

RADIO TODAY



November
1936

FOR RADIO'S BIGGEST CHRISTMAS

Tenth Anniversary



Greetings

*to those who have shared with us
in the advancement of broadcasting*

NATIONAL BROADCASTING COMPANY, INC.

A Radio Corporation of America Service

NEW YORK • WASHINGTON • CHICAGO • SAN FRANCISCO

Christmas Offers



I am giving more
AMERICAN-BOSCH
CentrOmatic RADIOS
this year than ever before



Treat your family
to the only radio
with the
"AUTOMATIC MAESTRO"

*a special opportunity
to American-Bosch
dealers. This is why:*

1 Christmas demand is selling large sets and small sets, high-priced sets and inexpensive models: American-Bosch has a market measured line starting at \$19.95 . . . with a total of 19 Personal and Console models up to \$179.50. *A complete radio department in itself.*

2 Christmas demand is following the Fall trend: Sales of American-Bosch Radio have leaped 500% ahead. Attracted by American-Bosch cabinet styles and American-Bosch engineering, the public has unerringly picked a winner. In New York City one of the most prominent radio dealers has stated publicly over the radio that American-Bosch Model 680 is the finest radio ever produced.

3 Christmas demand will respond to Christmas windows. Now ready is our new 5 piece American-Bosch display in full color aimed directly at Christmas trade.

*Ask your American-Bosch distributor for
this new, different Christmas display;
or if you prefer, write direct to*

UNITED AMERICAN BOSCH CORP.
SPRINGFIELD MASSACHUSETTS

*Illustrated at left is center piece of new 5 card
Christmas display.*

Admiral

12 TUBE
TILT TUNER \$99⁵⁰

THE RADIO WITH PLENTY OF SALES AMMUNITION

TILT
TUNING

A sensation from coast to coast. Everywhere folks are saying "good-bye to back-benders . . . give me a tilt-tuner!" And no wonder . . . standing or sitting it's the easy way to tune.

11" OVAL
DIAL

Most beautiful ever designed. Dial figures in large, easy-to-read gold letters on translucent blue black background. New gold es-cutcheon plate.

FINGER FLICK
STATION
SELECTOR

Nothing like it! Accelerating "fly-wheel" gives split-second tuning with a "flick" of the finger. 5 seconds . . . instead of the usual 20 or 30 seconds . . . to go from 540KC to 18,000KC.

VISUAL
STATION
INDICATOR

Cathode-ray or miniature x-ray tube permits you to "see" when your set is perfectly in tune. Acts like a station "stop-light."

MINUTE HAND
FOR CLOCK-LIKE
TUNING

Just like looking at your watch and noting the time. Instead of logging in kilocycles, etc., let the pointers "tell-the-time." Small, conventional pointer acts as "hour" hand; special larger pointer serves as "minute" hand.



AM 481

ADMIRAL MODEL AM786 11 TUBE CONSOLE →

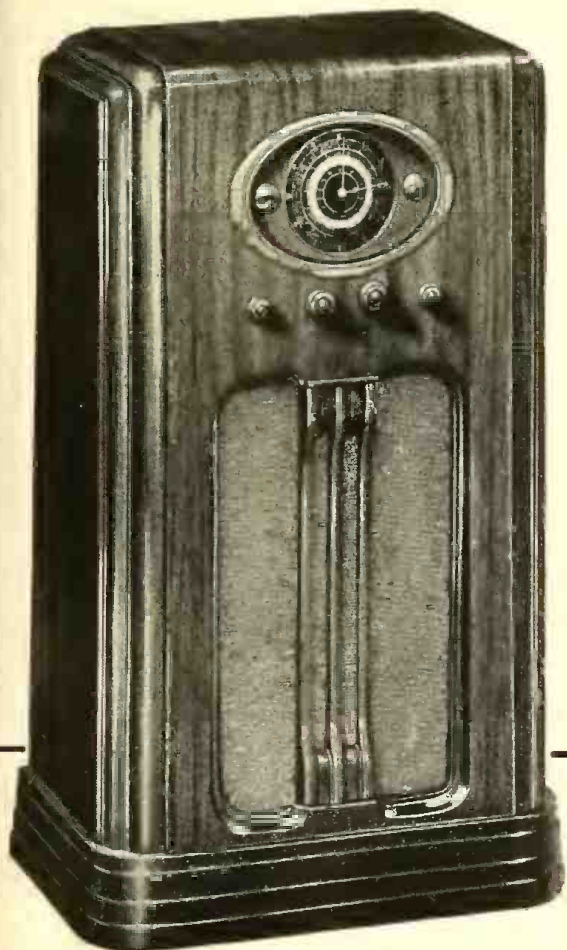
Meets all competition, and then some! 3 continuous all-wave bands (540 to 18,000 KC) . . . simplified tuning control (see above) . . . full floating 3 gang condenser . . . automatic volume control . . . hi-gain superheterodyne circuit with 3 stages of amplification . . . absolute 2 microvolt sensitivity . . . built-in filter . . . automatic antenna tuning . . . completely shielded circuits . . . push-pull high fidelity audio system . . . 7½ watts of clear undistorted power output . . . variable tone control . . . 12" heavy duty, plug-in super-dynamic auditorium type speaker . . . beautiful, tone-seasoned, trouble-free cabinet.

\$69⁷⁵

TWICE THE POWER OF ANY OTHER RADIO SELLING UNDER \$100⁰⁰

WHY MULTI-TUBE RADIOS? TO GIVE POWER!
THIS ADMIRAL RADIO . . . UNDER \$100 . . . GIVES

13 WATTS OF UNDISTORTED
P O W E R



MODEL AM 786

Why build a radio with a lot of tubes if you don't get the most out of them? Admiral "shoots the works"! Compare for yourself! Gives twice the power output of any other radio under \$100! And that's not all! Take a look at other sales ammunition on the opposite page: tilt-tuning, 11" oval dial, "finger-flick" station selector, visual station indicator, minute hand for clock-like logging, etc. It's one of the few radios in its price class with automatic tone control and beam power push-pull output stage using 2 6L6 beam power amplifiers. Housed in beautiful, walnut tilt-tuning console. Model AM488—\$99.50 List.

A Complete Line—Admiral offers a complete line for home, farm and auto . . . AC, AC-DC, Battery and Auto . . . 16 models . . . 4 to 19 tubes . . . 540 to 18,000 KC . . . \$19.95 to \$175.00 . . . the biggest value in radio today.

**CONTINENTAL RADIO
& TELEVISION CORP.**
325 W. Huron St., Chicago, Ill.

• **MAIL COUPON TODAY** •

Our new booklet gives detailed specifications covering all the new Admiral Models. Mail this coupon for your free copy today. There is no obligation. Send to Continental Radio & Television Corp., 325 W. Huron St., Chicago.

Name.....
Address.....



"Now, ABOUT OUR TIME PAYMENT PLAN—"

RIGHT THERE is where your sale may be closed—or lost.

Mr. and Mrs. Customer don't buy with their eyes closed. First they make sure the product is what they want. And then they go into the question of financing. Who is the financing company? What is its reputation for fair terms—for financial responsibility?

Commercial Credit Company qualifies in every respect. A national reputation assures public confidence. A record of financing more than \$716,000,000 of business in the past year alone, is a convincing measure of financial responsibility. Careful credit investigation, local cooperation and prompt remittances make Commercial Credit service the official choice of leading manufacturers, distributors and dealers in many lines of business.

May we explain how Commercial Credit Company Financing can help *your* sales? Inquiry at any of our 172 offices located in the principal cities of the United States and Canada will get immediate attention. No obligation.



COMMERCIAL CREDIT COMPANY

COMMERCIAL BANKERS
CONSOLIDATED CAPITAL



HEADQUARTERS: BALTIMORE
AND SURPLUS \$63,000,000

FINANCING SERVICE FOR MANUFACTURERS, DISTRIBUTORS AND DEALERS
THROUGH 172 OFFICES IN THE UNITED STATES AND CANADA

Sell

CROSLEY

... THE RADIO THAT HAS EVERYTHING!

TUBE FOR TUBE ... FEATURE FOR FEATURE ... COMPARE THESE 1937 CROSLEY VALUES WITH ANYTHING ON THE MARKET!



FIVER-5 TUBES
2 Bands... 540-4000 Kc.
Continuous... 5"
Speaker... 3 1/4 Watts
Output. **\$1999**

MODEL 525-5 TUBES
2 Bands... 540-4000 Kc.
Continuous... 5"
Speaker... 3 1/4 Watts
Output. **\$2500**



MODEL 529-5 TUBES
2 Bands... 540-4000 Kc.
Continuous... 5"
Speaker... 3 1/4 Watts
Output. **\$2995**



MODEL 629-6 TUBES
American-Foreign... 540-1710 Kc., 2350-7000 Kc.
6" Speaker... 4 Watts
Output. **\$3495**



MODEL 634-6 TUBES
American-Foreign... 540-1710 Kc., 6000-18,000 Kc.
...6" Speaker... 5 1/2 Watts
Output. **\$3995**



MODEL 744-7 TUBES
Continuous Coverage... 540-18,000 Kc.
Speaker... 6 Watts
Output. **\$4995**



MODEL 537 Console-5 Tubes
2 Bands... 540-4000 Kc.
Continuous... 8"
Speaker... 3 1/4 Watts
Output. **\$3995**



Model 759 Console-7 Tubes
Continuous Coverage... 540-18,000 Kc.
Speaker... 6 Watts
Output. **\$6750**



Crosley Plus Features
Look at this list of Crosley plus features that are the outstanding stars of the 1937 radio world. Every one is a powerful "seller" ... everyone a headliner that will draw traffic and make quick sales for the Crosley Dealer.

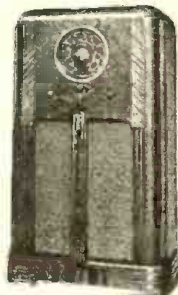
AUTO-EXPRESSIONATOR
MYSTIC HANO
BASS AND TREBLE TONE COMPENSATOR
SIX STEP FIDELITY CONTROL
HIGH FIDELITY METAL TUBES
CARDIOMATIC UNIT
MAGNA-CERAMIC DIAL
VIBRACOUSTIC SOUNDING BOARD
GIANT CURVILINEAR SPEAKER

Model 644 Console-6 Tubes
American-Foreign... 540-1710 Kc., 2350-7000 Kc.
12" Speaker... 4 Watts
Output. **\$4995**



Model 649 Console-6 Tubes
American-Foreign... 540-1710 Kc., 6000-18,000 Kc.
12" Speaker... 5 1/2 Watts
Output. **\$5995**

The new 1937 Crosley Radio Line has *everything* ... beautiful designs ... superb performance ... new, advanced features ... greater dollar-for-dollar value. That's the reason for the pronounced swing to Crosley by the radio-buying public ... that's why aggressive dealers everywhere are clamoring for the Crosley Franchise. Swing in behind the leader and sell Crosley—the radio that has everything. See your Crosley Distributor now for details of the Crosley Franchise.



Model 769 Console-7 Tubes
Continuous Coverage... 540-18,000 Kc.
Speaker... 6 Watts
Output. **\$7995**



Model 989 Console-9 Tubes
Continuous Coverage... 540-18,000 Kc.
Speaker... 12 Watts
Output. **\$9950**



Model 1199 Console-11 Tubes
Continuous Coverage... 540-18,000 Kc.
Speaker... 20 Watts
Output. **\$10950**



Model 1211 Console-12 Tubes
Continuous Coverage... 540-18,000 Kc.
Speaker... 20 Watts
Output. **\$12950**



Model 1313 Console-13 Tubes
Continuous Coverage... 540-18,000 Kc.
Speaker... 25 Watts
Output. **\$14950**



Model 1516 Console-15 Tubes
Continuous Coverage... 540-18,000 Kc.
Speaker... 25 Watts
Output. **\$17450**

*** **WHATEVER HAPPENS YOU'RE THERE WITH A CROSLEY**

CROSLEY RADIO

THE CROSLEY RADIO CORPORATION - - - CINCINNATI

POWEL CROSLEY, Jr., President
Home of WLW—the world's most powerful broadcasting station—70 on your dial.
(Prices slightly higher in Florida, Texas, Rocky Mountain States and west.)

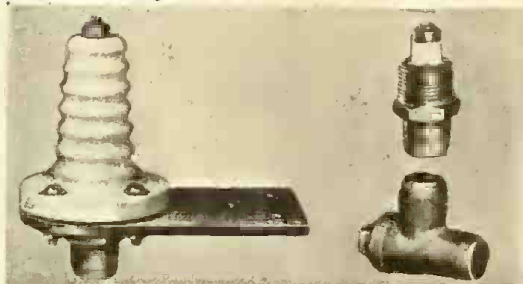
FROM
TRANSMITTER
TO

Antenna

A Complete Installation with
**ISOLANTITE COAXIAL
TRANSMISSION LINE**



WESTERN ELECTRIC ultra high frequency Police Radio Transmitter. Station W2XEM. Newark, N. J.



National Newark and Essex Bank Building. Showing location of transmitter and antenna connected by ISOLANTITE COAXIAL TRANSMISSION LINE.

In the rapidly developing technique of radio communication engineers recognize the coaxial transmission line as the most efficient means of conducting radio-frequency energy from point to point and from transmitter to antenna.

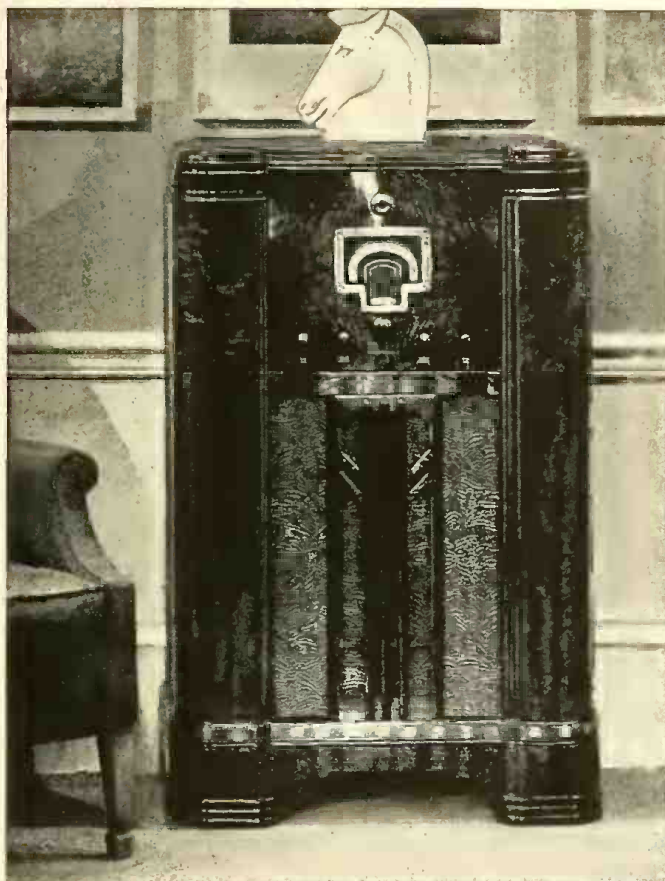
ISOLANTITE INC. has been closely identified with this development and now announces A COMPLETE COAXIAL TRANSMISSION LINE SYSTEM for ultra high frequency and broadcasting stations.

Write for our complete bulletin on this product. ISOLANTITE INC., 233 Broadway, N. Y. C. Factory at Belleville, N. J.

Sold only through Graybar Electric Company and Manufacturers of transmitting equipment

Isolantite
CERAMIC INSULATORS

RCA Victor celebrates NBC's 10th Anniversary *with the greatest radio values in its history!*



★ RCA Victor-NBC 10th Anniversary Model 10K . . . has famous Magic Voice, Magic Brain, Magic Eye, Metal Tubes, 150-410 to 530-60,000 kc. band coverage, phonograph connection, two-speed tuning, band spreader, selector dial, super-fidelity speaker and several other fine features. A great RCA Victor value at \$150.00.

Tie in with it by featuring magnificent RCA Victor-NBC Anniversary Models and gain the benefits of this great newspaper and broadcasting program!

Elaborate plans for the celebration have been made by both RCA Victor and NBC. "RCA Victor-NBC Tenth Anniversary Models" are going to attract nation-wide attention. NBC is putting on a gigantic nation-wide prize contest during which 5 of these models will be awarded to winners each day during the contest period!

The Magic Voice Contest created an unprecedented demand for Magic Voice models. A continued barrage of RCA Victor advertising—over the air, in the magazines, and in the newspapers—will still further increase the demand for RCA Victor—radio's greatest value. If you are not one of those already aboard the RCA Victor profit wagon—get aboard now.

Remember, in demonstrating the "RCA Victor-NBC Tenth Anniversary Models" to your customers, that these fine sets are designed and engineered by the same skilled craftsmen who supply broadcasters with most of their equipment!

Listen to "The Magic Key" every Sunday,
2 to 3 P. M., E. S. T., on the NBC Blue Network



RCA Victor

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

PHILCO starts on the 9th MILLION!

PHILCO passes another million mark! But Philco isn't taking time out to celebrate the event. Not with the biggest selling season of the year already at hand!

So Philco merely notes a new milestone . . . and concentrates all efforts on speeding toward the sale of the ninth million sets.

With eight million Philco owners already enthusiastically spreading abroad their high regard for Philco . . . with Philco *Automatic Tuning* hailed on all sides as the star sales feature of the year . . . with Philco *Foreign Tuning System* proving that short-wave can be enjoyable as well as exciting . . . with business steadily improving . . . that nine million mark doesn't look so far away!

PHILCO RADIO & TELEVISION CORPORATION

Staff—

DARRELL BARTEE
RANDALL R. IRWIN
M. H. NEWTON
B. V. SPINETTA
VINTON K. ULRICH

LEE ROBINSON
Sales Manager

RADIO TODAY

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PEAK-TIME IN GENERAL

★ Signs of solid health have appeared in stout dozens throughout general business activity. Next it knows, U. S. industry will be face to face with a 1929 brand of business; trends have learned the upward way.

Both General Motors and the U. S. Steel Corp. have announced spectacular wage increases—a shot of cheer for buying power. Auto people count on a new kind of 5,000,000-unit year. Retailers report sales ahead of supply, in some corners; advertising volume has the highest level in 3 years. Latest monthly figure from National Industrial Conference Board on total U. S. payroll shows a 22.4% lift over last year.

XMAS XPECTATIONS

★ Yule shoppers this year are scheduled to have both the desire and the dough. Average weekly pay envelope contains 11.4% more than last year, and sales totals for the holiday period are destined to rush past a 20% increase over last year.

The Santa Claus thing began earlier this time, with benefit of wild forecasts as to December's thirst for gifts. Radio, with a batch of new models and a background of trade recovery, can claim a share that will do its heart good.

RADIO'S BUILDING BUILDINGS

★ Broadcasters say that they will streamline themselves a couple of additional radio show places, NBC in Washington, D. C., and CBS in Hollywood. New studios won't cut the clouds like the blocky towers of the original Radio City, but they will have the same smash charm.

NBC's efforts in Washington will mean fancy new homes for stations WRC and WMAL, clearly as up-to-the-minute as the web's engineering genius, O. B. Hanson, knows how to make them. Meanwhile Columbia

will spend \$1,000,000 on flashy quarters for coast station KNX, probably to become the Pacific's broadcast center. House design is up to William Lescaze, whose technique has an international OK.

RMA RULES AGAINST UNFAIR TRADE PRACTICES

★ Prizes, "spiffs," "push-money," bonuses, and also cruises will be among the evils in radio merchandising which will be ended, under the program adopted by RMA.

Initiative and leadership in the program for cleaning up radio-set merchandising was begun several months ago by Commander E. F. McDonald, Jr., of Chicago, chairman of the Fair Trade Practice Committee. The RMA plan developed already has the unanimous endorsement of most leading set manufacturers



Commander McDonald, who heads up RMA'S Fair Trade Practice Committee

and also has been tentatively approved by government officials at Washington.

A major feature of the new clean-merchandising program for set manufacturers is a new rule of fair trade practice, which provides:

Spiffs, push-money

"Rule 3—The granting or giving or promising to grant or give by manufacturers in the industry, directly or indirectly, to employees of retail sales outlets selling competitive lines of radio merchandise, of commissions, bonuses, premiums, prizes, 'spiffs,' 'push-money,' gratuities, privileges or anything of value in any form whatsoever, in consideration of the said employee's influencing the retail purchase of industry products manufactured by the grantor or donor, whether or not the same shall expressly be granted or given for that purpose, to the extent that such practice has a tendency and effect of improperly influencing and deceiving the buying or consuming public by reason of the fact that the purchaser is not aware of such subsidy or consideration and expects the retail employee to be unbiased, impartial and free from any such influence as between different merchandise sold by him, is an unfair trade practice."

Robinson-Patman Act

While the proposed new trade practice rule applies only to action of manufacturers and extends only to radio retail salesmen, wider effect, specifically on radio distributors, will be attained through supplementary action of set manufacturers. The set manufacturers also approved unanimously a separate contract, which has already been signed by a large number of leading companies, that they will "use all lawful means" under their control to prevent their distributors from violating, either in letter or in spirit, the proposed trade practice rule and prevent distributors from granting the prohibited premiums, prizes, "spiffs," etc., to retail salesmen handling competitive sets.

For enforcement of the provision of the separate agreement of manu-



E. Alschuler ("E.A.") president, and George Russell, general sales manager, Sentinel Radio Corp., looking over some new highs in battery radio sales.

facturers affecting their jobbers, action would be had upon complaint of alleged unfair competition.

With the merchandise reform plan thus effective on manufacturers, retail salesmen and also jobbers, the Robinson-Patman Act will re-enforce the merchandising program so far as dealers are concerned. The Robinson-Patman Act requires the manufacturer to make available to all competitive dealers any dealer allowance which he makes available at all. This will specially meet the situation regarding cruises as manufacturers would be required to extend the privilege of cruises to all dealers.

Commenting on the work of the Fair Trade Practice Committee, Chairman McDonald said: "I feel

that while real progress has been made to eliminate commercial bribery and unfair trade practices, the Committee's work is by no means finished. It is our intention to continue and finish our job if possible."

"INTERMEDIATE FREQUENCIES" OF ALL SETS

★ Alphabetically by trade names, the service editor of RADIO TODAY is making a compilation which will attract national attention among service men. Going to print with some rare data on every super-het ever made, Vinton K. Ulrich invites the interest of all persons in the service industry; he is ready with the all-time key on i.f. peaks and color coding on some 7,000 sets.

Deluge of this data begins bravely in this issue, will continue for some months positively to clear up one important aspect of every-day servicing. Material isn't to be found elsewhere, as it stops to include many private brands and has been checked with scores of sources.

RADIO ELECTED THE PRESIDENT

★ SURPRISE vote-totals of the Presidential election were a pretty obvious tribute to radio's brand of coverage. Magazines and newspapers fumbled predictions by the foul dozen, having based their observations on contact with that part of the public which remains friendly in spite of the fact that publishers were forever grinding some sort of axe.



Henry Forster, president Radio Speakers, Inc., in the midst of a big hunt which bagged six bucks.

Now we know: that section of voters is no longer representative. Final count of ballots indicated that radio had been reaching a group of voters upon whom the newspapers had either wasted their ink, or had missed completely. This group was large enough to stage a landslide, to wilt the press, to award radio its greatest notice of prestige.

Small wonder that advertisers are willing to spend additional millions on network programs. They reach a public otherwise beyond reach—a national swarm which has re-stated its preference for a master medium.

PROPOSES NO NEW MODELS UNTIL APRIL

★ Commander E. F. McDonald, president of the Zenith Radio Corporation, has called upon the radio industry to bring out no new models or changes in current models or prices until the close of the present radio season in April, 1937. Zenith distributors have been instructed to make guarantees to this effect, and to agree further to take back from dealers and pay full purchase price on any current models, if there is any change in models, cabinets or prices of current home lines.

Commander McDonald feels that many radio dealers have failed because manufacturers have cut prices or brought out new models in the middle of the season, thus obsoleting sets on the dealers' hands. This in turn has caused dealers to cut prices and liquidate their inventories, in order to take on new models. This practice has also caused sharp reduction in value of the dealer's time-payment paper.



Dr. E. F. Weston and Caxton Brown, big bosses of Weston Electrical Instrument Corporation, muse about the future of servicing instruments when television gets going!

RADIO FOR THE RICH

★ There has been quite a rumor that wealthy persons have given radio the ice, and that the leisure class is generally fatigued by broadcast efforts. Families on the right side of the tracks are described as piqued by our programs, cool to our cabinets.

At last, a formal check-up on the radio attitudes of the very rich. Victor M. Ratner, director of advertising and sales promotion at CBS, has a report on a survey made by a university among the first families of Boston, based upon solid interviewing rather than on casual phoning.

All the elegant houses were found to be radio-equipped with from 1 to 14 sets, the average being 3 receivers per mansion. They averaged 3 hours of listening daily, and mentioned by name, 129 different features which they ate up. Favorites among all types of features were ranked: Boake Carter, Major Bowes, Rudy Vallee, News Bulletins (in general) and the Ford Symphony.

REVISE ADVERTISING ALLOWANCES TO DEALERS

★ A number of leading radio manufacturers are instituting separate merchandising reforms relating to advertising allowances. The anti-trust laws will not permit definite binding and concerted action among manufacturers regarding advertising allowances; therefore, any such action must come separately by individual companies. It is understood that without any agreement or un-



Atwater Kent's F. E. Basler, now hailed as new sales manager for Gibson Elec. Refrigerator Corp.



King Football's master's voice. The coach climbs onto this elevated perch to watch his team, and bellows instructions, through the twin speakers, report Wilkinson Bros., Dallas, Tex.

derstanding whatever, several leading set companies are adopting policies which will result in improvement in future radio merchandising practices.

Several leading companies will require a minimum contribution of 50 per cent by dealers in cooperative advertising. It is also understood that some set companies will hold the advertising allowances to their distributors to between 2 and 3 per cent.

THE KING'S KINDERGARTEN

★ "Nursery for B.B.C. Staff!" wisecracks the British press, commenting upon the proposal of the British Broadcasting Company to establish itself a training school for non-technical members of the staff. Idea seems harmless and quaint, like something out of the pastel chatter of London's tea tables, but the press cries "Dictatorship" and "Door Shut on New Blood!"

BBC's director-general, Sir John Reith, thinks that future vacancies could be better filled by drawing from a training school, and that present employees don't know all there is to know about sound broadcasting. Hence the need for the discipline "nursery."

SMALL ADVENTURE

★ As if the serviceman's tube shelves were not already sufficiently mixed up, a small brown animal has emerged from the Bronx River to make things worse.

Anyway, a mischievous little mink got bored with what goes on in minkland and spent a recent night at the shop of serviceman Morton Silver, manager of Radio Engineering Service, 1682 Washington Ave., The

Bronx, N. Y. Minks, if that's what it was rather than a mongoose, are fast, strong and reckless; this one managed to tip over a radio cabinet and to scatter tubes by the wild dozen. They had tried to corner him before the shop was closed for the day, but he retired into a wall until the floor was cleared of persons with weapons.

Last report, a trap was baited. Not with a radio tube, but with a live fish, looking tenderly eatable and rather doomed.

TOO OLD TO DREAM

★ That the broadcast schedules of the day are freighted with melody of genuine charm and variety is apparent in the annual analysis of tunes played on NBC and CBS webs made by the American Society of Composers, Authors and Publishers. ASCAP made its count on all 1935 airings, by song titles, giving each tune a point for being played on a single station.

Most-played tune for the year was "When I Grow Too Old To Dream," with 29,161 points; other ranking hits were "I'm In The Mood For Love," 26,537; "In A Little Gypsy Tea Room," 25,228; "Lullaby of Broadway," 24,864; and "Cheek to Cheek," 24,134; During the period, it turned out that radio listeners got the advantage of the work of 131 different authors and composers.

E. C. Mills, general manager for ASCAP, is willing to say that the radio rankings of the tunes are the best indication of what songs were uppermost in the national consciousness.



Carl McKelvey, who has been named to general manager Galvin Mfg. Corp.'s new home radio dept.

HOW TO DO A PLUS SELLING JOB

Rapid list of selling strategies which have had a trial by radio men who went after and got extra holiday profit

★ **DECEMBER** calendar this year fairly drips with extra profit for radio dealers.

Sales floors are sagging with Yuletide's "greatest gift"—1937 radios—and now's the time for some fancy promoting of the only merchandise on earth which is totally holiday-perfect.

Sell what you will as a side line, new model receivers loudly invite your pushing. Store display stunts may depend upon your shop facilities, but in that part of promotion which depends upon your originality, you accept help. You're welcome to the following series of Christmas selling aids which have enjoyed some success.

Sales-Spur No. 1

Christmas Club checks are mailed from most banks late this month or early in December. Last year many radio men displayed placards reading "Christmas Club Checks Cashed Here" and thus got some first chances at the \$300,000,000 which is normally turned loose in the country. Dealers found it wise to make this announcement in newspaper ads or in windows ahead of those who had other gifts to sell.

Stunt No. 2

"Gift Certificates," which are usually applied to merchandise that comes in sizes, have come back into favor in many radio stores. These credit slips, given by the donor instead of the receivers, appeal to persons who make a lot of gift selections and make them in a hurry. They get across with people who do not know the exact tastes of those to receive the gifts, and can be introduced by radio dealers via the mails.

Idea No. 3

Holiday radio business has been improved in many quarters by the dealer's remembering that the season for winter cruises and sports opens the first week in December. Travel displays and sports photos in radio windows have given dealers a swell chance to work in a new receiver among items needed for the outings. Idea is important in wealthy communities, and in port towns. Season occurs so close to Christmas that the gift angle is involved.

Trick No. 4

"No Payment Until Next Year" practice has become so important that dealers have learned to prepare for credit business far in advance of the main buying period. Radio shops connect with the local Chamber of Commerce or similar agencies and check credit ratings with their own prospect lists, so that little time is lost when sales are being closed. Reports are that this year the employment situation is changing so rapidly that dealers cannot afford to be without the latest data on local payrolls.

Promotion No. 5

When the round of Christmas parties gets under way, set salesmen have successfully tried this: Clip advance notices from society columns and attach them to letters based upon the "party" appeal. These letters suggest that your new instruments are the ideal ones to add life and style to social events. Prospects, flattered that the story had been noticed in the paper, are generally willing to listen to more sales talk.

Feat No. 6

One dealer has had genuine success with a window display using toy trains, automatically running around through radio receivers. Flying trains were accompanied by sound effects—a record heard through an

amplifier at the top of the window. "Choo-choo" sounds were loud and authentic and attracted hundreds of pedestrians, many of whom came into the store to ask how the mechanism worked.

Plan No. 7

Receivers designed for use in kitchens have appeared in many radio shops as the ideal gift. These sets appeal to husbands as a gift for wives because they definitely represent an item which will lighten the work of the housewife. Receivers for this purpose are often finished in light colors and lend themselves nicely to the red-and-green trim used at holiday time.

Thought No. 8

Selling copy used in windows along with radio displays has by this time established some new thunder. The words "hint" and "suggestion" in regard to radios as gifts are generally considered too mild and too casual. A good set offers "years of supreme entertainment" and "million dollar programs by the dozen." Hence the window placards become more dramatic and more serious and describe the merchandise as "a way to be remembered for keeps" and "a handsome ticket to a vast entertainment service."

Sales-Notion No. 9

Younger persons among the givers of gifts have in many cases been switched to radio. Dealers have stimulated their sales by appealing to young men with the suggestion that "a boudoir set will delight her" and by approaching young women with the idea that she should "give him a radio for his car." The "sweetheart" market will stand developing because so far it has been dominated by jewelry and personal effects.

Strategy No. 10

Dealers claim that their best bet at Christmas is the use of direct mail. Letters this year accent (1) improvements in 1937 models, (2) more broadcast "musts," (3) improved business conditions in general and (4) attractive time payment plans. Radio men report more success with letters of a warm and personal nature.

GIFT-LIST REMINDERS

- For Mother
 - a boudoir set
 - For Father
 - a console
 - For Sister at college
 - a personal radio
 - For Big Brother
 - an auto set
 - For the Little Folks
 - a nursery radio
 - For Grandpa
 - an all-wave job
 - For the Maid—
 - a kitchen set
 - For the Whole Family—
 - a phonograph-radio combination
-

FOR RADIO'S BIGGEST CHRISTMAS

Among your new models is a perfect item for every unit of the gift-giving public. Be sure to say so!

Move No. 11

Radio stores cannot personally greet their patrons through window copy. A good-will stunt of substantial value is the use of a house Christmas card, obviously friendly and as far from the "form" style as possible. Set salesmen have favored the use of handwriting on these cards and the amount of advertising should be generously cut. Cards with an electrical design, simple and dignified, are effective.

Stimulator No. 12

Radio men have been able to trump up several kinds of "Gift Weeks" with decent results. These have been based on special trade-in offers, combinations of merchandise (such as a radio sold with another appliance at a special figure), and on demonstrations or free trials. These "Weeks" are plugged simultaneously in newspaper copy, on the air, and perhaps by direct mail. It would be a help if dealers could figure out an eye-catching synonym for the word "Week."

Rouser No. 13

Many shops have good luck with special announcements on "night openings." Most stores change their hours about Dec. 2 to accommodate Christmas shoppers, but radio dealers have an extra advantage in evening selling because that's when most of the big popular broadcasts occur. Demonstrations can be given new snap and current ads invite folks to "Come in Thursday evening and hear Show Boat through a new 1937 model Master set." In some cases dealers have invited whole organizations, civic, social or musical, to the store.

Exploit No. 14

Home-coming period for college students begins about Dec. 9, and there are success stories about how radio salesmen have greeted them. Their families are good targets because they usually belong to upper income brackets. They are appealed to on sports broadcasts, popular music features and lighter entertainment to be heard on the air. These prospects can be picked up by watching local newspapers for arrival notices.

Project No. 15

Reports are that some extremely nifty displays have been built by using radio lamps with special holiday shades. For those dealers who dislike the idea of tying ribbons and tinsel onto the dial knobs of the receiver, this has been the ideal method of getting an impressive holiday atmosphere. Shades that whirl, and the candle-style lamps have been used with excellent effect. The shades may be changed when Christmas is over.

Scheme No. 16

Selling by telephone has had a certain vogue at Yuletide, but dealers seem to agree that "cold" phoning at Christmas is a mistake. For old patrons, however, telephoning is OK if the radio salesman takes a genuine interest in gift problems, reception difficulties and service matters. Conversations are likely to fall

flat if they deal only with price-appeals and hi-powered gift offers. Unskilled spokesmen can do a lot of damage.

Method No. 17

Through various ad channels, dealers have pepped up their sales by parading broadcast schedules for the Christmas period. By Dec. 1 the networks have lined up the full artist cavalcade for the current season and their names and photos make fine evidence of what extraordinary gift-value radio receivers possess. Informal close-ups of broadcast stars are best for windows, and pictures are more effective when they show studios and mikes.

Device No. 18

Radio display experts have found that it is always wise to exhibit at least one receiver "packaged" for Christmas and completely wrapped for use as a gift, card and all.



Broadcasters are merrily making up extra Yuletide features to aid dealers.

RADIO AT N. Y. AUTO SHOW

- auto radio sales 20-65% above last year
- purchases of cars exceed 1935 show by 100%

★ More auto radios than ever, is the opinion of exhibitors at New York's famed automotive show. Fact is that demand for radio-equipped cars is way above last year's. Manufacturers are expecting to hike their radio sales from 20 to 65 per cent this season. But even so, only a relatively small portion of the cars will be radio-equipped.

Entirely new ideas are being offered by some of the manufacturers, Oldsmobile, for instance, has a deluxe set with dual speakers—one of which is mounted behind a grille in the instrument panel, the other is of the cowl type. The panel speaker is for the higher frequencies, the other for the lows.

Rear-seat speakers

Chrysler Motors have overcome the obstacle of difficult rear-seat reception by having a second speaker that mounts in the back of the front seat. Now the back-seaters can hear easily without those in the front listening to excessive volume.

Roof antennas have all but disap-

peared. Most of the cars, because of the metal roofs, are using antennas under both left and right running boards. Rigid and flexible types are being used. On factory-equipped cars only, Buick is insulating the running board itself, and using it for an antenna. Oldsmobile are also using a similar scheme in their cars. Auburn and Cord mount their antenna under the car (not running board).

Ford has an aerial that extends up from the center post of the windshield. For local reception it is down out of the way, while for country use, the slender tubing is extended above the roof.

Roof aerials are used in the Packard, Pierce Arrow and Graham closed cars. With Graham, the steel panel in the roof is insulated from the rest of the body.

Installation of sets in these new cars is usually a matter of an hour or less. Holes are drilled in the body and chassis. Where header speakers are used, it is general practice to provide a dummy cable with which to pull the speaker leads into place. Fac-

tery installation can be had with many of the cars—but because of inventory difficulties, many auto dealers order the radios separate and have them installed locally.

At least one company (Graham) put a heavy duty battery in their radio equipped models. Car also has an oversize generator with an automatic voltage regulator which provides a high charging rate when the battery is low. Cadillac and some of the other manufacturers have similar regulators. Refinements such as these will go a long way in making radio reception more effective—for in the past excessive load on the battery meant frequent recharging.

Cadillac and LaSalle have a large sounding board built into the roof of the car to provide lifelike reception from a header type speaker.

Panel design

Very few of the cars have radio as regular equipment—none in the popular and medium-priced field. Some cars having radio as standard are Hudson Custom, Cadillac V-16, Packard 8 and 12, Cord.

Realizing that radio is an important accessory, the manufacturers are designing their instrument panels for radio. On the Ford, for instance, it is no longer necessary to lose the use of the ash tray when installing the set—the controls are mounted above the ash tray. The radio dials are designed to harmonize with the rest of the instruments on the panel—and in practically every car the radio is mounted in the middle of the panel.

A choice of two custom-built models is available for most of the cars. Usually the deluxe model is a dual unit job—the lower-priced job may be a single unit affair with one tube less.

Prices, around \$55

Prices range from \$48 and up—average being around \$55. These are for sets installed with antenna (if required). Independent radio dealer has an advantage in that he can offer the car owner the choice of several models over a large price range. In addition to the large price range—the radio dealer is in a position to offer more than one brand.

In view of the fact that most of the auto dealers prefer to order their radios separate and have them installed locally, it will pay servicemen to contact the auto dealers in their locality so that they can cash in on the installations. At the same time they are making contacts with future service business.

RADIO FACILITIES OF THE 1937 AUTOS

Make of car	Make of radio	Price Installed	Type Antenna	Speaker mounting	Installed by
Auburn	Crosley	\$49.50	Roof	In set	Fact'y
Buick	Buick	61.25	Insul. RB	Dash	F-D
	Buick	68.85	Insul. RB	Dash	F-D
Cadillac	Cadillac	79.50	2 RB	Header	D'l'r
	Cadillac	59.50	2 RB	Header	D'l'r
Chevrolet	Chevrolet	59.75	2 RB	Cowl	D'l'r
	Chevrolet	49.75	2 RB	Cowl	D'l'r
Chrysler	Philco	59.50	2 RB	Cowl	F-D
				Rear seat (extra)	
Cord	Crosley	Std. eq.	Under car	Header	Fact'y
DeSoto	Philco	53.95	2 RB	Cowl	F-D
				Rear seat (extra)	
Dodge	Philco	53.95	2 RB	Cowl	F-D
Ford	Philco	48.00	Pole	Header	F-D
Graham	Philco	56.45	Roof*	Header	F-D
Hudson	RCA-Victor	59.95	2 RB	Cowl	F-D
LaFayette	Philco	57.95	2 RB	Header	F-D
	Philco	43.95	2 RB	In set	F-D
LaSalle	Cadillac	79.50	2 RB	Header	D'l'r
	Cadillac	59.50	2 RB	Header	D'l'r
Lincoln	Philco	70.00	Roof*	Rear seat	F-D
Lincoln-Zephyr	Philco	50.00	Roof*	In set	F-D
Nash	Philco	57.95	2 RB	Header	F-D
	Philco	43.95	2 RB	In set	F-D
Packard 6, 120	Philco	59.50	Roof*	Cowl	F-D
Packard 8, 12	Philco	Std. eq.†	Roof*	Cowl	Fact'y
Oldsmobile	Oldsmobile	66.50	Insul. RB	IP-cowl	F-D
	Oldsmobile	53.00	Insul. RB	Cowl	F-D
Pierce Arrow	Philco	67.50	Roof*	Header	F-D
Plymouth	Philco	54.00	2 RB	In set	F-D
Pontiac	Gen. Motors	65.95	RB	Cowl	F-D
	Gen. Motors	53.95	RB	In set	F-D
Studebaker	Philco	58.50	2 RB	Header	F-D
	Philco	45.00	2 RB	In set	F-D
Terraplane	RCA-Victor	59.95	2 RB	Cowl	F-D

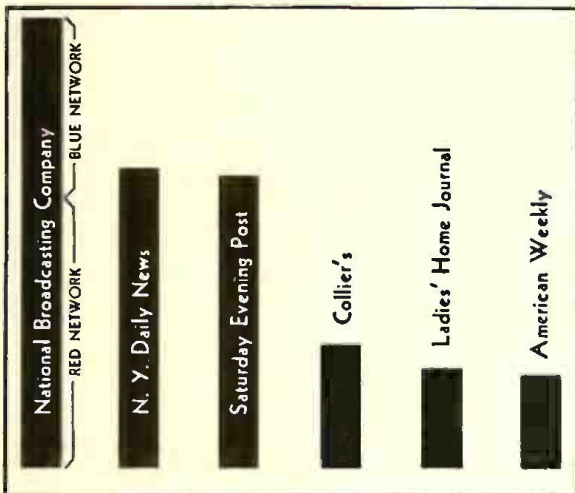
*Built-in antenna—all closed models
†Standard equipment in most models

RB—running board antenna
Insul. RB—insulated running board

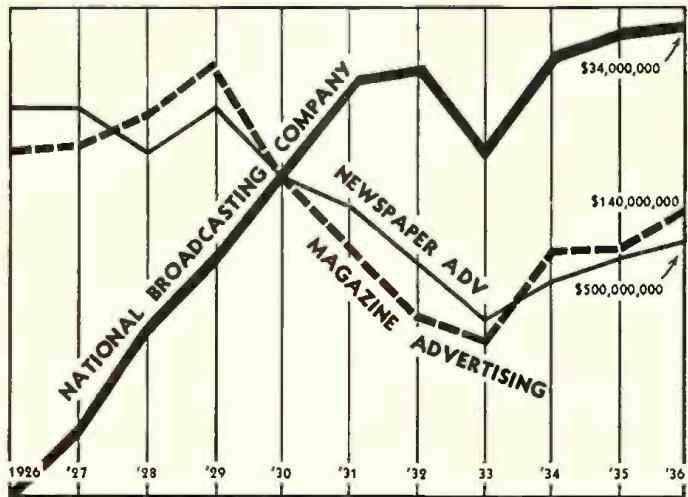


David Sarnoff, General Harbord, and President Lohr, with their guests, the leading broadcasters of all Europe.

NBC'S TEN-YEAR ACHIEVEMENTS



NBC's premier place in advertising dollar volume.

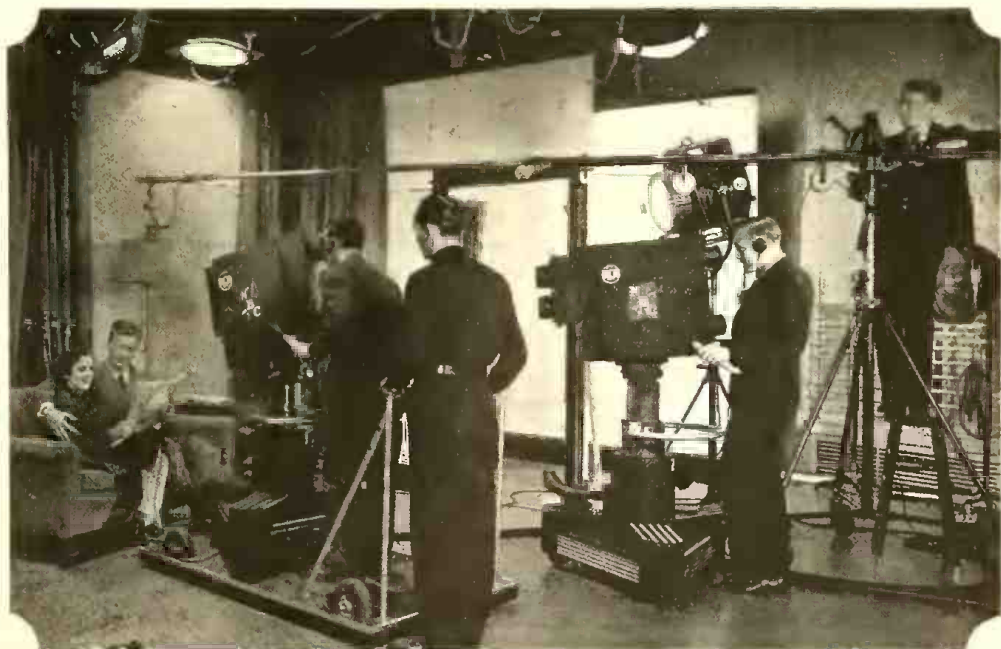


NBC's ten-year trend, in contrast to older mediums.

★ When by sheer popular appeal, a brand-new medium can in ten years project itself into first place as an advertising service, that is evidence of the public's keen interest in broadcasting.

It is evidence, too, that what radio dealers have to sell — the program service of great broadcast networks like NBC — ranks tops in popular opinion.

NBC's tenth anniversary celebration is therefore shared in by all radio dealers, servicemen, distributors and manufacturers, as an occasion celebrating, as well, their own participation in this great adventure of supplying the public's demand for radio.



NBC's new television studio, initiating another ten years of public miracles.

CAN THE "GAS-MAN" SELL HOME SETS?

Shall radio trade use filling stations to open new contacts for demonstrations?

NO!

1. Gas man's regular work involves so much grease and dirt that his radio sales presentations may be second-rate.
2. His lack of radio background will eventually get him in trouble with the listening public.
3. His stations are not adapted to the effective display of radio lines.
4. He has no special training as to how to "sell up" or to go after the replacement market.
5. He and thousands of his colleagues will be able to buy radios at a discount, rather than from radio dealers.
6. His appearance in the radio biz will encourage other non-radio outlets.



YES!

1. Gas attendant has repeated face-to-face contacts with a great group of radio prospects.
2. His company has already checked the credit of thousands who need a new receiver.
3. He can at least make the public conscious of advantages of new receivers.
4. He can get special radio training from instructors furnished by radio trade or his owners.
5. He has already had considerable experience with selling and servicing auto radios.
6. His appeal will not be made on a price basis; many of his sales may be made on time.

★ **ELECTRICAL** Appliance Dealer's Association of Brooklyn, N. Y., recently raised 15 different kinds of hell because local jobbers sold home receivers to a chain of gas stations.

Dealers muttered that it was an unfair, unprincipled, lousy trick—to bring a whole new group of non-radio outlets into the radio retail picture. They said flatly that radio selling and servicing should be done by those who were qualified by training and experience. They declared loudly that the public should be supplied by professional suppliers who had spent years learning the tricks. They stoutly believed that they should not be cheated and thrown by a batch of rank newcomers who could swipe their volume without adding overhead.

Nationally speaking, it was the old question of what are legitimate radio outlets. Dealers elsewhere in the country have been disturbed by the fact that jewelry stores, tire and ac-

cessory shops, drug stores, garages, etc., have stocked home receivers.

What happened in Brooklyn may happen elsewhere: the Association appointed a committee to meet with the distributors who were responsible for dragging the filling stations into the business. These jobbers faced a dilemma; they couldn't ditch the volume represented by the organization's membership for the sake of a single chain of gas stations. Yet it seems likely that other brands will be offered the gas-station crowd.

Cooperative moves

Thus the question asks for a national solution, and it appears that the trade has several items to huddle over if the business expects to emerge from the uproar a brighter, healthier thing.

From what radio selling the gas station man had a chance to do, it

appeared that his brand of contact with the public could be a great asset to the radio business, merely in terms of sales totals and regardless of the outlet. He is in position to approach and contact the public, if nothing else.

It may be the cue for the radio dealer to use the filling stations to hike his own business. He could arrange with the stations on some cooperative basis to have the attendants mention or show his merchandise to the motoring public. It already has been done successfully in the case of barber shops, grocery stores, and other non-electrical outlets.

It is probably true that radio dealers do not personally introduce their merchandise to the public as much and as consistently as they should. There are great groups of such dealers who sit in their stores and almost rot, waiting for customers. When prospects do arrive, they are given a lot of hi-powered blah about price.

Postage
Will be Paid
by
Addressee

No
Postage Stamp
Necessary
If Mailed in the
United States

BUSINESS REPLY CARD

First Class Permit No. 22273 (Sec. 510 P. L. & R.) New York, N. Y.

RADIO TODAY

480 LEXINGTON AVENUE

NEW YORK, N. Y.



Send me RADIO TODAY for the period indicated below:

1 Year (12 issues) \$1.00

Send bill

3 Years (36 issues) \$2.00

Amount enclosed

Name **Title or Occupation**

Company

City **State**

Street

Our Main Line of Business is:

If RADIO TODAY is to be mailed to your home, fill in address here

.....

If dealers need an extra crop of outside salesmen, whose contacts already have a direct and personal quality, filling station men may fit in perfectly.

Together they fall

There is certainly some question about how effectively organized groups of dealers can keep the filling stations out of the radio business. In large groups, they can tell their jobbers what to do, but what about radio manufacturers whose set-up is such that they have no responsibility at all to such groups.

Point is that if the filling stations really want "into radio" they can get in. No amount of organized squawking to the jobbers of leading brands will make any difference. The outfit is dynamite, any way you look at it.

Hour is late

If radio dealers get together on a general outlet clean-up, which perhaps they should to avoid the fatal direction of things, they will be faced with the fact that it's rather late.

Some distributors have refused to sell to off-color outlets just to invite the OK of legitimate radio dealers. Then other manufacturers stepped in and sold the outlets. Dealers did positively nothing about it, and the thoughtful jobbers got no credit, no loyalty whatever.

Organized groups of radio dealers will discover, too, that a certain per cent of their own members could not be classed as "legitimate." Their ruthless price-cutting tactics mark them as more foul and unfortunate, declare the gas men, than any filling station could ever be.

ON A BANNER ABOVE US

★ RADIO TODAY has not needed a slogan, but it happens that we came across one which would do very well. We suppose that some two dozen concerns will recognize traces of their motto-art, but that's OK with us.

(If there's room), here's our personal ballyhoo:

"Only RADIO TODAY Has It; The Magazine of Tomorrow—Today; Always a Year Ahead; America's Most Copied Publication; Sound Editorially; Put Rhythm In Your Reading; Win In A Walk With RADIO TODAY; Since Broadcasting Began; All on the Air in a Column Square; Re-Creates The Industry In Your Store; Watch RT in 1937; The Editorial Instrument of Quality; Step With RADIO TODAY!; Radio Headquarters; There's Nothing Finer Than a RADIO TODAY."

WHAT AILS THE TUBE BIZ?

— dealers name the snags in today's market
— type-weary servicemen suggest changes

★ ALL-AMERICAN squawk about the condition of the tube business is not without its real ideas for prompt improvement.

A survey just made by RADIO TODAY, cooperating with E. T. Howard Company, gave dealers and servicemen in all corners of the country a chance to speak up. Major headache, they said, had to do with price-cutting and the manufacture of too many types. And they had some advice for the trade— suggestions that take form only after you've faced the public for a number of years across the tube counter.

Collected advice started off with an old refrain:

Sell the public on the idea that only by having good tubes in their radios can they take full advantage of all the fine programs that are being given.

Price tangle

Maintain price. Allow no department store cut-price sales.

Send circulars, stickers and mailing cards.

Build advertising and dwell on the fact that tubes are the heart of a radio set.

Sell good tubes as well as give good helpful service.

Run a small advertisement occasionally in local newspapers with dealer tie-in.

Quit price cutting and raise prices in general.

Control prices and render service— public now able to buy the tubes at price I pay.

Develop a tube that holds initial efficiency longer, and then goes quickly to a cut-off point.

Accent window trimming, cards, etc.

Offer more advertising material and sales helps.

Sell only to legitimate accounts— any one can buy at dealers' discounts.

Demand for price stabilization is repeatedly re-stated among the recommendations from the field. This and other ways in which the leaders may help continue in the dealers' own words:

By maintaining compulsory list prices.

Building the tube whereby we have the least come back— eliminating noises in tubes, and liberal replacements.

Assist in purchasing tube testing equipment.

Use best tubes with trade name and break others instead of creating market for cheap tubes through chain stores. Cut prices should be avoided.

Keep tube testers up to date or furnish new ones at low cost. Provide price cards.

Continual radio announcements and advertising.

By continuing to make a good tube and not sacrifice quality for price.

Manufacture the best tube possible— provide a chart showing the location and type of tube in all radio sets manufactured.

Give us some real post-card type ads, imprinted and ready to mail except for names and addresses, so we can keep plugging at our own customers with high-grade and good-looking ads.

Provide selling helps and competent tube testers that can be used and priced reasonable.

Guarantee tubes longer. We are charged with the time they are in sets before we get them.

By consignment of at least the more expensive and slow selling numbers, so that we always have the tube the customer asks for.

TELEVISION ANNOUNCER!



When RCA put on its first television shows, this month, it initiated this pleasant new type of announcer.

WHY WE ADDED ELECTRICAL LINES

Radio reports on its romance with other electrical merchandise



Electric clocks represent attractive style merchandise for the radio dealer.

★ **WHYEVER** did such a mob of radio dealers decide to sell other home appliances along with radio?

Answers don't have any special wallop unless dated November, 1936, and from the dealers themselves. **RADIO TODAY** has those answers as a result of a national inquiry. They're a series of obligingly honest replies postmarked all the way from the Pacific to Pennsylvania, from Ohio to Texas.

Almost all dealers reporting agreed that extra appliances have a "beautiful" effect on radio sales. Store traffic is improved, more OK radio prospects turned up.

Dealer's words indicate, all together, that the public no less than the shop-keeper, likes the effect of radio and other electrical items being

sold together. "Public demand" was a favorite answer as to why an assortment of appliances was sold.

One leads to other

Dealers who are active in outside selling report that radio work in the home naturally leads to an interest in other electrical aspects of the house. Other appliances are "just a part of the picture." Seems that when a radio man hooks a receiver to the power line, he is easily identified with every other gadget that may be hooked to it.

Part of this is due to the fact that the buying public has long since known that radio manufacturers also make other appliances. They appear together in newspapers, magazines and on the air. Their servicing problems are linked because the public thinks of "electricians" in both cases.

Utility companies have obviously been a big factor in matching merchandise. Interested in anything that builds "load," these interests have nationally plugged all appliances together. Dealers as well as prospects hear about all other home appliances in the same breath with radio.

Extra volume

Many radio men said that they wanted "extra profit with almost no additional overhead." The extra items can be added by simple re-arrangement of space and personnel.

One representative remark was that



"Packaged communication." Plug this Carrier-Call into the nearest outlet, and talk to any other nearby outlet, over the electric-light wires!

other appliances were needed "to fill in dead time." Also, the word "balance" was used very often. Although radio has certainly emerged as year-round merchandise, the fact is that it moves slower at certain known times of the year. Dealers pick up these dull spots as excellent periods in which to promote other appliances.

For this purpose, refrigerators seemed particularly suitable. Asked about the peak month in refrigerator sales, most dealers voted for June. Other ranking months were May, April and July.

Display advantages

Dealers were all for having "balance" also in the matter of display. Assorted appliances were hailed as

VAST ELECTRIC APPLIANCE OPPORTUNITY AMONG PRESENT RADIO USERS, BY DEVICES

	TO ONE			TO ONE	
	TO ONE			TO ONE	

the solution, both in building attractive interiors and in setting up eye-catching windows.

Labor-saving

Implication was that since the home was the ultimate sales target store displays are more effective and resultful if they feature labor-saving devices as well as radio's magnificent entertainment and educational service.

Of course it has been found too that the design of rooms is much easier to deal with if the merchant stocks other electrical items that belong in it. Particularly in large and elaborate stores, where radio is displayed in its natural room-setting, the dealer finds it important indeed to have other electrical items on hand.

Contacts hiked

Radio salesmen remember that prospects for one appliance are also prospects for another. They say that it is rather a waste of time to dig up their names for only one type of merchandise. Contacts made as a result of selling and servicing a neat assortment of appliances are listed as a great asset to radio selling.

A dealer in Seattle, Washington, reported that extra appliances had hiked his store traffic 30 per cent. This dealer was enthusiastic about "more contacts" after other appliances had been added. Seems that dealers not only make extra acquaintances, but actually make the sort of contacts that stimulate radio sales.

Radio stores also pointed out that they felt the need for something to sell persons who are already happy with their present receivers. Otherwise, when a customer buys a fine new console, he is checked off sales lists for some time.



Attractive lamps form the loudspeaker elements of this novel Radio Lamp equipment. The center control box enables sound to be projected through any lamp.

BEST-SELLING RECORDS

BLUEBIRD

One, Two, Button Your Shoe. So Do I. Both with Shep Fields and his Rippling Rhythm—B6604.

A Fine Romance. I Can't Pretend. Both with Winy Mannone and his orchestra—B6606.

A Star Fell Out of Heaven. When Did You Leave Heaven. Both with Charlie Barnet and his orchestra—B6488.

BRUNSWICK

I Wasn't Lying When I Said I Love You. The Harlem Waltz—Waltz. Both with VC by Larry Stewart, both with Leo Reisman and his orchestra—7757.

For Sentimental Reasons—VC by Virginia Simms. Did You Mean It—VC by Bill Stoker. Both with Kay Kyser and his orchestra—7759.

Wang Wang Blues—VC by Russ Morgan and the Mullen Sisters. The Isle of Capri. Both with Russ Morgan and his orchestra—7758.

COLUMBIA

Organ Grinder's Swing. Rhythm Lullaby. Both with VC by Midge Williams, both with Frank Froeba and his Swing Band—3151D.

Whatcha Gonna Do When There Ain't No Swing? It All Begins and Ends With You. Both with VC by Midge Williams, both with Frank Froeba and his Swing Band—3152D.

Until the Real Thing Comes Along. VC by Chuck Richardson. Merry-Go-Round. Both with Mills Blue Rhythm Band, directed by Lucky Millinder—3147D.

DECCA

(By Titles)

The Way You Look Tonight—Dixie Lee Crosby and Bing Crosby—907. Henry King and his orchestra—890.

When Did You Leave Heaven—Frances Langford—902. Tony Martin—884. Ben Bernie and his orchestra—878. Lee Sims—879.

A Fine Romance—Dixie Lee Crosby and Bing Crosby—907. Henry King and his orchestra—890.

VICTOR

It's De-Lovely. You've Got Something. Both with Eddy Duchin and his orchestra—25432.

La-De-De La-De-Da. Lounging at the Waldorf. Both with "Fats" Waller and his Rhythm—25430.

You Turned the Tables on Me. Here's Love in Your Eyes. Both with Benny Goodman and his orchestra—25391.

COMPILATION BY RCA-RADIOTRON SHOWS UNSATURATED MARKET IN RADIO HOMES

2 TO ONE

3 TO ONE

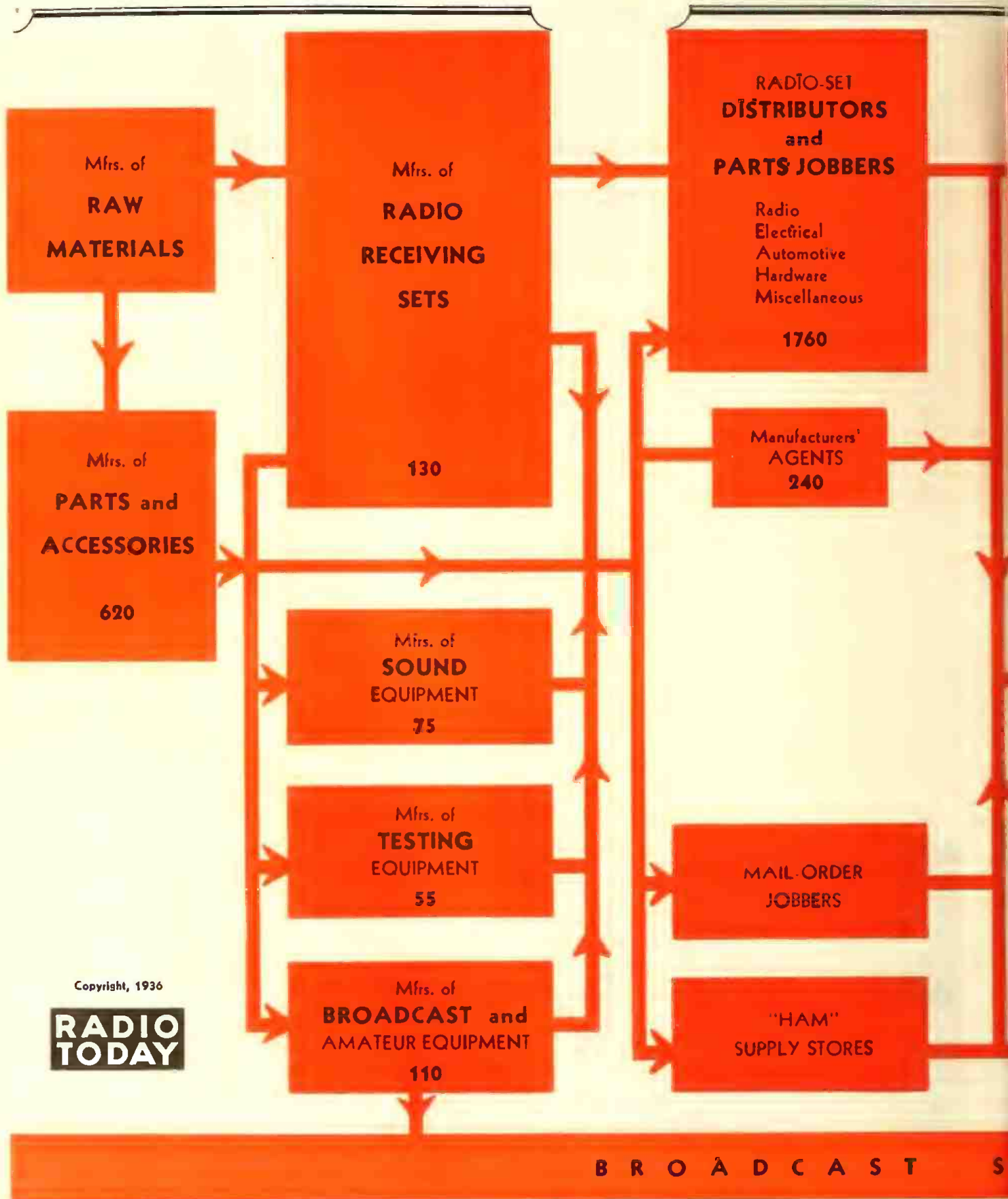
2 TO ONE

4 TO ONE

RADIO MARKETS VISUAL

MANUFACTURING

DISTRIBUTION



A chart and flow-sheet of the entire radio industry with census and marketing facts.

ING

SERVICING

CONSUMER MARKET

RETAIL OUTLETS

selling
RADIO
50,300

Primary Radio
Musical Instr. & Piano
Furniture
Department Stores
Electrical
Automotive
Hardware
Sporting Goods
Jewelry, etc.

15,000 large dealers do
82% of Radio business

SERVICE DEPT'S of RETAILERS

88% of larger
dealers have own
service facilities

INDEPENDENT SERVICE ORGANIZATIONS

AUTO-RADIO INSTALLATION and SERVICE STATIONS

FREE-LANCE, AMATEUR and PART-TIME SERVICEMEN

SOUND INSTALLATION and SERVICE

BUYING PUBLIC

Statistics

Total homes in U.S.	31,000,000
Total homes with radios	24,500,000
Homes with electricity	22,000,000
Farms in U.S.	6,000,000
Total passenger autos	23,500,000
Total autos with radio	4,500,000
Total radios in U.S.	32,000,000

Radio Markets by States

If a manufacturer has equalized distribution throughout the nation, the following table shows the percentage of business he should do in each state:

Alabama	1.14	Nevada	.10
Arizona	.28	New Hampshire	.44
Arkansas	.82	New Jersey	3.86
California	6.15	New Mexico	.22
Colorado	.91	New York	13.18
Connecticut	1.64	North Carolina	1.50
Delaware	.21	North Dakota	.44
Dist. of Columbia	.55	Ohio	6.15
Florida	1.03	Oklahoma	1.47
Georgia	1.47	Oregon	.95
Idaho	.33	Pennsylvania	8.54
Illinois	7.37	Rhode Island	.66
Indiana	2.71	South Carolina	.77
Iowa	2.21	South Dakota	.47
Kansas	1.53	Tennessee	1.45
Kentucky	1.38	Texas	3.79
Louisiana	1.14	Utah	.37
Maine	.72	Vermont	.32
Maryland	1.41	Virginia	1.48
Massachusetts	4.16	Washington	1.53
Michigan	4.12	West Virginia	1.06
Minnesota	2.36	Wisconsin	2.54
Mississippi	.73	Wyoming	.20
Missouri	3.11		
Montana	.40		
Nebraska	1.17		
		TOTAL ...	100.00

COMMERCIAL USERS of SOUND and COMMUNICATING SYSTEMS

AMATEURS and EXPERIMENTERS 80,000



RADIO MARKETS VISUALIZED

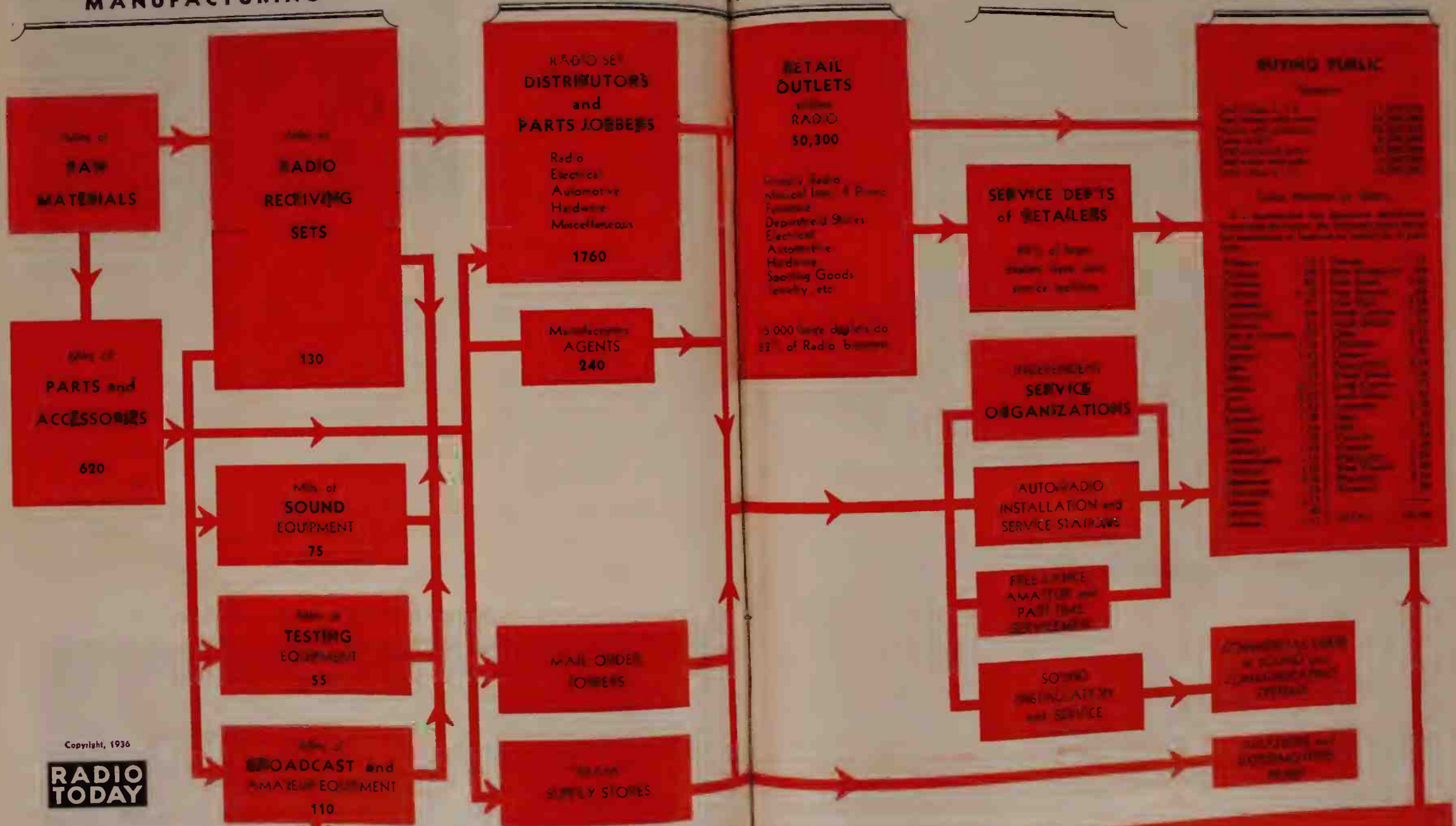
A chart and flow-sheet of the entire radio industry with census and marketing facts.

MANUFACTURING

DISTRIBUTING

SERVICING

CONSUMER MARKET



Copyright, 1936

RADIO TODAY

CUTTING OUT "INTERFERENCE"

- proper antenna installation is essential
- using filters at sources of trouble

★ The finest radio set may be a creator of annoyance and trouble, if it brings in interference and "radio noise" along with the program. Methods of eliminating such interference have been studied by the Joint Committee on Radio Coordination of the Edison Electric Institute, the Radio Manufacturers Association, and the National Electrical Manufacturers Association, which has now issued an instruction booklet for general use, the advance text of which we quote below.

Radio waves are sent out by sources other than broadcasting stations. Such waves are heard as crashing, scratching or buzzing sounds, commonly called static. These waves are caused by atmospheric conditions and by the operation of electrical equipment. The radio set cannot discriminate between static and programs, consequently the resulting sounds are sometimes intermingled with the programs.

At the present time little can be done to reduce the noise caused by atmospheric "static." However, it is possible to reduce the noises due to electrical equipment. This may be done, first, by seeing that the set is in good condition and is properly installed and operated, and second, by measures applied at the point where the noise originates.

Antenna important

The antenna is used for the purpose of collecting radio waves. The effectiveness of the usual types of antennae is increased as their height and length are increased.

The flat-top type of outdoor antenna gives good results, and is usually convenient to install on individual or row houses. It should be one wire 40 to 75 feet long. The lead-in, connected to it at the end near the house, should be run as directly as possible to the radio set. A long lead-in, running across the cellar, should be avoided. The lead-in should be placed as far as possible from electric light and telephone wiring.

The "ground" is as important as the antenna, and should be made with a clean tight connection to a basement water pipe. The "ground" should run directly from the radio set to the water pipe, but not close to electric or telephone wiring.

A pipe driven at least 6 feet into the earth may be used as a ground connection when water pipes are not available.

House wiring

If the lead-in wire passes near electric wires in the house, it may collect interference from them. To avoid this the lead-in may be shielded. A shield is a copper or aluminum covering over a piece of insulated wire. This covering should be connected to the ground terminal of the set which in turn should be grounded to the water pipe.

A number of special types of antennae are available for use under severe noise conditions and for short-wave reception. They usually consist of an antenna erected outdoors, and a special type of lead-in. Kits are for sale, which include all the parts of such antennae. Some are intended only for use on short-wave bands of the "all-wave sets," and others for both broadcast and short-wave reception. Connecting a ground to one of these special antennae in the wrong place will sometimes make noise worse. Consequently, the instructions should be followed very carefully.

Satisfactory reception in apartment houses is difficult to obtain. A special antenna is usually a necessity. Some apartments are equipped with antenna outlets connected to an antenna on the roof.



This "tone tester" developed by GE Radio, demonstrates how the bob-tail quality of past years sounds today.

Loose connections sometimes develop in house wiring and cause noise in the radio. These loose connections may be either in the radio-owner's home or neighboring ones. Occasionally when a pipe or a flexible conduit containing electric wiring rattles against other metal objects such as water, gas or heating pipes, clicking or rasping sounds occur. Noise from both of these sources can frequently be identified by the fact that it is noticeable when the house is shaken by movement of people or heavy highway traffic.

A lamp bulb improperly screwed into its socket or when about to burn out, will produce noise.

Electrical appliances, especially those with moving parts, such as cleaners, razors, mixers, etc., and those having heat control such as irons, heating pads, aquarium heaters, etc., sometimes cause noise. The first group make either buzzing or continuous scratching sounds. The heat control types make clicking or short buzzing sounds. Many of these cause noise even when working properly. Noise from these sources can be reduced by attaching radio noise filters to the devices or by being sure they are fitted with filters when purchased.

The cords and plugs which are out of order will also produce noise. Usually this can be traced to bent blades on the plug or worn wire where it enters the plug or appliance.

Electric-light switches and telephone dials may cause clicks in radios when operated.

Pole-line troubles

The outdoor equipment of electric companies is usually in good condition, but faults do occur which may disturb your radio. If noise comes from the electric lines, the power companies will usually cooperate to reduce it.

Noise from medical and industrial apparatus such as X-ray, welders, electric furnaces and diathermy equipment is a special problem requiring the services of an expert.

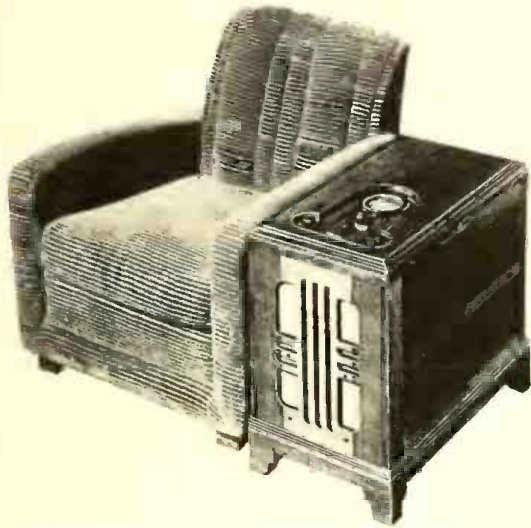
Automatic volume control takes care of the ordinary type of fading. But under certain conditions, some stations when heard after nightfall at distances of 50 to 100 miles, are subject to a rapid type of fading, which is accompanied by muffling or distortion. Practically nothing can be done to eliminate this (except under certain circumstances to link the antenna inductively with some extensive network such as a telephone line-wire, which extends the pick-up over a considerable area.—*Editor*).

EASY-CHAIR RADIO

Starting a new style, to bring the set away from the wall,—and outmoding receiver types now in use.



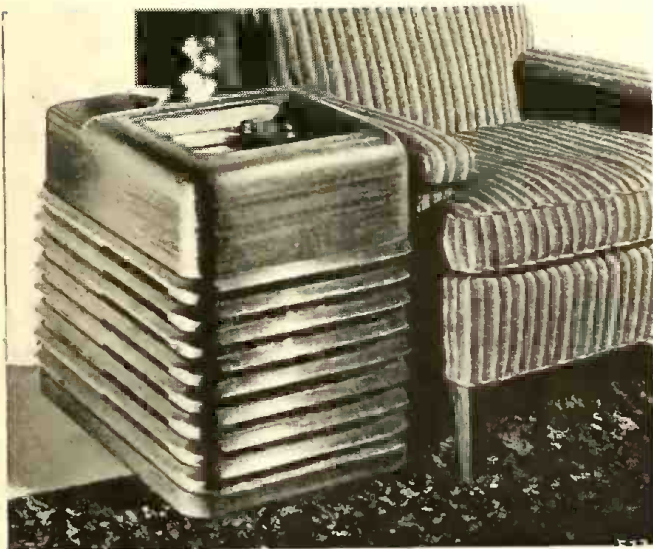
Lucky pillow has both Dorothy Mackail and Dictograph's new "silent radio."



Philco's pal for easy chair and slippers.



Emerson puts the dial right under your hand.



Zenith's streamlined idea of listening ease.



Remote-control box for Stromberg-Carlson.

LIST OF WONDER INSTRUMENTS

Radio-phonograph combination and electric record players attract quality prospects and stimulate sale of discs

Model No.	List Price	Cab- inet	Radio Set		Power Output watts	Tone control	Power supply	Type operation	Record changer		Turntable speeds	Will device record	Type pick-up	Volume range expansion	
			No. of wave bands	No. of tubes					No. of records	Size					
Ansley Radio Corp., 240 West 23rd St., New York, N. Y.—Ansley-Dynaphone															
D1	\$ 69.50	Port.	..	6	4½	Yes	AC-DC	Manual	..	..	78	No	Crystal	No
D1A	69.50	Table	..	6	4½	Yes	AC-DC	Manual	..	..	78	No	Crystal	No
D1A-AC	64.50	Table	..	6	4½	Yes	AC	Manual	..	..	78	No	Crystal	No
D7	59.50	Port.	1	5	.9	No	AC-DC	Manual	..	..	78	No	Magnetic	No
D9	79.50	Port.	2	7	.9	Yes	AC-DC	Manual	..	..	78	No	Crystal	No
D10	84.50	Table	2	7	.9	Yes	AC-DC	Manual	..	..	78	No	Crystal	No
D10-AC	79.50	Table	2	7	.9	Yes	AC	Manual	..	..	78	No	Crystal	No
D12	99.50	Port.	..	6	5½	Yes	AC-DC	Manual	..	..	78-33½	No	Crystal	No
D16	99.50	Floor	..	6	4½	Yes	AC-DC	Manual	..	..	78	No	Crystal	Optional
D17	125.00	Floor	2	7	.9	Yes	AC-DC	Manual	..	..	78	No	Crystal	No
D18	175.00	Floor	2	7	.9	Yes	AC-DC	Automatic	{ 8 7 }	{ 10 12 }	78	No	Crystal	No	
DA	37.50	Table	Turntable and pick-up only					AC-DC	Manual	78	No	Crystal
DA-AC	32.50	Table	Turntable and pick-up only					AC	Manual	78	No	Crystal
Caphart Corp., E. Pontiac St., Fort Wayne, Ind.—Caphart															
304E	\$795.00	Floor	4	19	15	Yes	AC	Automatic	20	10 & 12	78	No	Inertia high impedance	No	
305E	775.00	Floor	4	19	15	Yes	AC	Automatic	20	10 & 12	78	No		No	
314E	705.00	Floor	..	9	15	Yes	AC	Automatic	20	10 & 12	78	No		No	
315E	685.00	Floor	..	9	15	Yes	AC	Automatic	20	10 & 12	78	No		No	
404E	1125.00	Floor	4	24	30	Yes	AC	Automatic	20	10 & 12	78	No		No	
404ER	1475.00	Floor	4	24	30	Yes	AC	Automatic	20	10 & 12	78	No		No	
405E	1075.00	Floor	4	24	30	Yes	AC	Automatic	20	10 & 12	78	No		No	
405ER	1425.00	Floor	4	24	30	Yes	AC	Automatic	20	10 & 12	78	No		No	
406E	995.00	Floor	4	24	30	Yes	AC	Automatic	20	10 & 12	78	No		No	
406ER	1345.00	Floor	4	24	30	Yes	AC	Automatic	20	10 & 12	78	No		No	
407E	995.00	Floor	4	24	30	Yes	AC	Automatic	20	10 & 12	78	No		No	
407ER	1345.00	Floor	4	24	30	Yes	AC	Automatic	20	10 & 12	78	No		No	
414E	1025.00	Floor	..	14	30	Yes	AC	Automatic	20	10 & 12	78	No		No	
415E	975.00	Floor	..	14	30	Yes	AC	Automatic	20	10 & 12	78	No		No	
416E	895.00	Floor	..	14	30	Yes	AC	Automatic	20	10 & 12	78	No		No	
417E	895.00	Floor	..	14	30	Yes	AC	Automatic	20	10 & 12	78	No	No		
500E	2500.00	Floor	4	29	45	Yes	AC	Automatic	20	10 & 12	78	No	No		
500ER	2850.00	Floor	4	29	45	Yes	AC	Automatic	20	10 & 12	78	No	No		
"R" in model No. indicates remote control															
Electro Acoustic Products Co., 2131 Bueter Rd., Fort Wayne, Ind.—Magnavox															
P3	\$ 49.50	Port.	..	NS	3.5	No	AC	Manual	..	..	78	No	Crystal	No
PU3	60.50	Port.	..	NS	1.2	No	AC-DC	Manual	..	..	78	No	Crystal	No
RT3	26.50	Table	..	..	..	..	..	Manual	..	..	78	No	Crystal	No
RTU2	37.50	Port.	..	..	..	..	AC-DC	Manual	..	..	78	No	Crystal	No
TP501	64.50	Table	..	NS	5	Yes	AC	Manual	..	..	78	No	Crystal	No
TPU501	75.00	Table	..	NS	3	Yes	AC-DC	Manual	..	..	78	No	Crystal	No
2501	NS	Floor	..	NS	25	Yes	AC	Manual	..	..	NS	No	Crystal	No
2502	NS	Floor	..	NS	25	Yes	AC	Automatic	8	10 & 12	NS	No	Crystal	No	
Emerson Radio & Phonograph Corp., 111 Eighth Ave., New York, N. Y.—Emerson															
C145	\$149.95	Floor	3	8	4½	Yes	AC	Manual	..	..	78	No	High Impedance magnetic	No
G127	79.95	Port.	2	6	1	No	AC-DC	Manual	..	..	78	No		No
L143	59.95	Table	2	5	3	Yes	AC	Manual	..	..	78	No		No
L144	69.95	Floor	2	5	3	Yes	AC	Manual	..	..	78	No		No
General Electric Co., 1285 Boston Ave., Bridgeport, Conn.—General Electric															
E79	\$ 99.50	Floor	3	7	5	Yes	AC	Manual	..	..	78	No	Magnetic	No
E129	295.00	Floor	4	12	15	Yes	AC	Automatic	{ 7 8 }	{ 12 10 }	78	No	Crystal	No	
Harris Mfg. Co., 2422 W. Seventh St., Los Angeles, Calif.—Harris Electrotone															
100	\$ 79.50	Port.	..	4	6	Yes	AC	Manual	..	..	78	No	Crystal	No
200	99.50	Port.	..	4	6	Yes	AC	Automatic	8	10	78-33½	No	Crystal	No	
300	94.50	Port.	..	5	6	Yes	AC-DC	Manual	..	..	78	No	Crystal	No
400	125.00	Port.	..	5	6	Yes	AC-DC	Automatic	8	10 & 12	78-33½	No	Crystal	No	
500	99.50	Port.	1	7	6	Yes	AC	Manual	..	..	78	No	Crystal	No
501W	114.95	Table	2	7	6	Yes	AC	Manual	..	..	78	No	Crystal	No
501 AC-DC	139.50	Table	2	7	6	Yes	AC-DC	Manual	..	..	78	No	Crystal	No
600	125.00	Port.	1	7	6	Yes	AC	Automatic	8	10	78-33½	No	Crystal	No	
700	135.00	Port.	1	7	6	Yes	AC	Automatic	8	10 & 12	78-33½	No	Crystal	No	
701W	174.50	Table	2	7	6	Yes	AC	Automatic	8	10 & 12	78-33½	No	Crystal	No	
701 AC-DC	199.50	Table	2	7	6	Yes	AC-DC	Automatic	8	10 & 12	78-33½	No	Crystal	No	
800	150.00	Port.	1	7	6	Yes	AC-DC	Automatic	8	10 & 12	78-33½	No	Crystal	No	
900	149.50	Port.	2	7	6	Yes	AC	Automatic	8	10 & 12	78-33½	No	Crystal	No	
1000	174.50	Port.	2	7	6	Yes	AC-DC	Automatic	8	10 & 12	78-33½	No	Crystal	No	
1201W	198.50	Floor	2	7	6	Yes	AC	Automatic	8	10 & 12	78-33½	No	Crystal	No	
1201 AC-DC		Floor	2	7	6	Yes	AC-DC	Automatic	8	10 & 12	78-33½	No	Crystal	No	
Hetro Electrical Industries, Inc., 4611 Ravenswood Ave., Chicago, Ill.—Hetro															
F39	\$189.50	Floor	5	12	20	Yes	AC	Manual	..	..	78	No	Magnetic	No
F41	225.00	Floor	5	12	20	Yes	AC	Automatic	7	12 & 10	78-33½	No	Magnetic	No	
F84	235.00	Floor	5	12	20	Yes	AC	Automatic	7	12 & 10	78-33½	No	Magnetic	No	
F3915	192.50	Floor	5	12	20	Yes	AC	Manual	..	..	78	No	Magnetic	No
Lehman Radio Salon, Inc., 1013 Madison Ave., New York, N. Y.—Port-O-Matic															
10	\$139.50	Port.	2	7	1.2	Yes	AC-DC	Automatic	{ 7 8 }	{ 12 10 }	78-33½	No	Crystal	No	
10A	125.00	Port.	2	7	1.2	Yes	AC-DC	Automatic	{ 8 7 }	{ 10 12 }	78-33½	No	Crystal	No	
10S	99.50	Port.	2	7	1.2	Yes	AC-DC	Manual	..	..	78	No	Crystal	No
12	149.50	Port.	2	7	1.2	Yes	AC-DC	Automatic	{ 7 8 }	{ 12 10 }	78-33½	No	Crystal	No	
12B	135.00	Port.	2	7	1.2	Yes	AC-DC	Automatic	{ 7 8 }	{ 12 10 }	78-33½	No	Crystal	No	
12P	125.00	Port.	..	6	5	Yes	AC-DC	Automatic	{ 8 7 }	{ 10 12 }	78-33½	No	Crystal	No	
Marconiphone Co., 679 Madison Ave., New York, N. Y.—Marconiphone															
Console R	\$199.50	Floor	2	11	6	Yes	AC-DC	Automatic	{ 7 8 }	{ 12 10 }	78-33½	No	Crystal	No	
AA	139.50	Table	2	6	6	Yes	AC-DC	Automatic	{ 7 8 }	{ 12 10 }	78-33½	No	Crystal	No	
D	139.50	Port.	2	8	6	Yes	AC-DC	Automatic	{ 7 8 }	{ 12 10 }	78-33½	No	Crystal	No	
DE	149.50	Port.	2	8	6	Yes	AC-DC	Automatic	{ 7 8 }	{ 12 10 }	78-33½	No	Crystal	No	
DR	157.50	Port.	2	8	6	Yes	AC-DC	Automatic	{ 7 8 }	{ 12 10 }	78-33½	No	Crystal	No	

NS—Information not supplied.

(Continued on page 54)

KADETTE
IS

"CARRYING THE BALL"

WITH THE NEW
Stabilized
AC SUPER MODEL 36



Here's a compact that gets and holds foreign reception on a par with high-priced consoles yet you can feature it for only \$32.50!

Moreover, it sounds like a million dollars—its tone quality is beyond criticism. Here's how Kadette has accomplished this sales producing result.

First by limiting operation to the narrower, but really worthwhile portion of the short wave band (16-36 meters) thereby stepping up foreign reception to a new high peak. Second, by providing a special short wave stabilizer that minimizes fading and holds the station! For domestic reception (540-1600 kilocycles) the performance is likewise unexcelled. Large, full dynamic speaker combined with continuous variable Tone Control and full Automatic Volume Control are some extra-quality features.

Beautiful new lay-down style cabinet in striking modern treatment of straight and heart grain walnut veneers inlaid with bands of light aspen and grille in figured butt walnut, base and edge finished in ebony. Large airplane dial, edge-lighted and crystal protected. Size 9 $\frac{3}{4}$ " high, 17 $\frac{1}{2}$ " wide, 7 $\frac{3}{4}$ " deep.

Get behind this fast-moving Kadette Stabilized AC Super and see the sales roll up.

INTERNATIONAL RADIO CORPORATION
519 Williams Street
ANN ARBOR MICHIGAN

\$32⁵⁰

COMPLETE WITH TUBES
AND ANTENNA



Creators of
Quality Compacts

KADETTE

"SOUND" ON TIME

- credit plans to spur P. A. sales
- recipe for profitable policies

★ In one-syllable words, here is what you will run into if you want to sell "sound" equipment or public address on time. Terms are "simple and favorable."

Contracts for apparatus listing at \$100 or more are, in general, paper in which financing companies are interested, subject to the usual checks on the credit standing of your customers. As a rule you can offer only a year's time, and must require a down payment of 25 per cent. Exactly what terms are available depends upon what merchandise you handle, whether or not you are involved in "industrial" or big-scale P. A. installations, and whether your manufacturer has a hook-up with a financing company.

Usual thing is that your terms will follow the general outline of the plans currently offered on radio and major appliances. At least the same financing companies are involved and methods for credit-checking and for making collections follow the same pattern.



Ingenious, important style of P.A. installation in cemeteries, shown here with its local RCA engineer, A. J. Reid.

RCA's commercial sound section reports that what terms are available on its sound equipment are up to its authorized distributors. An illustration of what RCA jobbers do about it is the case of the big New York wholesaler, Bruno-New York, Inc., which clears its p.a. paper through the Commercial Investment Trust Corp. Terms are offered in this case on amounts above \$100 for a maximum time of one year.

Thus it happens that in the case of sound equipment, there are times when you will be able to get more specific help on this matter from your jobber than from manufacturing headquarters.

Here's a plan

Operadio has a time payment plan which is helpful and easy to get at, and aids in making sales otherwise impossible. It applies only to the ultimate consumer, requires a down payment of 25 per cent, minimum monthly payments of \$10, a minimum carrying charge to the purchaser of \$7.50.

Under this plan, when the dealer has had the purchaser's credit checked locally, he endorses the contract to his jobber, who in turn endorses it to Operadio. Company delivers it to the Bankers Commercial Corp. and the merchandise is ordered when an installation and delivery receipt is received. Dealer keeps the down payment and is sent a check for 100 per cent of the proceeds, less his cost for the merchandise, which is retained by Operadio.

Bankers Commercial Corp., as do other financing companies, receives payments direct from the purchaser. Dealer, jobber and manufacturer are out of it, once the paper has been sold to one of these firms.

Commercial Credit Co. is another big financing company active in the field, having paced its p.a. plans according to current practices in the industry. Such firms offer service through a network of branch offices completely covering the country—a set-up familiar to dealers who have already handled paper on radio and other appliances.

Other angles

Time payment situation in respect to P. A. is influenced by the fact that dealers make a good per cent of their sales to organizations, rather than to individuals. (Municipalities, political clubs, civic groups, churches, schools, etc.) They often require credit because they cannot foresee all P. A. needs when they make long-time appropriations for equipment, and they are good risks.

However, dealers must be on the look-out for changes in political control of municipalities when they make long contracts, because elections can sometimes determine whether the dealer will get more payments, or get his sound gadgets back.

Nevertheless there is a big trend in sound sales toward equipment for advertising purposes, and in such cases, the purchaser is often an individual. This is particularly true of portable sound units listing at \$100 or more.

Further, when a dealer gives a customer a year to pay, he must make definite servicing arrangements, because patrons sometimes stop payments if something goes wrong with the apparatus.

Big installations

Financing companies are buying paper on bigger p. a. sales (\$2,000 up) either from the manufacturer or direct from dealers. On such jobs these companies do their own credit checking and collecting, ask from 10 to 20 per cent down payment, and offer as high as two years' time.

Dealers cannot expect this help from financing companies, obviously, if they handle second-rate merchandise, or if they sell their equipment to parties who ordinarily would not be entitled to credit.

(Continued on page 56)

SAMPLE PLAN

Selling Price.....	\$376.
Down Payment (25%).....	\$94.
Balance.....	\$282.
Carrying Charge—(5.7%)... ..	\$16.80
Total—\$298.80, payable in 12 equal installments of \$24.90 each.	
Sales of \$300 or less take a minimum carrying charge of \$15, rather than 5.7% of the balance.	

IF YOU USED
TELETALK IN YOUR
OWN BUSINESS YOU
WOULD SELL EVERY BUSINESS
AND PROFESSIONAL MAN
IN YOUR
COMMUNITY!



WEBSTER ELECTRIC
Teletalk

● The sales possibilities of Teletalk are apparent after you have used it in your own business. Its advantages become so obvious, its operation so convincing that selling is a pleasure as well as a profitable undertaking. You'll agree that every business and every professional man in your community needs Teletalk.

Teletalk is an amazingly simple appliance, consisting of two or more (up to six) of the attractive units shown in the illustration. Installation is completed by merely placing the units anywhere desired, connecting them with a wire, then plugging into the light socket. Communication is carried on between the Teletalk stations by pressing the control lever

W

down to talk, then releasing to listen. No extra units, no separate microphone.

Operates on either AC or DC; is absolutely humless; has a variable volume control, and unusually faithful voice reproduction. It is priced far lower than the conventional type of communicating system—low enough to fit the pocketbook of the small business and the professional man.

Here's a golden sales opportunity for you! Order from your jobber today. If he isn't handling Teletalk, write to us direct for complete information. Be sure you address your communication *Webster Electric Company*, Racine, Wisconsin. Export Department, 100 Varick Street, New York City.

[Webster Electric Sound Systems are licensed by agreement with Electrical Research Products, Inc., under patents owned by Western Electric Company, Inc. and American Telephone and Telegraph Company]

**WEBSTER ELECTRIC
SOUND EQUIPMENT**

NEW MERCHANDISE TO SELL

Howard sets

★ Six-tube AC-DC table superhet—single band coverage from 550-1,710 kc. Metal ballast tube. 3½-inch illuminated full-vision dial. AVC and two-gang condenser. Oriental walnut cabinet with rounded corners. Model 56.

Eleven-tube console—three-band reception—3-gang tuning condenser. Six-inch 3-color dial—tone control. Push-pull 6F6 output stage feeds 12-inch dynamic speaker. 6G5 tuning eye. Walnut veneer cabinet. Model 118. Howard Radio Corp., 1735 Belmont Ave., Chicago, Ill.—RADIO TODAY

Stromberg-Carlson AC-DC sets



★ Nine-tube 3-band table receiver. Push-pull 48 output stage with 8-inch permodynamic speaker. Edge-lighted dial and tri-focal tuning. Has tone control and AVC. Model 127H illustrated. Console with same chassis 127M—10-inch speaker.

Other AC-DC models are 126H table and 126L console. These have 7-tube chassis with push-pull 43 output stage. Stromberg-Carlson Telephone Mfg. Co., 100 Carlson Rd., Rochester, N. Y. RADIO TODAY

Sentinel farm sets



★ Model 60BC is a 5-tube 2-volt receiver with oval full-vision dial. Covers broadcast band—visual on-off indicator saves on batteries. AVC and permodynamic speaker. Complete with batteries—list \$34.95.

Model 63BC—4-tube 6-volt receiver superhet—similar to above model and housed in same cabinet. List \$34.95 less storage battery. Sentinel Radio Corp., 2222 Diversey Pky., Chicago, Ill.—RADIO TODAY

Teletalk intercommunicator



★ Two-way intercommunicating system for offices, hospitals, stock rooms, etc. AC-DC operation—requires line wire between stations—up to six units can be used together. Speaker and amplifier housed in modernistic cabinet. Licensed under patents of Western Electric and A. T. & T., Webster Electric Co., Racine, Wis.—RADIO TODAY—See also advt. p. 27.

RCA-Victor farm set



★ 5-tube table model for battery operation. Tunes 530-1,800 kc.—full-vision dial with 6-1 vernier tuning. 8-inch permodynamic speaker—power output of 2.2 watts. Low battery drain—2-volt filaments, "B" and "C" batts connected by plug-in cable. Model 5BT—list \$32.95. RCA Mfg. Co., Front and Cooper Sts., Camden, N. J.—RADIO TODAY—See also advt. p. 7.

Freed-Eisemann portable radio



★ 3-tube portable tuned radio-frequency set. Tunes 540-1,500 kc. Op-

erates from AC-DC 110-volt line—uses 25A7 output-rectifier tube. Available in tan, blue, red, brown, green fabricoid case—7½ x 5 x 6¼ inches. Weight only 4½ pounds. Model FE-33—list \$9.95. Freed Mfg. Co., 44 W. 18th St., New York City—RADIO TODAY—See also advt. p. 55.

Rotary clock-globe



★ Combination 24-hour clock and globe for telling times in all parts of the world. Airline distance easily found from globe, while clock carries time of all principal foreign cities with shortwave stations. Ideal as premium with better-type all-wave sets. Available through Philco jobbers. Philco Radio and Television Corp., Tioga & C Sts., Philadelphia, Pa.—RADIO TODAY

Stewart-Warner refrigerators



★ 1937 line of refrigerators numbers 11 models—sizes from 4.5 to 8.1 cubic feet. Features are sav-a-step, slid-a-tray, 16-point cold control, vapor sealed cabinet, slo-cycle compressor. Illustrated is the 567 and 567P—5.64 cu. ft., 12.6 sq. ft. shelf area. Automatic interior light—feather touch trigger door handle. Interior finish of porcelain. Exterior porcelain or DuPont DuLux. Stewart-Warner Corp., Chicago, Ill.—RADIO TODAY
(To page 31)

RAYTHEON TUBES ARE NOT "CHINESE COPIES!"



MAKERS OF THE FAMOUS 4-PILLAR TUBES

RAYTHEON HAS ONE OF THE LARGEST, MOST PROGRESSIVE TUBE LABORATORIES IN THE WORLD—OPERATED BY INTERNATIONALLY FAMOUS SCIENTISTS.

WITH THE DEVELOPMENT OF NEW TUBES AND CIRCUITS, ENGINEERS OF LEADING SET MANUFACTURERS LOOK TO RAYTHEON'S ENGINEERS TO SUPPLY THEM WITH TUBES OF UNIFORM EXCELLENCE TO MEET THEIR EXACTING REQUIREMENTS. THAT IS WHY USING RAYTHEONS AS REPLACEMENTS IS SO WISE — AND PROFITABLE. THEY ARE NOT "CHINESE COPIES"—THEY REPRESENT REAL CONTRIBUTION TO THE RADIO ART.

RAYTHEON'S ENGINEERING STAFF AND PRODUCTION FACILITIES GUARANTEE LESS REJECTS, LESS ADJUSTMENT TROUBLE, AND REAL UNIFORMITY. RAYTHEON'S CLOSE INSPECTION TOLERANCE LIMITS ARE YOUR INSURANCE OF GREATER TUBE PROFIT.

LICENSED SET MANUFACTURERS EQUIP THEIR SETS WITH RAYTHEON TUBES BECAUSE THE NAME RAYTHEON INSURES TRADE AND CONSUMER QUALITY APPEAL, AND HIGHER COMPARATIVE SET UNIT PRICES WITH LESS SALES RESISTANCE.

USED AND DEMANDED BY ALL LEADING RADIO PARTS DEALERS AND SERVICEMEN.



THE MOST COMPLETE LINE—ALL TYPES OF GLASS, OCTAL BASE, METAL AND AMATEUR TRANSMITTER TUBES

RAYTHEON PRODUCTION CORPORATION

420 Lexington Ave., New York, N. Y.

55 Chapel Street, Newton, Mass.

445 Lake Shore Drive, Chicago, Illinois

555 Howard Street, San Francisco, Calif.

415 Peachtree Street, N. E., Atlanta, Ga.

November, 1936

"EVEREADY LAYERBILT"

Presents two

RECORD - SMASHING VALUES



The Famous 486
"LAYERBILT"

at a new low price **\$1⁹⁸**



The New

"SUPER LAYERBILT"

The Longest Lasting **\$2²⁵**
"B" Battery ever offered at only

Genuine "Eveready Layerbilt" "B" batteries, famous for years for *extra long service*, now cost but a few cents more than ordinary, wasteful, short-lived, old-fashioned round-cell "B" batteries. You can now buy genuine, exclusive "Layerbilt" "B" Batteries for *less* than many makes of round-cell battery. And "Layerbilt" now gives you the new, crack-proof cushion top in addition to the advantages of patented "Layerbilt" construction.

"Layerbilt" gives you longer service because there's no waste space, and because "Layerbilt" construction permits the power-making materials to be more completely used up. For example, the active material in a round-cell battery is contained in 30 zinc cans. The zinc is eaten away to make electricity, and usually tiny holes appear in the zinc long before the battery should be used up. Air gets in, the chemicals dry out, the battery goes dead quickly, before it is used

In "Layerbilt" batteries, the zinc plates perforate also, but not admitted and no harm. That's why long after a round-cell battery has quit, the Layerbilt goes on pouring.

Take advantage of this extra long price.

*Here's the way we're telling your customers about these two new Evereadys—
Are you stocked?*

Standard "Eveready" Round Cell "B" Batteries

NATIONAL CARBON

General Offices: New York, N. Y.

Unit of Union Carbide

The words "Eveready" and "Layerbilt" are trade-marks of the National Carbon Co., Inc.

Prices slightly higher in Far Western States

NEW MERCHANDISE TO SELL

(From page 28)

Carrier-Call inter-communication system

★ Radio-frequency operated inter-communication system operating over the power lines—no extra wiring required—uses electric light lines. Just plug into line and use—signal does not disturb radio or carry beyond electric meter. AC and DC operation. American Carrier Call System, 36 W. 44th St., New York City—**RADIO TODAY**

Kadette dual-wave superhet



★ Six-tube dual-band table receiver—tuning range, 540-1,600 kc. and 16-36 meters. 6 $\frac{1}{2}$ -inch dynamic speaker. Full-vision illuminated dial. Short-wave station stabilizer to minimize station fading. Walnut cabinet 9 $\frac{1}{2}$ x 17 $\frac{1}{2}$ x 7 $\frac{1}{4}$ inches. Model 36—list \$32.50. International Radio Corp., Ann Arbor, Mich., **RADIO TODAY**—See also advt. p. 25.

Admiral console



★ 11-tube AC console. 3-band coverage from 540-18,000 kc. Uses 10 metal tubes and cathode ray tuning indicator. Large oval dial—tone control. Push pull output of 7 $\frac{1}{2}$ watts—12-inch dynamic speaker. Model AM786—list \$69.75. Continental Radio & Television Corp., 325 W. Huron St., Chicago, Ill.—**RADIO TODAY**—See also advt. p. 2.

Quick-Up aerial

★ Indoor type antenna tape. One side of tape coated with adhesive so that it sticks to wall, baseboard, etc. Easily installed. List 60 cents. Fowler Mfg. Co., 9 Rutger St., St. Louis, Mo.—**RADIO TODAY**

Ward topper aerial



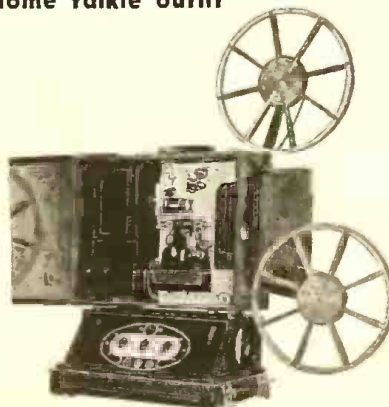
★ Antenna for autos designed to mount on top of the roof. Constructed of chromium-plated steel tubing with bakelite insulation. No need for drilling top of car—does away with running board aerial. Ward Products Co., Ward Bldg., Cleveland, Ohio—**RADIO TODAY**—See also advt. p. 60.

Emerson duo-tone receiver



★ 6-tube AC-DC table receiver finished front and back. Tune 540-1,700 kc. Micro-selector illuminated dial. Dynamic speaker. I.F. wavetrapp—power line noise filter. Acoustically designed cabinet. Model J106—list \$24.95. Emerson Radio & Phonograph Corp., 111 Eighth Ave., New York, N. Y.—**RADIO TODAY**

Home talkie outfit



★ Sixteen millimeter home projector with sound attachment. Projector has exclusive silent chain drive and sprocket intermittent. Amplifier has output of 10 watts—tone and volume controls. Amplifier can be used with mike or phonograph pick-up. Complete outfit housed in two cases—each 43

pounds. Herman A. DeVry, Inc., 1111 Center St., Chicago, Ill.—**RADIO TODAY**

Fada receivers

★ Six-tube dual-wave superhet with acoustical tone chamber which eliminates cabinet boom. Streamline console cabinet with tapering sides. Six tubes including cathode ray tuning indicator. Full-vision dial 535-1,750 and 2,200-6,900 kc. Tone control and AVC—i.f. wavetrapp. Model 265C—list \$59.95. Table model 265T—list \$44.95. Fada Radio & Electric Co., 30-20 Thomson Ave., Long Island City, N. Y.—**RADIO TODAY**

DeWald battery receiver



★ 5-tube superhet for battery use. Operates from any type filament supply—plug-in "C" and "B" batteries. Covers 540-1,750 kc. Illuminated full-vision dial—i.f. wavetrapp. Permodynamic speaker—AVC. Model 522—list (without batts.) \$31. Pierce-Airo, Inc., 510 Sixth Ave., New York, N. Y.—**RADIO TODAY**

Miller electric clocks



★ Line of electric synchronous clocks featuring modernistically designed cases. Operate from 110-volt AC power line. Herman Miller Clock Co., Zeeland, Mich.—**RADIO TODAY**

Electric heating pads

★ Heating pads with 3-heat switch and 2 non-radio-interfering thermostat. Size 12 x 15 inches—supplied with 10-foot cord. 115-125-volt AC operation—60 watts. Eiderdown covers in colors. List \$3.95 and \$4.95. General Electric Co., 1285 Boston Ave., Bridgeport, Conn.—**RADIO TODAY**

Philco car-top antenna

★ New aerial for use with auto receivers—eliminates tire static and reduces ignition noise. Consists of 80-inch stainless steel rod and 3 insulating supports which are bolted to car roof. Provides efficient pick-up for set. Philco Radio & Television Corp., Tioga and C Sts., Philadelphia, Pa.—**RADIO TODAY**

(To page 58)



TEN



**SOUND
ENGINEERING**

A decade of progress by NBC: The small picture shows a broadcast from the main studio in 1926. The large picture was taken in 1936, in the immense main studio at Radio City. Three stories high, acoustically perfect, and seating 1318, this is the world's finest, largest Radio Theatre—the result of the same sound engineering that distinguishes all RCA Radio Products.

RADIO CORPORATION OF AMERICA

EVERYTHING IN RADIO FOR SERVICE IN COMMUNICATION

YEARS—

that changed your life!

National Broadcasting Company, a service of RCA celebrates 10th Anniversary, marking a decade of unceasing progress in public service over the air

WHEN, on Nov. 15, 1926, the National Broadcasting Company presented its first network program few realized what a vast change it was destined to make in their lives—and in the lives of millions throughout the world.

For ten years ago broadcasting was in its infancy. Few were the believers who thought it would take its present place as the nation's most popular form of entertainment. It was held lightly, considered far too complex for general usefulness.

But today, the broadcasting of radio programs means the expenditure of fabulous sums of money... for air time and talent. Radio, through broadcasting, has become a mighty industry. Millions who once spent their leisure at other diversions now "listen in." Thousands now devote themselves to radio work. Artists, many then unknown, others famous only in large cities, now are the favorites of "fans" in every corner of the land. And in all these life changes, NBC has played a prominent part.

Thus, again RCA has served—and served well. RCA sound engineering stands behind the achievements of NBC—just as it has always been the guiding light of radio's greatest advances—just as some day it will give the world radio *sight!*

As the nation celebrates NBC's Tenth Anniversary, we reiterate: Public confidence in radio starts from the RCA trademark. This, the symbol of sound engineering, is the mark that makes sales. Dealers identifying themselves with it know this to be true. For they make more money.

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NATIONAL BROADCASTING CO., Inc. • RCA INSTITUTES, Inc.
RADIOMARINE CORPORATION OF AMERICA

*Listen to "The Magic Key of RCA" on NBC Blue Network every Sunday,
2:00 to 3:00 P. M., E. S. T.*

MILESTONES OF NBC PROGRESS

1926



1936

In January, 1927, NBC made the first successful transcontinental pickup by broadcasting the Rose Bowl game from Pasadena, California.

In June, 1927, NBC made radio's first multiple pickup by broadcasting Lindbergh's arrival in Washington.

In January, 1928, NBC broadcast the first program from the West Indies as President Coolidge opened the Pan American conference in Havana.

In February, 1929, NBC broadcast the first international program from Europe (England).

In May, 1929, NBC first broadcast the Kentucky Derby.

In December, 1929, Christmas Day, the first international exchange program was broadcast to and from England, Holland, Germany and the United States.

In December, 1930, the first broadcast from a submarine was made.

In December, 1931, a tribute to Marconi was broadcast from 19 different points in the world. This was the first time so many widely separated places were united in one broadcast.

In December, 1931, the first broadcast of the Metropolitan Opera Company from the stage was made on Christmas Day.

AMERICA • Radio City • NEW YORK
COMMUNICATIONS... BROADCASTING... RECEPTION



TEN YEARS—

that changed your life!



SOUND ENGINEERING

A decade of progress by NBC: The small picture shows a broadcast from the main studio in 1926. The large picture was taken in 1936, in the immense main studio at Radio City. Three stories high, acoustically perfect, and seating 1318, this is the world's finest, largest Radio Theatre—the result of the same sound engineering that distinguishes all RCA Radio Products.

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EVERYTHING IN RADIO FOR SERVICE IN COMMUNICATIONS... BROADCASTING... RECEPTION

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Beginning a new monthly feature indispensable to all servicemen

- most complete listing of intermediate frequencies ever printed
- exclusive information on R.M.A. color coding used in superhets
- accurate compilation checked and rechecked with all sources

Model Chassis	I.F. Peak	Model Chassis	I.F. Peak	Model Chassis	I.F. Peak	Model Chassis	I.F. Peak	Model Chassis	I.F. Peak	Model Chassis	I.F. Peak	Model Chassis	I.F. Peak	Model Chassis	I.F. Peak
ACRATONE*		ACRATONE* (Continued)		ADMIRAL* (Continued)		AIRLINE* (Continued)		AIR LINE* (Continued)		AIRLINE* (Continued)		AIR LINE* (Continued)		AIR LINE* (Continued)	
6A	175	168B	456	X6	456-RC	2D	456-RC	62-101X	262-R	62-190	456-R	62-416	465-RC		
6B	456	169B	456	X7	456-RC	5Y1	175	62-103	175-R	62-191	175-R	62-418	456-RC		
7A	456	177B	456	X8	456-RC	6D	456-RC	62-104	262-R	62-192	456-R	62-425	465-RC		
7B	456	179B	456	X-118	456-RC	6G	456-RC	62-105	175-R	62-193	456-R	62-426	465-RC		
7C	456	228	456	X-140	456-RC	6L	175-RC	62-106	175-R	62-194	456-R	62-427	456-RC		
8A	465	229	456	X-141	456-RC	6L	175-RC	62-107	175-R	62-195	456-R	62-428	465-RC		
8B	456	259B	456	X-341	456-RC	7L	456-RC	62-114	175-R	62-196	456-R	62-429	456-RC		
9B	456	260B	262	X423	456-RC	7P	456-RC	62-116	175-R	62-197	456-R	62-430	465-RC		
11B	456	266B	456	X-541	456-RC	7Q	456-RC	62-118	262-R	62-198	465-R	62-432	456-RC		
12A	175	266F	456	X-641	456-RC	15Y1	175	62-120	175-R	62-199	175-R	62-437	456-RC		
12B	456	267B	456	X-718	456-RC	16S1	175	62-121	175-R	62-202	175-R	62-439	456-RC		
13A	465	268F	456	X813	456-RC	46K1	175	62-122	175-R	62-203	456-R	62-1611	175		
13B	456	297B	465	X821	456-RC	46L1	175	62-123	456-R	62-205	456-R	62-1711	175		
14A	456	336B	456	Z2	456-RC			62-124	456-R	62-206	456-R	62-1838	262		
14B	456	337B	456	Z3	456-RC			62-125	175-R	62-207	456-R	62-1955	262		
16B	456	338B	456	Z4	456-RC			62-126	175-R	62-208	456-R	670	175		
17	175	339B	456	Z5	456-RC			62-128	175-R	62-209	456-R	811	175		
17B	456			Z242	456-RC			62-129	456-R	62-211	175-R	1111	175		
18B	456			Z282	456-RC			62-131	456-R	62-212	456-R	1238	262		
19B	456			Z344	456-RC			62-132	456-R	62-213	175-R	1355	262		
20B	456			Z442	456-RC			62-133	456-R	62-214	465-R	1355	262		
21B	456			Z444	456-RC			62-134	456-R	62-215	456-R	1955	262		
22B	456			Z482	456-RC			62-134X	456-R	62-216	456-R	Auto	262		
23B	456			Z544	456-RC			62-135	370-R	62-217	456-R	1932-33	262		
24A	465			Z593	456-RC			62-136	175-R	62-218	456-R				
24B	456							62-137	456-R	62-219	456-R				
26C	456							62-138	175-R	62-220	456-R				
27C	456							62-139	456-R	62-221	456-R				
28C	456							62-139X	456-R	62-223	456-R				
29C	456							62-140	175-R	62-224	456-R				
30C	456							62-140X	175-R	62-225	465-R				
31	175							62-141	175-R	62-226	456-R				
31C	456							62-142	456-R	62-227	456-R				
32A	175							62-143	175-R	62-228	456-R				
32C	456							62-144	456-R	62-229	175-R				
33C	456							62-145	456-R	62-230	465-R				
34C	456							62-146	456-R	62-233	465-R				
36A	175							62-147A	370-R	62-235	465-R				
38A	456							62-147BC	465-R	62-236	175-R				
39A	485							62-148	175-R	62-237	175-R				
40	175							62-148X	175-R	62-239	175-R				
40D	460							62-149	175-R	62-240	465-R				
42	175							62-150	370-R	62-241	456-R				
42D	175							62-151	175-R	62-242	175-R				
43	260							62-152	456-R	62-244	456-R				
43A	485							62-153	456-R	62-245	456-R				
43D	175							64-154	370-R	62-247	456-R				
44	175							62-155	175-R	62-248	465-R				
44A	485							62-156A	370-R	62-249	465-R				
44D	175							62-156BC	465-R	62-251	465-R				
49	260							62-157	175-R	62-253	465-R				
51	260							62-158	456-R	62-255	465-R				
52F	456							62-159	456-R	62-259	456-R				
53D	456							62-160	175-R	62-307	465-RC				
54D	456							62-161	175-R	62-308	456-RC				
55D	456							62-162	175-R	62-310	456-RC				
56D	456							62-163	456-R	62-311	456-RC				
58D	456							62-164A	370-R	62-313	456-RC				
60E	460							62-164BC	465-R	62-315	465-RC				
61E	456							62-165	456-R	62-316	465-RC				
62E	175							62-166	175-R	62-317	465-RC				
65	455							62-167	456-R	62-318	456-RC				
64F	456							62-169	465-R	62-326	465-RC				
65F	456							62-171	465-R	62-327	456-RC				
66	455							62-173	456-R	62-328	465-RC				
66F	456							62-175	456-R	62-332	456-RC				
67F	456							62-176	456-R	62-338	465-RC				
68F	456							62-177	456-R	62-407	465-RC				
69F	456							62-178	175-R	62-408	456-RC				
75	456							62-179	456-R	62-410	456-RC				
77	456							62-181	175-R	62-411	456-RC				
79	175							62-183	175-R	62-412	456-RC				
80	175							62-185	456-R	62-413	456-RC				
83	456							62-186	456-R	62-415	465-RC				
86	485							62-187	456-R						
87	485							62-188	456-R						
88	455							62-189	175-R						
92	175														
93	370														
94	370														
96	370														
97	370														
104	465														
117	465														
118	456														
121	456														
146B	456														
150	175														
167B	456														

C—Condensers
R.M.A. color coded

R—Resistors
R.M.A. color coded

#—R.M.A. color coding
used throughout the set

ALL-AMERICAN MOHAWK

B80 175
DC65 175
S6 175
S7 175
S8 175
SW8 485
S10 175
S50 175
S60 175
S61 176
S62 175
S63 175
S65 175
S80 175
SA51 175
SA65 175
SA90 175
SA91 175
SA110 175
SA130 175
SW80 485
U50 485
U55 485
U500 456
U650 456

AMERICAN-BOSCH*

05 465-#
10 175
20 175
20J 175
20K 175
20L 175
22 175
31 175
32 175
36 175
37 175
40 175
41 175
43 175
45A 175-R
45C 175-R
79 175
79C 175-R

*Indicates that the listings have been checked by the manufacturer.

Acknowledgement is given to the following additional sources of information: Bernsley's Official Radio Service Handbook, Gernsback's Official Radio Service Manuals, Ghirardi's Radio Field Service Data, Hygrade-Sylvania's Auto Radio Servicing and Installation, National Union's Official Chart of Peak Frequencies, Rider's Perpetual Trouble Shooters Manual.

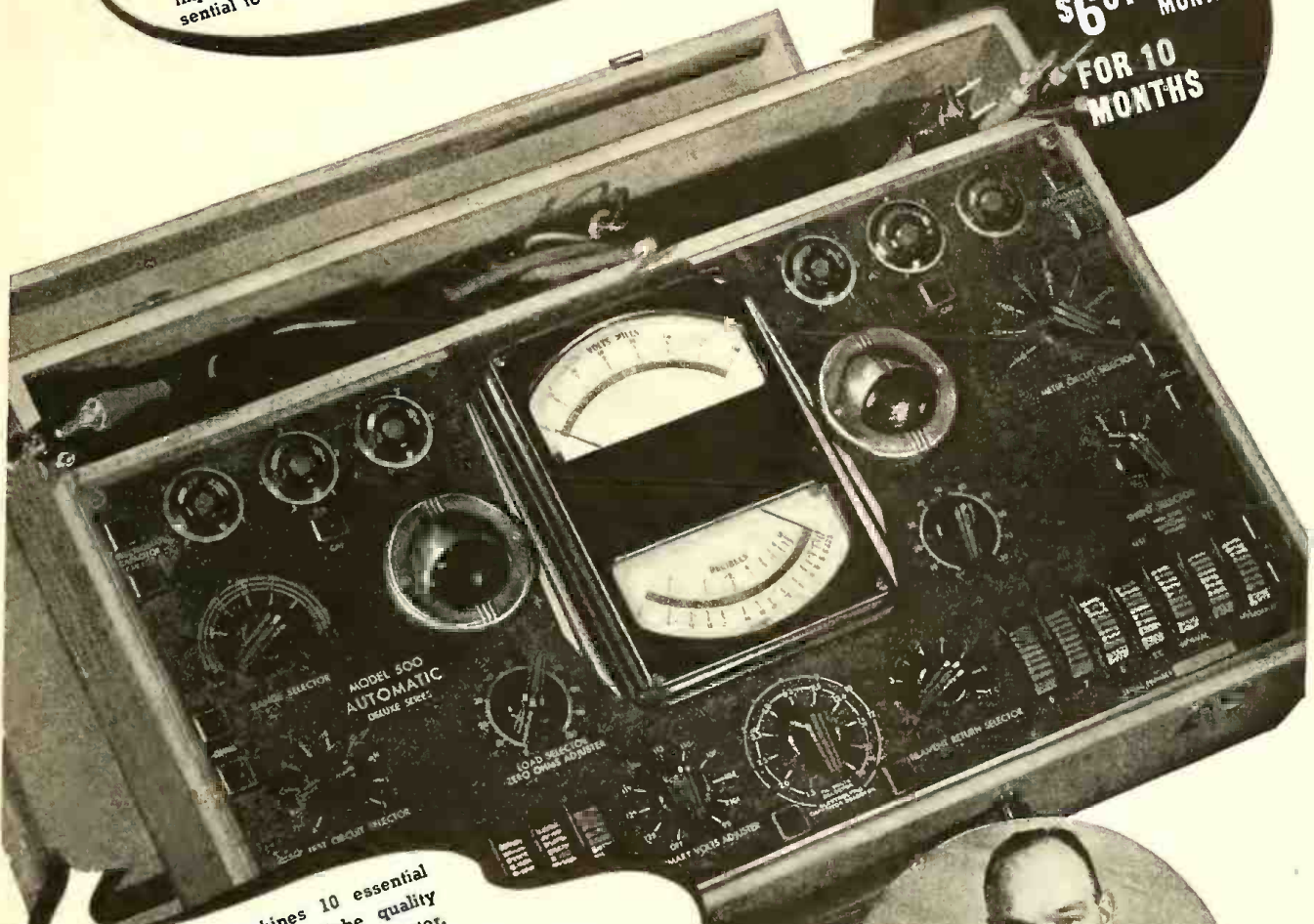
While every effort has been made to have this listing 100 per cent accurate, in a compilation of this magnitude, some errors are possible. The editors will appreciate hearing of these mistakes.—Copyright 1936 by Caldwell-Clements, Inc. Not to be reprinted without written permission.

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Years of experience in the design of radio testing equipment . . . plus a thorough understanding of what servicemen want . . . plus the realization that portable testing instruments must be not only versatile and practical but also impressive enough to make it possible for a serviceman to demand a profit on every job. All those elements were essential to the design of the 17 new SUPREME instruments.

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FOR 10 MONTHS

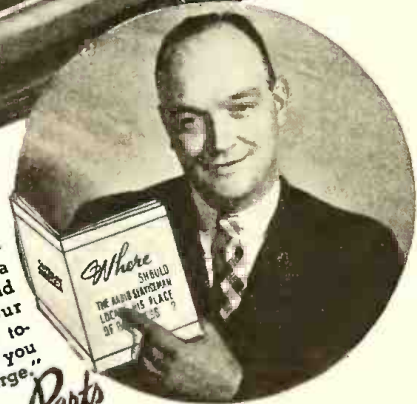


MODEL 500 combines 10 essential servicing instruments: Tube quality checker. Tube leakage and short tester. Electrolytic condenser analyzer. Paper and mica condenser checker. Multi-range D. C. volt-meter. Multi-range ohmmeter. Multi-range A. C. volt-meter. Multi-range decibel meter. Multi-range milliammeter. Multi-range output meter. Cash Price \$66.95

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Your Parts Jobber

BIASING CIRCUITS AND VOLTAGE MEASUREMENTS

An explanation of various methods of obtaining grid bias—ways of determining these voltages

★ Recent developments in grid biasing methods have complicated the circuits to such an extent that an explanation of the principles involved is highly desirable. Back in the old days of 1924-8 the use of a "C" battery was the only way of biasing the amplifiers.

Even today the bias battery is acknowledged as an effective means of obtaining a negative bias on the grid of the tube. It is quite widely used in battery sets and even in some power line sets—although in the latter a special type of bias cell is ordinarily employed. Fig. 1 shows the simplicity of battery bias—by-pass condensers and bias resistors are not necessary. The voltage is easily measured by placing a voltmeter from A to C. In the resistance coupled stage measurement from A to B would be wrong because of the presence of the high resistance R—unless a vacuum tube voltmeter were employed. In the transformer coupled stage either A to C or B is satisfactory.

When the new type bias cells are used, they should be measured only with a vacuum tube voltmeter or tested by replacement with a new cell. The current which an ordinary voltmeter takes will ruin these cells.

Self-biasing circuits

Fig. 2 shows a common method (self-bias) of getting bias through a cathode resistance. This is the most widely used system today. The heavy lines indicate the path of electrons or plate current through the circuit.

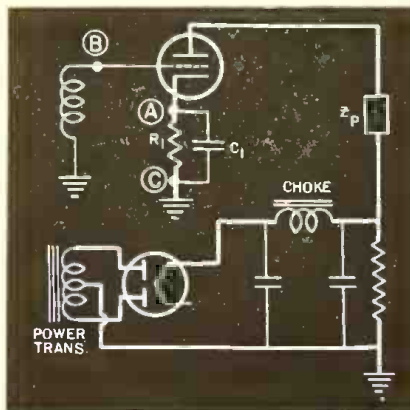
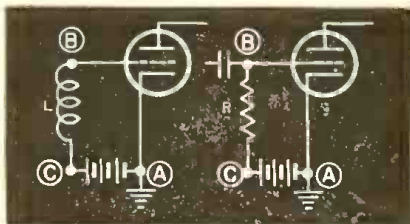


Fig. 1. (top) Battery bias is still employed for special circuit applications.

Fig. 2. Self-biasing is the most popular form of grid biasing.

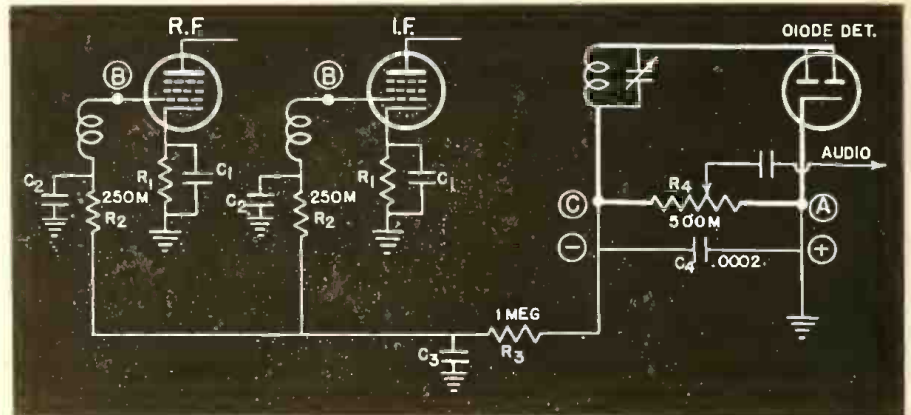


Fig. 6. AVC bias is usually obtained by utilizing the negative voltage developed by the diode detector. Note that self-biasing cathode resistors are also used.

Note that the plate current must flow through the bias resistor R_1 in order to close the circuit. It is this plate current (and screen current if a tetrode) flowing through the bias resistor that produces the bias. The cathode is placed at a positive voltage above ground—this is easily measured by placing a voltmeter from A to C and should be equal to the grid voltage A to B. If a transformer coupled stage this is always true—if a resistance coupled stage, it should also be true, but cannot be measured on an ordinary voltmeter because of the high resistance in the circuit. Since there is no voltage inserted between C and

B, the grid of the tube should be at ground potential.

Field coil bias

In many sets the grid bias for the power tube is obtained by utilizing a portion of the voltage drop across the speaker field coil. In this circuit (Fig. 3) the entire current drain of the set flows through the field coil which is placed between ground and the center tap of the high voltage winding.

The set illustrated uses a 45 output tube and a speaker field with 100 volts across it. One side of the field is negative with respect to ground and the filament of the power tube is at ground potential through the center-tap resistance R_2 . The total voltage across the field is too great for biasing the tube. By using a simple voltage divider comprised of two resistors it is possible to utilize only the desired portion of the voltage—in this case one-half.

The grid is connected to the mid point of the resistors or to -50 volts. This is point C. The negative grid voltage is either A-C or A-B. Because the resistors have an extremely high value, it is not possible to measure this voltage with the ordinary DC voltmeter. The combination of the high resistances and C_1 provides a satisfactory filtering of the bias voltage supply. Point A is ground.

The bias supply in Fig. 4 is very similar to that of Fig. 3. Instead of supplying merely the power output tube bias, a combination of resistors is used to provide a bias for several tubes. Again because of the high resistances, accurate measurement with a DC voltmeter is impracticable. C_1 acts as a filter condenser for the whole bias circuit.

Occasionally several tubes are biased through the same resistor. This is shown in Fig. 5. Both the 75 and the radio frequency tubes receive their

(To page 38)

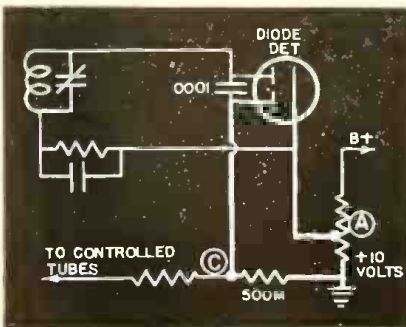
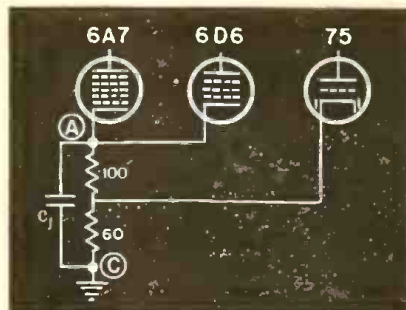


Fig. 5. (top) A combination of self-bias and fixed bias.

Fig. 7. Delayed AVC is obtained by employing a separate diode for AVC.



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BIASING CIRCUITS

the 75 requires less voltage than either the 6A7 or 6D6, the resistor is tapped to take care of this requirement. The principle involved is the same as that of Fig. 2. If the plate current of one tube is abnormal, it will affect the bias of all three tubes. On the other hand, the presence of two additional tubes tends to stabilize the bias voltage. C_1 is the cathode by-pass condenser. As in the circuit of Fig. 2, the grid voltage is the same as the voltage from cathode to ground and can be measured with an ordinary 1,000 ohm per volt meter.

AVC circuits

Most automatic volume control circuits use a combination of self bias (cathode resistor) and diode biasing. The diode provides the automatic control of volume. Fig. 6 shows an AVC circuit of the type used in many receivers.

The diode detector is supplied with an intermediate frequency voltage which is rectified by the diode. As a result of the rectification a pulsating DC voltage appears across the diode load resistance R_1 —the rate of the pulses depending upon the audio frequency modulation.

As is the case with all rectifiers, the cathode is the most positive point in the circuit. Consequently point C is negative with respect to A, the cathode terminal, which is grounded. The negative voltage at C is fed to the grids of the controlled tubes. This negative voltage depends upon how great a signal is produced at the diode detector. The greater the signal, the greater the bias voltage developed. When the negative bias is increased, the gain of the amplifiers is reduced.

If there is no signal coming through the radio, no bias is developed at C. That means that the grids of the amplifier tubes are at ground potential. In order to always be sure that there is a bias on the amplifier grids, it is necessary to use cathode bias resistors bias from the same resistance. Since

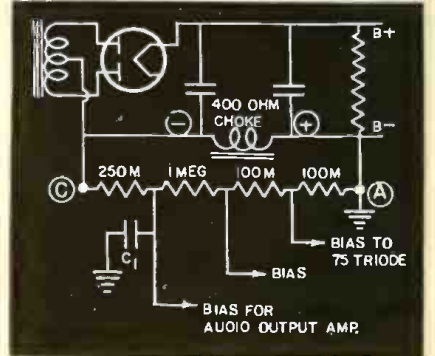
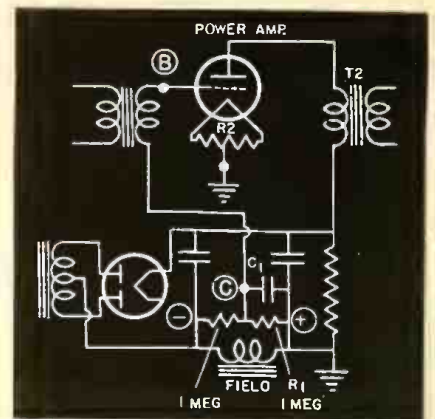


Fig. 3. (top) The voltage across the field coil is often used for biasing the power tube stage.

Fig. 4. Several tubes are biased by using the voltage drop across the choke coil in the B— lead.

(R_1) to provide the required minimum negative grid voltage.

R_2 and C_2 act as an R.F. filter circuit to prevent circuit oscillation and instability.

In a previous paragraph it was stated that the voltage across R_1 was pulsating DC—this kind of voltage is not suitable for biasing the tubes, so it is necessary to filter it and provide steady D.C. R_2 and C_2 do the necessary filtering. In addition the values of these two parts are so adjusted that

(To page 40)

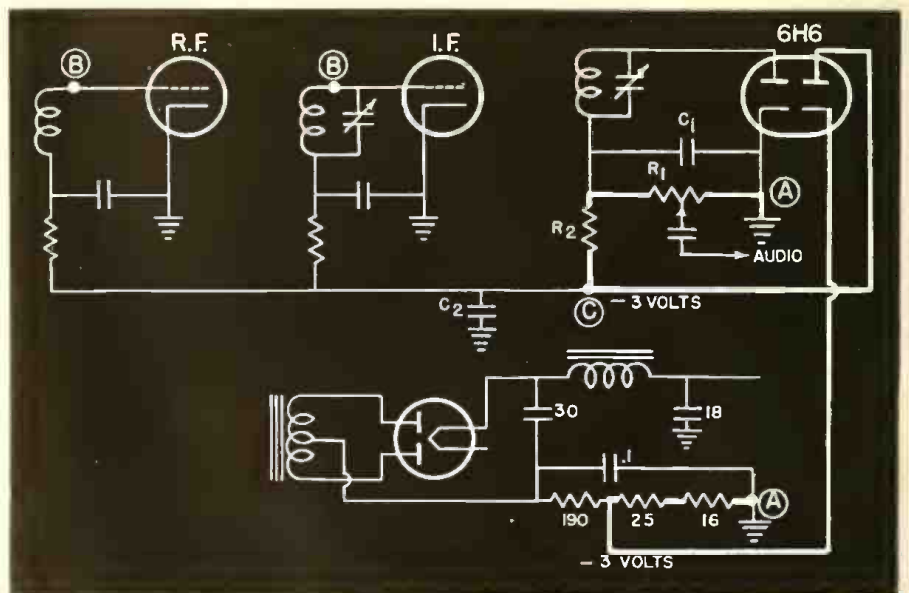
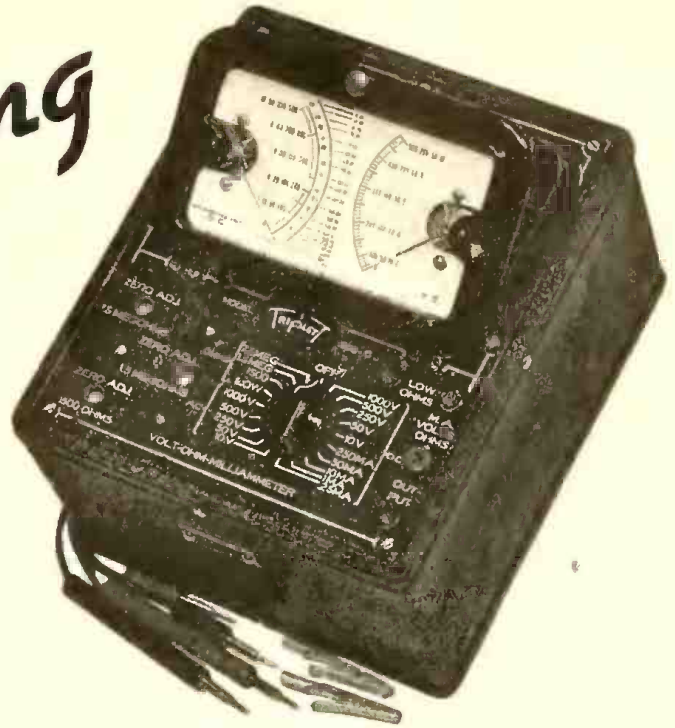


Fig. 8. Many of the 1936-7 receivers use a 6H6 tube to provide delayed AVC bias. Note absence of cathode resistors in the amplifier stages. The second section of the 6H6 provides a minimum bias at all times.

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BIASING AMPLIFIERS

the AVC does not work too slow to counteract fading—nor so fast that it follows audio modulation of transmitted wave.

In this circuit the initial bias can be measured by reading the voltage across the bias resistors. A vacuum tube voltmeter or some other currentless measuring device is needed to get the voltage from B to A because of the high resistances. B and C should be at the same potential.

Delayed AVC

A disadvantage with ordinary AVC is that it starts working for all signal values. Very often with extremely small signals it is desirable to delay the operation of the AVC until the signal reaches a predetermined strength. This is known as delayed AVC and is shown in Fig. 7. A separate diode is employed. The diode is usually capacitively coupled to either the primary or the secondary of the last I.F. transformer. Occasionally a separate winding is employed.

The delay is obtained by making the AVC diode plate negative with respect to the cathode. (Note, however, that the audio diode has no delay and is connected directly to the cathode.) The AVC diode is connected to ground, while the cathode is connected to plus 10 volts on the

voltage divider. No AVC voltage is obtained until more than ten volts of signal is fed to the detector. Then the AVC diode commences to rectify and provide a control voltage—this is because there are no positive signal peaks to rectify until the signal value is greater than the delay voltage.

The delayed AVC may be thought of as a system which has no AVC until the signal reaches a certain predetermined voltage. After the signal has reached that voltage, then the output remains substantially constant.

The delay voltage could have been obtained by placing a negative voltage between ground and the AVC diode resistor. In that case the cathode would have been grounded.

Numerous variations of the delayed AVC are found—particularly when a duo-diode triode tube is used. These variations are necessitated because of the common cathode and the necessity of providing a negative bias on the amplifier control grid.

The audio diode does not have any delay voltage since that would introduce audio distortion. With delayed AVC of this type, the two diodes are used independently, instead of in parallel.

6H6 bias circuit

In the two previous AVC circuits there was a need for cathode bias resistors and by-pass condensers. Recently a new circuit has been devel-

oped that does away with these parts—the result is reduced cost and more stable circuit operation. Fig. 8 gives the circuit in skeleton form. One-half of the 6H6 diode detector operates in the conventional manner.

The other half of the 6H6 provides both a minimum bias for the amplifier tubes and a delay for the AVC circuit. The cathode of the second half is connected to -3 volts and the plate is connected into the AVC circuit. As a result a current flows through the circuit as indicated by the heavy lines. Consequently there is a voltage drop of 3 across R_1 and R_2 —point C is at -3 volts. With C at -3 volts it follows that the grids of the tubes are also at that potential. Note that the cathodes of the amplifier tubes are grounded.

When a signal is tuned in, a negative voltage appears across resistor R_1 the same as in any other diode circuit. Until this signal has developed -3 volts or more bias it has no effect on the bias of the amplifiers. When the rectified diode voltage has reached -3 volts, the second diode circuit becomes inoperative, and the bias produced by the incoming signal serves to keep the amplifiers working at the proper gain. The second diode is inoperative because it is a one-way device—with point C more than 3 volts negative, the plate is more negative than the cathode. Knowledge of vacuum tubes tells us that no current will flow in a tube when the plate is negative with respect to the cathode. However, this is just that is needed for making the circuit work.

The no signal bias in this circuit can be measured by placing a voltmeter from C to ground. Optionally it can be measured at the junction of the 190 and 25 ohm resistors in the B—circuit. Measurement of the voltage at B requires a currentless voltmeter as in any other high resistance circuit.

EMERSON MODELS C134-C142

★ Chassis C is used in the Emerson C134, C136, C138, C139, C140, C142. Set is an 8-tube model using an R.F. stage on all bands.

Circuit is rather conventional using dual purpose tubes in both first and second detector positions. Note the tone compensating network following the 6R7 tube—a connection is made to the oscillator coil section circuit. In the shortwave position the connection is grounded through the oscillator coil.

The sensitivity of the set is governed to some extent by the position of the wavechange switch. Part of the AVC and audio circuit is connected to a tap on the oscillator switch. In the broadcast and police positions a resistor shunts part of the diode load resistor, and decreases both the AVC voltage to the I.F. stages and the audio voltage fed to the 6R7 grid. Note that the R.F. stage gets the full AVC voltage at all times.

I.F. alignment takes place at 456 KC. Wavetrap (in tuner unit) is adjusted for minimum response at 456 KC.

Layout of tuner unit is shown in (To page 43)



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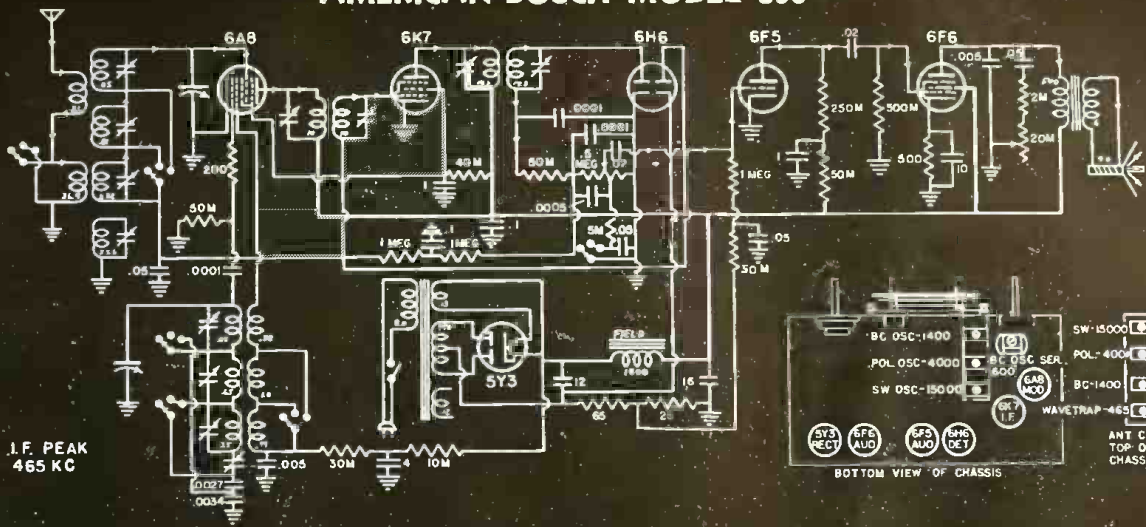
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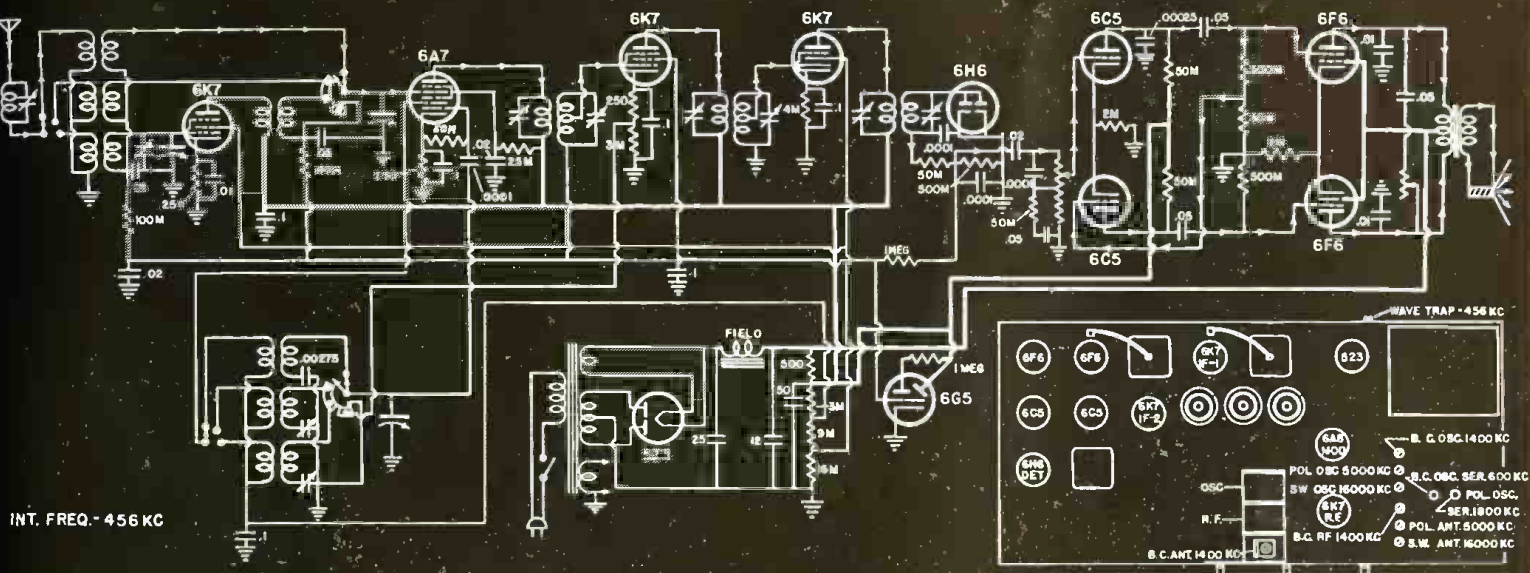
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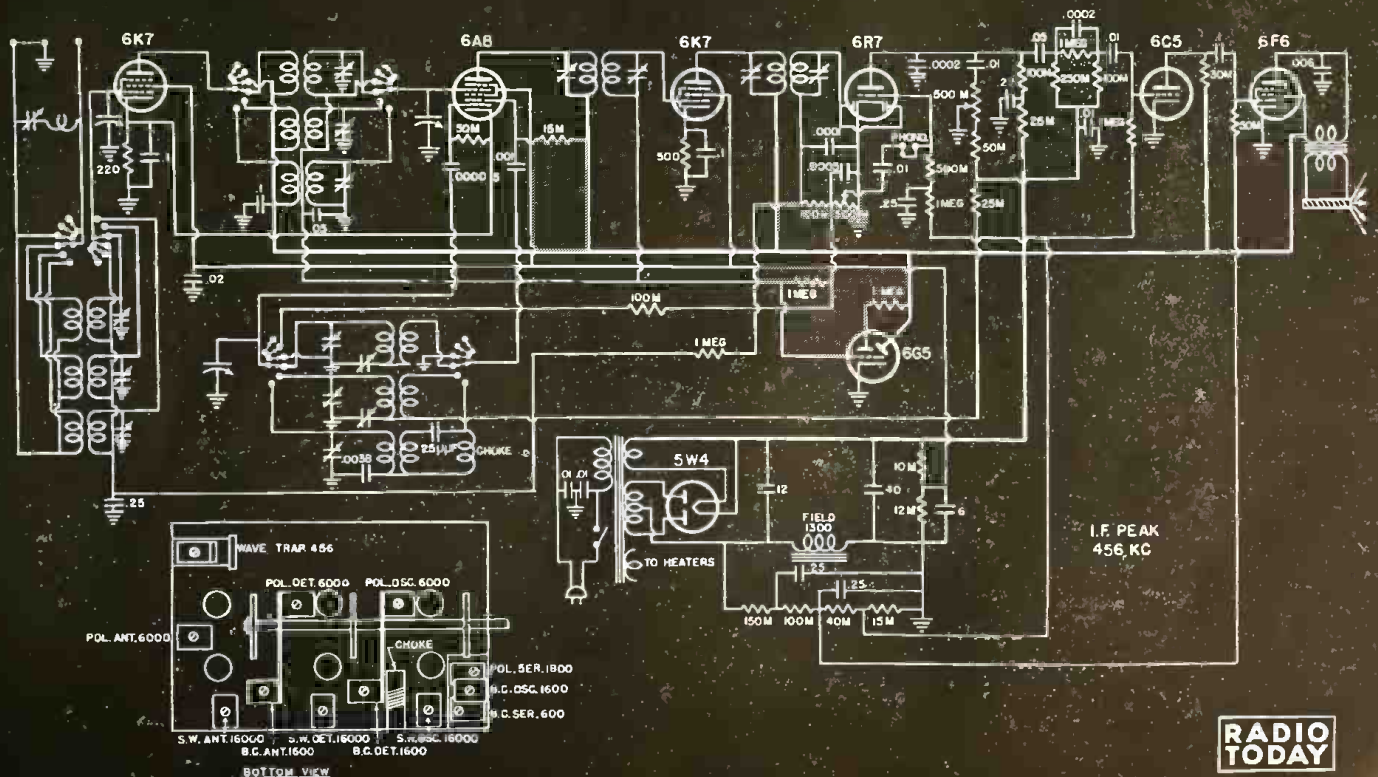
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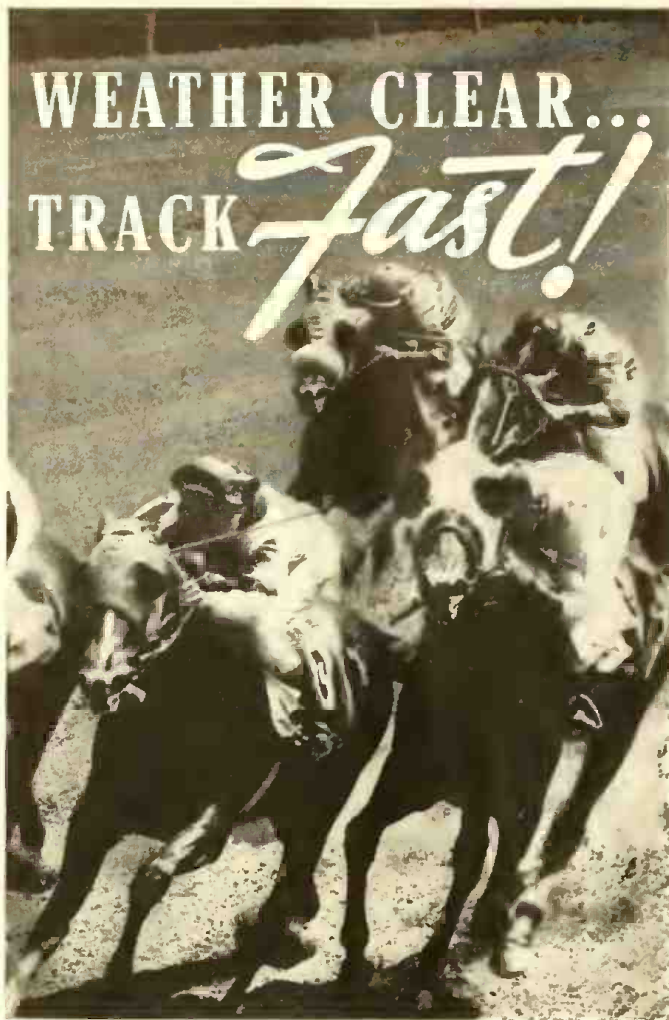


ADMIRAL AM786, AM787 Chassis AM7



EMERSON C134, C136, C138, C139, C140, C142—Chassis C





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SERVICE NOTES

(From page 40)

diagram. Broadcast is aligned at 1600 and 600 KC. For the 600 KC. adjustment, the gang condenser should be rocked for maximum response. Both pointers on the dial should coincide vertically at 890 KC.—they should be adjusted before alignment.

On the police band the frequencies are 1800 and 6000 KC. The oscillator works at a higher frequency than the RF circuits. Short-wave alignment frequency is 16,000.

AMERICAN BOSCH 650

★ The model 650 American Bosch receivers is a 6-tube model with three bands. Circuit is quite conventional and needs little comment.

Tapped coils are used in the input section, so that a definite order of alignment must be followed to avoid interlocking effects.

Alignment takes place first on the shortwave band at 15,000 kc. Next comes the police band which is tuned at 4,000 kc. The broadcast band is aligned last—1,400 kc. for the parallel trimmers and 600 kc. for the oscillator series condensers.

A wavetrap is used with the set—it is adjusted at 465 kc.

Note the new type of bias for the 1st detector and i.f. amplifier—it is described in the biasing story on page 36 of this issue.

ADMIRAL AM786-787

★ The AM7 chassis by Continental Radio is used in the Admiral 786-7 sets. Set uses 11 tubes in a superhet circuit. On the broadcast band a tuned r.f. stage precedes the 1st detector—on the police and broadcast band the antenna is coupled directly to the 1st detector and the r.f. stage is inoperative. (Circuit on page 41.)

Gain in the 1st i.f. stage is controlled by the oscillator wave-change switch. Amplification is reduced when set is tuned to broadcast band.

Note the use of two 6C5 tubes as phase inverters to drive the push pull 6F6 stage.

I.F. peak is 456 kc. Wavetrap in antenna circuit is adjusted for minimum response at 456 kc.

Alignment of the b.c. band takes place at 1,400 kc.—see chassis layout for location of trimmers. Oscillator series condenser adjusted at 600 kc. while rocking the gang condenser.

Short-wave band is next aligned at 14,000 kc. Oscillator works on the high beat. Police band is aligned at 4,000 and 1,800 kc.

SHORT WAVE ALIGNMENT

★ When aligning a receiver on the short-wave bands the set tuning should be constantly checked in order to eliminate errors due to drifting of the oscillator.

The heating of the tube and various set parts will often throw the oscillator out of tune by many kc.—so while adjusting those 1st detector and RF trimmers it is well to rock the condenser gang back and forth slightly to make sure the set is tuned to resonance. Incidentally, the test oscillator also may vary a bit in its frequency—so the effect of the two variations may be quite serious.

Always when aligning a set, the set should be allowed to operate 15 minutes or more before the trimmers are adjusted. This allows the set to reach the normal operating temperature and reduces frequency drift.

WESTON INVESTMENT PLAN

★ Servicemen everywhere will welcome the news that Weston has inaugurated a deferred payment plan for purchases of their testing equipment. The purchase price of radio test instruments may be spread into the period in which added profits are being obtained from their use.

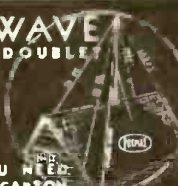
The investment plan is available through all regular Weston jobbers, and corresponds in general terms to automobile purchasing arrangements.

DYNAMIC-MIKE CHARACTERISTICS

The editors call attention to an error on page 59 of our October issue. In the article on microphones. Under "limitations" (middle column) the dynamic microphone should have been defined as essentially a low-impedance device, with uni-directional characteristics.

(To next page)

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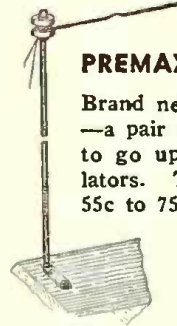


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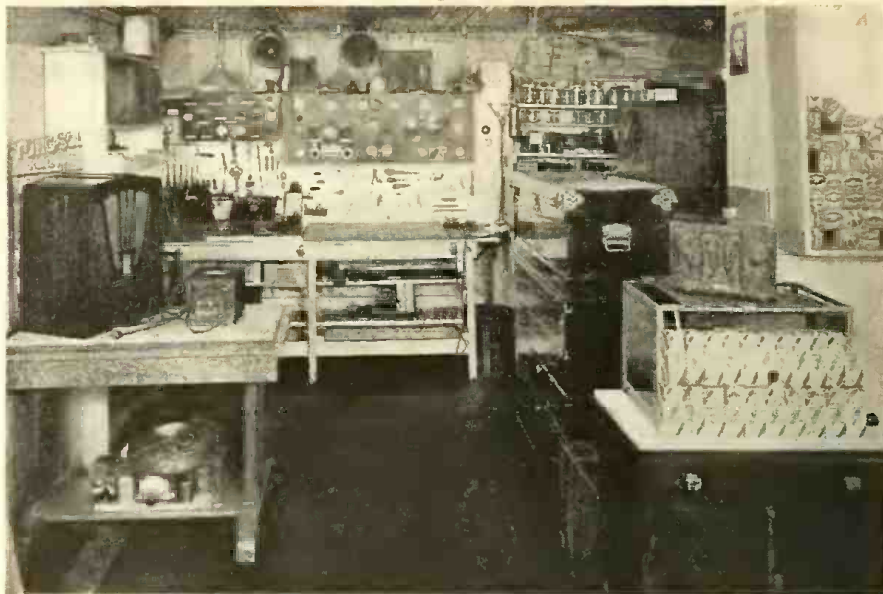
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(Continued from preceding page)

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G-E COLORAMA DIAL

★ The colorama dial which turns from red to green as a station is tuned in is an interesting circuit development and its operation should be understood by servicemen as it incorporates several fundamental principles.

Inspection of the circuit shown herewith shows that the lamps are connected in a series parallel arrangement and that a control tube is coupled through a reactor transformer. For a moment let us consider the lamp circuit only. The green lamps are all in series and the red lamps are arranged in a series-parallel connection. Neglecting the reactor circuit entirely, the green lamps would be brightly lighted and the red lamps only dimly. This is due to the fact that only half as much current (1/2 as much power) will flow through

(To page 46)

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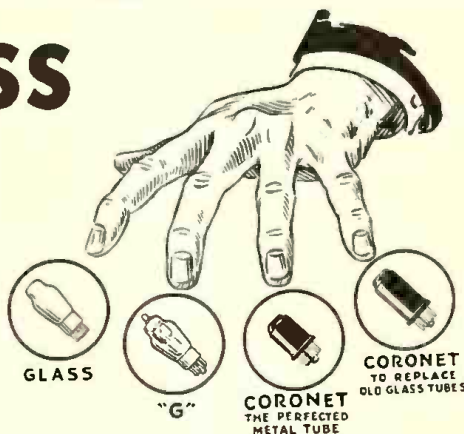
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"My record does all my talking for me, and I'll mix it up with TOBE TUBIDON or any condenser, for that matter. I'm not saying who'll win, but I've got a good idea. How can they beat my big feature of being flexible . . . if one section breaks down due to overload, that doesn't mean I'm finished by a long shot."

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MAXIMUM SIZE	2-1/4" x 1"	3-1/4" x 1 3/8" x 1 3/8"
MINIMUM SIZE	2-1/4" x 1/2"	2-1/8" x 3/8" x 3/8"
TYPE LEADS	solid bore tinned copper wire	insulated tinned copper wire
LEAD LENGTHS	2-1/2"	6"
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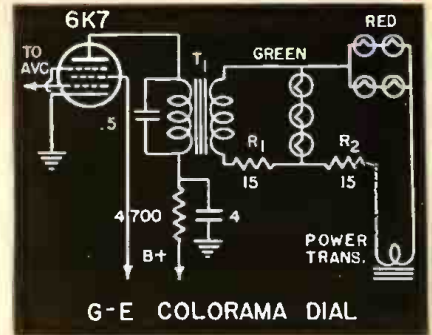
(From page 44)

each red lamp as through each green lamp.

However, if we were to short out the green lights, the entire lamp voltage supply would be applied to the red lights with the exception of a small drop across the 15 ohm series resistor.

The reactance (AC resistance) of the reactor secondary across the green lamps is some 500 ohms with no current in the primary. This is so high as to be negligible. However, as the current increases in the primary, the reactance gradually decreases to approximately 25 ohms. In the first case, the 500 ohms across the green lamp has no appreciable effect. In the second case, the 25 ohms is so low as to practically short circuit the green bulbs with a resultant increase in red illumination. For intermediate values of current, the secondary offers a partial shunt only and the green lights are somewhat decreased in brilliance while the red lights are somewhat increased.

The current in the primary is simply the plate current of the tube connected to it. This tube has a rather low initial bias which is fur-

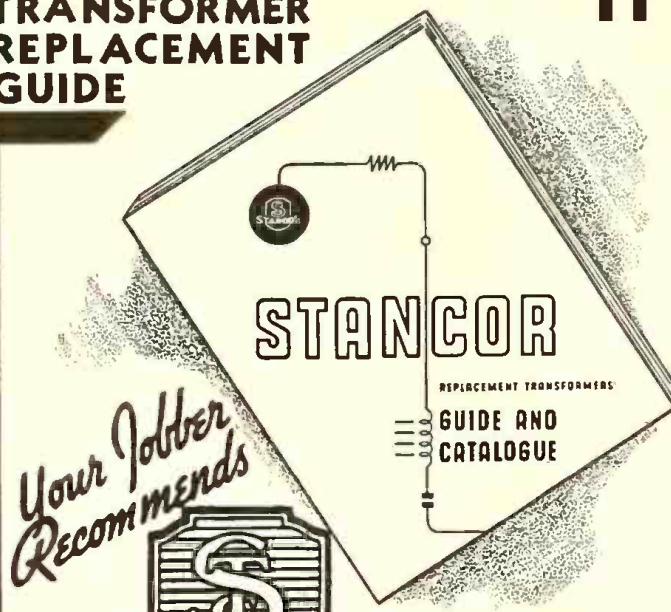


nished by the cathode resistor. This low bias results in comparatively high plate current and the reactor is almost completely saturated. We found that this caused the green lamps to be shorted and the red lamps to be brightly lighted. This is the condition which exists when the receiver is not tuned to a signal and no AVC voltage is being developed.

As a signal is tuned in, the AVC voltage builds up and is applied to the control tube. This increased negative bias decreased the plate current. We found a decreased plate current resulted in less saturation of the reactor and consequently less shunting effect across the green lamp so that they were permitted to approach the brightly lighted condition with consequent dimming of the red lamps.

(To page 49)

FREE! TRANSFORMER REPLACEMENT GUIDE



STANCOR
TRANSFORMERS

Don't hunt through page after page of catalog for the right transformer for that replacement job—all the information is here, in the STANCOR complete, exact duplicate replacement guide—listing the right transformer for any receiver. It's FREE. As many copies as you need are available on request. Just pin this ad to your letterhead and the number of copies you request will be mailed to you at once.

IT'S GOOD BUSINESS

TO USE

STANCOR TRANSFORMERS

● If we could take you through the STANCOR Factory, the most modern and scientifically equipped transformer plant in the radio industry—if you could see with what painstaking care every operation is carried out—you would readily be convinced that the STANCOR claim for superiority is more than an idle boast.

The performance of Stancor Transformers and the customer satisfaction they build, is causing more and more service men and dealers to use Stancor products exclusively. Your jabber carries them in stock.

STANDARD TRANSFORMER CORP.

852 Blackhawk Street

Chicago, Illinois



"You did us
a real favor
Mr. Martin when
you sold us that
new radio and
Power-Charger"

"Had a good radio a couple of years back. Ran fine and got everything on the air—as long as the batteries held up. Seemed, though, everytime I got mighty interested in a weather report or a good talk on crops, out came a squawk like a pig callin' contest n' then nothin' at all. Meanin' a signal for me to put my hat and coat on and start down to the village luggin' a battery. Didn't mind this in good weather but you ought to try it sometime when its rainin' or snowin' like blazes. To tell the truth, there aint no radio program worth all that trouble."

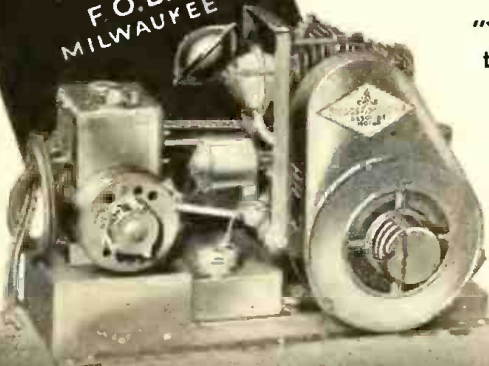
"Now, I'm no hand at testifyin' about something that tickles me, but both Molly and I want to thank you for tellin' us what this new radio would do tied up with a Power-Charger. We can play the radio from the time we get up until bedtime and forget about the batteries. Top of that, we've rigged up a set of electric lights in the house 'bout as good as the folks down in Pipestone have 'em. Molly can peel potatoes without cuttin' off a finger 'n I can smoke my pipe and read without gettin' crosseyed."

"You ought to come out to the farm and see how I've rigged up this combination. John — my oldest boy — showed me how to hook-up and run our grindstone from the charger motor. Used his head, I'd say, since its his job to sharpen the tools."

"And the whole outfit cost so little can't see why everybody don't get up to date. Thanks, Mr. Martin. You sure did us a favor."

BRIGGS & STRATTON CORP., Milwaukee, Wisconsin

\$59⁵⁰
F.O.B.
MILWAUKEE



BRIGGS & STRATTON
MILWAUKEE, WIS., U.S.A.
Power-Charger

BRIGGS & STRATTON CORP., Milwaukee, Wisconsin
Send complete information at once on
the 6-volt, 200 Watt Power-Charger.

Name of Radio handled.....
..... Dealer Distributor
Firm.....
Street Address.....
City..... State.....
Signed..... RA-5

IF you are
a
SERVICEMAN

You need radio's latest and largest
compilation of

I. F. PEAKS
and
COLOR CODING DATA

BEGINNING IN THIS ISSUE, PAGE 34,
CONTINUED IN SUCCEEDING ISSUES

AGAIN, RADIO TODAY adds to its record of "firsts"—
first in rendering much-needed services to the reader.
"I.F. Peaks & Color Coding Data" is not only first; it is
the most complete and accurate compilation ever made in
this field. It is so complete—so extensive—that it neces-
sarily appears in serial form and extends over a period of
many months.

You will need this compilation; this new material in
convenient form. It will give you data on 8,000 sets, from
the first superhet up to and including the current models;
will give you the data on both private and standard brands.

Each instalment in the series will be uptodate—up to the
month when the instalment appears.

The intermediate frequency material is more accurate than
the manufacturers' own records! Yes, actually more accu-
rate. For this reason: In double-checking and cross-check-
ing the data from all available sources, many early errors
and omissions were found and corrected.

The color coding data, in conjunction with the I.F. data,
will be extremely useful to servicemen. It is obtainable at
no other source because no other compilation of this nature
has ever been made. Both classes of material will make
the service man's work quicker and more accurate.

The first instalment appears in *this* issue. Unless you are
a subscriber or unless you send in your subscription at
once—you will miss out on this valuable compilation.
Each edition of RADIO TODAY is limited to the usual print
order; hence single copies will not be available. Subscribe
NOW!

IF you are
a
DEALER

You need these vital facts, figures
and methods:

"HOW TO MAKE
MORE PROFITS
OUT OF RADIO"

BEGINNING WITH JANUARY AND
CONTINUED IN SUCCEEDING ISSUES

FOR every man who sells radio at retail, RADIO TODAY
begins a series of feature articles that will be money-
makers—a series of the utmost importance, covering all of
the profit-phases of retail selling and retail sales promotion.

For example:

- How to reach more customers.
- How to "sell up" better sets.
- How to find prospects with cash.
- How to cut selling costs.
- How to pick go-getter salesmen.
- How to handle instalment sales.
- How to attract people to your store.
- How to select your radio stock.
- How to write radio ads that pull.
- How to control expenses against loss.
- How to insure profits.

—and, as a part of the series, a new statistical study of
selling costs entitled

"YARDSTICKS for PROFIT MAKING"

This eye-opening feature will be compiled with the coop-
eration of Dr. Norris A. Brisco, Dean of the New York
University School of Retailing.

With an entirely new and uptodate series of studies, this
feature will carry forward the systematic study of retail
selling costs conducted since 1926 by the present staff of
RADIO TODAY.

Make sure of getting this feature—all of it. Back orders
cannot be filled. Enter your subscription today.

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Enter your subscription at the present low rate of \$1 for 1 year, or \$2 for 3 years. Use the post card here-
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Our Main Line of Business is:

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.....

SERVICE DATA

(From page 46)

DRY ELECTROLYTIC CONDENSERS

★ In discussing the characteristics of dry electrolytic capacitors before the IRSM Fall Convention at New York, G. V. Peck of P. R. Mallory and Co., Inc., said:

"The chemical formula of the electrolyte paste used in the finished condenser determines the critical or sparking point. This sparking voltage has been 525, as a general average value on most dry electrolytic condensers until recently. Special electrolytes extending the sparking voltage limit from 525 to 585 volts or higher are now available and in use by some manufacturers of dry electrolytic condensers.

"Should sparking occur in dry electrolytic condensers, gas formation is developed which may cause minute explosions internally, due to the mixture of the hydrogen and oxygen gases. This condition is known as 'breakdown.' The best condensers now have separators including a layer of cellophane designed to retard the mixture of the oxygen and hydrogen gases, should any surge ever reach the high sparking voltage point of the new electrolyte. Therefore, these are not necessarily injured by short sparking intervals in these rare cases.

"The use of the new electrolyte and cellophane separators gives dry electrolytic condensers new points of superiority that are worthy of consideration by all radio manufacturers."

(To next page)



Auto radio and ignition tester by Bendix-Dayrad. Complete lab on wheels facilitates trouble shooting.

PARTS JOBBERS

Save time and money by ordering all your radio hardware from one source. We carry in stock all the standard and many special items of radio hardware used by manufacturers of receivers — speakers — sound equipment and parts. You will find our prices on bulk and assortments very attractive.



MACHINE SCREWS & NUTS
TUBULAR RIVETS
EYELETS
EYELET LUGS
SPADE LUGS
SOLDERING LUGS
BRASS WASHERS
STEEL WASHERS ETC.
FIBRE WASHERS
LOCKWASHERS
METAL TAPPING SCREWS
SPEAKER MOUNTING SCREWS
ESCUTCHEON SCREWS
WOOD SCREWS
RUBBER GROMMETS

Send for Bulletin No. 50—every item of radio hardware needed by the parts jobber.

FEDERAL SALES CO., 26 S. JEFFERSON, CHICAGO

Free!

CLOUGH-BRENGLE INSTRUMENTS

New 1937 MODELS...with

NATIONAL UNION TUBES



1937 Clough-Brengle Signal Generators. Model OMA operates from 110 volts, 50-60 cycle, continuously variable 100 K.C. to 30 M.C. Single and double trace selectivity. Curves for use with output meter or oscillograph; complete with tubes and accessories. Model OC-A, 100 K.C. to 30 M.C., operates from 110 volts, 50-60 cycle. Complete with tubes and hand drawn calibration curves. Available on N.U. tube deals with time payment plan covering deposit. Investigate.

YES—FREE—THE N. U. WAY

The National Union Way makes the purchase of National Union radio tubes doubly profitable. Besides full protection on the highest quality radio tubes, each National Union tube purchased helps to earn free equipment. But, possession of the equipment is obtained at once with just a nominal cash deposit. (Deposit is rebated when required number of tubes have been purchased.) Over 50,000 completed deals with progressive radio dealers. Don't be misled. See your National Union jobber and net all the facts.

OTHER NATIONAL UNION OFFERS

In SOUND EQUIPMENT items available include 17-watt portable system, 10-watt portable system, 6-watt portable system, phonograph pickup and turntable, etc., all manufactured by Webster-Chicago. In SHOP EQUIPMENT items available include stock cabinets coats, display signs, etc. All items absolutely free the National Union Way. Get FULL details. In SERVICE EQUIPMENT items available include tube testers, analyzers, oscillographs, signal generators, modulators, meters, etc., products of such manufacturers as Supreme, Clough-Brengle, Hickok, Triplett, Readrite, Precision, Radio City, Dumont, J.F.D. and others.

ABOUT NATIONAL UNION RADIO TUBES

National Union manufactures a complete line of radio tubes in glass, metal and G-type. National Union's high quality has made them the outstanding favorite in the radio service profession. All sales policies have been formulated with the idea of making National Union radio tubes the ideal replacement tube for the radio dealer. This has been backed up with a selling program that means real support and help to the wide-awake dealer. Dealers and Jobbers handling National Union radio tubes are the leaders in repair parts and services.

FLASH! EXTRA!

TIME PAYMENTS ON DEPOSITS!!

Service experts! Get many latest type service instruments for only a few dollars down and time payments on the initial low N.U. deposit. Remember—deposits are refunded when tube purchases are complete! Get the equipment you need, get it now, the sensational new N.U. way. See your jobber for details!



MODEL OMA
14¢ PER DAY \$11.40 DOWN
DEPOSIT REFUNDED



MODEL OC-A
7¢ PER DAY \$5.40 DOWN
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Let National Union Help You Write for Information

NATIONAL UNION RADIO CORPORATION
570 Lexington Ave., New York City RT1136
Without obligation please send me more information on . . . Free offer on Clough-Brengle Model OMA . . . ; Model OC-A . . . Free offer on . . .
Dealer's Name
Address
City State

NEW SUPERIOR WIRE WOUND REPLACEMENT RESISTOR

A SUPERIOR WIRE WOUND REPLACEMENT RESISTOR

MORE WATTS PER INCH—
MORE WATTS PER DOLLAR

JOBBER, DEALER—look into the profit opportunities in this new, different and superior replacement resistor. It's flat, taking less room, permanently accurate within 5%, noiseless, impregnated with water-proof cement and equipped with adjustable leads. Zipohms are made in all standard values, each clearly marked. Write for information on Special Introductory Kit offer today!

PIN THIS AD TO YOUR LETTERHEAD AND MAIL FOR COMPLETE DETAILS

THE MUTER COMPANY
1255 SOUTH MICHIGAN AVE.
CHICAGO, ILLINOIS

RADIO . . . "MAN-MADE" STATIC



THE nuisance noises caused by proximity of electrical conveniences may be completely divorced from any radio by installing this modern Amy, Aceves & King licensed antenna. On broadcast as well as shortwave bands "NOISE-MASTER" improves reception . . . in every type of location!

Write for Full Particulars

CORNISH WIRE CO., Inc.
30 CHURCH ST., NEW YORK CITY

SERVICE NOTES

(From preceding page)

I. F. FREQUENCIES

★ Starting with this issue, **RADIO TODAY** will publish the I.F. peak frequencies of all radio sets. This first part of this serial feature appears on page 34. Many thousands of sets will be listed in the coming months.

Preserve and file these frequencies for future use for they will be extremely valuable in your service jobs. In addition to the I.F. frequencies, data on R.M.A. color coding is given for many of the sets. This data is available only in the columns of **RADIO TODAY**.

5,000,000 SERVICE CALLS

★ Some 5,130,000 radio sets are in need of repairs according to figures released by RCA. And these are service prospects, since the sets are less than five years old. Almost two million of these, say the Camden, N. J., investigators, are totally inoperative, while the remainder are in fair or poor operating conditions. In terms of dollars, this represents about 15 millions in labor and 25 millions in parts and tubes. Go after and get your share of this business!

RECENT SERVICE BOOKS

★ *Automatic volume control* is the third volume in John Rider's An Hour a Day series. This 94-page book discusses control factors and time constants, simple AVC systems, delayed AVC, noise suppression circuits. Concluding chapter is devoted to trouble shooting in AVC systems. Book is chock full of typical circuits. As with the first two books, *Resonance and Alignment* and *DC Voltage Distribution*, the price is only 60 cents. Published by John F. Rider, 1440 Broadway, New York, N. Y.—**RADIO TODAY**

★ *Official Radio Service Handbook* is a thousand pager covering circuit theory and analysis, application and design of servicing equipment, hints on receiver repairs, all-wave high-fidelity data. Other chapters deal with auto radio installation and service, noise interference elimination, modernizing and conversion of sets, social and economic problems of the serviceman. Latter half of the book gives set data such as I.F. peaks, speaker field resistances, volume control data, tube complements, condenser replacement data, and operating notes (mainly case histories). Author is J. T. Bernsley. Published by Gernsback Publications, 99 Hudson St., New York, N. Y., Price \$4.—**RADIO TODAY**

★ Second edition of Ghirardi's *Radio Field Service Data* has made its appearance in a loose leaf form. Book has been revised—section on I.F. peaks almost doubled in size. Case histories of receiver troubles number over 200 pages. The wiring diagrams of autos have been revised to include 1936

(To page 52)

THERE IS NO OTHER PERMANENT MAGNET SPEAKER . . . like the

NOKOIL



No. 1984

Cadmium plating makes all parts thoroughly rust-proof which is essential to perfect permanent performance.

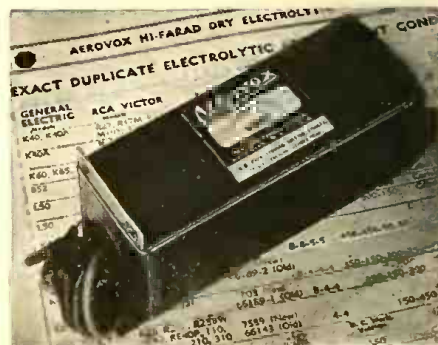
A super-sensitive high power Public Address **NOKOIL** Reproducer at a price that is within the reach of all sound engineers.

List Price **\$1984** Dust Proof Rust Proof Weather Proof

Write for catalog showing the World's most complete line of **NOKOIL** Reproducers and the name of our nearest distributor. Wright-DeCoster distributors are always anxious to cooperate.

WRIGHT-DeCOSTER, Inc.

2265 University Ave., St. Paul, Minnesota
Export Dept.—M. Simons & Son Co., New York
Cable Address: "Simontrice"
Canadian Office, Associated Sales Co., Guelph, Ont.



Exact-Duplicate Replacements



AEROVOX condensers precisely match initial equipment—mechanically, electrically, visually. ● The job LOOKS right, ACTS right, STAYS right, when you install an **AEROVOX** replacement. ● So find the unit needed in the **AEROVOX** listings. ● Get that unit at your local jobber. ● Thus you'll please the customer, make a real profit, and build up a sound business.

New CATALOG contains several pages of exact duplicate listings. Copy sent on request, together with sample of monthly Research Worker.

AEROVOX CORPORATION
70 Washington St. : : Brooklyn, N. Y.



ASK THE "FIX-IT" MAN!

Service men prefer KEN-RAD Radio Tubes



Right before the big broadcast, when the service man is called in to fix the radio, he's just "got to get results." That's why so many servicemen use and recommend Ken-Rad glass or *genuine all-metal* radio tubes.

As makers of highest quality radio tubes and incandescent electric lamps Ken-Rad has merited the confidence of dealers and the public for years. Increase your business the Ken-Rad way. Write us for our complete sales plan.

KEN-RAD

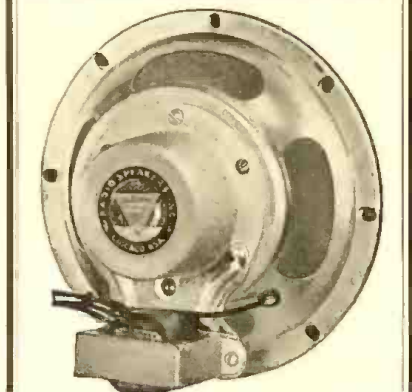
★ *Radio Tubes* ★

Manufacturers of a complete line of Standard
Class Types, G Series, and Genuine
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KEN-RAD TUBE & LAMP CORPORATION, Inc., Owensboro, Ky.

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**... SIMPLICITY ...
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Our background enables us to produce outstanding speakers, which is the basis of our success.

A complete line of PERMANENT DYNAMIC Speakers for Battery Sets, and P.M. Installations. Sizes 6 in., 8 in., 12 in.

Permanent Dynamic Auto Speakers. 6 in., 8 in. and 5 1/4 in. Header.

Also a complete line of Electro Dynamic Speakers ranging in size from 5 in. to 12 in.

Send us your specifications.

RADIO SPEAKERS, Inc.

Henry C. Forster, President

1338 S. MICHIGAN AVENUE,
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**MODERNIZE YOUR
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"Precision" modernizations incorporate accuracy . . . flexibility . . . ease of control . . . true professional appearance. When writing for details please mention make and model number of your old instrument.

WRITE FOR OUR PLAN *Modernization Div.
Dept. "T"*

**PRECISION
APPARATUS CORPORATION**

821 East New York Ave., Brooklyn, N. Y.

SERVICE NOTES

(From page 50)

models. Rear section of manual contains much reference data such as radio formulas, charts, tables, color coding and other items of value to servicemen. Published by Radio & Technical Pub. Co., 45 Astor Place, New York, N. Y. Price \$2.50 (with 2 supplements) — RADIO TODAY

SERVICE BULLETINS

★ Ken-Rad Tube Corp., Owensboro, Ky., has issued an "essential technical data" sheet, dated Oct. 15, 1936. Large chart carries tube descriptions in large type, complete with drawings.

★ New catalog on "Wire-Wound Tubular Resistors" is being sent by Atlas Resistor Co., 423 Broome St., New York City, to anyone requesting the material.

★ The Muter Co., 1255 S. Michigan Ave., Chicago, is sending out descriptive material on "Zipohms," a new type of replacement resistor made especially for servicemen.

★ Technical Appliance Corp., 17 East 16th St., has a new 12-page booklet titled "Taco All-Wave Master Antenna System," dealing with problems of multiple set operation in apartment houses, hospitals and hotels.

★ Just issued by Tobe Deutschmann Corp., Filterette Division, Canton, Mass., is a set of specifications for a shielded test room designed to eliminate interference from modern service work.

★ Bulletin containing full information to aid dealers and servicemen in selling and installing its newly named "Filternoys" units will be available from Continental Carbon, Inc., 13900 Lorain Ave., Cleveland, Ohio.

★ Hygrade Sylvania Corp., Emporium, Pa., is ready with two publications on tubes; a complete and up-to-date "characteristic sheet," and a "tube base chart."

★ New 1937 Parts Catalog has been issued by Philco, printed in two colors and carrying more information than ever before printed in the booklet. Philco distributors now have them in stock.

★ Power and service tables, voltage charts, and other useful data on a new line of radio and light batteries, are presented in a bulletin just issued by Globe-Union, Inc., 900 East Keefe Ave., Milwaukee, Wis.

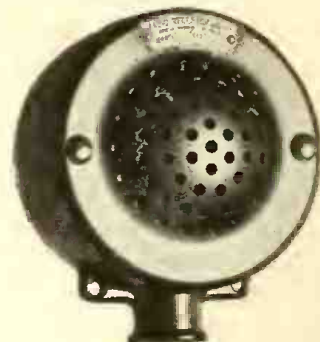
★ Kenyon Transformer Co., 840 Barry St., New York City, has begun the publication of a monthly "Kenyon Engineering News," to be devoted "entirely to the amateur, service engineer, sound technician and experimenter." Subscriptions are \$1 yearly, or are given for labels from the firm's cartons.

★ Two new catalogs have been published by United Transformer Corp., 72 Spring St., New York City. Titles are "Transformer Components" and "Equalizers."

(To page 54)

DYNAMIC MICROPHONES

ARE INCREASING
IN POPULARITY



because they

- have greater sensitivity
- are free from inductive pickup
- have no background noise
- can work with long lines
- are sturdiest ever produced
- are weatherproof
- are small in size
- are reasonable in price

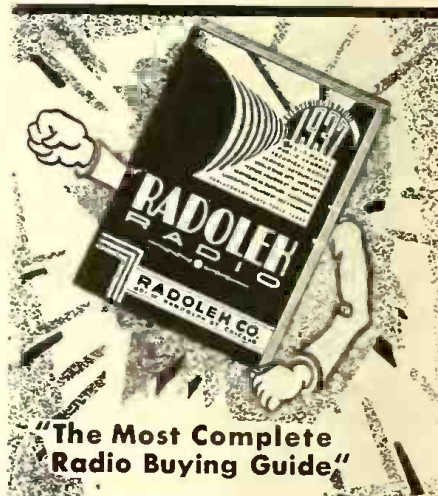
We solicit requests for special sound and amplifying equipment.

Send for our latest Bulletin 3013

We are pleased to send this to you.

RADIO RECEPTOR CO., Inc.

110 SEVENTH AVE., NEW YORK, N. Y.



**"The Most Complete
Radio Buying Guide"**

10,000 MONEY-SAVERS!

Completely revised—right up to the minute—bringing you everything in radio—at the right prices. Over 10,000 Repair Parts—a complete selection of Receivers, Amplifiers, Tubes, Tools, Books, Instruments—always in stock—ready for speedy shipment to you. You need this big Radio Parts Catalog. It's free! Send for it.

Radolek endeavors to restrict distribution of the Profit Guide to those actively and commercially engaged in the Radio Business. Please enclose your Business Card or Letterhead.

RADOLEK

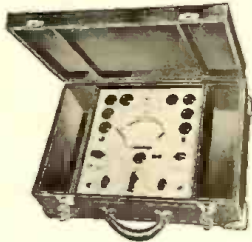
601 W. RANDOLPH ST., Dept. D1, Chicago
Send the Radolek Profit Guide Free.

Name
Address
Serviceman? Experimenter? Dealer?

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TO
GET
IT**



"LISTENING IN" is the latest way to sell tubes. Customer simply listens thru phone to audible proof for intermittent contacts or steady leakages — actually hearing how such tube troubles ruin radio reception. It's the most effective way imaginable for selling tubes. And it's exclusively RADIOTECHNIC! Ask about this and other R-T-L features!



Ask For Folder

THE RADIOTECHNIC LABORATORY 1328 Sherman Ave. EVANSTON, ILL.

A Complete Line of Tube Test Equipment

RADIOTECHNIC

RIDER'S VOLUME VII

NOW AVAILABLE AT ALL GOOD JOBBERS



A Special RADIO STORAGE BATTERY

... for better performance of farm radios and farm light plants!

FOR the 3,000,000 old farm radios that will need new batteries in the next twelve months . . . for the 2,000,000 new farm radios that will be sold in the same period . . . for new and old farm lighting plants . . . we offer the NEW Monark Special RADIO Battery. NOT an auto battery. But a radio battery ESPECIALLY BUILT for radios and light plants!

Because it gives a SLOW, STEADY DISCHARGE and takes a QUICK CHARGE, in contrast with the QUICK DISCHARGE and SLOW charging of the auto battery, the Monark Special Radio Battery gives BETTER radio and light plant performance . . . smoother, steadier power flow. No wonder it is the only ideal battery for radios and light plants!

Sell Monark Special Radio Batteries with new radios . . . and for old radios. They'll give you satisfied customers—and increased profits. Mail coupons for full details now!

Monark
Special Radio BATTERIES
4556 WEST GRAND AVE., CHICAGO

WHY Better PERFORMANCE FROM MONARK RADIO BATTERIES?

Here's Why!

- ✓ Wing-nut terminals for easy connection eliminates use of battery clips.
- ✓ Extra-thick "super-process" pickled plates for longer battery life and greater power.
- ✓ Special built-in hydrometer immediately tells condition of battery.
- ✓ Genuine Port-Orford Cedar separators—strong, durable, will stand up under any condition.
- ✓ One-piece hard rubber case—three times the tensile strength of ordinary composition case.
- ✓ Pre-Cycled—Every battery "broken in" at factory before shipping.
- ✓ Unconditional guarantee.

NATIONALLY ADVERTISED TO 2,000,000 HOMES!

MAIL COUPON NOW!

MONARK BATTERY COMPANY
4556 West Grand Avenue, Chicago, Illinois
Please RUSH full details and prices on your Monark Special Radio Battery.

Name

Address

City State

PHONOGRAPH COMBINATIONS AND ELECTRIC RECORD PLAYERS

(Continued from page 24)

Model No.	List Price	Cabinet Style	Radio Set		Power Output watts	Tone control	Power supply	Type operation	Record changer		Turntable speeds	Will device record	Type pick-up	Volume range expansion
			No. of wave bands	No. of tubes					No. of records	Size				
Marconiphone Co., (Continued)														
DER	167.50	Port.	2	8	6	Yes	AC-DC	Automatic	7	12	78-33 $\frac{1}{2}$	No	Crystal	No
JR	99.50	Port.	1	6	6	Yes	AC-DC	Automatic	8	10	78-33 $\frac{1}{2}$	No	Crystal	No
Console N	169.50	Floor	2	11	6	Yes	AC-DC	Manual	..	..	78	No	Crystal	No
AMP	69.50	Port.	..	5	6	Yes	AC-DC	Manual	..	..	78	No	Crystal	No
Muter Co., 1255 S. Michigan Ave., Chicago, Ill.—Muterphone														
1500	\$ 34.50	Port.	..	NS	3	Yes	AC	Manual	..	..	78	No	Magnetic	No
1501	Same as model 1500 except for cabinet finish.													
Philco Radio & Television Corp., Tioga & C Sts., Philadelphia, Pa.—Philco														
37-610	125.00	Floor	3	5	3	Yes	AC	Manual	..	..	78	No	Magnetic	No
37-650	185.00	Floor	3	8	7	Yes	AC	Manual	..	..	78	No	Magnetic	No
Pilot Radio Corp., 3706—36th St., Long Island City, N. Y.—Pilot														
P114	\$395.00	Floor	4	11	12	Yes	AC	Automatic	10	10 & 12	78-33 $\frac{1}{2}$	No	NS	No
P393	159.50	Floor	3	7	3	Yes	AC	Manual	..	..	78-33 $\frac{1}{2}$	No	NS	No
Radiobar Co. of America, 7100 McKinley Ave., Los Angeles, Calif.—Radlobar														
550-675	\$895.00	Floor	3	12	10	Yes	AC	Automatic	10	10 & 12	78	No	NS	No
RCA Mfg. Co., Camden, N. J.—RCA-Victor														
5U	\$ 69.95	Table	2	5	4.5	Yes	AC	Manual	..	..	78	No	Low Imp. Magnetic	No
7U2	129.50	Floor	3	7	4.5	Yes	AC	Manual	..	..	78	No	High Imp. Magnetic	No
7U	99.95	Floor	3	7	4.5	Yes	AC	Manual	..	..	78	No	Magnetic	No
8U	159.95	Floor	3	8	5	Yes	AC	Manual	..	..	78	No	Low Imp. Magnetic	No
9U	239.00	Floor	5	9	9	Yes	AC	Automatic	..	..	78	No	Magnetic	No
9U2	290.00	Floor	5	9	9	Yes	AC	Automatic	8	10	78	No	Low Imp. Magnetic	No
D22	600.00	Floor	5	22	25	Yes	AC	Automatic	7	12	78	Yes	Magnetic	Yes
R93	16.50	Port.	..	..	..	..	AC	Manual	..	..	78	No	High Imp. Magnetic	No
R93S	16.50	Port.	..	..	..	..	Spring Motor	Manual	..	..	78	No	Magnetic	No
R93-2	24.50	Port.	..	..	..	..	AC	Manual	..	..	78	No	High Imp. Magnetic	No
R95	49.95	Port.	..	3	NS	No	AC	Manual	..	..	78	No	Magnetic	No
R99	149.50	Floor	..	7	15	Yes	AC	Manual	..	..	78	No	Low Imp. Magnetic	Yes
Sonora Electric Phonograph Corp., 160 Varick St., New York City—Sonora														
	\$ 69.50	Table	..	NS	5	Yes	AC	Manual	..	..	78	No	Crystal	No
	79.50	Table	..	NS	4.5	Yes	AC-DC	Manual	..	..	78	No	Crystal	No
	99.50	Floor	..	NS	15	Yes	AC	Manual	..	..	78	No	Crystal	No
Stromberg-Carlson Tel. Mfg. Co., 100 Carlson Rd., Rochester, N. Y.—Stromberg-Carlson														
72	\$795.00	Floor	4	13	15	Yes	AC	Automatic	14	10 & 12	78-33 $\frac{1}{2}$	No	Magnetic	No
74	985.00	Floor	4	16	30	Yes	AC	Automatic	14	10 & 12	78-33 $\frac{1}{2}$	No	Magnetic	No
140P	199.50	Floor	3	9	6	Yes	AC	Manual	..	..	78	No	Magnetic	No
145P	299.50	Floor	4	10	9	Yes	AC	Automatic	7	12	78-33 $\frac{1}{2}$	No	Magnetic	No
160P	495.00	Floor	5	14	30	Yes	AC	Automatic	8	10	78-33 $\frac{1}{2}$	No	Magnetic	No

RADIO DISTRIBUTORS AND DEALERS FROM COAST TO COAST . . .

THANK YOU!

YOUR acceptance of the Magnavox Phonette record player, 1937's outstanding radio accessory has been tremendous.

Expressions from jobbers everywhere prove that the Phonette is the popular priced answer to the rapidly increasing demand for high fidelity reproduction of phonograph records through radio sets.

Attractive walnut case, crystal pickup, self-starting constant speed motor — easily attached to any modern set.



The **MAGNAVOX PHONETTE**

For Information Write Dept. T.

ELECTRO-ACOUSTIC PRODUCTS CO.

Subsidiary of The Magnavox Company

FORT WAYNE, INDIANA

SERVICE NOTES

(From page 52)

NO MORE FREE CALLS

★ A minimum charge of \$1 is made by Trites' Radio Service of Melrose, Mass. Says Serviceman Trites, "I have become disgusted with free inspection of sets.

"Quite often some chiseler expects me to spend my time diagnosing his set. After telling him what the trouble is, he will go to a cut-rate store and buy the new tubes, or get the required parts from a so-called jobber and have some kid down the street wire them in. This practice has led to strict policy of a minimum charge.

"After all why should I do the hard part of servicing (diagnosis) only to lose the job to a 'screw-driver mechanic.' Of course, if a customer brings his tubes to my store, I'll gladly test them free.

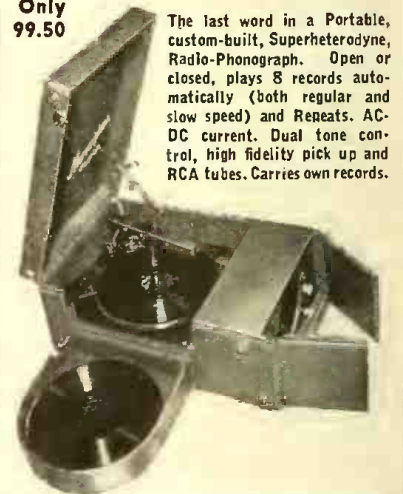
"Intermittent sets are handled only upon an hourly basis—there is too much of gamble in it any other way."

(This is a commendable practice and is worthy of adoption by all servicemen. Diagnosis is 95 per cent of servicing—why give it away?—Service Editor).

NEW—SENSATIONAL—LOW PRICED—AUTOMATIC RADIO-PHONOGRAPH

Marconiphone

RETAILS AT JUNIOR Only 99.50



The last word in a Portable, custom-built, Superheterodyne, Radio-Phonograph. Open or closed, plays 8 records automatically (both regular and slow speed) and Repeats. AC-DC current. Dual tone control, high fidelity pick up and RCA tubes. Carries own records.

MARCONIPHONE, INC.
679 Madison Ave., N.Y.C.

—Write for Illustrated Folder—

Name

Address

City and State

SENSATIONAL 3-TUBE DYNAMIC RADIO



Performance equal to that of many 5 tube sets from this unusually compact radio.

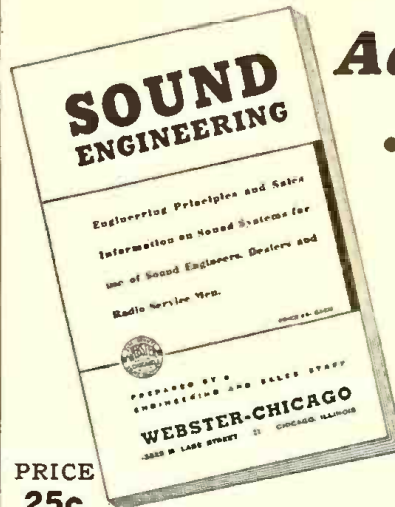
- Works on A.C. or D.C. current; 110-120 volts.
- Size: 7½" wide, 6¼" high, 5" deep.
- Improved T.R.F. circuit multipurpose tubes.
- Electrodynamic speaker; calibrated tuning scale.
- Self-contained aerial; ground not needed.
- In fabrikkoid covered cases; choice of 5 colors.
- Weighs only 4½ lbs.

Write for prices and catalog of FREED-EISEMANN sets.

FREED MANUFACTURING CO., Inc.
44 WEST 18th STREET NEW YORK, N. Y.

GET YOUR COPY

Act Now!



- 16 Page Sound Manual covering such topics in Public Address as:

How to estimate installations. . . How to install. . . Hints on obtaining better performance. . . Points on selling. . . etc. . . Nothing else like it available. . . Be Sure to Get Your Copy. . .

PRICE
25c

WEBSTER-CHICAGO

One of the oldest manufacturers of sound equipment in the field. Licensed under all important patents.

Products manufactured include:

- Portable Sound Systems, 8 to 20 Watts.
- Fixed Sound Systems, 8 to 120 Watts.
- Electric Phonograph Motors for all Cycles and Voltages.
- High Fidelity Pickups.
- Microphones: Carbon, Crystal or Ribbon.
- Speakers: Electro Dynamic or Permanent Magnet.
- Baffles and Trumpets.
- Sectionalized Sound Systems for Schools, Hotels, Department Stores, Hospitals and other institutions.
- Factory Call Systems.
- Two-Way Communication Systems.
- Custom Built Equipment of All Kinds.

NOTICE TO DEALERS

FREE COPY

Every dealer or active radio serviceman can obtain a copy of this Sound Engineering Manual free by signing name and address below and giving this coupon to one of our jobbers.

Name

Address

City State

Jobber.....O.K. and Send to
WEBSTER-CHICAGO, 3825 W. Loke St., Chicago, Ill.
Section N-9

TO DEALERS AND SERVICEMEN

TRIAD RADIO TUBE FREE!

UP TO \$1.25 LIST

A DARING NEW PLAN

To convince you of the superior quality of Triad Radio Tubes—we are offering absolutely free any Triad Tube up to \$1.25 list with your purchase of Triad Radio Tubes. Mail coupon below—also free Engineering Data Chart. Present it to your jobber when you purchase Triad Tubes and get your Free Tube—save \$1.25.

MAIL TODAY!

TRIAD MANUFACTURING CO., Inc. **THIS COUPON**
Dept. L-11 Pawtucket, R. I. **WORTH \$1.25**

Sure I'll try Triads. Send me Free Tube Certificate . . . good for \$1.25. Also FREE Engineering Data Chart.

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Jobber's Name _____

"THE QUALITY NAME IN RADIO TUBES"

AMPERITE presents..

The NEW RBn VELOCITIES



Distinguished in Quality, Design, and Construction

Featuring..

1. Output increased 6 DB.
2. Triple shielded—against all RF or magnetic fields, entirely eliminating hum pickup.
3. Eliminates feedback troubles.
4. Excellent for close talking and distant pick-up.
5. Acoustically designed to eliminate any possibility of cavity resonance.

Model RBn (High Impedance): RBnA (200 ohms) \$42.00 List
 NEW! Models RBnS, RSHn—Excellent All-around Microphones for Speech and Music. Slightly lower output and frequency range than above. Appearance same as above. \$32.00 List

Model RAH (2000 ohms): \$22.00 List

Model RAL (200 ohms): \$22.00 List

Model RAH (2000 ohms): \$22.00 List

FREE TO DEALERS AND SERVICE MEN: A striking window decal, advertising your SOUND SERVICE, and displaying the new Amperite Velocity. Write for it now!

AMPERITE Co. 561 BROADWAY, N. Y. Cable Address: Alkem, New York

AMPERITE Velocity MICROPHONE

Replacement METAL-TUBE RESISTORS



The original and perfected unit. Use it for satisfactory, trouble-proof, profitable servicing.

A precisely matched unit for any set model using this form of line-dropping resistor.

Any total voltage drop and all pilot lamp combinations—ideal for series-connected heaters.

Coded and base-wired in accordance with R. M. A. standards for such devices.

Also remember CLAROSTAT Exact-Duplicate Volume Controls for jobs that must FIT right, WORK right, LOOK right.

FREE MANUAL: Big 80-page directory of all sets and their control and resistor requirements, sent on request. Also latest supplements.

CLAROSTAT
 MANUFACTURING CO.
 Incorporated
 285 North Sixth St.
 Brooklyn, N. Y.

SOUND TRENDS

(From page 26)

BRITISH USE "PHON" AS UNIT OF SOUND LEVEL

★ A decision carefully avoided up to now by American noise experts and traffic officials, reports Dr. E. E. Free in his "The Week's Science," is that of exactly how much noise a motor vehicle may be allowed to make on the streets. This has, however, at last been tackled with some courage by the noise committee set up two years ago by the British Ministry of Transport. But not with quite so much courage, Dr. Free adds, as might have been shown by setting the noise-limit lower.

Following a preliminary report last year, the committee now has issued a tabulation of average noise observed from various types of motor vehicle, accompanied by two official anti-noise requirements which it is proposed

that every British motor vehicle be compelled to meet. For moving vehicles the standard is that a car or truck passing at 35 miles per hour, or at its maximum speed if below this value, shall not make a noise of more than 90 "phons" 18 feet away from the side of the car. A car standing still but with its engine racing is not to make more than 90 phons of noise 25 feet in rear of its exhaust.

The British phon is a noise unit not greatly different from the American noise unit of decibel. The 90-phon or 90-decibel limit would be considered, for American cars, exceptionally noisy. Less than 5 per cent of new American trucks would exceed the British 90-decibel limit, and less than 1 per cent of new or properly serviced passenger cars. Noise reduction on American streets by a legal limitation to 90 decibels would be negligible. A limit of 80 decibels would cause a great, and welcome, reduction. Limitation of loudness of horns would cause even more relief.

HAVE A NEW BOOKLET

★ Stromberg-Carlson, Rochester, N. Y., has re-issued a revised and modernized edition of booklet describing the company's Te-Lek-Tor equipment.

★ Philco is ready with a new 1937 calendar, a 12-page roto with a radio star on each page, presented in preparation for Xmas biz and designed to build store traffic until the new year is under way.

★ Descriptive 2-color circular on a new 2nd Edition "Radio Field Service Data" book published by Radio & Technical Publishing Co., 45 Astor Place, New York City, will be sent free upon request to Dept. C30.

★ New catalog of public address products has been issued by Atlas Sound Corp., 1451 39th St., Brooklyn, N. Y. Bulletin number is F-36.

★ J. F. Distributing Co., 4111 Fort Hamilton Parkway, Brooklyn, N. Y., has a 1937 catalog, completely illustrating and describing the company's line of parts.

★ Thordarson Electric Mfg. Co., 500 W. Huron St., Chicago, has a new booklet (No. 500) on "Tru-Fidelity" transformers. Eight-page bulletin includes 12 charts on transformer frequency characteristics.

★ Radlobar Co. of America, 7100 McKinley Ave., Los Angeles, has issued an elaborate folio presenting 1937 line of Radlobars with Philco receivers.

★ New 6-page 1937 catalog of microphones and accessories has just been issued by Shure Bros., 225 W. Huron St., Chicago. Item is available on request.

★ Marconiphone, Inc., 679 Madison Ave., New York City, has issued a descriptive bulletin on portable radio-phonograph combinations.

★ Westinghouse has two new booklets, "Micarta in the Radio Industry" and "Where You Can Use Micarta," describing and illustrating the use of this plastic material in switch parts, coil supports, tube sockets, etc. Copies come from your nearest district office or from Westinghouse Electric and Mfg. Co., East Pittsburgh, Pa.

You can get it with

Sparton Radio



RADIO'S RICHEST VOICE
 with the Photochromatic Dial

Ready for shipment to dealers is Sparton's 8-color flasher window trim.

The Complete SERVICE LABORATORY

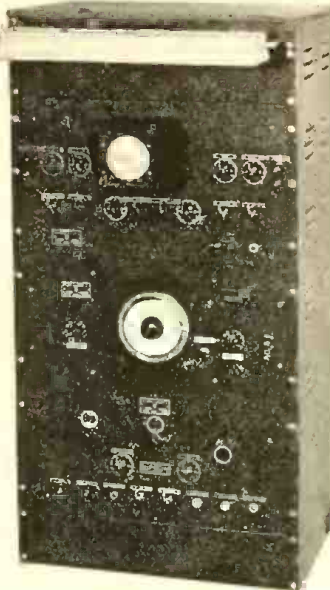
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CLOUGH - BREngle

Down Payment \$12.00
(and up)

Let the prestige building ability of these massive complete laboratories build profits for you.

Cabinets are C-B green with silvered Lumaline floodlight and black front panels. Every dial, name plate, and control stands out to intrigue the customer's eye and build confidence in your work.

With the new C-B Easy Payment Plan you can bring this modern complete equipment into your shop for less money than you are accustomed to paying for a small portable instrument. Ask your jobber for full details or write today for the new descriptive bulletin.



The C-B Laboratory Cabinet holds any standard 19" panel in which form all present and future C-B instruments are optionally offered. Buy the cabinet and one instrument. When more equipment is desired, the blank filler panels may be quickly removed.

Write for
Descriptive Bulletin

The CLOUGH-BREngle CO.

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Chicago, U. S. A.

Clarion
PUBLIC ADDRESS EQUIPMENT

"AS UP TO DATE as Tomorrow"

Visit the authorized CLARION Distributor in your vicinity . . . ask him to demonstrate this "Year Ahead" line . . . ask him to explain the CLARION sales policy which protects the Sound Engineer who makes the sale.

THEN . . . ask him to tell you the prices — you'll be AMAZED that so fine a line, engineered to the most exacting standards and built to stand a world of abuse, can be manufactured at such low prices. The answer is, of course, CLARION mass production!

TRANSFORMER CORP. of AMERICA
Dept. L-11
69 WOOSTER ST., NEW YORK CITY

PIONEER Scores Again!

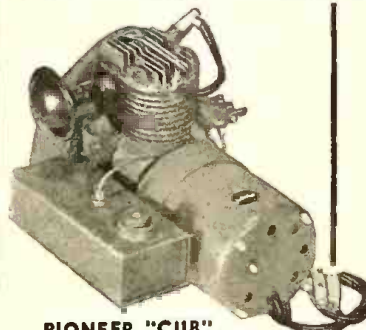
NEW DE LUXE AIR-FLO CHARGER WORKS IN THE SLIGHTEST BREEZE (4 MILES PER HOUR)

NOT a toy—not a makeshift—but a real scientifically designed battery charger, the new Pioneer De Luxe Air-Flo Charger is the result of months of intensive research and development. It is being announced to the trade only after exhaustive tests have proved it trouble-free!

Compare the performance of these chargers with any other wind operated electric generator on the market. The Pioneer De Luxe Air-Flow keeps batteries charged with the slightest breeze—it starts charging in a 4-mile per hour wind. At 25 miles per hour it develops 25 amperes.

Large 4-pole generator, 7½" in diameter. Completely weather-proof. Totally enclosed grease-sealed ball bearings. Enclosed bronze collector rings. Patented variable pitch propellor of scientific aeronautical design—mounted on electric speed control, which automatically regulates charging rate.

Made in two sizes—Super-De Luxe 25 ampere model as described above, \$54.95 list f.o.b. factory. 15 ampere De Luxe model, \$47.50 list f.o.b. factory. Mail coupon for data sheet!



PIONEER "CUB"

Charges storage batteries for radio and 12 electric lights. 200 watts 6 or 12 volts DC. Sells for \$44.95 with long profit! Direct drive! Push-button starting! Built-in ammeter! Also "Baby Jumbo" gas electric plants with magneto ignition; 6, 12 volts, 15D and 2DC watts DC. 12, 32, 110 volts, 250 watts DC.

PIONEER "BLUE DIAMOND"

Operates standard "city" radio and electric lights. 300 watts 110 volts AC. The lowest priced "city" light plant on the market, \$79.95 list! Ideal for PA work. Also has 50-watt DC winding for charging 6 volt batteries. Kick-pedal starting! Filter and remote control available.



OTHER PIONEER PRODUCTS

"Gold Crown" and "Grand Champion" Gas Electric Power Plants, 600 to 1500 watts, 110 volts AC; 800 watts, 32 volts DC; 80D-1500 watts, 110 volts DC. "Silver Band" Dynamotors, Red Seal Gen-E-Motors, Rotary Converters in various sizes and voltages.



MAIL THIS COUPON NOW!

PIONEER-GEN-E-MOTOR CORPORATION, 468-Z West Superior St., Chicago, Ill.
(Cable Address, "Simontrice," New York)

RUSH INFORMATION ON ITEMS CHECKED

() New De Luxe Air-Flo Charger () Gas-Electric Power Plants
() Pioneer's Extra Profit Plan for Electrical Dealers.

Name

Address

City State

NEW THINGS FROM THE MANUFACTURERS

Home recording system

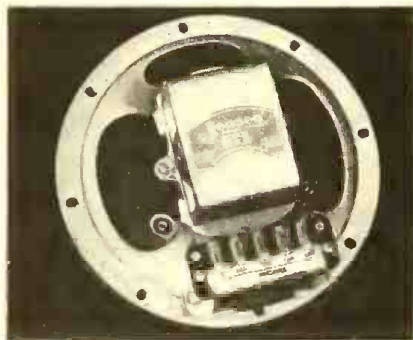
★ Instantaneous recording device at low cost. Makes 6-inch acetate record. Complete with microphone, cutting head, amplifier, and speaker for play back. Housed in compact carrying case—10x14x15 inches—weighs only 25 pounds complete. Model 1 Babytone—list \$85. Recording Equipment Co., 6611 Sunset Blvd., Hollywood, Calif.—**RADIO TODAY**—See also advt. p. 63.

Ranger-Examiner combination



★ Signal generator and volt-ohm-milliammeter for radio testing. Model 540 oscillator has plug-in coils covering range from 110-20,000 kc. Direct reading dial—accuracy of calibration 1 per cent up to 3,000 kc. other ranges 2 per cent. Model 740 multimeter has following ranges 0/10/50/250/500/1,000 volts AC and DC at 1,000 ohms per volt. 0/1/10/50/250 mils DC. Resistance scales 0/300/250M ohms with self-contained battery. In metal case—net \$36. Readrite Meter Works, Bluffton, Ohio—**RADIO TODAY**

Universal speakers



★ Line of P.A. and replacement speakers with adjustable impedance transformers. Two types available—matching either plate impedances or line impedances. No soldering required—flexible lead in pin jack adjustment. Clearly marked terminal strip. Either speakers or transformers available separately—thereby reducing required stock to minimum. Jensen Radio Mfg. Co., 6601 S. Laramie Ave., Chicago, Ill.—**RADIO TODAY**

Floating speaker mounting

★ Unit designed to eliminate cabinet vibration and resonance. Speaker is mounted in frame—floated in front



on rubber and supported in rear by a flexible damped spring. Sizes to fit 8, 10, 12-inch dynamic units of all manufacturers. Colortone, Inc., South Bend, Ind.—**RADIO TODAY**

Zipohm resistor



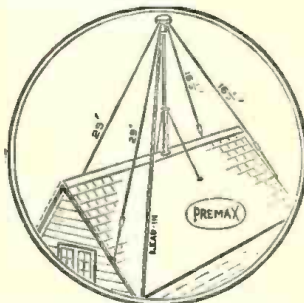
★ Wirewound resistor in 5 and 10-watt sizes. Units are compact, noiseless, and accurate—impregnated with waterproof cement. Resistor value on aluminum tag. List—5-watt unit 25 cents, 10-watt, 40 cents. Kit of 57 specially selected units—list \$11.75. Muter Co., 1255 S. Michigan Ave., Chicago, Ill.—**RADIO TODAY**—See also advt. p. 50.

Low-voltage cathode ray tube



★ Small cathode ray tube for service work and experimental use. Has 1 inch diameter screen and electrostatic deflection. Constructed with metal shell and octal base—operates from 6.3 volt filament supply and anode potential of from 250-500 volts. Type 913. RCA Mfg. Co., Harrison, N. J.—**RADIO TODAY**

Premax antenna



★ All-wave non-directional antenna for mounting on roof-top. Pyramid aerial shipped completely assembled with wires, junction box, noise reduc-

ing lead-in, insulators, 7-foot steel telescoping mast. Premax Sales Div., Chisholm-Ryder Co., Niagara Falls, N. Y.—**RADIO TODAY**—See also advt. p. 43.

Exact replacement condensers

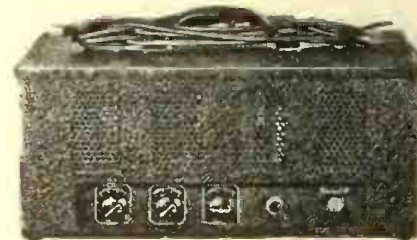
★ New and expanded exact replacement line of dry electrolytic condensers. Includes many types used on current receiver models. Solar Mfg. Co., 599 Broadway, New York City—**RADIO TODAY**—See also advt. p. 43.

Gaseous rectifier



★ "G" type gaseous rectifier for power supplies. Requires no filament power. Designed for use in battery operated sets and other uses where power consumption must be held to minimum. Companion to the 0Z4 introduced some months ago. Type 0Z4G in small glass envelope. Other types suitable for 6 volt operation are the 6X5 and 6X5G illustrated above. Raytheon Production Corp., 420 Lexington Ave., New York City—**RADIO TODAY**—See also advt. p. 29.

Mike pre-amplifier



★ Voltage amplifier for velocity or crystal mikes. Gain of 65 d.b.—electronic mixer for two input channels. Two stages of amplification. Low hum level. Steel carrying case with plug-in connections at input and output. AC operated. Model 660. Operadio Mfg. Co., St. Charles, Ill.—**RADIO TODAY**—See also advt. p. 40.

C-B etched-foil electrolytics

★ Line of compact dry electrolytic condensers. Use of etched foil increases capacity many fold over ordinary electrolytic condensers. 24-mike condenser is same size as average metal tube. Ideal for replacement and initial installations. Full details in catalog 134A. Cornell Dublier Corp., South Plainfield, N. J.—**RADIO TODAY**—See also advt. outside rear cover.

Low cost multimeter

★ Volt-ohmmeter of pocket size. Measures 0/5/50/500/1,000 volts available from pin tip jacks. Resistance range from 1/2 to 500/500M ohms. Current range of 0-1 mills also available. 2-inch meter housed 2 x 3 x 5 steel case. Complete with battery—net \$5.75. Powertone Electric Co., 179 Greenwich St., New York, N. Y.—RADIO TODAY—See also advt. p. 60.

Armored resistors

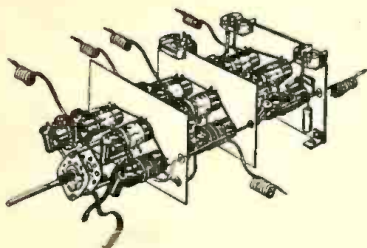
★ Wire-wound metal clad resistors with molded bakelite insulation. Hermetic sealing provides protection against humidity and electrical leakage. Maximum heat dissipation provided by metal jacket clamped flush against metal chassis. Available in various sizes and resistances. Clarostat Mfg. Co., 285 N. Sixth St., Brooklyn, N. Y.—RADIO TODAY—See also advt. p. 56.

Acoustic communication booth



★ Sound-proof booth designed for use in noisy locations. Useful for telephone conversations and conversations between two persons. Has no door and is open at bottom—yet is quiet. Ample ventilation. Constructed of steel and acoustic tile. Scientifically sound deadened. Johns-Manville, 22 E. 40th St., New York City—RADIO TODAY

Meissner coil unit



★ Multi-wave coil unit with air trimmers. 5-band assembly for all-wave receivers—covers 3.8 to 535 meters or 7.5 to 2,140 meters. Consists of antenna r.f., and oscillator coils. Align-aire trimmers on all bands except ultra high frequency which require no trimmers. Used with 410 mmfd. 3-gang condenser. Meissner Mfg. Co., Mt. Carmel, Ill.—RADIO TODAY

U-S-E test equipment

★ Featured in line of 1936 test instruments is the CR-4 beat frequency audio oscillator. Calibrated from 10 to 20,000 cycles with 120 cycle calibrating reed—accuracy within 2 per cent. Output impedances of 500 and 10,000 ohms—distortion at 100 cycles less than 5 per cent. Net \$77.

Cathode ray oscillograph with 3-inch tube. Horizontal and vertical amplifier. Linear sweep circuit. Sensitivity of 1/4 volt per inch rms. Focussing, illumination intensity, centering, adjustments. Model CR-3—net \$84.50. United Sound Engineering Co., 2233 University Ave., St. Paul, Minn.—RADIO TODAY

High-freq condenser



★ Series of ultra-high frequency variable condensers for receivers and low-powered transmitters. Available in dual and single models—cadmium-plated soldered brass plates with B.100 Isolantite insulation. Noiseless operation. Sizes from 15 to 140 micro-microfarads. Hammarlund Mfg. Co., 424 W. 33rd St., New York City—RADIO TODAY

Webster-Chicago sound system

★ Portable 17-watt sound system. Directional crystal mike with combination floor and banquet stand. Uses two 12-inch pernodynamic speakers in bias cut case. All equipment housed in two cases. Total weight 21 1/2 pounds. Model PA-417C. Webster Co., 3825 W. Lake St., Chicago, Ill.—RADIO TODAY—See also advt. p. 55.

Triumph test equipment



★ Low-cost volt-ohmmeter with sloping panel for easy reading. Ranges —0/10/100/500 volts DC and 0/1M/500M ohms. 1 milliampere movement. Rotary range selector switch. Housed in portable case—weight with battery only 20 ounces. Net \$7.85.

5-range AC operated signal generator. Full-vision airplane type dial calibrated from 100 to 75,000 kc. Optional 400-cycle modulation—5-step ladder attenuator and variable output control. Black wrinkle steel case. Net \$23.95. Triumph Mfg. Co., 4017 W. Lake St., Chicago, Ill.—RADIO TODAY

Tru-fidelity audio transformers



★ Line of high-fidelity transformers for amplifier and sound systems. Single hole mounting—heavy casing eliminate hum pick-up. High permeability alloy core—dual balanced coils with minimum leakage reactance and distributed capacity. Unusually great frequency response and minimum distortion. Thordarson Elec. Mfg. Co., 500 W. Huron St., Chicago, Ill.—RADIO TODAY

Anti-howl amplifier



★ 60-watt amplifier with automatic howl suppression and cathode ray indicator. Tone compensated volume control—reversed phase degeneration. Volume level expansion for recorded programs. Automatic constant output level for speech reproduction. Amplifier—list \$175. Volume range expander \$60 additional, howl supp. \$100, auto. const. output \$100. Amplifier Co. of America, 20 W. 22nd St., New York City—RADIO TODAY

Dictograph silent radio

★ Radio with Acousticon magic ear for silent reception—does not disturb other persons present in same room. Magic ear (illustrated) is placed



under pillow or on back of chair—not an earphone but a tiny tonal fork. Loudspeaker provided when all the people in room want to hear. Complete radio—list \$65. Progress Corp., 1 East 43rd St., New York, N. Y.—RADIO TODAY

POWERTONE

Model 801 Volt-Ohmmeter

A sensitive compact and accurate volt-ohmmeter that will be the busiest instrument in your "lab," or out on jobs. DC voltage readings 0-5-50-500 and -1000. Resistance readings from 1/2 to 500 and 200 to 500,000 ohms. Will read from 0 to 1 Ma. Low resistance range direct reading. Meter has 1000 ohm per volt sensitivity. Battery is self contained. Panel is clearly lettered. Compensator provided for zero adjustment. Measures only 5"x3 1/4"x2 1/2". Your price **\$575** complete with battery...



Direct from Manufacturer to You.
Send for illustrated circular describing Powertone test Equipment.

TRY-MO RADIO CO.
85 Cortlandt Street, New York City
POWERTONE ELECTRIC CO.
179 Greenwich Street, N. Y. C.

AUTOMOBILE AERIALS

**WHAT WILL
WARD PRODUCTS
SHOW FOR 1937?**

TOP AERIALS
WHIPS -- POLES
RUNNING BOARD AERIALS

Send coupon today for advance information about Ward's 1937 Auto Aerials.

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WARD BLDG. CLEVELAND, OHIO
CANADA: ATLAS RADIO CORP., TORONTO, ONT.
FOREIGN: LINCOLN EXPORT CO., NEW YORK

USE THIS COUPON

WARD PRODUCTS CORP.
Ward Bldg. - Cleveland, O.

Send information of Ward's 1937 Auto Aerials.

Name

Address

Check Dealer Jobber Service Man

NEW TRADE TOPICS

MAY COMBINE SPRING PARTS SHOWS AT CHICAGO

★ With two different radio parts shows scheduled for Chicago in the Spring, radio manufacturers see a division of trade interest which may result in diminished effectiveness for both shows.

The Institute of Radio Service Men has announced its national convention and trade show for April 2 to 4, at the Hotel Sherman, Chicago.

Meanwhile the Radio Manufacturers Association has planned a Chicago parts show for jobbers in May or June. No receiver exhibits would be included in this RMA radio-parts show. The RMA show plan is in charge of a committee made up of Fred Williams, treasurer of RMA, Arthur Moss, chairman of the Parts Section, and Bond Geddes, executive vice-president.

Efforts are now understood to be underway to combine the two shows into a single exhibition, to be operated under the direction of Ken Hathaway, executive secretary of IRSM. While such consolidation has been under discussion, no final conclusion has been reached as we go to press.

★ Galvin Mfg. Corp., 847 West Harrison St., Chicago, makers of Motorola auto radios, have started construction of a new modern plant on a newly purchased 7 1/2-acre industrial tract in Chicago. Firm expects to occupy the new plant by May 1, 1937, and at the beginning of the 1937 radio season, will announce a line of home receivers. Galvin has also announced the appointment of Carl McKelvey, formerly a sales exec for RCA, Zenith, and Brunswick, as general manager for a newly formed home radio division.

★ Cornell-Dubilier Corp., condenser makers, are shipping their products in brand new packages. Familiar yellow-and-blue colors are

retained, but packages have been streamlined for more visibility and easier stacking.

★ Part of Zenith Radio Corp.'s plans for expansion of its auto radio division is the appointment of R. F. Weinig as manager of the department. Weinig's former connections include presidency of Weinig Made-Rite Co., Cleveland; organizer and manager of the Columbus Distributing Co., Cleveland; and merchandising positions with Atwater Kent.

★ Peter Kain and Arthur Nodine, of Philco's Atlantic division, recently gave a champagne dinner for the sales group of Philco of Pennsylvania. Event celebrated that group's leadership in Philadelphia among 25 key cities of the country in radio quota rankings for two-thirds of the Fall season.

★ Hygrade Sylvania's director of foreign sales, W. A. Coogan, has returned from a 17,000-mile trip through South America, Cuba, Porto Rico and the Canal Zone. Journey would have taken 4 months by boat; Coogan used planes and made it in 7 weeks. He found general business excellent on South America's east coast, and found Peru leading the western countries. Report is also that 95 per cent of the radio equipment and tubes used in all South America are of American manufacture.

★ M. H. Kranzberg, executive secretary of Wholesale Radio Service Co., New York City, in commenting on the election, says: "I look forward confidently to four of the most prosperous years that Wholesale has ever known. In particular radio has demonstrated its pre-eminence as an advertising medium, and I am certain that the radio industry will reap great benefits from the fact so much interest has been aroused."



Microphones for home use, named for the famous Major and made by Pilgrim Elec. Corp. earns this kind of display at Bloomingdale's, New York.



J. J. McCarthy, president of Triumph Mfg. Co., directs the firm's new merchandising plans.

★ Triad Mfg. Co., Pawtucket, R. I., makers of Triad radio tubes, have appointed the Franklin Bruck Advertising Corp., New York City, as advertising counsel. New plans call for a series of announcements to dealers and servicemen; Mort Heineman is account exec. New wrinkle in merchandising Triad tubes is a plan whereby dealers may get one tube free up to \$1.25 list.

★ At the recent convention of the National Industrial Advertiser's Assn. in Philadelphia, first prize for the year's most effective campaign on major industrial equipment was awarded to Fairbanks, Morse & Co. Prize-winning campaign was directed by FM's advertising agency, Henri, Hurst & McDonald, Chicago.

★ Herman Diaz is the manager of the Barclay-Warner Co.'s new store at 94 Seventh Ave., New York City. Along with 9 leading radio lines, Diaz has stocked an assortment of appliances in the new shop. Exceptional store interior is finished in only two colors throughout, features indirect lighting, and has attracted wide attention.

★ E. A. Arndt, general manager of Wincharger Corp., has made a major announcement: W. W. Watts has been appointed sales and advertising manager for the company with headquarters at the main plant, Sioux City, Iowa. Watts has nearly 14 years experience in the farm market, promoting radio and electrical appliances.

★ C. L. Parris has sold his interest in Wincharger Corp., Sioux City, Ia., and has resigned as president. Parris has no immediate plans except to shoot pheasants in the Dakotas, hunt ducks in Minnesota, and to fish in Florida.

★ L. A. Meyerson, resigned president of the Morlen Electric Co., Inc.,

has organized the Electric Amplifier Corp. at 135 West 25th St., N. Y. C. Catalogues of the new firm are available when requested on business letterheads.

★ Continental Motors Corp., Detroit, Mich., has named John J. Kopple, 60 East 42nd St., New York City, as Eastern district sales representative. Kopple will handle Tiny Tim Portable Battery Charger and Lighting Plant, Perm-O-Flux Permanent Magnet Dynamic Speakers and Kleen-Aire Portable Air Conditioner.

★ Tobe Deutschmann Corporation, Canton, Mass., is continuing its active work on radio-noise elimination and public education. On Oct. 22, C. W. Metcalf of the Deutschmann company addressed the Kiwanis Club of Framingham, Mass., on practical methods of preventing radio interference, with demonstrations. Framingham has a bad local-interference situation, and the 40 local business men present were greatly interested in solving this noise problem.

★ Several lines of radio parts and public address equipment will be expanded by Thordarson Elec. Mfg. Co., Chicago, as a result of the purchase of controlling interest in that company by Dr. C. F. Burgess, president of the Burgess Battery Co., Chicago. Dr. Burgess, whose companies have long been successful in making drycells and flashlights, acoustic materials, electronic devices and similar products, has announced that personally Mr. Thordarson and himself will interest themselves in new research and development work.

★ R. E. Kane is a new divisional sales representative for General Household Utilities Co., Chicago makers of Grunow sets. Kane has had 13 years of experience in the business, having been connected with Sherman Clay, Chicago Talking Machine Co., and with RCA Victor. Newcomer to the Grunow radio sales staff is Walter J. Collins; V. P. Finger has been appointed sales representative.

★ Henry C. Bonfig has been named to direct the sale of all RCA package merchandise, including receivers, records, tubes, and parts; he will also supervise advertising and field activity. Other changes in the company's national executive sales set-up; F. R. Deakins will direct sales of all other products, engineering, international, and service; Paul C. Richardson will manage the radio and phonograph division; Vance Woodcox will direct national field activities from headquarters at Camden, N. J.

Eugene Carrington, sales manager of the distributing division of Standard Transformer Corporation, announces the appointment of the Royce Sales Agency as New York representative with a complete stock of Stancor products. The Royce brothers, Oscar and Marty, extend a cordial invitation to all their distributors.

NEW

THE latest power amplifier from the McMurdo Silver Sound Laboratories is the brand new 3A unit which delivers 32 watts undistorted (not over 2% total harmonic content), with an overall gain of 45 db. and any input impedance you ever need. Two of these units with two Super-Giant speakers, to which each 3A supplies 32 watts field power, "blew the roof off" the 18,000 seat Chicago Stockyards Auditorium when driven by a small pre-amplifier (ready now 100 db. gain, no hum, three-channel mixing, and ALL in $\frac{1}{8}$ of a cubic foot!)

Whenever you need power equal to over 200 watts into ordinary speakers, one 3A amplifier and one Super-Giant speaker will give it to you at less than 35c. per watt—with broadcast station quality. You can drive one to eight 3A with ONE 76 driver—they need no driving volume—each having a driver stage self-contained. One 6J7 feeding a 3A will give nearly 90 db. gain, draw its operating power from the 3A, and turn out 32 watts of better P.A. quality than you've EVER heard before.

Quite a lot? Why not write for the details of this and other up-to-the-minute sound units? Just use a postcard.

McMURDO SILVER CORP.

2900-J S. Michigan Blvd., Chicago, Illinois

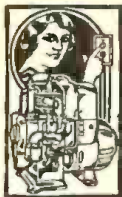


CLARIFIES RECEPTION

The new Birco all wave antenna will actually improve reception because it filters out all man-made static. The Birco Antenna kit is easy to install because it has been factory connected and soldered to eliminate incorrect and poor connections. The antenna transformer matches impedance to transmission. There is no signal loss in transmission to the receiver coupler which automatically adjusts itself to the frequency tuned in by the receiver. No switching for short wave or broadcast is required. No. 375 All Wave Antenna. List ea. \$4.25 No. 376 All Wave Antenna for sets with built in aerial selector. List ea. \$3.50 Dealers! Servicemen! Even the package has been redesigned and modernized to help you sell Birco products faster! See your jobber. If he cannot supply you write to Dept. RT-11.

BIRNBACH RADIO CO.
145 HUDSON ST. BIRCO NEW YORK, N. Y.

COMPLETE ELECTRIC PLANTS



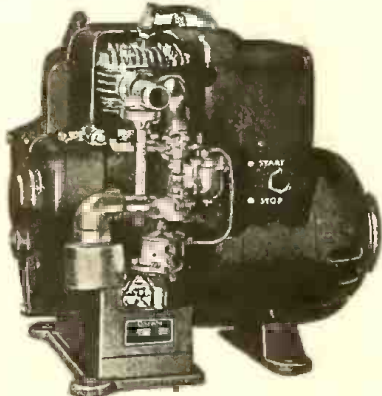
ONAN ALTERNATING CURRENT PLANTS OPERATE A.C. RADIO, PUBLIC ADDRESS SYSTEMS, SOUND CAR EQUIPMENT, MOTION PICTURES.

Can Be Used Anywhere

Supply Electricity for Camps, Cottages, Farms, Boats, Commercial Purposes and places where current is not available from power companies. Will Operate Water System, Refrigerator, Household Appliances.

Sizes to Suit Every Purpose

Built in sizes 350 to 50,000 watts, \$110 and up. Supply 110 or 220 volt, 60 cycle, single or three phase current. Operate on Gasoline, Gas or Distillate. Also 32 volt, D.C. Models. All Models furnished complete, ready to run.



Write for Details

D. W. ONAN & SONS

567 Royalston Ave. Minneapolis, Minn.

TRADE NEWS

★ Lively series of trade shows staged by Emerson jobbers has been in progress recently. Fones Bros., Emerson distributors for Arkansas, held a 2-day show at Little Rock, Ark.; Hollenback's Radio Supply, Altoona, Pa., sponsored shows at Du-Bois, Punxsutawney, Johnstown, and Lewistown, all in Pennsylvania.

★ Chas. F. Zehner, manufacturers' representative of 5718 Keniston Ave., Los Angeles, is now operating from a special Radio Equipment Trailer. Traveling demonstration features products of Bendix-Dayrad, Clough Brengle, Hickok, Jackson, Solar, Supreme, and Weston. Service engineer F. R. Brace is in charge of all demonstrations.

★ Newcomer to the staff of Radio Speakers, Inc., Chicago, is Wally Bauman, scheduled to do field merchandising. Bauman has had a long national experience with half a dozen leading firms in the field and has become a popular figure in distributing circles.

★ D. W. May, district radio sales manager for GE, has announced attractive plans for a 6-day winter vacation cruise to Bermuda, to be made by 400 radio dealers and their wives. S.S. Volendam leaves Feb. 27th and returns March 5th; reservations must be made by Dec. 31, 1936.

★ Monagas Trading Co., 349 West 29th St., New York City, has announced an interest in contacting radio manufacturers here who are open to exclusive selling arrangements in the Latin-American countries. Company has a special interest in Cuba, where it has already done considerable work.

★ At the first Annual Modern Plastics competition in New York City recently, the Sears-Roebuck Silvertone Radio was awarded first prize in the decorative group. Case of this set was the work of the Chicago Molded Plastics Corp., with a dial and tuning knob by the Erie Resistor Corp. The Erie company also did work for the Colonial Radio Corp., Buffalo, N. Y., which won third award in the industrial group.

★ First to introduce its 1937 refrigerator models, Stewart-Warner Corp. held its annual convention in Chicago Oct. 29th and 30th with the complete distributing organization of United States and Canada on hand to see the line and hear about promotion plans. Meeting was conducted by John F. Ditzell, refrigeration and radio sales manager. Other Stewart-Warner execs on the program were C. R. D'Olive, J. N. Colton, F. R. Cross, and L. L. Kelsey, E. F. Brinsley of the C.I.T. Corp. explained the brand new finance plans now in force, and Hays MacFarland and A. B. Discus of the Hays-MacFarland Advertising Agency outlined the new national advertising campaign. New 1937 models are already being shipped to distributors.



R. M. Gray is the new sales manager for Webster-Chicago.

★ To test the ability of its receivers to stay in alignment through drastic changes in temperature, humidity and altitude, RCA officials recently put a small table model aboard an air express, off for a 20,000-mile flight to the Philippines.

★ National Union Radio Corp. of N. Y. has appointed J. H. Robinson as director of new products research, along with present work as export manager. Robinson invites confidential connections with inventive persons with ideas on new products, patents and ideas in radio equipment, electronics, television and electrical industries.

★ Ken-Rad reports rapid progress on a new addition to its main plant at Owensboro, Ky. Improved facilities will be used mainly for the company's metal tube division and to relieve generally the current rush of orders. Ken-Rad's commercial engineering department, which cooperates with set makers, jobbers and dealers on technical problems, has moved to enlarged third-floor quarters in the main plant.

★ Special representative for Crosley, to assist distributors and dealers in sales promotional work is the newly appointed G. H. Wiley. Another appointment is that of Frank Holliday, to develop a retail organization to supplement wholesale activity in point of supplying capable men to dealers. Third announcement is that Jack Zumwalt is now district manager in the New England territory.

★ To strengthen RCA's West Coast organization serving wholesalers in the area, the company has appointed two new district managers, one for the Los Angeles and one for the San Francisco offices. Former job went to E. W. Isenhower, later to E. J. Rising.

HERE'S A NATURAL
Money
Maker!

Major Bowes' AMATEUR Home Broadcasting MICROPHONE

New! Norel!
Smart Buyers all over the country are fast becoming "Major Bowes Microphone Conscious." Why not you?
Be first in your city to feature this amazing "business getter!"

Write! Wire! NOW!

MAIL THIS COUPON!

PILGRIM ELEC. CORP.
44 West 18th St., New York
Please send me sample and prices of your Major Bowes Microphone.

Name

Address

RT-11-36

WHOLESALE AT WORK

★ Utah Radio Products, Chicago, announce the appointment of these jobbers for the complete line of Utah Radio parts: Offenbach Elec. Co., San Francisco; General Radio Supply, Camden, N. J.; Thomas H. Brown, New Haven, Conn.; Acme Radio Supply, Milwaukee, Wis.; Southern Equipment Co., San Antonio, Tex.; Radio Products Sales Co., Los Angeles; Lewis Sporting Goods Co., Raleigh, N. C.; Sun Radio Co., Baltimore; and Belmont Corp., Minneapolis, Minn.

★ Gerald O. Kaye, of Bruno-New York, Inc., is conducting a bang-up "Jack Pot Prize Contest" for dealers' salesmen in the area covered by this RCA Victor distributing firm. Points are awarded on sales of RCA instruments made between Nov. 9th and Dec. 15th. Added up, these points entitle salesmen to prizes selected from a catalog illustrating \$30,000 worth of such merchandise as watches, clocks, house furnishings, cameras, appliances, etc. Schedule gives from 10 to 125 points for selling various models, and prizes are available for as low as 225 points.

ATLAS
wire-wound tubular
RESISTORS

Universally known
to the industry for-

- ✓ **ACCURACY**
tolerance 2%
- ✓ **DEPENDABILITY**
safe wattage ratings
- ✓ **PACK WINDING**
insuring long life

CARRIES THE LOAD

Atlas adds color to jobbers' counters by sending this new card.

★ Southern Radio Supply, distributors of Corona sets and Ken-Rad tubes in Little Rock, Ark., have announced that George Bean, W5DVI, is a new travelling representative for the firm in the state of Arkansas.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACTS OF CONGRESS OF AUGUST 24, 1912, AND MARCH 3, 1933,

OF RADIO TODAY, published monthly at New York, N. Y., for October 1, 1936. State of New York, County of New York.

Before me, a Notary Public in and for the State and county aforesaid, personally appeared Orestes H. Caldwell, who, having been duly sworn according to law, deposes and says that he is the Editor of RADIO TODAY and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, as amended by the Act of March 3, 1933, embodied in section 537, Postal Laws and Regulations, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are: Publisher, Maurice Clements, 277 Park Avenue, New York, N. Y.; Editor, Orestes H. Caldwell, Catrock Road, Cos Coh, Conn.

2. That the owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding one per cent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a firm, company, or other unincorporated concern, its name and address, as well as those of each individual member must be given.) Caldwell-Clements, Inc., 480 Lexington Avenue, New York, N. Y.; O. H. Caldwell, Catrock Road, Cos Coh, Conn.; Maurice Clements, 277 Park Avenue, New York, N. Y.; Mary Havard, Cognewaug Road, Cos Coh, Conn.; M. G. Bergen, Crestwood, N. Y.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.) None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in said stock, bonds, or other securities than as so stated by him.

(Signed) Orestes H. Caldwell

B. M. Phillips
Notary Public, New York County
Sworn to and subscribed before me this 25th day of September, 1936
Notary Public, Westchester County, Belle Mead Phillips
County Clerk's No. 396
New York County Registrar's No. 8 P 227 (My commission expires March 30, 1938.)

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While every precaution is taken to insure accuracy, we cannot guarantee against the possibility of an occasional change or omission in the preparation of this index.

THE "BABY TONE" LIST

INSTANTANEOUS RECORDING UNIT

\$ 85.00
Up

MODELS FOR HOME OR PROFESSIONAL USE. F.O.B. Los Angeles
Each Unit Complete to Record and Playback, Including Quality Microphone
SIMPLE TO OPERATE • NO BACKGROUND NOISES
PRODUCES EXCELLENT RESULTS • TECHNICALLY PERFECT
CUTS AND GROOVES ACETATE IN ONE OPERATION

TRADE INQUIRIES INVITED

WRITE FOR BULLETIN
RECORDING EQUIPMENT MFG. CO.
6611 SUNSET BOULEVARD HOLLYWOOD, CALIF.

WHOLESALE AT WORK

— buying and selling under Robinson-Patman Act
— announcing a fast series of jobber expansions

★ Now that the Federal Trade Commission has actually begun issuing complaints against alleged violators of the Robinson-Patman Act, radio distributors develop extra caution in their dealings with both manufacturer and dealer.

Complaints so far have been against buyers and sellers in other fields. Only one radio case is formally mentioned as a violation of the Act's provisions. However, the trend of enforcement procedure is being clarified, and after the first hearings on Nov. 6, the attitude of the Commission was easier to get at.

Perhaps the simplest and most practical guide to the jobber is just that the Commission will concern itself with whether the total effect of any discrimination in price "has been or may be to substantially lessen competition."

When the radio wholesaler receives, or gives, price concessions on merchandise "of like grade and quality," he will be wise to investigate the effect of the concessions and to assure himself that they were justified by marketing costs.

★ Emerson has announced more new distributors: Specialty Distributing Co., 601 Spring St., S.W., Atlanta, Ga.; Virginia Wholesale Co., Appalachia, Va.; Jensen-Byrd Co., Spokane, Wash.; North Coast Electric Co., 625 N.W. Everett St., Portland, Ore.; and Schwabacher Hardware Co., 1st Ave., South and Jackson St., Seattle, Wash.

★ The 6-year old Frankelite Co., Crosley distributors of Cleveland, has opened a branch in Akron, Ohio, with Carl Kromer in charge. E. J. Rueth is Frankelite's sales manager, directing the expansion plans.

★ Sunset Electric Co., Philco distributors of Seattle, Wash., and Portland, Ore., announce 3 recently appointed dealers in Washington: Gesler-McNiven Co., Centralia; McMillan Bros., Tacoma; and Craig Furniture Co., Tacoma. Mark Greenleaf has been added to Sunset's sales staff in Seattle, and other news of the company is that last month the firm was host to 50 dealers' salesmen on a cruise on Puget Sound. Guests were winners of a sales contest and were entertained with salmon fishing, various games and contests.

★ Brown Supply Co., St. Louis, Mo., are distributors of Grunow radios and refrigerators and are currently involved in one of the most vigorous promotions of the country. Sales campaign includes broadcasting, cooking school hook-ups with scores of local clubs, radio displays in theatres, newspaper and street car advertising, promotions at local hockey games, billboards, and displays at food shops.

★ Formal opening of elaborate new quarters was held recently by Hamburg Bros., Pittsburgh, Pa., distributors of RCA Victor radios, Servel refrigerators and other appliances. New address is 305-7-9 Penn Ave. Company has branches at Wheeling, W. Va., and at Akron, Ohio; the firm is celebrating its 18th anniversary in the biz.

★ Central Supply Co., Motorola distributor of Denver, Colo., has special plans for 3 feature promotions of the auto sets, according to manager A. H. Vogler. First will feature the "Topper" aerial, second will plug the 1937 dash panel mountings, and third will push Xmas merchandising of the car receivers.



Chatting here are Ray Erlandson (left) of Wurlitzer's, Cincinnati; J. F. Ditzell (center) Stewart-Warner's sales mgr., and M. Salzman, popular jobber.

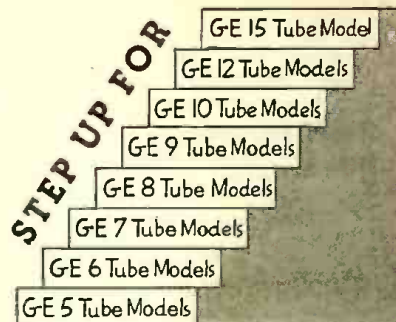
STEP UP TO REAL PROFIT WITH G-E!

YOU can sell up to higher profits with G-E Focused Tone Radio features — they're

TANGIBLE — VISIBLE DEMONSTRABLE!

Each model has been designed from a sales viewpoint and fits into a definite proved price range. Each model offers more exclusive G-E features than the model priced just below it. Each model offers full value to your customer.

PROFIT



LOOK AT THESE OUTSTANDING G-E FEATURES

- Colorama Dial
- Local Station Personalizer
- Automatic Frequency Control
- Silent Tuning
- Metal Tubes
- Sentry Box
- Stabilized Dynamic Speaker
- Sliding-rule Tuning Scale

— built into the G-E Focused Tone Radio line, one by one, to provide you with tangible reasons to step up from one price bracket to another and increase your average unit sale and profits. Start today stepping up to higher profits by *selling up* with G-E!

WATCH G-E RADIO IN 1936-1937!



G-E TONE TESTER

Amazing New Invention
opens up golden Opportunity
for sales and profits....

This ingenious device enables prospects to hear and see the great advance in radio reception made possible by Focused Tone Radio. The GE Tone Tester demonstrates, by clear comparison, the marvelous improvement in performance of the 1937 Focused Tone Radio over that of radios manufactured during 1927, 1930 and '33. It duplicates the contrast or side-by-side type of house demonstration right in the dealer's show room, and does it, too, by a more dramatic and convincing method.

Here's the kind of sales promotion assistance dealer salesmen are really looking for. The GE Tone Tester will sell Focused Tone Radio ON THE SPOT - boost radio shoppers into radio BUYERS. GE Tone Tester is a real scientific instrument, handsomely styled and finished. It is 24 inches high; illuminated; automatic; instant and visible in action; easily and quickly attached to a 1937 Focused Tone Radio.

Get full information on the GE Tone Tester at once! See your local GE Radio Distributor.

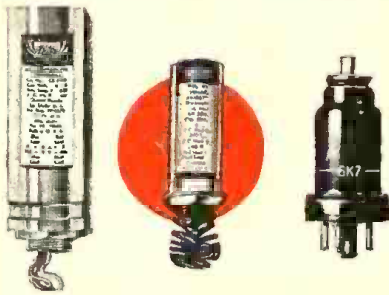
GENERAL  **ELECTRIC**

Focused Tone Radio

CORNELL-DUBILIER



TYPE KR



INTRODUCING . . .

To keep step with the requirements of the servicing fraternity, C-D engineers, introduce at this time, their latest laboratory development . . . the KR series of COMPACT "DWARF MIDGET" DRY ELECTROLYTICS.

Rounding out the world's most complete condenser line, these small (no larger than the 6K7 metal tube), neat, efficient, and convenient electrolytic condensers lend themselves to symmetrical assembly, giving servicemen a satisfactory and dependable job. Manufactured to the well-known high standard of C-D quality, they embody the exclusive C-D patented method of etched foil assembly.



TYPE JR

World's largest exclusive manufacturers of condensers for more than twenty-six years, Cornell-Dubilier has become the accepted standard of quality in the radio and electrical industry. Manufacturers of receivers, transceivers and transmitters have standardized on C-D condensers . . . broadcast stations, United States Army, Navy, Signal Corps, and other government departments utilize C-D condensers. Wherever unflinching dependability is a prime essential C-D condensers will be found.

For Lasting Satisfaction, Standardize on Cornell-Dubilier Electrolytics

Type KR

Etched-foil, metal container units, 8" wire leads,
Duals, separate sections no common
Working volts—250 V.D.C., 300V. Peak

Type No.	Cap. Mfd.	Size (Approx.) Dia. x Height	List Price
KR-204	4	1" x 2 3/4"	\$.75
KR-208	8	1" x 2 3/4"	.95
KR-212	12	1" x 2 3/4"	1.10
KR-248	4-8	1" x 3"	1.30
KR-288	8-8	1" x 3"	1.45

Working Voltage—450V.D.C., 525 V. Peak

KR-504	4	1" x 2 3/4"	\$.85
KR-508	8	1" x 2 3/4"	1.05
KR-512	12	1" x 3"	1.40
KR-548	4-8	1 3/8" x 3 1/4"	1.45
KR-588	8-8	1 3/8" x 3 1/4"	1.60

Bring your C-D catalog file up-to-date. Send for your copy today.
Catalog No. 127 for industrial and transmitting condensers.
Catalog No. 128 for radio condensers.
Catalog No. 132A for "Dwarf-Tiger" Paper Tubulars.
Catalog No. 133A for Transmitting Condensers for the Amateur.
Catalog No. 134A on Etched Foil Dry Electrolytics.

The World's Most Complete Condenser Line
Electrolytic . Mica . Paper . Dykano

TYPE JR

Dwarf-Midget Dry Electrolytic Condensers

Tiny Silver-coated Cardboard Containers,
Equipped with Color-coded Flexible Wire Leads and Mounting Feet
Compact, Dependable and Inexpensive. Excellent electrical characteristics.
For use in limited space and tight-squeeze radio service jobs. Adequately protected against humidity. No need for an endless variety of special expensive exact duplicate replacements.

200v D.C. Working Voltage • 250v D.C. Peak Voltage

SINGLE Section Units: Red Lead Positive; Black, Negative. DUAL and TRIPLE Sections, Separate Units, No Common.

Cat. No.	Cap. Mfd.	Size	List Price	Cat. No.	Cap. Mfd.	Size	List Price
JR-204	4	2 1/4 x 3/4 x 1/2	\$0.65	JR-244	4-4	2 1/4 x 1 1/8 x 1 1/8	\$.90
JR-208	8	2 1/4 x 1 x 9/16	.80	JR-248	4-8	2 1/4 x 1 1/8 x 3/8	1.15
JR-210	10	2 1/4 x 1 x 1 1/16	.90	JR-288	8-8	2 1/4 x 1 1/8 x 1	1.25
JR-212	12	2 1/4 x 1 1/8 x 1 1/16	.95	JR-2816	8-16	2 1/4 x 1 1/8 x 1 1/8	1.45
JR-216	16	2 1/4 x 1 1/8 x 1 1/8	1.05	JR-2888	8-8-8	2 1/4 x 1 1/8 x 1 1/8	1.90

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

SINGLE Section Units: Red Lead Positive; Black, Negative. DUAL Sections, Separate Units, No Common.

JR-502	2	2 1/4 x 3/4 x 3/8	\$0.65	JR-544	4-4	3 x 1 1/8 x 3/8	\$1.20
JR-504	4	2 1/4 x 1 x 3/8	.75	JR-548	4-8	3 x 1 1/8 x 1 1/8	1.35
JR-508	8	2 1/4 x 1 1/8 x 1 1/8	.95	JR-588	8-8	3 x 1 3/8 x 1 1/8	1.50
JR-510	10	2 1/4 x 1 1/8 x 3/8	1.15	JR-5816	8-16	2 1/2 x 2 x 1 1/8	2.15
JR-512	12	2 1/4 x 1 1/8 x 1	1.30				

1022 HAMILTON BOULEVARD

CORNELL DUBILIER CORP. SO. PLAINFIELD, N. J.