

RADIO RETAILING

HOME ENTERTAINMENT MERCHANDISING



This electrically illuminated tube display, made of metal and glass, is free with a special tube deal. For details, write your jobber or write direct to

NATIONAL CARBON COMPANY, INC.

General Offices: NEW YORK, N. Y.

Branches:

Chicago

New York

San Francisco

Unit of Union Carbide  and Carbon Corporation



Everybody told us

You can't do it

... but we did!

Radios the wise boys said could never be made—but here they are, ready to make money for you that *is* money! Clarion's "going to town"—come on along! With these values and these prices you can't miss real sales records!

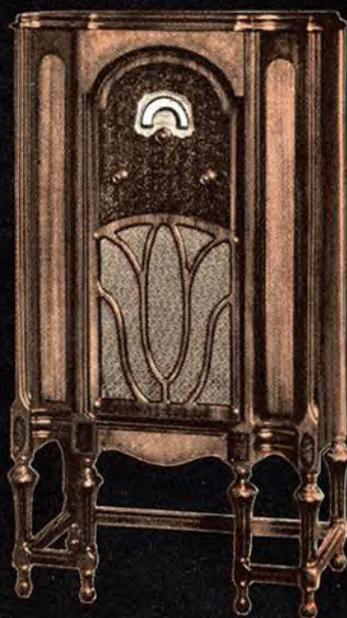


12-tube Console

\$69⁹⁵

complete

- Double push-pull output stage using four type-46 class B tubes.
- Over-size twin speakers.
- Tuning silencer.
- Automatic volume control.

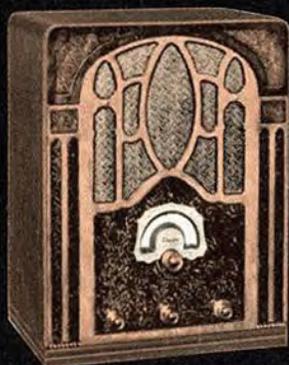


10-tube Console

\$49⁹⁵

complete

- Twin speakers.
- Automatic volume control.
- Automatic selectivity control.
- Continuous variable tone control.



8-tube Midget \$39⁹⁵

complete

- Long and short wave combination.
- Automatic volume control.
- Duo-diode detector.
- Foreign stations—police calls.



6-tube Midget \$29⁹⁵

complete

- Continuous variable tone control.
- New type detector oscillator.
- New full vision dial.
- Handsome cabinet.

All prices slightly higher in the Far West and South. Sales tax extra.

Clarion

98% pure tone Radio

TRANSFORMER CORPORATION OF AMERICA, Ogden and Keeler Avenues, Chicago, Illinois

Radio Retailing, July, 1932, Vol. 16, No. 1. Published monthly. McGraw-Hill Publishing Company, Inc., 330 West Forty-second Street, New York, N. Y. \$2 per year, 25 cents per copy. Central and South American countries, \$3. Foreign, \$3. U. S. Currency, or 15 shillings. Canada (including Canadian duty), \$2.50. Entered as second-class matter April 10, 1925, at the Post Office at New York, N. Y., under the Act of March 3, 1879. Printed in U. S. A.

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Something to SHOUT About

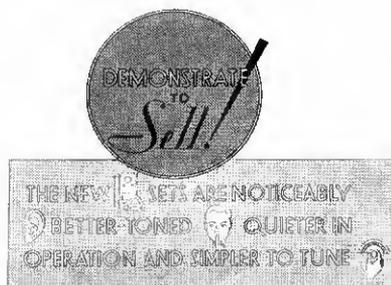
IN THE past, minor technical improvements of but slight advantage or consumer interest have been unduly acclaimed by set makers. As a result dealers have been unable to demonstrate any marked superiority behind such claims. The public, in turn, has gradually lost interest in these "revolutionary" inventions and now refuses to become excited over advertising ballyhoo.

SINCE the Show, however, the picture has changed—for most of the consoles at Chicago were *markedly* superior to prior models. Automatic noise control, twin speakers, reserve audio power and allwave tuning are some of the major improvements that now can be made to mean something to the prospect.

But, because the industry has shouted "Wolf!" so often it may now be a difficult matter to convince the consumer, verbally or through the printed word, that replacement buying is warranted.

THE answer to the problem is this: the trade must use, more than ever, the *comparative demonstration* method to sell sets. The 1932-33 receiver is noticeably better toned, easier to tune, quieter in operation and more powerful than its predecessors. The ratio of sales to demonstrations, therefore, should be higher than at any time since the introduction of the a.c. set.

Insist that prospects *listen* to these outstanding differences in performance value. Rest your case on direct comparison. *Demonstrate to sell.* . . . These three words should be our sales slogan for the coming season.



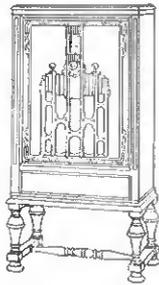
NEW

MODELS

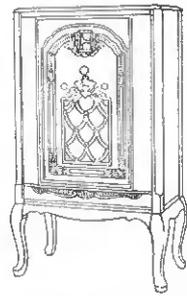
\$143 to \$567⁵⁰

East of Rockies

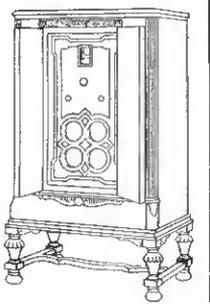
LOWER PRICE RANGE



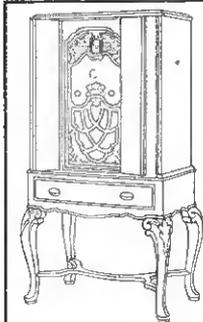
No. 37 Radio. Height, 38 $\frac{3}{4}$ in.; width, 20 $\frac{1}{2}$ in.; depth, 11 $\frac{1}{2}$ in. Baffle area, 3.68 sq. ft. Price, with tubes, . . . \$143



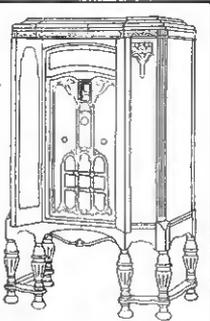
No. 38 Radio. Height, 42 $\frac{1}{4}$ in.; width, 25 $\frac{1}{4}$ in.; depth, 15 in. Baffle area, 5.37 sq. ft. Price, with tubes, . . . \$172.50



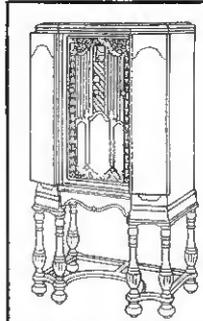
No. 39 Radio. Height, 44 $\frac{1}{2}$ in.; width, 27 in.; depth 16 in. Baffle area, 6.12 sq. ft. Price, with tubes, . . . \$195



No. 40 Radio. Height, 50 $\frac{1}{2}$ in.; width, 27 in.; depth, 16 $\frac{1}{2}$ in. Baffle area, 5.65 sq. ft. Price, with tubes, . . . \$232.50



No. 41 Radio and Automatic Phonograph. Height, 48 in.; width, 29 $\frac{1}{2}$ in.; depth, 19 $\frac{1}{4}$ in. Baffle area, 7.06 sq. ft. Price, with tubes, \$407.50



No. 27 Radio. Telektor type. Height, 48 $\frac{1}{2}$ in.; width, 27 $\frac{3}{4}$ in.; depth, 17 $\frac{3}{4}$ in. Baffle area, 5.66 sq. ft. Price, with tubes, . . . \$310

FINER FEATURES

These new models of the telephone-built radio, together with the popular new Stromberg-Carlson Franchise, open the door of opportunity to the radio dealer.

They are finer radios than even Stromberg-Carlson has ever produced before — yet the definitely lower price range now brings Stromberg-Carlson within the reach of an entirely new group of buyers.

And—Stromberg-Carlson's direct-to-dealer selling — its guarantee not to reduce list prices — the fact that every sale is large enough to show a real margin of net profit — make the Stromberg-Carlson Franchise most desirable at this time.

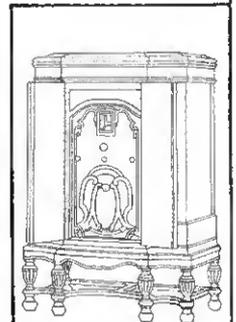
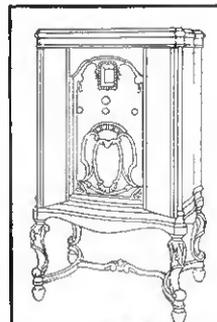
"There is nothing finer than a Stromberg-Carlson"

STROMBERG-CARLSON TELEPHONE MFG. CO.

ROCHESTER, N. Y.

No. 22 Radio. Telektor type. Height, 48 in.; width, 27 in.; depth, 19 $\frac{1}{4}$ in. Baffle area, 6.02 sq. ft. Price, with tubes, . . . \$385

No. 24 Radio and Automatic Phonograph (at extreme right.) Telektor type. Height, 47 in.; width, 32 in.; depth, 20 $\frac{1}{2}$ in. Baffle area, 7.42 sq. ft. Price, with tubes, . . . \$567.50



1894

Stromberg-Carlson



1932

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

MEET THE "show me buyer" ON HIS OWN GROUND AND MAKE MONEY



THE TOWN HOUSE

is one of the most popular numbers in the complete Stewart-Warner line of 4 models, designed to meet all household requirements. Capacity 6.4 cu. ft.; silent, fast-freezing unit; no radio interference; stainless, seamless porcelain interior; 8-point cold control; automatically lighted food compartment.

tures, appearance and quality construction . . . prices that are sensationally low for the quality offered . . . and a factory-dealer co-operation that brings prospects into the store.

Get all the facts. Don't wait until somebody else signs up and cashes in on a sure-fire profit opportunity you might have had. Cinch the line that is built to sell in the "show me" market of today. For illustrated folder, prices and complete information on factory co-operation selling plan, mail coupon.

**STARTLING PRICE
VALUE LEADER**
A 4.1 cu. ft. box
factory priced
at **\$99⁹⁵**
only

Sensational New Stewart-Warner Electric Refrigerators offer Sure Profit in market that is looking for greater dollar-for-dollar value

Price on a cheap refrigerator that can't profit the dealer, and can't satisfy the buyer — attracts few buyers today. "Show me value and I will buy" is the challenge of millions who know the worth of a dollar.

Stewart-Warner meets this hard-boiled challenge directly — with the most outstanding dollar-for-dollar value in the refrigeration field. Thus it capitalizes on a situation that is starving those who insist on selling *price* alone.

Live dealers in electric refrigerators — and men who want to get into the field — will recognize that Stewart-Warner has *every* element that makes for smashing success.

A nationally known — nationally advertised name — that has been identified with products of proven quality and dependability for over a quarter of a century . . . a line outstanding in mechanical

STEWART-WARNER

Electric Refrigerators

MAIL THIS COUPON TODAY!

ELECTRIC REFRIGERATOR DIVISION
STEWART-WARNER CORPORATION

Gentlemen: Please give me all details about Stewart-Warner Refrigerators and money-making Sales Plan. **BB-1**

Name

Firm Name

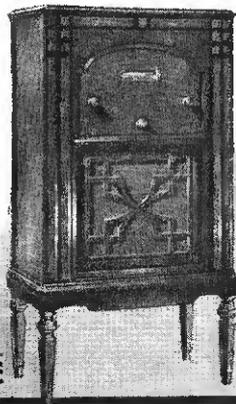
Address

City State

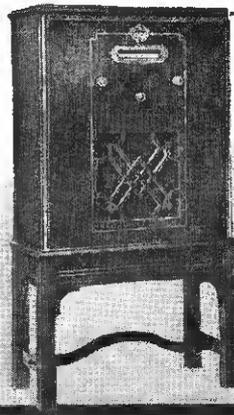
OVER 30 MILLION SATISFIED OWNERS OF STEWART-WARNER PRODUCTS

All A.C. console models
equipped with
Twin Speakers.

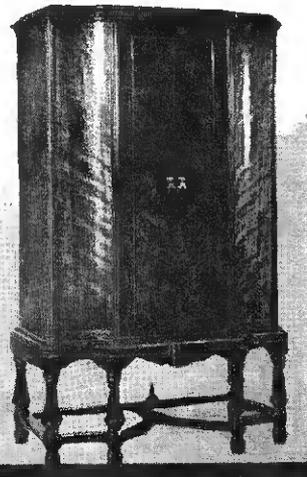
MODEL
242-E



MODEL
250-M



MODEL
312-G



VIBRO

-sweeps American Bosch into

LESS than 24 hours after the Exhibit opened at Chicago, word was passed around that American Bosch was the "hot line of the show."

Downstairs at the Exhibit... along corridors... in the elevators... men discussed Vibro-Power... the new American Bosch discovery that establishes new standards of tone fidelity, quiet tuning and power output.

Up in Room 2105 at the Hotel Stevens came the real excitement... actual demonstrations of every Vibro-Power set. Static had all but disappeared. Gone were swish,

whistles, noise. Gone was between-station roar. Here was new, unprecedented radio realism, that provided a demonstrable opportunity to dealers going out after replacement business this coming season.

The performance and prices made possible through Vibro-Power, made this year's show at Chicago the most successful in the history of American Bosch Radio. Distributors whose names are identified with territorial leadership came, saw, listened... and signed up. Actual orders booked, more than trebled expectations.

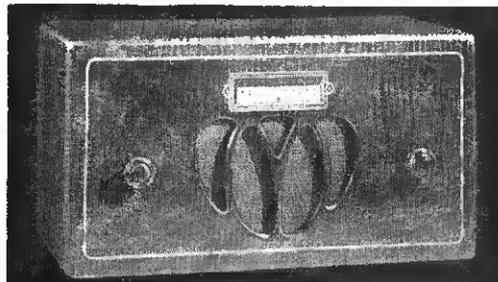
American Bosch offers Vibro-Power in a complete line... for every purse or purpose. Read the values described on the opposite page... compare them with any other line... and you'll decide that this is the "hot line" for you too. Write or wire for full information.

UNITED AMERICAN BOSCH CORP.
SPRINGFIELD MASSACHUSETTS
Branches: New York, Chicago, Detroit, San Francisco
Manufactured under Patents and Applications of R C A

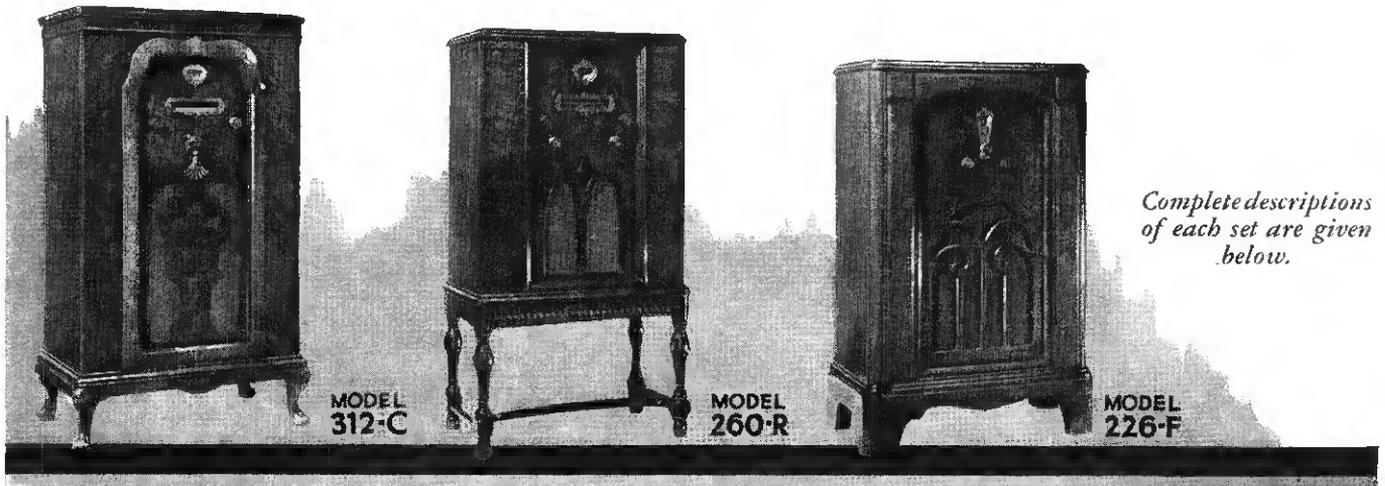
RADIO SALES RISING!

Don't let anybody tell you there's no money in the radio business this year. 3,420,000 sets were sold in 1931. At least as many, we are confident, will be sold this year, especially because the radio industry will profit—as will no other industry—from the fever-heat interest in the 1932 Presidential campaigns, the Olympics, boxing matches, election returns, etc. The advances introduced in American Bosch Vibro-Power Radio will give you a decided edge on competition in this promising radio year.

MODEL
236-A



AMERICAN BOSCH



Complete descriptions
of each set are given
below.

VIBRO-POWER

leadership at Chicago!

THE EMPIRE—Model 242E. Vibro-Power 8-Tube Double-Action Superheterodyne. Full-Band Automatic Volume Control, Automatic Noise Reducer, Full Vision Tuning Scale, Bi-resonant tuning. New Type 56 and Type 58 tubes. Chassis mounted in live rubber. Vibro-Blended Dual Speakers—\$69.50 complete with tubes.

THE MANSION—Model 250M. Vibro-Power 10-Tube Double-Action Superheterodyne. Full-Band Automatic Volume Control, Automatic Noise Reducer, True Pitch Tone Control. Full floating rubber cushioned chassis. Visual electrical tuning. Vibro-Blended Dual Speakers in an exclusive tone-blending chamber—\$89.50 complete with tubes.

THE GRAND OPERA—Model 312G. Vibro-Power 12-Tube Triple-Action Superheterodyne. Full-Band Automatic Volume Control, Automatic Noise Reducer, Automatic Between-Station Silence, Electric Tuning, Triple-Push Super Power Output, new type low-current-drain tubes and Vibro-Blended Dual Speakers—\$169.50 complete with tubes.

THE GRAND CONCERT—Model 312C. Vibro-Power 12-Tube Triple-Action Superheterodyne. Full-Band Automatic Volume Control, Automatic Noise Reducer, Automatic Between-Station Silence. New type tubes. Triple-Push power output, Vibro-Blended Dual Speakers—\$139.50 complete with tubes.

THE WORLD ROVER—Model 260R. Vibro-Power 10-Tube Double-Action Multi-Wave Superheterodyne Receiver for regular broadcast programs and short wave broadcasts. One tuning control for all wave lengths. Full Range Automatic Volume Control, Automatic Noise Reducer. Electric tuning meter, and Vibro-Blended Dual Speakers—\$99.50 complete with tubes. In de luxe cabinet, \$124.50.

THE FIRESIDE—Model 226F. Vibro-Power 8-tube Superheterodyne receiver for unwired homes. Operates on new Air Cell battery. Provides same quality reception as wired power sets. Full-band Automatic Volume Control, Automatic Noise Reducer, Tone Control, Full Tone Dynamic Speaker, Triple Push Power output and Neon tube dial light. \$99.50 complete with tubes.

PERSONAL RADIO—Model 236A. New, improved 6-tube Superheterodyne. Ample volume. Solid mahogany Cabinet with fine inlay. Electrically lighted dial—\$43.95 complete with tubes. Model 205A—5-tube t.r.f., \$32.95.

PERSONAL RADIO CHEST—Model 200A and B. Richly carved or figured walnut. Solid construction. Cover acts as sound deflector. Effective baffle area. Full tone electro dynamic speaker—\$49.95 complete with tubes.

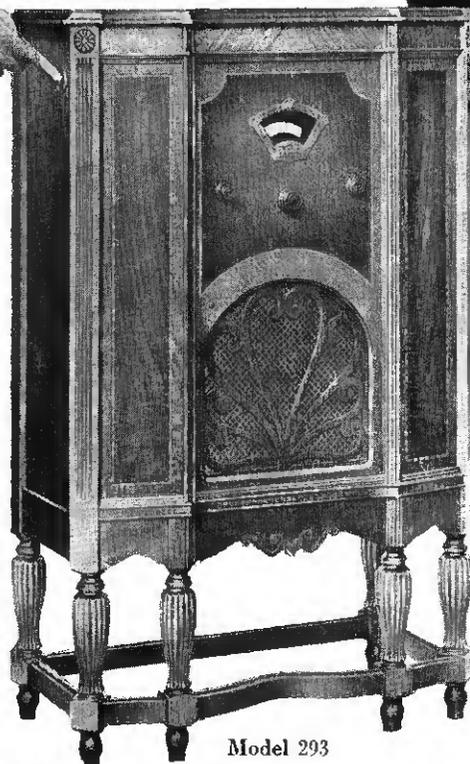
All Prices Tax Extra.



MODEL 200-A

VIBRO-POWER RADIO

Puts the JINX on STATIC!



Model 293

The ADAMS—Full-size lowboy console, Hepplewhite design—9-tube superheterodyne circuit, embodying new Automatic Synchro-Silent Tuning, Automatic Volume Control, Duo-Diode Detection, Tone Control and 100% pentode amplification. New 2½-volt tubes throughout. Complete with Majestic tubes

\$ **69.50**

**SYNCHRO-
SILENT
TUNING**

**EXCLUSIVE
with
MAJESTIC**

SEE that little knob on the new Majestic? Turn it forward and, when tuning, your prospect hears all the between-station roars and crackles so disturbing in the usual radio receiver. Turn it back and those noises are *eliminated!* In comes station after station against a quiet background... even in the daytime, in "noisy" locations. *What a demonstration!* No wonder Automatic Synchro-Silent Tuning is swinging sales to Majestic... and confounding competition!

At the left is shown The *Adams*, \$69.50. Other President models include The *Madison*—9-tube table set, \$59.50, and The *Monroe*—12-tube broadcast and short-wave receiver, \$94.50.

These new President models embody more than a dozen major engineering betterments. They include: Automatic Synchro-Silent Tuning... the NEW 2½-Volt Tubes... Perfected Automatic Volume Control... Distortion-Free Duo-Diode Detection... 100% Pentode Amplification... Mercury-Vapor Tube Power Supply... Spray-Shield Tubes... Image Rejector Circuits... Super-Dynamic Reproducer... Full-Range Tone Control... Double Pentode Audio-Frequency Amplification... Precision-Engineered Superheterodyne Circuit.

Priced right both to consumer and to dealer, these new Majestics assure sales aplenty for everyone who possesses a Majestic franchise.

GRIGSBY-GRUNOW COMPANY, CHICAGO, and affiliates, with factories at Chicago; Toronto; Bridgeport; Oakland; London, England; and Sao Paulo, Brazil. Manufacturers also of MAJESTIC REFRIGERATORS

Majestic

Superheterodyne

Licensed under patents and applications of R. C. A., Hazeltine, LaTour, Lowell & Dunmore, and Boonton Research Corp.

Price subject to any Federal or State Tax on radio sets or tubes that may be levied. Prices slightly higher on West Coast.

RADIO

Now ARCTURUS Offers Five Improved Tubes



Recent developments in radio demand new types of tubes. To provide its customers with the latest advantages in tubes, Arcturus has added Types 46, 56, 57, 58 and 82 to its line. The new 6.3 volt tubes—Types 41, 42 and 44—have also been developed.

These new tubes are built to the high quality standards that the industry has come to expect from Arcturus. Many set manufacturers, who use Arcturus Blue Tubes as initial equipment, are incorporating these new series in their 1932 receivers—assuring an increased replacement market in addition to the millions of sets now Arcturus equipped.

Here's the new 2.5 volt Blue Tube line:

TYPE 82—Full-wave mercury vapor rectifier.

TYPE 58—Variable- μ r. f. pentode. Has uni-potential cathode with a. c. heater.

TYPE 46—Class "B" Power Amplifier.

TYPE 57—Screen-grid detector amplifier. Has uni-potential cathode with a. c. heater.

TYPE 56—Detector, amplifier and oscillator. Has uni-potential cathode with a. c. heater.

Technical data sheets on these new tubes sent on request. If you are not now handling the blue tube line, we suggest that you get in touch with your Arcturus Jobber promptly.

ARCTURUS RADIO TUBE CO., NEWARK, N. J.

ARCTURUS

"The BLUE TUBE with the LIFE-LIKE TONE"

SPEEDING UP...

Summer TUBE SALES

This **NEW PLAN** gives you help just when you need it most...

THE political campaign, the Olympic games, the Races—radio was never more exciting—radio sets were never more apt to be working overtime!

And when radio sets work overtime, tube sales are bound to grow! Not only replacements for burned out tubes—but new tubes to improve reception.

The Sylvania Plan pictured at the right multiplies these dollars by your customers! It helps you make real profits from summer tube sales. It is FREE too—every unit in it is yours for the asking.

In addition Sylvania continues its popular radio broadcasts; and other advertising helps; its no-cost tube analyzer plan; its no-cost Service Kit plan. A Sylvania Tube on your shelves is more than that much merchandise—it is a share in Sylvania's steady selling effort.

Sylvania
THE SET-TESTED RADIO TUBE



WHAT THE PLAN IS

- (a) People always stop for pictures! This 38 x 16 1/2" photo poster gives your store window interest... tells people a real reason for buying Sylvania Tubes.
- (b) Politics are the talk of the season! More political speeches than ever before are on the air, more families listening in. This poster makes election fans want new tubes. Size 12 x 28.
- (c-d) 2 Window Cards... Both colorful, both backed by a real sales idea. Like (a) and (b) this material is always at your FREE disposal.

HYGRADE SYLVANIA CORPORATION, 8-7-1
SYLVANIA DIVISION, EMPORIUM, PENNA.

Please send me FREE the first 2 units (units a and b) in the Summer Sales Plan. I understand 2 others will follow at intervals of 3 weeks.

NAME _____

ADDRESS _____

CITY _____ STATE _____

I would also like to learn more about the Sylvania no-cost Analyzer Plan the no-cost Service Kit Plan

KOLSTER REJECTOSTATIC SYSTEM

Sensation of the show!

"High spot" . . . "Hot spot" . . . "Sensation" . . . these were comments heard in the crowds around Kolster at the R. M. A. show. Noted engineers thronged in to hear the *first and only* reception 98% free of man-made static.

DISTRIBUTORS and jobbers came in . . . heard . . . saw what happened . . . and began to ask about open territory. DEALERS found what they had been looking for . . . "something new" . . . "biggest thing for sales since the electric set."

"High spot of the show"

"Rejectostatic System is greatest development I have seen in years. Kolster has caught the industry napping . . . a fast one. We will have to hustle to catch up."

(This opinion was expressed by one of the leading engineers in the profession. Overheard in the lobby.)

"Dealers will want this"

"Every worthwhile dealer, every man I'd like to see signed up in my territory, will see the possibilities of this winner right away. How soon can we have sets?" That statement by one of the important distributors is typical. Once again distributors and jobbers are asking about deliveries.

"Something really new"

"This is something really new. I know I can move sets right now. This Rejectostatic System has been badly needed for years." With those words one of the big metropolitan dealers expressed his determination to throw out what he called 'dead lines' and concentrate on Kolster.

"This will make them trade"

"No doubt about it, this Rejectostatic System gives me something that will make a lot of my customers trade. I'm sold," declared a Middle Western dealer who had come to the show hunting something to give his stagnant business a lift.



Model K-120 - Completely shielded 8-tube console superheterodyne. Automatic volume control. Latest type radiotrons; R. F. and A. F. Pentodes. Phonograph pickup connection. Outlet for Kolster 3-tube short wave converter. Full 8 1/2-inch dynamic speaker. Cabinet, 41 inches high, carries cross fire butt walnut panel, zebra wood top and bottom rails and pilasters. Price (with Radiotrons), \$74.75.

NO OTHER RADIO EVEN REMOTELY APPROACHES IT!

Five receiving sets were ranged around the demonstration room. Four of these were the new Kolster, with Rejectostatic System equipment. The fifth was a *good*, recognized model. *And in addition . . .*

In the room were a sign flasher, violet ray machine, vacuum sweeper, hair dryer and a portable tester, capable of producing a large volume of regenerative squeal.

The 'good' set would be tuned in . . . then one after another, the foregoing static-makers would be operated. You can imagine the roars, buzzes, crashes and howls!

Then, a marvelous contrast, the four protected, Rejectostatic System equipped 1932 Kolsters would be tuned in. First the \$144.75, double speaker Console set; then the \$99.75 and the \$74.75 Console sets; then even the \$59.75 Table model! And each played without so much as a single crackle or whine! Amid all those static makers in action!

If you want to know about open territory, details of franchise, and any other facts regarding the new Kolster line, write or wire. Applications are considered in the order of their receipt.

KOLSTER INTERNATIONAL

Noiseless RADIO



Ask for a copy of this book. Completely describes the Kolster Rejectostatic System. Gives details of installation. Valuable!

KOLSTER RADIO INC.

Kolster Radio Inc., is affiliated with Mackay Radio and Telegraph Company and other units in the International System.

New York Office: International Telephone and Telegraph Building, 67 Broad St., New York City.

Factory: 360 Thomas Street, Newark, New Jersey

Industry Gathers

New Strength

TRADE SHOW SIGNIFICANT SUCCESS . . . FRED WILLIAMS

By Ray V. Sutcliffe

BETTER merchandising—on the firing line—will be the policy of the Radio Manufacturers Association during the coming twelve months. Its new president, Fred D. Williams, is an analytical thinker and possesses a world of practical, executive and sales experience. He thinks in terms of point-of-sale reactions. Mr. Williams is president of P. R. Mallory and Company, Indianapolis. He formerly was associated with Grigsby-Grunow, Raytheon and National Carbon. Of the many hopeful and constructive actions and trends which found expression at Chicago last month, the selection of a man of the caliber of Fred Williams for this important post was by no means the least.

All in all, the convention and trade show was successful beyond predictions. Total attendance, as might be expected, fell below that of last year—by 30 per cent—but those who visited the “eighth annual” were there for business purposes. From manufacturers’ sales managers came reports of many new distributors appointed and of many sizable orders closed.

This year, at the Hotel Stevens, as never before—and despite “low tide” in general business conditions—there was an underlying feeling that the radio industry, definitely, was headed toward permanent stabilization.

RECEIVER lines were complete, up-to-date and overflowing with quality and value. The appeal of these superior 1932-33 consoles surely should prove irresistible to any prospect for radio with an ounce of buying power. Today’s set is demonstrably a much better performer than that of yesteryear. In our technical analysis of trends, the growing use of more than one speaker, new tube developments and other advances scored at the Show will be covered in detail. Suffice to remark here that this season’s average radio receiver is a *real* piece of musical merchandise, and well worth its asking price. And price scales, by the way, were *not* radically lower. While midgets were offered at \$29.50, and one 10-tube console for \$49.95, more sets, selling for \$100 and over, were featured than at the 1931 show. Prices gave evidence of being stabilized. Distress merchandise would appear to be largely cleaned out. Manufacturers appear determined to gear production to demand and not to price below factory costs.

The Gothic type midget is finding, in the improved box or chest design, real competition. Jumping to the higher brackets, radio-phonograph combinations were less in evidence, being featured by those concerns also interested in records but, in some instances, being dropped from the lines of the other set makers.

WITH but two exceptions every nationally known radio receiver concern in the country exhibited at the Stevens. Their merchandise was flanked by beautiful backgrounds and constituted a true cross section of what the fall and winter buyer will find available.

Short wave sets are growing in popularity. Most exhibitors displayed at least one number—combined with the regular broadcast band receiver. Trick, multi-scale dials generally were a feature of this affiliation. Short wave is now being sold for just what it may be expected to accomplish—another healthy trend.

Automobile radio, as viewed at the Show, apparently has gone through its evolution, from battery to all-electric operation, in double-quick time. The outstanding feature about motor car music this year will be the popularity of storage battery operated B and C eliminators.

Despite the prominent place which electric refrigeration now occupies in radio circles, and the fact that eight radio manufacturers exhibited their line of refrigerators at Chicago, the chief topic of conversation was radio. Two months ago radio jobbers and dealers were talking nothing but refrigeration. While appreciating the value of this complementary line, it would appear that radio is still recognized as the bed rock foundation on which the permanent business hopes of the radio industry must be erected.

And what of the progress of television? Frankness compels us to state that the Trade Show is not the place to find the answer to this question. We discovered but one television outfit. As a commercial proposition television is not yet ready to make its public bow. As Harold A. La Fount, Federal Radio Commissioner, pointed out in his address to the delegates, visual broadcasting is still in the experimental stage.

Association Activities

From the convention sessions at Chicago came the following highlight actions:

GROUP ACTION—Special emphasis will be placed upon the more active and individualistic functioning of each of the three groups into which the membership of RMA logically falls; namely the set makers, the tube makers and those remaining members interested in producing parts and accessories. It is planned to strengthen the operations of the merchandising committee of the set group.

NEW OFFICERS AND DIRECTORS—In addi-

at CHICAGO!

PRESIDENT RMA 1932-33

and W. W. MacDonald

tion to the elevation of Fred D. Williams as president of the Radio Manufacturers Association the following were elected to serve with him: first vice president, Harry A. Beach, Stromberg Carlson; second vice president, Meade Brunet, RCA-Radiotron; third vice president, Leslie F. Muter, Muter Company, Chicago; and treasurer, E. N. Rauland, of the Rauland Corporation, also located in Chicago.

Four new members of the board of directors, to serve three years, and four "replacement" directors were elected: W. S. Symington, Colonial Radio; S. W. Muldowny, National Union; C. B. Smith, Stewart-Warner; Franklin Hutchinson, Kolster Radio; J. M. Spangler, National Carbon; J. Clarke Coit, U. S. Radio and Television; R. A. O'Conner, Magnavox, and Roy Burlew, Kenrad.

Bond Geddes was re-elected executive vice president and also elected executive secretary following the resignation last April of Martin F. Flannagan of Chicago. Mr. Geddes will be in charge of both the Chicago and the New York RMA offices. The New York offices will be temporarily closed during the summer months.

PUBLIC SHOWS—Upon recommendation of the set and tube manufacturers, RMA voted not to endorse any public radio shows during the next 12 months. Association sponsorship for the New York and Chicago shows had been requested. In view, however, of prospective general business conditions it was thought best to withhold such endorsement for the time being.

FINANCES AND DUES—Reduction of dues and expenses was voted at the first meeting of the new administration. A special budget committee also was appointed. RMA finances, however, are in splendid shape, with a very material cash and other asset balance on hand.

PATENT SITUATION—With the success of all other factors of the industry dependent upon the future of the set makers, the complicated radio patent situation has been ameliorated. After many months of negotiations substantial royalty reductions have been obtained. RMA also has been an influential factor in the negotiations of the Department of Justice looking toward the establishment of an industry patent pool. Many complicated problems yet remain to be solved, according to John Van Allen, RMA general counsel, but negotiations are still continuing and a successful conclusion is looked for in the near future.



One of the many groups arriving for the Trade Show

Show Spotlights Important Design Trends

Stampede to r-f. pentodes, swing to twin speakers noted. Automatic noise control and push-push audio circuits cause comment

MANUFACTURERS have fallen for the new six-prong tube series like the proverbial "ton of brick." Ninety-five per cent of them use these efficient tubes in practically all models. Twin speakers have likewise rocketed into prominence, 72 per cent of the set makers so equipping quality merchandise. Automatic noise control, widely heralded a.v.c. refinement, is now to be found in 68 per cent of the catalogs, while push-push audio has been adopted by 48 per cent of the factories.

Designers, this season, introduced more higher priced than lower priced radios, thus raising the average list. There are more models in most lines. Double purpose furniture has lost ground; phono-combinations barely hold their own. Two-volt battery models have increased. Auto-radio is made by twice as many companies as last year. And shortwave equipment is still climbing.

It is evident the manufacturers generally have utilized recent technical developments to the full in order to widen the performance gap between new sets and those two or more years old. Design advances which really mean something to the consumer have been adopted with a vengeance; are incorporated in most lines.

These and other important trends are spotlighted by

Radio Retailing's statistical survey of the 8th Annual RMA Show exhibits. A more complete picture is given in the following tabulation:

	1931 SHOW	1932 SHOW
PRICES		
Range.....	\$18 to \$495	\$19 to \$585
Average low.....	\$39	\$43
Average high.....	\$148	\$162
MODELS		
Range.....	2 to 20	2 to 27
Average number of models per line.....	6	9
Average number of consoles.....	4	6
Average number of table models.....	2	2
Ratio, consoles to total home models....	65%	72%
TYPES		
Lines with double-purpose furniture.....	70%	20%
Lines with phono-combinations.....	23%	28%
Lines with automatic combinations.....	17%	16%
Lines with remote control models.....	6%	12%
Lines with home recording models.....	8%	8%
Lines with 2-volt battery models.....	23%	56%
Lines with auto-radio models.....	20%	40%
Lines with all-wave combinations.....	6%	76%
Lines with shortwave converters.....	6%	44%
TUBES		
Range.....	5 to 13	4 to 20
Average number of tubes.....	7	9
Lines with r. f. pentode models.....	...	95%
Lines with a. f. pentode models.....	91%	92%
Lines with push-push audio models.....	...	48%
CIRCUITS		
Lines with manual tone control models..	76%	92%
Lines with a.v.c. models.....	53%	92%
Lines with automatic noise control models	...	68%
Lines with visual tuning indicator models	12%	48%
Lines with twin speaker models.....	5%	72%
Lines with automatic tone compensation	...	12%

The foregoing tabulation shows the percentage of manufacturers employing, in one model or more, the various features listed therein. It does not, however, indicate how many models are so equipped. The following additional data sheds further light upon current design trends:

A total of 215 models were exhibited at Chicago by all manufacturers combined. Of these, 62 per cent were consoles, 23 per cent table models, 5 per cent double purpose furniture types, 5 per cent shortwave converters and 5 per cent auto-radio. Breaking this general classification down still finer, 7 per cent of the consoles were phono-combinations, 5 per cent automatic combinations, 9 per cent 2-volt battery sets and 24 per cent all wave combinations.

Fully 96 per cent of all the models exhibited had r.f. pentodes, while 75 per cent had a.f. pentodes and 13 per cent push-push audio. Ninety per cent were equipped with manual tone control, 74 with a.v.c. Thirty-one per cent boasted automatic noise control, 2 per cent were remote control jobs and 30 per cent had more than one speaker.

Close analysis indicates that in addition to being incorporated in many lines, all wave combinations, 2-volt battery sets, twin-speakers, r.f. pentodes, automatic noise control and visual tuning indicators were also present in a large number of models in each line, thus achieving two-way popularity.

"Greatest improvement in radio since 1927" say leading set makers of this year's models. And, considering the practical nature of the many new features embodied in lines exhibited at the Show, we are inclined to agree.



The Federal Tax on Radio and Refrigeration

THE new manufacturers' sales tax on radio products and mechanical refrigeration, as finally adopted by the House and Senate, makes no material changes in the bill as originally drawn by the House. The law will impose a five per cent tax on the manufacturer's selling price of chassis, cabinets, sets, reproducing units, power packs, phonograph mechanisms and records. Also on household type refrigerators and components.

Every person liable for taxes under this act shall make monthly returns under oath and pay the taxes imposed to the collector for the district in which the principal place of business of such person is located. The returns shall contain such information as shall be prescribed in the regulations to be formulated by the Commissioner of Internal Revenue.

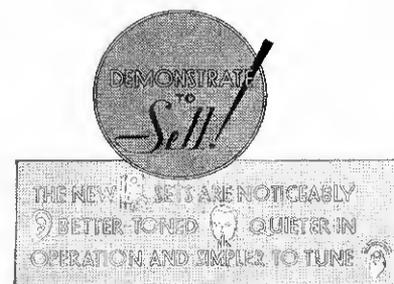
It will be noted that the collection and payment of this tax is a matter of manufacturer responsibility and enforcement. To apply this tax, either list prices must be raised by a sum which will cover the necessary five per cent net increase to the manufacturer, or the amount of the tax must be billed, through jobber and dealer, as a separate item.

At a special meeting of representative members of the Radio Manufacturers Association with Treasury Department officials, held in Washington, June 20, it was explained that taxes which the makers of tubes, cabinets, speakers and other taxable radio accessories pay, and pass on to receiver manufacturers, are not deductible from the tax which the latter must pay on complete re-

ceivers. On tubes alone, however, tube concerns may supply their product tax free, to the set makers—leaving the latter to collect and pay the tube tax. This ruling provides, therefore, a double tax on cabinets, speakers, etc., when purchased by set makers from other manufacturers. The pyramiding of the radio tax, for profit, beyond government requirements constitutes an offense punishable by a fine up to \$1,000.

For further, last minute news as to specific decisions for handling this tax, please turn to page 32.

Copies of the new treasury regulations have been obtained by the Radio Manufacturers Association for distribution to interested parties. Further questions about this tax will be answered if addressed to the RMA office, 307 North Michigan Ave., Chicago, or to Frank D. Scott, RMA counsel, Munsey Building, Washington, D. C.



Applause

KEYNOTES FROM THE CONVENTION SPEECHES

Must think in point-of-sale terms

FRED WILLIAMS,
President, RMA

“THE set manufacturers’ group, which has the problem of merchandising nearest to it, must become more active. By settling their slight differences the set makers can go full speed ahead and accomplish constructive results. We have been too much interested in new developments, and not sufficiently interested in the proper manner and right time to present them to the public. This has been one of the curses of our industry.

“While launching of new products has been done by the haywire method, our greatest fault has been that we have allowed merchandising plans to lie dormant and failed to correct trade evils. We have not thought enough about merchandising plans. Unless we begin at once to think in simple terms and to put more effort at the point of sale we will lose money. *We must find some common plan or idea with which to face the consumer en bloc.* We must all pull together and sell *radio* instead of circuits, lumber and price.”



Ours a monopolistic industry

JUDGE VAN ALLEN, *General Counsel, RMA*

“RADIO is both the subject and the beneficiary of three of the most powerful monopolies created by, and permitted under, the laws of the United States, to wit: the monopoly in invention, created by the patent laws; the monopoly in musical compositions, drama and literary works, created by the copyright laws; and the monopoly of the use of wave channels, created by the radio laws. We are thus unique among industries.

“With respect to the so-called patent monopoly and the pending government suit: we suggest that the court be urged to confirm the licenses heretofore granted and to reserve the right to deal with matters affecting them in the future, and that a congressional act be passed, if necessary, conferring jurisdiction of the court to deal with the granting or refusing of licenses in the future for the protection of the public interest and private investment in the event of arbitrary or oppressive denial of licenses or terms whether the government wins or loses the present pending suit.

“With respect to price fixing: we suggest that a manufacturer should not be restricted by law from fixing the price of his commodity throughout its course from his plant to the consumer, provided he does so without understandings or agreements with his competitors: that he should be permitted to contract for one price maintenance with his trade classifications in order that the integrity of his trade relations may be maintained.”

Business must demand governmental economy

MERLE THORPE, *Editor, "The Nation's Business"*

“BUSINESS has a bleak future unless it realizes that 15 billion dollars must be collected from the people before there is a nickel left for a loaf of bread or \$50 for a radio. When business realizes this it will relieve congress and the state and local governments of pressure for activities for their particular interests, and demand as a national policy that this tremendous overhead be cut without fear or failure.”

Fifty cycle ruling will help set sales

HAROLD A. LAFOUNT, *Federal Radio Commissioner*

“BROADCASTERS are showing a fine spirit of cooperation with the Commission in its effort to render the listening public the best possible service. A concrete example is the fact that the vast majority of stations have already installed the necessary equipment to keep within 50 cycles of their assigned frequency consistent with a Commission order which goes into effect June 22, 1932. This ruling will eliminate whistles and heterodynes now prevalent on many regional channels, thus increasing the service areas of many stations and set sales possibilities.”

B-Eliminators Boost *Auto Radio*

B-BATTERY eliminators have injected new life into our auto-radio business. They not only have removed the most frequently voiced objection—inconvenience of drycell replacement—but have minimized our service costs. Most of the sets put out this season will be equipped with these accessories and in addition we are starting to sell them to people who bought receivers from us last year."

Frank S. Denham, owner of the Bloomington Moto-Music Company, Bloomington, Ill., with the assistance of E. D. Goodfellow, his manager, has built up an enviable business in auto-radio, specializing in this field. He sold 110 sets last fall, expects to close the present season with 250 new names on his books. Eliminators will help swell volume, Denham thinks, to \$30,000 gross.

DEMONSTRATES TO SELL

"It takes demonstrations to sell," Mr. Denham states. "We have two steady men doing this work and often take prospects to see customer installations ourselves. (Galvin, "Motorola"). We use our satisfied customer list extensively in selling and can show a prospect most anything from a 16-cylinder to a Ford model-T job. Each installation sells at least two more sets for us; auto-radio gets attention wherever it goes. Its demonstration value in the hands of a user is greater than that of almost any other product now on the market.

"Our customer list is effective for two purposes. First, we show it to all prospects, refer them to users. Second, we follow it up for more prospects and we get them, without canvassing among strangers. Only in a

very few instances have we failed to get at least two good leads from an owner of one of our sets.

"Car dealers cooperate fully. We help them sell auto-radio and they help us. Thus a great many of our jobs are installed in new cars before delivery to the buyer. On most of these jobs the whole thing—the set, eliminator and installation—are financed right with the automobile. There is only one set of papers, one carrying charge, one monthly payment. Our own sales are 75 per cent cash, while time sales through car dealers are fully protected.

"Installation, when the purchaser of a new car contracts for it in the showroom of a car dealer, settles all that business about defacing the machine. The customer who buys in this way has no feeling at all that his radio is an accessory. It, he feels, belongs right there, where it has been since he first sat at the wheel. To him it is a factory job and as such, satisfactory.

"There is no question in the minds of most car dealers that our work also helps them move cars. There are, it seems, car owners ready to trade, but who would 'do without' for another season, if it were not for auto-radio. They want a set but not in their old car. So they decide to trade in and have one installed in the new automobile. The combination of radio with a new machine clinches the business where the snap of the new model alone might not be sufficient to swing it."

SERVICE IS SIMPLIFIED

"We have had no serious difficulty in service or installation work. Today our average installation takes



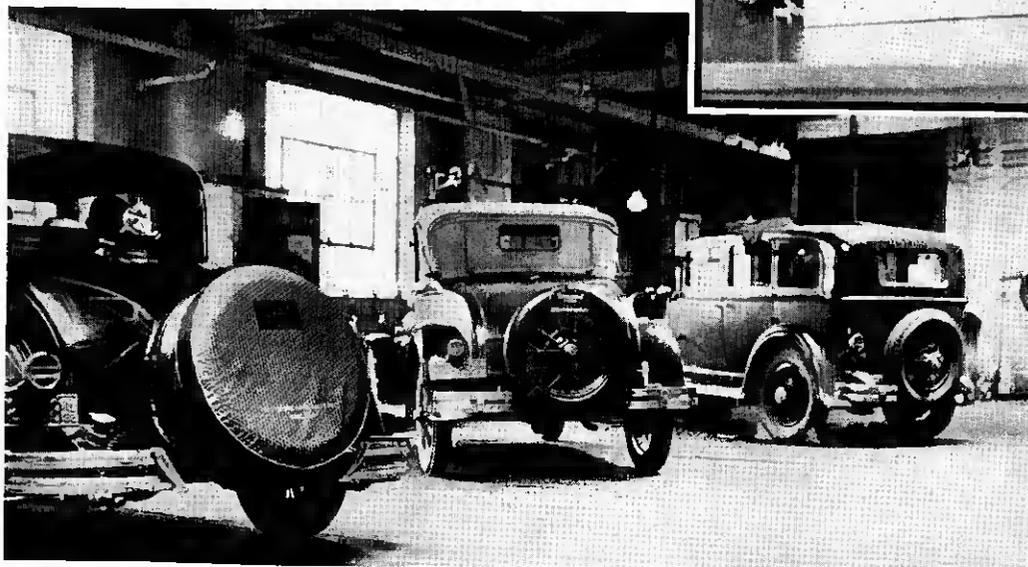
E. D. Goodfellow, manager and Frank S. Denham, owner

BUSINESS

Bloomington Moto-Music Company Budgets \$30,000 on Sales Possibilities of New Type Sets



Testing an eliminator. "Every installation sells two more," says Good-fellow



Three car jobs under way. The company also goes after boat business and has closed one airplane contract

about 2½ to 3 hours, including a roof-antenna. We have never had a "fire" job, never damaged a car. Out of all the sets we have sold, only 8 tubes have been replaced and these were damaged by excessive vibration. We have never had to eliminate wiring or disconnect any accessory already in a car. We find ways and means to make our radios operate without making alterations which might affect the performance of the customer's machine.

"There are two rules to which we strictly adhere:

1. Nothing under the car, unless it is absolutely necessary. This applies to battery boxes, antenna, chassis, etc.
2. Never cut the car.

"The first rule is self-explanatory. We had trouble at first with battery boxes. The cells got wet when the car was driven through rain and slush, or when it was washed, no matter how well we installed those boxes. We couldn't keep water out. That's all over now because most of our sets are equipped with eliminators

(Mallory "Elkon"). We worry no longer about battery failure, cold weather does not cut down voltage. There is always full power on the set.

"We don't have to cut the car for a battery box. The eliminator is smaller and easier to install. We slip it right under the front seat usually.

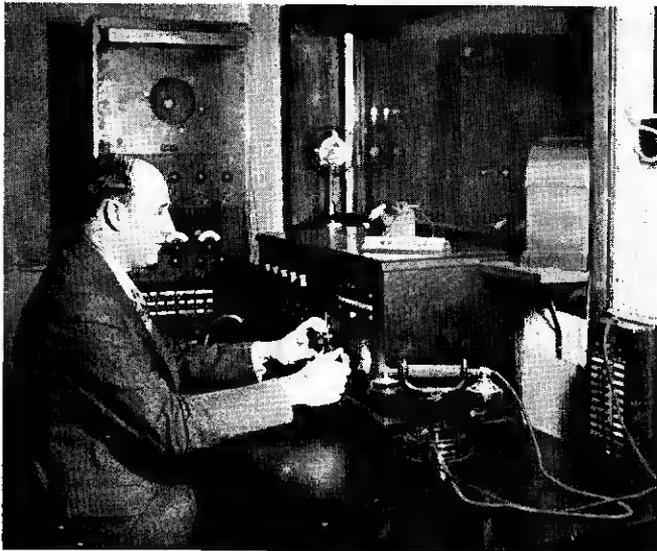
SETS ARE BETTER

"We can't say too much for the type of equipment manufacturers are supplying today. It's right, and this is of great importance in a growing business where every kick hurts. We had one job that was forced off the road by a truck. It turned over, struck a tree so hard that the bolts holding the set were sheared away.

"The set was still playing when the driver crawled out of the wreckage!

"Small as this town is (40,000) we are confident that there will be more than sufficient auto-radio business and eliminator business to support our specialized business."

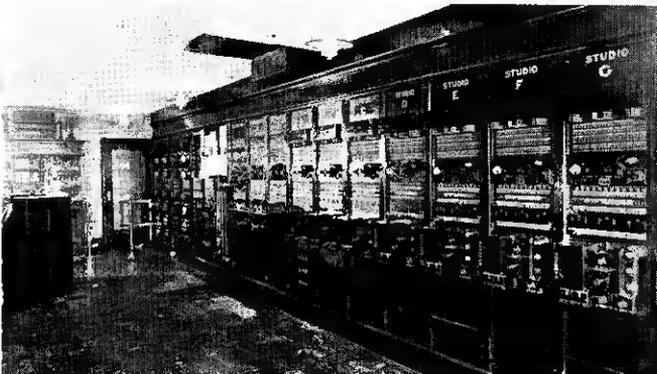
New Engineering Insures *BETTER*



SPEECH INPUT—Full 10,000 cycles, reproducing overtones and harmonics



SHORT WAVE—Unique pick-up from speeding train



NEW STATION EQUIPMENT—Wider ranges of frequencies and sound levels—main control board of NBC

Improved tone quality of latest receivers needed to keep pace with these advances in broadcasting:

ELECTRO DYNAMIC
MICROPHONES

PARABOLIC "BEAM MIKES"

SENSITIVE SHORTWAVE
PICK-UPS

IMPROVED SPEECH INPUT
PANELS

TELEPHONE LINES
(60-3,000 CYCLES)

TRANSMITTERS
(40-10,000 CYCLES)

DIRECTIONAL ANTENNAS

"HALF-WAVE" VERTICAL
ANTENNAS

DURING recent months a number of developments have occurred in broadcasting which make it all the more necessary for the listener to be provided with a modern radio receiving set of high fidelity, if he is to enjoy all the good things that the broadcasters provide him.

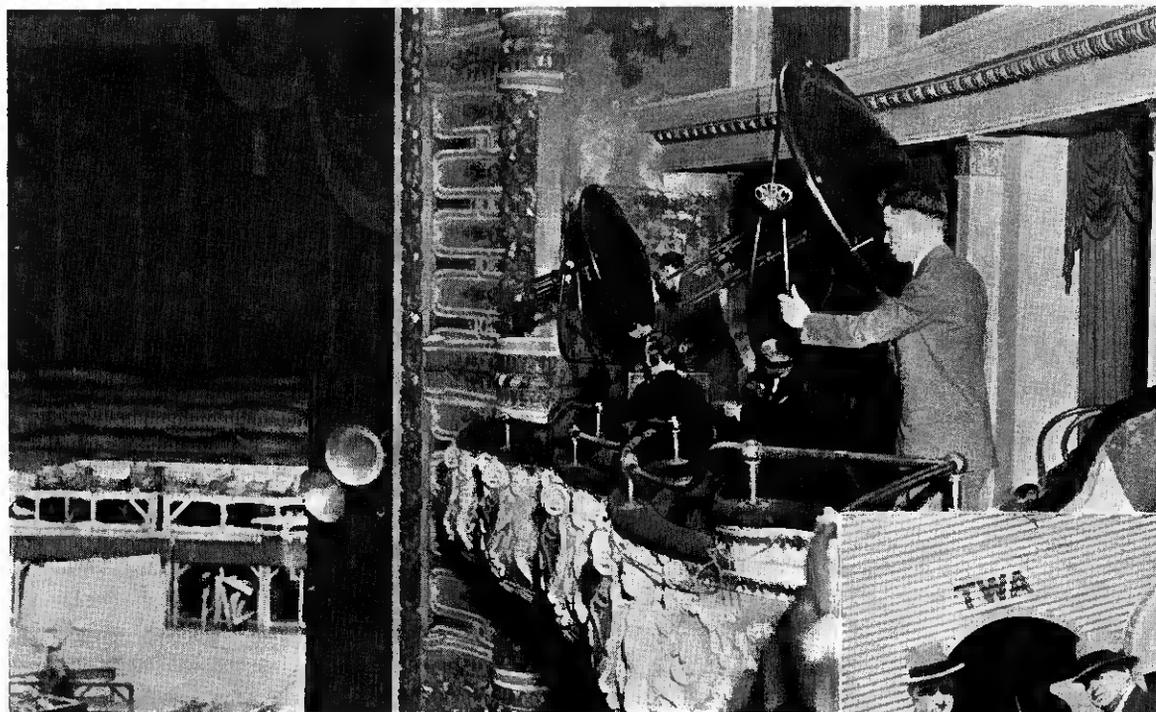
New microphones, new station equipment, wider frequency ranges of special telephone circuits, new antennas, and greater overall scrutiny of sound effects—these marked improvements in the broadcasting end, which make for greater reality, will be largely lost unless the listener equips himself with one of the improved receivers which have been especially designed to reproduce the various advances of 1932 broadcasting technique.

ELECTRO-DYNAMIC MICROPHONE

IN the broadcasting studio and at the point of sound pick-up itself, great progress has been made in microphones, within the past few months. The new electro-dynamic microphone, for example, repeats the history of the electro-dynamic loudspeaker, so well known to radio dealers, with a corresponding improvement in quality. Curiously, this newest electro-dynamic microphone harks directly back to Alexander Graham Bell's original invention of the telephone, for Bell's telephone of 1876 was nothing else than a vibrating diaphragm moving in a magnetic field and setting up corresponding currents. So by a curious swing of the wheel of science, the first man-made mechanism that ever talked, now becomes the pride of 1932 broadcasting. The new microphones have a wider range of pick-up and greater freedom from side noises. Thus they contribute much to greater realism, passing this improved quality all the way down the chain of communication to the listener.

By O. H. Caldwell

BROADCASTING



PARABOLIC BEAM MICROPHONE

THE new "beam microphone" or parabolic-reflector mike, is another advance greatly facilitating outdoor pick-ups or broadcasts from large groups. The "beam mike" is an importation from Hollywood, where it has been successfully used in motion-picture work. It looks like a headlight reflector, and is about two feet in diameter. At the focus, where the light-source would be, is placed the microphone unit. Just as a searchlight beam might be played upon various persons in a crowd, several hundred feet away, so this beam mike reverses the procedure and, as it is swung around, picks up the sounds from distant persons, reproducing them with uncanny clearness.

One of these beam microphones was under test during a football game at the Yale Bowl last fall, being pointed at various persons on the opposite side of the field. Finally it alighted on Ted Husing, well-known announcer, just as he made a casual comment about beam mikes to the player seated on the bench beside him. Every word of his ordinary-tone speech was picked up and clearly reproduced, all the way across the football field, in spite of the hubbub and noise which the vast crowd produced. This ability to pick up a desired sound at a distance, while shutting out all other sounds around, gives remarkable flexibility to broadcasting pick-up for

(Above)
PARABOLIC REFLECTOR —
Microphone can be focused on distant sounds

(Right)
PORTABLE TRANSMITTER —
Ground-to-plane conversation, while 77 Columbia stations listened in



outdoor events. No longer is it necessary to run wires and a mike to difficult places. The reflector merely has to be turned on the speaker and his voice comes through, clear of all outside interference.

Several of these beam microphones were taken to the national political conventions at Chicago, and were used to pick up the remarks of speakers from the floor of the convention. It was easy for the microphone tender to swing his reflector, like a searchlight, and pick out any group in the vast assemblage, getting the speaker's words clearly. Beam mikes have been used successfully to broadcast the Metropolitan Opera, picking up the voices

of stars during special passages, and following them around the stage. Field sports, orchestras, parades, and mass-meetings have also been broadcast in this way.

SHORT-WAVE DEVELOPMENTS

RECENT developments in short-wave apparatus, also have greatly facilitated news event pick-ups in difficult places. With these remarkable and flexible short-wave 'phone units, communication can be quickly established with any point 30 to 50 miles away over water and within 10 or 15 miles over any kind of country. When it is impossible to get wire connections, the announcer and his assistants merely carry a portable shortwave unit with them, and this is used to set up positive connection with the nearest wire-line, over which the program can be transmitted to the broadcast station.

Shortwave links have also been used successfully to gain broadcasting access to buildings into which it is not possible to lay ordinary wire lines. In such cases a wire connection is established with a building across the street or in the next block. The announcer then takes his portable shortwave kit to the scene of the news event, speech or banquet, and proceeds to make connection with the studio via the ether link. In such cases the broadcast proceeds without the listeners being aware of the complexity of circuit arrangements serving them.

The big national networks have duplicate sets of these shortwave transmitters and receivers always standing ready for instant action. Fifty-watt sets are used for the longer pick-ups, and ten-watt sets for golf course and other broadcasts where the wire terminus is only a mile or so distant. Parades, fires, floods, and sports events have been handled in this way. The recent broadcast from a speeding B&O train to the Columbia System, and the NBC broadcast from a speeding racing car during the Memorial Day races at Indianapolis, were examples of the unique possibilities of shortwave pick-up.

IMPROVED INPUT PANELS

MEANWHILE greater and greater fidelity of reproduction is being secured through wider frequency range of station apparatus, telephone lines and transmitters. The input equipment of leading stations is now being overhauled to give a flat characteristic of transmission, for all frequencies from 40 to 10,000 cycles. The big new transmitters are capable of sending out an undistorted range up to 10,000 cycles, or a frequency twice that of the highest note on the piano. These high frequencies make for fidelity in overtones, giving quality and brilliance to various instruments. Unfortunately the available frequency-range of modern stations has outrun the space available in the overcrowded ether, and the 5,000-cycle limit imposed by the 10 kc separation between broadcasting stations, prevents the full usefulness of this wire range being demonstrated, except after stations in adjoining channels have shut down. Telephone lines are

also being made available for much wider transmission characteristics. The American Telephone and Telegraph Company now serves the great broadcasting systems with lines from New York to Chicago, Washington, and Boston, having a frequency range from 60 to 8,000 cycles and flat within one decibel.

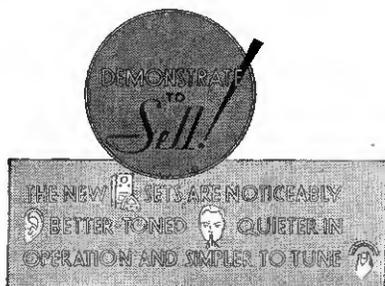
IMPROVEMENTS in antennas designed to deliver greater field strength of broadcast signal to the listener's set, constitute another contribution made by the broadcasters in their unceasing efforts to furnish better radio reception. Several stations have installed directional antennas, designed to pour the radiation in the direction where it is most needed, at the same time safeguarding nearby cities from being blanketed by excess intensity of signal.

The new vertical "half-wave" antenna has been a unique example of theory applied to solve practical difficulties. The first of these great vertical antennas, that of Station WABC at Wayne, N. J., is 680 ft. high (125 ft. taller than the Washington Monument) and has all its huge weight supported on a single insulator. The purpose of its vertical design is to project the major part of its output in a flat, horizontal direction. This increases its effective power, while reducing the usual sky-wave component, which is a factor in causing annoying fading and mushing.

Skilled engineering staffs maintained by the broadcasting systems and by individual stations, have been carrying on independent investigation and research, and this has contributed greatly to the sum total of technical knowledge in the broadcast field. The engineers of the stations have also become much more discriminating in the demands they put upon the makers of broadcasting equipment, and apparatus is not now accepted unless it fulfills definite specifications. The engineering personnel of the stations is being more carefully selected, and the operating staff is being chosen not only for technical knowledge, but for tone sensibilities. A system of elaborate tone tests recently prepared by the Bell Telephone Laboratories, has been employed by several broadcasters to test the hearing of the men controlling the tone quality of their programs. In the past it has sometimes happened that an engineer who was virtually "tone blind" attempted to adjust and govern the tone output of a station. Advance tests of all operators now prevent such unconscious havoc at the control board, and the man who supervises the output of the station is one whose senses have been thoroughly tested for full-range perception.

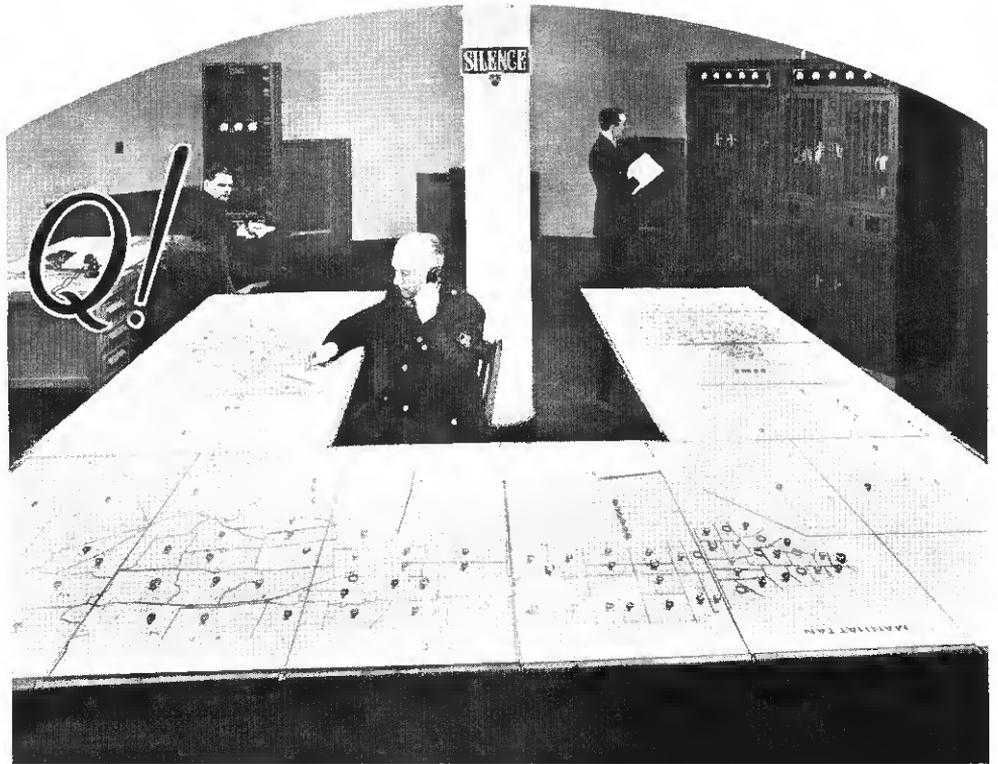
THUS every influence in the whole realm of sound reproduction is now directed at greater and greater fidelity. The broadcasters have achieved results in this direction far beyond the possibilities of earlier receiving sets, results which will test the full-tone capabilities of the wonderful new receivers of 1932.

The new sound pictures, the new public address systems, the new phonographs all bring to the listener new and undreamt possibilities of reality. Thus Mr. Prospective Radio Purchaser and his family will, during the remainder of 1932, be under the continuous bombardment of unconscious argument and demonstration tending to dissatisfy them with the old radio set, or with any inadequate set, and to fasten the desires on the new 1932 outfits. And the broadcasters and the set-makers are ready to give them perfect quality and "reality" whenever they tune in.



P.D.

PD



WPEG, New York's new police transmitter, responds to a telephoned appeal — while shortwave fans listen

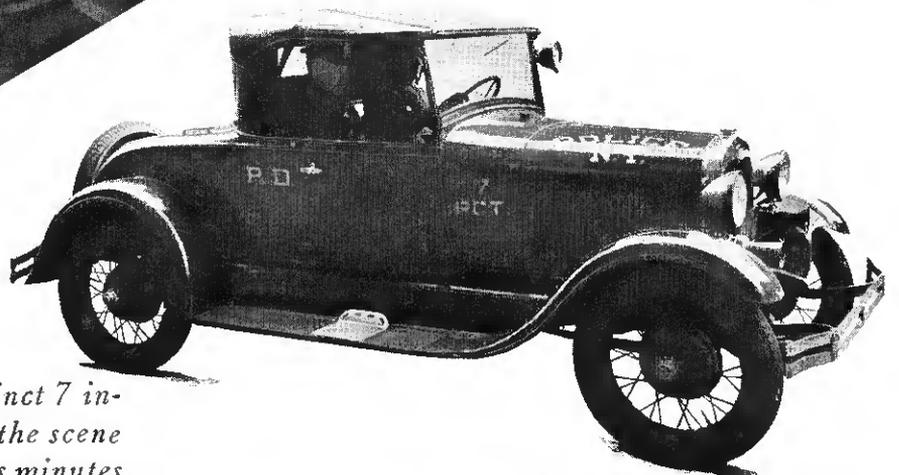


1—RECEPTION

Dispatcher at HQ receives the call, scans his map, pencils orders to the nearest police patrol car

2—TRANSMISSION

Message "takes the air", flashing out over the city via a powerful "Western Electric" 500-watt transmitter. Two auxiliary stations are located in Brooklyn and the Bronx



3—APPREHENSION

Two men cruising in Precinct 7 intercept the signal, speed to the scene of the crime, saving precious minutes

The Basic Principles

The Good and Bad Points of

FOR over a year I have been operating a simple accounting system which I devised myself. It seems to give me all the facts I need and is easy to keep. However, my banker isn't quiet satisfied. Says my statements aren't complete enough. Will you please analyze my methods and give me your frank criticism of what's wrong and what changes I should make."

The above request was received from a successful radio merchant located in one of the New England states. Inasmuch as Mr. "A's" home-made system is similar to many others, operated by radio dealers and considered by them quite satisfactory, let's take A's set-up as a case study, and discuss, openly and frankly, its good and its weak features.

But first of all, just what functions should a good accounting system perform and of what elements should it be composed?

Any merchandising transaction, regardless of its nature, has a double effect upon the business involved—hence the necessity for double entry bookkeeping. For example: to buy merchandise is to increase this form of

asset and increase or incur a liability. To sell merchandise is to decrease inventory and to create another form of asset termed accounts receivable. When both effects are not recorded half of our business is kept on the books and the other half allowed to disappear into thin air. It follows then that any arrangement for recording business data not operating on this principle is neither a system nor a method and should not be called such. Single entry books are purely memo records. They cannot be considered good accounting.

ACCOUNTING records should be so devised as to make the development of facts recorded therein automatic and easily obtainable. The work of accumulating the financial story should be reduced to a matter of routine. This compilation of figures should fit with rapidity and accuracy into periodic statements of good form. These monthly or quarterly statements should show clearly what profits have been made, how they have arisen and what disposition, if any, has been made of them, together with the exact financial condition at the end of the period. By no means should the necessary information have to be searched for.

The system should be as foolproof against errors and omissions as possible. It should be convenient to make journal entries, or vouchers for later journalizing, immediately as each business transaction occurs, leaving nothing to memory. The system of double entry is in itself a check against many inaccuracies and minimizes mistakes and omissions.

The books must take in all operations and transactions of the business, all liabilities and all assets. There is no ground whatsoever for omitting one phase of the business because it seems relatively unimportant. Unguarded it may take on sufficient magnitude to upset the whole enterprise.

Finally, the system should be as easy to operate as is consistent with the specific requirements. There is no reason why any well devised complete system of accounts for a retail store should be so complicated that the business man of average intelligence cannot grasp it in a very short time.

The set up that has proven ideal for the retail radio trade is composed of three elements: a voucher pad and combined cash-journal and general ledger. The voucher pad, commonly called sales slip, is the medium through which all records of transactions originate. For each financial occurrence—purchase, sale, receipt of cash on account, payment of an invoice, acceptance of a note, etc.—a voucher is made out immediately, just as is done

A Proper Accounting System Will . . .

- Be so devised as to make the recording of all essential facts automatic
- Be self-checking—foolproof against errors or omissions
- Provide a place on both sides of the ledger for every transaction, regardless of its nature
- Provide accessible data for the compilation of frequent business statements, which will show actual net profit or loss, assets and liabilities

The Weak Points in Dealer A's Homemade System

- Large errors or omissions possible
- Difficult to spot the vital statistics or to properly tabulate them
- Omits record of notes receivable, notes payable (sales financing) and of trade-in allowances
- Makes possible the inadvertent issuance of incomplete, hence inaccurate, business statements

By Russell B. Rich

of ACCOUNTING

Dealer A's Homemade System

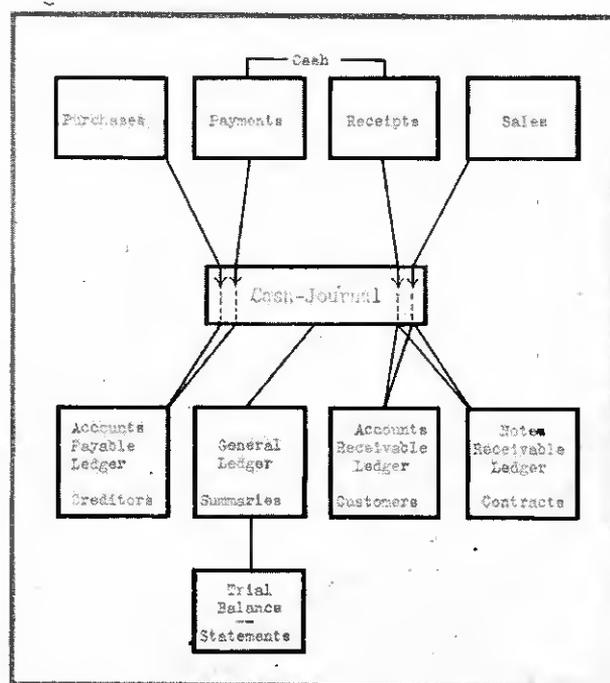
by a department store sales person. At the end of each day these vouchers are entered in the cash-journal, debiting and crediting the proper accounts in the distribution columns. At the end of each month, or other business period, the columns in the cash-journal are footed and the totals posted to respective accounts in the general ledger. This general ledger is the hub of the system into which all financial data is accumulated in classified form. It is the record from which all statement work is done and is the key to the entire system.

NOW to consider the "method" under review, Mr. A maintains no general ledger. He has a "day book" of three money columns in which are put cash receipts, charge sales, cash paid out, in single entry. He also has a twenty column sheet called "monthly statement" giving a column to each of eight expense accounts, one each to sales-cash, sales-charge, purchases, merchandise credit, discounts earned, received on account, cost of sales, bad accounts, accounts payable, bank deposits, accounts drawn. Each day's totals are distributed on this sheet, building up much memoranda that must be dug into when basic information is needed.

Frankly, Mr. Dealer's system does not meet the requirements of modern accounting and must fail him in many vital respects. Digging out the figures for statements each month must be a real man's size job with no certainty at the finish that the work is accurate. Large errors or omissions are possible as there is no satisfactory method of checking the work.

Our friend informs us that his books and statements only cover a portion of his business. No records are kept of notes receivable and notes receivable discounted, this latter account being the sole cause of many insolvencies. We question, also, his handling of trade-in merchandise of which he keeps no record.

A balance sheet, as we all know, is a statement of assets, liabilities and capital. In one group we list all the assets of the business the total of which must equal the outside liabilities plus the equity of the proprietor. To put it another way, the equity of the proprietor is the difference between the total assets of the business less the liabilities. Mr. Dealer submits a so-called balance sheet at December 31, 1930 that does not balance, the first one of its kind the writer has even seen. He lists assets that total \$12,714 against which he shows liabilities of \$3,078 and capital of \$10,035, a total of \$13,113. We can give no explanation, neither can we imagine the reaction of a creditor or prospective lender to whom such a statement might be submitted.



How Accounting Data Should Be Routed

This chart shows the routing of financial data from the vouchers thru the Cash-Journal to the ledgers.

A voucher is made out for each transaction at the time of its occurrence. These vouchers are numbered serially and are entered in the Cash-Journal in the order of occurrence, amounts put in the proper columns. Each entry affecting accounts payable, accounts receivable or notes receivable is posted, immediately, to the individual account in the ledger.

At the end of the period all columns are footed and the totals posted to the accounts in the general ledger, from which is secured the trial balance used to develop the financial statements

FINDING no reflection in the statements of contracts or notes, we asked Mr. A if he had not done some installment business during 1931. We find that he has taken contracts, discounted them but has not brought this phase into the accounting records. He feels that he is out of this picture entirely until the time arrives to repossess such merchandise. He does not realize that these contracts constitute a very large contingent liability, any portion of which he may be suddenly called upon to liquidate out of working capital. Under any condition the sales financing should be thoroughly covered in the dealer's accounting.

It seems that "trade-ins are not entered until sold, then entered as clear profit unless there is a repair charge." We deduct from this that customers are credited with the allowances on trade-ins and that the

(Please turn to page 38)

This Dealer



Sells himself

HOW SETS COMPARE

Make "A" 14% of sets sold need service
59% of calls are tube trouble
22% of calls are outside noise
19% are speaker or chassis trouble

Make "B" 12% of sets sold need service
28% of calls are tube trouble
24% of calls are outside noise
48% are chassis or speaker trouble

Make "C" 16% of sets sold need service
40% of calls are tube trouble
30% of calls are outside noise
30% are chassis or speaker trouble

Make "D" 15% of sets sold need service
62% of calls are tube trouble
14% of calls are outside noise
24% are chassis or speaker trouble

Farr carefully analyzes various phases of service. This is just one of his interesting tabulations.

UP to a year ago, Mort Farr's service department was losing money—not a great deal, but enough to be annoying during a period of business readjustment and uncertainties.

During the first half of 1931, for instance, a check-up of service records (which were more or less tangled with those of the merchandising end of the business) revealed a net loss of \$1,700. That meant just a little less than \$300 a month. Then it was that Farr and service manager, J. W. Pritchard, decided on a right-about-face in the handling of the department. It was suddenly divorced from the store, set up in other quarters as a separate business and "hired" by the store when needed. While still a part of the business, it was put entirely on its own in the matter of showing profitable results.

From that time to the present, every month it has brought a profit. Today, besides doing more than anything else to promote new set sales for the store, the department nets better than ten per cent on a gross volume of about \$35,000 a year. It is giving this Upper Darby, Pa. store the finest kind of service on its sales at the extremely low blanket rate of \$2 for the entire guarantee period of the sets.

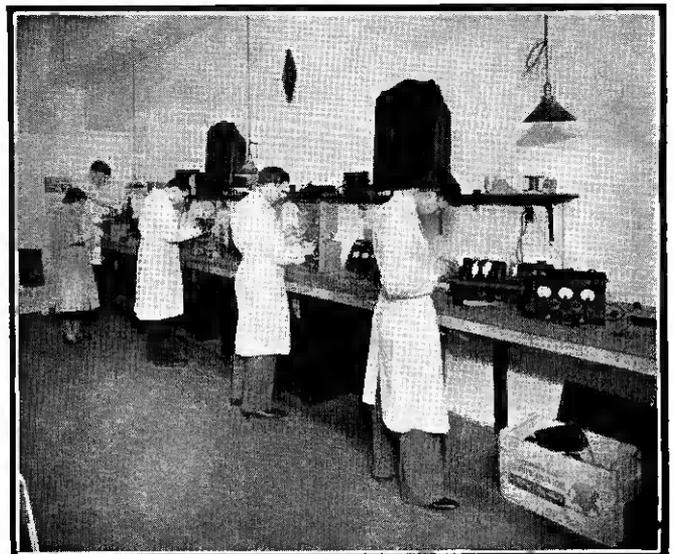
*Dealer Mort F. Farr's Shop
LOST \$1,700 in 1931
He divorced it from the store,
insisted that it be self-supporting.
Now repairs NET him
\$290 monthly*

"So," says Farr, "the depression hasn't been without its bright side. It has taught us a lot about efficient management and has shown us, among other things, that a service department can be transformed from a liability to a profit-maker as well as a business-builder.

"If we had been operating half as efficiently in 1929, when volume reached a quarter of a million, as we are now, we'd be ready to retire. As it is, we've been following the policy of the fellow who, when handed a lemon, made lemonade out of it. We're learning to make a smaller volume count for more and the realignment of our service has been one of the big steps in the right direction."

SALARIES EXCEED \$40

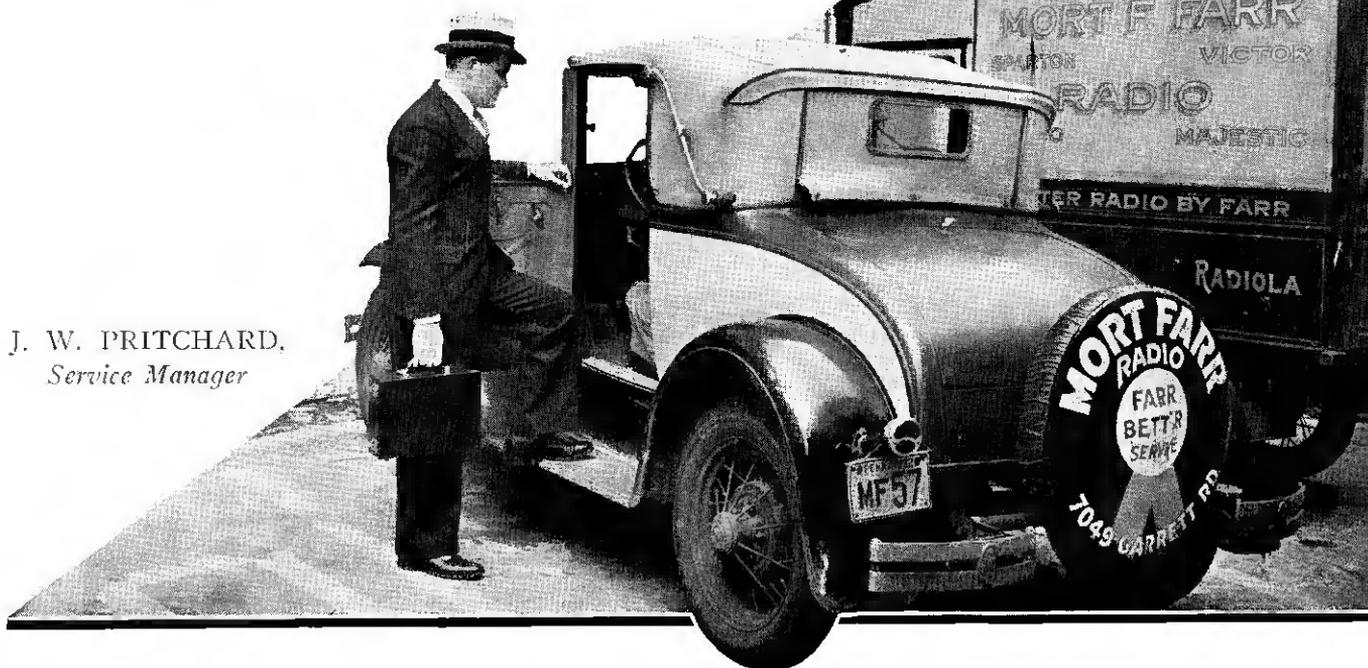
Eight men exclusive of Pritchard and his secretary are kept busy on service. Another one, travelling in an especially equipped truck, spends his time on aerial installations and repairs. All of the service men have their own roadsters which the company helped them buy



SERVICE

By Harry P. Bridge, Jr.

J. W. PRITCHARD,
Service Manager



but which they maintain themselves. Straight salaries are paid, ranging upward of \$40 a week.

When the service department was first put on its own, it was moved to quarters two miles from the Farr store. Later a spacious building in the rear of the store became available and it moved in there—still as a separate and distinct business.

Leaks were uncovered in the checking out of materials and replacement of tubes and parts. Now these have been reduced to a negligible minimum by having one man issue all parts and see that they are properly billed. High credit losses on service work also came in for prompt consideration. The men were instructed to make their own collections and the cash business jumped from 40% to 90%, where it is today. Losses nose-dived accordingly.

To avoid overcharging or actual dishonesty, receipted bills are mailed from the office as soon as the money is turned in by the men.

There are more than 6,000 service record cards on file. These cover service work both on store sales and "strange" sets. Facts and charges on all calls are carefully noted here so that there can be no question regarding past work, guarantees or life of tubes. Also, the credit standing of each customer is indicated by colored tabs. When a Farr set is installed, a guarantee and service record card is tacked inside the cabinet. Such facts are noted on the company's record cards so there can be no unfair comebacks by customers.

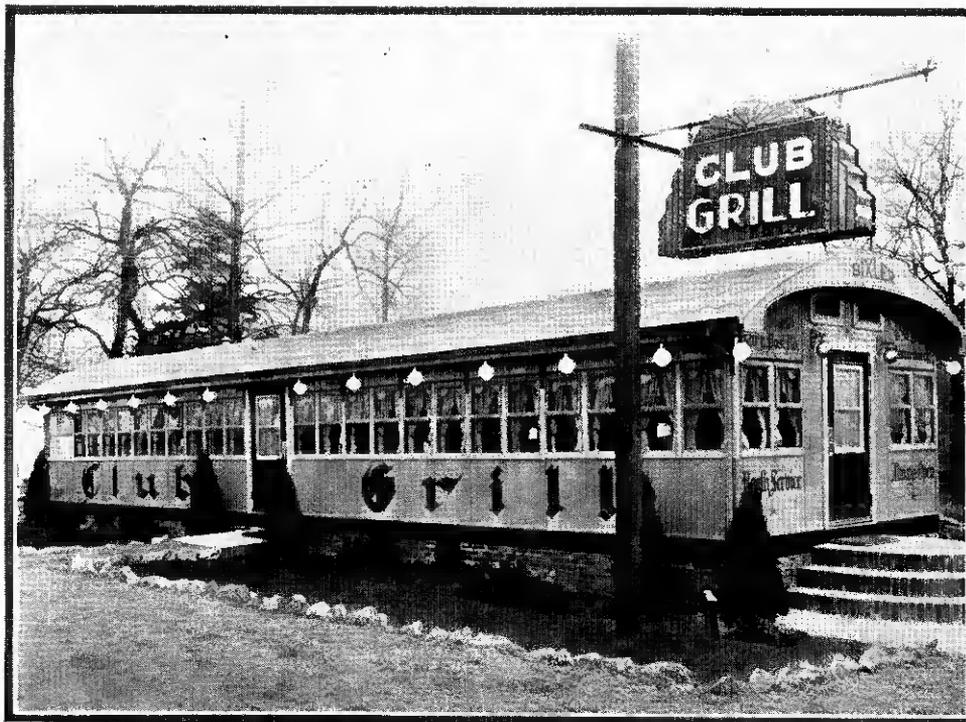
Although the minimum service charge is \$1.50, one hundred service reports picked at random from the April, 1932 group, disclose the fact that the average call brought in \$7.95—a figure which may safely be regarded as a pretty fair average average for all-year-round business.

"We pick our men," says Mr. Pritchard, "first for their ability to service and second for their ability to impress customers with the advisability of having the work done right. These qualities are equally important from the standpoint of a good service business. We don't expect them to sell radios but we do expect them to sell folks on the idea of buying complete sets of tubes or on having defective parts replaced rather than doctored.

"There is just as much opportunity for real salesmanship in service work as in any other phase of the radio business. The fact that we train our men to exercise it accounts for the high average charges for our calls. More than that, it accounts for the high percentage of satisfaction among our customers."

Not one customer out of 100 complains of high prices—or anything else, for that matter. Following every call, a stamped, return post card is mailed with the request that the customer fill it out. This contains spaces for answers to questions such as: Was the work entirely satisfactory? Was it completed when promised? Did you receive courteous treatment? How can we improve

(Please turn to page 37)



The

DINER *Market*

THE rapid growth in popularity of the de luxe diner opens up another interesting market for radio dealers. No less than 700 of these glorified lunch wagons now dot our highway landscapes. Furthermore there are approximately 9,000 more diners of more modest proportions which also offer sales possibilities. To sell this type of prospect, the right kind of music-producing instruments must be carried. Diner floor space is limited. Compact, automatic-feed record players have recently been developed and are now available. For the common or garden variety of lunch wagon today's small radio set is, of course, the logical proposition.

A typical example of sales possibilities, when the owner of a modern, \$12,000 to \$20,000 dining "palace" is properly approached, is seen in the experience of the Parkinson Piano House, Providence, R. I.

This concern has been pushing a coin operated, magazine feed phonograph player that sells for approximately \$250. For the past six months it has averaged one sale a week, mainly to restaurants and diners. This device weighs but 136 pounds. It is 42 inches high, 33 inches long and 19 inches wide.

Parkinson's regular piano and radio salesmen simply canvass every prospect, arrange for a demonstration and explain the "self-paying" terms. Ninety per cent of the 75 orders so far booked provide for a guaranteed payment of \$25 a month. With few exceptions the machine itself takes in this sum, in nickles, every 30 days. Frequently there is a sizable balance, velvet, left over for the owner of the diner.

Here is a typical, conservative New England music house which has shown an operating profit, during a time of great depression in its regular lines, due almost solely to its energy in getting out and going after a new mar-

ket. The salesman receives a 10 per cent commission. Advertising expense is practically nil.

Mr. Parkinson issues one word of warning. "Coin-operated amusement devices, in many public places, are controlled by professional 'operators'," he declares. "Generally speaking, these chaps have little credit responsibility or character. When dealing with them, either get cash in advance, or control, yourself, all collections until the player is paid for."



ABOVE *A typical interior. Note the radio set at the far end of the aisle.*

TOP *Ten thousand diners now dot our roadside landscapes. Most of these are prospects for radio or phonograph equipment.*

How we Budget

Our Business



By

Ernest F. Henderson

Treasurer, World Radio Corp., Boston

By holding actual expenses down to budget allowances the process of making a profit reduces itself to a formula

THE most difficult problem faced by radio dealers during hard times is the maintenance of profit even in the face of falling prices and falling sales. The experience of our company shows that this is possible. With earnings averaging over \$50,000 net for the past three years, World Radio Corporation feels confident that it can meet depression conditions in 1932 without fear of red ink.

The principal factors to which the management attributes its success in avoiding losses is a policy of writing down accounts receivable and inventories to their *actual value* each month, charging the difference between cost and market value of inventories into expense, and by writing off all accounts on which no payments have been made for 90 days or more. This policy may appear too drastic but it has the advantage that the monthly operating statements we set up always reflect the exact condition of the business.

Losses have largely been avoided through a policy of setting up at the beginning of each month, in budget form, an operating statement for the succeeding month showing estimated sales, gross profit and all estimated expenses figured as a percentage of total sales. With the possible exception of rents and fixed interest and depreciation charges almost all of the expense items appearing in this budget are variable and can be adjusted to the estimated volume of business in such a way that total expense will not exceed the gross profit anticipated. By comparing the estimates with the actual figures an almost unbelievable degree of accuracy can be attained. In this way, by holding the expenses down to the budget

allowances, including the reduction of salaries when this becomes unavoidable, the question of making profit reduces itself to a matter of following a formula rather than hoping for better times.

Experience has shown that with an efficient credit department losses on bad debts will vary from a half of 1 per cent during good times up to 1½ per cent during times of serious unemployment. Rent should never exceed 5 per cent. Administrative salaries frequently run as high as 3 per cent although we consider 1 per cent sufficient. Total salaries average 10 per cent. Two of our large items are advertising, which is held to 7 per cent of sales, and *inventory mark-downs*, which during hard times, frequently reach 3 per cent.

One of the most difficult tasks of a retail radio concern falls to the lot of the credit manager who must be able to say "No" to from 20 to 30 per cent of all applicants for credit. Experience shows that by selecting only the best credit risks, losses are greatly reduced.

Another problem is the securing of a large volume of business at a small advertising outlay. We rarely buy

Editor's Note: This article is a recital of business control methods rather than of merchandising practices. It generally is known that the company in question does one of the largest radio businesses in New England controlling the operation of 50 retail outlets.

space in newspapers except to advertise an outstanding value. In this way the effectiveness of newspaper advertising, which costs us over \$100,000 a year, can be counted on to produce substantial returns on the money invested.

Merchandise figured at the retail price must be turned at least ten to twelve times per year in order to avoid excessive inventory losses. In other words, inventory figured at wholesale cost should not exceed 60 per cent of the month's sales.

(Please turn to page 38)

Would You Like

—how to Display the New Sets

ONE way of impressing people with the superiority of new receivers from the standpoint of tone, quieter operation and easier tuning (as advocated in the editorial on page 17) is to display a new and an old set in the store window together with a placard bearing the words: "There is a difference. Come in and hear it!"

The two sets should be plainly labelled "1933" and "An Old Radio." It might even be a good plan to list the various modern features of the new set although actual demonstration, rather than flowery technicalities, should be the keynote of the display.

Maybe this scheme is something all the dealers in town can stage a "cooperative" on.

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—how to Reduce Trade-in Losses

INSTEAD of piling used sets in the back room, showing them only when a customer asks, we polish them up immediately upon receipt and put them in the store window, along with new sets. We do not find that they interfere with the sale of new sets; people who are looking for a modern receiver don't look at them a minute. But they are quickly snapped up by prospects for used merchandise—those who would not be able to buy new equipment in any event." This from a Chicago store.

+

—how to Display Small Appliances

ELECTRIC cleaners, irons, percolators are effectively displayed in a wall recess lined with silver paper. The paper reflects so much light that a small lamp supplies ample illumination. The merchandise stands out even if it isn't given much space.



—how to Cut Service Costs by Telephone

"WHAT seems to be the trouble?" asks manager Bogatin of the Coast Radio Company when Seattle customers phone for service. If the symptoms suggest tube trouble he suggests that they save a \$1.50 minimum charge for service calls by bringing their tubes to the store for free test.

This suggestion comes as the result of experience which has shown that 85 per cent of all service requests are due to worn-out tubes. The tube sales made in the store usually net a greater profit than those closed in the home despite the minimum service charge, as this is straight over the counter business.

+



—how to Dramatize Food Savings

"ELECTRIC refrigeration saves the average user \$9.96 a month in food alone," announced Frigidaire in a bulletin to the trade. One enterprising dealer immediately bought this quantity of groceries, heaped it up in his window.

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—how to Move Tubes by Direct-Mail

HOWARD MERCER of the Evanston (Illinois) Radio Laboratory mailed penny postcards bearing the company name, address, phone number and a short offer to test tubes free, in homes. It brought in enough business to induce him to spend money on a more ambitious folder worded as follows:

"Your radio tubes tested FREE in your own home. Something absolutely new in radio service inaugurated for your convenience by the North Shore's leading radio service organization. No inconvenience. No obligation. Simply phone Greenleaf 6870." On the inner pages he went into greater detail: "The tube is the heart of your radio. If it is weak, your set may fade, be noisy, have poor tone or volume . . . Our records show that about 75 per cent of all service calls are caused by weak tubes. It is not necessary to wait until your set stops operating

to KNOW?

to call us . . . Do it now and be assured of the best possible reception. Remember this tube testing service is free, with no obligation, and if you prefer we will test your tubes regularly every three months so you will always be assured of perfect reception . . . Phone us today . . . You will like this new service."

Seventeen thousand folders cost \$100 and in the first three weeks of use increased sales by 150 tubes a week; and other accessory business rose in proportion.

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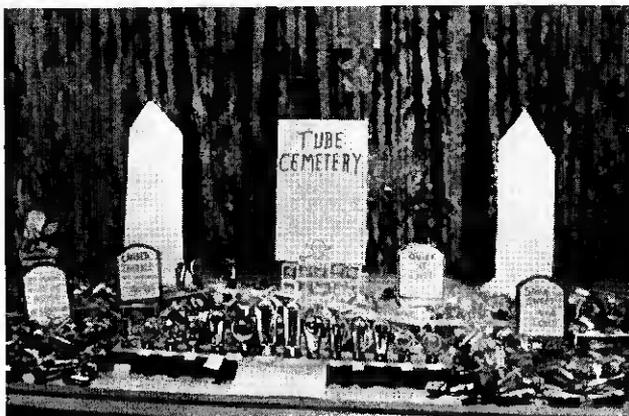
—how to Use the 25c. a Day Plan

IT WASN'T the electric clock offer but rather a daily payment idea that sold 140 refrigerators for Harry Plisner. "The clocks I used had a coin-slot and locked banking compartment," he explains, "and were not of the expensive meter type which shut off the current when quarters stop coming. They cost me \$2.95."

Plisner owns the Community Radio Stores, Middle Village, L. I., and feels that 70 per cent of his success in signing up 140 refrigeration accounts in five months was due to his featuring "Only 25c. a day—less than the cost of ice," rather than monthly terms. On machines selling over \$200, the daily rate is 30 cents, or \$9 monthly.

He remarks about the plan: "While many of my customers do not drop a quarter in the clock bank every day the amount is generally large enough, when the collector calls, to enable the housewife to add just a little, completing the required monthly payment."

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—how to Sell More Replacement Tubes

A "TUBE CEMETERY" window, in which hundreds of old types represented bodies lying beneath cardboard tombstones, is the best replacement tube propaganda ever devised by Patterson Radio of Pasadena. For three weeks it doubled tube business and is still going strong at this writing.

Some of the inscriptions were amusing, ingenious, such things as: "Quiet At Last!" . . . "I Died of Old Age" . . . "He Made a Lot of Noise—A. Squealer."

Are you still living in the "Gay nineties" of Radio?

You wouldn't drive a horse and buggy if you could afford a good motor car, would you?

You millions of people who could buy a good radio are worrying about with crude, antiquated sets, hopelessly out of date—the "experiments" of the early days of radio.

The advance in radio engineering has been so swift that sets considered the "same of perfection" two or three years ago are now entirely eclipsed by the new developments in radio. The radical betterments fully justify the purchase of a modern set.

One who buys a radio today will steer a safe course if he selects one from among those named here. These are all successful, time-proven radios. Their total sales represent the bulk of the industry's production.

For quality of construction, for engineering perfection, for lifetime dependability, these makes are far in the lead. And your radio dollar buys more when invested in them.

Yes, in line of a series of sets—illustrated by the R.M.A.B. DIVISION of the Electric League of Indianapolis, demonstrating the up-to-date nature of radio expert shops.

—how to Write Good Cooperative Copy

THE Radio Division, Electric League of Indianapolis, ran a series of 10 cooperative radio ads, one every Monday, in the *News*. According to Ted C. Brown, secretary, the league paid half and jobbers whose sets were mentioned paid half.

The ads were models of "class" copy. Reminding people that radios do not last forever is a worthy cooperative cause.

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—how to Advertise Through "Personals"

J. P. KENNEDY of South Bend has hit upon an ingenious method of advertising through the "personal" columns of a newspaper, using small space ads which are extremely effective. In the personal column he inserts a notice like this: "Once upon a time there was a traveling man who had two wives. One was a beautiful auburn-haired creature who lives in a furnished apartment in—(Story continued in the Radio column)." Then, in the radio section he continues: "(Continued from the personal column)—South Bend. The other wife had died two years before the traveling man married again. Now this isn't an unusual story but these bargains in radio on J. P. Kennedy's list are unusual" . . . a list of bargain buys follows.

He advertised three used radios at 7 cents a line, 2 insertions, in a paper with 32,000 circulation. All three were sold within the week.

Copy of this character utilizes small space to good advantage, attracting attention out of all proportion to its cost.

More About the New Technical Features

Further data on "muting" circuits, push-push audio and automatic tone compensation

By W. W. MACDONALD
Technical Editor

FAMILIARITY with the operating principles of technical features in 1933 receivers is essential to servicemen. Fortunately, most of these are variations or refinements of systems introduced commercially in seasons past, requiring no further explanation here. Several circuits, however, are quite new to the trade and three of these . . . automatic "muting," push-push audio as applied to a.c. sets and automatic tone compensation . . . merit particular attention.

Muting Circuits

THE primary purpose of the many muting circuits now in use is to quiet receivers when tuning between stations. Thus they are of particular value in sets equipped with automatic volume control, for these ordinarily operate near full gain

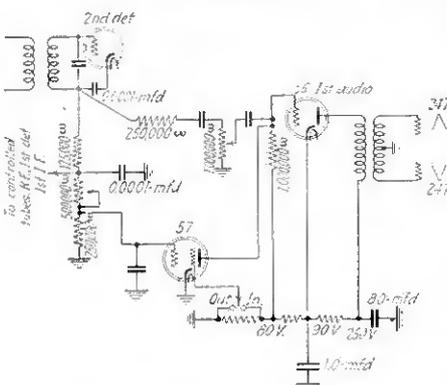


Fig. 1—Fada "mute"

when no carrier voltage is impressed upon the input circuits, picking up considerable noise. Although scarcely two manufacturers use identical muting circuits they may be divided into two general classes, systems which mute audio stages and those

which reduce the radio frequency gain. The method employed in *Fada* models 78 and 79, devised by chief engineer H. J. Heindel, is a good example of a fully automatic muting circuit effecting audio control. Fundamentally, the system (Fig. 1) consists of a first audio tube biased beyond plate current cut-off. This bias voltage is provided by a separate tube whose input is connected to a portion of the automatic volume control circuit. As a carrier is applied, the voltage developed in the automatic volume control circuit reduces the plate current of the separate tube, thereby releasing the cut-off bias on the first audio tube.

Obviously there can be no input to the power stage unless a carrier is received. The relative magnitude at which this action takes place depends upon the circuit arrangement of the automatic volume control and the initial plate current of the separate tube.

The *Lyric* model S-130, engineered by V. C. MacNabb, uses a two-tube audio muting system which also makes it impossible to destroy tone quality by cutting off sidebands through careless tuning. Up to the input of the second detector the set is an orthodox superhet with a.v.c. The a.v.c. tube is a tetrode biased beyond cut-off and operating as a vacuum tube voltmeter from the r.f. energy available at the input to the second detector.

No signal can be heard except in the small area two kc. or so either side of the carrier frequency. The muting arrangement (Fig. 2) includes the second detector (D), first audio tube (A), and two "channel control" tubes (V and U). Tuned circuit C is so coupled to B that the selectivity at the grid of tube V is more than the selectivity at the grid of second detector D. When no signal is impressed upon the control grid of tube V the voltages of the circuit are so arranged to produce the following results:

Tube V is biased beyond cut-off and no plate current is flowing. Tube U is so biased as to allow plate current to flow, which plate current is drawn through the grid-coupling resistance of the first audio tube A. This last tube is thus biased beyond cut-off and is inoperative.

When a signal is applied to the grid of tube V, the circuit conditions reverse, i.e., by vacuum tube voltmeter action tube V draws current through resistor R, the drop across R biasing tube U beyond cut-off, stopping its plate current and therefore removing the abnormally negative bias from the first audio tube, allowing it to function. Owing to the greater selectivity of the signal impressed upon tube V the set cannot operate until tuned almost dead on the carrier, yet this additional selectivity does not cut sidebands or impair high frequency response as the heard signal does not pass through this more selective control circuit.

The time constants are so arranged that the set will not operate on static, in fact static in conjunction with the a.v.c. circuit has the tendency of preventing the set from functioning. Static can and does operate the a.v.c. system which lowers the sensitivity of the receiver, thereby allowing less signal to get to tube V, the signal at that point being the criterion as to whether or not the set will operate. Thus a station submerged in static will have difficulty getting enough of its own carrier through to tube V and will probably not be heard, while signals sufficiently above the noise level to be entertaining will come through without trouble.

Majestic 290 and 300 and *Columbia* C-90 chassis have muting circuits similar to

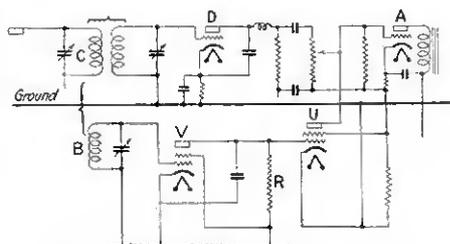


Fig. 2—Lyric "Channel Control"

those already described in that audio cut-off is effected. Designer Dorman D. Israel has included, however, a manual adjustment which makes it possible for the installation man to adjust the system to suit noise-level in any given location, even to cut out the automatic muting effect entirely in exceptionally quiet areas.

The operation of the receiver is that of a normal a.v.c. receiver up through the duodiode type G-4-S. The audio voltage developed in this rectifier circuit is fed through condenser C-20 to the G-57-S a.f. amplifier in the usual way. A G-58 is so connected, however, that its grid is fed from the a.v.c. line at the junction between C-19 and R-12, and its plate is fed from the manual level control, circuit R-5 and R-6 in the grid circuit of the audio tube G-57. The cathode of the a.f. tube is approximately 90 volts above ground, because it is connected to the same voltage supply as the screens of the other tubes. Because of this high cathode to ground voltage resistor R-16 furnishes the normal grid bias for the a.f. tube. It is also apparent that when the noise-suppressor tube draws plate current there

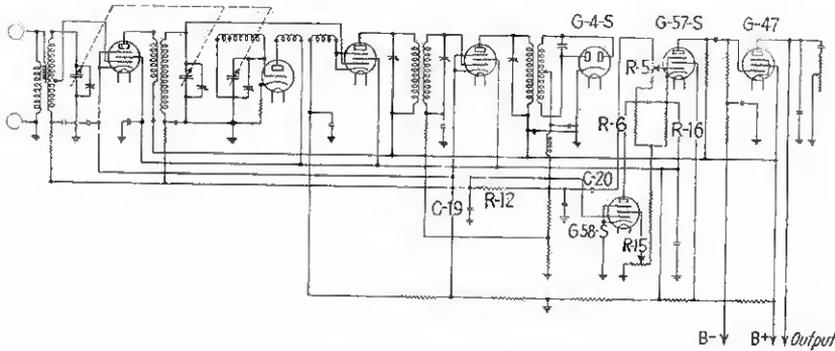


Fig. 3—Majestic 290

will be furnished to the a.f. tube additional grid bias, because of the voltage drop through R-5 and R-6.

As soon as a signal is tuned in, automatic volume control voltage is developed, and the grid of the noise suppressor tube is biased negatively, causing the plate current of the noise suppressor tube to fall off. When this happens, the only bias on the a.f. tube is that developed across R-16 in the cathode circuit, and the audio tube is therefore operative.

The adjustment of the noise suppression, or cut-off point, is accomplished by varying the voltage on the screen of the noise suppressor tube by means of potentiometer R-15. This is so proportioned that the noise suppression feature is completely eliminated when the control is turned in the extreme clockwise direction. Conversely, with the control turned in the extreme counter-clockwise direction maximum noise suppression is introduced. Between these two extremes the correct setting for a given location may be found. In order to improve sensitivity at low manual volume control settings the circuit is so arranged that the muting effect is partially removed as such settings, irrespective of the noise suppression control adjustment.

Silver-Marshall employs a semi-automatic muting circuit which permits adjustment of r.f. gain, rather than audio amplification. The system used in McMurdo Silver's a.v.c. models involves the use of a control to change the control grid bias on the first i.f. tube to a value just sufficient to drop receiver sensitivity to the point where objectionable noise is excluded. This is accomplished by cutting in a variable bleeder resistor, this resistor being adjustable from the rear of the set chassis with a screw driver.

In practice it has been found that the noise suppression setting which eliminates inter-station noise in commercial districts still permits the reception of distant, high power stations with ample volume. Throwing a switch permits the operator to go down into the noise level after less powerful signals should this be desired.

Once the operating principle of these typical muting systems is clearly grasped it should not be difficult to properly interpret others, even though numerous variations are certain to be encountered.

Push-Push Audio

SINCE push-push, or "Class B," audio amplification differs in its commercial application to a.c. receivers only in detail a description of the system as it is used in several Apex receivers designed by

Dudley E. Foster will supply sufficient working data.

Class B differs from the more familiar Class A audio output in that plate current is practically cut off until a signal voltage is applied to the power tube grids. Such a condition is obtained (Fig. 4) without external bias by utilizing the double-grid type 46 tube (RRMay32) with both grids connected together externally for high- μ operation. Inasmuch as there is no output from a Class B tube until the grid is swung positive and since the grid is positive during only half the audio wave cycle it is necessary to use two tubes in push-

push to obtain full wave audio output.

Grids driven positive draw power, hence it is necessary to include a "driver" stage which supplies this power as well as sufficient signal voltage to swing the 46 grids. A 46 with one grid connected externally to the plate to provide a low- μ power tube is used in this position with orthodox cathode resistor bias. (Some manufacturers use triodes type 36 singly, or even in push-pull as a driver stage.) Approximately 1.25 watts driver output operates the final stage up to 16 watts.

Normal operating voltage for the final Class B stage is 300 volts plate, with no grid bias. The 46 driver operates at 250 volts plate with 33 volts negative bias. Plate current under the conditions noted will average 22 ma. for the driver, Class B stage plate current being about 6 ma. no signal, periodically reaching as much as 100 ma. with full output.

Circuit requirements are more stringent than for Class A service. The a.f. transformer coupling the driver plate to the Class B grids, for example, will in general have a step down ratio varying from $\frac{1}{2}$ to $\frac{1}{3}$. This is required in order that the effective grid impedance of the Class B tubes be reflected into the driver plate circuit as a proper load impedance for the driver to operate with low distortion.

Since the plate current of such an audio

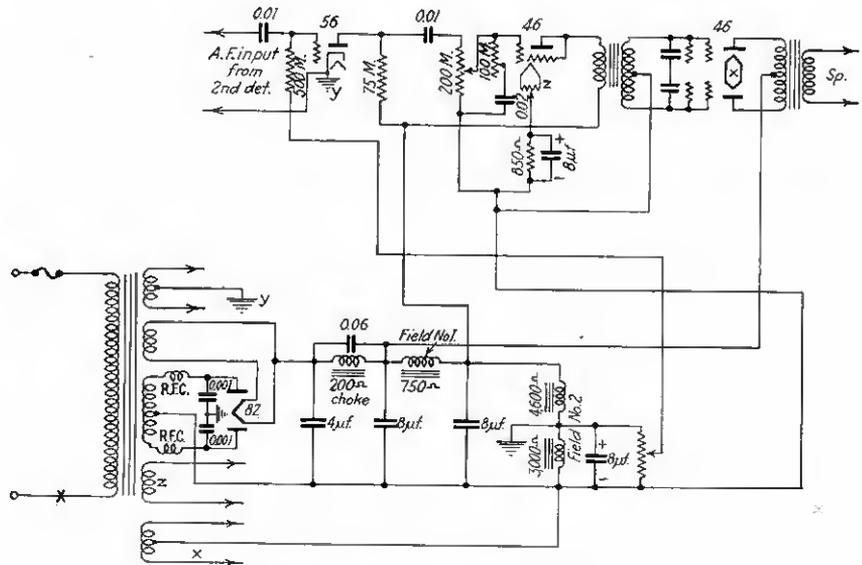


Fig. 4—Apex "Class B"

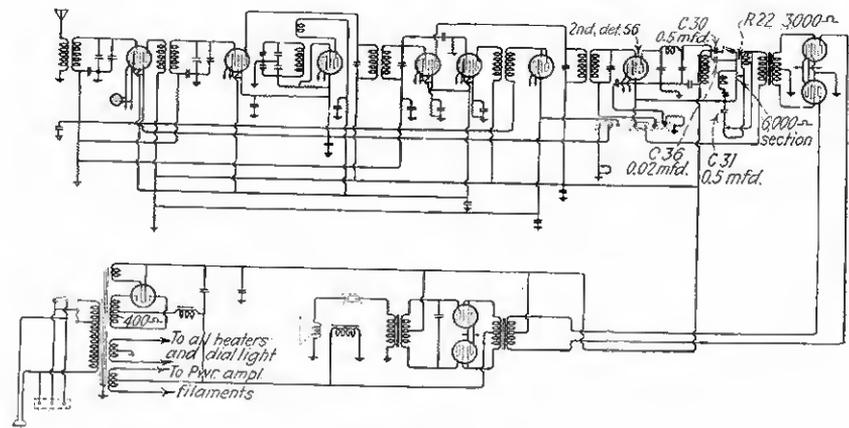


Fig. 5—RCA R-78

What Service Men Charge

By Samuel Roth, Pres.

Federated Purchaser, Inc., New York

system varies within wide limits, depending upon signal input voltage, a power supply system having excellent regulation is required in order to supply these severe current demands. This is accomplished through the use of the type 82 full wave, mercury-vapor rectifier (RRMay32) which not only has ample current carrying capacity but also low internal impedance more or less constant with normal loads. Peak current drain must be held below 400 ma. or the tube will deteriorate rapidly, and as peak current varies largely with the size of the first filter condenser 4 mfd. is generally the largest capacity which may be used in this position without exceeding this value. It should be borne in mind that there is a difference between peak plate current and maximum d.c. output current of the rectifier. It is quite possible to have a receiver with less than 125 ma. d.c. drain on the rectifier and still exceed the 400 ma. peak rating by using too large a first filter condenser in the powerpack.

A radio frequency choke and high-voltage r.f. by-pass condenser are included in the circuit shown, in each plate of the 82, to eliminate r.f. disturbance which might otherwise be generated and passed to the r.f. circuits by the tube (82's are also generally equipped with shields).

It was considered good practice to fuse the primary of the power transformer since the regulation of the 82 is so good that extremely large values of current are obtainable when short circuited. If the fuse is omitted such a short anywhere in the chassis would probably result in damage to the power transformer.

Under-voltage filament operation should be particularly avoided in connection with 82 mercury vapor rectifiers.

Tone Compensation

THE human ear is far less sensitive to both low and high frequencies than to notes in the middle register when the volume is turned down. Thus a number of new receivers are equipped with circuits designed to boost both low and high frequency response as volume is reduced in order to counteract this "ear deficiency."

In the RCA-Victor R-78 and General Electric J-125, two good examples, this is accomplished as follows: The output of the second detector (Fig. 5) is fed to the driver stage input through impedance-transformer coupling. The detector plate current goes through L-14 and the audio component passes through the 0.5 mfd. C-30 and through the .02 mfd. condenser C-36. The volume control resistor cuts in between these two stages and operates to reduce voltage applied to the primary of the interstage transformer. The first section of the volume control unit is 30,000 ohms and at this point a trap circuit consisting of L-15 choke and condenser C-31 are in the detector output circuit.

This trap circuit tunes to about the middle of the audio range and causes greater attenuation of notes in this part of the audible spectrum than at either end as volume is cut down by means of the manual control. The effect as this point is reached is to reduce the general volume level but the middle register even more than the ends. From here to the minimum position the volume control resistor acts as a potentiometer across the trap circuit, reducing the volume without changing the response to any great degree.

THROUGH comparison of methods much can be accomplished by the radio service fraternity. For knowing how others operate individual shops can establish prices and policies which will return a maximum of profit. It is, however, difficult for individual servicemen to gather their own statistics, and so, to aid them, we have surveyed our mail-order customers along the eastern seaboard, obtaining much interesting data which we pass along.

Our survey shows that 93 per cent make a minimum charge for inspection calls ranging from 50c to \$2.50, the average being \$1.25. In 88 per cent of the cases, the actual service work is based on a fixed charge per hour.

Average, fixed charges for replacement of major parts, labor and material, are as follows:

PART	AVERAGE CHARGE	MIN. and MAX.
Power transformer	\$11	\$4 to \$22
Filter condenser...	8	3 to 22
Volume control...	4	1 to 10
Voltage divider...	4	1 to 8
Audio transformer	5	1 to 10
By-pass condenser	3	1 to 7

Methods of charging vary, but most service organizations appear to work on a time basis, charging from \$1 to \$2.50 per hour plus the list price of necessary parts. Where parts bear no list price it seems customary to add from 30 per cent to 50 per cent when billing the customer. Several shops have established flat rate charges for labor on common repairs. Some admit that they charge whatever they think the traffic will bear.

Commenting on service charges a New Jersey shop has this to say: "If it costs nothing, it's worth nothing!" Another, in Chicago, writes: "Price should be secondary to quality workmanship. We think that servicemen should not establish standard rates as 'butchers' will immediately cut prices." A third, from Mississippi, suggests an interesting method of establishing a fair and attractive inspection charge. "The easiest service jobs are those involving tube replacements only. Since many servicemen can do this well, if nothing else, our cheapest rates are applied for initial inspection calls where mostly tube sales are involved. We charge \$1 for such a call, rebating this charge on necessary tube replacements or other

services agreed upon at the time of the call. This combats mail-order house tube purchases following free inspection calls, and minimizes the probability of the customer's calling a competitive serviceman for a cheaper estimate on necessary shop repairs."

Regarding the practice of adjusting service charges to the initial cost of the set, up for expensive models, down for cheap radios, another serviceman states: "It is believed unwise to base service charges on initial costs of radios. Service charges are based on time, or should be, at least. The time spent on a \$19.50 midget is just as valuable to a busy radio man as the time spent on a \$200 model. If it is apparent upon inspection that the labor and parts involved in repairing a cheap midget amounts to a considerable part of the original cost, the customer should be advised to invest in a new radio. It is a logical rule that cheap original investments in specialities are followed by more expensive upkeep. Radios are no exception."

Shop vs. Home Repairs

A surprising number of servicemen make all repairs in their shops. Fully 61 per cent state that they invariably remove the chassis from the home wherever it is necessary to install a new part. About 24 per cent repair either in the home or in the shop, depending upon the nature of the "grief." Three per cent work exclusively in the home.

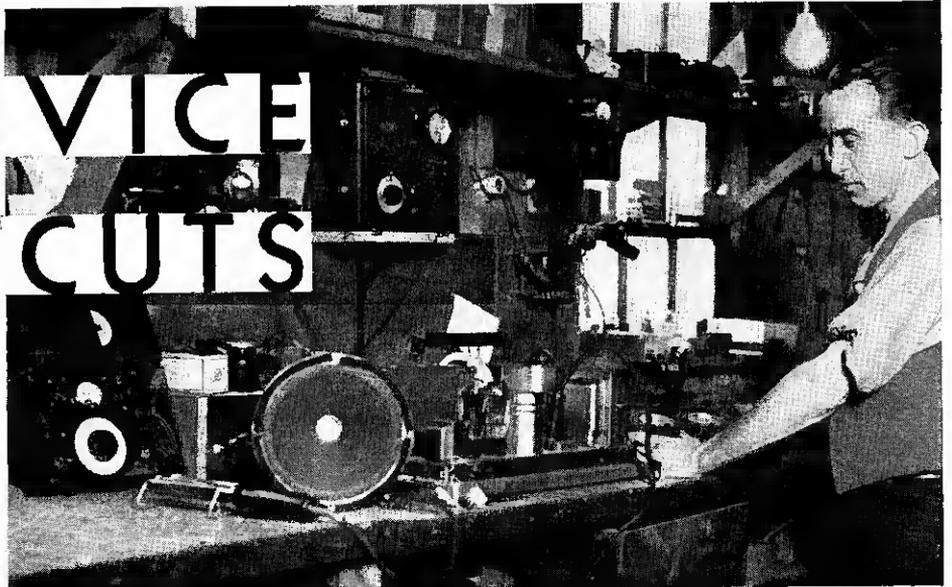
Eighty-eight per cent of the shops surveyed charge full list price for replacement tubes. And 81 per cent make some attempt to sell such accessories as line filters, antenna eliminators, tone controls, etc., when in the field. Where sets are over two years old, and where service charges are considered high in proportion to the original cost of the equipment or present worth, 76 per cent advise the purchase of new models. Twenty-four per cent, on the other hand, specialize in service only, and make no sales recommendations to the service customer unless specifically asked.

A Philadelphia outfit describes the most commonly employed method of selling new sets as follows: "We had a call to repair an old set and although we were sincere in our advice that the customer save money by buying a new model he could not see it that way, thought we were 'pressuring' him. So when our man brought the old chassis to the shop for repair we 'loaned' the customer a new model. He telephoned back that same night, asked if we had started the repair work. When we answered that we had not he told us to forget it, and bought the new set."

This information was obtained from data supplied by hundreds of servicemen to whom we are indebted. I take this means of thanking them for their cooperation, and hope that the foregoing will be of some enlightenment to them.



SERVICE SHORTCUTS

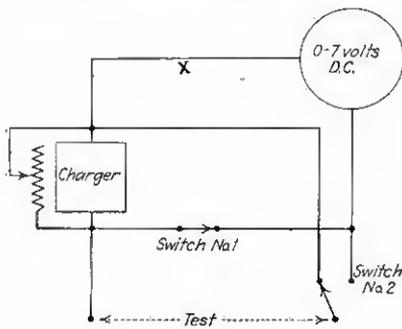


A.C. Continuity Meter

By Stanley P. Clymer

I find the instrument shown in the accompanying diagram particularly useful in testing coils of very low resistance. It is also handy to test variable condensers for shorts without opening wiring to transformer secondaries.

By opening switch No. 1 and changing the position of switch No. 2 it may also be used as a straight continuity meter. R1 is a variable, heavy-duty resistance of about 6 ohms used to adjust the meter to the desired full-scale. It may be omitted and a 2,000 ohm rheostat



placed at the point marked "X" if desired.

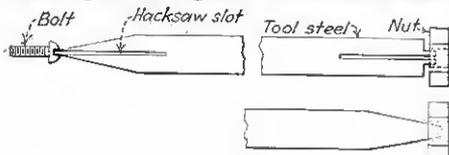
Parts necessary are: One Westinghouse or equivalent trickle-charger, one 6 ohm rheostat (or 2,000 ohm rheostat), one low resistance 0-7 volt d.c. meter, one single-pole single-throw switch, one single-pole double-throw switch and two binding posts.

Nut and Bolt Starter

By Ralph Bowers

To make a handy tool for starting nuts and bolts in out-of-the-way places secure a piece of 1/4 in. round steel stock, cut it to a convenient length and then slot each end with a hack-saw for about 1 1/4 in.

File one of the split ends down into a screw-driver blade, with the slot running through the length of the blade-edge. When pinched together this slotted blade



may be inserted in screw or bolt slots, the spring holding them firmly until they can be started.

File the other end of the tool down to a similar blade, but this time do it so that the slot runs through the thin blade dimension, and don't file to quite as much of a point. File the end again (as shown in the drawing) so that it will just slip about half-way through an 8/32 nut when compressed.

PILOT LIGHTS

RADIOLA 60. An open connection inside the oscillator grid condenser gives no noticeable indication on the test meter. Its symptom is weak and quavery reception. Replace it with a new one of approximately 750 mmfd. capacity.

MAJESTIC 70. To replace dial cable quickly unscrew the condenser housing, unsolder the four wires, remove the bolts holding the gang unit. This releases the entire gang and dial assembly and the work can then be done in the open

PHILCO 86. Contact arm pressing against rotor of three-plate midget used as range control sometimes corrodes, cutting down dx reception. Apply fine sandpaper to this spring and also to the entire edge of the stator plate

MAJESTIC 20, 60. When plate by-pass condensers inside i.f. transformers short remove the transformer from the chassis and place it in a "fireless" cooker. This will quickly melt the pitch and the defective condenser can be replaced. Use a drill to bore out the brads holding the transformer together if trouble is experienced here. Some servicemen claim that no replacement condenser need be installed, that the set works just as well without it

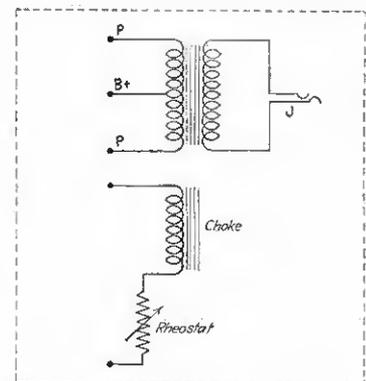
Universal Speaker Substitute

By J. P. Kennedy

A daily problem in service work is to test radio chassis that have been brought to the shop without their dynamic speakers. I have made up a small box which makes it possible to substitute a magnetic speaker in all tests and which includes also a dummy field.

Essential parts are: One filter choke, 200 ohms, 115 ma.; rheostat, 5,000 ohms, 60 watts; push-pull output transformer with a secondary impedance suitable for use with a magnetic speaker; box; binding posts; panel and wire, etc.

By marking on the panel the approximate position of the knob on the rheostat for various resistance values including the choke resistance it is easy to quickly adjust the dummy field resistance to any desired value between 200 and 5,200 ohms. The panel contains five binding posts, the jack for the magnetic speaker and the rheostat. If the output transformer is built into the set but designed to match a dynamic voice-coil a standard magnetic can be coupled to the plate of the power tube through a 0.1 mfd. condenser, grounding the other wire from the speaker. If



two power tubes are used run the other lead to the plate of the other power tube.

RMA Suggests Higher Lists

July, 1932

Other News of the Month,

MANUFACTURERS DISCUSS REVENUE LAW WITH TREASURY OFFICIALS

Recommend That Present Jobber and Dealer Discounts Be Applied to Existing Lists—"for Billing Purposes Only"

NEW list prices, for advertising purposes, and in amount equal to the old list plus the net of the manufacturers' excise tax, is recommended as the way the radio industry should apply the new radio revenue law. This suggestion was formulated by a majority of the many representative members of the Radio Manufacturers Association who met with Treasury Department officials in Washington, June twentieth. It also was thought advisable that no mention of the radio tax charge, either as included in the new list or as added as an extra to the old, be mentioned in any type of publicity matter.

The set makers present also concurred in the thought that jobber and dealer discounts be applied to existing list prices; which hereafter be used as base prices for billing purposes only. In other words that the net amount of the tax (five per cent of the manufacturer's selling price) become an integral part of a new consumer list but that, for simplification of bookkeeping, this tax be returned to the manufacturer, through the jobber, as a separate net item and that the present scale of discounts and base prices on which these discounts are predicated be allowed to remain in force between manufacturer, jobber and dealer.

On page 12 in this issue appears an interpretation of certain aspects of this tax as set forth by Federal officials, in response to questions by the set makers. It is important that the trade note that "pyramiding" or attempting to make a special additional profit, using the radio tax as an excuse or blind, is expressly prohibited and that a fine as high as \$1,000 is provided.

If the radio tax is not specifically carried in the manufacturer's invoice then the jobber or dealer cannot impose any tax whatsoever or increase the established and accepted price in the guise of a tax. If there is a tax statement in the invoice it must specify the exact amount of the tax and that only may be passed along to the ultimate consumer. This ruling of course, is to safeguard the public.

Dealers having stocks on hand before the new revenue law became effective are subject to a fine of \$1,000 if an attempt is made to add a tax to this merchandise.

Individual Interpretations

Prior to this meeting of RMA members with the authorities in Washington, a number of set manufacturers released bulletins announcing the way in which they intend to collect this radio tax which the consumer ultimately must pay.

One of the largest concerns making receivers proposes to issue new lists which will be approximately five per cent higher than its former scale of consumer prices. Another plans to bill the tax, at its net amount, to the jobber, leaving it to the discretion of said jobber and to the dealers

as to how this amount shall be added and collected from the ultimate purchaser.

Procedure on Tube Tax

A canvass of the leading tube manufacturers reveals a unanimity of agreement to the effect that prevailing list prices will not be increased but rather that a separate item covering the net amount of the tube manufacturers tax will be included in the latter's invoices to the jobber. This same amount will be passed along, as a separate item, to the dealer and the consumer, in turn.

Where tubes are sold to set makers, they will be billed, in the majority of cases, tax free: the tube tax to be collected and paid by the set maker.

Majestic Ties in With Demonstration Campaign

"Demonstrate for Sales" is the title of a dealer contest just announced by the Grigsby-Grunow Company, Chicago. The dealer must demonstrate the new Majestic features to at least fifteen prospects in order to qualify as an entrant. A first prize of \$150 will be awarded to the representative submitting the best letter on the subject "How Synchro-Silent Tuning Helped Me Sell a Majestic Radio." The thought behind this campaign closely follows with that expressed in the opening editorial of this issue.

Sparton Equipment on Many Police Cars

Many municipalities have recently ordered Sparton radio receivers for their police cars. From Washington, D. C., Ross Barrett, of the J. R. Hunt Company, reports that all scout automobiles operating in the District of Columbia have been so equipped. New England Distributing Company has signed up the city of Newton, Mass. And Leigh Borden, Inc., has just been awarded the contract for 150 additional sets for the cars of the Los Angeles police department.



First Ever

Echophone will exhibit the above set at the Chicago Worlds' Fair next year, entering it as the "original midget." It was manufactured in Nov., 1928.

United Motors Service to Install Franklin Auto Radios

Arrangements have been completed with United Motors Service for the installation of all auto-radio sets manufactured by the Franklin Radio Corp., Dayton, Ohio. For the present Franklin will sell through large outlets in key cities, the quoted price to include all necessary accessories, installation and free service.

United Motors maintains a nationwide service organization and this tie-up, together with extensive advertising by Franklin, is expected to go far toward popularizing the use of radio on autos.

Sanford Samuel in New Venture

Sanford Samuel, well known in eastern radio circles, has organized the Air Conditioning Sales Co., 136 Liberty Street, New York City. Assisted by S. Jay Goldstein, he will distribute the *Aquazone* device, manufactured by the Corozone Company, of Cleveland, Ohio.

Ferguson Gets RCA License

A license to manufacture radio apparatus under patents granted and pending has been granted the Ferguson Radio Corporation, New York City, by the Radio Corporation of America.

Conducts Refrigeration Class

Here's a chance for New York dealers to find out why electrical refrigerators refrigerate. The Wholesale Radio Equipment Company, 902 Broadway, conducts a class every Wednesday evening. All interested in servicing this appliance are welcome.

to Cover Radio Tax Levy

Arranged for Busy Readers

New York, N. Y.

Music Merchants Hold "Junior" Convention

Faith in the future of the music industry prevailed at the annual meeting of the Board of Control and the "Junior" Convention of the National Association of Music Merchants. This affair was held at the Hotel Commodore, New York City, June 9. Edwin R. Weeks, president of NAMM, presided. He also was the guest speaker at the luncheon, given to the convention delegates, by the Rotary Club of New York.

It was voted by the board that the present officers should continue in office,

in the absence of an election, as under the by-laws, officers serve "until such time as their successors may be elected."

J. M. Spangler

Eight new directors were chosen last month to guide the affairs of RMA. Among them was J. M. Spangler, manager of the radio tube division of National Carbon.

"The hope of the radio industry this year lies in the 'two-sets-to-the-family' market," declares Mr. Spangler.



RECORD-A-MONTH PLAN MAKES HIT

Columbia Announces Four Other Unique Policies for Promoting Sales of Discs and Combinations

Staking its faith on the sales possibilities of phonograph records and combination instruments, the Columbia Phonograph Company, Inc., New York, comes out with no less than five new promotional stunts.

Once a month, for a year, ever purchaser of a Columbia radio-phonograph set will receive, direct from the factory and free of charge, a 10-inch, latest release record.

"The idea is to keep alive the customer's interest in playing the phonograph part of his receiver," states H. Curtiss Abbott, sales manager. "With each of these record mailings will be inserted a printed list of latest recordings. Thus inviting a trip to the dealer's store to buy additional selections."

Tying to this plan is a special, factory-designed display stand—holds 24 records. Its purpose is twofold: first, to exhibit the latest records in an attractive manner and, second, to function as a perpetual stock or inventory bin system. The jobber's salesman can tell at a glance the condition of each dealer's stock. Another plan, also said to be new, empowers the salesman to switch records among dealers and to return for credit certain designated numbers—thus solving the long-standing problem of the accumulation of costly dead stock.

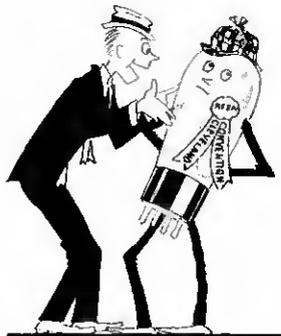
Columbia has adopted a trade name for its radio-phonograph instrument—to get away from the use of the word "combination." Hereafter this type of set will be known as the "Radiograph."

To complete this set-up the record itself is now cut so that it now will provide 62 per cent more running time—"entertainment value," according to Mr. Abbott—than did the older type.

Editor of "Radio Retailing" Is Honored

Orestes H. Caldwell, editor of *Radio Retailing* and former Radio Commissioner, has been elected president of the New York Electrical Society, one of the oldest organizations in the country whose purpose is the dissemination of scientific information.

During the month of June, Mr. Caldwell conducted a series of interesting radio talks over WABC and associated Columbia chain stations. These 15 minute broadcasts, of intense interest to radio dealers, will be continued throughout the present month over the Columbia Systems at 8:45, Eastern Standard time, every Saturday evening.



Cracked Ice and Ginger Ale

Clarion pulled one of the few "whoopce" parties at the Show. Remember the old days when every floor at the Stevens was a night club? Ross Stragusa's affair on the roof found high favor with the Transformer Corp. boys attending—especially the "unveilings."

RCA leased the 8th Street Theater for its get-together. We understand that business was the order of the evening.

American Bosch announced the appointment of W. E. and W. H. Jackson, Inc., San Francisco, as its representative for northern California.

RCA just prior to the Show, issued a set license to the International Radio Corp., Ann Arbor, Mich. Negotiations between RCA and the Marquette Radio Co., New York City, also were completed whereby the latter gets licenses on all Radio Corp. patents.

Speaking of Marquette, Joseph Frank, formerly president of the Radio and Television Stores, and David M. Kasson, formerly president of the Van Horne Tube Co., Franklin, Ohio, have joined forces. Kasson is general manager of Marquette and Frank has the distributing rights on the merchandise manufactured by this company in the states of New York, Pennsylvania and New Jersey.

Atwater Kent announced the prize winner of the tuning light contest during show week. Tone Beam is the name selected—first prize going to A. F. Sweeney, Tulsa.

Immediately following the convention,

D. W. May took his New York and New Jersey dealers on a chartered voyage to Bermuda. "Tremendous success!" said every one of the 500 participants. Wish we had more space to report in detail the many interesting features of this unusual sales promotional stunt.

Saturday preceding the convention, Clarke Coit corralled his distributors, at the plant of the U. S. Radio and Television Corp., at Marion, Ind., for a preview of the new line. At the same time, U. S. announced its entry in the electric refrigeration field.

RMA scored a publicity scoop with its first show release "Radio Industry is betting \$200,000,000 that American business will improve during next 12 months." This money will be expended by radio manufacturers on new machinery, raw stocks, labor and advertising to launch 1933 sets.

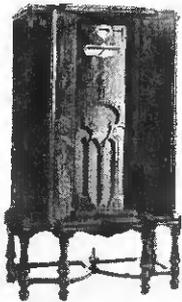
Kolster, International, added to its list of distributors Pixley Electric Supply, Columbus, Ohio, and Intermountain Appliance Co., Denver.

"Yo Ho, an' a couple o' Pirate Chests!" Bosch's cubicle sets created wide comment. Ought to go big in New York City, where tin boxes are so popular right now.

Philco's "Madam X" models, with their sloping baffles, inspired many a friendly wise crack.

Herb Frost had an exhibit in every room—100 per cent distribution. What was your gross intake, Herb, in nickels and dimes?

NEW MERCHANDISE



American Bosch Model 312G

American Bosch Line

Topping the line of United Amer. Bosch Corp., Springfield, Mass., is Model 312G, a 12-tube superheterodyne "vibro-power" radio.

The "vibro-power" principle is employed in each of the 12 new models, which include 5, 6, 7, 8, and 12-tube models, personal radio receivers, multi-wave receivers, air-cell sets, metropolitan d.c. sets, police switch receivers, police car and police precinct-house receivers, as well as automobile radios. The prices range from \$32.95 to \$169.50.

Vibro-power designates the technical results which have been attained in a new balance between the radio amplification and the acoustical reproduction, by coordinating all the electrical and magnetic interactions of the circuit and speaker with the design of the cabinet housing them.

Model 312G has automatic volume control, noise reducer and cutout for silence between stations. This set uses the new type tubes. It has a new device known as the "individual location control," which permits the receiver to be adjusted to the noise and static characteristics of any given location.—*Radio Retailing*, July, 1932.



RCA Victor Model R74

RCA Victor Sets

Three new receivers including a ten-tube table model with "B" amplification, an eight-tube table model, and console have been announced by the RCA Victor Co., Camden, N. J.

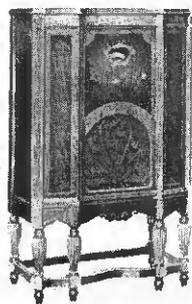
Model R-71, the eight-tube table model lists at \$56.50. Model R-72, a console model listing at \$69.50, incorporates the same chassis but has 3 in. instead of 6 in. cone speaker.

Model R-74 incorporates "B" power amplification and uses 4 56's, 3 58's, 2 46's (Dual Grid), and an 82. \$69.50.—*Radio Retailing*, July, 1932.

Wells-Gardner Line

A 5-tube superhet air cell battery set is included in the new line of Wells-Gardner & Co., 816 N. Kedzie Ave., Chicago. It is known as the 92 chassis, and is Model 925 in a lowboy console. Wells-Gardner also makes a 5-tube superheterodyne short wave radio covering from 75 to 550 meters. It may be had in either a mantle type cabinet or a low-boy console.

Model 1621 auto radio set is a 6-tube superheterodyne with automatic volume control. It uses a B battery eliminator.—*Radio Retailing*, July, 1932.



Majestic Model 293

Majestic Line

Grigsby-Grunow Co., 5801 Dickens Ave., Chicago, has appropriately named its new line the "President Series."

Model 291, the "Madison," is a table model with 9 tubes including the new 2½-volt series. It has automatic volume control and automatic synchro-silent tuning. \$59.50.

Model 293, the "Adams," is a 9-tube Heppelwhite lowboy. \$69.50.

Model 294, "the Monroe," is a short and long wave set with a total of 12 tubes. It covers from 15 to 550 meter. \$94.50.—*Radio Retailing*, July, 1932.

Lyric Models

Channel control is being featured in the 1932 line of the All-American Mohawk Corp., N. Tonawanda, N. Y.

With "channel control" the radio is silent until the station is heard, and then it is automatically tuned to its full limit. As the dial reaches the broadcast program, it comes in perfectly tuned, without the aid of buttons, lights, etc.

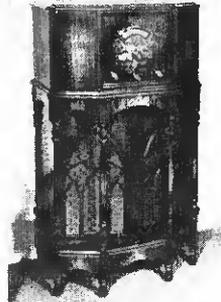
The 13-tube model is the only one with this novel type of tuning. It uses the new tubes and has two dynamic speakers and automatic volume control. \$139.50.

With the 6-tube chassis, two models are offered—a midget at \$12.50 and a lowboy at \$49.95.

The 9-tube model in a semi-highboy is \$69.50.

A standard and short-wave set, with 8 tubes, is \$84.50, in the same cabinet as the above model.

A battery operated superheterodyne in a lowboy cabinet with 8 tubes is \$89.50 less batteries.—*Radio Retailing*, July, 1932.



Echophone Model 20

Echophone Line

Both radio and television receivers can be obtained from the Echophone Radio Mfg. Co., Ltd., Waukegan, Ill.

Model 25 receiver in a modernistic console, 8-tube all-wave superheterodyne with two dynamic speakers and automatic volume control, is \$99.50. The tuning range: 70 megacycles to 550 kilocycles. In a six-legged console it is \$89.50.

Model 35, de Luxe 12-tube superheterodyne all-wave with 12-in. dual dynamic speakers, is \$159.50.

Model 5 is a 6-tube superheterodyne midget tuning from 3,200 to 550 kilocycles. \$39.75.

Model 10, an 8-tube all-wave midget, is \$59.50.

Model 15 is of the midget type, but quite a bit larger than the usual table set. It has 8 tubes in the all wave chassis and lists at \$69.95.

The television receiver is a combination sight and sound set, using Western Television Corp. television apparatus, and Echophone standard and short wave radio. \$245.—*Radio Retailing*, July, 1932.

Kennedy Line

Colin E. Kennedy Corp., South Bend, Ind., offers the "Metropolitan" four-tube t.r.f. midget; the "Cosmopolitan" 5-tube superhet midget; ten-tube all wave consoles, Models 164-B and 164-B; and four 12-tube all wave consoles, Models 266B, 266B, 366B and 866B.

The deluxe model of the line is a 16-tube with class B amplifier and matched twin speakers.—*Radio Retailing*, July, 1932.

Sentinel Receivers

Two midgets and five consoles make up the 1932 line of the United Air Cleaner Corporation, 9705 Cottage Grove Avenue, Chicago.

Model 145, an 8-tube all-wave superheterodyne midget is \$59.50. In console cabinet with two speakers, \$79.50.

Model 140 midget with automatic volume control is \$49.95. As a console, \$64.50.

Model 155, 10-tube all-wave superheterodyne highboy, with automatic volume control and dual speakers, is \$99.50.

Model 150, 10-tube console with automatic volume control is \$73.50.

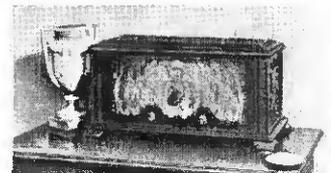
Model 127, 9-tube air cell set with automatic volume control is \$89.50 complete with tubes but less batteries.—*Radio Retailing*, July, 1932.

Crosley Receivers

Ranging from the "Pup," a 4-tube superhet table model, listing at \$25, to the "Ambassador," at \$119.50, the new line of the Crosley Radio Corp., Cincinnati, Ohio, offers a wide variety of sets.

Among the new features is the resistance coupled push-pull circuit supplied from a single detector tube. This circuit is used between the detector and push-pull pentode output tubes in the 6-tube and 9-tube models and between the diode detector and push-pull first audio stage in the 10-tube combination and the 12-tube receivers. Mercury vapor rectifier tubes are used in the "Commissioner" and "Ambassador" models.

This new "Election" series includes the "Justice," 6 tubes, \$33.50; "Alderman," same chassis but with two dynamic speakers, \$46.50; "Judge," a companion console to the Alderman, \$48.50; "Mayor," a 9-tube chest model, \$49.95; "Congressman," the same chassis but with two dynamic speakers, \$57.75; "Senator," a six-legged console, 9 tubes, \$59.95; "Secretary," a 10-tube combination short and long wave, chest model, with twin dynamic speakers, \$75; and the "Commissioner" and "Ambassador," 12-tube, Class B-amplification models with dual speakers, \$92.50 and \$119.50 respectively.—*Radio Retailing*, July, 1932.



Crosley "Alderman"

Apex Sets

Data on the balance of the Apex line of the U. S. Radio & Television Corp., Marion, Ind., details of which were not ready as we went to press for June is as follows: Model 5A 5-tube midget, rectangular in shape, \$34.50. Dual wave switch, for reception of police calls, etc.

Model "A" upright midget with Class "B" amplification, is \$49.95.

Model 12B lowboy has automatic volume control and Class B amplification. This set utilizes 9 tubes and lists at \$69.95.

Model 7D midget is a short and standard wave receiver listing at \$49.95.

Other models in the line, as covered in the June issue, include Apex models 12B, 9B and 120B and Gloritone Model 25A.—*Radio Retailing*, July, 1932.

J-B Auto-Radio

A 5-tube superheterodyne automobile set with built-in B battery eliminator has been brought out by the Jackson Bell Co., Ltd., Los Angeles, Calif. It has automatic volume control and is priced at \$54.95 complete. Remote control, \$10 additional. Size 8x4x12½ in.—*Radio Retailing*, July, 1932.



Trojan Radios

The 6-tube super Junior set made by the Trojan Factories, 5362 So. Hoover St., Los Angeles, Calif., may be had in either a midjet type cabinet at \$49.50 or a small console, \$69.50.

The Giant model, 8 tubes—in the table type cabinet is \$59.50, and \$20 more in the console.

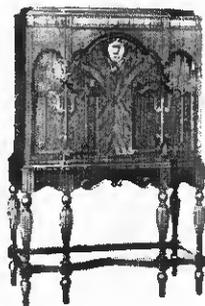
The tubes used in the Junior Trojans are a 224, two 551s, a 27, a 47 and an 80. The super-trojans have an extra 27 and 47.

Trojan also makes a 5 tube Baby Model housed in a cabinet 8x12x14 in. \$37.50. In a small console it is \$47.50.

An automobile radio set, 8-tube superheterodyne, is also made. It has full automatic volume control, illuminated single dial remote control, and lists at \$59.50 complete with tubes and batteries.—*Radio Retailing*, July, 1932.

Aircell "Class B" Tube

National Carbon Co., New York City, has announced a type ER-49 Eveready Raytheon audio output tube for use as a Class B amplifier (3.5 watts in push-push) or as a Class A amplifier (170 milliwatts per tube). Like the a.c. type 46 the ER-49 has two grids, both brought out to separate pins. Filament 2 volts at 0.12 amps. For Class B, 130 volts plate at 4 ma. (no signal) with no grid bias required. For Class A, plate and outer grid voltage 135 at 5.7 ma. with inner grid biased 20 volts negative.—*Radio Retailing*, July, 1932.



Columbia Model 84

Columbia Sets

Columbia's new line includes model C-81, a table model, in art moderne design. It uses the new 2½-volt tubes in a 8-tube superheterodyne circuit with automatic volume control. \$34.50.

Model C-83 is a large lowboy. The price is \$66, including the 8 tubes.

Model C-93 takes 11 tubes in the superheterodyne circuit, has inter-station noise suppressor, automatic volume control and lists at \$89.50.

Model C-84 is a highboy. The circuit is an 8-tube super, and this set has twin speakers. \$88.00.

Model C-123 is a air cell bat-

tery set, taking six tubes in the superheterodyne chassis. Columbia Phonograph Co., 55 Fifth Ave., New York.—*Radio Retailing*, July, 1932.

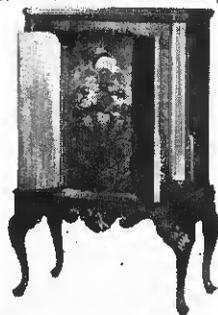
Sparton Series

Five new consoles with a price range of from \$69.50 to \$165, and a new automobile radio, are offered this season by the Sparks-Withington Co., Jackson, Mich.

Model 14 is the lowest priced of the consoles. It is an 8-tube superhet with automatic volume control, housed in a six-legged cabinet. \$69.50.

Model 18, at \$97.25, has 10-tube chassis.

Model 20 is an automatic radio-phonograph combination



Sparton Model 23

which plays ten 10-in. records automatically, and 12-in. records singly at either 78 or 33½ r.p.m. \$195.

Model 27 takes 13 tubes, and lists at \$129.50.

Sparton has another model, known as No. 28, with 13-tube superhet chassis and three speakers. These three speakers are used on an arc of a circle, to give an even, well-rounded sound wave. One of the side speaker grilles can be seen in the illustration. \$165.

Automobile radio set Model 34, can be mounted either under the dash or beneath the floorboard. It has 7 tubes, and is equipped with automatic volume control. \$79.50.—*Radio Retailing*, July, 1932.

Clarion Models

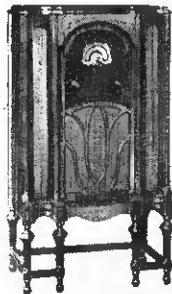
Transformer Corporation of Amor, Ogden and Keller Ave., Chicago, Ill., had four new models at the Show.

Model 220, a 6-tube mantle set, using the new type tubes and equipped with a continuous variable tone control, is \$29.95.

Model 240, also a mantle model, but with 8 tubes, covers short and long waves. \$39.95.

Model 260, called the "leader of the line," is a 10-tube super in a 6-legged console with new type tubes, twin speakers, automatic volume control, continuous variable tone control. \$49.95.

Model 280 is a de luxe 12-tube super in a 6-legged console. It uses four type-46 Class B tubes. \$69.95.—*Radio Retailing*, July, 1932.



Clarion Model 260



Lapel Microphone

Measuring less than 1¼ in. in diam. by ¾ in. thick, and provided with a handy clip, the R.T.I.C. lapel mike is designed for speakers and singers for complete freedom of action and a more natural performance on the stage or in the open. Despite compact dimensions, this device provides splendid pick-up it is said, due to its fixed and favorable position with relation to the sound source.

This tiny unit is in reality a carbon-granule microphone with stretched gold-plated duralumin diaphragm.

The R.T.I.C. lapel mike is not a toy, but actually replaces any standard two-button microphone without additional equipment or circuit changes. Supplied with attachment cord and handy connector, it may be jacked in or connected with the usual speech amplifier input. Made by the Radio Television Industries Corp., Reading, Mass.—*Radio Retailing*, July, 1932.

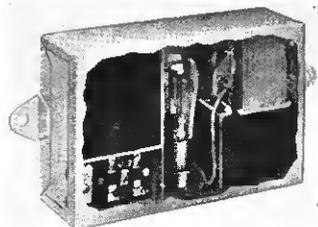
Utah B-Eliminator

A compact auto B-power unit, 5 in. high by 7½ in. long by 2½ in. wide, and weighing 6½ lb., has been brought out by the Utah Radio Products Co., 312 Orleans St., Chicago, Ill.

This unit delivers 135-volts d.c. at 25 milliamperes, and consumes 1½ amperes from the storage battery. A vibrating interrupter is used in conjunction with the mercury rectifying tube.

An automatic A-power control relay to control the B-power unit from the present radio switch can be supplied at a list price of \$2.50.

This power unit comes in three types for different applications—6 volt for automobile radio, 12 volt for airplane service, and 32-volt for farm-lighting service. The list price is \$20.—*Radio Retailing*, July, 1932.



Elasticord

A self-folding heater cord, designed primarily for use in ironing, has been placed on the market by the United Elastic Corp., Easthampton, Mass.

This cord has no springs, is strong and affords freedom while iron, as it really "floats" above the board so there is no strain or pull on the iron. It comes in green, rose, black and brown. \$1. With on or off switch on plug, the price is \$1.25.—*Radio Retailing*, July, 1932.

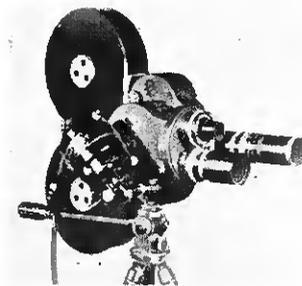
Freeze King Refrigerator

A new model electric refrigerator, retailing at \$99.50, is announced by the Freeze King Corp., Chicago, Ill. This company has been making electric boxes for years, but has just entered the low price field.

Briefly, the characteristics of this refrigerator are: Dry Zero insulation, 5.30 cu.ft. capacity, three ice trays making six pounds of ice, nine point cold control, defrosting switch and overloading relay. The evaporator is of the flooded type with a reciprocating compressor and aluminum alloy piston.—*Radio Retailing*, July, 1932.

B & H Camera With Electric Motor

To meet special demands for airplane motion picture work and for outfitting scientific expeditions, the B & H Co., 1801 Larchmont Ave., Chicago, has arranged to equip its portable 35 mm. "Eyemo" movie camera with an electric motor. An external film magazine carrying 400 feet of film can also be added. With this equipment it is possible for airplane pilot to place the camera with attached motor in an advantageous position, and shoot pictures by remote control. Any Eyemo camera employing a hand crank can be motor equipped.—*Radio Retailing*, July, 1932.



Strang Air Conditioner

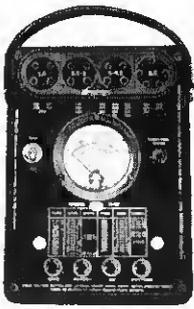
The "Mountain Air" air conditioning unit introduced by the Strang Air Conditioning Corp., Kansas City, Mo., is a portable and self-contained device for both summer and winter use.

In its summer application, the conditioner not only considerably reduces the dry bulb temperature of the air it recirculates, but also, what is more important, in humid weather it circulates the air through the chilled reducing cones and baffle, causing the air to reach its dew point and drop its moisture vapor. In winter, the Mountain Air properly humidifies the air.

The only working parts are the standard motor and two sturdy, quiet, blow-type fans. It is designed for operation from any wall outlet. The intended retail price is \$189.50.—*Radio Retailing*, July, 1932.

Auto-Radio "Handipak"

As a fitting companion for the "Handipak" of 10 assorted radio resistors, the Lynch Mfg. Co., 1775 Broadway, New York City, offers in convenient and handy form the required suppressors for auto radio sets.—*Radio Retailing*, July, 1932.



FRC Testers

The Franklin Radio Corp., newly organized in Dayton, Ohio, has announced seven numbers in radio service instruments. These items consist of 5 tube checkers, a combination set analyzer and tube checker, and a set analyzer.

Model D-32 tube checker checks all popular types of tubes, including the new 239. \$20.50 net to dealer. This tester is also furnished in a home service tube testing kit, and is then known as D-32-K. There is room to carry an assortment of 9 tubes, as well as a few tools, in the carrying case. \$27.

Model H-32, in addition to checking all types of tubes, is designed for use in making circuit and continuity tests on radio receiver. Voltage taps are provided for testing circuits, transformers, condensers, etc. \$26.50.

Model D-32-A is a combination set analyzer and tube checker in a portable case. It will make a complete analysis of all circuit conditions within the limits of 800 volts a.c. or d.c., and current up to 100 milliamperes. A complete tube checker is included. \$34. Without tube checker, \$64.

All instruments are manufactured under a license agreement with Weston Electrical Instruments, and Weston or Jewell meters are used throughout.—*Radio Retailing*, July, 1932.

Coil Forms

A new type coil form made of extruded isolantite, affording maximum efficiency at high frequencies, has just been developed in the laboratories of the Hammarlund Mfg. Co., 424 W. 33rd St., New York City.

The Isolantite material employed closely approximates the qualities of fused quartz, said to be one of the finest high frequency insulating materials known.

The form is equipped with a black enameled handle for convenience in removing and inserting. The top of this handle is broad and flat, so the coils, wavelength range, etc., can be marked.

This form is 1½ in. in diameter, and 2½ in. long, exclusive of knob and prongs. Four, five and six-prong types are available.

Hammarlund has also developed a new type of low loss Isolantite socket. They are made for either subpanel or base mounting, and are available in the four, five and six prong types. They are 2½ in. long by 1½ in. wide, with standard 1½ in. mounting centers.—*Radio Retailing*, July, 1932.



"Crystal" Speakers and Mikes

Rochelle salt crystals, when properly ground, mounted and subjected to stress, generate minute electric currents. This interesting property is now utilized in the design of crystal speakers and microphones by the Brush Development Co., Cleveland, Ohio.

The speakers are small, light (2½ lbs.) and being magnetic in principle require neither field current nor polarizing voltage. Electrically, they have similar characteristics to a .03 mfd. condenser and are essentially high impedance devices. They may be connected directly across the output of a high impedance chokes in the plate circuit of a pentode output tube. Coupling transformers are necessary when the speakers are to be used in connection with other tube types.

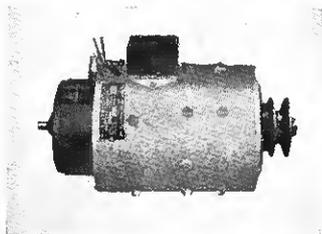
Power consumption is about one-tenth that of an average dynamic, hence Rochelle salt crystals lend themselves to multi-speaker installations. Sensitivity is high and fidelity is said to be excellent up to 10,000 cycles.—*Radio Retailing*, July, 1932.

A.C. Generators for Cars

The Upp Electric Company of Kansas City, Mo., now supplies a line of generators which supply 110 volts a.c. at or above 60 cycles irrespective of motor speed when driven by the fan-belt of an automobile. The generators have an auxiliary d.c. winding for battery charging and so replace the stock generator of the car wherever this is fan-belt driven. Where the car generator is not driven by the fan-belt it is retained and driving power for the Upp device obtained by coupling it to the fan-belt through special brackets.

Model A, list \$65, is a 100 watt type for ordinary radio use. Model B, \$75, is the "light broadcasting" type, supplying 150 watts. Model C is for portable public address systems and generates 300 watts, \$100.

In addition to these three car-type generators the company

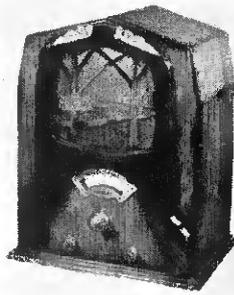


also has a Model D farm power plant type generating 500 watts of 110 volt a.c. and also 6 volts d.c. This can be supplied with a Fairbanks-Morse 1½ horsepower gasoline motor at \$175, or separately for \$95.—*Radio Retailing*, July, 1932.

Readrite Oscillator

No. 550 oscillator which the Readrite Meter Works, Bluffton, Ohio, has brought out covers the entire broadcast band, from 550 to 1500 k.c., and intermediate band 120 to 185 k.c. Both bands are read directly on a scale marked on the heavy metal panel. It is a very compact instrument, encased in a leatherette case 12 x 6½ x 5½ in. Shielded wire leads and instructions are contained in the cover. It comes complete with 22½ and 3 v. small size batteries and a '30 tube. The dealer's price is \$18. This oscillator may be had with or without output meter.

Output meter No. 575 lists at \$6.—*Radio Retailing*, July, 1932.

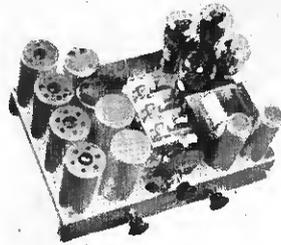


Ferguson Radios

The newly-formed Ferguson Radio Corp., 12th St. and University Place, New York City, offers two sets which may be obtained either in a cabinet or chassis form, the same cabinet being used to house both chassis.

Model BL-60 is a 6-tube t.r.f. receiver with a wave length range of from 200 to 2,000 meters. The wave length range is covered in two steps—200 to 600 and 700 to 2,000 meters, by means of a switch that controls 3 circuits simultaneously. This set uses 3-235s, 1-224, 1 '47 and an '30.

The other model is an 8-tube superheterodyne employing three 235s, 2-217s, a 224, a 227 and a 230. It has full vision dial, tone control and phonograph jack. The tuning range is for the regular broadcast band only.—*Radio Retailing*, July, 1932.



Standard "1200 Series" Electric Stoves

Two new ranges in the "1200" series of the Standard Electric Stove Co., Toledo, Ohio, are ready. They are Models 1237 and 1238.

These ranges have a large aluminum lined oven, four hotplates or three hotplates and unit cooker.

They are furnished in a variety of six finishes without extra charge.—*Radio Retailing*, July, 1932.

Microphone

A 2-button microphone of the non-stretched diaphragm type, may now be obtained from Shure Bros. Co., 337 W. Madison St., Chicago, Ill. It is especially recommended for public address systems in which price is an important factor. It operates best at 6 to 8 M.A. per button. Limit of guarantee: 10 M.A. per button. The list price is \$10.—*Radio Retailing*, July, 1932.

Cinderella Washer

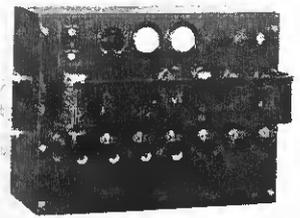
A family-size clothes washer at the low price of \$29.50, has been brought out by Black & Decker Mfg. Co., Towson, Md. It is called the "Cinderella" electric utility washer, and employs the bubble action vacuum principle of washing, in which no moving parts come in con-

tact with the clothes, eliminating wear and tear. This machine is driven by Universal Type electric motor, and can be used on either a.c. or d.c.

The tub is a standard 13-gallon copper wash boiler and the capacity of the machine ranges from 35 to 45 pieces.—*Radio Retailing*, July, 1932.

Webster Theatre Amplifiers

Designed to meet the very exacting requirements for excellent reproduction of sound-on-film, Models 6048R and 5049R amplifier of the Webster Electric Co., Racine, Wis., fills a definite need. It will give equally good results with sound-on-disc. The unit is simple and can be supplied so that electric pick-ups



from both turntables can be connected directly to the main amplifier.

Data on these two units include; volume for theatres up to 1,000 seat capacity; tapped power transformer and line voltage control permitting correct operation on 100, 110 and 126 volt, 50/60 cycle lines; low hum level; voltmeter to check line voltages which can be controlled by a regulating switch; simplicity of operation; and separate adjustment for each photo cell.

Model 6048R is priced at \$450.—*Radio Retailing*, July, 1932.

"Auto-Dial" Motor Car Radio

Either B batteries or a B-power eliminator may be used with the "Auto-Dial" radio receiver made by the J-M-P Mfg. Co., Inc., Milwaukee, Wis.

This set can be quickly installed, as only two nuts are used to hold the set to the car, and the dynamic speaker requires only one hole for mounting. All power connections are made by two plugs, which can be easily disconnected. If desired, the dynamic speaker plug may be removed and another speaker with a similar plug inserted and extended any distance from the car. The tubes used are two '24s, a '35, a '27 and a '47. The list price is \$40, f.o.b. Milwaukee, which includes everything except installation and B-supply.—*Radio Retailing*, July, 1932.

Arcturus Transmitting Tubes

Arcturus Radio Tube Co., Newark, N. J., announces the following new tubes:

Type E-745, (50-watt transmitter), modulator and a.f. modulator; Types E-711 and E-711-E, (50-watt transmitter), oscillator, power amplifier, modulator; Type E-703-A, (50-watt transmitter), r.f. oscillator and a.f. amplifier; and Types E-772 and E-766 mercury vapor half-wave rectifiers.—*Radio Retailing*, July, 1932.

This Dealer Sells Himself Service (Continued from page 23)

our service to make it more satisfactory to you?

Hundreds of these cards are returned. Invariably they contain glowing praise for the department with surprisingly few complaints. Pritchard considers them especially valuable as a means of keeping the work of his men up to a high standard. And incidentally, row after row of the filled-in cards, attractively mounted, have gone to make a most convincing window display.

Not so long ago, only about 40% of the service calls were on sets that the store had not sold. Now, however, the fame of "Farr Better Radio Service" has grown to the point where other service calls amount to 70% of the total. And this means that the service department is building for replacement set sales, not to mention sales to friends of satisfied and enthusiastic service customers.

Mort Farr does not believe in high-pressure out-of-the-store selling. He considers his service department his best advertising and promotes it accordingly. The fact that 90% of his sales of new sets are made in the store speaks for itself.

A careful analysis of service calls shows that in 56% of the cases tubes are at fault. Outside conditions are to blame on 15% of the calls, while 29% of the sets serviced require replacement of parts. This analysis does not include ground and antenna jobs which are handled by the special truck which averages between sixty and seventy calls a month. Cheaper men handle this work and when not busy on it, they deliver chassis that have been repaired in the shop and which do not require a highly skilled man to install.

Each service car is equipped to do as much of the work in the customer's home as possible. Due to the high percentage of tube trouble, particular attention is paid to carrying a complete line so that men do not have to return to the store at frequent intervals. Service equipment is sold to the men at half of the store's cost and then becomes their property. It includes a separate tube checker, analyzer and tools. Trucks also carry selections of small, frequently used parts.

The charge is \$1.50 a call plus the manufacturers' list price on parts used. On every call, men are instructed to check the set completely and to balance and neutralize it. Records are kept of the volume of business turned in by each man. Thus, when one begins to fall too far below the average he is informed of the fact as a means of getting him to improve his selling efforts. Pritchard insists on the importance of pushing tube sales.

"Seldom if ever does a radio set need only one new tube," he declares. "When tubes were high in price there was some excuse for not buying a complete new set. But that doesn't hold good today. Prices are low and our men are taught to prove to customers that a set is only as efficient as its weakest tube. The last reduction in tube prices meant that we had to increase our tube sales 40% to get the same money volume. We slipped a little the first month but came back strong the second and have been going ahead ever since."

Mort Farr spends about \$15,000 a year for advertising

and service is prominently featured in all of it. The store is located in the 69th street suburban district so a number of small suburban newspapers are used in preference to the city papers. Billboards and telephone book space have also brought good results as did the featuring of the service department in movie trailers.

The service department is open until 10 o'clock every evening and one man is kept on the job Sundays. He receives no extra salary for his overtime work. However, Sunday calls are charged for at the increased rate of \$2 and he gets half of this along with a 20% commission on all service material which he sells while on these calls.

"The theory that people don't listen to radio during the summer is poppycock," says Pritchard. "That is our busiest season as far as service calls are concerned. Whether it is because moisture affects condensers more at this season, I don't know but I do know that calls show an increase of from 10 to 15% during the warm months. Thus there is no let-up in our featuring of service at this time when competition is prone to take things easy."

Every Tuesday morning at eight o'clock there is a get-together breakfast for the service men. It is their party—and has been for more than

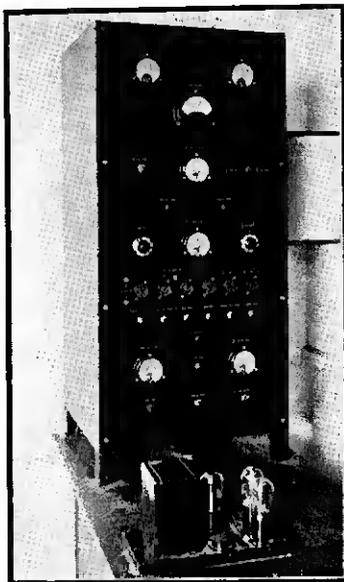
a year. They do the talking, swap experiences and service kinks and have their say about the business in general.

Service calls are routed to the extent that the long trips are distributed equally among the men. There can be no grouping of a number of calls in a district, however, for the reason that they are handled almost as soon as they are received. Practically all calls are handled the day they come in, many of them immediately. Men call the store as soon as a job is completed and very often get another assignment that saves them time and distance.

Sets are never returned to manufacturers thanks to the high degree of skill of the men chosen for the Farr service department and the facilities available. Beginners or men of little experience are never hired. Several of the men have seen service with leading manufacturers and two have had extensive laboratory experience.

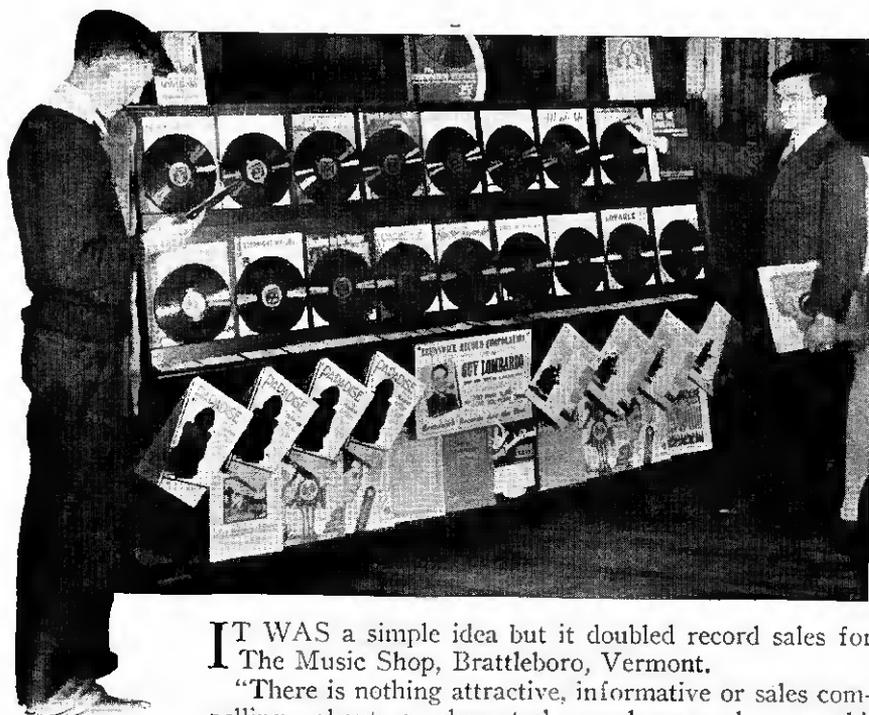
"To make service pay," says Farr, "we are convinced that it must be regarded as a separate business and a capable man put in full charge. Certainly this is true where a large volume of work is being handled. If our department only broke even we would still be ahead of the game because it gives service on store sales at the low blanket price of \$2 for the guarantee period and that enables us to show a bigger profit here. But despite this handicap, we expect it to show a profit—and, due to sound, business-like management, it does.

"When Pritchard came with me as service manager, he knew little about radio but a lot about managing men and making a business pay. That was just what we needed. Our service men handle the technical end and he puts their activities on a business basis. And I am free to devote my entire time to selling."



This modern tester, built by employees, helps tube sales

Proper Display Doubles Record Sales



IT WAS a simple idea but it doubled record sales for The Music Shop, Brattleboro, Vermont. "There is nothing attractive, informative or sales compelling about a characterless phonograph record,"

reasoned Byron Leach, head of this concern. "On the other hand, the cover page of a popular piece of sheet music has life and color. Why not combine the two? For every record there generally is a corresponding sheet music selection."

The accompanying photograph shows how Leach worked it out. Few people ask for a particular record. They want to look around a bit. This stand "flashes" eighteen current hits at one glance. Frequently the prospect buys both record and instrumentation.

Before this display stand was installed record sales, per month, averaged \$97. Now it is a poor month that does not gross \$225 in discs alone—and this in a town of less than 9,000 souls.

"It brings people in and it stimulates combination sales and repeat business," Mr. Leach concludes.

How We Budget Our Business

(Continued from page 25)

The success of the credit department in collecting accounts can be gauged by the ratio of collections on these accounts during any one month compared to the average accounts receivable outstanding during that month. The average of these accounts should be figured by adding the total accounts receivable at the beginning of the month to the accounts receivable at the end of the month and dividing this sum by two. Dividing this average of accounts receivable by the amount collected during the month (excluding first payments and cash sales) will give collections on a percentage basis.

When collections on accounts receivable, figured in this way, fall below 12 per cent per month it is a danger signal and indicates that there may be many bad accounts on the books which should be written off. The World Radio Company averaged collections of 11.8 per cent in 1929, 12.6 per cent in 1930, and 15 per cent in 1931. These figures are based on time payment leases running up to a maximum of one year.

An easy test of the efficiency of any concern's credit department may be made by taking the ratio of the total accounts receivable on the books to the annual volume of sales. In the case of companies extending not over one year on time payment contracts, the accounts receivable should not run over 40 to 45 per cent of total sales. The extent to which the ratio falls below this figure is a measure of the ability of the company to collect its installment payments.

By watching its accounts receivable, by keeping down its inventories and by constantly advertising leading values. World Radio has improved its business each year for the last three years. Sales for the present fiscal year, ending July 31, will exceed \$1,300,000.

The Basic Principles of Accounting

(Continued from page 21)

other side of such transactions, the charging off of the loss and the inventorying of the resalable merchandise is not recorded. But the sale of the trade-in is recorded as clear profit. In other words all profits are put down and losses omitted.

According to Mr. Dealer's Profit and Loss statement for the year ended December 31, 1931 his net income was \$8,300, or 22 per cent of sales. In view of present conditions this percentage seems extremely high. But let us grant that it is correct for the time being and attack a very vital point. What has happened to this profit, how much of it remained in the business at the close of the year and of what was it composed at that time? Mr. Dealer explains by saying: "Fifty per cent contains accounts receivable, fixtures and personal expenses." No mention is made of the other 50 per cent.

From his own balance sheets of December 31, 1930 and December 31, 1931 we are able to establish a somewhat different angle. During the year he has increased his assets by \$559.85 and has decreased his liabilities by \$568.52, a total improvement of only \$1,128.37 in the financial status of the business. What has happened to the remainder of \$7,171.63 he himself is apparently unable to tell. If there was some record of his personal drawings available we could go further with the analysis. But we do not believe that Mr. Dealer withdrew all of this \$7,171 from the business for personal use. We do feel, however, that the profit has been unintentionally overstated and that he has been grossly misled with regard to his earnings. This can be blamed solely on the loose, inefficient and inadequate method of accounting employed and we know that a good system of double entry would have avoided it.

• Join Columbia on the road to *Record-SALES*

COLUMBIA has been studying the situation in the record-business . . . analyzing what must be done to bring about a revival. It is clear that the need is records that offer better quality, quantity, and variety of entertainment. And now Columbia is pleased to present a sample of its work along these new lines.

Columbia's all-star June 30th release is a *radio-record*—demonstrating an entirely new treatment of recorded music. Here is a 14-minute program, with all the character of a broadcast, featuring those popular artists, Ted Lewis and Kate Smith. On one side, Ted Lewis, cleverly introduced by an announcer, offers a popular dance-program. The unusual arrangement, chorus-work, and patter show the well-known master touch of Lewis. On the other side, Kate Smith sings a group of familiar favorites. She announces each number herself in inimitable style, accompanied by her famous theme-song.

This radio-record plays almost twice as long as the standard disc of the same size on any 78

r.p.m. turn-table.
Reproduction is

full-toned, lifelike, and free from surface-scratch. The music and speech have the personal, intimate quality of a radio program. This, in short, is the kind of record that people are going to buy for "home-broadcasting" on the new radio-phonograph combinations. The kind of record that is going to take its place, along with radio, as standard home-entertainment.

The release of this number is only one of the steps in Columbia's progress forward. There are new promotional plans, new deals for you, intensive merchandising and advertising activities under way. And there will be further developments in records—remarkable developments—about which Columbia will be able to tell you soon.

Don't you agree that a company with 43 years' musical recording experience, now under a live, new management, is the logical leader of a movement to restore your record-business? Why not join Columbia—on the road to record-sales? The Columbia Phonograph Co., Inc., 55 Fifth Avenue, New York City.



RECORD No. 56000-D 12-inch \$1.25
 TED LEWIS PRESENTS A MINIATURE DANCE-PROGRAM
 Introducing *Dinah*; *The Lonesome Road*—Fox-Trots
 KATE SMITH PRESENTS A MEMORY PROGRAM
Old Folks at Home; *Grandfather's Clock*; *Songs My Mother Taught Me*; *Seeing Nellie Home*—Vocal

Would you like to receive a copy? Write to The American Weekly, 959 Eighth Ave., New York City.



\$16,000!

WHEN an advertiser buys a color page in THE AMERICAN WEEKLY he lays down a lot of money — \$16,000.

But he really gets a bargain, and the retailer shares in the profit.

Look at it this way. With 5,581,137 circulation, THE AMERICAN WEEKLY is the most powerful printed salesman on earth.

Reaching nearly twice as many people

as any other magazine, its influence is so wide that it acts on the buying habits of one out of every five families in the United States.

And these families, living in communities large and small, are customers of thousands of retailers—families that respond quickly to displays of merchandise advertised in THE AMERICAN WEEKLY.

What is The American Weekly?

The American Weekly is the largest magazine in the world. It is distributed through 17 great Sunday Newspapers. In 558 of America's 995 towns and cities of 10,000 population and over, The American Weekly concentrates 70% of its circulation.

In each of 136 cities, it reaches one out of every two families

In 105 more cities, 40 to 50% of the families

In an additional 153 cities, 30 to 40%

In another 164 cities, 20 to 30%

... and, in addition, more than 1,750,000 families in thousands of other communities, large and small, regularly buy and read The American Weekly

new ATWATER KENT RADIO Featuring TONEBEAM

*Only once in 4 years
comes an
opportunity like this*

PRESIDENTIAL YEAR always jogs owners of old, out-of-date radio sets into replacing them with new ones.

Every person with ears is bound to hear the historic campaign of 1932. Help 'em to hear the battle as it *should* be heard—with the new Atwater Kent.

You've seen the new Atwater Kent line, with Tonebeam silent tuning featured on modestly priced but highly profitable models.

You've tried the new tubes, the extra condensers, the range switch and all the other improvements that make these new Atwater Kents so desirable. You've heard that unrivaled TONE. You've agreed on the wonderful eye-appeal of the new cabinets.

You KNOW that the Atwater Kent franchise is a square-shooting, clean-profit proposition all the way through.

So play the Winning Ticket with Atwater Kent. Get those old, worn-out, obsolete radios out of their hiding places in a million living-rooms and put the up-to-date new Atwater Kent in their places . . . This deal for your customer is always the best deal for you.

All prices quoted herein subject to any Federal or State Tax that may be levied on radio sets or tubes.

Prices from \$49⁵⁰ to \$99⁰⁰

Prices slightly higher west of the Rockies and in Canada



10 tubes, including latest super-powerful 2½-volt type; 2 pentodes in push-pull . . . 5-gang condenser, completely shielded, eliminating super-heterodyne noises . . . Deep, rigid chassis base of drawn steel . . . Tonebeam—silent tuning—sensation of Atwater Kent this year—now improved to indicate tone peak of many more stations . . . 11 tuned circuits . . . Improved automatic volume control . . . 4-point tone control and static reducer . . . Range switch . . . Extreme sensitivity—greater distance, better daytime reception . . . Clearer, richer, full-range tone . . . Electro-dynamic speaker of advanced design . . . Quick-Vision compensating dial . . . Atwater Kent dependability; watchmaker-precision workmanship . . . New cabinet design—receding side panels—American walnut, with burlled maple arch over speaker grille of rich gold . . . Also Model 469 Lowboy, \$89.00, same cabinet as above. 9 tubes; 2 pentodes in push-pull. Completely shielded 4-gang condenser. Automatic volume control. 4-point tone control. Centralized Tonebeam . . . Model 188 Lowboy, 8 tubes, \$69.50 . . . Compact Model 228, 8 tubes. Automatic volume control. Tone control. Range switch. 4-gang condenser. American walnut, Gothic design with Gothic escutcheon, \$59.50 . . . Also Compact Model 567, 7 tubes. Tone control, \$49.50 . . . Also models for Direct Current, Battery operation, Atwater Kent Motor Car Radio, and short-wave converter.

TUNG-SOL RADIO TUBE CONSIGNMENT PLAN

*assures you real profits
on your tube business*

Take a good square look at your present method of merchandising radio tubes—with its uncertain and entirely inadequate net profits—then compare it with the Tung-Sol Consignment Plan, under which you:

- ① Tie up no capital of your own.
- ② Get a full, fair profit on every single tube you sell.
- ③ Always have on hand an adequate stock of ALL types of tubes to meet any demand.
- ④ Enjoy complete protection against any price declines or obsolescence.
- ⑤ Are free of ruinous competition and entirely independent of the price-cutting tactics that take the profit out of the business for so many dealers today.

Every dealer who studies this proposition will recognize an unusual opportunity in tube sales and profits! We know how it works out because we tested the plan for a solid year in representative territories before announcing it to the trade in general. **THE NEW TUNG-SOL PLAN DOES NOT INVOLVE ANY CHANGE IN REGULAR TRADE DISCOUNTS.** Write today for complete details.

TUNG-SOL RADIO TUBES INC.

NEWARK, NEW JERSEY

Atlanta
Baltimore
Boston
Charlotte
Chicago
Cleveland
Dallas
Detroit
Kansas City
Los Angeles
New York
St. Paul



All America Applauds BI-ACOUSTIC TONE



Watch your customers "prick up their ears" when they hear the amazing difference in *tone* resulting from these 8 great advances!

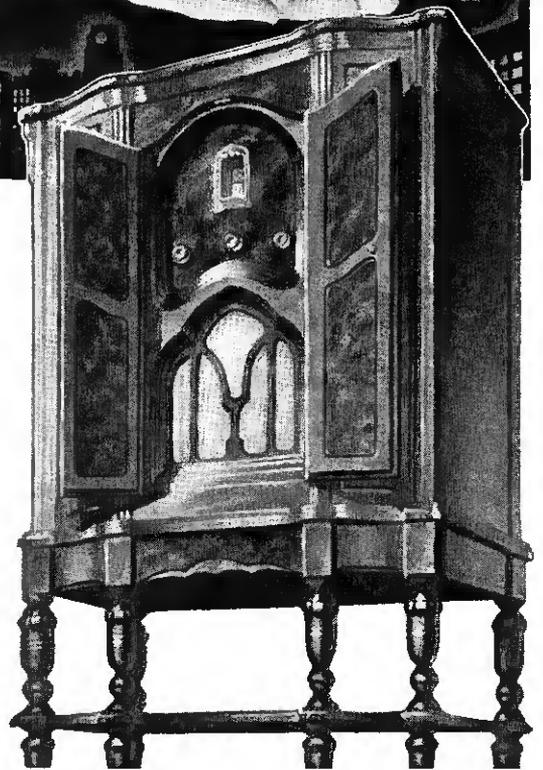
ALL because a new circuit has put the thrills back into radio. Given music lovers something they can really appreciate! Given drama fans thrillers that make their spines tingle! Put flesh-and-blood into all sorts of programs that heretofore have come in as mere shadowy imitations of the real thing!

All you have to do is put Bi-Acoustic Radio up beside any preceding model—and any one can see the difference. All you have to do is demonstrate it to a few prospects—a word-of-mouth praise of Bi-Acoustic sets their

friends thinking about scrapping outworn models for a radio that *really* produces!

The technical story of Bi-Acoustic is told in the list of new features at the right. These make the most powerful sales story of the season.

But you won't appreciate what Bi-Acoustic really means in terms of revived business until you see, hear, test out this new circuit in actual use. Your RCA Victor distributor is ready—get in touch with him right now! The RCA Victor Company, "Radio Headquarters," Camden, N. J. *A Radio Corporation of America Subsidiary.*



MODEL R-78

complete with 12 RCA Radiotrons, only \$139.50 (sales tax extra)

1. "B" AMPLIFICATION, gets the thrills without distortion...
2. AUTOMATIC TONE COMPENSATORS, take out "tinniness," hold tone true...
3. TONE EQUALIZERS, no cabinet rumble or shrill...
4. DUAL AUTOMATIC VOLUME CONTROL, ends fading and blasting, holds volume level...
5. EXTENDED MUSICAL RANGE gets 2 more octaves and reproduces all instruments from lowest to highest tones...
6. 12 SUPER-PHONIC RADIO-TRONS, including 2 new Dual Grid power tubes—all newly designed...
7. NEW IMPROVED DYNAMIC SPEAKER, to handle all frequencies and all volumes...
8. NEW CABINETS, tuned acoustically and executed in genuine quilted maple and butt walnut. Beautiful full length doors... Quicksite tuning dial.

Plus all the features of previous RCA Victor Super-Heterodyne models.

RCA Victor



RADIO S PHONOGRAPH COMBINATIONS
VICTOR RECORDS

Profit from New Selling Sensation

MASTER ALL WAVE CONSOLE

A striking example of modified 18th Century furniture design—front panels and curved flanking pilasters are matched Butt Walnut. Grain walnut sides. Genuine wood carving on front.

11 Tube Duo-Superheterodyne circuit—Magic Dial—new type



Stewart-Warner Electro Dynamic Speaker—Automatic Tone and Volume Control—45½ in. high—26½ in. wide—16 in. deep. An amazing value to retail at \$149.95.

A complete line of 11 models, including a separate Short Wave Converter

Priced from \$19⁹⁵ to \$184⁹⁵

THE MAGIC DIAL

4 DIALS IN ONE THAT COMMAND ALL THE WORLD

STEWART-WARNER

OVER 30 MILLION SATISFIED OWNERS OF STEWART

the ONE Big in Radio:.. THE MAGIC DIAL

Stewart-Warner, trail blazer of the air, climaxes a series of outstanding developments with the Magic Dial... that opens up new avenues of World-Wide Reception

Again Stewart-Warner dealers profit from the far-visioned leadership which last year gave them the sales advantage of offering 'Round-the-World Radio to a public eager for new thrills.

This year, on top of proved 'Round-the-World Radio—on top of perfected tone and volume control, Stewart-Warner dealers will cash-in on radio's foremost achievement—the MAGIC DIAL. The Magic Dial—mysterious—fascinating—gripping—has the spotlight this year. Advertising—dramatically displayed—firing curiosity will make

people eager to know more about Radio's latest, greatest sensation.

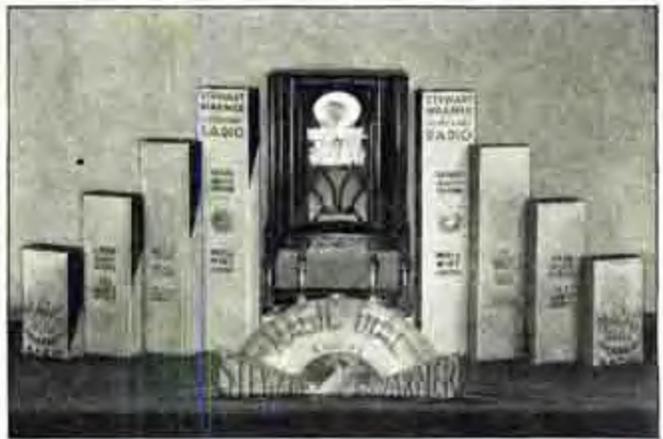
A series of masterful, colorful dramatic displays of the Magic Dial in your window will draw people into your store to "hear what it does" and "see how it works."

To profit this year—you need something new—something spectacular. Get the facts which show how and why you will Scale New Sales and Profit Peaks with the line that features the new 11-Tube Duo-Super-heterodyne Magic Dial Radios.

Wire, phone or write your nearest Stewart-Warner distributor—or use coupon.

A BIG SMASHING, NATIONAL AND RETAIL ADVERTISING PLAN

Will put Stewart-Warner Dealers on top of the world. We show below two of the series of colorful window displays which identify your store as headquarters for Stewart-Warner Magic Dial Radios



RADIO

WARNER PRODUCTS

STEWART-WARNER CORPORATION

1826 Diversey Parkway, Chicago

Please send me full information on your Magic Dial Radio Line.

Name _____

Address _____

City _____ State _____

GUIDE-POSTS ON THE ROAD BACK ...

FIVE MODELS FROM

Columbia's NEW LINE

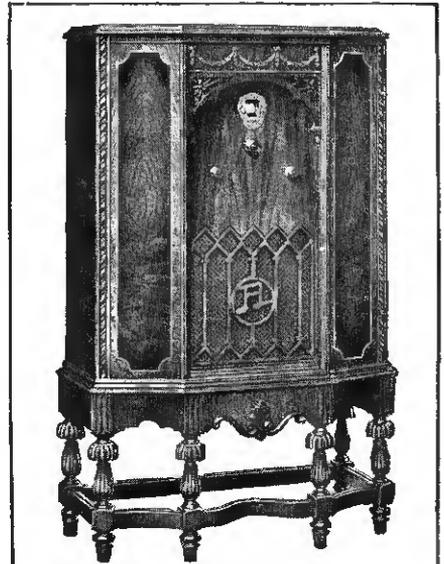
Columbia calls for a return to sanity in the radio business. Accordingly, it has outlined a rational plan for production and sales. But you want to know *what* Columbia is producing, *what* it is selling. . . . For you realize that the success of any program is based on good products.

Here you see five representative models from Columbia's new line. Here you have your good products . . . competitively priced—competitively engineered. Fine instruments, every one of them.

These radios, supported by Columbia's new policies, will lead the way back to sane and sound radio business. Look them over. Read the specifications. And, if you are a progressive distributor or dealer, we suggest that you write to Columbia for complete, detailed information.



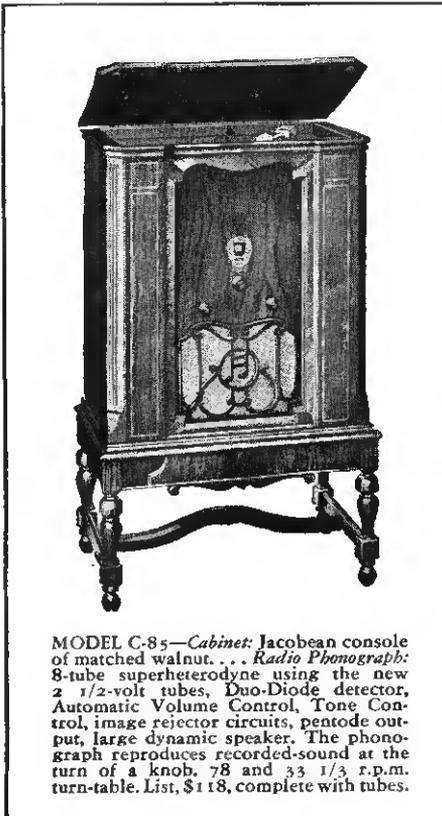
THE COLUMBIA PHONOGRAPH COMPANY, INC.
55 Fifth Avenue New York City



MODEL C-93—Cabinet: Elizabethan lowboy of matched walnut. . . . Radio: 11-tube superheterodyne with the new 2 1/2-volt tube, 100% pentode amplification, "noiseless tuning," Automatic Volume Control, Duo-Diode detector, push-pull pentode output, full-range Tone Control, full-dynamic speaker. List, \$89.50, complete with tubes.



MODEL C-83—Cabinet: Heppelwhite lowboy console in panelled American walnut. . . . Radio: 8-tube superheterodyne using new type-58 and 57 pentodes, Duo-Diode detector tube, Automatic Volume Control, full-range Tone Control, image rejector, mercury-vapor rectifier, and large dynamic speaker. List, \$66, complete with tubes.



MODEL C-85—Cabinet: Jacobean console of matched walnut. . . . Radio Phonograph: 8-tube superheterodyne using the new 2 1/2-volt tubes, Duo-Diode detector, Automatic Volume Control, Tone Control, image rejector circuits, pentode output, large dynamic speaker. The phonograph reproduces recorded-sound at the turn of a knob, 78 and 33 1/3 r.p.m. turn-table. List, \$118, complete with tubes.

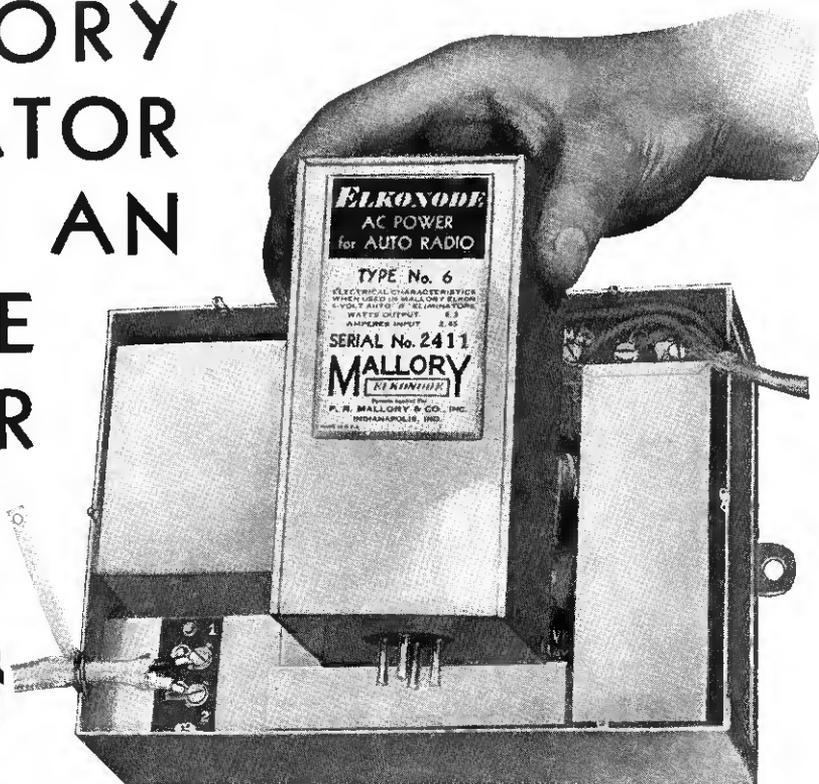
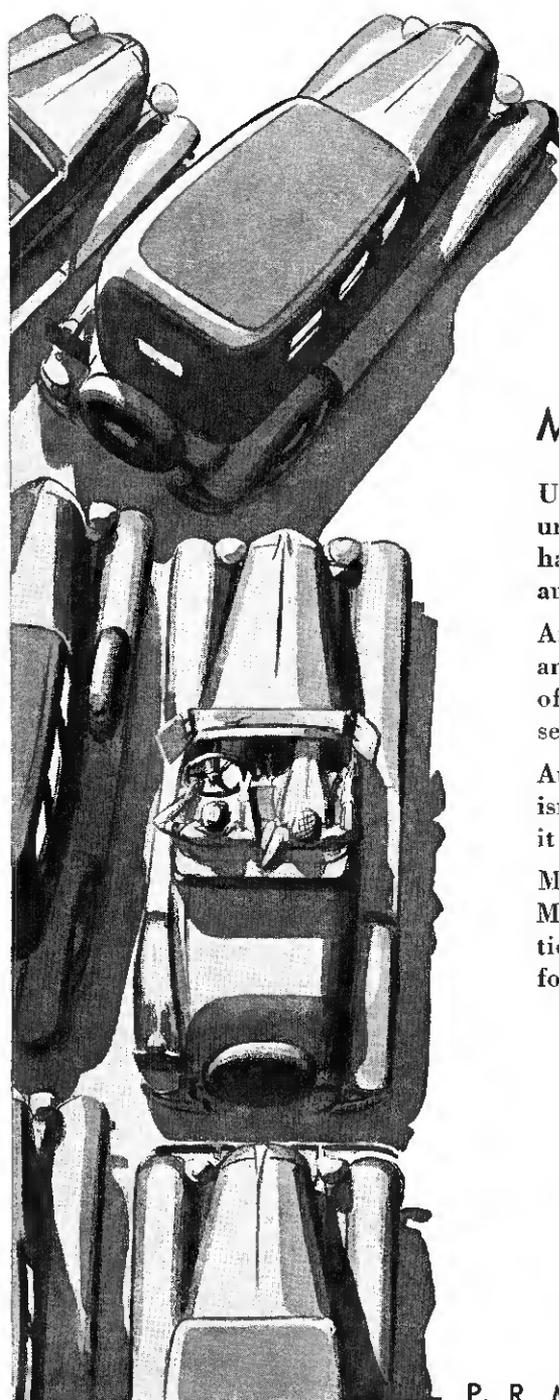


MODEL C-84—Cabinet: Sheraton highboy cabinet of matched walnut, with Lacewood overlays. . . . Radio: 8-tube superheterodyne provided with pentodes of the new 2 1/2-volt type. Automatic Volume Control, smoothly variable Tone Control, distortion-free Duo-Diode detector, new type-82 rectifier and Shadow-Line tuning dial. Twin speakers assure unusually perfect reproduction. List, \$88, complete with tubes.



MODEL C-81—Cabinet: Modernistic Compact, finished in two-toned walnut. . . . Radio: 8-tube superheterodyne. New 2 1/2-volt tubes, Automatic Volume Control, 100% pentode amplification, Duo-Diode detector Tone Control, image rejector, full-dynamic speaker. List, \$54.50, complete with tubes.

THIS MALLORY "B" ELIMINATOR MAKES 1932 AN AUTOMOBILE RADIO YEAR



List Price **\$19.95** Complete
including relay and cable
... nothing else to buy.

—thanks to the Tried and Proven
Mallory-Elkonode new profits are yours

Used in the Mallory-Elkon "B" Eliminator, this simple *plug-in* unit which supplies the correct voltage and output for *any set* has been heralded as the *greatest single achievement* in the automobile radio field.

Any Mallory-Elkon "B" Eliminator becomes the right type for any set by merely plugging in the proper Elkonode. This feature of interchangeability, distinctive to Mallory, offers you a big selling opportunity with a small inventory.

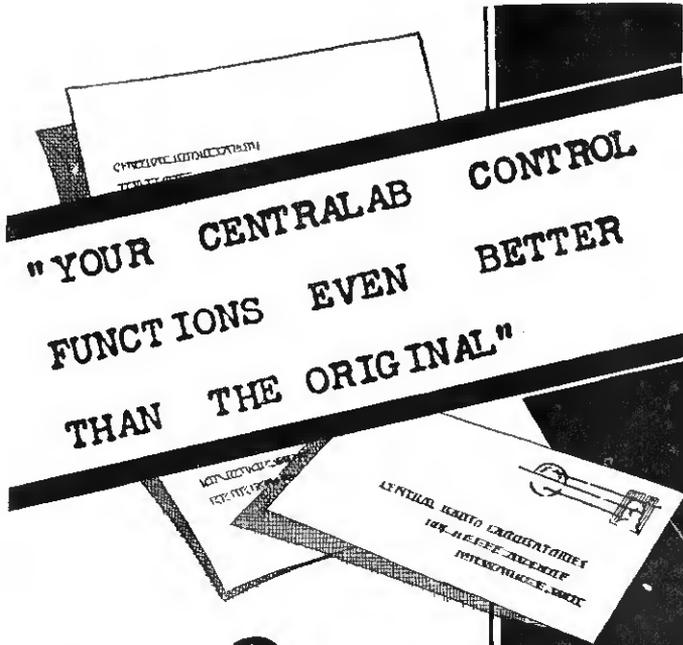
Automobile Radio is a big business. It isn't "on the way" . . . it isn't "coming" . . . it's here right now and the dealer going after it doesn't take a trade-in loss but makes his full margin of profit.

Make up your mind now . . . to lead with the leaders. The Mallory-Elkon "B" Eliminator is simple in construction . . . practical in operation . . . unequalled in performance and approved for all leading radio sets. Let us send you full particulars.

MALLORY

"B" ELIMINATOR

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

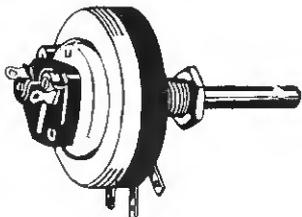


a typical letter

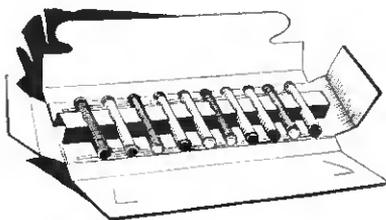
from a serviceman who has discovered the advantage of concentrating on Centralab Replacement Controls.

Each and every Centralab Control has been tried and approved for use in the various receivers specified in our Volume Control Guide.

Even where the original control differs in appearance or is of the wire wound type the Centralab unit invariably functions better.



Order 5 Centralab Replacement Volume Controls and get the new 50c. VOLUME CONTROL GUIDE FREE.



Get this service carton of 10 Centralab Fixed Resistors, lists at retail for \$3.00, for only . . . \$ **1.75**

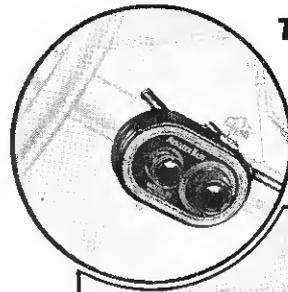
FREE: the New Quick Reference Wall Chart showing resistance values at a glance.



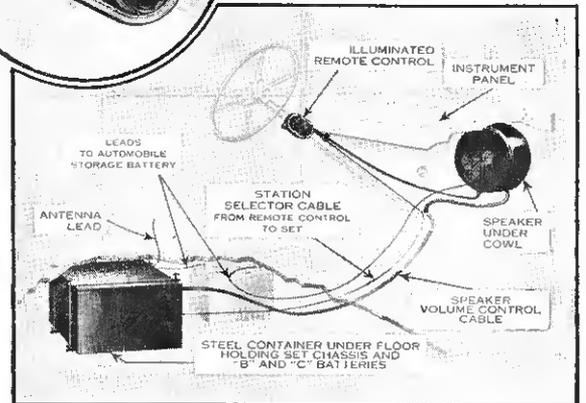
CENTRAL RADIO LABORATORIES
Keefe Ave. and Humboldt
Milwaukee, Wis.

NEW ATWATER KENT RADIO for MOTOR CARS

The REMOTE CONTROL



Located on the steering column, just below the wheel, the illuminated dial permits of easy and accurate tuning while driving. The new escutcheon plate contributes to dignity, in keeping with the appointments of even the most luxurious cars.



Now 3 Methods of Installation

Model 91—As illustrated above.

Model 91-B—Cowl installation.

Model 91-C—Separate set container mounted under floor and accessible from above.

The new Atwater Kent Motor Car Radio is a powerful nine-tube superheterodyne of greatly increased selectivity, with automatic volume control and full electro-dynamic speaker. Tone quality compares favorably with the best home reception . . . Completely shielded against interference . . . Rugged—built to stand up under hard usage . . . Placing and arrangement of units assure easy installation in any make of car. See your Atwater Kent distributor.

Price, as illustrated, complete with tubes **\$69⁸⁰** less batteries and installation cost . . .

ATWATER KENT MANUFACTURING COMPANY
4700 Wissahickon Ave. A. Atwater Kent, Pres. Philadelphia, Pa.

RADIO DISTRIBUTORS Take my word for it!

I have just returned from the Zenith factories in Chicago, where I saw the most attractive, the most profitable, and the fairest-priced radio line in this country.

My advice to wholesale distributors is to wire Zenith for their remarkable proposition today!

David F. Goldman

DAVID F. GOLDMAN,

NORTH AMERICAN RADIO CORP.
*Wholesale Distributors of Zenith Radio for Greater
New York and adjacent New York State territory.*

Manufacturers:

Make the

E M
A U
R F

Test

TOLERANCE and good nature characterized buying in the good old pre-depression days. But that's all past. Today buyers scrutinize value, price and product before buying as never before. Hence the rise of such organizations as Consumers' Research and the Electrical Testing Laboratories. Hence, too, the featuring of its "Bureau of Standards" by Macy's, New York's potent department store.

In buying advertising, radio manufacturers and their advertising counsellors are daily becoming far more cautious, far more exacting. They're making the "ear muff" test of radio business publications. To make this test, the ears are shut to all ballyhoo and bunkum of conflicting claims. Instead the eyes have it—the responsibility of finding out the facts and basing buying decisions on facts alone.

In this search for advertising facts, radio manufacturers and makers of allied home entertainment products and electrical appliances consider the buying of advertising from these angles:

EDITIONAL PAGES—Are the magazine's editorial pages independent or are they controlled by advertising which the magazine carries? Are the editors contributing practical selling help to distributors and dealers or are they filling the magazine with "puffs" for manufacturers? How does a typical issue of the magazine compare for sheer merit with its competitors? Has the magazine met the rigid standards of the Associated Business Papers?

READERS OR CIRCULATION—What are the circulation policies of the magazine? Do readers ask and pay for it or is it mailed to them without their consent? How many readers has the magazine? How were the readers obtained? Does the magazine belong to the Audit Bureau of Circulations, as does every standard newspaper, consumer magazine and business paper

in the United States? What do the "Standard Rate and Data Service" figures show about the magazine's circulation?

ADVERTISING — What companies are using the magazine as an advertising medium? Do all advertisers pay the standard advertising rates or do some enjoy "cut rates"? Which magazine has won the greatest share of radio manufacturers' trade advertising appropriations?

WHY not make this "ear muff" test, too, as a manufacturer and buyer of advertising space? You, too, will find, we're confident, that one magazine, *Radio Retailing*, will win your test, just as it has won every other test of supremacy.

Get the most for your advertising dollar—the times demand it.

Radio Retailing

Member of the A.B.P.
and A.B.C

—a McGraw-Hill
Publication

Look...

AN OPTIMIST!



He's a G-E Radio dealer—and the picture wasn't snapped in the good old days when buyers were begging for sets. It's a late 1932 likeness, taken after two tough years. And while he hasn't set the world ablaze, he *has* been getting enough business to push away pessimism. Just listen to this:

In 1931—hard-boiled old bygone!—G-E Radio stepped out and set its first real sales record. Did it in times that were about as terrible as times ever get. And that's not all.

In 1932—which so far hasn't been a bell-ringer for big business—G-E Radio sales for the first quarter have doubled, mind you, *doubled* the sales for the same period in 1931!

And there you have it, gentlemen. Looks as though G-E dealers are

getting a fairly decent breeze in spite of the general calm—doesn't it? We think you'd like to know why. We'll tell you.

After all—human nature hasn't turned a complete flip-flop. People can still be *sold* if your selling story is good enough. And the G-E selling story *is*. That's the nub of the thing. G-E Radio has one of the greatest selling stories any radio ever had—*better tone!* Sure—every radio under the sun *claims* it. But G-E *proves* it—which seems to make a big, big difference. Proves it time and again in actual tone-tests. And—G-E puts this proof right under the eyes of about 8,000,000 people *every month in the year!* G-E isn't just a cold-weather advertiser.

Result: People are "Believing their

own ears"—and buying. And as a result of that—G-E dealers are sitting prettier *and prettier*—with a line that is priced *right* for the 1932 market.

Isn't that what you'd like to be doing? Isn't a line that can show some signs of life in these lagging times the kind of line you'd like to link-up with? Then mail the coupon—and get the G-E franchise story.

● *The G-E Circle—a program of special interest to women—is on the air every weekday (except Saturday) at noon Eastern Daylight Saving Time.*

Section R-687, GENERAL ELECTRIC CO.,
Merchandise Dept., Bridgeport, Conn.

Without obligation, kindly send me further information about the General Electric Radio dealer franchise.

Name.....

Address.....

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

GENERAL  ELECTRIC
RADIO

GET SET NOW

and lick that summer sales slump!

No need to worry about losing business in July and August if you plan now and devise ways to cash in on the many sales possibilities open in "hot weather" for the alert merchant. There is one sure source of ideas. It is that helpful business publication—**RADIO RETAILING**.

RADIO RETAILING is read by 23,000 progressive radio merchants, radio and electrical wholesalers, department store managers and buyers, central station merchandise managers, radio service men, and other dealers interested in the sale of all home entertainment products.

RADIO RETAILING brings to those men a "dollar value" return unequalled by any other radio publication. It is not a "fan" magazine. It is the clearing house of all the practical selling ideas developed by salesminded distributors of radio sets, television receivers, portable and auto radios, phonograph combinations, 16 mm "home-talking" movies, shortwave sets, tubes and allied items. It will contain in the next few issues dozens of practical ways of building mid-summer radio business.

RADIO RETAILING is not sold on any newsstand. It is sold through subscription only and mailed direct to recognized dealers once each month. Don't depend on some one else's copy. Have your own mailed direct to you for less than 9c. a month. Use it now to prepare for summer business.

Special Half-price Offer

The regular price of **RADIO RETAILING** is \$2 a year. Here is your opportunity to secure a full year's subscription *at just half-price*. Simply send in \$1 with the coupon below and the next 12 issues will be sent to you. Check, money-order or currency may be sent at our risk. **PAYMENT MUST ACCOMPANY ORDER** at this low rate.

Mail this coupon  with \$1.00 TODAY

SAVE \$1 WITH THIS COUPON

The regular price of *Radio Retailing* is \$2 a year. This coupon and a check, money-order or cash for \$1 will bring you the next 12 issues of this practical dealer merchandising service at 1/2 the regular rate.

Mail Your Order — NOW
Payment must accompany order as we cannot bill at reduced rate.
SEND MONEY AT OUR RISK

RADIO RETAILING, 330 W. 42d St., New York, N. Y.

RR 6-32

Here is my \$1. Enter my name for a year's subscription (12 months) to *Radio Retailing* at special half price rates starting with the July number.

Check here if you are already a subscriber and want your subscription extended at Special \$1 price. (\$2 in Canada — \$3 elsewhere.)

Name

Address

CityState

CompanyPosition

Nature of Business

Price outside U. S. and Canada \$3 a year. Price in Canada \$2.50 year, with a special rate of \$2 if payment accompanies order. Canadian currency acceptable at par.

For Profits

*tie up
with
FADA*

Put yourself in your customer's place—look at radio values through consumer eyes—and you'll say to yourself that Fada is the logical set for you to *sell* because it's the logical set for any value-minded person to *buy*!

Fada makes most effective use of all the newest developments in radio, contributes exclusive features of its own... because Fada has 12 years of cumulative experience in radio improvement at its command... an experience that goes back to the very beginning of broadcasting!

Compare FADA prices and quality with the best the field has to offer—and you'll agree that your best chances for quick sales to enthusiastic customers—*at a profit to you*—are tied up with Fada this year! Write at once for details and name of nearest Fada distributor.

FADA RADIO & ELECTRIC CORPORATION
Long Island City, N. Y.

"I am convinced that no manufacturer has ever before put so much value into a radio receiver or taken so much out of the price as Fada has this year!"

J. A. S. Andrews



**PROFIT MAKING VALUES
THAT PRODUCE QUICK SALES**

- Model 73** De Luxe Table Model (7 tube) **\$52.00**
- Model 85** Open Face Lowboy Console (7 tube) **62.50**
- Model 87** Open Face Lowboy Console (9 tube) **73.00**
- Model 76** Sliding Door Console (9 tube) **94.00**
- Model 66** Short/Regular Wave Receiver (10 tube) **109.50**
- Model 78** De Luxe Sliding Door Console (11 tube) **131.00**
- Model 79** De Luxe French Door Console (11 tube) **142.00**

— COMPLETE WITH TUBES —
EXCISE TAX PAID BY MANUFACTURER



1920—SINCE BROADCASTING BEGAN—1932

\$83⁵⁰
(with tubes)

Model . . . 74
Nine tube super-heterodyne. New triple Grid and Push Pull Power Pentode Tubes. Automatic Flash-O-Graph. Automatic Volume Control. Silent Tuning. Multiple Action Dynamic Speaker.

SEARCHLIGHT SECTION

For Sure, Quick Money, Sell Portable Sound-on-Film



to Theatres, Schools,
Churches, Clubs.

Write for manufacturers' prices on Soundheads, Photocells, Optical Systems, Rectifiers, Amplifiers, Horns, Faders, Synchronous Motors, Projectors, Lamphouses, Screens, Microphones, etc.

S.O.S. CORP.
(Dept. R. E.)

1600 B'way, N.Y.C. Cable "Sosound"

SERVICEMEN-DEALERS

Get Our Prices First
Complete Stock of NEW
Condenser Blocks
Volume Controls
Resistors
and Radio Replacement Parts

Write for our Catalogue

Hard to Get Parts—We have them.
Send us your repair work for estimate.

Grant Radio Laboratories
6521-R South Halsted St., Chicago, Ill.

SPECIAL NOTICE:

To the Radio Industry

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

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

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

REPRESENTATIVE AVAILABLE

WANTED—Low priced radio and accessory lines to represent in New England on commission basis. RA-170, Radio Retailing, 330 West 42d St., New York.

REPAIRING

GUARANTEED microphone repairs—any make or model—24-hour service. Stretched diaphragm double button repairs \$7.50. Others \$3.00. Single button repairs \$1.50. Write for 1932 catalog with diagrams. Universal Microphone Co. Ltd., Inglewood, Calif.

ATTENTION!

Rebuilders, Appliance Dealers, Repair Men. Send for free folder on standard and obsolete vacuum cleaner parts, also Renewed standard make vacuum cleaners, guaranteed 1 year. Armature rewinding, 24 hours' service.

RE-NEW SWEEPER CO.
2262 Gratiot Ave., Detroit, Mich.

MEN WANTED

We require a man in each community, FULL or SPARE time, as local representative. The work is dignified, permanent, and pays well. You simply recommend and call to the attention of business men and workers of all kinds or to fellow employees, the most complete line of business and technical books ever published. They find in our books the ready reference knowledge that gives them quick and valuable assistance in their daily work, and helps increase daily earnings or profits promptly and effectively. You can make \$1 to \$3 an hour easily showing our lists. No experience required. Complete equipment.

Write Tom Crawford, Dept. R.R.

McGRAW-HILL BOOK CO.
330 West 42d Street, New York City

No VACATIONS!

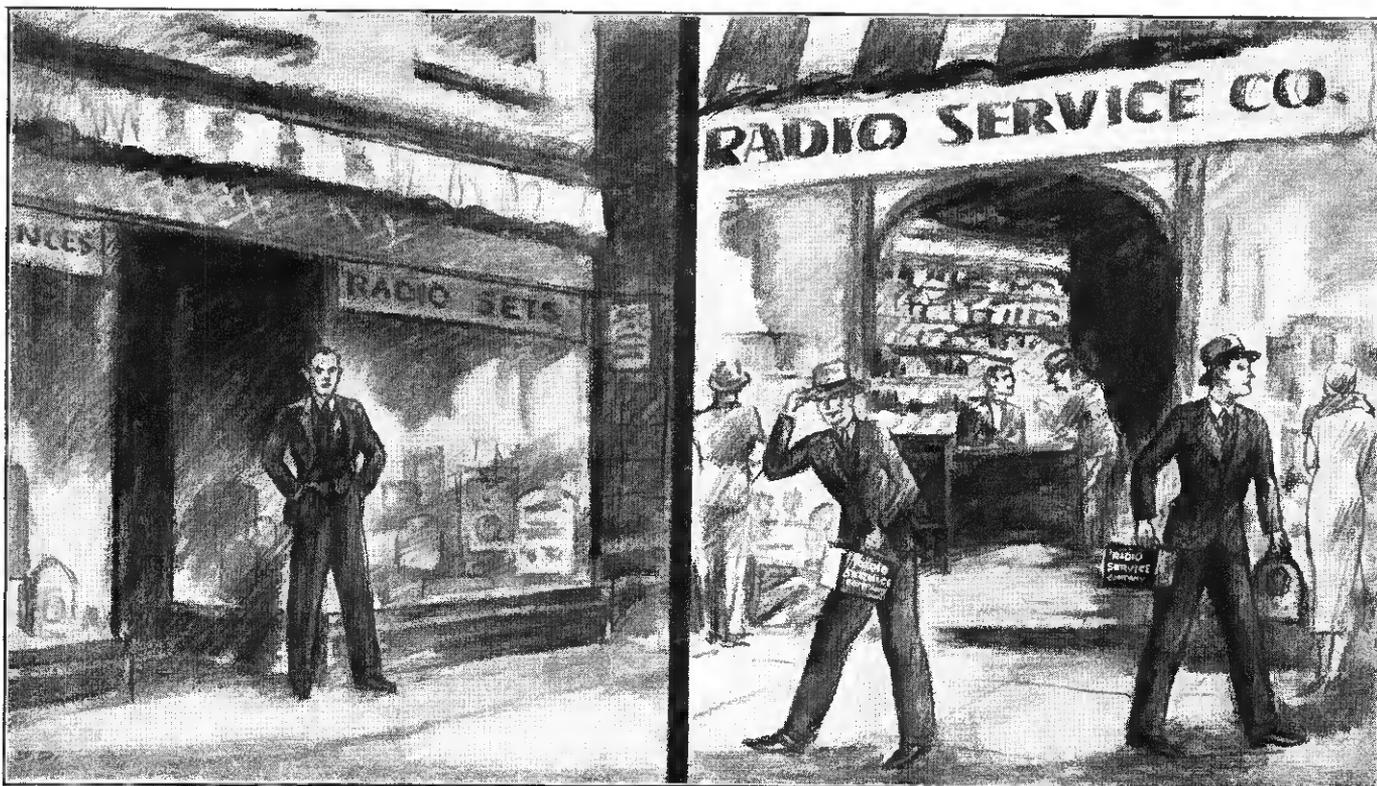
No matter how well manufacturers, distributors and dealers run their businesses, the interruption to summer work due to vacations is bound to cause inconvenience. Particularly is this true of the manufacturers' sales force. What sales manager has not chafed at the fact that during his salesman's vacation dealers and jobbers are not being contacted quite as well as during the rest of the year?

Fortunately, however, a business magazine like "Radio Retailing" takes no vacation. Month in and month out, the whole year thru, Uncle Sam's mails take it unerringly to its readers. Unlike the salesman-in-the-flesh, the manufacturer's advertisement in "Radio Retailing" which is his *printed salesman*, always tells the same story, unaffected by vacations, illness, the golf bug, the blues, the heat or the humidity.

Next month just before the start of the Fall Radio season, the August issue of "Radio Retailing" will take to 23,000 worthwhile radio merchants an editorial section of practical selling information and an advertising section made up of the printed salesmen of the leading radio and appliance makers—a section about merchandise that can be sold at a profit.

Radio Retailing

—a McGraw-Hill publication



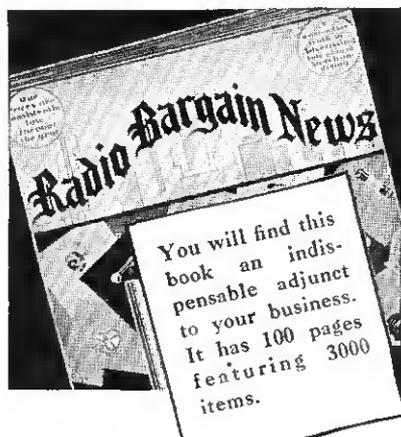
There's Big Money in Service Work!

Don't stand by and wait for better times — make them yourself — with SERVICE WORK. It pays big returns. Innumerable radio receivers in your neighborhood are not operating as well as they did when they were new. You can cash in on putting them in first class condition if you go after the business. Service jobs are profitable. They give you entre into prospects' homes and enable you to sell Midget Sets, Tubes, Incandescent Lamps, Accessories and Summer Household Appliances. But don't wait for this business to come to your door—go after it—solicit it—cultivate it—build up profits on it.

A national survey recently con-

ducted by us among radio dealers and servicemen brought out the facts that plenty of service work is available and that such service work is more profitable than selling new low priced midgets. It also showed that in many cases, after a service call had enabled the dealer to demonstrate a new set in the customer's home, a sale has been made.

Radio Bargain News—will assist you make your service work profitable. Here are 100 pages of quality merchandise and the greatest array of replacement parts ever assembled—and all at extremely low prices—always. You will find this Buying Guide of the radio industry indispensable in maintaining a profitable service department.



Federated Purchaser Inc.

25 PARK PLACE

NEW YORK, N. Y.

The Following Distributing Units Maintained for Your Convenience:

JAMAICA, L. I.

MT. VERNON, N. Y.

NEWARK, N. J.

92-26 Merrick Road

51 East 3rd Street

273 Central Avenue

PHILADELPHIA

ATLANTA, GA.

2909 Broad Street

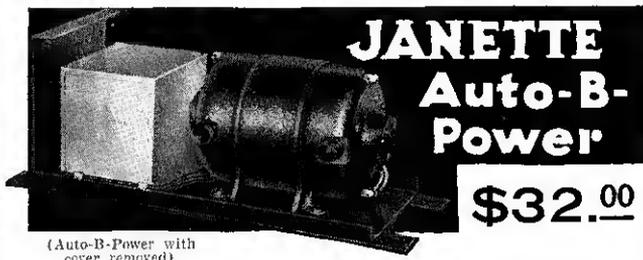
631 Spring Street, N.W.

Fill in and mail this coupon back to us at once.

Name

Address

City State



(Auto-B-Power with cover removed)

Better Auto-Radio Results Without "B" Batteries

- VOLTAGES**
- 6 to 135
 - 6 to 180
 - 12 to 135
 - 12 to 180
 - 32 to 135
 - 32 to 180

MAIL COUPON TODAY

Sell a JANETTE Auto-B-Power with every auto-radio sale and make two profits on one sale. Also, a big replacement seller. Eliminates "B" batteries on auto-radios or battery-type home sets. Assures a constant, non-weakening "B" voltage as well as strong, clear reception. Built to the same quality standard as the world-famous Janette Rotary Converter. Ball bearing, dynamically-balanced armature. Well filtered. Delivers pure continuous D.C. similar to battery current. Furnished complete with voltage divider and tap.

JANETTE MFG. CO.
555 West Monroe St., Chicago, Ill.
Please send complete information on your "Auto-B-Power."

Name

Address

City and State

Fulco RADIO COVERS

"FULCO" Radio Covers insure deliveries in perfect condition—without scratches or broken parts. Well padded, strongly sewed, and made to give maximum service at minimum cost. Also Dust Covers. Write for prices.

Fulton Bag & Cotton Mills
Manufacturers Since 1870

Atlanta St. Louis Dallas
Minneapolis Brooklyn New Orleans Kansas City, Kan.

Only Reliable Products Can Be Continuously Advertised

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Member A.B.P. Member A.B.C. Printed in U. S. A.

"Selected" to make Radio History in 1932-33

The Crosley "Marvel" Series

The Crosley VAGABOND



A 5-tube superheterodyne in a beautiful metal cabinet. Uses 2½-volt heater tubes—balanced image suppressor pre-selector—dynamic speaker and other radio refinements. Dimensions: 8½" high, 13½" wide, 7" deep. **\$29.25** Complete with tubes Plus Tax

The Crosley NOMAD



A chest model 5-tube superheterodyne in a cabinet of selected walnut veneer. Uses same chassis and dynamic speaker as The Crosley VAGABOND. Dimensions: 8½" high, 12¾" wide, 7" deep. **\$32.50** Complete with tubes Plus Tax

The Crosley "Election" Series

The Crosley JUSTICE



This 6-tube superheterodyne incorporates 2½-volt heater tubes—push-pull pentode output—double tuned image suppressor pre-selector—dynamic speaker and other outstanding features. Dimensions: 16¾" high, 13½" wide, 8½" deep. **\$38.50** Complete with tubes Plus Tax

The Crosley ALDERMAN

An exquisite chest model overlaid with walnut veneer. Dynamic speakers at both ends. Uses same chassis as The Crosley JUSTICE. A sensational radio value. Dimensions: 10½" high, 22" wide, 10" deep. **\$46.50** Complete with tubes Plus Tax



The Crosley JUDGE

A beautiful console incorporating the same 6-tube chassis and speaker as The Crosley JUSTICE. Here is a real radio value at a very low price. Dimensions: 49" high, 22½" wide, 12" deep. **\$48.50** Complete with tubes Plus Tax

The Crosley CONGRESSMAN

This 9-tube superheterodyne chest model is finished in stump walnut overlays and walnut veneer. The chassis is same as The Crosley MAYOR. Dynamic speakers at both ends. Dimensions: 11" high, 25½" wide, 11" deep. **\$57.75** Complete with tubes Plus Tax



The Crosley SENATOR

A handsome console model incorporating the same 9-tube chassis and dynamic speaker as The Crosley MAYOR. Cabinet is finished in fine woods. Dimensions: 40" high, 23½" wide, 12¼" deep. **\$59.95** Complete with tubes Plus Tax



The NEW Crosley PUP

A 4-tube superheterodyne at a sensationally low price. The compact metal cabinet is finished in subdued silver gray. Incorporates balanced image suppressor pre-selector—combined volume control and on-off switch—illuminated station selector—dynamic speaker. A great radio value. Dimensions: 7½" high, 12½" wide, 7" deep. **\$25.00** Complete with tubes Plus Tax



The Crosley MAYOR

This superheterodyne uses 9 tubes including the new 2½-volt tubes—silent automatic volume control—meter tuning—four gang tuning condenser—double tuned image suppressor pre-selector—full floating moving coil dynamic speaker and other amazing features. "Election" series models bring in short-waves to, and including 1750 kilocycles. Dimensions: 17½" high, 16¾" wide, 9¾" deep. See your Crosley Distributor for details about the new Crosley line. **\$49.95** Complete with tubes Plus Tax

Two Crosley 12-Tube Superheterodynes

The Crosley COMMISSIONER



The new 2½-volt tubes—class "B" amplification—silent automatic volume control—meter tuning—four gang tuning condenser—double tuned image suppressor pre-selector—dual dynamic speakers are only a few of the newest radio developments that are incorporated in this fine 12-tube superheterodyne console model. Dimensions: 45" high, 26¾" wide, 14" deep. **\$99.50** Complete with tubes Plus Tax

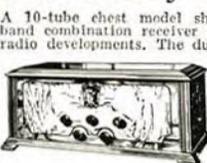
The Crosley AMBASSADOR



An exquisite console of remarkable beauty. Only the finest woods and veneers are used in its construction. It incorporates the same 12-tube superheterodyne chassis and dual dynamic speakers as is used in The Crosley COMMISSIONER. Here is the finest in radio at an amazingly low price. Dimensions: 45½" high, 26" wide, 14" deep. **\$119.50** Complete with tubes Plus Tax

Two Low-Priced Short Wave and Broadcast Band Receivers

The Crosley SECRETARY



A 10-tube chest model short wave and broadcast band combination receiver incorporating the newest radio developments. The dual dynamic speakers are located in the ends of the cabinet. Dimensions: 11" high, 25½" wide, 13¾" deep. **\$75.00** Complete with tubes Plus Tax



The Crosley GOVERNOR

A beautiful console short wave and broadcast band combination receiver having a range from 550 kilocycles to 20 megacycles (20,000 kilocycles). Dimensions: 41½" high, 23" wide, 12¾" deep. **\$89.50** Complete with tubes Plus Tax

Western Prices slightly higher

THE CROSLEY RADIO CORPORATION

Powel Crosley, Jr., President

CINCINNATI

Home of "the Nation's Station"—WLW

YOU'RE THERE WITH A CROSLEY
CROSLEY RADIO

ADDING NEW SALES APPEAL

TO RADIO RECEIVERS



Super Sets Employ-
ing the Sensational
New Super-phonics
RCA Radiotrons
will have these
advantages

1 Superb Tone
Quality; 2 Tremendous
Reserve Power;
3 Improved Volume Control;
4 Quieter Operation;
5 Greater Sensitivity; 6
Greater Selectivity; 7 Reduced
Power Consumption; 8 Smaller
Power Transformers; 9 Smaller
Chassis; 10 Improved
Operation at Short
Waves

RCA RADIOTRON CO., INC. · HARRISON, N. J.
A Radio Corporation of America Subsidiary

RCA RADIOTRONS

THE HEART OF YOUR RADIO