—no need for space-wasting covered dishes and pans.
- **NO DRIED-OUT, WASTED FOOD!** Genuine high humidity in every inch of the big upper compartment keeps sliced roast, leftovers, cheese, lettuce and celery perfectly, without covering or wrapping, right on the open shelves!
- **KEEPS FOOD IN STERILE AIR!** The rays of a newly-developed Sterilamp kill bacteria, prevent mold and ice box odor—provide new health protection, new food savings!
- **NO DEFROSTING!** Because there are no frost-collecting coils in the moist-food compartment, there's nothing there to defrost! A convenience every housewife goes for instantly!

STEWART.

Get full details from your Stewart-Warner distributor—or from Stewart-Warner Corp., 1828 Diversey Parkway, Chicago



NEW! BIG DOUBLE-DUTY FREEZING UNIT

Has Special Cold Storage Compartment

*Provides Brand New Utility — Offers a Perfect
Step-Up to Dual-Temp Models*

THE NEW DeLuxe Stewart-Warner Refrigerators give you something really new to sell—something the housewife can see and understand and appreciate instantly—*something she'll remember over competing boxes*. The new-type Freezing Unit is really two in one—with a new side compartment that holds several packages of frozen foods—or keeps three of the ice trays frozen while their regular space is used to freeze desserts, store large packages or chill a bowl of salad.

AMONG OTHER FEATURES ARE: Huge Meat Chest for extra-cold storage • 4 Improved Snap-Out Ice Trays • Hermetically Sealed Compressor carrying 5-Year Warranty • Sliding shelves • Built-in thermometer • Automatic interior light • Glass-covered Jumbo drawer-type Vegetable Freshener and fruit basket • Massive welded all-steel cabinet with extra-thick insulation • and many others!

**...And Precision-Built, Top-Quality
Sealed-Unit Jobs That Are Tops
in the PRICE FIELD**

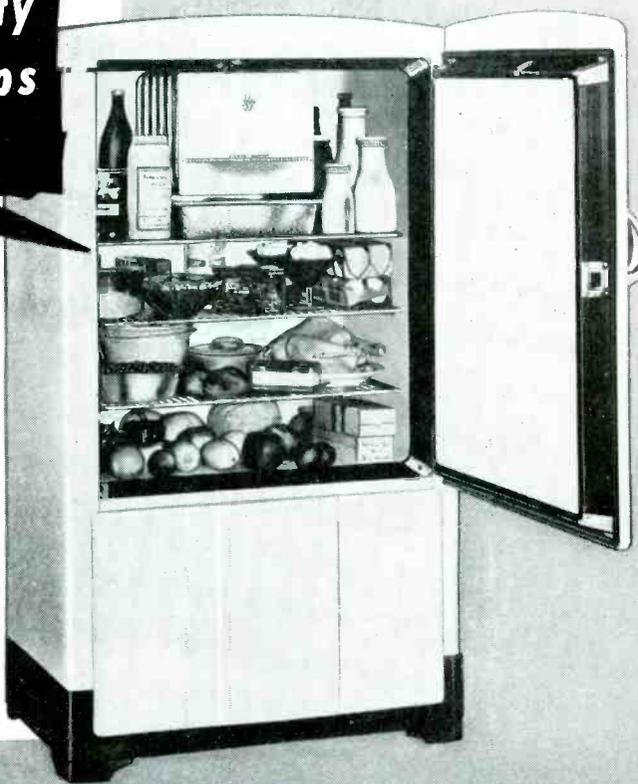
**The 6-FT. SPECIAL
is PLENTY HOT in Any Market**

WITH this Stewart-Warner line you can "step in swinging" in any competition on price and value—whether it's on a 4½-foot size, a Big Six Special or a Standard job you're selling against. Because regardless of low price, every one of these Stewart-Warner's gives you real quality to sell—the same super-powered sealed unit used in the highest-priced Dual-Temp model, the same fine cabinet construction, same operating economy and long life! Every model is a really fine, dependable refrigerator you'll be proud to deliver.

THE SPECIAL SIX (illustrated) HAS: Super-powered Sealed Unit (160 pound I.M.E.) carrying 5-Year Warranty • Large-sized freezing compartment with 4 new Snap-Out trays • Automatic interior light • Finest porcelain interior • Welded all-steel cabinet with 3 to 3¾ inches of insulation all around!

SPECIAL EXHIBIT — ALL PRODUCTS

AMERICAN FURNITURE MART, CHICAGO • SPACE 510A



WARNER REFRIGERATORS

ANOTHER STEWART-WARNER PRODUCT

A DEPENDABLE PRODUCT BUILT BY A DEPENDABLE COMPANY

Also Makers of SAV-A-STEP Electric Ranges and Magic Keyboard Radios

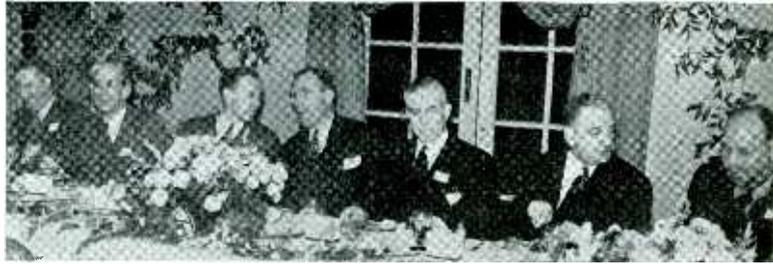
G-E Tells Full Line Story

200 distributors hear it in new Institute Building meeting

BRIDGEPORT—Opening the doors for the first time to its new Institute Building, the General Electric Company entertained 200 of its appliance distributors and their sales managers here December 6, 7 and 8, with a preview of appliance product lines for 1940 and a presentation of advertising and merchandising plans for the coming year.

For the first time in the history of G-E previews, the meeting brought together engineering, sales and promotional managers of every company appliance for a single presentation. It also officially introduced to distributors H. L. Andrews, vice president of General Electric and now the executive head of the company's entire appliance operation. On the speaker's platform were, in addition to Andrews, G-E president Charles E. Wilson, Carl M. Snyder, B. W. Bullock, L. H. Miller.

The first days session was devoted to product presentations covering clocks, vacuum cleaners, fans, heating devices, home laundry equipment, radio, electric sinks, kitchen cabinets, ranges, water heaters and refrigerators. The second day was given over to promotional plans on these same items and on the third, policy and merchandising efforts were discussed.



AT G-E SHINDIG SPEAKERS TABLE—General Electric's C. E. Anderson, W. S. Clark, C. M. Snyder, C. E. Wilson, H. L. Andrews, and G. J. Chapman (left to right) grace it with New Orleans district manager Carl Brown, cited for 1939's outstanding radio sales job

Emerson Silver Jubilee

Distributors offered three celebration models at temporarily reduced price

NEW YORK—At a meeting of eastern and mid-western distributors for the Emerson Radio and Phonograph Corporation, held early this month at the Hotel New Yorker, three "Silver Jubilee" sets temporarily retailing at \$10 less than established list prices (celebrating Emerson's 25th Anniversary) were announced by sales manager Charles Robbins.

The purpose of the limited Silver Jubilee offer, according to president Ben

Abrams, is not only to maintain and increase the company's sales levels during the months of January and February but to stimulate public interest in general. (Abrams reported an increase in both unit and dollar volume for 1939 amounting to approximately 30 per cent over 1938. Distributor inventories, he continued, reveal lower stocks than ever before at the beginning of a new year.) Only one distributor order, it was announced, would be permitted on these models.

Before returning to their territories convening distributors visited the Emerson factory, saw new and greatly enlarged engineering and production facilities.

Maxson Heads Jensen

Knowles, White made vice presidents. Oliver heads Board. Jensen resigns

CHICAGO—Important announcements are made by Jensen Radio Manufacturing Company concerning both personnel and products just as this issue goes to press.

W. E. Maxson becomes president and general manager after having served the corporation for ten years as managing director. Hugh S. Knowles and Thos. A. White have been elected vice presidents while continuing also as chief engineer and sales manager respectively. A. Leslie Oliver, after 11 years tenure as vice president, becomes chairman of the board of directors. Other corporate officers remain unaffected except for the departure of Peter L. Jensen, whose resignation was recently accepted.

Ownership control of the company is undisturbed.

In a final statement by Jensen executives it was said that news would shortly be released concerning a complete new line of loudspeaker equipment and accessories, the product of many months of research and development by the Jensen engineering department.



JENSEN OLDTIMERS ALL STEP UP—(Top left) W. E. Maxson becomes president and general manager of the Jensen Radio Manufacturing Co. (Top right) A. Leslie Oliver is now chairman of the Jensen board. (Bottom left) Thos. A. White has been made a vice president (continuing also as sales manager). And Hugh S. Knowles (Bottom right) becomes a vice president (continuing also as chief engineer)



MANAGE UNITED TELEPHONE—S. L. Baraf (left) and I. A. Mitchell of United Transformer Corp. They now also manage United Telephone Corp., newly formed and taking over the manufacture and sale of "Cinaudagraph" speakers. United Telephone will continue speaker production in the Stamford, Connecticut plant

Stromberg Distributors Meet

Hear firm sold 18 per cent more sets in 1939 than any of previous 5 years

ROCHESTER—Distributors and representatives of the Stromberg-Carlson Telephone Manufacturing Company met here January 3 and 4 in their annual winter sales conference, were told that this company sold 18 per cent more radios in 1939 than in any of the previous five years, heard sales manager Lloyd Spencer predict an even greater year in 1940.

Factors strengthening Stromberg-Carlson's position in the industry, said Spencer, included a 49 per cent increase in franchised dealers last year plus the advent of frequency-modulation broadcasting. "Frequency modulation", he remarked during the meeting, "will increase sales of our new models in those places where FM programs are available."

Many of the new Stromberg-Carlson models are equipped with a special FM band. Nine new models, in all, were shown at the conference.

Landay-Sutton Merger

LOS ANGELES—Max Landay has merged his interests with those of E. Lloyd Sutton, forming Sutton & Landay, Inc., manufacturers' representatives.

The firm has, at the present time, six men covering the west coast, expects to build up this staff materially as new lines are obtained.

Garod Moves

BROOKLYN—The Garod Radio Corporation moves sometime this month from 115 Fourth Avenue to larger quarters at 70 Washington Street. General sales manager, Maurice Raphael, says the new plant is three times the size of the old.

Where Perfect Reception is Essential—



IN SCHOOLS
AUDITORIUMS
HOTELS
RESTAURANTS
CLUBS
GYMNASIUMS
RECREATION HALLS

Wherever High-Quality Radio
Reproduction is to be used
with Audio Amplifying Equipment

Use a Meissner P-A Tuner!

Whatever type of Radio-Public Address installation is to be made—fixed or portable—there's a Meissner P-A Tuner to fill the bill. Three efficient models to select from—all provided with multiple output impedance to feed any good Audio Amplifier.

These P-A Tuners are supplied as complete kits (except tubes) with detailed printed instructions and diagrams. Assembly and wiring is merely a matter of a few interesting hours with soldering iron, pliers and screw-driver.

HIGH-FIDELITY MODEL

Broadcast-band coverage, two-stage band-pass TRF with diode detector, AVC and dual-triode audio and monitor amplifier. Especially designed for most faithful reproduction of High-Fidelity Broadcasts. Five tubes, operates on 110 volts, 60 cycles.

"UTILITY" MODEL

Broadcast-band coverage, three-stage Ferracart (iron-core) TRF with diode detector, AVC and dual-triode audio and monitor amplifier. Ample selectivity and sensitivity for excellent reception of local or distant

Broadcast stations without interference. Six tubes, operates on 110 volts, 60 cycles.

DUAL-BAND MODEL

A seven-tube super-het with tuning indicator—covers regular broadcast and the 5.9 to 18.8 mc short-wave band. Has RF stage on both bands, diode detector, AVC and dual-triode audio coupler monitor amplifier. This is the Tuner to use where distant reception of Broadcast or Foreign programs is desired. Somewhat larger than the other two models—has 7¼-inch linear scale dial. Operates on 110 volts, 60 cycles.

To obtain any of the literature listed below, just clip the lower part of this ad, check the items you want, write your name and address in the margin and mail to the address below.

Get This New Book!



A brand new 168-page book, full of live, interesting, up-to-the-minute radio constructional data and information. Contains complete diagrams and instructions for all the Meissner Kit Receivers as well as complete data on ready-wired units.

18-pages of latest Television data covering theory and practical application in plain language. See your Jobber at once or order your copy direct from factory. Only 50c net.

COMPLETE CATALOG FREE

For more detailed information and prices on these unusual P-A Tuner Kits, as well as a complete listing of all Meissner Products, get this big 48-page 1940 Catalog, absolutely free.

168-PAGE INSTRUCTION MANUAL

See description at left. You can't afford to be without this new Manual of up-to-date radio designs. Just send 50c in coin, stamps or money-order and we will mail your copy direct, post-paid.

TIME-PAYMENT PLAN

Ask your Parts Jobber for details of the Meissner Time Payment Plan on which these P-A Tuners and many other Meissner Products may be purchased.

DEPT. R-1





MANAGES BELDEN SALES—Just made manager of merchandise sales for the Belden Manufacturing Co. is *Les A. Thayer*, with this company since 1930 and until his latest advance district manager for the southwest

Gale Springs Kit Plan

Shows 16 "base" models, packaged kits of food compartment equipment for stepup

GALESBURG—Announced by Gale Products of this city, a division of Outboard Marine & Manufacturing Company, simultaneously with two new lines of domestic refrigerators comprising 16 models, is a new merchandising plan intended to overcome often-expressed dealer criticism relative to "too many models", "too high inventory", "no profit leader models."

Known as the Gale "Kit Plan", the idea involves "Special" and "DeLuxe" lines. Each includes a four, five, six and eight foot cabinet and these are available with just evaporator, and shelf hangers. All food compartment equipment is packaged in kits for each size. Equipment is carefully selected, according to the company management, to fully equip all refrigerator models by easy price steps, creating as many as four different models from one cabinet.

Said general manager C. P. Rossberg: "In addition to cutting inventory in half while maintaining even more models than last year the Kit Plan takes the gamble out of dealer buying, cuts down model obsolescence, eliminates loss leaders and gives the dealer a new concept of volume and profits."

Sonora Ups Freund, Fetterman

CHICAGO—From Jos. Gerl, president of Sonora Radio & Television Corp., comes word that Ben Freund has been appointed vice president in charge of factory operations, Don Fetterman vice president in charge of engineering.

Sonora, according to Gerl, has doubled its production facilities in the last six months, increasing plant space. About to be launched is an intensive start-of-

the-year merchandising campaign, the management anticipating heavy demand for the current line and for several new models due this month or next.

Masters Joins Stewart-Warner

CHICAGO—Floyd D. Masters, in the radio and household appliance field for the past 17 years, has just joined the Stewart-Warner Corporation as special factory representative for this firm's radio division, will work with distributors all over the country.

New Universal Ranges Ready

Five models announced at meeting of reps. Multi-I-Heat control featured

NEW BRITAIN—At a group meeting held December 11, 12 and 13 at the Landers, Frary & Clark plant here, five new "Universal" electric range models were shown to salesmen assembled from all over the country. Told about a promotional campaign about to begin were reps, expecting the biggest electric range year in 1940.

Company execs taking part in the various sessions included A. G. Kimball, president; B. C. Neece, general sales manager; W. J. Cashman, electric range sales manager; D. Shepard and H. E. Metz, engineers. Pointed out by Cashman was the new "Multi-I-Heat" control, a surface unit switch that dials over 101 different heats, other features such as "Superheat" speed units, "Magic-Eye" oven control and "Serv-A-Drawer", a novel thermostatically-controlled warming compartment.

The five new models were labelled "Nation's Fastest".



UPPED BY THORDARSON—Edward J. Rehfeldt, just appointed Director of Foreign Sales for Thordarson, continues to supervise the firm's advertising. He has been with the outfit six years, is well known to the trade

Mallory Supplements Ready

INDIANAPOLIS—Just off the presses are the first three issues of the Mallory Supplemental MYE Monthly Technical Service to the 3rd Edition Mallory-Yaxley Radio Encyclopedia.

Entitled "Receiving Tube Characteristics," "Dry Electrolytic Capacitors" and "Useful Servicing Information," these supplements prepared by P. R. Mallory & Co., Inc., may be subscribed to in conjunction with the Encyclopedia or separately.

Like the Encyclopedia they supplement, these Monthly Technical Service bulletins are understood to be available to technicians at subscription prices barely covering the cost of printing and mailing.



LANDERS, FRARY & CLARK REPS MEET—Welcomed to the New Britain plant last month were salesmen *Stan Chidsey, Fred Stegema, Chas. Lyons, Fred Baker, Louis Drager, Bob Harrison, Bob Beyers, Alan McLroy, Gar Lythgoe, Merle Woods, Harold Dennison, Sam Piro, Bill James, Frank Hathaway, Milton Vose, Chic Allen, Ben Bourne, Roy Brown, Fred Dale, Vic Gerardin, Merle Meyers, D. S. Connelly*. Factory and branch office execs. *B. C. Neece, W. J. Cashman, Jess Kennedy, Harry Payor, Al Bross, Henry Quackenbush* and *Jack Conlin* also watched the birdie

Majestic Shows Spring Line

Ties in with Home Furnishing Market and other shows January 8-19

CHICAGO—Majestic Radio and Television announced a new Spring line of radios at the Drake Hotel January 8-19, coincident with the National Home Furnishing Market and other shows here.

Models exhibited included a new 2-wave band American and foreign console, an ac-dc table model with similar coverage, a new push-button type portable equipped with a battery regenerator and two other new models. All, according to William B. E. Norrins, are already going on the production lines and will be ready for delivery in February.

Shown at the Drake, in addition to the models noted above, was the complete Majestic line, ranging from low-priced console receivers to phono-radio combinations with automatic record changing.

Philco Ups Otter, Orth, Lindstrom

CHICAGO—Official announcement was made here in the Palmer House December 18 by Philco factory officials T. A. Kennally and James H. Carmine of the appointment of J. M. Otter, former general manager of Philco Distributors, Chicago Division, to the post of general sales manager of the Midwest Division of Philco Radio & Television Corporation.

Simultaneously, Hal Sheer, general manager of Philco Distributors, announced the promotion of E. A. Orth, former sales manager of the Chicago Division to the post of Philco Distributors Chicago Division general manager. C. E. Lindstrom, former assistant sales manager in Chicago, was named general sales manager of Philco Distributors, Chicago Division to succeed Orth.

Copeland Gets Dennison

SIDNEY—Announced by sales manager, W. G. von Meyer, of the Copeland Refrigeration Corporation is the appointment of W. H. (Bill) Dennison to the post of domestic division merchandising manager.

For five years Dennison was sales manager of Norge's department store division, later became sales manager of Borg-Warner's Detroit Vapor Stove division and domestic sales manager of Universal Cooler. He entered the refrigeration industry in its early days, organizing the Dayton Refrigeration Corporation and serving as its vice president and sales manager.

"Radio's Riches"

WASHINGTON—Hot off the presses is a 7-by-10 inch rotogravure type booklet entitled "Radio's Riches," printed by

the National Association of Broadcasters for distribution to the listening public.

Included in the booklet, designed to swell listening, are general sales boosting paragraphs for all sets, a special boost for news, hints for the radio receiver owner, a plug for two or more sets per home.

Offered at cost to member broadcast stations just before Christmas, the booklets have now been made available on the same basis to members of the RMA, are profusely illustrated for maximum consumer selling effect.

Altorfer Appoints Bones

PEORIA—Walter Bones, formerly Minneapolis branch manager for Maytag,

has been appointed division manager for the Altorfer Bros. Minnesota, Wisconsin, Iowa, North Dakota, South Dakota, Nebraska territory including parts of Montana and Wyoming, will make his headquarters at Minneapolis.

New Airtemp Conditioners Coming

DAYTON—The Chrysler Corporation's Airtemp Division plans to broaden its line of "packaged" air-conditions early this year by the addition of several new models for both private and commercial use, according to B. S. Williams, air conditioning department sales manager.

NEW! OPERADIO INTERCOMMUNICATION SYSTEM



MASTER STATION

Includes amplifier, speaker-microphone unit, and station selector switches.



SPEAKER STATION

Includes Speaker Unit only.

NEW IMPROVEMENTS!

NEW DEVELOPMENTS!

Incorporating the very LATEST "do more—do better" features

The NEW Operadio INTERCOMMUNICATION SYSTEM

is the culmination of all suggestions received from the trade . . . plus our years of engineering, manufacturing, and sales experience in the field of intercommunication and sound equipment.

All the new developments and improvements, as well as the System itself, are fully explained in Catalog 17. Write for it.



OPERADIO
MANUFACTURING COMPANY

Dept. RR1 St. Charles, Illinois
Export Division: 145 W. 45th St., New York

All Operadio Amplifiers and Intercommunication Systems are Licensed by Electrical Research Products, Inc., under U. S. Patents of American Telephone and Telegraph Company and Western Electric Company, Incorporated.



Old Man Centralab, in a nostalgic mood, dug up this famous "ad" of five years ago with this trenchant remark,

"It's as true today as it was then . . . you've got to be Centralab-equipped if you want to do a decent and satisfactory replacement job."

So be sure to have plenty of Centralab Radiohms, Fixed Resistors, and Wave Band Switches on hand for every service job.



Centralab

Div. of Globe Union Inc.
MILWAUKEE, WISC.

Kelvinator-Leonard Convene

Distributors hear about new manufacturing and selling plan effecting \$30-\$60 refrigerator price reduction

DETROIT—Announcement of the perfection of a new manufacturing and selling plan by which Kelvinator and Leonard electric refrigerators can be sold to the public at delivered prices from \$30 to \$60 less than in 1939 was made at the combined conventions of distributors for these two brands held here January 11. The new program of the Kelvinator Division of Nash-Kelvinator Corporation also brings better margins and better profit opportunities to retailers, it was declared by Frank R. Pierce, general sales manager.

In explaining how the dual manufacturing and selling program was perfected Pierce told distributors: (1) The company had concentrated 96 per cent of its production on six and eight cubic foot models, bringing about production savings. (2) In anticipation of greatly increased sales it had doubled production schedules, permitting further economies. (3) Cost of selling was then further cut by working out a more efficient and economical form of selling. (4) A slice of factory profit was passed along to the public and retailers and, (5) Freight costs would be paid by the factory so that advertised prices east of the Rockies might be actual "delivered in your kitchen" prices. (Exclusive of State and Local taxes.)

Exhibited during the convention were five "big six" boxes and three "eights", price structures in both Kelvinator and Leonard lines being identical.

Hotpoint At Biloxi

Company's new products, plans and policies discussed at southern meeting

CHICAGO—Highlights of the Edison General Electric Appliance Company's "Hotpoint Partners Meeting" at Biloxi, Mississippi, last month included:

President George A. Hughes of The Hotpoint Company and his welcoming address. . . .

Vice president and general sales manager R. W. Turnbull's keynote speech, in which he sounded as the theme for the coming year the slogan "Follow Through in '40"

Home laundry and kitchen sanitation product presentations by Harre E. Warren and M. H. Beekman. . . . Refrigerator presentation by F. B. Williams, a talk on the housing project market by Ross Smith, "Friendly Finance" plan outline by George W. Scott and details of Hotpoint manufacturing by I. A. Rose. . . .

New Hotpoint ranges were shown by Ward R. Schafer, assisted by Mildred Hickman. Service plans were discussed



KELVINATOR'S 6½ — Distributors convening at Detroit heard (left to right) Kelvinator's Frank R. Pierce, W. F. Armstrong and George W. Mason predict that this 6½ cubic foot electric would make refrigeration history in 1940

by D. C. Marble, water heaters by A. H. Jaeger. . . .

A. D. Byler enthusiastically forecast a good year for all appliance selling, was followed by J. C. Sharp, who explained "legitimate" methods of cost reduction. Clinton Brown told of coming promotional and sales training campaigns, was followed by G. H. Smith, who explained how to tie together in usable form the company's products, plans and policies revealed at previous sessions.

O'Neill Joins Hytron

SALEM—Donald C. O'Neill, formerly a commercial engineer for Majestic, has joined the Hytron Corporation in the same capacity, will contact manufacturers out of the Chicago office following four or five weeks at the factory here.



TOTES TUBES ET. AL.—Examining the complete tube stock carried in Charles Kierulff's West Coast Sales Company display car is National Union's J. W. Marsh with driver Roy Davis. The car is a Chevrolet station-wagon, has 125 square feet of shelf space with room for 1500 items, is lighted by five 15-watt lamps, provides power to demonstrate ac or dc radios

1939 BROADCASTING \$

UP OVER \$10,000,000 on 1938, 1939 total billings of the NBC, CBS and MBS broadcast networks hit \$83,113,801.

National collected \$45,244,354 (up 9.1 per cent), Columbia \$34,539,665 (up 26.3 per cent) and Mutual \$3,329,782.

Cosgrove Joins Crosley

CINCINNATI—Raymond C. Cosgrove, former assistant sales manager of the Westinghouse merchandising division, has been appointed a vice president of the Crosley Corporation and general manager of its manufacturing division.

Powel Crosley, Jr. remains active as president of the Corporation and Lewis M. Crosley continues as executive vice president while Cosgrove is placed in direct charge of the engineering, production, distribution and sale of Shelvador refrigerators, the company's radios, electric and gas ranges, washing machines and ironers and new automobile.

Five American Steel Appointments

NEW YORK—Five appointments to the staff of American Steel Export Company, export distributor of Philco products, have just been announced by president Howard McAteer.

Timothy Williams, formerly with Philco Radio & Television of Great Britain, will handle export sales of Philco refrigerators and Philco-York air-conditioners. Albert A. Bombe, formerly with International G-E, has been assigned to South and Central American sales of Philco radios and refrigerators. Horacio Lima has been appointed resident manager of ASECO for Brazil. Hans Stauder gets a similar post in Mexico. Cameron S. Herbert goes to Bogota, Colombia.

Two New Jobs For Frigidairemen

DAYTON—R. E. Krum, formerly associated with the National Retail Furniture Association in Chicago, has been appointed to the dealer development department of Frigidaire Division, General Motors Sales Corporation. He will contact furniture stores on a nationwide basis.

L. C. Truesdell, formerly sales manager in the firm's Kansas City office, will henceforward contact department stores all over the country, working under Dan A. Packard, who is in charge of major dealer development.

Finch Plant to Jersey

PASSAIC—Finch Telecommunications, Inc., has just leased a 3 story plant here at 4th and Virginia, will move in about January 20.

Novel Broadcast for Servicemen

NEW YORK—Beginning January 21 over WBNX (1350 kc.) and continuing thereafter each Sunday evening at 9:15 to 9:45 p.m., will be a new program devoted exclusively to the interests of radio servicemen, titled "Radio Masters of the Air." Sponsor, J. Grand of 53 Ramsey Rd., Yonkers, says it will include service hints, describe common troubles and solutions, test equipment and other new merchandise, will introduce prominent servicemen from all over the country as speakers. Servicemen throughout the metropolitan area will be invited to participate.

Gillespie Joins Jenkins

KANSAS CITY—Kenneth G. Gillespie, associated with Stromberg-Carlson of Rochester for the past 20 years and most recently directing sales for that firm in the middle and southwestern states, has joined the Jenkins Music Company as manager of its wholesale radio department. Plans for expansion in the appliance field are in process of formation.

New Spot for Times

NEW YORK—The Times Appliance Company, Inc., has moved to new quarters on the 6th floor at 353 Fourth Avenue.

**STOP! LOOK!
FIGURE
THIS VALUE**



SUPREME MODEL 561

MODEL 561 OSCILLATOR is an entirely new and better instrument. In the 561 we have for the first time, at moderate price, an oscillator capable of producing (1) a true sine wave R.F. signal (2) linear audio modulation (3) continuously variable percent amplitude modulation at all audio frequencies, etc.

A. F. OSCILLATOR. 15 to 15,000 cycles cover the audio spectrum. Push button selection of 4 output impedances; 50, 500, 5,000, 50,000 ohms to match any input. Center-tapped for use across push-pull inputs. Absolute accuracy of frequency and wave form. Frequency response flat ± 1 D.B. from 30 cycles to 10,000 cycles—15 cycles down 2 D.B. and 15,000 cycles down 2 D.B. Output perfectly controllable 0 to maximum. Output: 125 milliwatts; 35 volts open circuit.

R. F. OSCILLATOR. 5 bands 65/205; 205/650; 650/2050; 2050/6500 K.C.; and 6.5/20.5 M.C.; harmonics above 60 M.C. Each range push-button selected on only two scales. All scales illuminated, shadow type, dual ratio mechanism. Air-dielectric trimmers and iron coil inductors allow factory calibration at both ends of each band to within $\frac{1}{2}$ of 1%—guaranteed accuracy. Push button attenuator with fine control is continuously variable from $\frac{1}{2}$ micro-volt to 100,000 micro-volts.

CARRIER AND MODULATION MONITOR. A vacuum tube voltmeter is used to control output level in actual micro-volts. The R. F. and A. F. Oscillators can be used separately, or the variable audio oscillator used to modulate the R. F. Read percentage of modulation, 0 to 80%, directly on meter.

FREQUENCY MODULATOR uses the SUPREME patented electronic "lock-center-synchronize" circuit—the

only system which proves correct, both mathematically and in practice. Positive automatic centering—no "image wandering"—no distortion—all is automatic. Ideal for aligning all R. F., I. F. and A. F. C. circuits.

SUPREME MODEL 561 gives you all this for only \$78.50. Installation Terms: \$8.50 cash and 12 monthly payments of \$6.49.

STOP! LOOK! FIGURE! Look over the specifications. Everything engineered and built in one unit saves you money. We repeat, the Model 561 SUPREME Combination, Metered A.F. and R.F. Frequency Modulated Oscillator is new and better. We believe it is everything to be found in the finest laboratory, brought within the serviceman's reach. Never have we had more faith in an instrument! No finer, more careful, thorough or dependable job of circuit work has ever been done!

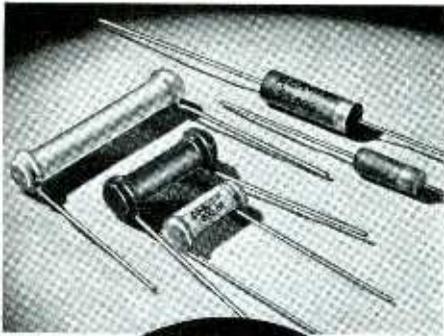
PERFORMANCE IS PROOF! We want every good serviceman to carefully consider the Model 561 OSCILLATOR, because we believe that every good serviceman needs one. We want qualified servicemen, who will appreciate this new instrument, to try out the new Model 561 OSCILLATOR in their own shop—so much so that we'll ship it right now—10 day free trial—then you be the judge. See your jobber today or write for information.



SUPREME

SUPREME INSTRUMENTS CORP.
GREENWOOD, MISSISSIPPI, U. S. A.

EXPORT DEPT. Associated Exporters Co., 143 W. 43rd Street, New York
Circle Address LOPREN, N. Y.



Worthy
of the
AEROVOX
good name



- ★ Don't overlook the resistance part of the AEROVOX octagonal symbol! It means that, in addition to an outstanding line of condensers of all types, AEROVOX also offers a choice of essential resistors to the really critical component buyer.

WIRE-WOUND RESISTORS

- ★ Pyrohm Jr. Fixed Types in 10 and 20 watts. All popular resistance values from 1 to 100,000 ohms. Also Slideohm Adjustable Types in 25, 50, 75, 100 and 200 watt ratings, 1 to 150,000 ohms. These power resistors represent the very latest advances in the art. Instead of wasting time with meaningless claims, all we ask is that you try them. Especially so since prices are "right".

CARBON TYPE RESISTORS

- ★ Again we have sought the very latest advances in the art. Two types offered: Insulated Molded Carbon with carbon resistance element permanently imbedded in crackproof casing of insulating material; Lacquer-Coated Carbon with heavy carbon element properly protected. Both types are RMA color coded. Again, prices are "right".

Ask Your Jobber . . .

- ★ Along with those AEROVOX condensers you are ordering, ask for some of these best grade resistors in your required wattages and ohmages. Also ask for the new 1940 catalog—or write us direct.



Westinghouse Previews

New refrigerators, ranges, room coolers shown

NEW YORK—Previewed in New York early in January were new Westinghouse Electric & Manufacturing Company household electrical appliances.

Included were new refrigerators featuring "True-Zone Cold", "True-Temp Control", Fiberglas insulation, modern styling, improved doors and other features. The Westinghouse electric range line came in for its share of attention, featuring a new five-speed Corox unit, balanced oven heat. Also exhibited to the press were a new line of "Mobilaires", packaged room coolers.

An increased use of newspaper, magazine and newspaper advertising was simultaneously announced by the merchandising division's manager of advertising and sales promotion, Roger H. Bolin, who said that it would apply to household refrigeration, electric ranges, roasters and irons specifically.

Dealer Helps

SERVICEMAN'S MANUAL—Just off the presses and free to servicemen through *Cornell-Dubilier Corporation* jobbers is a 256-page, pocket-size "Capacitor Manual for Radio Servicing." Set manufacturers' names appear alphabetically, together with an appended list of manufactured models by these companies, and data is given regarding replacement capacitor values, working voltages, physical sizes. Contains standard circuits of many types showing suitable condenser types for each.

MIKE CATALOG—A new 8-page catalog of microphones and microphone accessories is offered by the *Turner Company* of Cedar Rapids, Iowa. Includes list prices.

BIG NEWS—"Big News" is the name of a new *General Electric Company* house-organ to be issued periodically, covering radio and television products of the company.

TRANSFORMER ENCYCLOPEDIA—A new *Thordarson Replacement Transformer Encyclopedia and Service Guide* (No. 352-E) is just off the presses. Lists proper power transformer, filter choke, audio and output unit replacement types for thousands of radio receivers. Includes service guide covering timely technical and sales subjects. Free through jobbers.

5 BIG HELPS—Among *RCA-Victor* promotional material offered this month we note: (1) A new and complete catalog of Victor records, listing approximately 7,500 Red Seal and Black Label discs, cross-indexed by artist, composer and title. (2) A new demonstration



PREDICTS 15 PER CENT RISE—Westinghouse Electric's *Frank R. Kohnstamm*, merchandising division sales manager, says household electrical appliance business should climb at least 15 per cent this year

album of records, ten recording specially selected to cover the entire gamut of record-buyer tastes. (3) Announcement of a Mid-Monthly Red Seal record promotion campaign, featuring album collections. (4) A complete catalog of Radio and Television Test Equipment. (5) A nationwide tie-in with the Paramount picture "The Great Victor Herbert."



NORGE MEN UPPED—*Paul Puffer* (top), former regional manager for Borg-Warner's Norge Division, has been made refrigeration department sales manager. *E. R. Bridge* (bottom), former regional manager, has been appointed sales manager for the firm's washer, ironer and space-heater department. Simultaneously announced is appointment of *William H. Hanna*, *Harry Lewis*, *R. H. Pizor* and *Ray C. Roy* as regional managers

DEMONSTRATION RECORDS—*Philco* is offering at moderate cost six double-faced records chosen especially to appeal to every variety of American musical taste, shipping these in a special album for demonstration purposes.

TEST REPORT FORM—Announced by *National Union* is a new form known as the "Official Radio Service Analysis and Test Report." It is 5½ inches wide by 13¼ long, patterned after shop checkup records and service report sheets so successfully used in the automotive industry, has 13 separate headings and more than 40 sub-heads for actual estimating. Available to N-U dealers without charge (except where imprint is desired) through company distributors.

GOLD, BLACK, Red — *Stromberg-Carlson* has a new placard which, placed on top of a displayed S-C set, tells each prospect he will be able to enjoy either television pictures or frequency modulated aural transmissions with high-fidelity sound if he chooses any Labyrinth radio.

Distribution News

ATLAS—*P. D. Terwilliger* of 505 University Ave., Rochester, has this amplifying and reproducing apparatus for all of New York State except the metropolitan district.

SPEAK-O-PHONE — Representing this firm, maker of instantaneous recording equipment, is *Paul Cornell* of Cleveland Heights; *Mel Foster*, Minneapolis; *Henry Segel*, Gardner, Mass.; *Royal Stemm*, Chicago; *Royal Smith*, Dallas; *Byron Moore*, Buffalo; *Don Wallace*, Long Beach.

KARNS-WHITE—New reps for Soundview Marine Radios include: *Edward J. Grady* (New England States), *Leslie M. Friedman* (Philadelphia, Baltimore and Washington), *Hugh Snyder* of S & S, Mississippi, Alabama, North and South Carolina, Virginia, Florida.

STEWART-WARNER — *White & Shauger* of Paterson, N. J., has both the radio and refrigerator line, has just appointed *Carl F. Maschmeyer*, sales manager of its radio and electrical appliance divisions.

NORGE—*Ben S. Gambill's, Braid Electric* of Nashville has the complete line, covering middle Tennessee and southern Kentucky, was one of the first Norge distributors back in 1930. *P. E. Griffith* handles territorial sales while *Arthur Boyd* looks after city accounts.

WARD-LEONARD—New rep for Indiana, Wisconsin, Illinois north of Decatur and Kentucky north of Lexington and Louisville is *R. O. Lund* of Chicago, 1720 North Damen Ave.

AUTO RADIO

(Continued from page 46)

"Let the other fellow have the headaches, I can never have the right tuning head anyway and customers expect more than they can get."

Headaches Are Gone

Those days are gone. The old stock-keeping, installation, noise suppression, and other headaches have vanished too.

There's no good reason now why any radio dealer worthy the name can't sell auto radio, make a profit, increase good-will, and make new satisfied customers too—

Unless you're one of those rare dealers who just can't handle any more business, and don't want any more profits—or customers.

Radio is your business.

It's a *sideline* to all the others.

If it's a good business for others, it's a good business for radio dealers.



A Giant Tube Tester - MODEL 325

● A great tube merchandiser is this Model 325 with 9-inch dial artistically colored—red, green and black—brightly illuminated by two easily replaced 6-V bulbs. Provides for complete range of filaments from 1.5 to 120 volts. Tests octals, single-end tubes, bantams, midgets, ballast tubes, gaseous rectifiers, even Christmas-tree bulbs. Individual toggle switches permit checking each element separately. Large neon tube for checking shorts and cathode leakage; head phone jack for noise test. Line adjustment with smooth vernier control. Drawer with handy tube charts. Dealers net price\$34.50



A Giant Set Tester MODEL 320

● The big, easily read 9-inch illuminated meter applied to a wide range set tester. First tester to incorporate a meter of this size; also first to incorporate 50 ranges — nine A.C. and nine D.C. voltage ranges; six milliamperer ranges; five resistance ranges, four capacity ranges; seven decibel ranges. Entirely A.C. operated. All voltage ranges have resistance of 1,000 ohms per volt. Test leads are included. Rack mountings available. Dealers net price \$37.50

Giants

in everything but price

HERE is Simpson beauty, quality and uncompromising accuracy in man-size proportions. No shop is complete without these impressive instruments. When you see the handsome panels and the big illuminated dials you will know why we say they are giants in everything but price.

From these shop instruments with their nine-inch dials down to pocket-size testers, all Simpson Instruments have the same unrivalled beauty of design and unerring accuracy that could only have been built into them by Ray Simpson and a group of associates who have made a life study of instrument design and production.

Ask for new catalog of remarkable Simpson values.

SIMPSON ELECTRIC CO.
5216-18 Kinzie Street, Chicago

SIMPSON

INSTRUMENTS THAT STAY ACCURATE



An Advanced Signal Generator MODEL 310

● Here, too, you have the easy readability of a 9-inch meter in the new Simpson Signal Generator designed to the most minute detail for highest accuracy, greatest stability, minimum leakage and good wave form. Smooth vernier control permits close settings and knife edge pointer, accurate readings. Your kind of Signal Generator. Dealers net price\$37.50

MAJESTIC



LOWBOY CONSOLE—Push-button tuning; slide rule dial; matched walnut, hand-rubbed cabinet; 9-tube superhet; foreign and police band reception; has a dual directional loop antenna that eliminates the need for outside or inside aerials and trailing wires.



MODEL 5BD—Portable battery radio measuring 12 inches in length and weighing 12 lbs., provides a self-adjusting handle; operates on a.c.-d.c. and battery with 3 push buttons indicating "off," "battery," and "a.c.-d.c."; cabinet in steerhide or rawhide. Majestic Radio & Television Corp., 2600 West Fiftieth St., Chicago, Ill.

WESTINGHOUSE



MODEL WR-173—A 5-tube superhet with built-in loop and auxiliary terminal for outside antenna connection. Has 4-inch electro dynamic speaker; beam power output; operates on a.c. or d.c.; price \$9.95 in walnut, \$12.95 in ivory.



PAGE 60

Preview of

MODEL WR-272L—A 5-tube two band a.c. superhet with 6-inch speaker, slide rule dial, automatic volume control and provision for phono or television. Price \$29.95. Westinghouse Radio Headquarters, 150 Varick St., New York, N. Y.

PHILCO

WIRELESS RECORD PLAYER—Model RP-1 player in gum wood cabinet with walnut finish. Streamlined with rounded edges; tone arm has crackle finish. Plays 10 and 12 inch records; list price \$19.95.



MODEL 502-122—Radio phonograph featuring closing lid while playing 10 or 12 inch records. Uses new type motor, improved tone arm; housed in walnut and inlaid cabinet. Price \$29.95 list. Philco Radio and Television Corp., Philadelphia, Pa.



ADMIRAL



MODEL 13-C5—A 5-tube superhet housed in handsome black plastic cabinet with carrying handle. Has built-in Aeroscope loop antenna. Lighted full-vision dial. Price \$12.95 list.



MODEL 18-85—A two band 5-tube superhet housed in deluxe wood cabinet with diagonal wood inlay on top and bottom of front panel. Modernistic speaker louvre. Price \$24.95 list. Continental Radio and Television Corp., 3800 Cortland St., Chicago, Ill.

LAFAYETTE

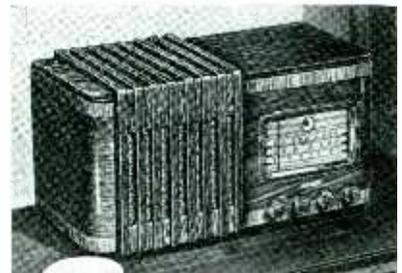


TABLE MODEL—Model D-33 three band receiver with illuminated sliderule dial; tuning eye; 6 inch dynamic speaker; provision for phono or television; 7 tubes. Radio Wire Television Inc., 100 Sixth Ave., New York, N. Y.

DEWALD



PORTABLE—Operates on a.c., d.c. and battery; uses 5 tubes, loop antenna, automatic volume control, airplane dial; housed in flat carrying case with simulated leather finish. Available in 2 types; model 545 tuning 170 to 555 meters and model 545SW tuning 15 to 55 and 170 to 555 meters. DeWald Radio Mfg. Corp., 440 Lafayette St., New York, N. Y.

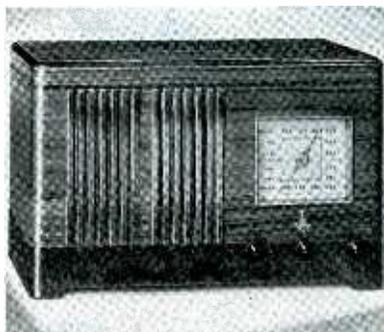
RADIO and Television RETAILING, JANUARY, 1940

New Products

EMERSON



MODEL 330—Compact a.c.-d.c. superhet with plastic cabinet and full vision dial. Tuning range 550 to 1550 kc. List price \$19.95.

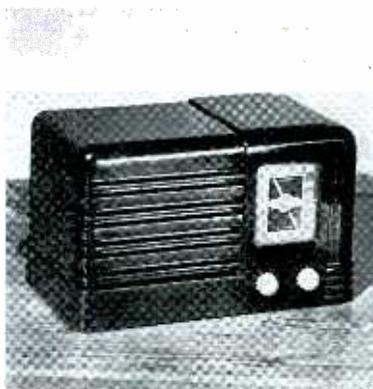


MODEL 331—Table superhet housed in handsome wood cabinet with inlay on top and bottom. Full vision dial; tunes 550 to 1600 kc. and 2.4 to 6.5 mc.; modern speaker grill. Price \$29.95 list. Emerson Radio and Phonograph Corp., 111 Eighth Ave., New York, N. Y.

RCA

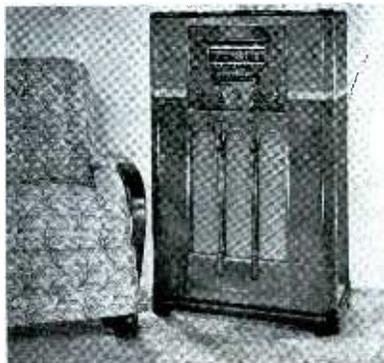


MODEL BP-56—This new portable "Pick-Me-Up" radio is operated either on batteries or house current; convenient to take to football games; has special metal-grilled ventilation vent in end panel; complete domestic broadcast coverage; superheterodyne using 6-tuned circuits; 3 magnetite core transformers; covered with tough airplane type luggage cloth in contrasting patterns of tan and brown; comfortable leather handle.



MODEL 40X30—Miniature 5-tube radio equipped with magic loop antenna; has automatic volume control; a.c.-d.c. operation; provision for victrola; electro-dynamic loudspeaker; beam power output; housed in walnut finished plastic case. Model 40X31 has all features described above, but is housed in finished ivory. RCA Mfg. Co., Camden, N. J.

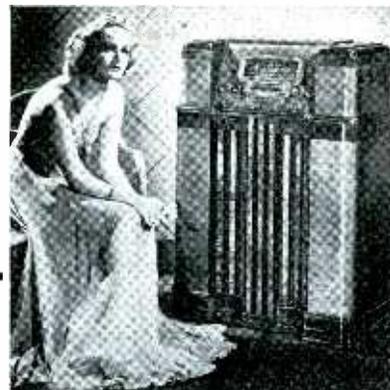
STROMBERG-CARLSON



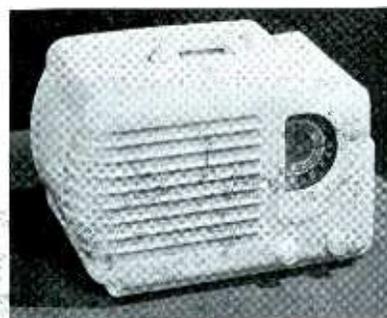
MODEL 455M—Labyrinth frequency modulated receiver which also receives standard broadcast and short wave bands. Has 6 electric pushbuttons; automatic drift compensator; bi-focal tuning indicator; extended fidelity on frequency modulation; provision for television and phono.



MODEL 420J—Table model set receiving standard and short wave bands. Handsome walnut cabinet; 6 pushbuttons; bi-focal tuning indicator; automatic volume control; provision for television and phono. Stromberg-Carlson Tele. Mfg. Co., Rochester, N. Y.

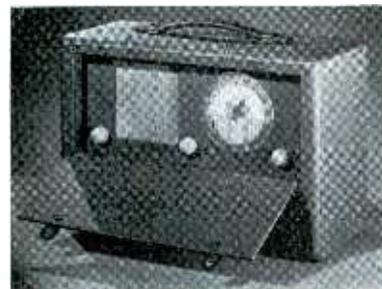


MODEL BC-102—A 10-tube superhet with 3 wave bands tuning from 540 kc. to 18.1 mc. Contains shielded rotatable Built-In-Tenna; automatic volume control; bass compensation; 12 inch dynamic speaker; 10 watts output; provision for television and phono. Cabinet finished in American stump walnut with rare wood inlays.



PORTABLE—New electric portable radio, cabinet-fitted in ivory plaskon composition; shaped in a modern style trend; horizontal corner louvres; equipped with hand-knob tuning and a convenient handle. Farnsworth Television and Radio Corp., 3700 Pontiac St., Fort Wayne, Indiana.

SONORA



TRIPLE-PLAY PORTABLE—Operating on a.c.-d.c. or battery with easy switchover arrangement from electric to battery operation; 6-tube superhet. Features a built-in antenna; automatic volume control; 5-inch P.M. Dynamic Speaker; novel "speedometer type" dial with rotating needle. Encased in modern style luggage with strong leather handle; hinged lid which closes over dial, controls, and grill. Sonora Radio and Television Corp., Chicago, Ill.

FULTON

OBSERVOX—A television receiver in kit form or completely wired. Uses 7 inch white picture tube and may be had with or without cabinet. Complete kit less tubes and cabinet \$67.13; with tubes and console cabinet and completely wired \$166.51. Fulton Radio Corp., 100 Sixth Ave., New York, N. Y.

INVESTIGATE!

You'll find Arcturus
Tubes tops in Quality!



INVESTIGATE!

You'll find Arcturus
Dealer Helps real
Sales Builders!

INVESTIGATE!

You'll find ARCTURUS
EQUIPMENT DEALS
earn extra profits!



THE EQUIPMENT YOU NEED — WHEN YOU NEED IT

The coupon below is your key to one of the greatest money-saving opportunities you've ever had... it will bring you facts and figures that show how easy and practical it is to obtain the newest models of store and shop equipment at practically no cost, merely by selling high quality Arcturus Tubes. Don't miss it—mail the coupon today—then you be the judge!

FREE! NEW EDITION OF THE ARCTURUS DEALER HELPS FOLDER
New ideas... new items... new selling material that bring profitable business to your store. Be sure to get your copy.

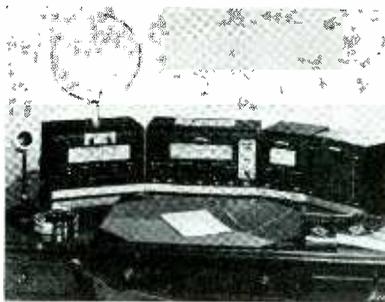
MAIL THE COUPON

ARCTURUS

ARCTURUS RADIO TUBE CO., Newark, N. J. R-27
Without cost or obligation, send my copy of the ARCTURUS DEALER HELPS Folder and details of the ARCTURUS EQUIPMENT DEAL.

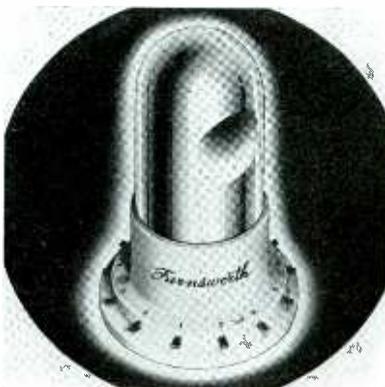
Name.....
Street.....
City.....State.....
 I am a dealer I am a serviceman. My
jobber is.....
Address.....
(Offer good in U. S. A. only)

HOWARD



COMMUNICATION RECEIVERS — Progressive series sets; initial investment of \$30.00 may be enlarged by adding additional equipment as desired. From left to right is shown a 2 stage preselector, 10 tube receiver, frequency monitor, and external speaker. Howard Radio Co., 1731-35 Belmont Ave., Chicago, Ill.

FARNSWORTH



ELECTRONIC EQUIPMENT—A new line of equipment for studio and radio transmission of sight and sound. Includes image dissector tubes, multipactor tubes, telecine projectors for televising film, television pickup cameras, photocell multiplier tubes as illustrated, and master timer and pulse generators. Farnsworth Radio and Television Corp., Ft. Wayne, Ind.

WESTON



CIRCUIT TESTER—Model 785 tester has 27 complete ranges for voltage, current, and resistance measurement. Measures d.c. volts at 20,000 ohms per volt from 0-1 to 1000 volts in 6 ranges; a.c. volts at 1000 ohms per volt from 0-5 to 500 volts in 6 ranges; current from 0-50 microamps to 10 amps in 6 ranges; resistance measurement of 0-3000 to 30 meg in 5 ranges with self contained battery. Weston Electrical Inst. Corp., Newark, New Jersey.



PERMO

REPRODUCING NEEDLE—Transcrip-Tone phono needle tipped with precious metals of radium, ruthenium, osmium and iridium. Designed for high fidelity reproduction, broadcast transcription work and recording and sound studios. Special characteristics of the needle tip provide a lubricating action which does not wear nitrate or commercially pressed records; long life. Permo Corp., 6415 Ravenswood Ave., Chicago, Ill.

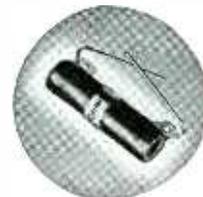


NEW OHMITE TAPPED CORDOHMS

Line-cord resistors with extra tap for pilot lights on AC-DC radio receivers. Replaces voltage dropping resistors and ordinary fine cord. Eliminates generated heat from set.

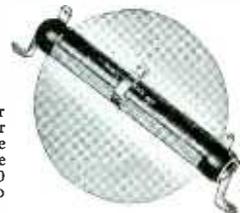
OHMITE BROWN DEVILS

Extra-sturdy vitreous-enameled resistors for voltage dropping, bias units, bleeders, etc. 10 and 20 watt sizes; 1 to 100,000 ohms.



OHMITE ADJUSTABLE DIVIDOHMS

Mighty handy for quick replacement or change of resistance value. Ideal voltage dividers. 10 to 200 watts. Resistances to 100,000 ohms.



.....SEND COUPON TODAY.....

OHMITE MANUFACTURING CO.
4871 Flournoy Street, Chicago, U.S.A.

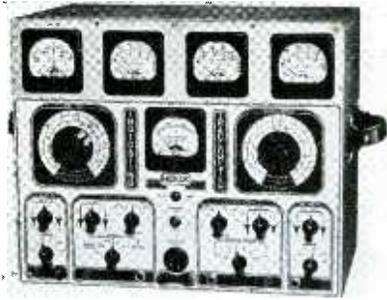
SEND FREE CATALOG 17

Name
Address
City State

OHMITE

RHEOSTATS RESISTORS TAP SWITCHES

HICKOK



TRACEOMETER—A signal tracing instrument with five meters as indicators. Measures r.f., i.f. signals at any point in a receiver; d.c., a.f. and a.c. voltages as well as a.v.c. and a.f.c. voltages; measures watts up to 300 watts. Hickok Electrical Inst. Co., 10514 Dupont Ave., Cleveland, Ohio.



SPRAGUE

MOTORMIKE—A capacitor indicator which may be used as an emergency motor starting condenser on 110 volt 60 cycle motors where capacities from 54 to 180 mfd. are required. Equipped with carrying handle, test leads, and fustats for protection and housed in rugged steel case; net price \$29.90. Sprague Products Co., North Adams, Mass.

ERWOOD



SOUND SYSTEM—A 20 watt combination 6 volt d.c. and 115 volt a.c. system in handsome tweed carrying case. Provision is made for either microphone or phono reproduction. Output is variable for various speaker loads. Erwood Sound Equipment Co., 224 W. Huron St., Chicago, Ill.

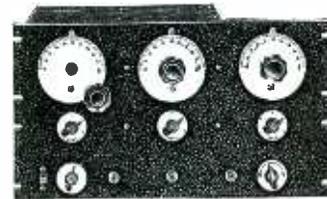
ELECTRO PRODUCTS



ELIMINATOR—An "A" and "B" eliminator for use on 4 to 7 tube 2 volt battery receivers. Operates on 115 volt 60 cycles current; delivers 90 volts of "B" power and required filament voltages. Total power consumption is 14 watts; weight 4½ lbs., list price \$9.95. Electro Products Labs, 549 W. Randolph St., Chicago, Ill.

MUELLER

CABLE—Booster battery cable for emergency car starting. Cable is 6 feet long with clips and connectors permitting a second battery to be conveniently connected in parallel with regular battery for starting. Available in sizes of number 1 to number 00 cable; price from \$1.80 to \$3.45 each. Mueller Electric Co., Cleveland, Ohio.



ACCESSORIES MFG.

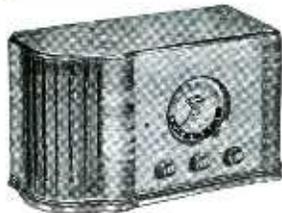
GROUND CLAMP—New clamp for making ground connection on any pipe or rod from 3/8 to 1 1/16 inches in diameter. Has special 8 point contact which bites into metal while tightening; price \$1.00. Accessories Mfg. Co., 4612 N. Clark St., Chicago, Ill.

BROWNING

TRANSMITTER—New electron-coupled all-band-switched exciter-transmitter and voltage regulated power supply. Stability comparable to better grade x-cut crystals; operated from 10 to 160 meters. Browning Labs Inc., 750 Main St., Winchester, Mass.

Majestic GREETES THE NEW YEAR WITH NEW MODELS

See the Display of Majestic Radios at the Drake Hotel, Chicago, Jan. 8-19.



MAJESTIC MODEL 5CAA
2 Wave band AC-DC table model for American and foreign reception, with full vision aero-type dial. 6 tube superhet with 8 tuned circuits.

● As new as 1940, designed right for quick sale, and priced right for quick profit, Majestic greets the New Year with brand new models to keep your radio profits on the upward climb. From the PUSH BUTTON PORTABLE—a Majestic first!—to the new price leader console, the new, improved, 1940 line of Majestic Radios gives you profit merchandise with added consumer appeal. Write for new literature and prices.

MAJESTIC RADIO & TELEVISION CORP.

2600 W. 50th Street, Chicago, Illinois



MAJESTIC CONSOLE MODEL 5CDC

5 tube superhet for American and foreign reception. Incorporates many Majestic features and has a real price appeal for quick sales.



MAJESTIC MODEL 5ADA
A 5 tube improved superhet with single wave band covering standard broadcast, as well as police calls. Incorporates distinctive Majestic radio features.



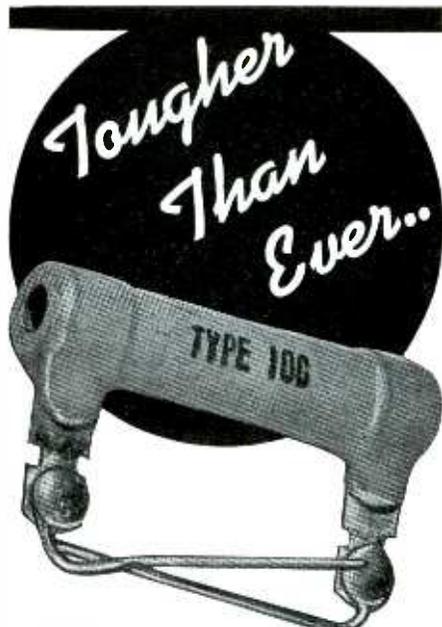
MAJESTIC MODEL 5BDA
5 tube superhet with push button control, permeability tuned stations and band switching. Two tuning bands.



MAJESTIC MODEL 5BD PUSH BUTTON PORTABLE
5 tube superhet AC-DC or battery operated with battery control. Includes battery regenerator and new portable radio features. Small view shows model closed.

MAJESTIC MODEL 5CEC

Same as Model 5CDC, except 110-115 volt, 50-60 cycle operation.



★ Still tougher resistors for your toughest jobs—that's the idea behind CLAROSTAT GREENOHMS. These unique cement-coated power resistors are winning over servicemen everywhere—by actual trial—just as they have won over hams, instrument makers, commercial equipment manufacturers and others who insist on quality components. ★ Ask local jobbers for Greenohms—10 to 200 watts, any popular resistance value. Try them. ★ Or write us direct for data. ★ Dept. RRG, Clarostat Mfg. Co., Inc., 285-7 N. 6th St., Brooklyn, N. Y.



Big Value . . .
TUBE TESTER COMBINATION



ONLY
\$26.85
DEALER
NET

With
RED • DOT
Lifetime
Guaranteed
Meter

Readrite
RANGER

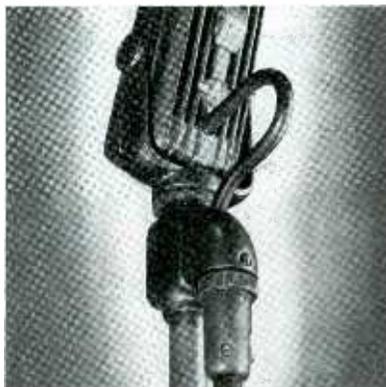
**MODEL
432-A-742**

- Model 432-A-742 is a combination Tube Tester and Volt-Ohm-Milliammeter.
- Complete Volt-Ohm-Milliammeter, 16 Ranges
- Sockets for All Tubes . . . Filament Voltages from 1 to 110—A Safeguard Against Obsolescence • Precision Indicating Instrument with Two Highest Quality Sapphire Jewel Bearings • Separate Line Control Meter • Neon Shorts Test • Approved RMA Circuit • Portable Rich Black Leatherette Covered Case—Professional in Appearance, Etched Panel. Complete, less batteries . . . \$26.85 . . . Dealer Net Price.

WRITE FOR CATALOG! Section 120 College Avenue

READRITE METER WORKS, Bluffton, Ohio

AMPERITE



PLUG—A station type connector plug which holds the cable firmly and prevents undue strain on the cable. Ideal as a microphone connector. Amperite Co., 561 Broadway, New York, N. Y.

RADIO CITY



TUBE TESTER—Model 308 tester for use with all tubes commonly used including 0Z4, loctal, single-end, bantam, miniature, high voltage filament types and ballasts. Uses 3 inch meter, may be had for 110 or 220 volt operation in portable or counter styles. Radio City Products Co., 88 Park Place, New York, N. Y.

KATO

POWER PLANT—Portable power plant for emergency use in hospitals, fire departments and such, in case of power line failure. Available in sizes from 300 to 10,000 watts. Kato Engineering Co., Mankato, Minn.

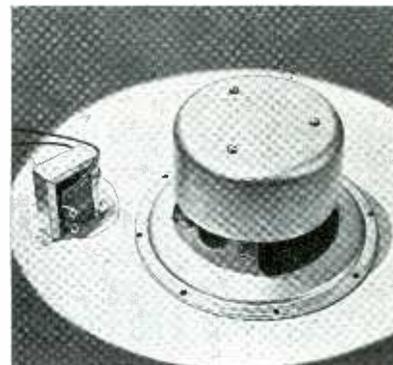
CLARION



SOUND SYSTEM—High powered portable sound system Model C-483 rated at 40 watts output. Has 4 microphone inputs with gain of 128 db.

and 2 phono inputs of 84 db. Permits mixing of any 5 channels, has master gain control, output meter, sloping panel, speaker matching switch for output impedances of 2 to 500 ohms. Complete with 2 p.m. speakers, microphone, stand, carrying case and cables. Price \$236.39. Transformer Corp. of Amer., 69 Wooster St., New York, N. Y.

QUAM-NICHOLS



P. M. SPEAKERS—New line of 8 and 12-inch p.m. dynamic speakers with 28 and 48 oz. magnets. Model D80PM 8-inch unit illustrated. Equipped with 1-inch voice coil and interchangeable transformer. Quam-Nichols Co., Cottage Grove at 33rd Place, Chicago, Ill.

LAFAYETTE



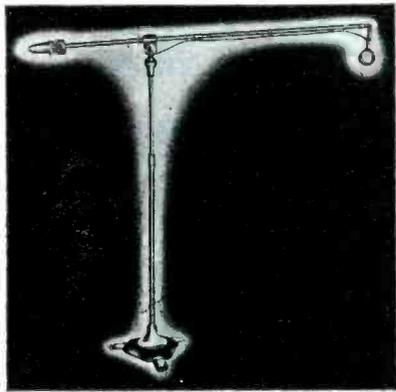
SOUND SYSTEM—Complete beam power amplifier, 2 speakers, cables, plugs and airplane-luggage carrying case. Provides 15 watts output; 113 db. gain; facilities for mixing and fading 3 channels; universal output impedance from 2 to 500 ohms. Radio Wire Television, Inc., 100 Sixth Ave., New York, N. Y.

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KEYTUNER—A self-teaching code instructor. Either headphone or speaker operation may be had; four ranges of tone pitch can be chosen; operates on 110 volts a.c.-d.c.; price of kit \$4.60 net, completely wired \$6.60 net. Edwin I. Guthman & Co., Inc., 400 S. Peoria St., Chicago, Ill.

ATLAS



MIKE STAND—Boom type stand for broadcast and other microphone application. Fully adjustable and counter-balanced boom; base has 17-inch span with rubber feet. Finished in polished chromium and gunmetal shrivel; list \$45.00. Atlas Sound Corp., 1447-51 Thirty-Ninth St., Brooklyn, N. Y.

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HIGH VOLTAGE ELECTROLYTICS—Compact high voltage, high capacity condensers in work-

ing voltages of 600 and 800 volts. Known as types AP, AD, and RC; low leakage and low power factor. Sprague Products Co., North Adams, Mass.

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WARD

ANTENNA ADAPTER—A conversion kit designed to facilitate mounting standard auto aerials on streamlined 1940 cars. Fits all car makes regardless of body lines. Ward Products Co., Ward Bldg., Cleveland, Ohio.

RCA



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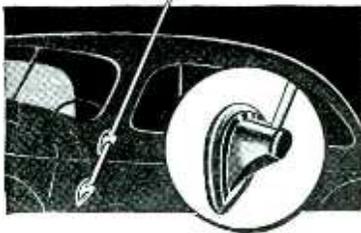
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JIM QUAM

Says



When a serviceman repairs a speaker for the smaller and cheaper sets, I think he's just making it tough for himself. Nine times out of ten he will not have matching parts in stock, consequently performance will be off, with the customer dissatisfied and left with that "overcharged" feeling. It just doesn't make sense.

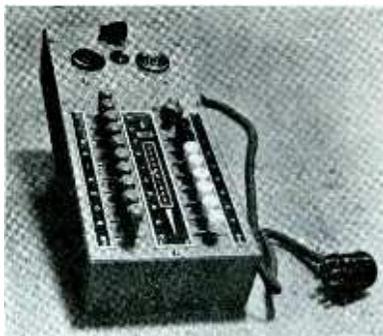
But when a serviceman insists that a new speaker is needed, the set delivers real performance again and the customer feels he's had his money's worth. And the serviceman has made a profit on the deal.

It seems to me that a serviceman is cheating himself and his customer every time he attempts to repair these smaller speakers.

QUAM-NICHOLS CO.
33rd Place & Cottage Grove 1674 Broadway
CHICAGO NEW YORK

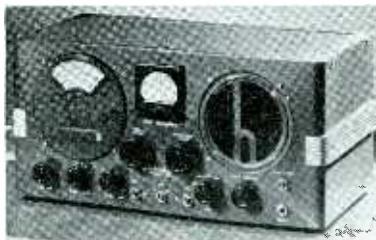


PHILCO



MODERNIZER—Designed to bring tube testers up to date; plugs into any tester having 6 prong socket and heater voltages up to 7½ volts. Will handle all new tubes with various filament voltages and bases. Finished in light gray crackle with red and ivory telephone type switches; price \$25.00 list. Philco Radio and Television Corp., Philadelphia, Pa.

HALLICRAFTERS



SKY CHAMPION—Model S20-R communications receiver tuning from .54 to 44 mc. in 4 bands. Has high signal to noise ratio, electrical band spread, rubber cushioned loud speaker, provision for "S" meter, noise silencer, finished in gray with stainless steel trim. Hallicrafters, Inc., 2611 S. Indiana Ave., Chicago, Ill.

OPERADIO



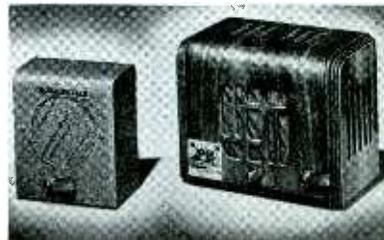
MODEL 172—Mobile sound system for use on a.c. or battery. All controls on one dial plate for ease of operation. "Economizer Control" for conservation of battery supply saves from 25 to 50 per cent of battery charge. Equipped with 25 watt amplifier, 12-inch turntable, crystal pickup, 12 inch p.m. speaker and dynamic mike. Operadio Mfg. Co., St. Charles, Ill.

ANSLEY

DYNAPHONE—Two new high fidelity radio chassis, one using 2A3 tubes in the output and an

a.c.-d.c. model with 4-25L6 types. Finished modern or period furniture styles. Ansley Radio Corp., 4377 Bronx Blvd., New York, N. Y.

TALK-A-PHONE



INTERCOMMICATOR—Model LP-5 complete interoffice phone with one master and up to 5 substations. Substations can call master at will, persons may speak as far as 50 feet from units; includes special "silent" switch which permits master to be called yet excludes noise pickup from substations; operates on 110 a.c.-d.c. Talk-A-Phone Mfg. Co., Chicago, Ill.

CORNELL-DUBILIER

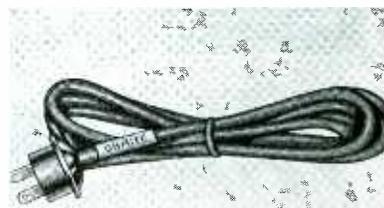


MOTOR CAPACITIES—Type ETN electrolytic capacitors for motor starting of the etched foil type. Hermetically sealed in aluminum cylinders with Bakelite terminal heads. Special cardboard sleeve insulates aluminum case. Cornell-Dubilier Mfg. Co., South Plainfield, N. J.

PHILSON

TELEVISION ANTENNAS—Adjustable antennas for television and other ultra high frequency use. Model T120 consists of single dipole, mast and mounting provisions \$11.00 list. Model T220 uses dipole and director or reflector and is complete with mounting dipole and antenna support for \$15.25 list. Philson Mfg. Co., Inc., 156 Chambers St., New York, New York.

OHMITE



CORDOHMS—Tapped resistances for a.c.-d.c. receivers providing voltage for pilot light. Available in range of values for 4 or 5 tube sets with or without tapped positions. Ohmite Mfg. Co., 4835 Flournoy St., Chicago, Ill.

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Has all tube sockets including Loctals, Bantam Jr. and the new 1.4-volt Miniatures. Tests High Voltage series tubes including 117Z6G. Future tubes provided for by filament voltages in 20 steps from 1.1 to 110 volts. Noise test jack and separate line voltage control meter. Suede finish Silver Grey and Maroon case and sloping panel of heavy, streamlined steel. Case size with cover—15¼" x 11¾" x 6½". Dealer Net Price\$34.84

Model 1612 is the same as Model 1613 but in a counter type case.....Net Price.....\$29.84

MODEL 1213

Contains all sockets to test present day tubes including Loctals, the new Bantam Jr., the High Voltage Series tubes including 117Z6G, the new 1.4-volt Miniatures, and Gaseous Rectifiers. Ballast Tube continuity test. Foldex Tube Chart RED•DOT Lifetime Guaranteed Instrument.....Dealer Net Price\$22.00



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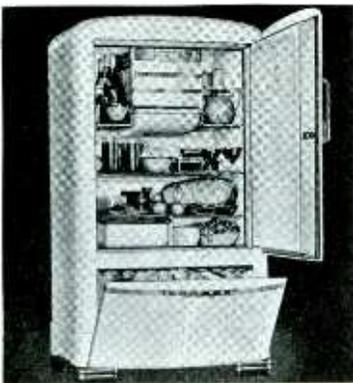
NEW ELECTRICAL HOME SPECIALTIES

G-E



REFRIGERATOR—New line of 13 refrigerator models with increased capacity and operating efficiency. Low priced 8 cubic feet model designed particularly for rural use. Deluxe model illustrated shows large shelves and food bins. Equipped with aluminum container for removing food odors. General Electric Co., Bridgeport, Conn.

LEONARD



REFRIGERATOR—Equipped with HI-Humid system for maintaining original food freshness longer. Available in 6 and 8 cubic foot models in prices from \$119.95 to \$239.95. Uses a simple single-cylinder reciprocating Glacier sealed unit. Leonard Division, Nash-Kelvinator Corp., Detroit, Mich.

HOTPOINT



HOTPOINT REFRIGERATOR—Has an easy-to-clean calglass finish; net capacity 6 cubic feet; features an automatic interior light; special door on the Speed Freezer; two metal ice trays with rigid grids; one all-rubber tray, and one aluminum tray; a vegetable pan, and a wire fruit basket. Edison General Electric Appl. Co., Inc., 5600 W. Taylor St., Chicago, Ill.



CROSLLEY

MODEL ML8-70—Deluxe Model features a miniature cold storage plant; vegetable crisper with glasstop; sliding shelves; door with shelves; automatic light; storabin for reserve non-refrigerated storage; 112 ice cubes at one freezing; 6 ice trays (4 shallow—2 quick release trays); sturdily built cabinet of 20-gauge steel. Crosley Corp., 1329 Arlington St., Cincinnati, Ohio.



BARTON

WASHERS—A new line of washers ranging in price from \$39.95 to \$99.95; some featuring a Controla Speed equipment permitting three speed washing and wringing; and the patented Water Deflector Tub. Model C65 illustrated. Barton Corporation, West Bend, Wisconsin.



GALE

MODEL RGC64—One of a line of domestic refrigerators with 6 cubic feet capacity which includes ample shelf space; special meat storage compartment; individual vegetable and fruit trays; sliding removable shelves. Gale Products, Galesburg, Ill.

KELVINATOR



REFRIGERATOR—New 1940 line of refrigerators with moist-master humidity system for improved operation. Eight cubic foot model illustrated. Prices range from \$119.95 to \$239.95. All models are powered with Polarsphere unit. Kelvinator Division, Nash-Kelvinator Corp., Detroit, Mich.

NORGE



REFRIGERATOR—New 1940 line of refrigerators contains sliding shelves so that all items are easily accessible. "Safety stops" prevent shelves from sliding all the way out. Plenty of space for fruit, dairy products and vegetables. Heavy tipped bars of each shelf are properly spaced for safe storage of small articles. Norge Division of Borg-Warner Corporation, Detroit, Mich.

WESTINGHOUSE



REFRIGERATOR—Model 24959 features glass-top Humidrawer, includes a dairy basket for storing eggs and other dairy products which are provided with high humidity and moderate cold to keep fresh produce at its best. Westinghouse Elec. and Mfg. Co., Mansfield, Ohio.

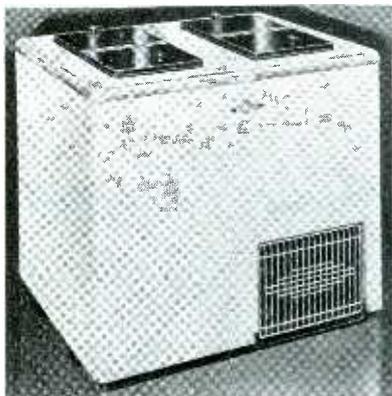
UNIVERSAL



ELECTRIC RANGE—Equipped with oven; 2 utility drawers; 3 variable speed units; cooker, deep fry basket, variable heat; new smokeless broiler grill; illuminated dial on oven control; selective switch for time control of oven or outlet; deluxe warming drawer, lower right, with signal light and automatic temperature limiting control; automatic interior oven light, 25 watts. Landers, Frary and Clark, New Britain, Conn.

FRIGIDAIRE

ICE CREAM CABINET—All-steel cabinet with new pull-out condensing unit to eliminate unnecessary maintenance expense; features removable storage compartment, new positive action switch, new positive grip container holder, as well as sealed, air-tight construction. Frigidaire Division, General Motors Sales Corporation, Dayton, Ohio.



WESTINGHOUSE



AIR CONDITIONER—Model 258402 the smallest of three Mobilair units in the new line. Has cooling capacity of 4000 B.T.U. per hour. No plumbing connections are necessary for installation. Westinghouse Elec. & Mfg. Co., Mansfield, Ohio.

RCP COMBINATION Model 801M

A modern tube and comprehensive set tester . . . complete for only

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Additional Socket for New Miniature Tubes

Big value at low cost is the reason RCP test instruments are doing the work today for more and more busy dealers and servicemen. RCP gets down to business. And here's the proof—Model 801M, combines in a compact portable case two essential instruments—a complete tube tester and set tester, provides the serviceman with a broad background for profit. Tests all new, old, and ballast tubes. Fused 4½" Meter ALNICO MAGNET (only finest, most sensitive meters employ Alnico.) Fused meter. Impressive panel in frosted silver, black and maroon. AC voltage measurements have linear scales to coincide with DC—practically eliminating temperature errors, an RCP exclusive. Line regulation 103 to 137 volts; direct meter indication. Noise test. Eight AC - DC volt ranges 0-1000. DC milliammeter 0-1-10-100-1000. DC amps 0/10. Four ohmmeter ranges 0-500 up to 10 Meg. Polarity reversing switch—double fused line. Compact, light, slip hinge cover case. Complete with battery and test leads. You couldn't buy these two test instruments individually at anywhere near the low RCP price!

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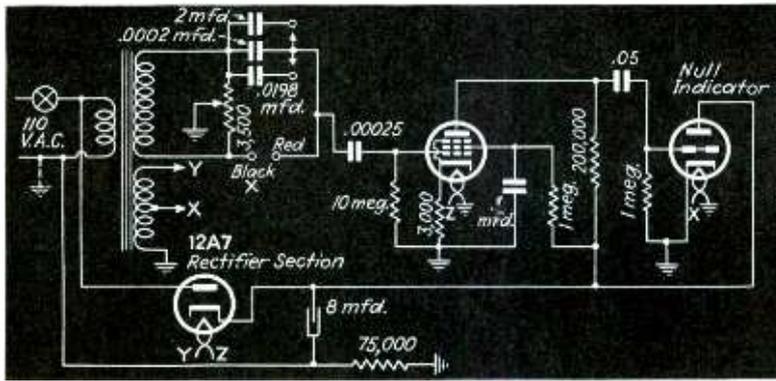
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Capacitor Bridge

Herewith is the schematic of the compact, self-contained capacitor bridge model BN by Cornell-Dubilier. The circuit revolves around a 12A7 pentode-rectifier. A tuning eye tube is used as null indicator.

At the left is the power transformer which supplies filament and control voltage for the instrument. The rectifier section connects directly to the line and supplies plate voltage to the pentode and tuning indicator.

Across the upper secondary of the transformer is a 3500 ohm potentiometer. On this is a dial calibrated in capacity. This serves as the capacity indicator and null adjuster.

On the upper leg of this secondary is the capacitor range switch permitting a wider range of indication than just one capacitor would give. This is arranged in series with the unknown capacity which is connected at X (black and red terminals). To the midpoint of these capacities the grid of the pentode, which serves as an amplifier, is connected. Any voltage flowing to the pentode grid is amplified and impressed onto the control element of the tuning indicator which rectifies this and uses it as a control voltage, actuating the eye.

If the unknown capacity at X is the same as that in the upper leg and the potentiometer is set at the center, then no voltage flows to the grid of the pentode and a null point is indicated on the tuning eye. The dial on the potentiometer would then read a capacity size equal to the capacity in the above leg.

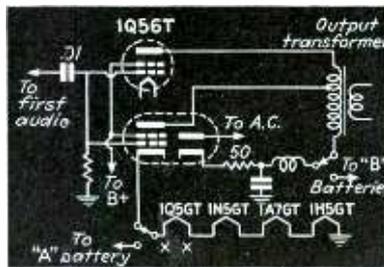
Likewise, if the capacity at X were half (or any other ratio) of that at the upper leg, then the dial would have to be set at a similar ratio of potentiometer resistance to give the null.

A.C.-D.C.-Battery Supply

Many unusual circuits have resulted from the a.c.-d.c.-battery portables placed on the market a short time ago. Among them is the output stage by

Stewart-Warner shown here.

For normal battery operation a 1Q5GT supplies the audio output to the speaker. This is conventional except for the fact that the 70L7GT pentode section has its grid and plate circuit in parallel with the 1Q56T. This has little effect, since on battery



operation, the filament of the 70L7GT is not heated.

During a.c.-d.c. operation (as illustrated) the 70L7GT is heated and the rectifier section begins to deliver plate voltage. This is supplied to the plate of the pentode section through the output transformer which is tapped to provide a better load value for this tube. Plate current flows and causes a voltage drop in the resistance con-

nected in series with the cathode, which, in this case is the filaments of all the other tubes. This voltage drop is used as bias for the pentode and filament voltage for the other tubes.

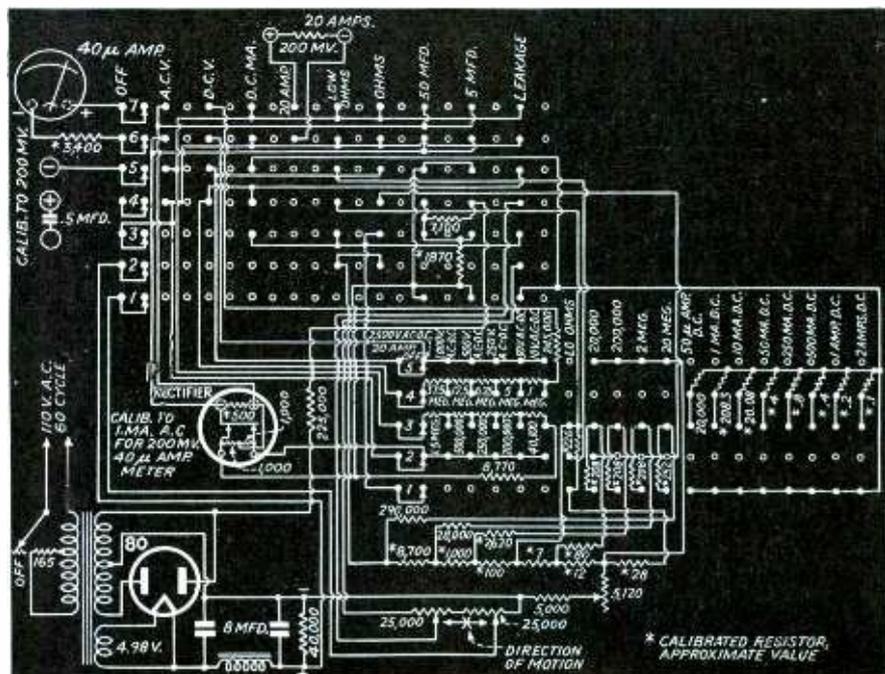
Such a circuit might appear to have complications since two different output tubes are connected to the same load. However, the 70L7GT pentode draws 50 ma. plate current which is just right to produce the correct voltage drop across all tube filaments but the 1Q5GT. This tube has a 100 ma. filament and 50 ma. though it does not produce sufficient heat to make the tube conduct.

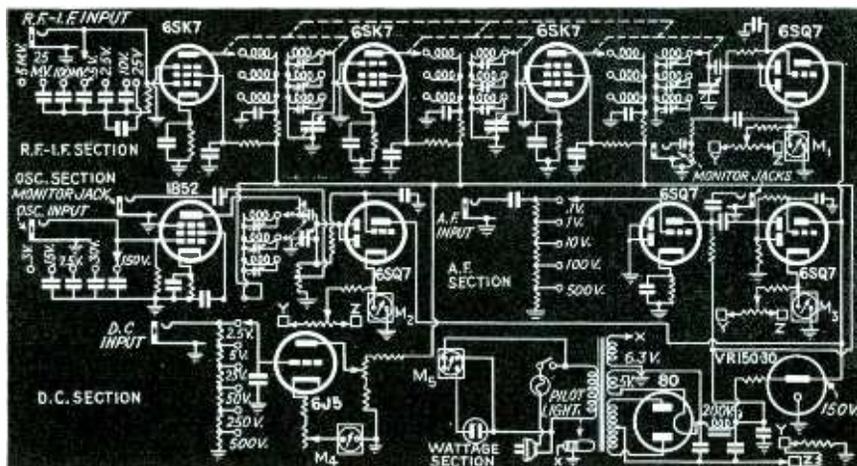
Versatile Tester

All common test functions are contained in Triplett's model 1604 tester shown here.

The switching section shown at the upper left comprises the circuit selector, which permits reading a.c. and d.c. voltages, d.c. milliamperes and amperes, ohms, mfd and leakage. The resistors and switching to the right enables the correct range of any of the above conditions to be chosen. A 40 microampere meter movement gives all d.c. readings at 25,000 ohms per volt; a.c. readings at 1000 ohms per volt. The rectifier shown at left center is of the plug-in-type and contains the necessary shunts.

In addition, a tube tester-analyzer is incorporated in the unit (not shown in schematic). All connections to the socket prongs are brought out to tip jacks so that voltage and current measurements can be made.





Traceometer

A complete signal tracer using meters as indicators and permitting actual voltage and microvoltage measurements has been devised by Hickok.

The r.f.-i.f. section, comprising the 4 tubes shown at the top of the diagram, tunes from 100 to 1800 kc and has a measurement range from 0-5000 microvolts to 25 volts in 7 ranges. This is accomplished by substituting various size capacitors at the input of the first 6SK7. Two other 6SK7 tubes serve as r.f.-i.f. amplifiers and feed the diode plates of the 6SQ7

which operates like any diode detector. The triode element of this tube is direct coupled to the output of the diode so that this voltage is further amplified, permitting sufficient current values to operate the meter indicator. The meter is calibrated in microvolts and volts, depending on the range used and thus indicates the actual voltage impressed on the input of the circuit.

The oscillator section, using an 1B52 and a 6SQ7 and shown at the center left operates in a fashion similar to the above channel. Likewise in this case the triode of the 6SQ7 is coupled to the diode and operates the meter.

At the lower left is the 6J5 d.c. voltmeter. This has a range of 0-2.5 volts to 500 volts in 6 steps. Input impedance is 18 megohms. A zero center meter movement is employed so that it is unnecessary to observe test prod polarity when testing.

The a.f. section at the center right is similar to the d.c. section except for a second 6SQ7 rectifier-amplifier.

At the lower right is the wattmeter, reading up to 300 watts, and the power supply. A VR150-30 voltage regulator insures proper operating voltages for all the calibrated stages.

New Tubes

3A8GT—A diode-triode pentode by Raytheon. The filament has a center-tap so that it may be operated in series at 2.8 volts or in parallel at 1.4 volts. Series filament current is 0.1 amp.

	Triode	Pentode
Plate Voltage.....	90	90 volts
Screen Voltage.....	—	90 volts
Grid Voltage.....	0	0 volts
Amplification Factor.....	65	— volts
Plate Resistance.....	0.24	0.6 ohms
Transconductance.....	275	750 umhos
Plate Current.....	0.15	1.2 ma.
Screen Current.....	—	0.3 ma.

7A7-LM—Triple-grid super-control single-ended amplifier by RCA. With

NEW MODEL AC-DC
Dual Volt
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Sentinel
QUALITY RADIO SINCE 1920

SENTINEL RADIO CORPORATION
Evanston, Illinois

new Octalox base which fits the lock-type 8 pin socket. Characteristics are:

Heater Voltage.....	6.3 volts
Heater Current.....	.3 amp.
Plate Voltage.....	250 volts
Screen Voltage.....	100 volts
Grid Voltage.....	-3 volts
Suppressor.....	(connected to cathode)
Plate Resistance.....	0.8 megohm
Transconductance.....	.2000 umhos
Plate Current.....	8.6 ma.
Screen Current.....	2.0 ma.

7Q7—Heptode pentagrid converter with loctal base by Raytheon. The oscillator section is designed to operate in a Hartley circuit with the cathode connected to a tap on the oscillator coil. Self-excited characteristics are:

Heater Voltage.....	6.3 volts
Heater Current.....	.3 amp.
Plate Voltage.....	250 volts
Grid No. 2 and 4 Voltage.....	100 volts
Grid No. 3 Voltage.....	0 volts
Grid No. 5 Voltage.....	0 volts
Grid No. 1 Resistor.....	20,000 ohms
Conversion Transconductance.....	.450 umhos
Plate Current.....	3.4 ma.
Grid No. 2 and 4 Current.....	8 ma.
Grid No. 1 Current.....	0.5 ma.

828—Transmitting or audio beam power amplifier by RCA. Plate lead brought out through the top. Push-pull class AB, characteristics are:

Heater Voltage.....	10 volts
Heater Current.....	3.25 amps.
Plate Voltage.....	2000 volts
Screen Voltage.....	750 volts
Suppressor Voltage.....	.60 volts
Grid Voltage.....	-120 volts
Plate Current (max.).....	.270 ma.
Screen Current (max.).....	.60 ma.
Suppressor Current.....	.9 ma.
Load Resistance (plate to plate).....	18,500 ohms
Power Output.....	385 watts

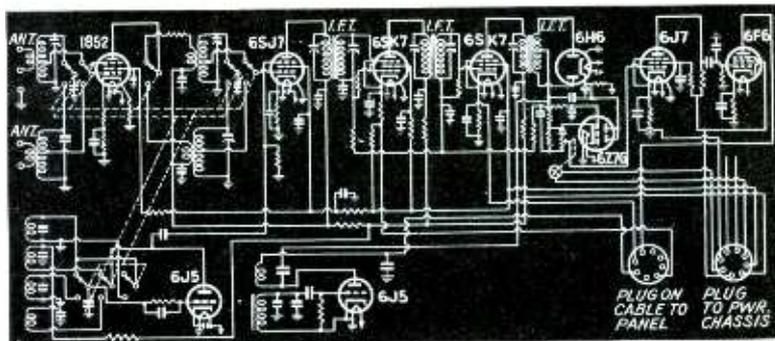
High Frequency Receiver

Designed to operate in the ultra high frequency range from 27.8 to 60.3 mc., the HF-30X by RME schematic shown here is useful for communication, police and other services.

A gain of 15 db. is realized in the r.f. stage even at these frequencies by virtue of an 1852 high gain tube. This feeds a 6SJ7 mixer which in turn drives two 6SK7 i.f. stages. Following this is the 6H6 full wave diode detector and 6Z7G noise silencer which is of the noise gate type, limiting the detector audio output to a predetermined value with respect to the carrier strength. This prevents large bursts of static from overriding the signal. A 6J7 and 6F6 complete the audio lineup.

The heterodyne oscillator circuit, using a 6J5 and shown at the lower left is of the tickler feedback type since this type has been found most stable on high frequencies and has the least amount of hum modulation. Hum is one of the drawbacks of cathode feedback type oscillators and usually results in a certain amount of instability.

Oscillator voltage is injected into the 6SJ7 mixer through the suppressor. This permits a good conversion gain with little interaction between circuits.



A second 6J5 to the right of the heterodyne oscillator serves to produce a beat note for c.w. reception.

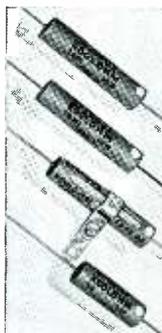
The power supply unit, not shown

in the schematic, likewise the "R" meter speaker and phone jack, plug into the sockets shown at the lower right.

UNBEATABLE SPRAGUE VALUES UNMATCHED SPRAGUE QUALITY

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• DIFFERENT!
• ECONOMICAL!

Imagine a 70,000 ohm 10-watt wire wound resistor actually dissipating 10 full watts! Imagine resistors with an automatic overload indicator. Imagine resistors with 0 inductance at 50 mc. and distributed capacity of only 2 mmfd. available at lowest prices ever! No wonder the entire trade is talking about *Sprague Koolohms*. See them today!



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UT-81,	8 mfd.	150 V.	5/8"x1 1/2"	Net 27c
UT-4,	4 mfd.	450 V.	11/16"x1 1/2"	Net 33c
UT-8,	8 mfd.	450 V.	13/16"x1 1/2"	Net 36c
UT-88,	dual 8,	450 V.	1"x2 3/8"	Net 63c

TC TUBULARS . . .



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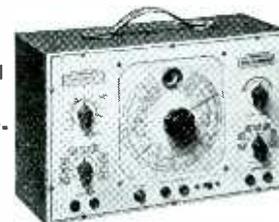
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SPRAGUE PRODUCTS CO. NORTH ADAMS, MASS.

FIRST AID for CABINETS

EASY REPAIR methods for dented and scratched radio cabinets

By C. A. NUEBLING*

IT is not difficult to see why a bathing beauty of 1940 will attract more attention than one of the '90's. It's all a question of external appearance.

From this, servicemen can derive a valuable business hypodermic by making repair jobs look better as well as work better. In the same way, plenty of extra cash can be made by touching-up not only radio cabinets, but also household furniture. If you don't believe that, just try it anyway; you'll be surprised at results.

As far as actual cabinet touch-up work goes, it's safe to say that almost any serviceman can get good results after a little practice on his own set and others around the shop. A few supplies will be needed to do the work and a stock of these should be kept on hand at all times. Numerous kits are on the market which contain a complete assortment of these materials, but for the sake of explanation, a listing of the important items is given here:

- Rubbing Oil
- Polishing Oil
- Padding Lacquer
- Transparent and Solid Shellac Sticks
- Number 9-0 Sandpaper
- Cork Block
- Powdered Color Stain
- Number 4-0 Steel Wool
- Soft Brush
- Small Putty Knife
- Cheesecloth
- Alcohol Burner

A general cabinet cleanup is probably the most useful and easiest for the beginner to tackle. This consists simply of applying rubbing oil to the entire cabinet in much the same way as furniture polish. This will remove finger marks, dust and minor surface blemishes. For grilles, friezes or other intricate woodwork,

apply the oil with a clean soft paint brush as illustrated in Fig. 1. This permits the oil to get into out-of-the-way places and produces a more finished job than just the cloth would.

After the entire cabinet is oiled, dry thoroughly with a clean cheesecloth, using a forward and backward motion.

White streaks along the edges of moulding and trim, as shown to the

right of Fig. 1, should be darkened, using a small camel hair brush and the proper blend of powdered stain mixed with a drop or two of oil.

Dents and nicks in woodwork are a little more difficult to repair but should present no serious difficulties.

The cabinet top in Fig. 2 shows several spots where the finish has been completely scratched through. Obviously it would be impractical to attempt to finish over these without first filling-in so that the injured spots will be level with the rest of the top.

This procedure is called "burning-in" and is illustrated in Fig. 3. Before "burning-in" however, any loose lacquer or dirt should be removed from the surface with a small putty knife as shown in Fig. 2.

Referring again to Fig. 3 the putty knife is first warmed by holding over an alcohol burner. Do not heat the knife too much, just enough to melt a small quantity of the shellac stick (which, incidentally,

TOUCHING-UP In 6 Steps

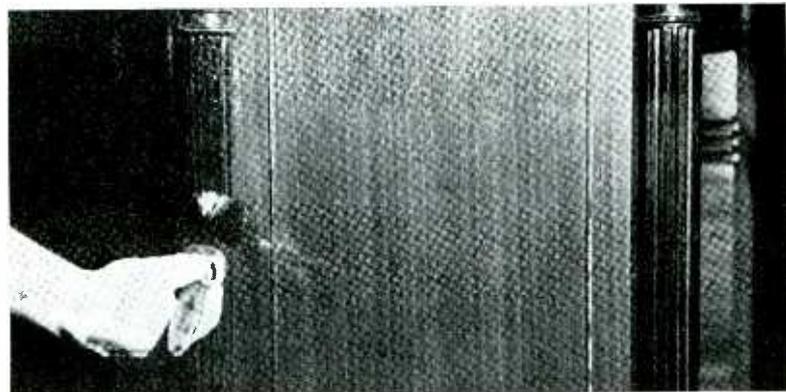


Fig. 1. General cabinet cleanup with brush

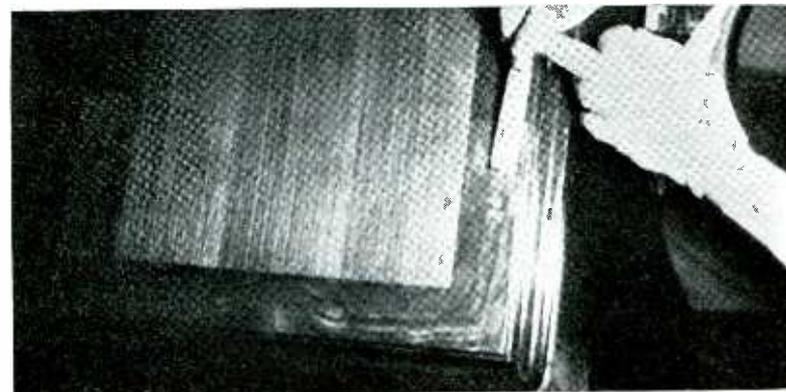


Fig. 2. Removing loose lacquer from dent

* Technical Editor

resembles sealing wax) on the tip of the knife. This is then applied to the indentation and pressed into place just as if you were using putty instead of the shellac stick. Repeat this procedure until all dents are completely filled.

If some of the fill-in protrudes too much above the surface after it has cooled, heat the knife and go over it again.

With a small piece of number 9-0 sandpaper, backed by a cork block, rub down the repaired surface. Before rubbing, however, the surface should first be coated with rubbing oil applied with a brush. This step is shown in Fig. 4. As the rubbing continues, more oil should be applied to keep the surface moist.

Do not use a block of wood in place of the cork as this is too hard, resulting in uneven sanding, wearing through the finish in spots. Sand just enough to smooth the surface nicely and no more. Then wipe and dry thoroughly.

The surface now should be completely smooth but with a dull finish in the spots sanded.

The final finish (Fig. 5) is applied with a cheesecloth which has been moistened slightly with padding lacquer. Do not wet the cloth, just apply enough to dampen the cabinet surface when rubbed. This final step is called "french polish" and should again be performed with a forward and backward motion.

Never allow the padding lacquer or the moistened cloth to contact any one spot of the cabinet for any length of time as it will eat through the finish.

The padding lacquer used here is of the newer type which contains the proper amount of polishing oil. With some types, polishing oil must be applied to the cloth along with the padding lacquer, otherwise the solvent action is too rapid.

The "french polish" finish produces a high gloss which is characteristic of most cabinet finishes today. If a satin or slightly dull finish is desired, this may be obtained by rubbing the finished surface lightly with number 4-0 steel wool (Fig. 6) and rubbing oil using the same forward-backward motion.

When the entire surface is rubbed, wipe clean and polish by rubbing with a clean cloth. This produces a slightly dull finish which does not show dust, scratches and imperfections as readily as a gloss finish.



Fig. 3. "Burning-in" with a shellac stick

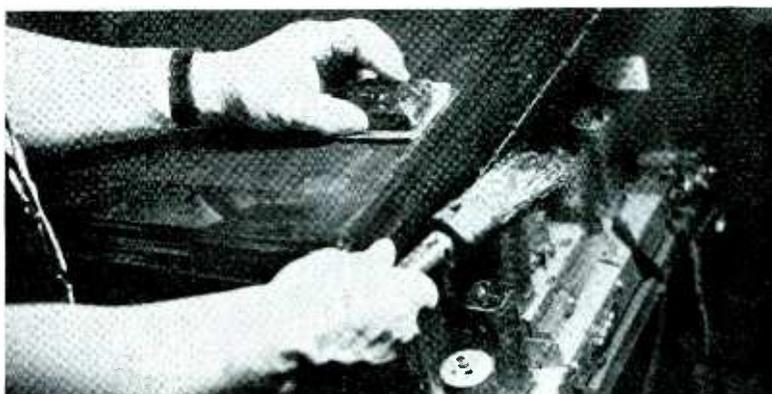


Fig. 4. Cork and sandpaper smooths surface



Fig. 5. "French polishing" with padding lacquer

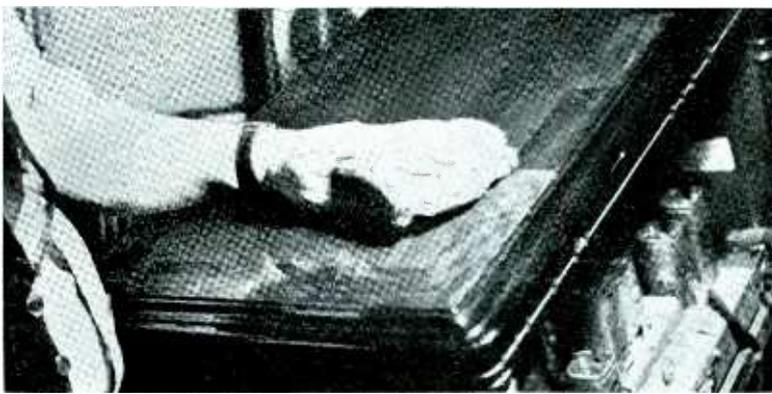


Fig. 6. Fine steel wool gives satin finish

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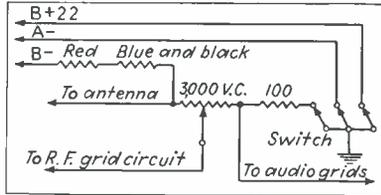
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TRICKS

CROSLLEY 556

When the volume control fails in this set, it often is difficult to procure a new one because of its special characteristics. A positive substitute can be made with a 2000 or 3000 ohm wire-wound potentiometer and a 3pst switch. Connections are shown in the accompanying schematic.



CROSLLEY 648

Intermittent . . . replace the 60,000 ohm resistor connected from the 6A8 oscillator grid to chassis.

G-E A 82

In this receiver extremely noisy operation over the broadcast range and intermittent operation over the short wave ranges may be caused by an open by-pass condenser from the R.F. circuit primaries to ground. It is necessary to remove the entire "sentry box" assembly in order to reach the condenser. Sometimes it is necessary to increase the value of this particular condenser to as much as 0.5 mfd. before the noisy condition can be completely eliminated.

PHILCO F-1640

Distorted reception . . . check speaker cone for alignment. May also be a bad or open volume control which opens up the 75 grid circuit. In case the speaker is out of alignment, take

the cone out and realign using shims. In most instances, this happens to sets still within the warranty period and replacements can be obtained from the manufacturers.

RCA R-73

Fades after few minutes of operation . . . check for open of the 10 mfd cathode bypass on the 55 second detector.

RADIOLA 66

Dead, loud hum . . . look for shorted bypass across plate and cathode terminal of second detector; replace with .0024 mfd unit.

SPARTON 301

If hum still remains after everything is checked, clean and tighten ground connection of the large wire-wound 7,000 ohm resistor.

STROMBERG CARLSON 160, 180

Strong hiss although tuning indicator functions properly . . . replace 6A8 with 6J7 with no other changes.

SILVERTONE

Often these sets will not track over the entire tuning range. When this trouble is encountered, try aligning the i.f.'s a few kc. higher or lower than the recorded peak.

STEWART-WARNER

Bad hum . . . replace the grid resistor in the output stage with 100,000 ohms. Also tighten spring holding grid bias cell.

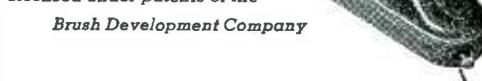
STEWART-WARNER R173

Dead . . . check for leaky audio coupling condenser which puts a positive voltage on the 6F6 output tube grid.

This New Series Webster Electric Crystal Pick-up Offers Jobbers MAXIMUM Profits

Many outstanding features, unusual performance, beauty of design, and the reputation of Webster Electric make this new Pick-up a good bet for any jobber. The price is right, and discounts insure real profit for jobber and service man. Write for details—you'll want to read about the features of the NEW Webster Electric Crystal Pick-up.

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Webster Electric

"Where Quality is a Responsibility and Fair Dealing an Obligation"

RADIO PLUS

(Continued from page 22)

pooh-poohed the suggestion that they buy better radios having greater tonal range become tone-conscious the instant they start buying classical recordings. Combinations, therefore, put new punch in tone quality as a sales weapon. Acoustic and circuit refinements aimed in this direction more readily tickle the consumer ear.

Sales stepup need not stop at the simpler combinations. Another rung of the price ladder may be climbed with the aid of models incorporating automatic-record changers. Additional features, are in fact, more easily sold to combination buyers than to any other group and already such secondary functions as home recordings have come in for their share of attention. Still other refinements are not beyond possibility and many men in the business feel that as new ideas come along these may make their initial bow in combination form.

Some price maneuvering on straight radios will undoubtedly occur in the early months of this year, as it so often does immediately following the holiday peak. Judging by all the signs, most manufacturers will concentrate more than the usual amount of promotion in the months ahead on console combinations, and the trade is, accordingly, urged to get behind such. . . .
RADIOS, *Plus*.

AHEAD IN 1940

(Continued from page 19)

men resulted in important additions to both volume and profit. An

improvement in the financial picture of many jobbers was a natural sequel.

In the merchandising field an outstanding event was the cooperation between manufacturers and jobbers in the stabilization of the replacement tube market. Reasonable list prices were initiated and sane trade discounts adopted. A legitimate margin of profit was still included for jobber and dealer alike.

1939 provided the opportunity for parts wholesalers to put their houses in order. It was also gratifying to note a marked desire on the part of everyone for greater cooperation and participation in the merchandising plans which affect jobbers individually and collectively.

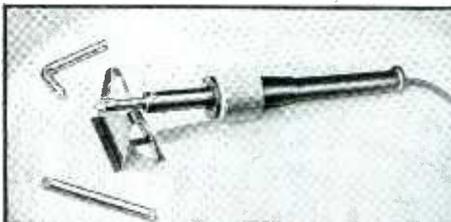
We expect a continuation of good business in 1940. Everything points in that direction. New plans for healthier merchandising and continued cooperation between manufacturers and parts wholesalers are being developed. We look ahead with confidence in the sincere belief that the infant parts jobbing industry has finally come of age.

ARTHUR MOSS
Executive Secretary
National Radio Parts
Distributors Association

EXPECTS HEALTHY INCREASE

Without exception, members of our group look forward with much optimism. Predictions for 1940 among individual members range all the way from 5 per cent to 30 per cent increases in radio component sales during 1940.

At our last meeting, held in New



Length 7" overall. Weight 5½ ounces including cord and plug. Operates on either AC or DC current. Element wound on brass tube, mica insulated. ¼" tip with set screw (#231 with ⅜" tip). Complete with tips, stand and 6 ft. approved rubber cord and plug.

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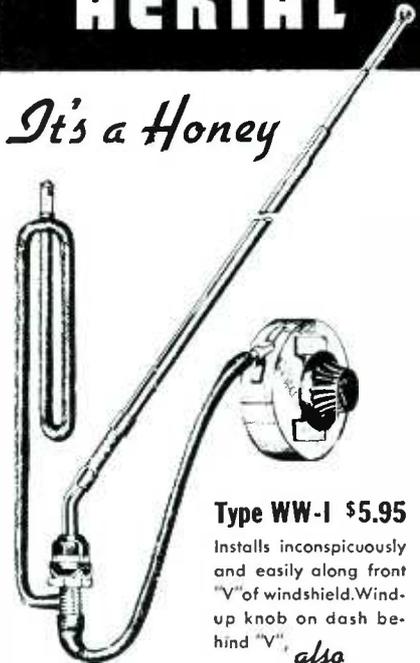
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AND a score of refinements that add to Ease of Operation, Longer Life, Better Appearance, Improved Performance!

THE RADIART CORP - CLEVELAND, OHIO

York on December 28, there were many reports of improved conditions in the jobbing trade and the feeling seemed to be general that the industry as a whole could look forward for at least a year not only to a healthy increase in business but to generally more stabilized conditions.

PAUL S. ELLISON
Chairman

Sales Managers Club (Eastern Group)

PARTS START STRONG IN 1940

At this time of the year, many of us pause to reflect on the year just passed and as I do so now, I feel a certain gratification on the progress made in the radio parts business.

In general, those engaged in this business have enjoyed a substantial gain during 1939. Certainly for the early part of 1940, we can all look forward to continued good business. To prognosticate beyond that would be too difficult because of many factors . . . war, political and otherwise . . . that can affect a change one way or the other.

To me, the measurement of the success of an industry is not alone in the dollar volume done but rather the spirit of the individual toward one another that make up that industry. Surely we can look back on 1939 as a year of progress in creating a more united radio industry.

Let us then look forward toward 1940 with avowed intention to do a greater job in every way.

Yours for an outstanding radio parts show in 1940. . . .

ARTHUR A. BERARD
President

Radio Parts National Trade Show

ULTRA HIGH FREQUENCY

(Continued from page 25)

true with certain qualifications) *how many customers do you think are badly enough bothered by noise to replace otherwise satisfactory equipment for this reason alone and what percentage of your total customer list do you think they represent.*

Granting even that wideband frequency modulation may offer a new approach to transmission of truly high fidelity programs (and this virtue is still debatable if transmitter power is disregarded) *how many customers do you think could be immediately bowled over with this argument in the light of your past experience with the sale of tone quality?*

Where either of these questions (noise or fidelity) is of paramount importance to the public frequency modulation provides another sales approach when the service becomes available. In such cases you simply go ahead and sell it.

Both On Ultra Highs

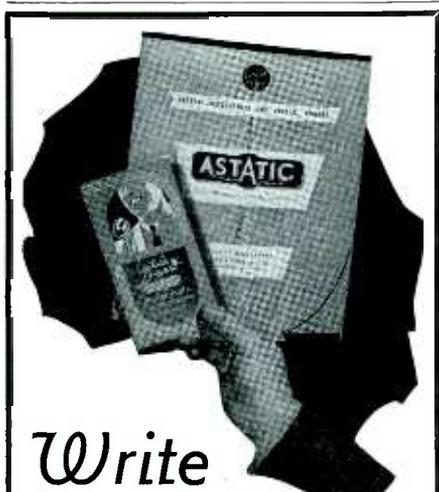
Still other questions could be asked and answered but these should be sufficient to convince merchandisers there is not likely to be any embarrassing quick kicking over of the traces. Commercial expansion of frequency modulation, which will probably come faster than that of television, will yet be slow. There are, in fact, problems common to both because both use the ultra high frequencies for propagation.

Ultra high frequency services, regardless of their nature, are more limited than the longer waves with respect to service area and yet cannot be wholly depended upon to stay in their own backyard 365 days of the year. Height of the transmitting antenna and the character of terrain between transmitter and receiver are more critical than on lower frequencies.

Frequency modulation and television have other things in common beside the ultra highs. Both require relatively wide bandwidths for transmission and chaining of stations via 'phone lines is not readily achieved. (At the moment it looks as though ultra high frequency radio itself may eventually be used as the link). Then there are common economic problems such as the financing of programs, financing of new transmitter buildings and equipment, financing of initial receiving equipment production. With these latter problems most radiomen are familiar because they have long since been thoroughly aired with reference to television, in these columns and elsewhere.

Don't Run a Temperature

All this is written to help reduce whatever temperature the trade may be needlessly running at the moment



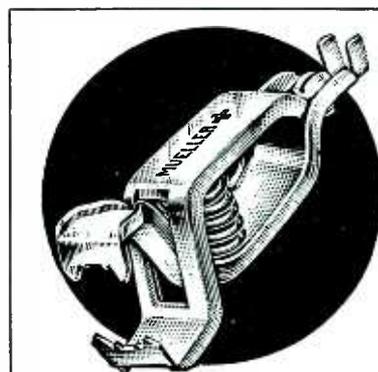
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regarding frequency modulation and particularly its immediate effect on our present replacement market. There is no need for such worry at this early date.

Yet there is little question but what frequency modulation, like television, will one day add to our replacement market a brand new initial equipment market of major proportions. Even casual study of the list of FCC licenses and applications in these pages, and particularly the names of the companies filing them in Washington, indicates that broadcasters are sufficiently impressed to at least stake their claims.

By way of news, we also pass along the information that in addition to General Electric and Stromberg-Carlson, licenses to build frequency modulation receivers have also been obtained from Armstrong by Scott, Radio Engineering Laboratories, National, Hammarlund, Hallicrafter and two unknown others. With the exception of the first three and possibly the last two, it will be noted that initial licensees have heretofore built communication rather than broadcast equipment and, judging by current articles in technical magazines, they will doubtless offer frequency modulation receivers first to amateur and commercial groups.

Promise Rather Than Threat

Insofar as 1940, at least, is concerned, it should be obvious to the trade that sale of standard radios will continue to be our bread and butter. In certain localities television may add some initial equipment gravy and in still others (probably more numerous) frequency modulation will add some more. In either case it will be plus business for all of us, these services supplementing rather than supplanting existing ones and causing much less holdback in standard set buying than the trade's long cultivated fear complex leads it to believe.

When these new services (or others that may be ours to manufacture, distribute and retail) begin to nick our merchandise sales totals to some appreciable extent will be time enough to worry about whether the word "supplant" might some day be substituted for "supplement."

For our part, we prefer to think of the future of such new radio-propagated services as a promise rather than a threat.

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Although Radio & Television Retailing takes every precaution to insure accuracy, we cannot assume responsibility for an occasional change or omission in the above index.

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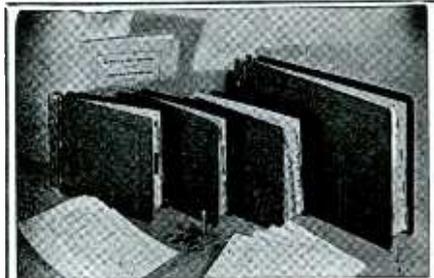
SEARCHLIGHT SECTION

New "SEARCHLIGHT" Advertisements

must be received by February 6th to appear in the February issue.

Address copy to the
Departmental Advertising Staff

Radio and Television Retailing
330 West 42nd St., New York City



BOOKKEEPING SYSTEM Especially Designed for APPLIANCE-RADIO DEALERS

A direct, easy-to-understand system, devised by an expert accountant in your line of business. It is in practical use by many dealers everywhere.

Provides for cost of sales, operating expenses, inventory to date, cost of repossessions, cost of rebuilding, loss on trade-ins and every conceivable situation of your very own business.

Also system for smaller stores.

Write today for descriptive folder.

THE KNAPHURST COMPANY
501 S. Jefferson Street Chicago, Illinois



ALL RADIO NEEDS

Your nationally known favorites in sets, parts and supplies, public address systems, testers and kits, etc., at lowest possible prices. Write for this big book.

BURSTEIN-APPLEBEE COMPANY
1012-14 McGEE ST., KANSAS CITY, MO.

POSITION WANTED

Manufacturers and Distributors — Attention!
Desire better position in servicing or sales. Identified with radio sales, service and engineering fields for 18 years. Last 5 spent teaching in technical trade school. Ambitious. Married. Age 36. Will locate anywhere. References upon request. Write—Box 136, Radio & Television Retailing, 330 West 42nd St., New York City.

FOR SALE

For sale, unused one year old MILLION Model TV portable tube tester and analyzer; \$15.00 C.O.D. Box 135, Radio and Television Retailing, 330 W. 42nd St., New York, N. Y.

REPRESENTATIVE AVAILABLE

To represent radio, radio parts manufacturer or jobber in South Carolina. References upon request, H. A. Loring, Bamberg, South Carolina.

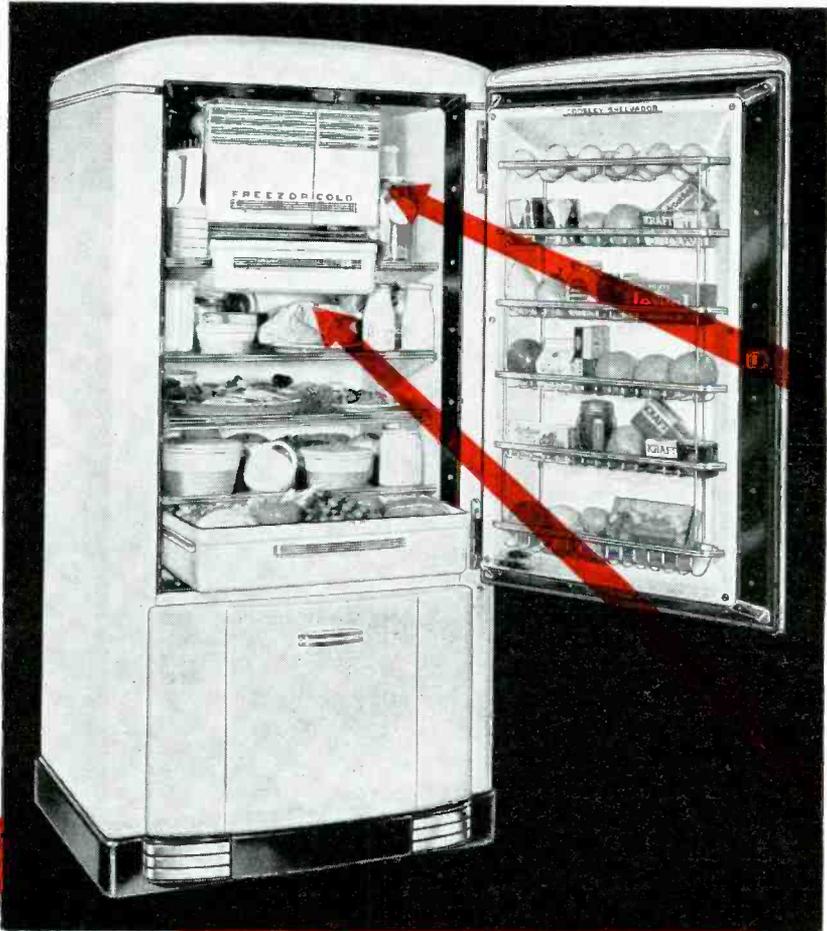
REPRESENTATIVE WANTED

REPRESENTATIVE with following of radio parts jobbers, chains and other large dealers to sell new "MAGNA" recording and play-back pickup. Several choice territories still open. Brown Electric Co., 65 Atlantic Ave., Rochester, N. Y.

The new Crosley Freezorcold selling features are dealers'

Crosley 1940 Freezorcold Shelvadors are **QUIET***, are priced for **ACTION** and **PROFIT**, and are built of quality material and by quality methods throughout, even where skimping can be hidden, so that Crosley dealers may say with conviction to the thousands of prospects Shelvador features will attract, "you can buy no better refrigerator anywhere at any price."

*The 1940 Crosley Freezorcold Shelvador is practically noiseless. A metal flue-like envelope around the condenser and lined with sound insulation contributes to this new silence. Sound that travels from compressor to the outside via the condenser is muffled in this hush-a-bye feature. Engine compartment is also insulated for sound. Stroboscope studies of oil splash inside sealed unit enabled engineers to eliminate further noise in unit operation.



6 CU. FT. **NEW 1940 MODEL**
FREEZORCOLD
SHELVADOR

\$124⁵⁰

MODEL MW9-60A—Important talking points of the new 1940 Crosley Freezorcold Shelvadors apply to this model . . . Quietness of operation, the economy and usefulness of the miniature cold storage plant—the Freezorcold, the convenience of the Shelvador, the quiet, economical power of the hermetically sealed Electro-saver Unit, the porcelain lining in the food compartment and the brilliant baked-on Dulux finish.

*Delivered and installed . . . 5-year protection plan \$5.00 additional . . . prices slightly higher in south and west.

Shelvadors with **4** exclusive sure source of profit in 1940

1 *The* **PATENTED** *Shelvador*

The Shelvador is an advantage no other refrigerator has

It is the most convenient feature a refrigerator has ever had because it keeps small things constantly in sight and because it makes efficient use of all storage space. It is an economy feature, too. It shortens the time the refrigerator door need stand open when food is sought or being put away. This saves power.

It does not cut into the space inside the refrigerator. It holds more than a shelf full of small food items which removed from the inside shelves, provides that much more room for bulky foods and articles.



Crosley 1940 Shelvadors begin with the 3 Cu. Ft. Apartment House Model at \$99.50. 4 and 5 Cu. Ft. Shelvadors at \$114.95 and \$127.50 respectively, attract price-conscious prospects. 6 Cu. Ft. Freezorcold Shelvador tops Special MA9 line at \$137.50.

Three MB9 models step from the low price MA9 line into the deluxe M19 line of five models which present every refinement and luxury of household refrigeration that ingenious engineers and home scientists can conceive. Top model of the deluxe line is the super-Freezorcold Shelvador in which the general food compartment presents a high humidity or moist cold maintained by secondary coils for most efficient food preservation.

*Delivered and installed . . . 5-year protection plan \$5.00 additional . . . prices slightly higher in south and west.

THE CROSLLEY CORPORATION
POWEL CROSLLEY, Jr., *President* CINCINNATI
Home of "the Nation's Station"—WLW—70 on your dial.

2 *The Freezorcold*

A Miniature Cold Storage Plant

This new idea introduced by Crosley into domestic electric refrigeration is exciting all women who see it. It stores frozen foods—freezes fresh meat, game, poultry, fish . . . keeps ice cream. This Freezorcold compartment permits women to buy frozen food specials at lowest prices and store them until wanted. It holds from eight to twelve pounds of meat. It's a fine place to chill salads quickly. Fresh meat can be frozen and aged in it. It has tremendous sales appeal because it offers possibilities of a much wider variety in the family diet and at the same time provides for definite economies in food purchases.

3 *The Cold Drawer*

With Self-Lifting Lid

This drawer, just below the evaporator, is a degree or two above freezing. That makes it ideal for beverages. It can be used as an auxiliary to the REAL meat keeping feature,—the Freezorcold. The COLD-DRAWER will keep meat fresh for several days but the Freezorcold will keep it many days. The COLD-DRAWER is handy and easy to operate with one hand. It slides out smoothly and the lid lifts itself automatically when you pull out the light porcelain drawer. This drawer lid is perforated to catch water in the drawer during the defrosting process.

4 *7 zones of refrigeration*

Various foods keep best at different temperatures. Thrifty and efficient housewives will respond to such a feature. They will be quick to take advantage of refrigeration characteristics that provide maximum safety and preservation for ALL foods.



Quality + Profit

Are you starting the year right? Do you have a line of tubes that is profit protected? Or, are you at the mercy of a line that appears in cut price windows and bargain newspaper advertising? Can you depend on the quality of your tubes to keep your work sold? Does your tube line give

you the sales help you need?

We sincerely believe SYLVANIA has the right answer to all these questions, and gives dealers and servicemen all these things,—repeat sales, dependable quality, and steady profit. If you handle SYLVANIA, we congratulate you—If not, let's talk business!

SYLVANIA

SET-TESTED RADIO TUBES

Hygrade Sylvania Corporation, 500 Fifth Avenue, New York City
Cable HYSYLVANIA, N. Y.