

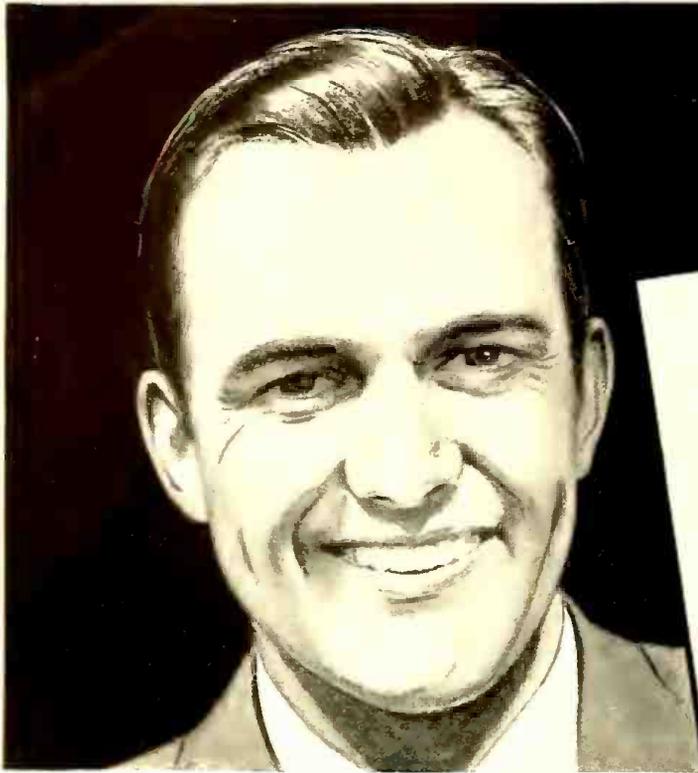
# RADIO TODAY



"TO CATCH HER EAR, FIRST  
CATCH HER EYE" See page 16

IN TWO PARTS PART ONE

SEPTEMBER



**I CAN HELP  
ANY RADIO  
DEALER MAKE  
MORE SALES  
AND MORE  
PROFIT**



I'LL SELL RADIOS for you that you couldn't sell without me.

I know the people in your community . . . particularly those of moderate means who buy on the instalment plan. They know *me*, too, through extensive national advertising of the service I render them, and through actual dealings with me in previous purchases of motor cars, refrigerators, ranges and other appliances. They like the way I've treated them. They'll do business with me again. I can make them your customers.

I know how to investigate their credit standing without offense or embarrassment.

I know the danger signals that warn of bad risks. I can protect you from them.

RANGES REFRIGERATORS  
ELECTRICAL EQUIPMENT HEATING  
EQUIPMENT • AIR CONDITIONING UNITS

I know how to keep collections up to date and relieve you of the embarrassment of an occasional repossession, without losing you any of your customers' good will.

It's my business to know all these things and to employ them to your advantage.

I'm the local manager of a Commercial Credit Company office. You can get in touch with me in any of 193 offices in the principal cities of the United States and Canada. When you adopt Commercial Credit financing for your time payment sales you get 100% cooperation from me on credit, collections and remittances.

You can concentrate on selling.

## COMMERCIAL CREDIT COMPANY

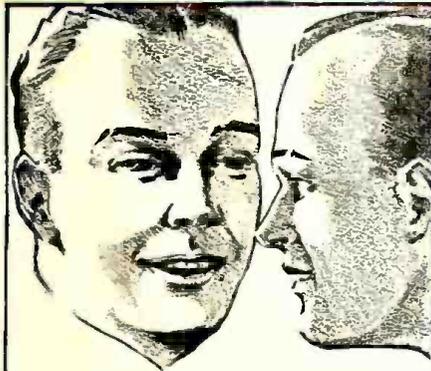
COMMERCIAL BANKERS  
CONSOLIDATED CAPITAL



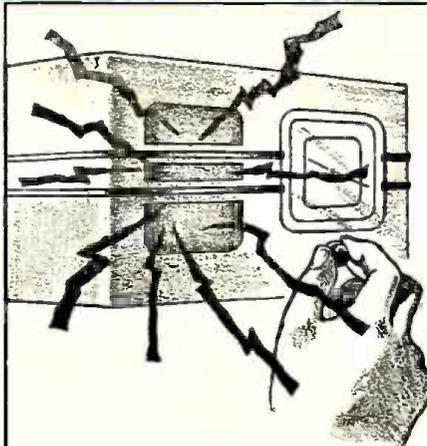
HEADQUARTERS: BALTIMORE  
AND SURPLUS \$65,000,000

SERVING MANUFACTURERS, DISTRIBUTORS AND DEALERS THROUGH 193 OFFICES IN THE UNITED STATES AND CANADA

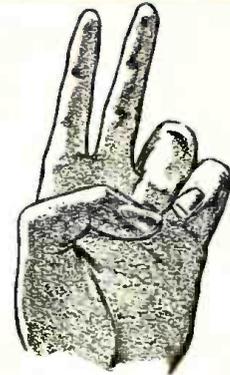
# DO YOU KNOW THESE ESSENTIALS ABOUT VOLUME CONTROLS?



**DO YOU KNOW** that the resistance value of a volume control is not critical? It is commercial practice to allow a resistance variation of plus or minus 20%. Most circuits will allow even greater variation.

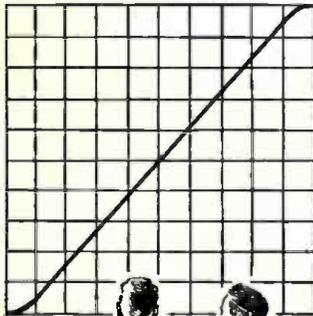


**DO YOU KNOW** that taper is critical—and if the incorrect taper is employed the volume control action will be sudden and perhaps noisy?



**DO YOU KNOW** that there are only two kinds of taper necessary for proper volume control operation? The left hand taper used in shunt circuits, and the right hand taper used in series circuits.

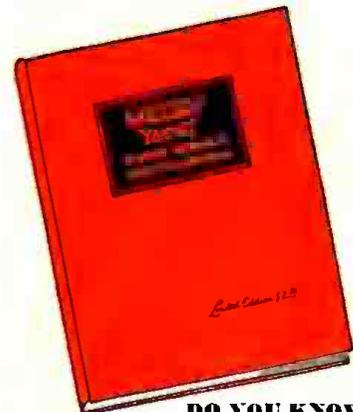
YAXLEY No. 4 TAPER (LINEAR)



**DO YOU KNOW** that a linear taper is really not a taper at all—the resistance is uniform over the element? That linear tapers are rarely used except in low resistance values?



**DO YOU KNOW** that Yaxley tapers are easy to remember? Left hand is number 1 and right hand is number 2.



**DO YOU KNOW** that the Mallory-Yaxley Radio Service Encyclopedia completely delinks the subject of volume controls and explains how to easily determine the proper replacement control for any application? See pages 101 to 105!

**DO YOU KNOW** that in developing constant improvements in Yaxley Replacement Volume Controls, Mallory-Yaxley engineering has brought about undreamed of precision in universal application to meet all service needs for over 12,000 different radio receiver models?

*That's worth knowing — if you profit by the knowledge!*

Use

**P. R. MALLORY & CO., Inc.**  
**MALLORY**  
REPLACEMENT  
CONDENSERS... VIBRATORS

**P. R. MALLORY & CO., Inc.**  
INDIANAPOLIS INDIANA  
Cable Address—PELMALLO

Use

**YAXLEY**  
REPLACEMENT  
VOLUME CONTROLS



# SCIENCE

*"Symbol of the Radio Age"*



## WORLD'S LOFTIEST SIGN ON RCA BUILDING, RADIO CITY, N. Y.

The new RCA sign stands 900 feet above Rockefeller Plaza. The letters—24 feet tall on the north and south sides of the building, 18 feet

on the west side—are constructed of 5000 pounds of solid aluminum. By night they are brilliantly lighted with a new kind of golden-amber helium

gas, contained in 2376 feet of specially constructed Claude-Neon tubing. The sign is visible for many miles around New York City.

# RADIO CORPORATION

RADIOMARINE CORPORATION OF AMERICA

NATIONAL BROADCASTING COMPANY

# ...Vanguard of Industry

“INDUSTRY today is following the vanguard of science into new and infinite realms of knowledge. It would be a rash astronomer who said that he had calculated the outermost limits of space, beyond which there is nothing. It would be a rash physicist who claimed that he had dissected the atom into its ultimate, indivisible fragments. Science and knowledge have no boundaries.

“So it would be a rash economist who predicted any limit to the tangible results of scientific thought in the form of new goods and services placed at the disposal of mankind. In fact, it is only by a constant development of new goods and services that we may expect to re-engage the man-power released by technological improvements in established industries. The market for every new commodity eventually reaches a saturation point and becomes primarily a replacement market, so that a more efficient technology reduces the number of workers needed in that field.

“But science is simultaneously creating new employment, both by the modernization of established industries and by the creation of new ones. In our own generation we have seen the automobile, the airplane, the motion picture, and the radio provide totally fresh fields of activity for millions of men and women. Many of our older industries have engaged scientists, with notable success, to develop new and remodel old products to meet the needs of a modern era.

“The industry which has not learned how to employ scientists to make it new, and keep it new, is doomed. Few industries are so stagnant as not to be aware of this; but there are some so conservative that the scientist is called upon to turn salesman and show them how modern science can rejuvenate them to meet present-day realities and survive.”



President  
Radio Corporation of America

## Your free copy of “TELEVISION” is ready!

This new book of more than 20 recent laboratory and field reports on the new art by leading RCA engineers will be sent without extra charge to all paid-up subscribers

to the RCA REVIEW, an outstanding quarterly journal of radio progress. \$1.50 per year (foreign, \$1.85). Address RCA Review, 75 Varick St., New York City.

# OF AMERICA *RADIO CITY, NEW YORK*

RCA MANUFACTURING COMPANY, INC.

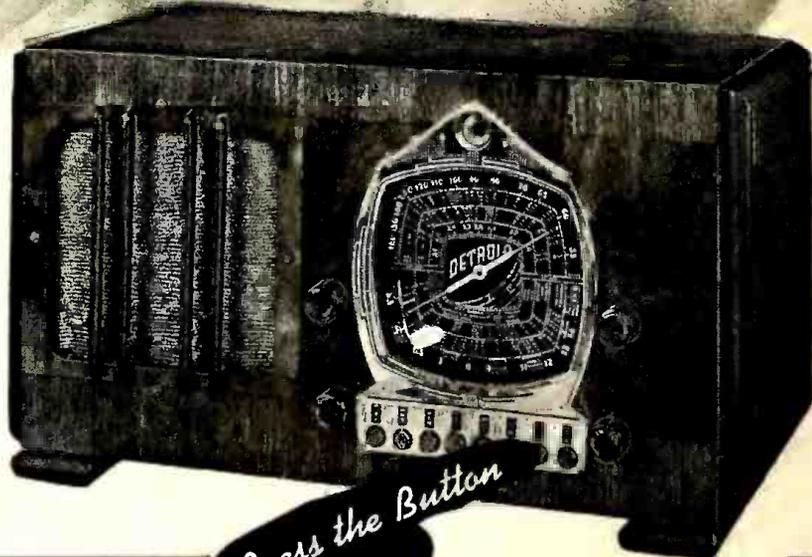
RCA INSTITUTES, INC. • RCA COMMUNICATIONS, INC.

# LIKE A Bombshell FROM THE SKY

They expected us to do it—AND WE DID IT! Detrola has a complete set-up for you on radio's NEWEST and BIGGEST feature—*Electric Tuning!* NOT manual tuning—NOT variable trimmer tuning—NOT mechanical tuning—but genuine Electric Tuning in its most simplified and most accurate form . . . and at unequalled prices that give you more profit and the public a great deal more for their money. Be the first to offer Electric Tuning Radios at moderate prices.

**AGENTS and DISTRIBUTORS**  
A few exclusive territories still available. Phone, wire or write for particulars.

## DETROLA Announces **ELECTRIC TUNING!**



*Press the Button*

THERE'S YOUR STATION

To Retail at

**\$69<sup>50</sup>**

The first Electrical Tuning table model radio in America and at a sensationally low price. 8 tubes with 12 tube performance. AC Superheterodyne. Bands; Standard Broadcast, Police, Aviation, Amateur, Foreign. 532-16000 KC. 8" dynamic speaker. Telabeam Tuning Eye—Automatic Volume Control. Tone Control. Illuminated Network Dial. Cabinet: 12" x 22" x 9".

Write for Illustrated Literature



**MODEL C1**  
8 tube AC Superheterodyne. 532-16000 KC. 14" dynamic speaker. Tuning Eye. Bandshell Baffle. Standard, Police, Aviation, Amateur, Foreign Bands. Cabinet: 39" x 22 1/2" x 12 1/2".



**MODEL C2**  
11 tube AC Superheterodyne. 532-16000 KC. 15" dynamic speaker. Tuning Eye. Bandshell Baffle. Standard, Police, Aviation, Amateur, Foreign Bands. Cabinet: 41" x 24" x 13 1/2".



**MODEL C3**  
14 tube AC Superheterodyne. 532-16000 KC. 15" dynamic speaker. Tuning Eye. Bandshell Baffle. Standard, Police, Aviation, Amateur, Foreign Bands. Cabinet: 42" x 25" x 14".

DETROLA CORPORATION

DETROIT, MICHIGAN

**NOW ON THE AIR  
OVER 197 STATIONS!**

# \$50,000 CONTEST

**TREMENDOUS** enthusiasm marked the launching of Philco's big \$50,000 Cash Prize Mystery Contest on radio stations all over the country! Already tube sales are mounting . . . and dealers everywhere are cashing-in **BIG!**

**FOLLOW THRU!** Be sure you have a sufficient number of Official Entry Blanks. Remember . . . contestants must call for them at a Philco Tube dealer's store. Get these blanks from your Philco distributor . . . and get full details of the special promotion material which will help make your store Contest Headquarters in your community!

With this series of contest broadcasts, Philco Tubes . . . the easiest tubes in the world to sell . . . become still easier to sell. **GO TO IT!**



# PHILCO TUBES

# HOT?...IT'S SETTING THE INDUSTRY

# ON FIRE!

The Most Startling  
Radio Improvement  
Since the All-Electric  
Set — and Only  
Stewart-Warner Has It

Utterly Different from  
Other Tuners — Faster  
— Simpler — More  
Accurate — Easier to  
Set — Easier to Use



*Amazing*

*Exclusive*

# STEWART-WARNER

*Mystic Mechanism with the*

# MAGIC KEYBOARD

**FOUR TIMES** as many orders for immediate shipment as the best previous year in our history! That's the record-smashing result of the first showing of the Stewart-Warner Mystic Mechanism with the Magic Keyboard!

Dealers and distributors who had heard rumors of what was coming expected great things—but never even dreamed the full truth of what this amazing, exclusive invention is and does.

Truly, there's nothing else like it! Any 15 stations—regardless of dial position—are held in readiness—and tuned in perfectly at a touch. The dial goes *direct* to the station—in a split second. The keys are set from the front—without tools—and *any* key can be re-set to *any* station without disturbing the others!

No wonder they're *saying it with orders*. It's a feature that puts you ahead of any competition—the "headline news" in a great new 1938 Stewart-Warner line with more models and a wider price range than ever before. Ask your Stewart-Warner distributor for all the details—at once.



**EXCLUSIVE NEW FINANCE PLANS** offered by Stewart-Warner-C.I.T. include a startling Add-On Sales Plan that really makes sales.

**COAST-TO-COAST BROADCASTS** by Horace Heidt and his famous Alemite Brigadiers, favorites of millions, are selling **YOUR prospects now.**

**INCREASED ADVERTISING AND MERCHANDISING SUPPORT** insures more prospects—more sales.

**STEWART-WARNER CORPORATION — CHICAGO, ILLINOIS**

# RAYTHEON

*Olson*

IS RESPONSIBLE FOR  
THE SALE OF OVER...

**3,000,000  
FARM RADIOS!**

Over ten years ago RAYTHEON developed and pioneered the 2-volt battery tube. It was the improvement the engineering world was waiting for—to make possible real radio reception in rural localities!

Since then, there has been no outstanding development until the announcement of the new RAYTHEON LOW DRAIN cathode-type tubes which permit AC operation from battery sets without excessive battery drain.

Again RAYTHEON was responsible for tripling the sales of battery receivers! When you buy replacement battery tubes with the name RAYTHEON on the base you are getting tubes made by the engineers who invented them with the added advantage of proven field experience!



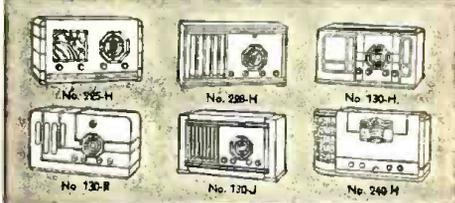
# RAYTHEON

445 Lake Shore Drive, Chicago, Ill.      20 Lexington Ave., New York, N. Y.  
55 Chapel Street, Boston, Mass.      35 Howard St., San Francisco, Cal.  
415 Peachtree St., N. E., Atlanta, Ga.

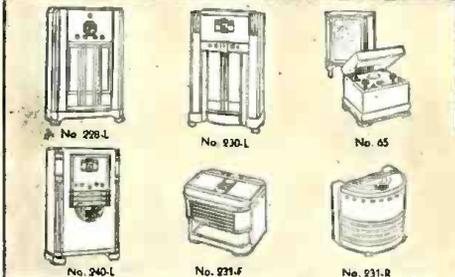
**FOR BETTER RECEPTION**

# Radio's Outstanding ACTION Feature

The New  
FLASH TUNING



STANDARD CONSOLES OF DISTINCTIVE DESIGN



Of all this season's improvements in radio operation, none equals Stromberg-Carlson's method of automatic tuning. A twist of a knob—and flash... there's the station, with the call letters instantly lighted up. And it's the same knob you use for regular tuning—that's the best of it—no complication—no trouble. Dealers who have seen these latest Stromberg-Carlsons are wild with enthusiasm over this automatic tuning convenience. Besides, the station is *kept in tune exactly* through perfected 2-tube and 3-tube A.F.C. circuits. Pre-selected stations are easy to set up. Women, interior decorators and all who are strong on *appearance* are delighted with its freedom from the "machine" look.



**Flash Tuning**  
Visual Automatic Station Finding in which you see the station you're tuned to because its call letters light up when you reach it. Automatic Frequency Control makes Flash Tuning, accurate tuning.

Other operating features? Yes, a host of them—altogether putting Stromberg-Carlson away out in front in making a radio that ships right, works right and is easy to use.

There is nothing  
**Stromberg**

# -and Radio's Greatest TONE Feature



## The Acoustical LABYRINTH

The current year reveals no radio advance comparable to "Labyrinth" tone. It still remains the outstanding important feature of high quality radios. It is patented and exclusively Stromberg-Carlson, obtainable only in Stromberg-Carlson receivers. The "Labyrinth" gives natural reproduction of speech and music; doing away with cabinet "boom." It increases the bass response—resulting in rich, full audio quality; projects sound from the front of the cabinet only thus avoiding sound-wave interference.



### Labyrinth Radio

The long, winding passageway of the Acoustical Labyrinth, takes the place of the usual box-like cavity in the cabinet which is the source of the exaggerated boom in low tones.

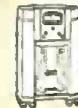
With "Labyrinth" tone; with the most beautiful and exclusive cabinets ever seen in radio; with Stromberg-Carlson quality of workmanship which everybody knows; with a price range from \$57.50 to \$1050 the line offers to any dealer an opportunity for money-making probably never before presented in radio.

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

*All prices slightly higher in Southeastern States and West of the Mississippi.*

*finer than a*  
**-Carlson**

### CONSOLES WITH THE FAMOUS ACOUSTICAL LABYRINTH



No. 145-L



No. 150-L



No. 160-L



No. 240-W



No. 70



No. 240-M



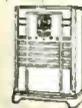
No. 240-S



No. 250-L

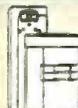


No. 160



No. 200

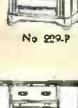
### RADIO-PHONOGRAPHS . . . SINGLE RECORD and AUTOMATIC



No. 145-P



No. 220-P



No. 160-P



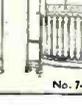
No. 160-P



No. 231-P



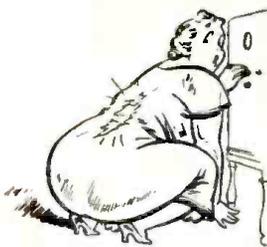
No. 240-P



No. 72

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**ALL AMERICA HAS SAID**  
**"YES!"**  
**TO "NO SQUAT**  
**STOOP**  
**SQUINT"**



**A** YEAR ago Philco's slogan "Click . . . there's your station!" spread the glad tidings that Philco Automatic Tuning had arrived.

It was a great slogan then . . . and it still is . . . in the original form and in all variations.



But a new season is a *new* season with Philco! When Philco launched the 1938 line with that powerful sales-making idea "NO SQUAT...NO STOOP...NO SQUINT"...Philco felt that this was a sales appeal even more powerful than last year.



But "NO SQUAT . . . NO STOOP . . . NO SQUINT" has clicked beyond Philco's fondest expectations. Philco advertising in the magazines, in the newspapers, and on the air started the ball rolling . . . and will keep it rolling. Newspaper columnists and cartoonists have taken it up. Everybody . . . everywhere . . . knows that six-word slogan!

But more important than anything else . . . those six words *are selling* Double-X Philcos! That's why we can say that all America has said "Yes!" to "No Squat . . . No Stoop . . . No Squint!"

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**PHILCO RADIO & TELEVISION CORPORATION**

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# RADIO TODAY

ORESTES H. CALDWELL  
Editor

M. CLEMENTS  
Publisher

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Sales Manager

SEPTEMBER, 1937  
IN TWO PARTS,  
PART ONE

## RISING SET PRICES— LISTS UP, \$3 TO \$15

★ Major set manufacturers are now announcing price increases on many models. Mark-ups range from about \$3 to \$15 or more. Percentage increases amount to as much as 25 per cent on some of the models, which evidently were priced originally to give an exceptionally good value. Five or ten dollars is the increase for sets listing between \$50 and \$150, while the \$20 to \$40 table models are hiked about \$3.

One manufacturer marked up a table model about 10 per cent, while the same chassis in a console model went up 25 per cent—this indicating that cabinet cost must have been the major factor in the increase.

Changes are most notable in the popular-priced jobs—with the real expensive models staying very much in line with the June prices.

Manufacturers announcing price increases effective immediately are: RCA-Victor, Philco, Zenith, and Crosley.

## RADIO SETS FIRST-HALF 1937, UP 12%

★ Radio-set sales by manufacturers, during the first six months of 1937, totalled 3,348,635 receivers, an increase of 12 per cent over the corresponding six-month period for 1936.

Second-quarter (April-May-June) factory sales for 1937 were 1,769,499 sets, an increase of 4½ per cent over the second quarter for 1936.

Tube sales for the six months totaled 46,783,210 in 1937, as against 38,446,850 in 1936, an increase of 21 per cent in tube volume.

Second-quarter tube sales, 24,389,213 for 1937, were up 22 per cent as compared with 19,971,773 tubes for the 1936 quarter.

Following is a summary for recent quarters of 1936, showing set volume:

1st quarter	1,287,462
2nd quarter	1,697,444
3rd quarter	2,330,959
4th quarter	2,932,890
<b>Total</b>	<b>8,248,755</b>
1937	
1st quarter	1,579,136
2nd quarter	1,769,499

Radio-tube sales showed a corresponding increase. Following are the figures on tube output, with values given in factory selling prices:

1936		Tubes	Value
Jan.-Mar.	18,475,077	\$ 6,066,462	
Apr.-June	19,971,773	6,595,378	
July-Sept.	28,965,512	9,434,460	
Oct.-Dec.	30,891,846	9,846,100	
<b>Total</b>	<b>98,304,208</b>	<b>\$31,942,400</b>	
1937			
Jan.-Mar.	22,393,997	\$ 7,170,900	
Apr.-June	24,389,213	8,125,684	

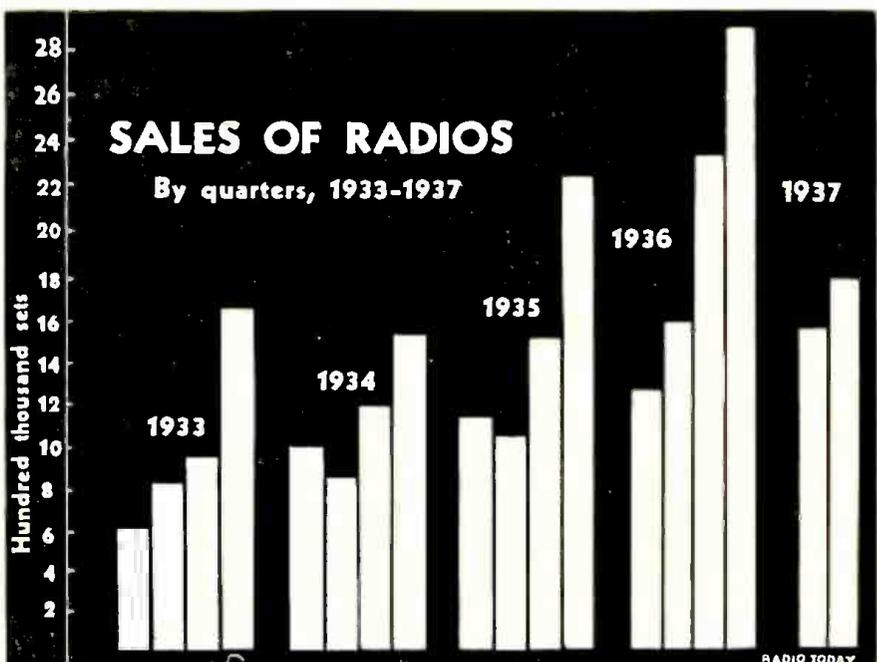
## INVENTORIES INCREASING?

★ While receiver manufacturing is going ahead, there is a distinct fear in some quarters that distributor and dealer inventories are piling up, and that sets are slow in moving from dealers to the public. Manufacturers were out early with their new lines this year, and long orders were encouraged. Retail purchasing was de-

layed by the extreme hot weather of early September. Whether the delayed public purchasing would be frightened out by war scares in the Orient and Mediterranean, and by stock-market antics in New York, was troubling radio-industry leaders as this issue went to press.

## RADIO DATES AHEAD

- Oct. 1-3—New York Radio Parts Trade Show, Commerce Hall, 5th Ave. at 15th St.
- Oct. 1—Joint Meeting, Eastern and Western Sales Managers Clubs, Victoria Hotel, New York City.
- Oct. 2—Meeting of "The Representatives," Victoria Hotel, New York City.
- Oct. 3—Membership Meeting, National Association of Radio Parts Distributors, Victoria Hotel, New York City.
- Nov. 8-10—Rochester, N. Y., Fall Meeting, Institute of Radio Engineers.



## AUTUMN AIR HAS NEW QUALITY

★ Starts the parade, and dozens of broadcast favorites make their Fall return to the mikes. Besides the Jack Benny-Eddie Cantor-Fred Allen-Al Jolson sort of thing, new names and new entertainment tricks are coming up.

Such important newcomers as Tyrone Power, Kitty Carlisle, Allen Jones and Hugh Johnson are all set to air if they aren't at it already. General Motors' concert series will be switched to a new idea—a permanent company of top artists under season-long contract.

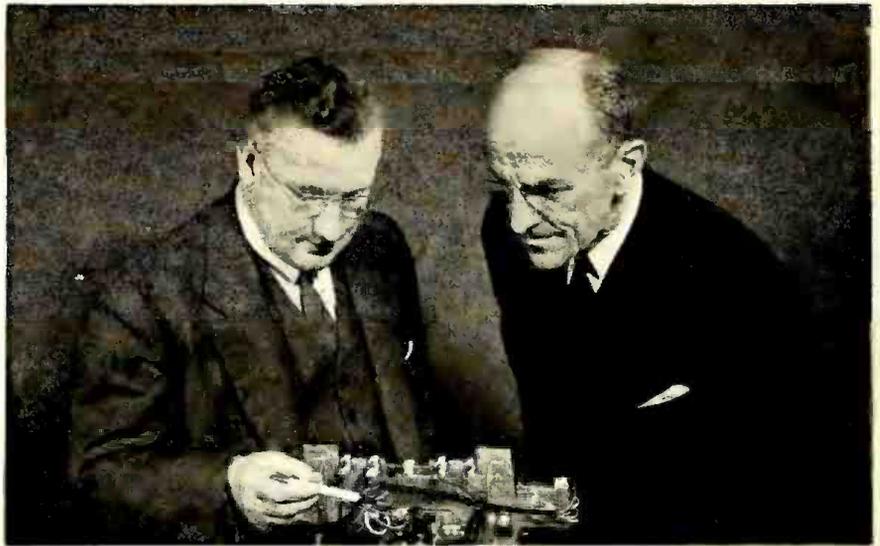
Crosley, General Electric, Philco, RCA Victor and Stewart-Warner will continue broadcast efforts in the interest of modern radio sets. Zenith appears with a new weekly coast-to-coast blast tagged the "Zenith Foundation"—described as "startling and unprecedented"—an idea worked up by Commander E. F. McDonald, Jr. Mental attitudes toward progress are dramatized, and new surprises promised.

## AND SO—VICTORIA

★ World's largest exhibition hall is bristling with great plans for one of the world's best shows. In other words, Commerce Hall in New York



John J. Ross, dynamic president of Detroit, embarks on jobber-dealer policy of radio distribution.



G. K. Throckmorton, RCA-Victor's chief executive (right), examines new controls with Robert Shannon, vp for manufacturing.

City will sag with the newest in radio parts when nearly 75 exhibitors appear Oct. 1-3. The Hall is located at 15th St. and 8th Ave., a 10-minute subway ride from Show headquarters at the Victoria Hotel, 7th Ave. at 51st St.

Pleased no end with the industry's enthusiastic attitude toward the event are the Show corporation officials: S. N. Shure of Shure Bros., president; A. A. Berard of Ward-Leonard, vice-president; Ken Hathaway, managing director; and Carl Rauber, secretary of the program committee. Reports indicate that extra masses of jobbers, servicemen, sales representatives, engineers and amateurs will show up. They'll eye the exhibits, attend the big-time technical sessions, and meet their own kind in organization meetings aside from the main show.

On following pages of *RADIO TODAY*, the customers will find a complete program, and a list of all exhibitors.

## THE PRESIDENT'S INK ON MILLER-TYDINGS

★ Careful now, what price you put on trademarked radios. There's a many-toothed national retail price maintenance law since President Roosevelt signed the Miller-Tydings bill Aug. 17. Clean-cut selling is a nation-wide reality except in seven states, Alabama, Delaware, Mississippi, Missouri, New Hampshire, Texas and the Dist. of Columbia, where national price control is pointless because of no state "fair-trade" laws.

Bond Geddes, shrewd RMA executive, and member of the Washington (D.C.) bar, has this to say: "In the

42 states having so-called fair trade practice laws which permit price maintenance, direct contact between manufacturers and dealers (or distributors) are now permissible, exempt from anti-trust laws, instead of former contracts limited to such states and between state distributors and dealers."

What the dealer has to know next is about trade-ins. Question is whether manufacturers should issue lists of fixed maximum trade-in allowances, or whether retailers themselves should decide what's reasonable.



J. J. Kahn, president Standard Transformer Corp., is new director of RMA.

## EHFA BOTHERS TO FINANCE RADIOS

★ Electric Home and Farm Authority, no less, has announced that its finance plan now applies to radios. But they must be purchased in combination with one or more of the appliances listed on the Authority's schedule of acceptable equipment.

To decide the maximum time over which radio-plus-appliances payments may be extended you take the maximum period named for the appliance or appliances involved. For instance, EHFA will finance a radio sold in combination with a refrigerator over a maximum period of 36 months, because that period is the maximum one named for "boxes."

EHFA, in the Tower Building, 14th and K Streets, Washington, D. C., is printing and will distribute a new and detailed explanation of terms.

## BROADCASTERS ESTABLISH NEW EDGE

★ Sponsor after eager sponsor has nodded favorably to broadcast time and talent charges running to six figures. It all has a terrific effect on radio's leadership among advertising media. In the most recent report of the National Association of Broadcasters it says, "radio broadcasting for the first half of this year showed the greatest relative increase of any major medium."

For the first six months of the year, broadcast ads totalled \$65,426,432, as compared to \$50,802,179 for the same period last year. This was a gain of 28.7 per cent for radio, while national magazine ads increased 16.2 per cent, national farm paper volume 13.6 per cent and newspaper lineage 2.9 per cent.

## THE POWER TO PURCHASE

★ Like something on springs, the buying power of the nation is moving still further upward. More persons are crowding into radio's moneyed-prospect classes.

Since July of last year, payroll disbursements among factory employees have increased 34.2 per cent, according to the latest release from the National Industrial Conference Board.

Among 25,000 middle-class families in 43 states, four out of five have hiked their annual incomes an average of \$437 since the business sag a few years ago. This was revealed in a striking study recently made by the Northwestern National Life Insurance Co. The investigation indicated too that more families are buying



Ralph J. Cordiner, asst. manager of GE's appliance and merchandise dept. is now also gen. mgr. of appliance sales.

homes, starting savings accounts, going in for new cars.

Such is the strapping state of things just as radio introduces its finest models. Into the population's pockets is actually rolling the money with which to buy.

## STREAMLINED FIRESIDE

★ If you want some idea of how office-working persons spend their evenings, here's the dope. It's a help, because when a radio dealer tries to figure out the after-hours sales appeal of his merchandise it is well to know who's guzzling a cocktail, who's at the movies, who's just chattering and who has his nose in the newspaper.

Here's what Macfadden Publications uncovered when they analyzed

238 questionnaires asking what people did with their evenings:

	Women Per cent	Men Per cent
Listened to radio....	45	35
Had cocktails .....	5	12
Worked overtime ....	5	5
Dined out .....	12	15
Read newspapers ....	26	30
Read magazine or books	35	42
Played bridge .....	1	6
Talked .....	20	16
Went to the movies..	8	10
Walked .....	12	10
Entertained guest ...	10	2

Of course there are other things done evenings, but you can't snoop around *too* much with a questionnaire!

## "SELLING SOUND"—OF IMPORTANCE TO EVERY RADIO MAN

★ As Part II of this issue of RADIO TODAY, the publishers present a special section on "Selling Sound," covering the vigorous and active new business which has developed in the sale of sound-reinforcing equipment, public-address, and intercommunicating systems.

In this "Selling Sound" section, the radio man will find the attractive sales opportunities in sound, fully presented from a diversity of angles, including:

- The Market for Sound
- Outlook for Sound Sales
- Jobbers' and Dealers' Problems
- Intercommunicating Systems
- Laying Out an Auditorium
- Sound Short Cuts
- Glossary of Sound Terms
- Sound News, Trends
- Buying Guide to Sound

Don't fail to study Part II of this issue.



Squatless, stoopless, squintless; here are Philco's Sayre Ramsdell, left, and Harry Boyd Brown. Latter was recent speaker at Sales Execs Club, N. Y.

# SELL LOTS OF RADIOS—BUT AT

Watch out to see that you are adding enough "Mark-up"  
And don't let expenses eat up the "net" before you get it.

★ "Money, money, money! The air's filled with cash"—is the refrain of one of the big radio promotion campaigns this Fall.

And certainly radio money is all around these days—ready to be gathered in by the radio dealers and service men who go after it. Crops are good. Employment is up. Incomes have increased 20 per cent and are again at prosperous levels.

And people want radio sets. For the first time in seven long years, this Fall the public has money to spend with some feeling of freedom.

And they want the new things radio offers—new sets, new cabinets, new styling, new tone values. Don't worry about it any longer, the public is coming to you for radios this Fall and Winter.

## Holding on

And for what it wants and buys, the public will pay. Collections will be good. Money is moving; crop cash is being poured into the nation's steady stream of finances. Bank accounts are higher than since the depression hit. You will sell sets and you will get your money.

But the question is, will you be able to hold onto your fair share of the money you receive? Will you be able to make a profit, and collect it—and hold it?

For profits are slippery things. It is not enough to select and stock the right goods, sell it, and collect the money. The profit ought then to be in your hands. But it won't be if you have failed to price your goods right.

Nor will profits linger long if expenses have been allowed to creep up and absorb most or all of the margin that had been set aside for "net."

Don't fool yourself, the smartest and biggest businessmen get bitten sorely by these same two dangerous bugs, the bacillus Cut-price-osis and the germ *Expensibus Gallopus*. Some of the most successful executives and managers have seen their sound business structures rapidly destroyed by these two arch-enemies of profits.

Like beams attacked by termites that silently eat their way through wood which seems solid on the surface (until it crashes!)—businesses appear to have ample strength and volume for gratifying profits—but may be profitless inside. Expenses may be eating all the fibre and strength out of the otherwise healthy business operations.

## Watch closely

So keep a close watch at two points—1. Prices and 2. Expenses.

You must get in enough money for a fair profit in the first place.



Finger-tip control for the back-seat driver—another luxury touch for automobile radio!

You can get it in only by pricing your goods high enough to collect the money you need.

Second, you must watch that the ever-rising tide of expenses does not reach up and engulf the narrow percentage you have planned for "net."

Remember what it costs to do business in the average radio store. RADIO TODAY recently collected figures as the result of a questionnaire sent to 5,000 dealers. And we found that radio selling costs run something like this.

	Per cent
Owner's Salary.....	11
Employees' Wages.....	8
Rent .....	3
Tel., light, heat.....	2
Advertising .....	2
Installation .....	2
Other expenses.....	2
Total .....	30

In other words, if your merchandise costs \$58 you will have to add \$30 to

"We're buying a modern all-wave radio" is caption of this widely circulated Admiration Cigar ad in the E. Regensburg series heralding the return of prosperous, happy living in 1937-38.



# A PROFIT!

that cost to sell for \$88 and "just break even." And \$30 is a little over 51 per cent of \$58. Add 51 per cent to cost, and then just break even! Add 51 per cent to "cover expenses," but then have \$00.00 for yourself!

## To net a profit

On the other hand, if you are interested in earning a profit of 12 per cent for yourself—as the average radio dealer surveyed by RADIO TODAY succeeded in doing—you will have to add \$42 to the \$58 cost of that merchandise, to have a selling price of \$100. In that case, \$30 will go for selling costs, and everything above \$88 is sweet net profit.

Most merchants don't understand how very large the percentage of markup must be to meet expenses, if any net profit is to be made. Get your pencil and figure it out.

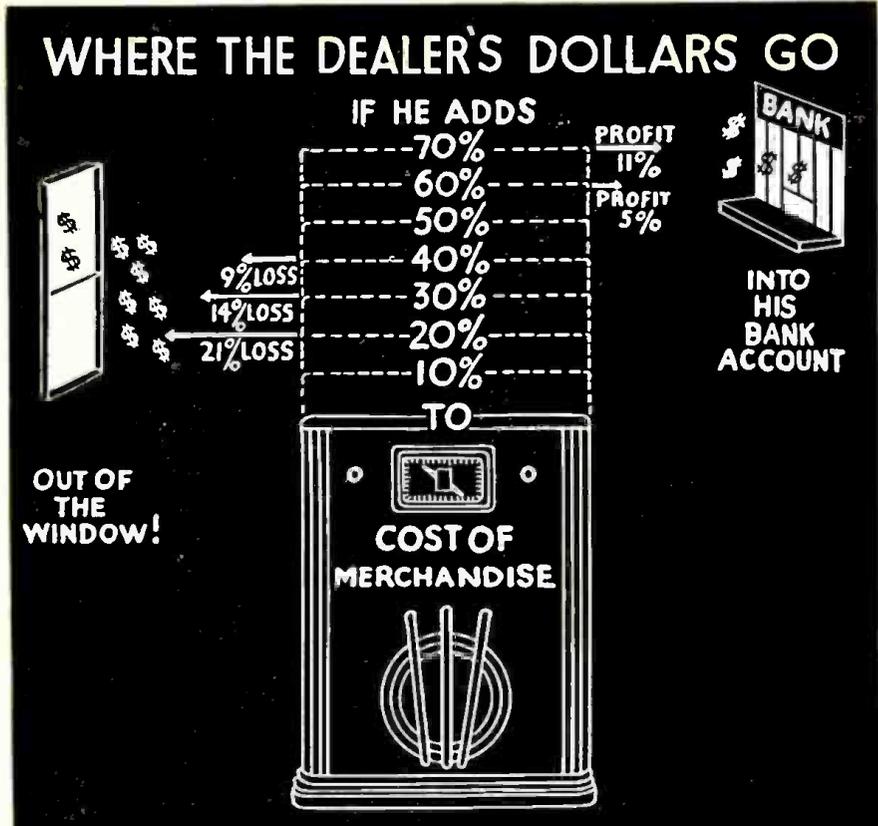
If you add only 20 per cent you're in for a loss on every sale—a loss of 21 per cent. If you add 30 per cent, you'll still have a loss—12½ per cent in red. In fact here's what the loss or the profit will be, if you add to the cost of merchandise, the percentages of markup below:

Add 20%	Loss 21%
Add 25%	Loss 17½%
Add 30%	Loss 14½%
Add 35%	Loss 11%
Add 40%	Loss 9%
Add 45%	Loss 4½%
Add 51.7%	Break-even
Add 55%	Profit 2¼%
Add 60%	Profit 5½%
Add 65%	Profit 8%
Add 70%	Profit 11%

## Average store costs

So better check-up and see just what your percentage of mark-up is on the radio merchandise you are offering when the big Fall "push" gets underway. Because, if it is going to roll up only losses and deficits and "red ink" instead of net profits, you had better leave it lie in your store, and get somebody to take it off your hands as a job lot. For you can make a satisfactory net profit only if there is a fair net profit in every sale you make.

And in the modern bed-room de luxe, the center of the picture is now occupied by a cozy bed-table radio that provides space also for lamp, clock and books. An item for every home.



Few business men realize what a lot of "mark-up" must be added, if any net profit is to be left, after selling costs have been paid.

And remember too that the net-loss and net-profit figures shown in the foregoing, are based on selling-expense percentages comparable to those in RADIO TODAY's survey of average retail radio businesses. If your own store rent, employe's wages, advertising, or salary are "out of line," the result will show up in the net-profit, and then loss-or-profit figures may be shifted 5 or 10 per cent further "into the red end of the spectrum," as the scientists say.

So the answer is: Do a big radio business this Fall! Sell a lot of sets. Collect your money.

## Is price right?

But see that your selling price is right in the first place, to bring in the profit you expect—the profit you need. And watch—as a hawk watches little chickens—all those many expenses that creep insidiously upward—destroying profits, prosperity, and balance-in-the-bank!



# HOW RADIO LANDS THE LADIES

The woman buyer begins to dominate the quality set market  
Advertising that will catch her eye—and sell new models

In every town there is a street.  
On that street is a house.  
In that house is a lady.  
In that lady's sock are \$100.  
It's enough to buy a brand new radio. And with some special effort on the part of the dealer, the sale can be made. Hundreds of ladies; hundreds of sales!

The woman is responsible for the house; supervises all that goes into it, spends more time there than the (laboring) male. And, of course, the house is where home radio functions.

The trick is to CATCH HER EYE. She's increasingly worth it!

## 60% important

To RADIO TODAY, dealers have reported that as high as 60 per cent of their total sales are regularly inspired by women. The technique by which the woman buyer is dragged profitably into the radio picture seemed to come under these heads: (1) special advertising on cabinet design, (2) window displays with "milady's" angle. (3) personal letters, (4) hook-ups with local women's clubs, (5) extra attention to store atmosphere, and (6) revised methods on the sales floor.

Dealers are generally happy to use an advertising theme based on modern radio cabinet design, because it offers a new chance to play down the matter of price. And it is a special magnet where women are concerned.

## Dramatizing design

The idea is to accent beauty and utility in radio store ads. More in detail, such lead-offs as "To High-Light a Corner of Your Home—Model ABC," or a heading in big type like this one: "Mrs. America Finds a Spot for Our New Radio!"

Advertising copy in such cases uses the less rugged wording. Rough, flat technical descriptions are played down. And the writer remembers that women have considerable vanity. They are to be addressed as if they were positively the last word in taste and home-maker perfection.

## Eye-catchers

In these ads, radio dealers are at liberty to talk more about wood grains in cabinets, new standards in furniture finishes, interior decorative effects, etc. Women like to be credited as knowing all about such things even if they are privately bewildered.

It has been found that the ladies are greatly interested in the radio tastes of celebrities. Testimonials by famous persons have a powerful meaning to the gals. For instance, if dealers could display a photo of Myrna Loy tuning a certain radio in her home, countless women would be genuinely impressed. This is particularly true of the younger ones.

Of course, the men, too, would gaze at such a picture, but they might not feel that Miss Loy knew anything about the set except that it had an elegant appearance.

In many cases, dealers alertly choose the women's section of local papers for these feminine-appeal ads. The displays are not expensive and do not require a great deal of space because prices in screaming type have no special place in them.

## Windows

Window displays designed to attract femme customers have more than just a mass of radios. Part reproductions of actual rooms, or sections of rooms, are effective. Careful attention is given to the surface condition of the merchandise—no dust and no doubtful polishes. Many dealers like to use an attractive floor covering—a cheerful rug or a trim carpet.

Some dealers have used fresh flowers in their windows on special days with good effect. As for the placards, graceful handwriting rather than square lettering is in vogue.

Others find the frilly nature of such displays to be beyond them. They are inclined to ask the advice of a woman employee, a stenographer or a file clerk. However, the average radio man can make a special effort to be neat, clean and rather fancy, and do a fine job.

## "Dear Madam:—"

Direct-mail pieces addressed to women are found to be OK when they are personal in tone and are carefully written. Such letters can scarcely advise women, in bold black and white, about household well-being, since they are signed by a man. Mostly radio dealers stick to a clear,



Thousands of women stopped to watch when a live demonstrator in front of the Home Modernizing Co., South Bend, Ind., joined the cut-out in the window.



Leave a new receiver by her chair.

simple and attractive outline of new radio developments which are likely to interest the ladies.

These letters need to consider whether the woman addressed is also a mother, and whether she will therefore need to consider the listening needs and habits of youngsters. Some radio retailers make a practice of learning the names of the offspring and mentioning them in letters.

Although most of the giveaways available in the radio field are designed for men, some radio stores take tips from refrigerator and appliance merchandisers, and use the device among radio prospects. Women always welcome useful household items, and when they are being given away, letters are a good spot to mention the fact.

### Club contacts

No doubt there is a batch of important women's clubs in town which will stand an approach by the dealer. First move is to watch the local society and club news, and to make a complete list of the organizations. If they have musical interests, so much the better. To keep a record of the leaders and officers is a valuable stunt.

Then the dealer may loan consoles for special meetings of clubs and church societies or may arrange to use phonograph-radios with formal programs of recorded music. For bridge clubs, he may furnish score cards with his imprint on them. And if a local club goes on the air at the

local station, the dealer is sure to make a gala radio event out of it.

In large stores where private rooms are available, women's clubs are invited to hold meetings with the dealer as host.

### By this time, she's in the store

Having angled properly for the woman shopper, the dealer still has special tactics to use when she shows up in the door way. She positively must not get the impression that the radio store is an "engineering den."

Store atmosphere registers sharply with women; they dislike the prospect of tripping over wires or mixing with dust. Neatness is their business. They're house-cleaners, and the dealer had better house-clean before they arrive.

### Appearances count

Modern women are used to shopping under the most comfortable conditions. They remember that in no other store were they confronted with greasy gadgets and general informality. Thus in case the shopper should compare the radio store with others, it is necessary that she get a first impression of a trim, pleasant exhibiton of glistening furniture.

Definitely discouraging to the person with the purse are such things as old radio tubes scattered about, half-opened packing cases with nail points in evidence, sloppy piles of manufacturers' booklets and dangerous-looking wire and outlets.

Nobody suggests that to sell a lady you have to be a fashion plate. But the facts are that she notices such items as dirty collars and soiled hands. A slick appearance is a definite asset throughout the sales period, unless you're one of those rare gents who has a lady-killing movie personality ready to turn on.

### The right necktie

A prominent merchandiser recently advised radio dealers to think more about their personal appearance, and for the rest of the check-up on treatment of women buyers went on to say:

And have you taken care that your personal approach or that of your salesman will be agreeable and acceptable?

Does the salesman show interest in the customer, approach her promptly when she enters the door, and devote his attention to her? Does he listen carefully to what she says, and follow any suggestion for a clue as to what kind of radio will interest her?

### A man's manners

Courtesy is demanded by the woman customer. Courtesy can be shown by the radioman's greeting, by his general attitude, and by his facial expression. The man who is selling must listen carefully to what the woman says, show his models willingly, be patient when she finds it difficult to make up her mind, and always be helpful.



One way to catch the shopper's eye is to catch her ear via the telephone.

# KEY TO RADIO-TUBE NUMBERS

\* *THE logical basis on which the present tube-numbering system was developed, is explained below by Roger M. Wise, chief radio engineer for Hygrade-Sylvania, and chairman of the RMA tube committee, who had an important part in shaping up the new system. He makes clear how the tube-number can usually be used to gain an idea of the heater voltage, number of useful elements, and base connections. This "logical" system thus makes it very much easier to remember tube type-numbers and so contributes to the usefulness of the numbering system.*

As long as radio-tube types were few in number, the selection of a "type number" was rather simple. One of the earliest types was given the designation "200," the next one "201," etc. Also, certain manufacturers used the corresponding numbers in the 100, 300, 400 and 500 series. In addition to this complication, some numbers otherwise available, were used up for transmitting tubes.

As the number of tube types increased, it became desirable to leave off the first digit in order to eliminate some of the confusion between type designations among manufacturers. When this was put into effect a great simplification resulted, as can be seen by taking as an example the early, indirectly heated triode, introduced as UY227. This type, variously designated as 127, 227, 327, 427, and 527, became merely type 27.

## Digits cover essentials

With the more rapid introduction of tube types, the two-digit combinations were soon all used up, and so many three-digit combinations had been used that it would have been necessary to jump to a four-digit combination to obtain designations which had not been previously used. At this point the RMA Vacuum Tube Committee again reviewed the subject, with the hope of finding some solution more attractive than going above 1,000 for tube-type designations.

After much discussion and some difficulty in reconciling differing views, a proposal was drawn up in 1932 whereby a combination of digits designating certain essential features of the tube type, combined with an arbitrary letter assignment, was proposed in order to meet this problem.

One point of prime importance to every tube-user is the filament voltage. Recommendation was therefore made that the first digit, or digits, in the tube-number be selected in accordance with the filament or heater-voltage rating, with one or two arbitrary arrangements, as indicated in the following tabulation:

Heater Rating	Designating Digit
Cold cathode*	0
Voltage rating below 2.5 volts.....	1
2.5 to 2.9 volts.....	2
3.0 to 3.9 volts.....	3
4.0 to 4.9 volts.....	4
5.0 to 5.9 volts.....	5
6.0 to 6.9 volts.....	6
etc.	

\*Includes tubes in which the cathode is heated by the Plate current.

If a fully logical arrangement had been followed the battery tubes rated at 2.0 volts would have carried the digit 2, and the 2.5 volt tubes designed for a-c use would also come under this same classification. This difficulty was avoided by throwing the 2.0 volt rating into the "1" class (the 1.1 volt battery tubes had become obsolete by the time this matter was under consideration). This arrangement has worked out very well in practice, as it has served to distinguish clearly between the battery group and the low-voltage a-c group.

## Useful elements

The last part of the tube type number is related to the number of "useful" elements in the tube, "useful" in this case being restricted to those elements which are brought out to a separate base-pin or top-cap connection. If an additional element is not provided with an external connection, it is not counted. Since the heater or filament constitutes a single element, the filament pins are counted as one, even in cases where there are more than two such connections, as in the case of a tapped filament designed for operation at different voltages.

To determine the digit to be used in designating the number of useful

elements it is only necessary to count up the number of *active* pins on the base and subtract one in cases where the normal arrangement of two filament pins is provided. If a top-cap is also used the number is increased by one. The resulting figure makes up the last part of the tube designation.

By clearing these numbers through a single agency (E. W. Wilby of RCA License Laboratory) it is possible to avoid all the conflicts which would otherwise arise in case of simultaneous development of new types of tubes which are similar in design.

A few observations of the working of this numbering system will give some idea as to the convenience obtained by its use.

## Examples of system

All battery tubes designed for 2.0-volt operation carry numbers starting with the figure 1. All 2.5-volt tubes, including the group used for AC receivers, start with the figure 2. All 6.3-volt tubes designed for automobile, AC-DC and AC receivers start with the figure 6. Among higher voltage types we have a number of 25-volt AC-DC types in which the type number starts with the figure 25.

Ballast tubes of the resistor type, designed for use as series resistors in AC-DC sets, have been numbered under this system in the past, but because of the desirability of incorporating provisions for pilot-light operation, have been numbered under a modified system. Prior to this time such numbers as 46A1 were used, this particular number indicating a 46-volt resistor tube.

Triodes of the filament type are designated by the figure 3 at the end of the type number. Heater-type triodes are designated by the figure 4 following the type number, the extra element in this case being the cathode, which, since it is brought out to a base pin, counts as a useful element. Thus type 6B4 is a heater type triode.

It is evident that too much dependence cannot be placed on this portion of the type number, as a filament-type tetrode such as type 1A4 carries the same final digit as a cathode-type triode. It only constitutes a general guide, giving a rough indication of the complexity of the tube type to which it is assigned.

Thus 2A3 is a filament-type triode

(Continued on page 43)

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**What each figure  
tells about the tube  
it designates.  
Aids to memory**

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Get the serviceman to tell you about the basic technical set-up.



Let whole sales staff hear how to use '38 engineering.

# NEW SALES STYLE

On 1938 technical features

Photos from the Fairbanks-Morse film, "Sweet and Lovely"



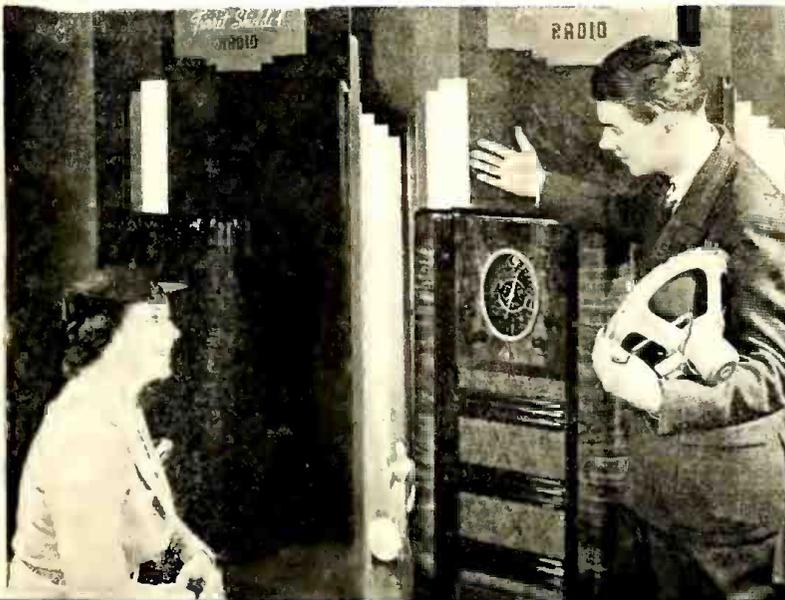
Translate the serviceman's dial-remarks into lively sales talk.



Compare improved tone quality, and ease of control.

Explain the bare essentials of purity in 1938 tone production.

After the console sale, mention advantages of second set.



# PLANNING DOUBLE PROMOTION

Manufacturers pour new millions into direct advertising aid for retailers.

★ PROMOTION BLASTS of rare quality are behind the radio dealer this Fall.

Manufacturers have dozens of tricky new ideas for selling 1938 radio to the public. They are spending about \$20,000,000 to put them over.

\* \* \*

W. H. Stellner of Motorola's household division reports big things doing in the company's first year in the home-radio business.

"Our appropriation is set at a good many thousands of dollars," he writes. "The promotion campaign will be built around electric push-button network tuning and will include a unique spot broadcast campaign, newspaper advertising, and window and store display material."

With the Motorola push-buttons colored to identify popular networks, the company has special material to promote. Featured colors will be red, blue, green and yellow, respectively, for the NBC red, NBC blue, Columbia and Mutual networks.

## General Electric drives

With the first leg of a greatly enlarged advertising campaign just complete, GE plans yet another drive in Fall promotion. Ernest H. Vogel, manager of the radio sales division, mentions "a consistent advertising schedule in over 600 newspapers in excess of 440 towns throughout the

country," aside from the space used in national magazines.

Mr. Vogel continues, "We have built a very complete and comprehensive campaign of sales promotion on our Touch Tuning, including billboards, window displays, spectacular traveling department store displays and all of the complementary sales promotion literature."

New campaigns for the company will run through October, at which time the promotion schedules will start all over again. In summary, Manager Vogel states that "our proposed advertising program for the Fall of 1937 represents an expenditure of approximately twice that of 1936."

## Fairbanks-Morse at work

From Parker H. Ericksen, radio sales manager for Fairbanks-Morse, comes a statement: "Our all-around effort for promoting the 1938 Turret Shielded radio line constitutes larger and more comprehensive plans than ever before!

"Nationally, the line will be backed by a Sunday newspaper advertising campaign in every major distributing city. It is our largest newspaper campaign. The theme throughout is the dramatic presentation of four major features incorporated in the line.

"Fairbanks-Morse's campaign in total comprises more than a hundred million advertising impressions. Back-

ing up this national effort is a well-rounded-out sales promotion procedure involving sales education, store identification, outside selling efforts, etc."

## RCA promotion

"We enter the Fall selling season with one of the most comprehensive advertising and sales promotion campaigns in RCA-Victor history," declares Thomas F. Joyce, advertising manager, RCA Mfg. Co.

As units of the campaign, Mr. Joyce names a \$300,000 nation-wide electric tuning contest, an "Overseas Dial" promotion which features direct-by-mail pieces from London, Paris and New York, and full page ads in four colors in a series of national magazines.

In addition, RCA has its six and eight page editions of *Listen*, appearing each month in *Life* picture magazine. The advertising program in newspapers will be the largest in many years, and besides cooperative advertising with dealers and distributors, large space ads have been placed with newspapers in the principal metropolitan areas. All this together with the phonograph-radio advertisements in national magazines, and the RCA Magic Key program on a network of more than 90 stations.

## "Phyl Coe" mysteries

With every one of its nearly 200 distributors enlisted, the radio-tube division of Philco Radio and Television Corporation entered the first week of its \$50,000 cash "Phyl" Coe Radio Mysteries contest with 239 broadcasting stations.

Enthusiastic acceptance of the contest has also been reflected in a sharp increase in tube sales, an overwhelming demand for additional tube display material and many dealers reported a marked increase in demand for servicing to assure reception of the weekly broadcasts.

Up to the week prior to the first of the 16 weekly broadcasts, Philco reported it had sent out 2,000,000 pieces of literature for consumers and more than 200,000 pieces of literature and displays to dealers.

## START NEW "RADIO STAMP" CRAZE. COLLECT STARS' PICTURES



Wendell Hall

Marjorie Hannan "Janet"

Elinor Harriot "Ruby"

Here are three samples of "Radioprints," appearing first in a Zenith log book prepared by Walter Haynes of Chicago. Available in groups from dealers, people collect them like stamps, keep a picture record of past and present artists.

# ACROSS THE ATLANTIC

—Improved dials and controls keynote of British advances

★ EUROPEAN radio design again this year is placing much emphasis on controls and dials. The dials are even larger than before, many of them being mounted at an angle. And on a few models, the angle of the dial may be adjusted to suit the owner. Lens projection systems are used to throw magnified, large sized tuning scales on a ground glass screen, thereby avoiding crowded, hard-to-read arrangements. Dials are made with the names of the station locations.

Recessed controls on the side of the receiver do much to eliminate the unsightly appearance of several knobs on the front; moreover, it is claimed that the side of a receiver is a more natural place because the hand doesn't have to be twisted to an awkward angle. One line employs a 14-inch spin-wheel for rapid tuning. Mounted in the roll at the top of the cabinet, it somewhat resembles the old drum dials with a thumb drive used some years ago in this country. The dial pointer may be sent across the entire scale by a mere flick of the finger, and the wheel permits both fine and quick tuning. One console has the dial on the top, facing vertically for convenient operation.

## Woven-fibre cabinets

Woven fibre cabinets in console styles are made up in a variety of colored fibres similar to those found in easy chairs. Models are available with sideboards and cocktail cabinets.

Practically all of the British receivers have all-wave three-band tuning in contrast to the two of last year, while a limited number tune to the ultra-short-waves. In general, the many extra or "luxury" circuit features found in American models are limited in use. Many of the receivers employ as few as three or four tubes (not including rectifier). However, two manufacturers are featuring contrast expansion, which is known here as volume range expansion.

A number of automatic tuning receivers were shown at Olympia radio show in London. These included both the manual and electric motor types.

For the record enthusiast, an automatic record changer with an automatic needle-changing device is being sold on the Continent and was displayed at the Berlin show. Claim is made that the records will last longer since the needle is changed regularly after each playing.



Typical English receiver.

Television in England seems to be reaching the commercial stage—some fourteen manufacturers showed models at Olympia. Both direct and projection type cathode-ray tubes are employed, and an average picture size is 8 x 10 inches. In Berlin there were a number of television exhibits, although none was for sale.

Dr. Goldmark, chief television engineer for C.B.S. reports after a five-week tour of Europe that the English outdoor pickups are of fine quality and that the B.B.C. televises events taking place within a 20-mile radius

of Alexandra Palace. More sensitive television cameras permit pick-ups in daylight illumination ranging from bright sunlight to dim haze.

Despite the fact that the B.B.C. has broadcast visual programs for almost a year, less than 3000 receivers have been sold to home users. With prices ranging from \$300 to \$800, television cannot yet be considered as a popular entertainment medium.

## AUTOMATIC TUNING FOR CHEVIES

★ Among the outstanding features in U. S. auto radio field this Fall will be push-button automatic tuning introduced by Crosley for General Motors' Chevrolets. It is reported that this feature will appear in the Fall models of the cars. The unit is the "pre-set" type and is very easily adjusted. It is very small in size, approximately 2 in. x 3 in. x 4 in., mounts on the outside of the regular receiver case, and is driven by a 6-volt reversible motor. Temperature compensation of circuit tuning is used, instead of AFC. General Electric used AFC last Fall in Model FASO.

For 1938, minor improvements have been made in the method of coupling the low-capacity rod antenna in 1937 receivers, resulting in more efficient operation.

Several manufacturers have improved reproduction by designing speaker baffles to eliminate resonance.



At the Berlin Radio Show, this cathode-ray outfit re-projected an enlarged picture of the speaker, onto a screen behind him. Scanning was accomplished by a flying-spot of ultra-violet, cathode-ray controlled.

# NEW HATS IN THE SALES RING

Current selling strategy as tried by radio's merchandisers

## BIG PICTURES GET ADV. RESULTS

★ The radio department of Ed. Schuster & Co., Milwaukee, Wis., has experienced an increase in sales recently, according to C. Schedder, manager, by using practically nine-tenths of a page space in which to place the illustration of a radio. Only a small part of the page is used for copy.

"The advantage of an advertisement like this is that when people are turning the pages of a newspaper they can't help seeing the radio illustration," states Mr. Schedder. "After all, it is the radio that people are interested in mostly, and when they see it in a picture, that arouses a buying desire. Since we began using ads like this we have noticed a fine increase in business. This applies to various types of prospects, both those who have radios to trade-in and those who haven't."

## COMPUTE OPERATING COST

★ "Get in touch with prospects at the time they are thinking of buying, and sales are half made," advises R. A. Miller, manager of the radio department of the Endres Electric Co., Anderson, Ind.

To put his theory into action, Miller recently staged an estimating

bee at a local community show in his city. He displayed a radio in operation and invited the public to calculate how much it cost to run this radio for 100 hours. As rewards he offered credits toward the purchase of a radio at the Endres store.

"Because of the nature of these prizes, we knew that only those interested in buying a radio were going to turn in answers," stated Mr. Miller. "We sold 20 radios to prospects thus secured."

"Naturally the average seller doesn't know when a man is ready to buy. Nor can he know, without devising some such means as this sales plan, which automatically spotted the worthwhile leads for us."

## SETS FOR FACTORIES

★ Prominent Philadelphia factory has made a move which indicates that any factory is a good prospect for the sale of a whole series of receivers, to be used particularly during the baseball season.

Philly outfit noticed that interest among the employees in baseball broadcasts was sufficient to interrupt working schedules, so rather than have the workmen grabbing off informal listening periods in an unorganized and unsupervised fashion, factory officials installed a number of sets around the place for the special purpose of listening to the big games.

These and other factory officials are ready to decide that their employees may as well take time off to listen, as to be unhappy and impatient about not being able to hear the airings of important games.

## FARM RADIO CONTEST

★ Special method by which the dealer may connect with new prospects for farm radio involves the use of local farm boys and girls in a contest to find the oldest farm radio. Prizes are offered to the youngster who brings in the name and address of the farmer owning the oldest receiver, as shown by make and model.

The boys and girls can be required to leave the dealer's literature in the homes contacted. Radio men will find that the device builds valuable prospect lists.

This sales trick is one of those presented in "More Farm Radio Sales," the lively booklet published by Wincharger Corp., Sioux City, Iowa.

## PROFIT VIA HOME MOVIES

★ A batch of radio men have reported some lively experiences in selling home movie equipment. At George's Radio, Washington, D. C., it has been found that the merchandise hikes traffic about 10 per cent, that it is a simple matter to display it effectively, and that it is "plenty good for Xmas business!" Sales technique at this store is to plug the cameras and projectors with window displays and newspaper ads.

Aaron Lippman Co., Newark, N. J., find the equipment easy to handle as an adjunct to radio, and mentions "personal contact" as the chief method of advertising it.

Fort Orange Distributing Corp., Albany, N. Y., uses envelope stuffers to plug the merchandise and thinks that it's good for a 10 per cent increase in store traffic.

A.B.C. Darcy, San Diego, reports selling more movie equipment in the past seven months than radio and the latter volume hadn't fallen off either.

It happens that all these merchandisers are currently stocking Univex.

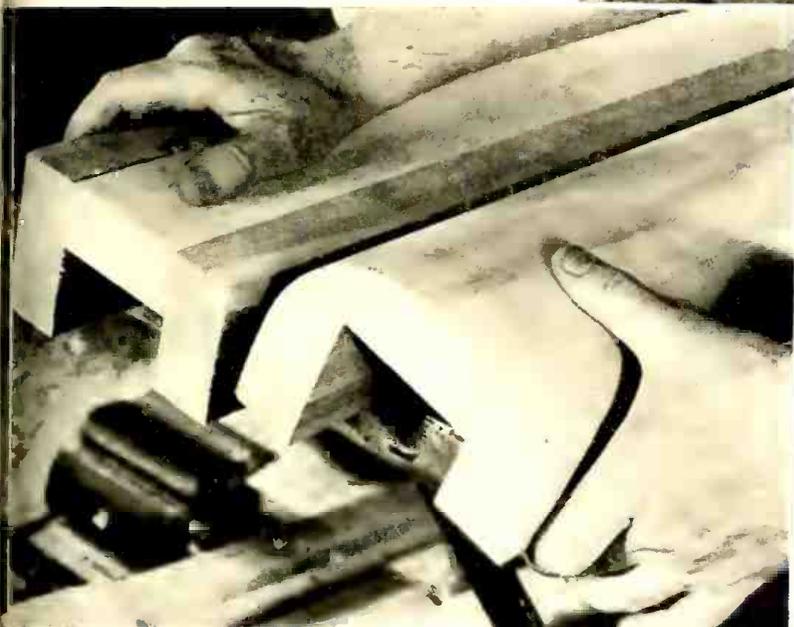


Chicago store, Bissell-Weisert, smartly displays a piano and records with Ansley radio, emphasizing home music for the winter evenings ahead.

# SELLING FINER CABINETRY

Emphasize the beauty of the cabinetry. But assure the customer also that the cabinet has something behind its well-groomed appearance.

(From an RCA talking slide-film produced by AudiVision, Inc.)

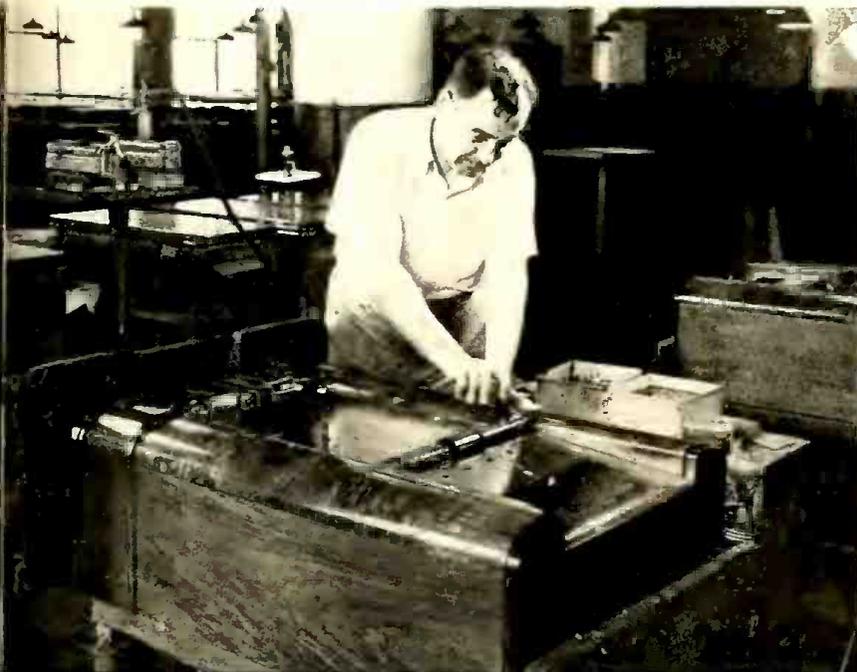


Talk woods that are sturdy, seasoned, and matched.



Mention details of how parts are put together.

Explain the process of polishing.



Remind her that modern styling fits the room interior.



# PUSH BUTTON TUNING SYSTEMS

A detailed description of the RCA, G-E, and Sparton tuning systems

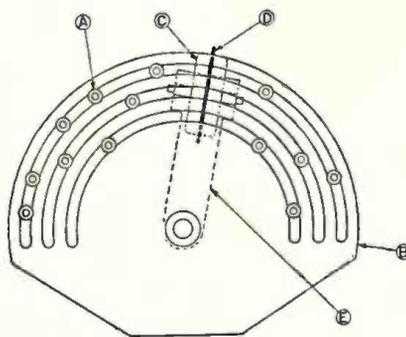
★ **ELECTRIC** tuning as used in the new receivers is really quite simple in operation when only the basic principles are considered. With the RCA and G-E models, use is made of a reversible type motor to drive the condenser gang. Upon reaching either extremity of rotation, the reversing switch attached to the condenser gang is operated and serves to reverse the direction of the driving motor.

In the Sparton receiver use is made of six sets of pre-set trimmer condensers—these being brought into the circuit by means of a series of 3-pole interlocking switches which complete the circuit.

## Motor drives

The motor drive systems are set into operation by pushing a button which completes the motor circuit. The motor then turns in the direction in which it was last rotating—it keeps going in that direction until the contact for the desired station is made, or until the condenser can turn no further and reversing switch changes the direction of rotation. After the reversing switch has operated, the condenser is driven in the opposite direction—when the contact for the desired station is made, the motor stops and the station is tuned in. In other words, the motor continues to turn the condenser until its position is such that the contact for the desired station is made.

What happens after the contact is



Adjustable (A) and roving (D) contacts as used on the G-E electric tuning models.

made is where the various systems differ. In the RCA-Victor receivers "making contact" is really opening the circuit.

The RCA sets have an assembly of 8 discs at the rear of the tuning condenser. These discs are fastened to the shaft in such a manner that they will slip when a moderate amount of force is applied to them—otherwise they are immovable. The angular position of these discs is what determines the station to which the set will tune.

## Setting stations

To set up the receiver, the push button to be pre-set is depressed and the motor allowed to stop. Then a key is inserted at the rear in a slot on the disc corresponding to the push button (see illustration). The sta-

tion desired is then tuned in manually while the disc is held in place by the key. This procedure is repeated for each one of the 8 stations desired.

An examination of the discs shows that when the condenser is tuned to the station desired (same position as with key in slot)—an insulated segment prevents the spring contact on the bottom from completing the circuit. As long as the push-button is in and the spring is making contact, the motor will turn the condenser gang. The instant the insulated segment opens the circuit, the motor goes dead and the condenser stops tuning.

## Motor thrust

A novel use is made of the fact that, when the motor is energized, there is a thrust on the shaft which causes the motor armature to move forward. This forward movement engages a pin which connects the motor up to a gear on the condenser drive. When the motor is off, the armature comes back because of a spring. In this manner the motor is always disconnected for manual tuning.

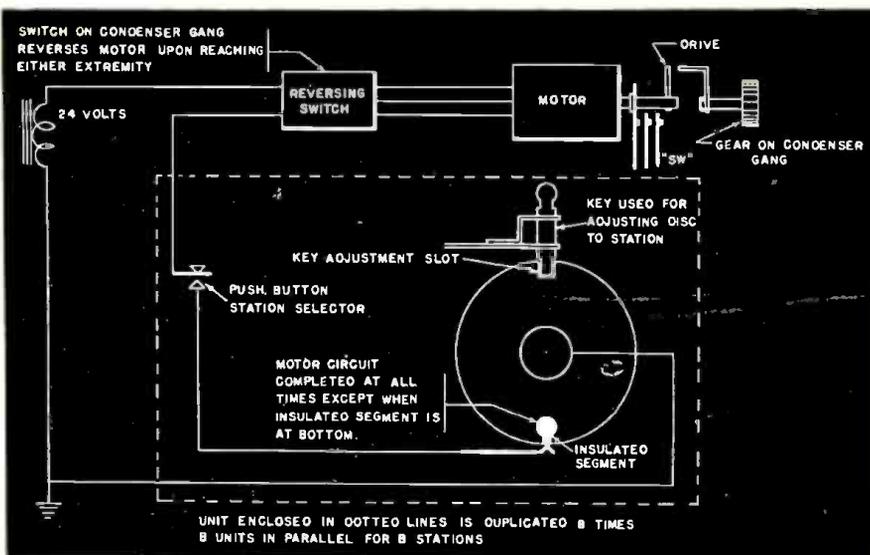
The motion of the motor armature also operates a switch which serves to mute the set, and kill the AFC during the tuning operation. This switch is labelled "SW" on the diagram.

In order to simplify the diagram, only one of the push buttons and selector discs is pictured. There are eight of these units in parallel (enclosed in dotted lines). Since they are series circuits, only the one having a button depressed is in operation at any one time—the others are dead. The push button stays in the closed position until another one is depressed, at which time it snaps up.

A 24-volt induction motor is employed for driving the condenser, through a train of gears to reduce the speed. The voltage is supplied from a winding on the power transformer.

## Remote control

When remote control is employed, a duplicate set of push buttons, connected to the set by a cable, is employed. A control on the receiver panel is used to select manual, panel push-button, or remote push-button tunings. These circuits have been



Schematic of RCA-Victor electric tuning system. Use is made of the thrust on motor armature to close switch contacts and connect motor to condenser shaft.



## Prestige - Price and Profit!

If you are the kind of dealer who knows that the easiest way to make money retailing radios is to concentrate on a well known medium priced line, **HOWARD** is the line for you!

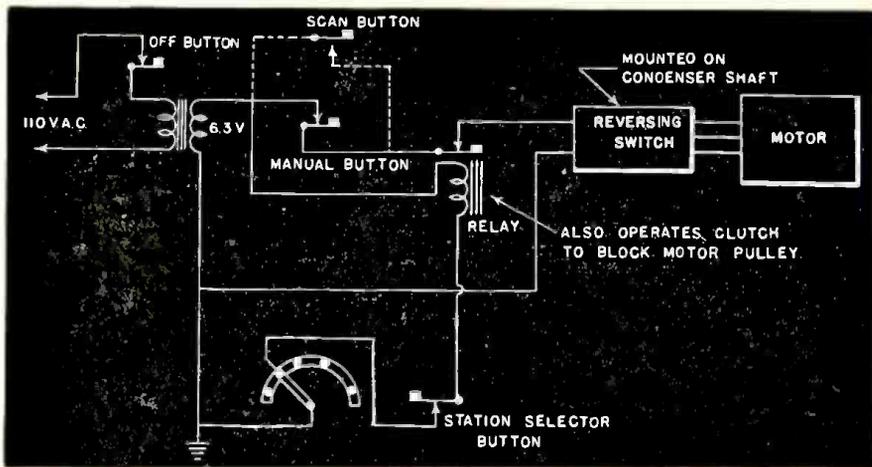
It doesn't take a lot of argument to get folks to buy **HOWARD** radio. . . . They sell quickly because they combine a *good name* with *irresistible value*. In both appearance and performance they will please your customer the first time he sees them, and keep on pleasing him day after day, month after month, year after year. . . . Every time you put a **HOWARD** in a prospect's home you've made a lasting friend and an enthusiastic booster for your store.

We're all set with the most outstanding . . . most complete selection of A.C., battery, and auto radios in Howard history; and back them with advertising and sales promotion ideas that guarantee you a big pay-off right from the start.

Illustrated above is our new 14-tube, push-button motor driven automatic tuning model 425-A. All the latest 1938 features including push-pull beam power output . . . 14 watts undistorted . . . **BASS BOOST**, three full bands covering 18,000 to 540 K.C., edge lighted dial, gold plated escutcheon, copper plated chassis, R.F. stage on all bands, and giant 15 inch heavy duty dynamic speaker.

*Distributors' and Dealers' interests fully protected; write or wire for either proposition.*

**HOWARD**  
RADIO COMPANY  
1735 BELMONT AVENUE  
CHICAGO



Simplified diagram of the General Electric system of motor driven push button tuning. Thirteen station selector buttons are employed and are connected to as many adjustable contacts.

omitted on purpose since they do not come into the operating principle.

The General Electric system of electric tuning operates in a similar but opposite manner to the RCA. Stopping the condenser at the desired point is done by making a contact which operates a relay. A series of adjustable contacts are used in conjunction with push-buttons. In addition to the station selector buttons, there are buttons for manual tuning, scanning, and turning the set off. The receiver is automatically turned on when any one of the station selector buttons is pressed.

### Adjustable contacts

The layout of the contacts is shown in an accompanying sketch. These contacts are adjustable along 3 arcs—each arc 180° in length. The contacts are adjusted by tuning in the station manually, and then sliding a contact so that it meets the roving contact which is the condenser shaft. Three semi-circular slots are used so that stations can be set up closely to each other if desired. If only one slot were used, it would be impossible to set the adjustable contacts to within 10 KC because of the space they occupy.

A second sketch on the G-E receiver shows the wiring of the entire electric tuning circuit. However, for simplicity only one station button is shown, and likewise only one adjustable contact shown connected. The off button is connected in the power transformer primary. When any other button is depressed it closes automatically, thus pushing any station button turns on the set and puts the motor into operation.

When a station button is pressed, both the manual button switch and relay contacts are closed—this means that power is supplied to the motor from the 6.3-volt transformer wind-

ing. The motor rotates until the roving contact strikes the contact pin which is connected to the depressed station button. As soon as contact is made, the relay opens up the lead to the motor—and also operates a friction clutch to block the motor pulley.

A reversing switch is connected to the condenser to reverse the motor

when the shaft has reached either extreme of rotation. The motor continues to operate until the station contact and roving contact meet. The scan button enables one to cause the motor to turn the condenser continuously until it is released, since it closes the circuit to the motor (note the relay is always closed except when the station selected is tuned in).

The manual button is so arranged as to open the motor circuit when depressed. It, however, automatically closes when a station selecting button is pushed in.

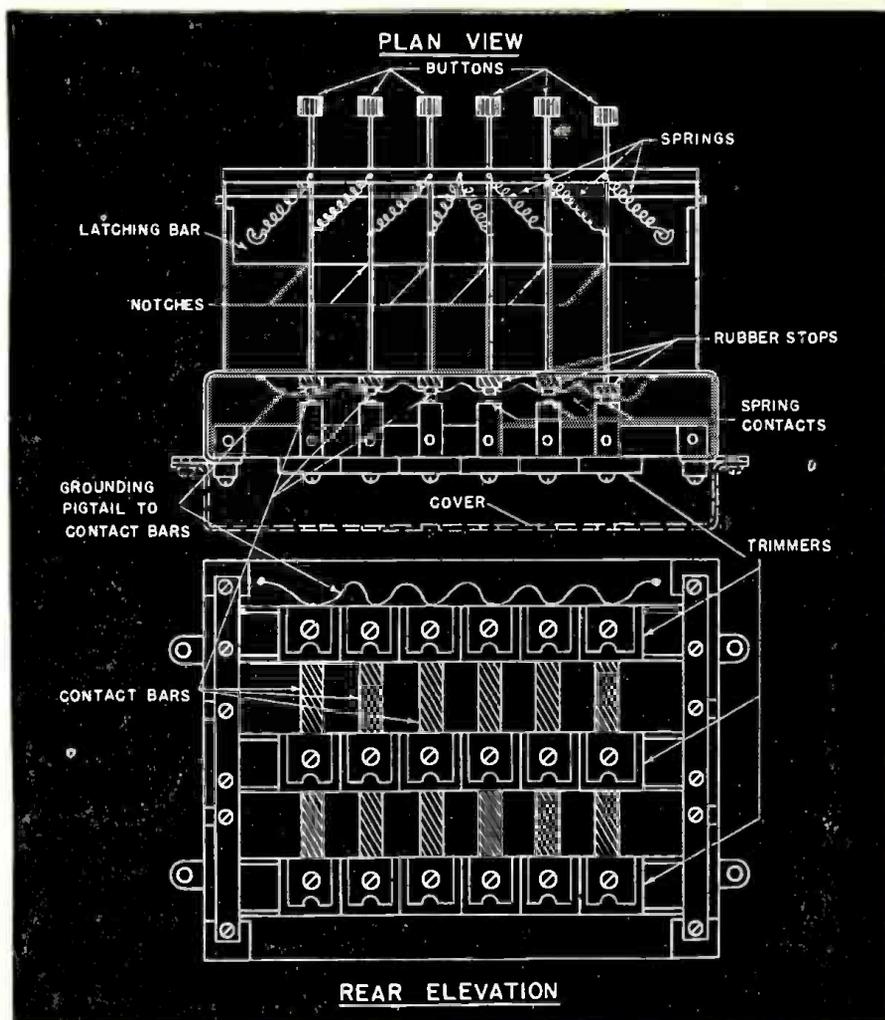
The relay in addition to handling the tuning circuit, has contacts which kill the AFC and close the silent tuning contact.

### Latching buttons

All buttons except the scanning latch in, and release the other push buttons when they are depressed. The motor is a split-phase reversible induction type.

The Sparton Selectronne tuning system does not require the use of motors. Pre-set trimmer condensers are used to tune a total of six sta-

(To page 52)



View of the insides of Sparton's Selectronne unit using pre-set condensers.

# Money in the Bank For You!



THAT'S WHAT THESE TWO SENSATIONAL NEW RCA VICTOR SELLING HELPS MEAN!  
THEY'LL WORK FOR YOU LIKE BEAVERS—BRINGING HOME THE BACON  
IN THE FORM OF GREATER VOLUME AND INCOME.

1

## RCA Victor ELECTRIC TUNING CONTEST!

Designed to pull hundreds of new prospects into your store where you can make demonstrations and sales—this great contest begins September 20th—runs for 5 weeks. And during those weeks you'll have chance after chance—every day—to make more money!

There's no doubt about this contest's pulling power. It will bring the people into your store in flocks and droves because it's an *easy* contest—and a *free*

one... because every one of the \$50,000 worth of prizes is a valuable prize... because 1022 prizes are *guaranteed* to persons in your territory each week... because local newspaper advertising will tell everyone in your community about it—and send them to your store for demonstrations and entry cards! Get behind this spectacular contest—push RCA Victor at every opportunity—and your sales will grow bigger each day!

2

## A MAGAZINE WITHIN A MAGAZINE! RCA's "LISTEN" IN LIFE!

The Aug. 16th issue of Life presented to America the most revolutionary advertisement of modern times. It was a "magazine within a magazine", 6 pages, run by RCA and called LISTEN.

LISTEN is a dramatic picture "magazine". Each month it tells the RCA story in a new, different, refreshing way—a way that guarantees consumer reading. LISTEN is going to

make millions conscious as never before of the great part RCA plays in radio and sound entertainment. It's going to inspire new and greater public confidence in the RCA trademark. It's going to mean easier selling for dealers who feature RCA products—and will make every RCA Victor dealer a bigger man in his community.



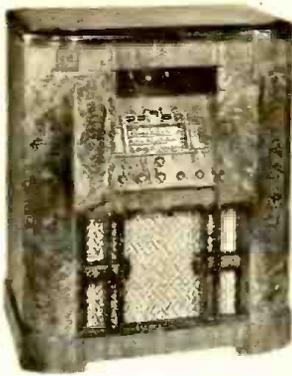
# RCA Victor

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

A SERVICE OF THE RADIO CORPORATION OF AMERICA

300 MILLION

RCA RADIO TUBES HAVE BEEN BOUGHT BY RADIO USERS... IN TUBES, AS IN RADIO SETS, IT PAYS TO GO RCA ALL THE WAY!



RCA-Victor U-109



Radiobar Philco 2-IXX



Portomatic



Emerson AR-166

# COMBINATIONS & RECORD PLAYERS

Complete specifications and sales features of the 1938 phonograph instruments

Model No.	List price	Cabinet style	Dimensions	No. of wave bands	No. of tubes	Power output watts	Speaker size	Power supply	Auto record changer				Self-starting motor	Type pick-up	Volume range expansion	Features	
									No. of tone controls	No. of records	Size	Play mixed sizes					
Ansel Radio Corp., 240 W. 23rd St., New York, N. Y.—"Ansel Dynaphone"																	
DA	\$39.50	T	8x13x17	.....	.....	.....	.....	AC-DC	0	.....	.....	.....	78	Yes	Cry	No	
D1	74.50	PO	9x14x20	.....	6	4	8	AC-DC	1	.....	.....	.....	78	Yes	Cry	No	
D1A	74.50	T	17x12x14	.....	6	4	6	AC-DC	1	.....	.....	.....	78	Yes	Cry	No	
D7	64.50	PO	13x13x8	1	5	1.2	5	AC-DC	1	.....	.....	.....	78	Yes	Mag	No	
D9	84.50	PO	15x13x9	2	7	2	6	AC-DC	1	.....	.....	.....	78	Yes	Cry	No	
D10	89.50	T	17x12x14	2	7	2	6	AC-DC	1	.....	.....	.....	78	Yes	Cry	No	
D12	110.00	PO	18x18x10	.....	6	5	8	AC-DC	1	.....	.....	.....	78&33	Yes	Cry	No	2
D16	120.00	CON	33x22x14	.....	6	4	12	AC-DC	1	.....	.....	.....	78	Yes	Cry	No	
D17	145.00	CON	33x22x14	2	7	2	12	AC-DC	1	.....	.....	.....	78	Yes	Cry	No	
D18	195.00	CON	33x27x18	2	7	2	12	AC-DC	1	(7	12)	No	78	Yes	Cry	No	
D20	170.00	CON	33x27x18	.....	6	4	12	AC-DC	1	(8	10)	No	78	Yes	Cry	No	
D21	175.00	CON	33x27x18	2	13	8	12	AC-DC	1	.....	.....	.....	78	Yes	Cry	No	
D22	225.00	CON	33x27x18	2	13	8	12	AC-DC	1	(7	12)	No	78	Yes	Cry	No	
D23	120.00	ACR	24x23x14	2	7	2	12	AC-DC	1	.....	.....	.....	78	Yes	Cry	No	
D24	260.00	CON	35x27x18	3	15	8	12	AC-DC	1	(7	12)	No	78	Yes	Cry	No	
D25	210.00	CON	35x22x14	3	15	8	12	AC-DC	1	(8	10)	.....	78	Yes	Cry	No	
David Bogen Co., Inc., 663 Broadway, New York, N. Y.—"Bogen-Supreme"																	
S	79.50	T	12x14x14	.....	3	4	8	AC	0	.....	.....	.....	78	Yes	Mag	No	1
	129.00	T	12x14x14	.....	3	4	8	AC	0	(8	10)	No	78&33	Yes	Cry	No	
	69.50	PO	12x14x14	.....	3	4	8	AC	0	.....	.....	.....	78	Yes	Cry	No	
PM12	159.50	PO	20x10x13	.....	6	12	10	AC	1	(8	10)	No	78&33	Yes	Cry	No	
Emerson Radio & Phonograph Corp., 111 Eighth Ave., New York, N. Y.—"Emerson"																	
R189	\$59.95	T	12x16x13	2	5	3	8	AC	0	.....	.....	.....	78	Yes	Cry	No	4
AL164	79.95	PO	15x15x10	2	6	2	6 1/2	AC-DC	0	.....	.....	.....	78	Yes	Cry	No	4
AR166	89.95	T	16x17x15	2	6	5	6 1/2	AC	1	.....	.....	.....	78	Yes	Cry	No	3, 4
AP166	89.95	T	16x17x15	3	6	2	6 1/2	AC-DC	1	.....	.....	.....	78	Yes	Cry	No	3, 4
AR177	99.95	T	16x16x16	2	6	2	6 1/2	AC	1	.....	.....	.....	78	Yes	Cry	No	3, 4
AR177	99.95	T	16x16x16	3	6	2	6 1/2	AC-DC	1	.....	.....	.....	78	Yes	Cry	No	3, 4
AR165	119.95	ACR	26x14x31	2	6	2	10	AC	1	.....	.....	.....	78	Yes	Cry	No	3, 4
AR165	119.95	ACR	26x14x31	3	6	2	10	AC-DC	1	.....	.....	.....	78	Yes	Cry	No	3, 4
AR184	139.95	CON	40x25x16	3	14	15	15	AC	1	.....	.....	.....	78	Yes	Cry	No	3, 4
X175	750.00	CON	46x14x19	3	15	15	15	AC	1	(10	10)	No	78&33	Yes	Cry	Yes	3, 4
Galvin Mfg. Corp., 4545 Augusta Blvd., Chicago, Ill.—"Motorola"																	
9R	\$149.95	CON	41x19x19	3	9	NS	8	AC	1	.....	.....	.....	78	NS	Mag	No	3
Garod Radio Corp., 115 Fourth Ave., New York, N. Y.—"Garod"																	
Grebe Mfg. Co., Inc., 119 Fourth Ave., New York, N. Y.—"Grebe"																	
307-P5	\$157.50	CON	45x27x18	3	7	4 1/2	12	AC	1	.....	.....	.....	78	Yes	Magnetic or Crystal	No	
309-P5	173.50	CON	45x27x18	3	9	5	12	AC	1	.....	.....	.....	78	Yes		No	
3012-P6	212.50	CON	46x28x19	3	12	12	12	AC	1	.....	.....	.....	78	Yes		No	
3012-P6A	255.00	CON	46x28x19	3	12	12	12	AC	1	8	10	No	78&33	Yes		No	
309-P7	210.00	CON	34x38x18	3	9	5	12	AC	1	.....	.....	.....	78	Yes		No	
309-P7A	252.50	CON	34x38x18	3	9	5	12	AC	1	8	10	No	78&33	Yes		No	
3012-P7	238.00	CON	34x38x18	3	12	12	12	AC	1	.....	.....	.....	78	Yes		No	
3012-P7A	279.50	CON	34x38x18	3	12	12	12	AC	1	8	10	No	78&33	Yes		No	
803-P5	166.50	CON	45x27x18	3	8	3	12	AC DC	1	.....	.....	.....	78	Yes		No	
903-P5	182.50	CON	45x27x18	3	9	3	12	AC DC	1	.....	.....	.....	78	Yes		No	
1203-P6	221.50	CON	46x28x19	3	12	10	12	AC DC	1	.....	.....	.....	78	Yes		No	
1203-P6A	253.50	CON	46x28x19	3	12	10	12	AC DC	1	8	10	No	78&33	Yes		No	
903-P7	219.00	CON	34x38x19	3	9	5	12	AC DC	1	.....	.....	.....	78	Yes		No	
903-P7A	261.00	CON	34x38x19	3	9	5	12	AC DC	1	8	10	No	78&33	Yes		No	
1203-P7	247.00	CON	34x38x19	3	12	10	12	AC DC	1	.....	.....	.....	78	Yes		No	
1203-P7A	289.00	CON	34x38x19	3	12	10	12	AC DC	1	8	10	No	78&33	Yes		No	
P6A and P7A, 10-inch automatic record changer models available with 12-inch changer for \$10 additional.																	
Harris Mfg. Co., 2422 W. 7th St., Los Angeles, Calif.—"Harris Electrotone"																	
500	\$ 99.50	PO	23x15x19	1	7	6	8	AC	1	.....	.....	.....	78	Yes	Cry	No	
600	125.00	PO	23x15x19	1	7	6	8	AC	1	8	10	No	78&33	Yes	Cry	No	



Fairbanks-Morse Turret Shielded Radio, Model 9.AC4

## TURN PROSPECTS INTO CUSTOMERS

Visible plus-value features of Fairbanks-Morse Turret Shielded Radios turn lookers into buyers

Demonstrate *any* model from the 1938 line of Fairbanks-Morse Turret Shielded Radios to a prospect—and you will have made a *sale*. Some day, perhaps, all good radios will have features like those that make today's Fairbanks-Morse Radios sell on sight. But today, only Fairbanks-Morse offers them.

First—*Turret Shielding* and monitor base chassis, an exclusive Fairbanks-Morse development that shuts out much of the crackling and popping noise that ruins foreign reception on ordinary sets. Add to this the natural built-in ability of Fairbanks-Morse Radios to bring in foreign stations clear and strong, and you begin to realize what a demonstration of this feature means when the prospect is "on the fence"!

Second—the exclusive Fairbanks-Morse  
*The men who sold*



Tone Projector that gives this radio new faithfulness and beauty of tone. Your prospects *see* what it is—*bear* what it does—like it—buy it and show it to their friends.

Third—today's finest development in *automatic tuning*—true automatic tuning with *true automatic frequency control*.

And that's not all. The Fairbanks-Morse 1938 Turret Shielded Radio has everything worth-while found in any radio—plus these and other sales-clinching features found in no other line.

No other radio makes as favorable an impression on the prospect as does a 1938 model Fairbanks-Morse.

Write for the complete story. There is a substantial net profit in it for you if your territory is open. Address Fairbanks, Morse & Co., Home Appliance Division, 2060 Northwestern Avenue, Indianapolis, Indiana.

*them last year know!*

# FAIRBANKS-MORSE

1938 *Turret Shielded* RADIO

# ELECTRIC PHONOGRAPH & COMBINATION SPECIFICATIONS — Continued

Model No.	List price	Cabinet style	Dimensions	No. of wave bands	No. of tubes	Power output watts	Speaker size	Power supply	Auto record changer				Self-starting motor	Type pick-up	Volume range expansion	Features
									No. of controls	No. of records	Size	Play mixed sizes				
<b>Harris Mfg. Co. (Continued)</b>																
700	135.00	PO	25x6x9	1	7	6	8	AC	1	7	12	No	78&33	Yes	Cry	No
800	150.00	PO	25x6x9	1	7	6	8	AC-DC	1	8	10	No	78&33	Yes	Cry	No
900	149.50	PO	25x16x9	2	7	6	8	AC	1	7	12	No	78&33	Yes	Cry	No
1000	174.50	PO	25x16x9	2	7	4	8	AC-DC	1	8	12	No	78&33	Yes	Cry	No
<b>Midwest Radio Corp., 909 Broadway, Cincinnati, Ohio—"Midwest"</b>																
HP-10	NS	ACR	28x13x13	3	10	6	8	AC-DC	1	8	10&12	Yes	78	Yes	Cry	No
DN-12	NS	CON	46x33x16	5	12	7	8&8	6V	1	8	10&12	Yes	78	Yes	Cry	No
NN-12	NS	CON	46x33x16	5	12	10	12	AC	1	8	10&12	Yes	78	Yes	Cry	No
OO-16	NS	CON	46x33x16	6	16	10	12	AC	1	8	10&12	Yes	78	Yes	Cry	No
UU-18	NS	CON	46x33x16	6	18	15	12&6	AC	1	8	10&12	Yes	78	Yes	Cry	No
YY-20	NS	CON	46x33x16	6	20	20	12&6&6	AC	1	8	10&12	Yes	78	Yes	Cry	Yes
<b>Noblitt-Sparks Industries, Inc., 13th &amp; Big Four R.R., Columbus, Ind.—"Arvin"</b>																
848CS	\$125.00	ACR	23x16x26	3	8	5	10	AC	1	.....	.....	.....	78	Yes	Cry	No
<b>Pilot Radio Corp., 3706 36th St., Long Island City, N. Y.—"Pilot"</b>																
TP423	\$ 99.50	T	17x18x15	3	7	2	6	AC-DC	1	.....	.....	.....	78	Yes	Cry	No
RG184	159.50	CON	34x37x19	3	8	2.5	12	AC-DC	1	.....	.....	.....	78&33	Yes	Cry	No
RG674	169.50	CON	34x37x19	3	7	3	12	AC	1	.....	.....	.....	78&33	Yes	Cry	No
RG584	169.50	CON	34x37x19	3	8	6	12	AC	1	.....	.....	.....	78&33	Yes	Cry	No
PG-184	139.50	CON	43x26x17	3	8	2.5	12	AC-DC	1	.....	.....	.....	78&33	Yes	Cry	No
PG-674	149.50	CON	43x26x17	3	7	3	12	AC	1	.....	.....	.....	78&33	Yes	Cry	No
PG-584	149.50	CON	43x26x17	3	8	6	12	AC	1	.....	.....	.....	78&33	Yes	Cry	No
<b>Portomatic Corp., 1013 Madison Ave., New York, N. Y.—"Portomatic"</b>																
112F	\$139.50	PO	24x10x15	2	8	2.5	6 1/2	AC-DC	1	8	10	No	78&33	Yes	Cry	No
110F	129.50	PO	22x10x15	2	8	2.5	6 1/2	AC-DC	1	7	12	No	78&33	Yes	Cry	No
100F	89.95	PO	21x15x9	2	8	2.5	6 1/2	AC-DC	1	.....	.....	.....	78	Yes	Cry	No
101F	105.00	PO	22x10x15	2	8	2.5	6 1/2	AC-DC	1	.....	.....	.....	78&33	Yes	Cry	No
119F	125.00	PO	21x15x9	.....	5	5	8	AC-DC	1	7	12	No	78&33	Yes	Cry	No
K-1	260.00	CON	41x28x18	5	15	12	12	AC-DC	1	8	10	No	78&33	Yes	Cry	No
105F	NS	PO	21x15x9	.....	4	2.5	6 1/2	AC-DC	1	.....	.....	.....	78	Yes	Cry	No
Above models with fabricoid covering. Airplane cloth, cowhide, or rawhide available at increased price.																
<b>Radiobar Co. of America, 7100 McKinley Ave., Los Angeles, Calif.—"Phonograph with Philco Radio"</b>																
1-116	\$600.00	CON	42x42x21	5	15	15	NS	AC	2	8	12	No	78	Yes	Cry	No
2-1	450.00	CON	43x26x18	3	12	10	NS	AC	1	8	10	No	78	Yes	Cry	No
3-3	395.00	CON	42x37x19	3	9	5	NS	AC	1	8	10	No	78	Yes	Cry	No
4-4	295.00	CON	36x35x19	2	8	5	NS	AC	1	8	10	No	78	Yes	Cry	No
5-9	139.50	CON	30x35x17	2	6	3	NS	AC	1	.....	.....	.....	78	Yes	Cry	No
6-9	119.50	ACR	22x16x31	2	6	3	NS	AC	1	.....	.....	.....	78	Yes	Cry	No
<b>RCA Mfg. Co., Front &amp; Cooper Sts., Camden, N. J.—"RCA-Victor"</b>																
R93A	\$ 19.95	T	5x9x11	.....	.....	.....	.....	AC	0	.....	.....	.....	78	No	Mag	1, 8
R94	32.50	T	7x13x16	.....	.....	.....	.....	AC	0	.....	.....	.....	78	Yes	Mag	1, 8
R96	67.50	T	13x14x17	.....	3	4.5	8	AC	1	.....	.....	.....	78	Yes	Mag	1, 6, 8
R97	89.50	T	16x14x18	.....	3	4.5	8	AC	1	8	10	No	78	Yes	Mag	1, 8
R99	149.50	CON	34x15x25	.....	7	15	12	AC	1	.....	.....	.....	78	Yes	Mag	1, 3, 8
U101	76.50	T	14x14x20	2	5	4.5	8	AC	0	.....	.....	.....	78	No	Mag	1, 6, 8
U102E	109.50	ACR	23x26x17	2	5	4.5	12	AC	0	.....	.....	.....	78	Yes	Mag	1, 6, 8
U103	210.00	CON	34x16x37	3	10	12	12	AC	1	8	10	No	78	Yes	Mag	3
U107	295.00	CON	43x20x31	3	10	12	12	AC	1	8	10	No	78	Yes	Cry	3
U109	450.00	CON	43x22x36	3	16	15	12	AC	1	7	12	No	78	Yes	Cry	3, 5
<b>Recoton Corp., 178 Prince St., New York, N. Y.—"Recoton"</b>																
Jr	\$ 39.75	T	17x9x15	.....	.....	.....	.....	AC	0	.....	.....	.....	78	Yes	Cry	No
Jr	46.75	T	17x9x15	.....	.....	.....	.....	AC-DC	0	.....	.....	.....	78	Yes	Cry	No
<b>Sonora Electric Phonograph Co., Inc., 160 Varick St., New York, N. Y.—"Sonora"</b>																
PB1	\$ 28.50	T	7x15x13	.....	.....	.....	.....	AC	1	.....	.....	.....	78	Yes	Cry	No
PB2	38.50	T	7x15x13	.....	.....	.....	.....	AC-DC	1	.....	.....	.....	78	Yes	Cry	No
PC3	139.50	CON	24x18x15	.....	3	3.5	10	AC	2	.....	.....	.....	78	Yes	Cry	No
P202	49.95	T	10x14x15	.....	3	3.5	6	AC	2	.....	.....	.....	78	Yes	Cry	No
P400	59.95	T	10x14x15	.....	5	3.5	6	AC-DC	2	.....	.....	.....	78	Yes	Cry	No
PR202	64.95	T	10x14x15	2	5	2.5	6	AC	2	.....	.....	.....	78	Yes	Cry	No
PR400	74.95	T	10x14x15	2	6	2.5	6	AC-DC	2	.....	.....	.....	78	Yes	Cry	No
P101	89.50	ACR	23x27x15	.....	3	3.5	10	AC	2	.....	.....	.....	78	Yes	Cry	No
P300	99.50	ACR	23x27x15	.....	5	3.5	10	AC-DC	2	.....	.....	.....	78	Yes	Cry	No
PR101	109.50	ACR	23x27x15	2	5	3.5	10	AC	2	.....	.....	.....	78	Yes	Cry	No
PR300	119.50	ACR	23x27x15	2	6	3.5	10	AC-DC	2	.....	.....	.....	78	Yes	Cry	No
P303	109.50	CON	33x26x17	.....	5	17.5	12	AC	2	.....	.....	.....	78	Yes	Cry	No
P500	119.50	CON	33x26x17	.....	5	8.5	12	AC-DC	2	.....	.....	.....	78	Yes	Cry	No
PA303	149.50	CON	33x26x17	.....	5	17.5	12	AC	2	7	12	No	78	Yes	Cry	No
PA500	159.50	CON	33x26x19	.....	5	8.5	12	AC-DC	2	8	10	No	78	Yes	Cry	No
PC303	199.50	CON	33x26x17	.....	5	17.5	12	AC	2	8	10	Yes	78	Yes	Cry	No
PC500	214.50	CON	33x26x17	.....	5	8.5	12	AC-DC	2	8	12	Yes	78	Yes	Cry	No
PR303	129.50	CON	33x26x17	.....	6	3.5	12	AC	2	.....	.....	.....	78	Yes	Cry	No
PR500	139.50	CON	33x26x17	3	7	3.5	12	AC-DC	2	.....	.....	.....	78	Yes	Cry	No
PRA303	169.50	CON	33x26x17	3	6	3.5	12	AC	2	7	1	No	78	Yes	Cry	No
PRA500	179.50	CON	33x26x17	3	7	3.5	12	AC-DC	2	8	10	No	78	Yes	Cry	No
PRC303	225.00	CON	33x26x17	3	9	17.5	12	AC	2	8	10	Yes	78	Yes	Cry	No
PRC500	240.00	CON	33x26x17	3	1	8.5	12	AC-DC	2	8	12	Yes	78	Yes	Cry	No
PRC404	295.00	CON	36x31x18	3	12	17.5	12	AC	2	8	10	Yes	78	Yes	Cry	No
PRC600	310.00	CON	36x31x18	3	12	8.5	12	AC-DC	2	8	12	Yes	78	Yes	Cry	No
<b>Sound Products Co., 704 N. Curson Ave., Hollywood, Calif.—"Sound Products"</b>																
Hollywood	\$149.50	ACR	24x29x20	.....	4	10	12	AC	1	7	12	No	78&33	Yes	Cry	No
<b>Zenith Radio Corp., 6001 Dickens Ave., Chicago, Ill.—"Zenith"</b>																
6S203	\$ 99.95	ACR	26x15x22	3	6	4.5	8	AC	1	.....	.....	.....	78	Yes	Cry	No
7D203	109.95	ACR	26x15x22	3	7	1.8	8	AC-DC	1	.....	.....	.....	78	Yes	Cry	No
9S:04	161.95	CON	26x18x42	3	9	4.5	12	AC	1	.....	.....	.....	78	Yes	Cry	No
12S205	355.00	CON	45x19x36	3	12	15	12	AC	1	.....	12	Yes	78	Yes	Cry	No

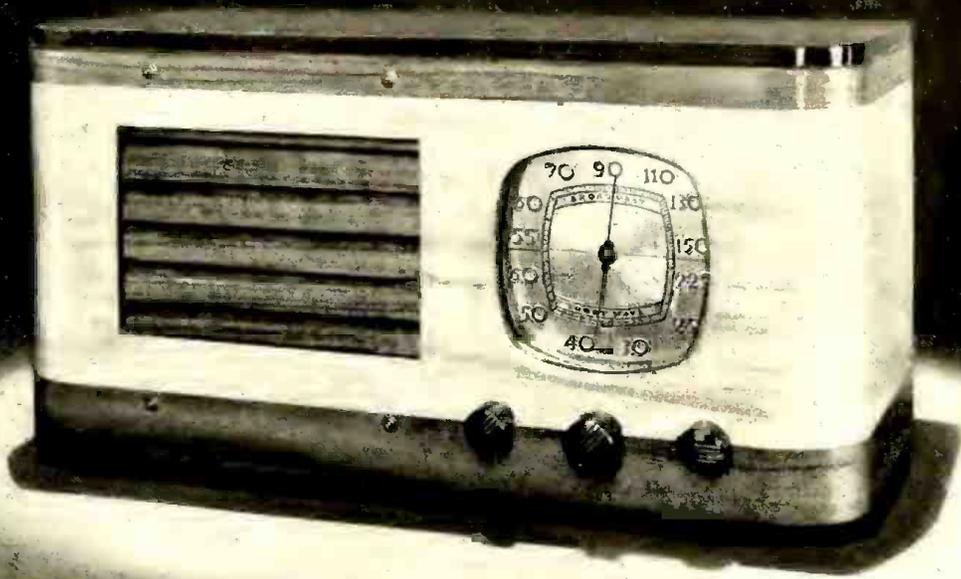
CODES  
ACR—arm chair  
CON—console  
PO—portable

T—table  
Cry—crystal  
Mag—magnetic  
FEATURES:

1. Plays 10- and 12-inch records  
2. Plays 10-, 12-, 16-inch records  
3. Acoustical treatment or compensation  
4. Counterbalanced tone arm

5. Push button tuning  
6. Automatic record stop  
7. Record compartment  
8. Compensated volume control

# ANOTHER SPECTACULAR KADETTE— AN UNUSUAL BEAUTY



*Sensational*  
**10 TUBE**  
SUPERHETERODYNE  
**\$24<sup>95</sup>**

**K**ADETTE ANNOUNCES the newest value-shattering 1938 model—the K-1024 with 10 tubes for only \$24.95.

The beauty of this new Kadette challenges comparison with any radio at any price. A step-up for the already famous 10-tube Model K-1019 at \$19.95, this latest Kadette model is a bargain for the public with a full profit to the dealer.

Features of the K-1024, in addition to its striking cabinet of Prima Vera Maple finish matched with Walnut grains, include 10-tube AC Super-

heterodyne circuit with full automatic volume control . . . electro-dynamic speaker with highest quality tone reproduction . . . fully illuminated, easy reading, crystal-covered airplane type dial . . . standard broadcast, amateur, airplane, police and 49 meter foreign tuning ranges.

Kadette's complete line is bringing dealers the biggest profits in all Kadette history. The buying public's demand for Kadette is exceeding every expectation.

The Kadette line includes compact, console, table and chairside models. There's a Kadette in beautiful wood or colorful plastic in every price bracket from \$10.00 to \$59.95.

Sell Kadette and get your share of bigger profits. See the line that is startling the industry. Communicate with your distributor—or write or wire **TODAY.**

KADETTE DIVISION  
INTERNATIONAL RADIO CORPORATION  
548 WILLIAMS STREET • ANN ARBOR, MICHIGAN

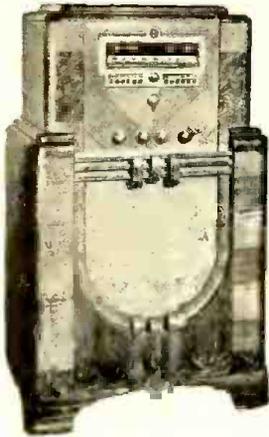


# KADETTE

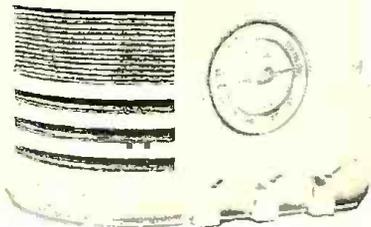
*The World's  
Best  
Value*

# NEW THINGS FROM THE MANUFACTURERS

## Majestic receivers



★ Electric push button tuning for 12 stations. All-wave 16-tube chassis covering weather band. Automatic frequency control, volume range expansion. R.F. amplifier on all bands—high fidelity operation. Acoustically treated tone chamber with 12-inch speaker. Power output 16 watts. Model 1656.



AC-DC table superhet available in walnut, ivory, or ebony. Tunes 540-1,750, 2,200-7,200 KC. 5 tubes. Model 55P. Majestic Radio & Television Co., 2,600 W. 50th St., Chicago, Ill.—RADIO TODAY—see also advt. p. 38.

## RCA-Victor receiver



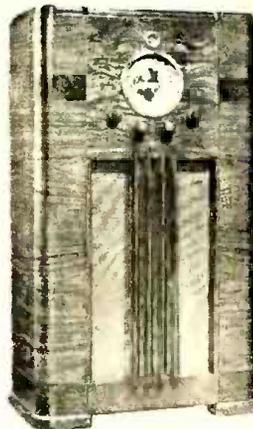
★ Upright 5-tube superhet tuning 530-1,720 KC. Large illuminated dial, vernier tuning, magnetite core I.F. transformers. Dynamic speaker—output 2½ watts—glass tubes. Size 14½ x 12½ x 6¾ inches. Model 85T2—list \$25.95. RCA Mfg. Co., Front &

Cooper St., Camden, N. J.—RADIO TODAY—see also advt. p. 27.

## Auto radio control belts

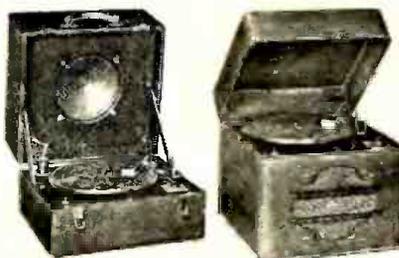
★ Woven fabric belts of 3-ply canvas and 2-ply rubber. Exact duplicate for practically every set on the market including Zenith, Grunow, Silvertone, Emerson, Fada, Garod, and Crowe dials. List 25 cents each. J. F. D. Mfg. Co., 4111 Ft. Hamilton Pky., Brooklyn, N. Y.—RADIO TODAY—see also advt. p. 73.

## Crosley Dynatrol radio



★ 11-tube all-wave superhet with dynatrol electric motor tuning. Mirror type dial with Iris tuning indicator. Uses impulse motor that stops dead upon release of electric tuning knob. Power output of 10 watts. Walnut console 40 inches high. Dynatrol 11—list \$89.95. Crosley Radio Corp., 1329 Arlington St., Cincinnati, Ohio—RADIO TODAY—see also advt. p. 34.

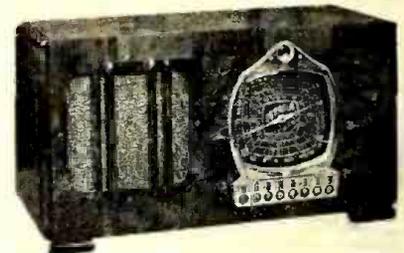
## Portable record players



★ AC operated electric phonographs. High fidelity amplifier with 6-watt output. Magnetic type pick-up and large dynamic speaker. Portable model in leatherette case \$69.50. Table type in walnut cabinet \$79.50. Automatic record changer model in walnut case \$129. David Bogen Co., Inc., 663 Broadway, New York, N. Y.—RADIO TODAY.

## Push-button tuning table set

★ Electric push button tuning in a table model. 8-tube superhet chassis—cathode ray tuning indicator. Pre-selector circuit ahead of 1st detector—push-pull audio output. Tunes 532-16,000 KC in 3 bands. Eight stations handled by push button tuning—requires no shifting from manual to



electric. 8-inch speaker. Model T-1—list \$69.50. Detrola Radio Corp., Detroit, Mich.—RADIO TODAY—see also advt. p. 4.

## Cowl auto aerial

★ Telescoping cowl antenna. Extends to 62 inches—collapses to 24 inches. Seamless rust proof metal. Mounts on car with small insulated brackets. Shielded lead-in 30 inches long. Plug on lead-in fits socket at radio. Part No. 45-2553—list \$6.75. Philco Radio & Television Corp., Tioga St., Philadelphia, Pa.—RADIO TODAY.

## Emerson high-fidelity console



★ 14-tube AC operated all-wave console. 15-inch dynamic speaker and 15-watt output. Full-range volume expansion with Symphonizer. Hand-rubbed figured walnut console. Has terminal for phonograph pick-up. Model AB-182—list \$89.95. Emerson Radio & Phonograph Corp., 111 Eighth Ave., New York, N. Y.—RADIO TODAY.

## Precision resistor



★ Wire-wound type resistor for use with precision equipment. Made in values up to 1¼ megohms—extremely small, 1¼ long by ¾ diameter. Standard tolerance of 1 per cent—on special order to 1/10 of 1 per cent. Non-inductive, low noise level, impregnated against moisture. Type WW-5. International Resistance Co., 401 N. Broad St., Philadelphia, Pa.—RADIO TODAY—see also advt. p. 44.

# Ride the Crest of the Wave!

with **Sentinel** *the* **DOUBLE PURPOSE RADIO**

and **RAD-O-FONE** *The* **PRIVATE COMMUNICATION SYSTEM**



Superlative  
Radio  
Performance

*Plus*  
A Private  
Communication  
System



**CITY RADIO** | **FARM RADIO**

from  
**\$21<sup>95</sup>** to  
**\$99<sup>95</sup>**

from  
**\$26<sup>95</sup>** to  
**\$89<sup>95</sup>**

With every Modern Radio Feature  
Plus **RAD-O-FONE**

## Sweeping Ahead to Greater Sales and Added Profits!

Sentinel Dealers are riding the crest of the wave—the wave of buying by the Sentinel-conscious public—a wave that's smashing its way to new highs in sales and profits.

No wonder! Never before has any radio dealer had so much to offer his customers. In the cities—on the farms, RAD-O-FONE has captured public approval, approval that keeps the Sentinel Dealers' cash registers working overtime.

Even with RAD-O-FONE this sensational Sentinel 1938 Line would still be outstanding! It's got everything, Automatic Tuning, Splendid New Performance, Value, New Low Prices, National Advertising and a *Complete Line* with 110 volt AC Models and 2, 6, and 32 volt Farm Models, every model in every classification a set that you can safely RECOMMEND to your customers—*everything* needed to make SENTINEL the outstanding "Profit Line of 1938!"

Ride the Sentinel Wave to New Profits. Send in the Coupon today!

### ★ WHAT IS RAD-O-FONE?

The most sensational radio development in years—another exclusive Sentinel feature! RAD-O-FONE provides the equivalent of TWO radios—radio in one location, second speaker in another location—and a control system that allows conversation between the two!

**MAIL THIS COUPON NOW!**

**SENTINEL RADIO CORPORATION**  
2222 Diversey Pkwy., Dept. RTS, Chicago, Illinois

Please send me complete information on the 1938 Sentinel Line.

Name .....

Address .....



# Sentinel

**THE DOUBLE PURPOSE RADIO**

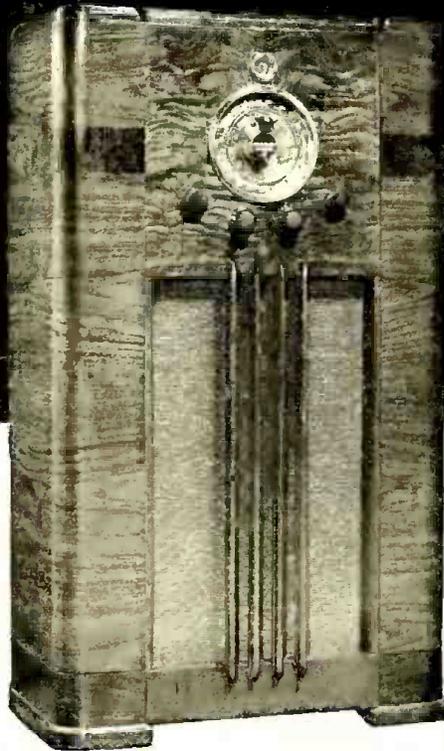
# ANOTHER CROSLEY RADIO SENSATION

## THE CROSLEY DYNATROL 11

# ELECTRIC TUNING

# 11 TUBES

# \$89.95



Crosley Dynatrol—Model 1127—11 tubes . . . 3 bands, 525-22,000 Kc. . . Receives American, foreign, amateur, aviation, police, and ships-at-sea broadcasts. Dynatrol motor-drive electric tuning. Latest type IRIS tuning indicator. Mirro-Dial, edge lighted, gold reflector-type with graduations fused on the convex glass. 10" electro-dynamic speaker. Tone compensation on broad automatic volume control.

Continuously variable tone control. 10 watts output. Extra large cadmium plated chassis. Power supply noise filter. Push-pull pentode output. Greater selectivity with local-distance switch. More beautiful cabinet with sloping front panel of stump walnut, sliced walnut top and half-round walnut pilasters, decorated with stump walnut bands. Hand rubbed finish. Cabinet dimensions: 40" high, 24 $\frac{1}{4}$ " wide, 12 $\frac{5}{8}$ " deep.

Once again Crosley crashes through with another sensational radio leader from the 1938 All-Star Radio line . . . an eleven-tube console model with electric tuning for only \$89.95. Like every other model in the Crosley All-Star line, the Dynatrol 11 is by a wide margin the biggest radio value in its own price class. Like all the other All-Star models, too, it is a natural sales leader that has all America "Swinging to Crosley." Have your Crosley Distributor demonstrate the startling Dynatrol Electric Tuning feature, as well as the score of other powerful selling features that distinguish this and other Crosley All-Star models. See and hear these models today. Stock and sell them . . . and join the profitable "Swing to Crosley."

*(Prices in South and West slightly higher)*

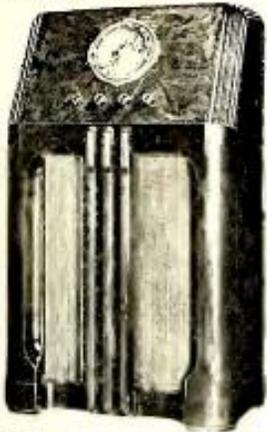
**THE CROSLEY RADIO CORPORATION - CINCINNATI** POWEL CROSLEY, Jr., President

Home of "The Nation's Station"—WLW—500,000 watts—70 on your dial

# YOU'RE THERE WITH A CROSLEY

# NEW THINGS

## Teledial console



★ 6-tube all-wave console tuning 55-18,000 KC—R.F. stage on all bands. Power output 3½ watts — 12-inch speaker unit. Inclined panel for easy tuning while standing or sitting. Teledial provides fast automatic tuning for 10 stations. Walnut cabinet 41¼ inches high. AC operation. Grunow Model 653. General Household Utilities Co., 2638 N. Pulaski Ave., Chicago, Ill.—RADIO TODAY—see also advt. p. 49.

## World time clock



★ Self-starting electric clock with 24-hour dial showing GMT and standard time scales, which also tell the time in principal countries and cities around the world. Designed for hams and DX listeners. Modernistic appearance with chrome bezel and black base. Net \$9. Gordon Specialties Co., 440 S. Dearborn St., Chicago, Ill.—RADIO TODAY.

## Electric phonographs



★ Floor type electric phonograph featuring tone injection amplifiers whereby a complete selection of bass and treble combinations is possible. Power output ranges from 7 to 30 watts. Moderno model illustrated. Televiso Co., 127 N. Dearborn St., Chicago, Ill.—RADIO TODAY.

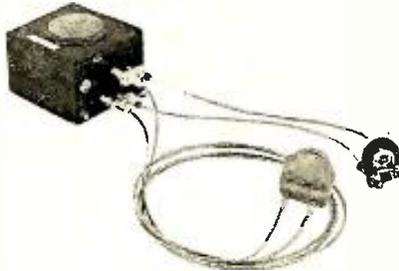
## Centralab parts

★ Universal auto replacement volume controls—¼ to 2 megs with or without D.P.S.T. switch. Slotted shaft with hinged insert and guide funnel on shaft. Tone compensation tap.

Line of economy P.A. controls. Gain controls, straight fader, delta T pads. For all types of fading and mixing positions—standard impedances.

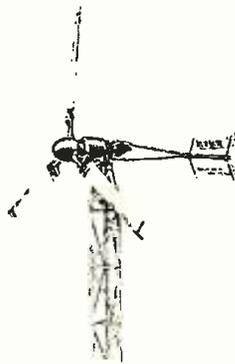
Spring return switches—replacements for intercommunicators. Available in 1, 2, 4 poles. Switch returns to original position when released. Centralab, 900 E. Keefe Ave., Milwaukee, Wis.—RADIO TODAY—see also advt. p. 52.

## Dual controls for auto radio



★ Universal type auto radio control permitting operation from 2 different points—such as front and rear of car or boat. Both control heads synchronized all the time. May be added to any radio without disturbing original control mechanism. Gears for matching all ratios. Dual Remote Control Devices, Detroit, Mich.—RADIO TODAY.

## Ruralite 32-volt generator



★ High-powered wind-driven generator for 32-volt farm power systems. 4-pole generator rated at 25 amps, but will deliver 45. Extra large commutator, oil-sealed ball bearings. 3-blade variable pitch, automatically governed propeller of Douglas fir. Instrument panel with both ammeter and voltmeter, relay, fuse block. Equipped with mountings for guy tower or standard windmill tower. Ruralite Engineering Co., Sioux City, Iowa—RADIO TODAY.

## Converter tube test oscillator

★ Instrument for testing the performance of oscillator sections of converter tubes. Measurements made at approximately 1,000 kilocycles. Varies the resonant impedance seen by the tube between its grid and cathode as proposed by the RMA Committee on tubes. Type 10A. Boonton Radio Corp., Boonton, N. J.—RADIO TODAY.

## Magic wave antenna



★ All-wave type antenna, giving noise reduction on both broadcast and international short-wave bands. Uses ordinary type antenna such as horizontal or vertical wire of any length from 20 to 120 feet. Comprised of antenna to transmission line and transmission line to set transformers, transmission cable, antenna wire, and accessories. No. 9812—list \$6.95. RCA Mfg. Co., Front St., Camden, N. J.—RADIO TODAY.

## 2-volt storage batteries



★ Competitively-priced radio batteries for 2-volt sets. Chrome-plated bale type handles, radio terminals, and non-interchangeable plainly identified terminal nuts. Exide Type 2R-160 rated at 160 ampere hours—list \$6.95. Type 2R-105 is 105 amp-hrs. listing at \$4.95. Electric Storage Battery Co., Allegheny Ave., Philadelphia, Pa.—RADIO TODAY.

## Car-radio control kit

★ Two control heads, one switch-arm, 7 extra dials, provide for replacement of all auto radio controls. Any combination of gear ratios can be matched. Enables jobbers and dealers to maintain full service with a minimum of parts. Universal Controls, Inc., 21-07 40th Ave., Long Island City, L. I., N. Y.—RADIO TODAY.

## Radiotechnic tube tester



★ Checker for tubes using a system of colored lights to indicate condition of tubes. Test dependent upon ability of grid to control plate current and cathode to supply emission current. Non-obsolescence circuit—set 3 switches for any tubes. Gives indication of output, shorts, open elements, leakage, and noise. Radiotechnic Labs., 1328 Sherman Ave., Evanston, Ill.—RADIO TODAY—see also advt. p. 78.

# Build Up

RCA NOW OFFERS FREE WAYS OF INCREASING

## HOOK UP TO CHECK-UP THROUGH CENTRAL TELEPHONE EXCHANGE

It's the most spectacular check-up promotion ever offered to radio dealers and service men

THE RCA Fall Check-Up promotion beginning September 20th features the advertising of a Central Telephone Number that prospects call when they want an RCA radio check-up. The telephone exchange—an independent telephone number having no connection with RCA—then relays the call to the nearest qualified RCA tube dealer. He does the job—pockets the profit. That's all there is to it. It's simple—but effective.

The RCA Central Telephone Exchange is being established in over 112 cities. A partial list of these is shown at the right. All tube dealers, particularly those located within a 10¢ calling distance of a Central Telephone Exchange can build business by tying in with this promotion. **BUT YOU MUST BE IN ON THIS PROGRAM BEFORE SEPTEMBER 20th.** Remember, RCA pays all the costs and a purchase of 50 tubes qualifies you for this listing. Get in touch with your RCA or Cunningham tube distributor **RIGHT AWAY** for full details.

HERE'S HOW WE'LL MAKE 'EM PHONE!

*For Better Radio Reception*

Get RCA's 10-Point Check-Up! **\$1.50**  
Includes inspecting, cleaning and adjusting your radio for only \$1.50

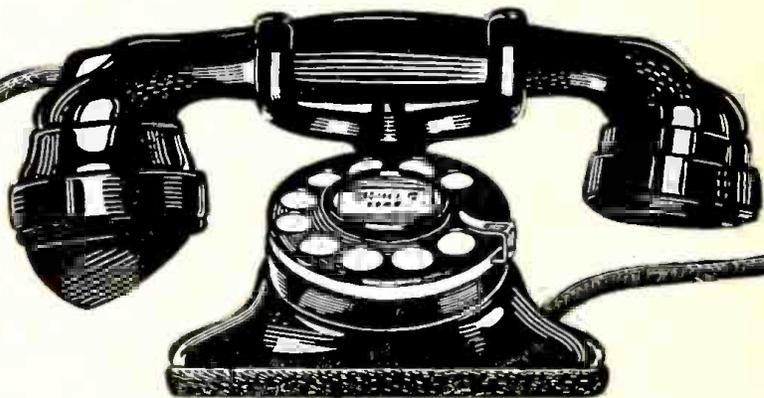
CALL (Phone) **0000** for your nearest Authorized RCA Service Dealer... He recommends RCA Tubes

We'll make prospects phone by running 4-inch newspaper ads 4 times as large as the one shown,

on radio pages three times a week. Or by sponsoring spot broadcasts on local radio stations. As soon as prospects find out how inexpensive a check-up is—how *easy* it is to get in touch with *you*—they'll keep your telephone ringing and your cash register humming a merry profit tune!

### Some of the 112 cities in which the RCA Central Telephone Exchange Check-Up Plan will operate:

Bridgeport, Conn.	Baltimore, Md.	Minneapolis, Minn.
Hartford, Conn.	Richmond, Va.	St. Paul, Minn.
Portland, Me.	Tampa, Fla.	St. Louis, Mo.
Boston, Mass.	Atlanta, Ga.	Omaha, Nebr.
Providence, R. I.	Chattanooga, Tenn.	New Orleans, La.
Springfield, Mass.	Nashville, Tenn.	Memphis, Tenn.
Albany, N. Y.	Evansville, Ind.	Oklahoma City, Okla.
Buffalo, N. Y.	Louisville, Ky.	Tulsa, Okla.
Rochester, N. Y.	Cincinnati, Ohio	Dallas, Texas
Syracuse, N. Y.	Dayton, Ohio	Forth Worth, Texas
Utica, N. Y.	Akron, Ohio	Denver, Colo.
Jersey City, N. J.	Cleveland, Ohio	Salt Lake City, Utah
Newark, N. J.	Columbus, Ohio	Portland, Ore.
Trenton, N. J.	Toledo, Ohio	Seattle, Wash.
New York, N. Y.	Youngstown, Ohio	Tacoma, Wash.
Camden, N. J.	Oetroit, Mich.	Oakland, Calif.
Harrisburg, Pa.	Chicago, Ill.	San Francisco, Calif.
Philadelphia, Pa.	Peoria, Ill.	Los Angeles, Calif.
Reading, Pa.	Indianapolis, Ind.	Spokane, Wash.
Pittsburgh, Pa.	Milwaukee, Wis.	Sacramento, Calif.
Washington, D. C.	Ouluth, Minn.	Fresno, Calif.



# Your Business

**YOUR RADIO SERVICE AND APPLIANCE SALES!**

## PULL IN MORE PROSPECTS WITH **38 SALES AIDS**

EVERY ONE OF THEM WILL HELP YOU MAKE MORE MONEY—AND EVERY ONE OF THEM IS FREE

ASK YOUR RCA TUBE DISTRIBUTOR TO SUPPLY YOU WITH THE BOOK OF DEALS SHOWN AT RIGHT

### HERE ARE A FEW OF THE 38 DEALS

With each 25 tube purchase—100 unimprinted postcards (form No. 1337), or 100 check-up tags (form No. 2244)—free.

With each 40 tube purchase—100 prospect cards (form No. 732)—free.

With each 60 tube purchase—200 leaflets (form No. 700), or 500 "not-at-home" cards (form No. 317)—free.

With each 70 tube purchase—300 repair tickets (form No. 696)—free.

With each 100 tube purchase—100 imprinted envelopes and check-up letters (form No. 1341), or 40 log books (form No. 913-S)—free.



### Please ship the following RCA Tubes

Type	Quantity	Type	Quantity
24A			
26			
27			
35			
45			
47			
71A			
80			

In accordance with the Special RCA Free Promotional Material offer (effective Sept. 1, to Nov. 1) please ship in return for the tubes ordered in excess of 50 (amount required for telephone listing) the sales promotional items indicated below, using name and address shown under "Telephone Qualifications" for imprint information.

Form #..... Form #.....  
Form #..... Form #.....

#### "TELEPHONE QUALIFICATIONS"

Service Work regularly done..... No. years.....  
From Store or Home..... Service Notes used.....  
Equipment Owned—Checker  Oscillator   
Oscillograph  Output Meter

Name of Firm or Business.....  
City..... Telephone.....

Form 2245 Note to Distributor—After order has been filled send card to RCA District Office so eligibility for Telephone Listing can be determined

**YOUR DISTRIBUTOR CAN GIVE YOU FULL DETAILS. OR, BETTER STILL, IF YOU WANT ANY OF THE MATERIAL OFFERED, FILL IN AND CLIP THE COUPON AT LEFT AND MAIL IT TO YOUR JOBBER.**



# Radio Tubes

**RCA MANUFACTURING CO., Inc., Camden, N. J.**  
**A SERVICE OF THE RADIO CORPORATION OF AMERICA**



Have You Investigated?

THE NEW 1938

**Majestic**  
MIGHTY MONARCH  
OF THE AIR!

... THE LINE OF  
**AUTOMATIC RADIOS**

CHALLENGES COMPARISON ON  
EVERY POINT!

A COMPLETE  
MODERN LINE BACKED BY  
**AN EXCLUSIVE  
DEALER FRANCHISE**

FACTORY-TO-DEALER PLAN  
OUTSTANDING CABINET  
BEAUTY... SALES-PERFORM-  
ANCE IN THESE ADVANCED  
FEATURES:

- \* AUTOMATIC BASS COMPENSATION
- \* AUTOMATIC VOLUME EXPANSION
- \* ELECTRIC AUTOMATIC TUNING
- \* TELEMATIC AUTOMATIC TUNING

Complete Line of Table, Chairside and  
Console Models with Automatic Tuning  
... A Price Range That Permits Profitable  
Merchandising!

Write Today for Detailed Information

**MAJESTIC RADIO &  
TELEVISION CORP.**

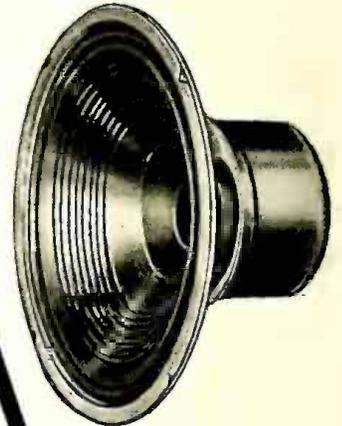
2600 West 50th Street Chicago

Cable Address: "Majestic—Chicago"

UTAH SPEAKERS ARE  
EASIEST TO SELL!

**Utah**

RIGHT YOU  
ARE!  
They've EARNED  
CUSTOMER  
Preference by  
Outstanding  
Performance in  
More Than  
10,000,000  
Sets. \*



\*Utah has produced  
more than 1,000,000  
speakers each year  
for ten years.

**No Haggling Over the  
Counter When You Say—**

**"IT'S A UTAH"**

• You're in business to make money . . . so think twice  
about Utah Speakers and parts. First, remember that  
there are more than 3,000,000 sets in use TODAY  
equipped with Utah parts. Second, Utah's 12 consecu-  
tive months of sales increase prove that servicemen and  
parts buyers, more and more, are looking to Utah for  
replacement parts.

Just bet your next order that UTAH Speakers are easiest  
to sell. Try it. Dealers have found that the easiest way  
to more sales at bigger profits is UTAH—the name that  
means "Worth the Money" to parts buyers. Address de-  
partment RT9 for complete information.

**UTAH RADIO PRODUCTS CO.**

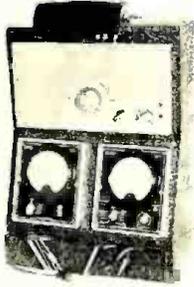
CHICAGO, U. S. A.

TORONTO ONTARIO, CANADA BUENOS AIRES  
(UCOA RADIO PRODUCTS CO.)

**"16 YEARS OF LEADERSHIP"**

# NEW THINGS

## Triplett test bench panels



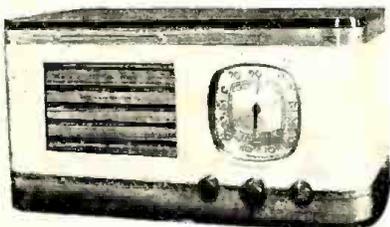
★ Cabinets for use with Triplett Master or DeLuxe instruments. Unit illustrated (model 1403) accommodates 1 deluxe and 2 master testers. Model 1402 has compartments for 2 deluxe instruments, and 1404 holds any 4 master units. Two or more cabinets may be bolted together to form a long continuous panel. Units easily removed for field use. Metal with black wrinkle finish. Drawer at bottom. Triplett Electrical Instrument Co., Bluffton, Ohio—**RADIO TODAY**—see also advt. p. 55.

## Philco signal generator



★ Precision type AC operated all-wave oscillator. Tunes 115 to 37,000 KC in 5 bands. Large direct reading scale with commonly used adjusting frequencies marked. 400-cycle audio modulation. Moisture-proofing insures permanency of calibration. Mirror-polished brass panel, unaffected by line voltage variations. Model 077—net \$27. Philco Radio & Television Corp., Tioga & C Sts., Philadelphia, Pa.—**RADIO TODAY**.

## Kadette receiver



★ 10-tube AC table superhet—uses glass tubes. Two-gang ball-bearing condenser. Hi-gain I.F. stage with 6D6 tube. I.F. wavetrap. Push-pull audio output. Transformerless circuit design using 25Z5 rectifier. 2 ballast tubes and a regulator tube. Walnut cabinet 9¼ x 17 x 7½ inches. Model K-1024—list \$24.95. International Radio Corp., Ann Arbor, Mich.—**RADIO TODAY**—see also advt. p. 31.

## Chairside radio



★ Dual-band AC receiver using 5 glass tubes. Power output of 5 watts. Automatic telephone type dial, straight-line glass tuning scale, automatic muting. Size—20¾ x 10½ x 18 inches. List \$44.95. Wilcox-Gay Corp., Charlotte, Mich.—**RADIO TODAY**.

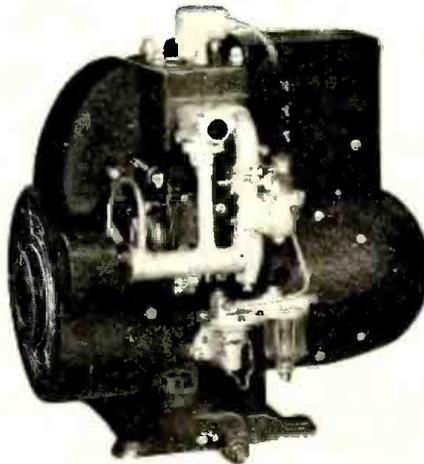
## All-wave oscillator

★ Five-band signal generator covering 100 to 22,000 KC—harmonics to 66,000. Direct reading dial calibrated for entire range. High-ratio vernier drive. Audio frequency modulation at 50 per cent. Separate outputs for A.F. and R.F. Steel cabinet. Operates on AC or DC. Model 1A1—Net \$12.50 complete. Ultra Precision Instruments Co., 123 Liberty St., New York, N. Y.—**RADIO TODAY**.

## Star auto radio control

★ 1938 model control for auto radio sets. Achieves complete elimination of backlash. Fully illuminated. All ratios self-contained. Star Machine Mfrs. Co., Hunts Point Ave., Bronx, N. Y.—**RADIO TODAY**.

## Water-cooled power plants

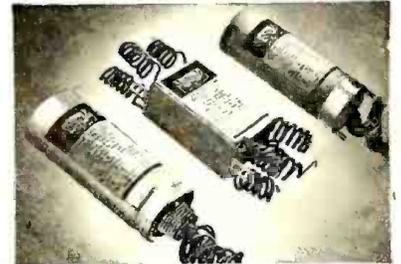


★ Complete line of AC and DC generating plants powered by water-cooled gas engine. Designed for marine use, but can be supplied with radiator. Ratings of 500, 1,000, 2,000, 3,000 watts. Manual or self-starting from remote control. Constant voltage characteristic under varying loads. Streamlined design. D. W. Onan & Sons, 53 Royalston Ave., Minneapolis, Minn.—**RADIO TODAY**—see also advt. p. 76.

## Transmitter kit

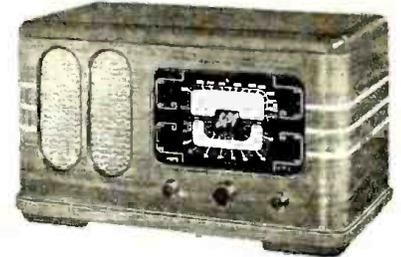
★ Complete 25-watt CW transmitter kit with crystal controlled 6L6 harmonic oscillator. Self-contained power supply and antenna tuning condenser. Black crystalline finished steel cabinet. Has plate milliammeter. Net to amateurs—\$15.95. Utah Radio Products Co., 812 Orleans St., Chicago, Ill.—**RADIO TODAY**.

## Universal replacement electrolytics



★ Series of electrolytic replacement units for AC-DC sets. 3 types of condensers take care of any AC-DC receiver. Color-coded leads with key printed on label. Series UM—described in catalog 15A. Cornell-Dublier Corp., S. Plainfield, N. J.—**RADIO TODAY**—see also advt. p. 59.

## Ultramar receivers



★ 6-tube 3-band superhet operating on AC or DC. 2 watts power output and 6½-inch speaker. Large illuminated dial 4½ x 7½ inches. Octal type tubes. Phonograph pick-up jacks. Model 306. Also available with long-wave tuning as model 316.



All-wave 3-band 8-tube receiver for 6-volt operation. 3 watts output, 8½-inch speaker. 8-inch dial—cathode ray tuning indicator. Permeability tuned I.F. transformers—RF stage on all bands. Model 327 for domestic, 337 for European use on long waves. Ultramar Mfg. Corp., 1160 N. Howe St., Chicago, Ill.—**RADIO TODAY**.

OVER A YEAR AGO

# Admiral

*Electric*  
**TOUCH-O-MATIC**  
*tuning*

**& MANY OTHER features!**

**T**HE last word in truly automatic tuning. Now . . . just touch a button . . . and presto! . . . in comes one of your favorite stations as simply and swiftly as switching on an electric light. The actual tuning is done by a tiny electric motor. Full vision rectangular dial with bands arranged horizontally permit easy reading. All calibrations are etched on a rich gold background and clearly indicated by moving ACRA-pointer.

Other outstanding Admiral features include full size dynamic speaker, automatic volume control, automatic frequency control, bass intensifier control, and many others.

*Remember—Only Admiral gives you “tilt-tuning” plus electric “Touch-O-Matic” Tuning*

*Note: Admiral “Tilt-Tuners” are fully protected by patents. All Models RCA, Hazeltine and Latour licensed.*





# Goodbye SAID TO BACK BENDERS



## TILT TUNING *is here!*

**I**T was really new last year when Admiral first said goodbye to "back-benders". No more "daily dozen" every time you bring in a different station. Standing or sitting the tilted dial is tuned in a jiffy. Easy on the back, kind to the eyes.

### Always Ahead of the Parade

Naturally such an outstanding feature was too good to go unnoticed by other radio makers . . . but none can duplicate the streamlined beauty of the curved front panel. This design is an exclusive Admiral patent. Admiral alone combines tilt-tuning convenience with smart, artistic cabinet styling.

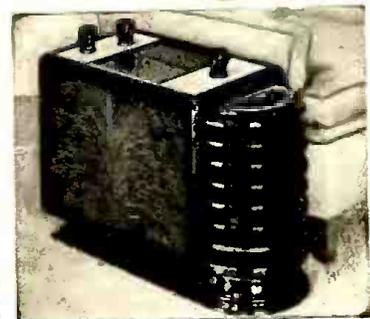
But that's not all! Only Admiral for 1938 gives you "tilt-tuning" plus electric "Touch-O-Matic" tuning . . . twin features that make Admiral the outstanding "buy" of the year. You owe it to yourself to get the whole Admiral story now. Mail coupon below today!

## CONTINENTAL RADIO & TELEVISION CORPORATION

325 W. Huron St. Chicago, Illinois

## 25 MODELS TO CHOOSE FROM

FROM the sensational new Admiral "Duettes" with their dual utility . . . to smart table models . . . to flowing-lined Armchair radios . . . to splendid new "tilt-tuners" . . . you have radio at its best—radio for every kind of electric current . . . for city and country . . . radio built for satisfaction-giving performance . . . radio styled in the best of good taste. That's Admiral for 1938!



## MAIL THIS COUPON FOR FREE CATALOG!

Just sign, tear out and mail to  
Continental Radio & Television Corp.  
325 W. Huron St., Chicago, Ill.

Name .....

Address .....

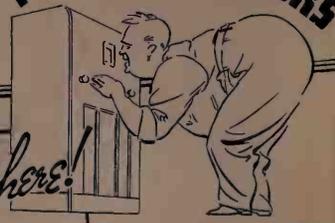




OVER A YEAR AGO

# Admiral

Goodbye  
TO BACK BENDERS  
SAID



TILT TUNING *is here!*

IT was really new last year when Admiral first said goodbye to "back-benders". No more "daily dozen" every time you bring in a different station. Standing or sitting the tilted dial is tuned in a jiffy. Easy on the back, kind to the eyes.

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**CONTINENTAL RADIO & TELEVISION CORPORATION**  
325 W. Huron St. Chicago, Illinois

### 25 MODELS TO CHOOSE FROM

FROM the sensational new Admiral "Duo-tone" with their dual utility... to smart table models... in flowing-lined Arc-a-chair radios... to splendid new "tilt-tuners"... you have really at its best—radio for every kind of electric current... for city and country... radio built for satisfaction—giving performance... radio styled in the best of good taste. That's Admiral for 1938!



### MAIL THIS COUPON FOR FREE CATALOG!

Just sign, tear out and mail to Continental Radio & Television Corp. 325 W. Huron St., Chicago, Ill.

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

Electric  
**TOUCH-O-MATIC**  
tuning

### & MANY OTHER features!

THE last word in truly automatic tuning. Now... just touch a button... and presto!... in comes one of your favorite stations as simply and swiftly as switching on an electric light. The actual tuning is done by a tiny electric motor. Full vision rectangular dial with bands arranged horizontally permit easy reading. All calibrations are etched on a rich gold background and clearly indicated by moving ACRA-pointer.

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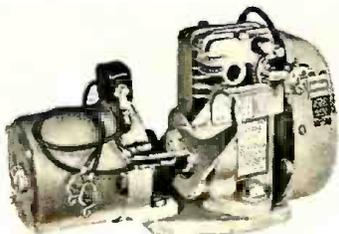
Remember—Only Admiral gives you "tilt-tuning" plus electric "Touch-O-Matic" Tuning

Note: Admiral "Tilt-Tuners" are fully protected by patents. All Models RCA, Hazel-tine and Latour license.



# NEW THINGS

## Washer motor with battery charger



★ Self-starting motor for washing machines. Has a generator for charging battery. Uses 4-cycle gas engine with special starting motor and generator. To start—merely step on starter switch. Briggs-Stratton Corp., Milwaukee, Wis.—RADIO TODAY.

## Soldering set

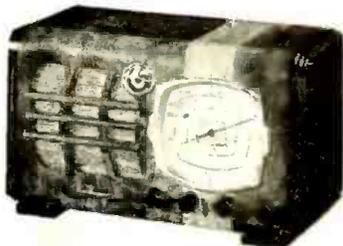
★ Variable heat control and soldering iron for all types of radio work. 100-watt iron. Heat control keeps tip of iron clean and saves power. Drake Electric Works, 3654 N. Lincoln Ave., Chicago, Ill.—RADIO TODAY.

## Roto-ranger analyzer



★ High-sensitivity multi-range meter featuring 10,000 ohms per volt ranges. DC ranges 0/10/50/300/1,000 volts, AC voltages 0/8/150/1,000 at 1,000 ohms per volt. Current readings 0/10/100/500 mils; resistance ranges 0/2/200M/20megs. Meter scales on rotating drum coupled to range selector switch—only one scale visible at a time. Model 275. Simpson Electric Co., 5216 W. Kinzie St., Chicago, Ill.—RADIO TODAY—see also advt. p. 53.

## 12-tube table receiver



★ 3-band AC-DC 12-tube superhet receiver. Cathode ray tuning eye, I.F. wavetrap, full AVC. Polished walnut veneer cabinet. Model 27D—list \$49.95. Model 97 has 7 tubes and is for AC operation—essentially the same chassis and cabinet—list \$49.95. Freed Mfg. Co., 44 W. 18th St., New York, N. Y.—RADIO TODAY.

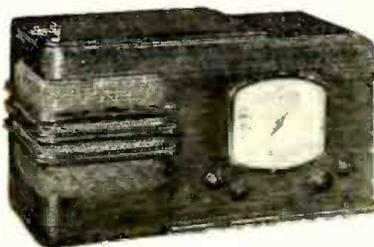
## 16-mm. sound-on-film projector

★ Popular priced portable sound projector for 16 mm. film with sound track. Projector in single unit with 750-watt lamp—weight 40 pounds. Adaptable for silent as well as sound films. DeLuxe model available for auditoria. Atlas Projector Corp., 35 W. 45th St., New York, N. Y.—RADIO TODAY.

## Insulated resistors

★ Carbon resistors with bakelite molded jacket providing additional protection against moisture, shorts, etc. Color coded, 2-inch pig-tail leads. Resistance values from 100 ohms to 10 megohms. Standard tolerance 10 per cent. ½ and 1-watt units. Aerovox Corp., 70 Washington St., Brooklyn, N. Y.—RADIO TODAY.

## Garod receivers



★ Seven-tube AC superhet tuning 16-545 meters in 3 bands. Power output of 4½ watts—8-inch dynamic speaker. Open face dial 6 x 7 inches with 15:1 tuning ratio—cathode-ray tuning indicator. Size 11½ x 21½ x 9½ inches. Model 307-L.



★ All-wave console with 9 metal and octal-glass tubes. Tuned RF stage on all bands. 12-inch dynamic speaker and power output of 4½ watts. 8 x 8 inch square dial. Cathode-ray tuning indicator tube. Height 42 inches. Model 309-2. Grebe Mfg. Co., 119 Fourth Ave., New York, N. Y.—RADIO TODAY—see also advt. p. 71.

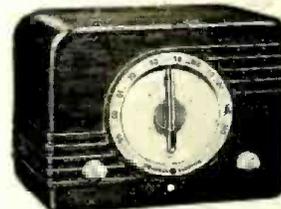
## Interference capacitors

★ Aluminum cased condensers for reducing radio interference. Pyranol treated and wax sealed. Flexible leads brought through bakelite cover. Available with or without mounting bracket. Capacities of ½/½ at 220 volts AC and .02/.002/.002 at 250 volts DC. General Electric Co., River Rd., Schenectady, N. Y.—RADIO TODAY.

## Low-cost touch tuning



★ 9-tube console with push-button tuning listing around \$100. Selects any one of 7 pre-set stations—instantaneous tuning. Automatic frequency to insure perfect resonance. 12-inch dynamic speaker. All-wave reception from 540-18,000 KC in 3 bands. Model F-96.



4-tube AC table receiver housed in plastic cabinet of modernistic design. 6½-inch dynamic speaker. Model F-40 listing at about \$20. Other new G-E sets are F-51, 5-tubes around \$30, and the F-74 and F-80, 7 and 8-tube models with louvre dials and tone monitor. General Electric Co., 1285 Boston Ave., Bridgeport, Conn.—RADIO TODAY—see also advt. inside rear cover.

## Glassmike condensers

★ Line of condensers sealed in a glass cartridge with "Hillite" compound, which has a high melting point. Units are waterproof. Rated at 600 volts DC. Plates of tinfoil. Condenser Products Co., 1369 N. Branch St., Chicago, Ill.—RADIO TODAY.

## Multivibrator oscillator

★ Signal generator for providing a signal over the entire spectrum simultaneously. Used in conjunction with usual signal generator to check operation of set at all points on the dial. Set condenser is varied to check opera-



tion of receiver over the entire band—no need to adjust or keep multivibrator oscillator in track. Weak spots, cross-overs easily located—oscillator series padders quickly adjusted. Model 20. Monarch Mfg. Co., 3341 Belmont Ave., Chicago, Ill.—RADIO TODAY.

## KEY TO RADIO-TUBE NUMBERS

(From page 18)

having a filament rating of 2.5 volts, while 6A3 is a similar tube having a filament rating of 6.3 volts.

### Pentagrid converters

The pentagrid converters having a larger number of elements are designated by higher numbers in the last portion of the type designation. Thus 1A6 is a pentagrid converter designed for 2-volt operation. Corresponding AC types are types 2A7 and 6A7, which have one more element (the cathode) than is the case with battery types.

In the case of metal tubes an extra connection is provided for the bulb which acts as a shielding member. Thus the tube corresponding to the 6A7, in metal becomes type 6A8.

A further modification of the numbering system was made by using the letter "G" following the type number to identify glass tubes mounted on octal bases. Thus the octal-base glass equivalent of type 6A8 became type 6A8G.

It is obvious that the number of type designations available can be expanded indefinitely, since after the alphabet is exhausted, two-letter combinations can be used. This is already being done to some extent, as a type recently introduced is a full-wave rectifier carrying the designation 6ZY5-G.

### LETTERS AGLOW

★ For radio tube dealers is a new neon bulb display lamp announced by RCA as available from distributors. It glows with the letters "RCA," fits into any AC or DC-110-volt outlet, and has a feature which makes it possible to have the letters face in any direction.

The item is suggested for novelty effects in windows, to identify the tube department, for general identification, or for night use.

### MAIL CAMPAIGN FOR JOBBERS

★ Hygrade Sylvania has started a 5-letter sales campaign, free to jobbers, to help line up new dealers and to aid jobber salesmen generally. Following the salesman's call on a dealer prospect, and upon receipt of a post card report of the call, Hygrade will mail, free, 5 letters to the dealer.

First letter offers a free subscription to Sylvania News. The second lists a series of new sales and technical helps, and the third is a vigorous letter on company policy. Fourth letter concerns tube quality, and the fifth explains the factory guarantee. Jobber's name appears on each letter.

# AMERICA'S No. 1 MOVIE CAMERA

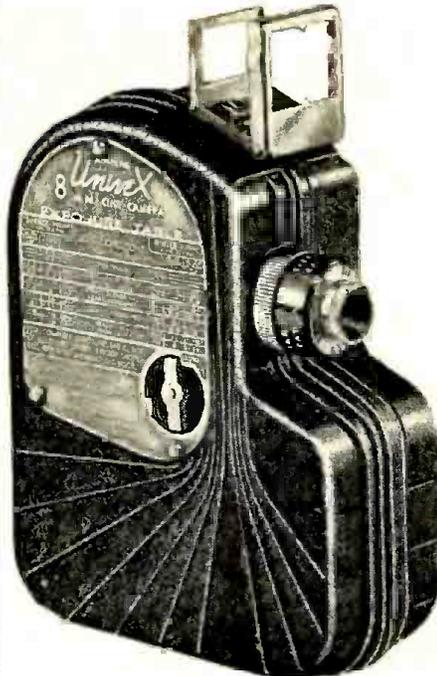
The Favorite of the MOVIE STARS!



Beautiful Ida Lupino, youthful Paramount star, takes time out from her latest picture, "Artists and Models" to shoot some personal movies with her lifetime UniveX Cine "8".

"You can't beat UniveX movies!" says Richard Arlen, Columbia's popular young star whose next picture will be "Park Avenue Dame."

## MOST SENSATIONAL CAMPAIGN EVER PUT BEHIND ANY MOVIE CAMERA!



Testimonials by America's "top flight" movie stars are appearing in full pages and dominant space in leading magazines and newspapers—reaching millions from Coast to Coast!

Smart dealers are tying up with this dynamic campaign by featuring UniveX Cine "8" in their own advertising—as well as in their windows.

### PREPARE FOR XMAS NOW!

There's no question about it—UniveX will be the most popular gift item this Xmas, because it is the only movie camera *everybody* can afford.

### UNIVERSAL CAMERA CORPORATION

World's Largest Unit Manufacturers of Cameras  
NEW YORK . . . HOLLYWOOD . . . CHICAGO

CINE '8'  
**UniveX** \$9<sup>95</sup>

# IRC

REG. U.S. PAT. OFF.

Initiative—Resourcefulness—Cooperation  
to advance the interests  
of the industry

*Metallized* CO  
... Now Available  
**SPECIAL REPLACEMENT  
TYPES**

with  
the  
*First and  
Only*

**SILENT SPIRAL**

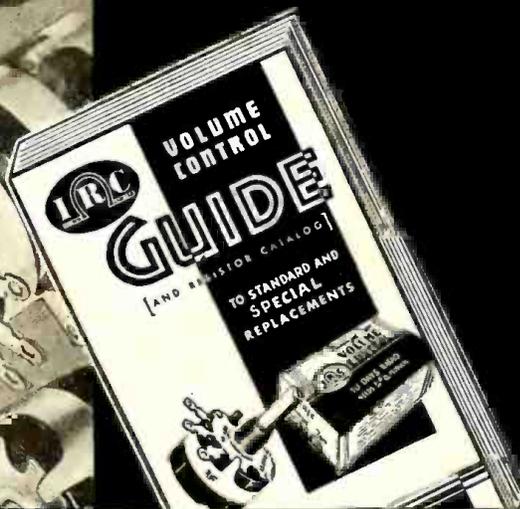
(Designated)

**"Because It's Positive"**

For years, servicemen have been looking for better controls—quieter controls for those extremely critical duplicate replacement jobs that cannot be handled with standard types. Today, IRC makes such controls available—backed with all the well-known features of standard Metallized units PLUS the exclusive 5-Finger Silent Element Contact PLUS the exclusive Silent Spiral Connector which is supplied on all of the new special replacement controls listing at \$1.50 and up (not standard types). These special controls are identified by the letter "J" preceding their part number in the IRC Guide. See them at your IRC jobber's today.

**GET THIS NEW  
GUIDE FREE!**

Just off the press! 208 pages! Lists standard and special replacement types for practically every radio receiver. Includes handy control and resistance calculation data, complete IRC Resistor Catalog, etc. Indispensable! Ask your jobber for a copy—or write direct to us.



*Quietest!* **BECAUSE  
SLIDING METAL-T**

Factories and Licensees

MAKERS OF RESISTANCE UNITS OF MODERN

**CONTROLS**  
*Available in*  
**REPLACEMENT**

**SILENT SPIRAL CONNECTOR**

(Made with Prefix "J"—Patent Applied for)

**It's Positively Noiseless!**

**IT ELIMINATES THE MOST  
COMMON SOURCE OF  
NOISE IN *Any* CONTROL**

The outcome of two years of engineering development work, IRC brings you the outstanding control improvement in years—positive and continuous electrical connection between the center terminal and the adjustment arm. This Silent Spiral Connector spells complete elimination of sliding, metal-to-metal contact in the place where most control noises originate. It means that these new IRC Special Replacement Controls are unquestionably quietest, because they are the only controls having this feature.

The Silent Spiral Connector is made of special wire—sturdy and durable—constructed like a fine watch for a lifetime of the quietest service you can imagine.

**NO SLIDE**

**NO FRICTION**

**NO NOISE**

**THEY'RE THE *Only* CONTROLS IN WHICH  
-METAL CONTACT HAS BEEN ELIMINATED**

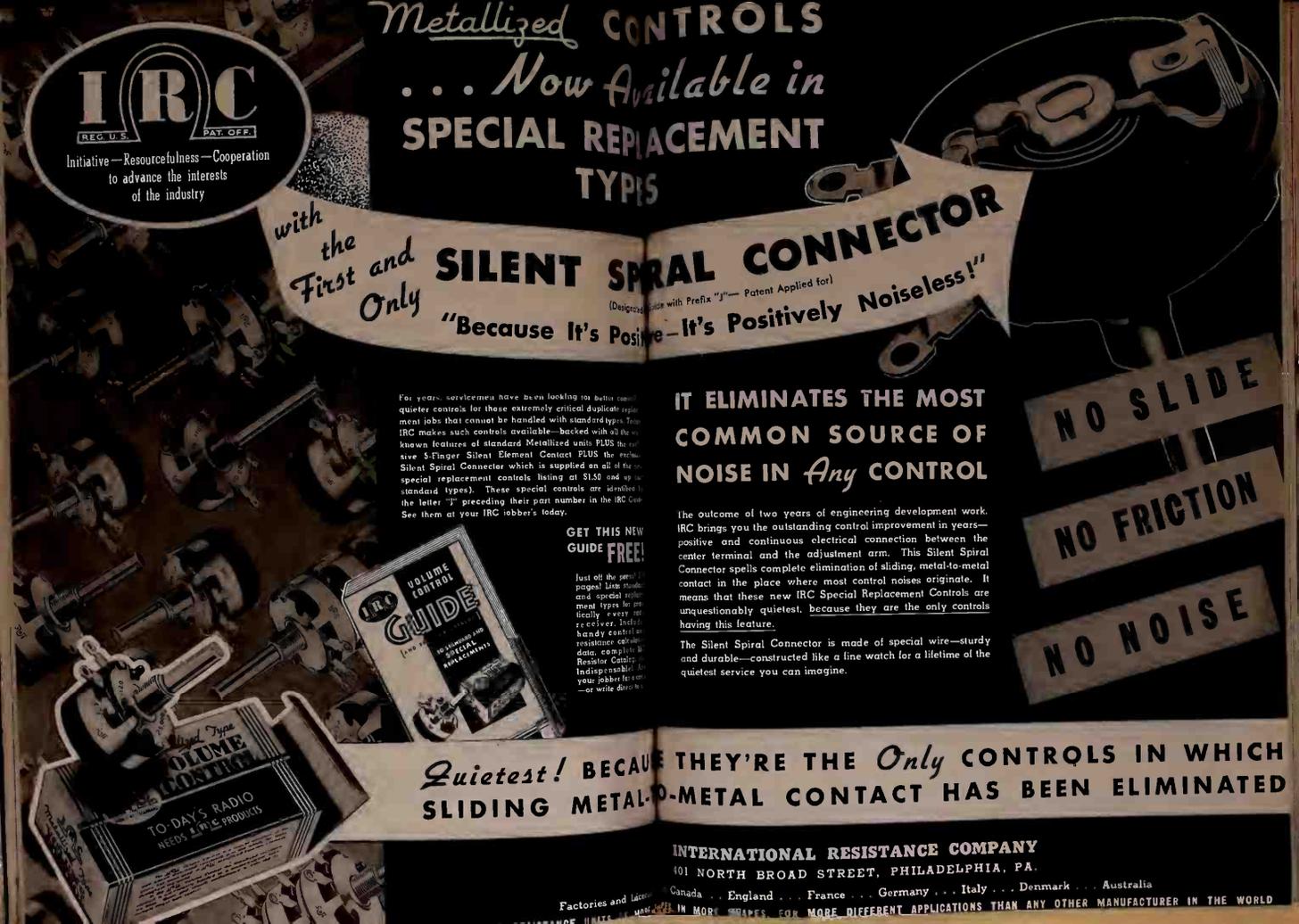
**INTERNATIONAL RESISTANCE COMPANY**

401 NORTH BROAD STREET, PHILADELPHIA, PA.

Canada . . . England . . . France . . . Germany . . . Italy . . . Denmark . . . Australia

IN MORE SHAPES FOR MORE DIFFERENT APPLICATIONS THAN ANY OTHER MANUFACTURER IN THE WORLD





**IRC**  
REG. U.S. PAT. OFF.

Initiative—Resourcefulness—Cooperation  
to advance the interests  
of the industry

# Metallized CONTROLS ... Now Available in SPECIAL REPLACEMENT TYPES

with  
the  
First and  
Only

## SILENT SPIRAL CONNECTOR

(Designated with Prefix "J"—Patent Applied for)

"Because It's Positive—It's Positively Noiseless!"

For years, servicemen have been looking for better control, quieter controls for those extremely critical duplicate replacement jobs that cannot be handled with standard types. Now IRC makes such controls available—backed with all the well-known features of standard Metallized units PLUS the exclusive 5-Finger Silent Element Contact PLUS the exclusive Silent Spiral Connector which is supplied on all of our special replacement controls listing at S150 and up (standard types). These special controls are identifiable by the letter "T" preceding their part number in the IRC Guide. See them at your IRC jobber's today.

### GET THIS NEW GUIDE FREE!

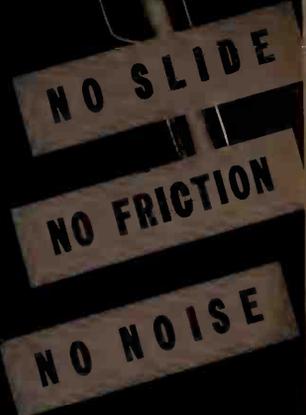
Just fill the serial page of the 16-page Line Study and special replacement types to get it free every day. Includes handy control resistance color code, complete Resistor Color Chart. Indispensable for your jobber to get the right size direct.



## IT ELIMINATES THE MOST COMMON SOURCE OF NOISE IN *Any* CONTROL

The outcome of two years of engineering development work, IRC brings you the outstanding control improvement in years—positive and continuous electrical connection between the center terminal and the adjustment arm. This Silent Spiral Connector spells complete elimination of sliding, metal-to-metal contact in the place where most control noises originate. It means that these new IRC Special Replacement Controls are unquestionably quietest, because they are the only controls having this feature.

The Silent Spiral Connector is made of special wire—sturdy and durable—constructed like a line watch for a lifetime of the quietest service you can imagine.



*Quietest!* BECAUSE THEY'RE THE *Only* CONTROLS IN WHICH  
SLIDING METAL-TO-METAL CONTACT HAS BEEN ELIMINATED

**INTERNATIONAL RESISTANCE COMPANY**  
401 NORTH BROAD STREET, PHILADELPHIA, PA.

Canada . . . England . . . France . . . Germany . . . Italy . . . Denmark . . . Australia

Factories and laboratories in more than 20 countries for more different applications than any other manufacturer in the world



# RETAILING NEW RECORDS

Note also phonograph-radio lists on pages 28-30

## PHONOGRAPH-RADIO FOR COUNTRY USE

★ A combination which should be made available to dealers is a battery-operated one for farm use, according to Carl R. Grigsby, of United Sale & Service, Flemingsburg, Ky. Mr. Grigsby believes that there's a big record market in the country which cannot be developed until such an instrument is produced. Backing his statement is the fact that there are about 4,000,000 homes in the country without current.

"This combination would use the spring type, or a 6-volt motor, and electric pick-up," suggests Mr. Grigsby, who insists that most of the country record fans want combinations.

## BOOK OF THE OPERA

★ The 526 pages of the new ninth edition of the Victor Book of the Opera are to be translated into Braille, so that the volume can be used by the blind. Work is being done by a WPA Braille project at Bismarck, North Dakota, where Martha Herman is supervisor.

General interest in the book has

increased sharply as the Fall music season approaches. New edition was revised by Charles O'Connell, author of the Book of the Symphony, orchestra conductor and Red Seal recording expert. Nearly 100 pages of new material and 180 new photos were added, and since it appeared 6 months ago, over 40,000 copies have been sold.

## WAX WORTH WATCHING

**AFRAID TO DREAM.** From the 20th Century-Fox film, "You Can't Have Everything" And **CAN I FORGET YDU?** from the Paramount film, "High, Wide and Handsome." Both sung by Jean Sablon with orchestra.—Victor 25643.

**THE BIG APPLE and SONG OF THE SAMOVAR.** Both with Clyde Lucas and his orchestra.—Variety VA 631.

**BLOSSOMS ON BROADWAY.** From the Paramount film of that name. **IN A LITTLE CARDINAL TOWN.** VC by Russell Brown. Both with Jan Garber and his orchestra.—Brunswick 7930.

**IF YDU WERE SOMEONE ELSE.** VC by Edythe Wright. And **AN OLD FLAME NEVER DIES.** VC by Jack Leonard. Both from the musical "Virginia," both with Tommy Dorsey and his orchestra.—Victor 25649.

**I KNDW NDW and 'CAUSE MY BABY SAYS IT'S SO.** Both from the Warner Bros. film, "The Singing Marine," both sung by Dick Powell with orchestra under direction of Lou Forbes.—Decca 1310.

**THE MDON GOT IN MY EYES and (YOU KNOW IT ALL) SMARTY.** Both from the Paramount film, "Double or Nothing," both sung by Bing Crosby with orchestra.—Decca 1375.

**SYMPOSIUM OF SWING.** Special release of four 12-in. swing records in an album. Two hot tunes by each of the orchestras of Tommy Dorsey, Benny Goodman, Bunny Berigan; two tunes by "Fats" Waller.—Victor Album C-28.

**WHISPERS IN THE DARK.** VC by Kay Weber. **STOP YOU'RE BREAKIN' MY HEART.** VC by Bob Crosby. Both from the Paramount film, "Artists and Models," both with Bob Crosby and his orchestra.—Decca 1346

**YOU AND I KNOW.** VC by Barry McKinley. **AN OLD FLAME NEVER DIES.** Both from the musical, "Virginia," both with Claude Thornhill and his orchestra.—Brunswick 7951.

Decca Personality Series ... **"HERR CHEVALIER, ICH GRÜSSE SIE,"** and **"GENUG DAMIT, GENUG,"** Die Fledermaus (The Bat). Lotte Lehmann, Richard Tauber, Karin Branzell, Dr. Waldemar Staegemann, Grete Merrem-Nikusch, vocal quintet with orchestra conducted by Dr. Weissmann—Decca 29015.

Victor Masterpiece Album ... **TREES. BY THE WATERS OF MINNETONKA. SMILIN' THROUGH. A DREAM. SYLVIA. THY BEAMING EYES. A PERFECT DAY. AT DAWNING. OH PROMISE ME. THE ROSARY. THE HILLS OF HOME. DEEP RIVER.** Nelson Eddy singing with orchestra or piano.—Victor C27.

## CODE READER OPENS NEW FIELD FOR DEALERS



"Reading code"—a new thrill from the home radio.

★ "For several years past there has been nothing really new to interest the radio fan," states Eli Lurie, president American Communications Corp., 1650 Broadway, New York. "By 'fan' I do not mean the licensed amateur who knows the technical side of radio, but the man who, in the early days of radio, used to stay up till the small hours of the morning getting dx.

"The thrill of foreign broadcast stations has already gone. The element of mystery has been removed because it is now a commonplace occurrence with the modern radio receiver.

"Today there is but one thing left to these fans . . . the code bands. With the American Code Reader attached to any receiver the average man can 'catch code on tape' and decode it easily and quickly with the aid of our simplified decoding table."

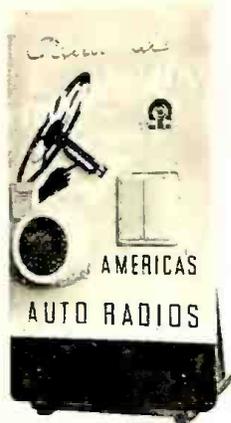
Mr. Lurie went on to say that every radio dealer has a list of customers who, without knowing radio technically, have a keen interest in radio. Dealers have been quick to recognize that code recording will appeal to them and have, as a consequence, stocked the code reader to fill this need.

Although originally intended as an aid to the embryo amateur, as well as the licensed amateur, sales to all-wave listeners have accounted for a large percentage of the volume to date.



Radio artists develop more use for recording equipment. Here's Hollace Shaw, CBS singer, warbling for Radio Today's camera and Presto's recorder.

## THREE NEW DISPLAYS



★ Available to dealers of the Continental Radio & Television Corp. are three new displays. First is a master which has space for a tilt-tuning console and four table models. Second is a Du-Ette metal display, modernistic design, with room for three Admiral Bakelite Du-Ettes. Third (illustrated herewith) is an elaborate auto display arranged so that the prospect may operate the radio himself.

## SETS HUNG ON SILVER

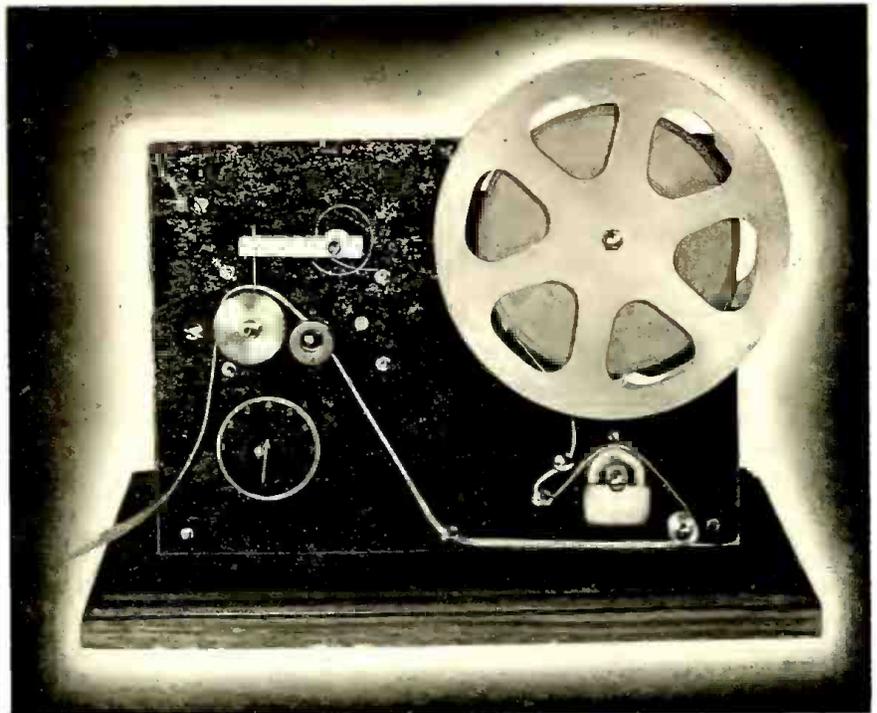


★ Specially compact display, which holds all of the 23 models comprising the 1938 Kadette line, has been released to dealers by International Radio Corp., Ann Arbor, Mich. The elaborate affair comes in panels (a single one is illustrated here), designed in two shades of blue with silver background and trim.

Each panel is lighted by 3 indirect diffusing lights. Sets hang on special concealed brackets against a silver background and all of them can be demonstrated. The display is free to dealers with the purchase of Kadettes.

# The AMERICAN CODE READER

## A New Source of Profit for Alert Jobbers and Dealers



● Here's a sensational new money-maker for Dealers and Jobbers everywhere. The Smash Hit of the 1938 season! The Cash Register is ringing in stores that demonstrate the American Code Reader.

The Code Reader is not only a hit with the licensed Radio Amateur, the experimenter and the beginner! A vast new field is opened up in the person of the man who is "a hound for DX" . . . the man who is constantly looking for

unit! Show them by actual demonstration how they can get code messages from far away lands . . . how they can open up an entirely new field of exploration which has heretofore been closed to them!

The secrecy which has hitherto surrounded Code Messages . . . which has mystified many an All Wave Listener, now is dispelled with the advent of the American Code Reader.

### LOW IN PRICE

Because it is low in price (Standard model lists at \$20 less tubes); because it is so easily operated (a child can do it); because it fills a genuine long felt need. . . YOU ought to stock it if you have not already done so! Mail or wire your order today and get complete sales plan, discounts, etc., at once!

### A NEW THRILL IN RADIO!

Every Dealer has a list of such customers! Cash in on it! Tell these customers how they now can "catch code on tape" with the American Code Reader . . . how they can decode it easily, quickly with the American Decoding Table which comes with each

**AMERICAN COMMUNICATIONS CORP.**  
1650 BROADWAY Dept. RT-2 NEW YORK, N. Y.

# SALES PROGRESS ON REFRIGERATORS

Radio dealers attracted to profits in new appliance lines

## SELF-SELLING REFRIGERATOR

★ "Good morning, madam, don't you think I'm a good-looking refrigerator?"

A pleasant, chatty voice thus stops passers-by in front of the Calden Furniture Co., Mt. Holly, N. J. It comes from a Norge refrigerator, one of several appliances lined up outside the store. The mysterious voice goes on to say, "I'd like you to meet other members of my family," and meanwhile a salesman gets under way among the pedestrians who have been attracted by the device.

Harry G. Wright, Calden service manager, explains the trick, which has been very profitable to the concern. "We installed a 2-way inter-office phone system, equipped with a combination speaker and microphone. We plugged in the mast control inside the store, where the hidden operator had a good view of the display. The loudspeaker was placed inside the freezing unit, with the refrigerator door open.

"It worked like a charm; almost invariably people stopped. Our salesmen asked people what they thought of the talking refrigerator, and if they were reluctant to speak before the crowd, the salesman addressed the refrigerator. The 'box' would then talk about itself. When the hidden operator spotted someone he knew, he called out his name with startling effect."

## SHORTER-TERM CREDITS BY FINANCE COMPANIES

★ During the years of economic readjustment growing out of the depression, finance companies revised their down payments and credit terms so that dealers might continue to sell to their budget buying market which had suffered diminished income.

"Today public income has risen and is rising to higher levels," explains A. O. Dietz, president, C. I. T. Corporation, New York. "It is our belief that we can render an important constructive service to our clients by adjusting instalment credit terms in better proportion to public income, encouraging standard down pay-



M. W. (Tommy) Thompson, new ad manager for General Household Utilities Co. On Dec. 1, Grunow will introduce new Thermene refrigerators.

ments and somewhat shorter maturities.

"Therefore effective September 1st, the following terms of maximum maturity apply to appliance paper acceptable to C. I. T. branch offices:

DISHWASHERS .....	24 Months
IRONING MACHINES .....	24 Months
RANGES .....	30 Months
(Installation costs of \$25 on electric ranges will be financed. Any excess installation costs should be added to down payment.)	
REFRIGERATORS .....	30 Months
SPACE HEATERS .....	24 Months
VACUUM CLEANERS .....	18 Months
WASHING MACHINES .....	24 Months
WATER HEATERS .....	30 Months
Gas or Electric	
RADIO RECEIVING SETS .....	18 Months
(On a battery-operated set, down payment must be sufficient to cover the cost of the battery.)	
On all above, a minimum down payment of 10% of cash installed price, or \$5.00, whichever amount is the greater, is required.	

"Establishing substantial interest in the equipment for the purchaser at the time of sale, and insuring satisfied ownership of the equipment before it wears out, definitely increases the safety of your operations and brings the purchaser into the market sooner as a prospect for another sale," Mr. Dietz points out.

★ National Electrical Manufacturers Association has issued a report on U. S. sales of electric household refrigerators for the first six months of the year. Units numbered 1,586,449, with a value of \$135,925,937, compared with 1,311,820

units sold in the same period last year, valued at \$107,008,496.

★ Frigidaire Division, General Motors Corp., has started production on a newly developed line of electric ranges to be introduced later this year and to be marketed nationally.

★ Air conditioning equipment has been added to the group of products made by Apex Elec. Mfg. Co., Cleveland, according to Apex president C. G. Frantz. The firm already produces refrigerators, washers, ironers and vacuum cleaners, but has recently bought the Zephyr air conditioning division of the Savage Arms Corp., Utica, N. Y. Sales program for the new product includes continuation of the present Zephyr distributors and dealers.

★ P. B. Zimmerman, one of the most-respected personalities in the appliance industry and for 25 years a top executive at General Electric, has been named as Norge's new vice-president in charge of sales. Zimmerman is widely credited as having started several of the major trends in electrical marketing, and is nationally identified with quality performance as a sales leader.

Announced at the same time by Howard E. Blood, Norge president, was the promotion of John H. Knapp to the position of assistant to the president.

★ Electrical Appliance Dealers Association of Brooklyn, N. Y., one of the country's most vigorous dealer organizations, held another meeting Aug. 25 with Fair Trade laws and associated trade-in problems again the main discussion. Special guests were representatives from similar dealer groups in neighboring Manhattan, Westchester, Queens and Staten Island. A speaker was W. H. Ingersoll, of Ingersoll, Norvell & Babson, who worded a resolution which the association adopted:

"Resolved that the practice of some manufacturers of leaving to the unguided individual judgment of dealers, the valuation of second hand trade-in radio sets offered by consumers in part payment toward the purchase of their new branded sets is unfair and unacceptable, in principle, to the members of this association; and further, that it is the sense of this meeting that the refusal by manufacturers operating under the Fair Trade Act to establish reasonable maximum valuations on trade-ins, leads to the practical nullification of the Fair Trade act of this state in respect to radio merchandising and opens the way to indirect rebating from the standard, uniform prices on new merchandise which it was the purpose of the Act to maintain, thereby defeating the policy of this state in respect to such merchandise."



# Announcement

On December 1st of this year your  
Grunow Distributor will display

## Grunow THERMENE

—the most amazing development  
in refrigerator history . . . a com-  
panion line to the popular electri-  
cally powered Grunow models.

GENERAL HOUSEHOLD UTILITIES CO.  
CHICAGO, ILLINOIS

CHILLED BY

THE FREEZING



FLAME



# OSCILLOGRAPHS FOR THE SERVICEMAN — Compiled by Radio Today

	Apparatus Design Co.	Burton-Rogers Co.	Clough-Brengle Co.	Jackson Electrical Instrument Co.	Hickok Electrical Instrument Co.	RCA Mfg. Co.	Supreme Instrument Co.	Triumph Mfg. Co.	Earl Webber Co.	United Sound Instrument Co.	Sundt Engineering Co.													
Model No.	NS	60	CRA	105	523	RFO-3	151	9515	9788	9641	555	545	546	535	530	77-1	77-2	820	800	96	CR3	150	151	
Net price	NS	39.95	79.50	48.90	59.50	63.00	47.50	84.50	800.00	110.00	147.95	92.95	59.95	49.95	29.95	49.95	59.95	39.95	63.60	NS	66.00	40.00	48.00	
Tube diameter	2	1	3	1	3	2	1	3	9	3	3	3	3	2	2	1	2	1	3	2	3	3	.5	
Sensitivity with vertical amplifier—peak volts inch	1.4	.7	.38	.68	.75	.6	2.48	.98	.14	.98	.85	.85	.57	2.26	1.98	1.9	1.2	1.9	.2	1.41	1.06	.008	.008	
Sensitivity with horizontal amplifier	1.6	.85	3.7	23	.75	None	2.48	.98	.14	.98	1.28	1.28	2.26	1.98	None	1.9	1.2	1.9	.2	1.63	1.06			
Sensitivity without amplifiers	NS	78 85	30 25	63 79	NS	25.5	12.8	49.5		49.5	46.5	46.5	46.5	70.7	70.7	36	21	36	7.7	NS	42.5			
Frequency range of amplifiers	10 to 100,000	10 to 50,000	to 100M	to 100M	to 100M	to 100M	30 to 10M	10 to 90M	4 to 300M	4 to 90M	to 90M	to 90M	to 90M	to 90M	to 90M	10 to 100M	10 to 100M	10 to 100M	10 to 100M	10 to 90M	15 to 20M	30 to 8M	30 to 8M	
Linear sweep fundamental frequencies	10 to 20,000	20 to 20,000	12 to 200M	15 to 30M	20 to 20M	0 to 150M	30 to 10M	10 to 18M	5 to 50M	4 to 18M	15 to 30M	15 to 30M	15 to 30M	15 to 30M		10 to 35M	10 to 35M	10 to 50M	10 to 50M	10 to 20M	15 to 20M	Mechanical 0-1000 RPM		
Return eliminator for line sweep	NS	No	No	No	No	No	No	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	Yes	
Synchronizing sweep control (locking)	NS	Yes	Yes	Yes	Yes	NS	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	
Calibrated screen	NS	Yes	Yes	Yes	Yes	No	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	Yes	No	No	Yes	Yes	
Internal oscillator or wobblator	Wob. only	No	No	No	No	Wob. only	No	No	No	No	Yes	No	No	No	No	Yes	Yes	No	No	Yes	No	No	No	
Single or double image alignment	D. I.		D. I. S. I.	D. I. S. I.	D. I. S. I.	D. I. S. I.	D. I. S. I.	D. I. S. I.	D. I.	S. I.	S. I.	S. I. D. I.	S. I. D. I.	D. I.	D. I. S. I.	D. I. S. I.	None							
Oscillograph controls on panel	NS	vs. hg, sw, fc, sc, i, f, i, f, vp, hp	vs. hg, sw, vl, ss, sc, i, f, vp, hp	vs. hg, sw, vl, ss, sc, i, f, vp, hp	vs. hg, sw, vl, ss, sc, i, f, vp, hp	vs. hg, sw, vl, ss, sc, i, f, vp, hp	vs. hg, sw, vl, ss, sc, i, f, vp, hp	vs. hg, sw, vl, ss, sc, i, f, vp, hp	vs. hg, sw, vl, ss, sc, i, f, vp, va, ha	vs. hg, sw, vl, ss, sc, i, f, p	vs. hg, sw, vl, ss, sc, i, f, p	vs. hg, sw, vl, ss, sc, i, f, p	vs. hg, sw, vl, ss, sc, i, f, p	vs. hg, sw, vl, ss, sc, i, f, p	vs. hg, sw, vl, ss, sc, i, f, p	vs. hg, sw, vl, ss, sc, i, f, p	vs. hg, sw, vl, ss, sc, i, f, p	vs. hg, sw, vl, ss, sc, i, f, p	vs. hg, sw, vl, ss, sc, i, f, p	vs. hg, sw, vl, ss, sc, i, f, p	vs. hg, sw, vl, ss, sc, i, f, p	vs. hg, sw, vl, ss, sc, i, f, p	vs. hg, sw, vl, ss, sc, i, f, p	vs. hg, sw, vl, ss, sc, i, f, p
Oscillograph controls elsewhere	NS	vp, hp	None	None	None	None	None	vp, hp	ab	vp, hp	vp, hp	vp, hp	vp, hp	None										
Dimensions	NS	8 3/4 x 7 x 10	13 1/2 x 8 x 17 1/2	8 3/4 x 8 1/2 x 9 3/4	17 x 8 3/4 x 12 1/2	11 x 9 x 7	13 3/4 x 9 1/2 x 7 3/4	12 1/2 x 7 1/2 x 17 1/2	17 1/2 x 20 1/2 x 25 1/2	12 1/2 x 7 1/2 x 7 3/4	28 x 14 1/2 x 18 1/2	7 1/2 x 11 1/4 x 13	12 1/2 x 8 1/2 x 8	12 1/2 x 8 1/2 x 8	9 1/2 x 7 1/2 x 8	13 3/4 x 10 x 8 3/4	8 1/2 x 9 x 8 3/4	8 1/2 x 9 x 8 3/4	8 3/4 x 12 1/2 x 18 1/2	10 x 15 x 11	13 x 7 1/2 x 18	8 3/4 x 10 x 13	8 3/4 x 10 x 13	
Weight	NS	11	32	16	30	16 1/2	14 1/2	39	195	39	62	50	21	17	14	17	14	14	34	23	31	25	26	

**CODES:**  
 vs—Vertical gain  
 sw—Sweep range selector  
 vl—Vertical spot position control  
 fc—Focus control  
 sc—Synchronizing voltage control  
 i—Intensity control  
 vp—Vertical spot position control  
 va—Vertical attenuator  
 ha—Horizontal attenuator  
 ab—Amplifier balancing controls  
 p—Phase control  
 Image Alignment  
 S. I.—Single Image  
 D. I.—Double Image  
 Wob.—Wobblator  
 NS—Data not supplied

# IMPROVED UP-TO-THE-MINUTE 1937-1938 TUBE TESTER



**MODEL  
430**

**DEALER  
PRICE \$19<sup>80</sup>**

*Only*  
**\$1980**  
*for this TUBE TESTER*

*Positively Checks All Type Radio Tubes  
According to Latest Recommendation  
of Tube Engineers*

- **Has Line Voltage Adjustment**
- **Has Leakage and Short Test**
- **Uses Triplet Direct Reading Instrument (GOOD-BAD Scale)**

## PORTABLE OR COUNTER USE!!!

*See Our Display—Booth No. 105—Radio Parts Show, New York City*

Five flush type sockets provide for all tubes. The tester operation is very simple and indicates condition of the tube for dealer and customer on Direct Reading (GOOD-BAD) colored scale of Triplet instrument. Will also test for inter-element shorts and leakages. Complete in attractive, sturdy, quartered-oak case. Sloping panel of silver and black. Suitable for portable or counter use.

*A Modified Emission Type Tester . . . Approved Circuit*

Model 431 same as 430 except has Readrite (Good-Bad) Meter. **DEALER PRICE \$15<sup>90</sup>**

**SEE YOUR JOBBER**

**WRITE FOR CATALOG**

*Readrite*

**TESTERS AND METERS**

**READRITE METER WORKS**

919 College Drive, Bluffton, Ohio

Without obligation please send me more complete information on

Model 430;  Model 431;  I am also interested in.....

Name .....

Address .....

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



**Mr. George Rohr says:**

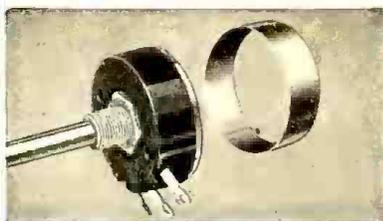
*"Centralab is the difference between a satisfied customer and a dissatisfied one."*

Mr. Rohr, who twirls a mean soldering iron at 67 Thorne St., Jersey City, N. J., is one of that vast army of radio men who year after year cast their preference with Centralab.

The smooth, noise-free performance of these world-famous controls explains their ever-growing popularity. For all replacements . . . CENTRALAB.

*The non-rubbing contact insures smoother performance . . . and the long resistor element maintains a more uniform taper.*

**Get the 1937  
Volume Control Guide**



**STANDARD RADIOHM**

**Centralab**

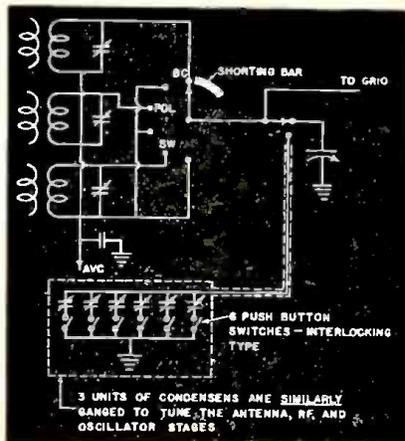
**Milwaukee, Wis.**

Division of Globe Union, Inc.

BRITISH CENTRALAB, Ltd.  
Canterbury Road, Kilburn  
London, N.W.6, England

FRENCH CENTRALAB CO.  
118 Avenue Ledru-Rollin  
Paris XI, France

# PUSH BUTTON TUNING



Wiring employed in the Sparton push-button tuning receiver.

(Continued from page 26)

tions. A trimmer is used for the antenna, first detector, and oscillator circuits. The accompanying schematic shows the essentials of the circuit as applied to a single stage. A manual-automatic switch serves to disconnect the gang tuning condenser from the coils and connect in the Selectronne tuning unit.

In the automatic position a shielded lead is brought to a series of 6 trimmer condensers. Any one of these 6 trimmers can be connected into the circuit by grounding it through the push-button operated switch. Each push-button controls the switches for the 3 tuned circuits.

## Shielded assembly

The mechanical construction of the tuning unit is illustrated on page 26. Referring to the plan view (as seen from the top), note that each push-button operates a shaft which is attached to three contacts for grounding the trimmer condenser circuits.

The button at the extreme right is shown depressed—making a contact to the low-potential side of the trimmers. A flexible pig-tail is connected to each push-button contact and then to ground. A latching bar holds the push-button in place—while it automatically releases the button when any other button is pushed.

In the rear elevation view, the 3 sets of 6 trimmers are plainly visible. Note the contact bars (cross hatched) behind the trimmers. When a button is depressed, the entire contact bar moves as a unit. Spring type contacts are used on the trimmer contacts and assure a perfect connection.

The entire assembly is well shielded and shielded leads are used to connect the trimmers to the rest of the receiver. The trimmers have suitable capacity ranges so that practically any combinations of stations can be selected. Adjustment of the trimmers is done the same as with any other high-frequency trimmers in a receiver—but naturally since there is no tracking problem involved, there is no oscillator series condenser.

In the three makes of receivers described, use is made of automatic frequency control to insure perfect tuning at all times. The accuracy of the station settings can be quickly checked by killing the AFC circuit and noting whether or not there is any change in the quality of the station received. If the quality is noticeably bad, it indicates that the station set-up on the automatic tuning has not been done accurately enough, and an effort should be made to do a better job. While AFC will correct inaccuracies in tuning, best operation will be had when that correction in mistuning is as small as possible, for then fading and strong adjacent stations will have a minimum effect on reception.

## MAKING USE OF THE INFINITE RESISTANCE VOLTMETER

★ The more widespread use of extremely high resistance circuits in the new receivers has made the measurement of voltages a difficult problem. Vacuum tube voltmeters are satisfactory for much of the work, but they have some disadvantages. The infinite resistance voltmeter is an ideal device for DC voltages—it, however, will not handle AC or RF voltages as does the vacuum tube voltmeter. Some uses of the infinite resistance voltmeter\* are described and explained by Glenn H. Browning, well known consulting engineer.

One cause of intermittent reception in a radio receiver is a faulty resistor in the plate circuit of a resistance coupled audio frequency amplifier. With an ordinary voltmeter it is difficult to measure the voltage between the cathode of the

\*The infinite resistance voltmeter was described in RADIO TODAY for May 1936 on page 29 and for September 1936 on pages 60-66. A complete theoretical discussion will be found on those pages.



In one year

# WHAT SUCCESS!

220

## Model 220 Roto Ranger

Tube and Set Tester

In the opinion of hundreds, the Model 220 is the greatest of all analyzing equipment. The "Roto-Ranger" feature places twelve distinct scales at your finger tips. Utilizes latest tube testing circuit. Has filament return selector. Tests all types of condensers on separate scales. Has separate resistance scales of 100 ohms, 100,000 ohms, 100 megohms. Three D.C. scales of 8-300-1000 volts. (2500 ohms per volt.)  
Net price **\$62.75**  
Time Price: \$12.50 down and 6 monthly payments of \$9.60 each.



275

## Model 275 Roto Ranger

High Sensitivity Set Tester

With the Roto-Ranger convenience and a sensitivity of 10,000 ohms per volt, this is one of the most outstanding instruments on the market—a new Simpson development. Ranges are D. C. volts 0-10-50-300-1000; A. C. volts 0-8-150-1000; ohms 0-2,000-200,000-20 megohms. Milliamps 0-10-100-500; Microamps 0-100.  
Net price **\$42.50**  
Time Price: \$8.50 down and 6 monthly payments of \$6.60 each



201  
202

## Model 201 and 202 Roto Ranger

Volt-Ohm-Milliammeter

A Volt-Ohm-Milliammeter with Roto-Ranger Feature with the following ranges: Model 201 (D. C.) Ohms, 0-20-200-2,000-20,000-200,000-20 megohms; Microamps, 0-200; Milliamps, 0-10-150; Volts, 0-8-300-1,000. Model 202 (A. C. and D. C.) A. C. volts, 0-8-130-1,000; D. C. volts 0-8-300-1,000; D. C. Milliamps, 0-1-8-130; Ohms, 0-100-0-50,000-2 megohms.

Net Price D. C. Model..... **\$32.50**  
Time Price: \$6.50 down and 6 monthly payments of \$5.00 each  
Net Price A.C.-D.C. Model..... **\$35.75**  
Time Price: \$7.00 down and 6 monthly payments of \$5.50 each



## Model 210

All-Wave  
Signal  
Generator

A signal generator as accurate as it is beautiful. Heavy aluminum castings give proper shielding. Single rotary selector switch provides modulated, unmodulated and externally modulated radio frequency and 400 cycle audio output. Range: Continuously variable from 94 kilocycles to 26 megacycles—all on fundamentals. Divided into 6 bands. 94-216, 215-550, 550-1500 kilocycles and 1.5-4.0, 4.0-10.0, 10-26 megacycles, selected by means of a 6-position rotary switch.

Calibration: At 6 points with quartz crystal oscillators. Maximum change in original calibration over long periods of time are less than 1%.  
Net Price, A. C. line operated **\$49.00**  
Time Price: \$9.85 down and 6 monthly payments of \$7.50 each  
Battery operated type (Model 211)..... **\$39.50**

HOW DID IT HAPPEN? How did a line of testing equipment, unheard of one short year ago, move so swiftly into the front ranks of radio analyzing equipment. How, for example, did the Simpson Model 220, unknown only eleven months ago, become the fastest selling instrument in its price class?

Was it because Simpson Equipment brought fresh ideas (long overdue) into the radio testing field? Was it because the Roto Ranger feature marked the greatest single advance in ten years of instrument building? Was it because . . . but why go further?

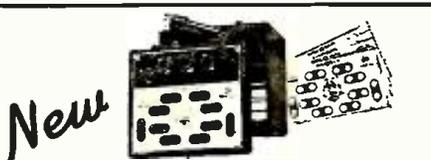
The answer, we believe, is that this success, like all achievements, was not due to any one thing, but rather to the sum total of MANY THINGS. It was the logical achievement of an organization that started afresh and anew, with unsurpassed experience in instrument building to guide it, but with none of the handicaps of old methods, old facilities, or old ideas to hamper it!

A serviceman expressed the big idea in a simple, but forceful way, at the New York Show when he exclaimed, "There IS something about these Simpson Instruments that GETS you!"

Hundreds of servicemen saw that "something" at the New York Show, and hundreds more saw it at the Chicago Show. They saw the revolutionary advances in Simpson Instruments, and they saw something that is even more significant to the experienced eye—a new beauty of design and workmanship in every outward detail from panel to pointer that gave unmistakable evidence of a watch-like precision which carries into the minutest hidden detail.

The thousands who purchased these instruments have had their first impression eloquently confirmed in truly flawless performance. They have found instruments that do the job better and quicker—instruments that DO "STAY ACCURATE." Look at them here. Notice the range of service they cover, and the better way they cover it. But look at them "in the flesh" too—at your jobber's. You will then know HOW it all happened—in ONE SHORT YEAR!

SIMPSON ELECTRIC COMPANY  
5216 Kinzie Street, Chicago, Ill.



New

## Model 100 ANAL-O-SCOPE

A NEW FREE POINT TESTER for use with any Set Tester or Volt-Ohm-Milliammeter. Has five sockets with a complete set of series type jacks connected into the various circuits for measurement of voltage, current and resistance between any tube elements or socket contacts. By selecting a card corresponding to the tube under test and placing it on the ANAL-O-SCOPE a complete picture of the elements and connections is in view while all tests are being made.

The cord and plug method of analysis is combined with the "Free Point" method in this modern testing unit. Furnished complete with test prods, adapters, and cards covering all popular tubes. Can be kept up to date at low cost.  
Net Price **\$17.50**

All sold on deferred payments



250

## 20,000 OHMS PER VOLT

## Model 250 -- Set Tester

This new Simpson Set Tester sets a new "high" in sensitivity and value. Negligible current consumption (20,000 ohms per volt) means incredibly accurate voltage readings on ranges of 2.5-10-50-250-1,000. Same ranges for A.C. at 1,000 ohms per volt. Current readings from 1 microamp to 500 milliamps. Accurate resistance readings as low as 1 ohm up to 40 megohms. Built and mounted as only Simpson Instruments are built. Send coupon for details covering range of tests. SEE IT!  
Model 250 (20,000 ohms per volt model)—Net Price..... **\$42.50**  
Time Price: \$8.50 down, 6 monthly payments of \$6.60 each.  
Also built in 10,000 ohms per volt model. Net Price \$32.50

## Model 215

A. C.-D. C. Volt-Ohm-Milliammeter

The first small instrument (only 5 1/2 x 7 x 3") to incorporate a big, 4 1/2 inch, easily read dial. Ranges: 0-2.5-10-50-250-1,000 volts A. C. or D. C. (at 5,000 ohms per volt D. C. and 1,000 ohms per volt A. C.); Milliamps, 0-10-100-500; Microamps, 0-250; Decibels five ranges—12 to +55; Ohms 0-4,000, 0-400,000, 0-4 megohms.

Net Price..... **\$25.75**



## Model 205

Volt-Ohm-Milliammeter

Here is Simpson quality and accuracy in a pocket edition. Only 5 1/4 x 2 7/8 x 1 3/4" Highest resistance ranges ever provided in an instrument of this size—0-2000-200,000 ohms—2 megohms; Volts 0-10-50-250-1,000 (D. C. only); Milliamps, 0-10-500.  
Net Price..... **\$13.25**



## Mail This Coupon

SIMPSON ELECTRIC CO.  
5216 W. Kinzie Street, Chicago

Please send facts covering Simpson Instruments checked:

- Model 220  Model 275  Model 201
- Model 202  Model 250  Model 215
- Model 205  Model 210
- Anal-O-Scope

Name .....

Address .....

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

# SIMPSON

Instruments that

## STAY ACCURATE

### ASK YOUR JOBBER

**\$1,000.00**  
**IN PRIZES**



**LET THIS New Free 1938 WHOLESALE RADIO CATALOG show you how TO WIN ONE OF THE PRIZES**

**SERVICEMEN, ENGINEER, EVERYONE.** Get in on these "Easy-To-Win" prizes! Hurry... send for the **BIGGEST CATALOG IN RADIO HISTORY!** Page ONE will show you how to win. First prize... \$250... Second prize... \$150... Third prize... \$100. Fifty other prizes of \$10.00 each. You can't lose... clip convenient coupon NOW!

The following well known people in the radio industry will act as judges:

Dr. G. M. Caldwell Editor, Radio Today  
Mr. Lawrence Cackaday Editor, Radio News  
Mr. Joseph Reiss Reiss Advertising Agency

**GREAT 180 PAGE CATALOG FREE**  
Packed with radio bargains... over 50,000 real radio "buys"... at prices amazingly low! Benefit by **WHOLESALE'S Easy Time Payment Plan**... use your equipment as you pay for it.

**for the SERVICER**... The greatest collection of test equipment, parts, tubes, hardware, at **LOWEST PRICES.** Join the thousands of successful servicemen who buy the **WHOLESALE WAY.**

**for the SOUND ENGINEER**... Lafayette P.A. systems are made in all sizes for every possible requirement and specification... at prices that allow a handsome margin of profit. See **BIG P.A. Sections.**

**REMEMBER!..**

This CATALOG is 180 pages **BIG**... and it's **FREE!** Send for it today... get the details of the \$1,000.00 contest. See the new **EASY-TO-PAY** Plan now available.

**SEND COUPON NOW!**

**WHOLESALE RADIO SERVICE CO., INC.**  
NEW YORK, N.Y. CHICAGO, ILL. ATLANTA, GA.  
100 SIXTH AVENUE NEW YORK, N.Y. 430 W. PRITCHER ST. N.W. BOSTON, MASS. BRONX, N.Y. NEWARK, N.J. JAMAICA, L.I.

Wholesale Radio Service Co., Inc.  
100 Sixth Avenue, New York, N.Y.

Rush FREE 1938 Catalog  
No. 69-1237 and full details of  
\$1,000 CONTEST.

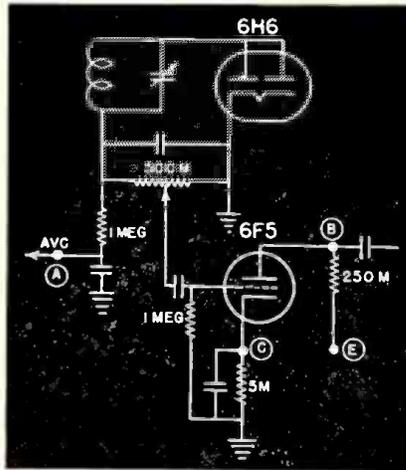
Name.....

Address.....

City.....

**YES!**  
**RUSH MY COPY**

# SERVICE NOTES



The infinite resistance voltmeter will accurately measure voltages in high resistance circuits such as this.

tube and the plate because of the high resistance involved. The common service procedure is to check the voltage applied to the plus B end of this resistor and then with the set turned off, check the resistance of the resistor itself.

This procedure is logical and satisfactory in cases where the resistance does not change with the current passing through it. However, an intermittent open in such a resistance is not uncommon and the writer has never been able to find one of these resistors that was intermittently open except when it was carrying current. As a consequence the voltage on the plate of the tube should be checked with the receiver in an operating condition at the time the signals begin or have actually faded out.

A typical circuit of part of a superheterodyne is shown in the diagram above. The voltage to the plate of 6F5 is applied through a 250,000 ohm resistor. Measuring the voltage between this point (B) and the ground with a 5000-ohm-per-volt meter gives a voltage of 138 volts. With a 1000-ohm-per-volt meter the voltage as measured is 89 volts; while the true voltage as indicated by the zero current voltmeter method is 160 volts.

Grid biasing resistors in resistance coupled audio frequency amplifiers many times give the serviceman trouble in the same manner as previously explained, though in fully as many, if not more cases the by-pass condenser is at fault where intermittent reception is caused by trouble in the cathode circuit. The voltages measured between the cathode and ground (point C to ground) with the various voltmeters are as follows:

5000-ohm-per-volt meter—voltage 1.5  
1000-ohm-per-volt meter—voltage 1.2  
zero current voltmeter —voltage 1.5

It will be noted that in the above case the 5000-ohm-per-volt meter is correct. However, had the measurements been made between the cathode and the grid of the 6F5, a 1-megohm resistance would have been in series with this voltage and the 5000-ohm-per-volt meter would have been materially in error. Of course, in the case of measuring cathode biases on power amplifier tubes the 1000-ohm-per-volt meter will, in practically all cases, give a sufficiently correct answer for practical purposes.

## AVC testing

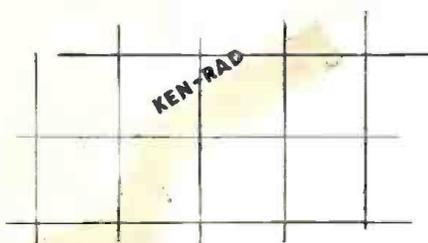
Cases of inoperative or incorrect operation of automatic volume control give the service man no end of trouble and an instrument which will measure accurately the biasing voltages on the tubes controlled by the automatic volume control system is a great advantage to say the least. To give the reader an idea of the automatic biasing voltage on the RF tubes, a radio frequency signal was applied between the antenna and ground system of a superheterodyne receiver by means of a signal generator and the automatic biasing voltage was measured between points A and ground in the 6H6 diode detector circuit shown above. The data obtained give the values of automatic volume control bias as measured on the three voltmeters with various RF signals put into the antenna and ground system of the receiver. The true voltages varied from 0 to about 25. A comparison showed that even the 5,000-ohm-per-volt meter has an average error of about 60 per cent.

The operation of the zero current voltmeter described is extremely simple, consisting of a variable potentiometer the voltage across which is supplied with a step-variable power supply. The balance between the known and the unknown voltage is indicated by the zero reading of a galvanometer type instrument the sensitivity of which is 350 microamperes. This meter is adjusted to zero after which the unknown voltage may be read directly on the same instrument (or a separate meter if desired) by pushing a button which connects the current instrument in series with the proper resistance across the variable voltage source so that a direct reading in volts is obtained. This type d-c. voltmeter has been incorporated into a new set tester now being manufactured by Hickok Electrical Instrument Co.

"Could you have listened to my set with the old and the new tubes you could truthfully testify that Ken-Rad Tubes brought it to the peak of performance in reception. Radio is my hobby and I believe myself qualified to be a competent judge of really good performance."

*Walter P. Honchell*

Mr. Walter P. Honchell  
114 Williams St.  
Lawrenceburg, Indiana



**"KEN-RAD TUBES  
BROUGHT MY  
RADIO TO  
THE PEAK OF  
PERFORMANCE"**

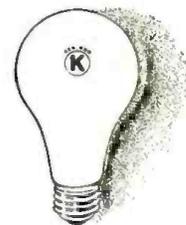


Manufacturers of a complete line of Standard Glass Types, G Series, and Genuine All-Metal Radio Tubes.

Enthusiasm among customers for the items you sell means an ever-increasing repeat business. This is the backbone of profits. For dependable performance and dependable profits tie in with Ken-Rad. Write us for our dealer proposition.

● **KEN-RAD BULBS, TOO**

Cheap electricity means an ever-increasing lamp field. Get your share of profits with Ken-Rad Bulbs.



**KEN-RAD**  
★ *Radio Tubes* ★

**KEN-RAD TUBE & LAMP CORPORATION, Owensboro, Kentucky**

*Also manufacturers of Ken-Rad Electric Light Bulbs*

Model	I. F.	101, 101B	175
Chassis	Peak	102, 102B	175
		109	175
		110	175
		111	175
		112A	465
		124	465
		136	465
		156, 156C	465
		156AW	465
		158, 158C	465
		419	465
		535	465
		535	465
		536	465
		537	465
		538	465
		557	465
		611	465
		612	465
		639	462
		710	465
		935	456
		936	456
		1934	190

TRAV-LER*			
230 L.	465	R	8
231 R.	465	R	51
231 F.	465	R	54
231 P.	465	R	54
240 H.	465	R	56
240 L.	465	R	60A
240 M.	465	R	63A
240 R.	465	R	63M
240 S.	465	R	76
240 W.	465	R	110
240 P.	465	R	112
250 L.	465	R	115
255 L.	465	R	135M
260 L.	465	R	136
260 P.	465	R	137
			138
			149M
			173
			500
			505
			512
			522
			525
			526, 527
			542
			549
			550
			601
			626
			627
			630
			635
			635M
			636
			636M
			642
			660
			701
			730
			733
			770
			830

NOTE: 25 Cycle sets have "B" added to model number.

STUDEBAKER			
AC206	260		
AC236	260		
AC266	260		
ST3	260		
ST12	260		
ST15	260		
10C	260		

SUPERTONE			
A31	456		
L5	456		
L6	456		
L7	456		
Z4	456		
Z5	456		
Superba	465		

TIFFANY TONE*			
55A, A5C	465		
55D, 5AVC	465		
5AW, 5M	465		
5AB, 5MTC	465		
5MTD, 5MTW	465		

TROPICAIRE			
06-W	262		

TROY*			
5L5	465		
5U5	465		
15	465		
15-5	465		
40	465		
42	465		
45	465		
46	465		
52	465		
54	465		
55, 55CC	465		
56	465		
57, 57PC	465		
62BC	465		
62BU	465		
62C	465		
62-L	465		
62PC	465		
62U	465		
65	465		
67SW	465		
68	465		
75	465		
75B	465		
75PC	465		
79	465		
82C	465		
84	465		
84C	465		
84PC	465		
84U	465		
86	465		
95, 95PC	465		

# I. F. PEAKS and COLOR CODING

PART XI • RADIO TODAY • SEPTEMBER 1937

Model	I. F.	Chassis	Peak
151-5	465		
157PC	465		
162	465		
162C	465		
162U	465		
TR5A	465		
TR50	465		
TR51B	465		
TR53	465		
TR55	465		
TR57	465		
TR57PC	465		
TR57SW	465		
TR63	465		
TR63B	465		
TR66	465		
TR67	465		
TR67SW	465		
TR74B	465		
TR75PC	465		
TR77	465		
TR79	465		
TR84	465		
TR86	465		
TR95	465		
TR100	465		
TR151	465		
TR153	465		
TR163	465		
TR179	465		
TR184	465		
TR711	465		

UNITED MOTORS* "Delco"			
626	262		
627	262		
628	262		
629	262		
630	262		
631	262		
631A	262		
632	262		
633	262		
634	262		
635	262		
1101	181.5		
1102	456		
1103	456		
1104	456		
1105	450		
1106	465		
2035	262		
3026	175		

TRUEVALUE			
6-U	262.5		

TRUMAN RADIO CO. "Orlando"			
E6	175		
E6RC	175		
E7C	175		
E7E	175		

TRUETONE*			
5Y	175		
6J	175		
6N	175		
6R	175		
6U	175		
575	175		
667	465		
670	175		
680	175		
686M	262		
880	175		
D692	385		
D697	456		
D698	456		
D699	456		
D702	456		
D703	456		
D706	465		
D708	456		
D718	456		
D720	456		
D725	456		
D726	456		
D732	262		
D735	175		
D736	175		
D737	175		
D737C	175		
D739	175		
D740	262.5		
D741	175		
D742	175		
D743	177.5		

R-1119	456		
R-1120	465		
R-2050	465		
3205	450		
R-3208	450		
R-3209	450		
R-6011	465		
R-6012	465		

## U. S. RADIO & TELEVISION "Apex"

5A	455		
7	262		
7A	262		
7D	455		
8	262		
9	262		
9A	262		
9B	262		
10	262		
10C	262		
12	262		
12B	262		
19	262		
19B	262		
24	455		
25	455		
25A	455		
69	262		
96	262		
112-A	1000		
120	262		
120B	262		
400	455		
500	455		
502	455		
507	455		
513	455		
700	455		
900	262		
902	262		
906	262		
1000	262		
1001	262		
1006	262		
1007	262		
1107	262		
1009	262		
1200	262		
3014	455		
3040	455		
3056	455		
3070	262		
3084	427		
3086	427		
3092	455		

WARWICK			
418	456		
511	456		
517	456		
518	456		
521	456		
530	456		
536	456		
540	456		
550	456		
560	456		
601	456		
613	456		
618	175		
621	456		
633	456		
635	456		
651	456		
660	175		
665	175		
686	262.5		
701	456		
725	456		
741	456		
751	456		
761	456		
780	456		
871	456		

WESTSTONE			
34 (5T)	456		
34 (4T)	456		
40	456		

WELLS-GARDNER*			
00A	175		
00B	175		
00C	456		
00M	456		
00L	456		
0F	456		
OGL	456		
O2A-O2AA	175		
05A-05AA	262		
05B-05BA	262		
06A	175		
06X	262		
06W	262		
07A	175		
07B	175		
022	175		
052	262		
062	262		
073	175		
092	175		
A1	456		

# 25,000 OHMS PER VOLT

Model 1200-E  
DEALER PRICE

**\$31.17**

## Model 1200-E Volt-Ohm Milliammeter

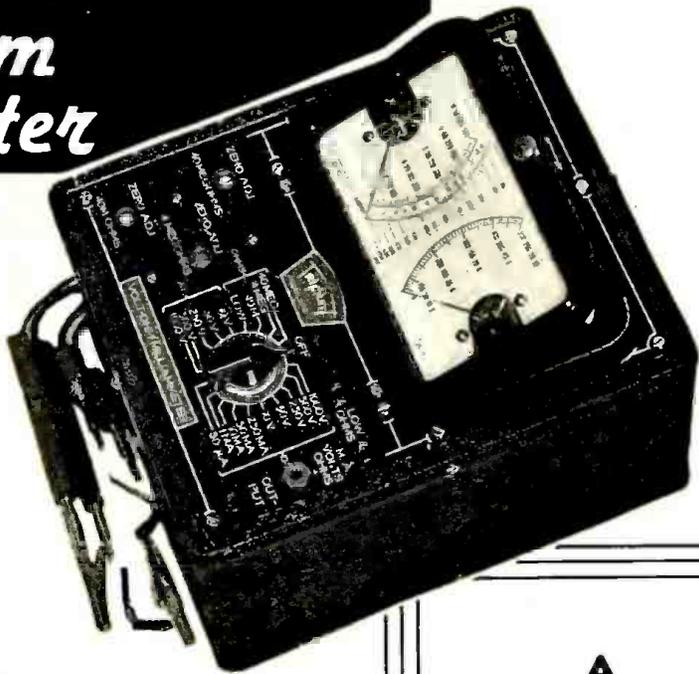
- Resistance Readings to 40 Megohms
- Separate A.C. and D.C. Instruments in Tilting Twin Case; Accuracy of each Within 2%
- For All Radio Measurements Not Requiring a No Current Draw Vacuum Tube Voltmeter

TRIPLETT MASTER VOLT-OHM-MILLIAMMETER, Easily Identified by the Exclusive Tilting Twin Scale, Is by All Odds the Overwhelming Favorite . . . Because It Is the Most Practical . . . (It Offers the Most for the Money)

Model 1200-E offers a new order of precision testing with 25,000 Ohms per Volt. Modern radio sets that require delicate balancing can be easily and quickly adjusted.

READINGS: D.C. Volts 10-50 250-500-1000 at 25,000 Ohms per Volt. A.C. Volts 10-50-250-500-1000. 50 D.C. Microamperes, 1-10-50-250 Milliamperes; Resistance ¼-1000 Low Ohms; Backup Circuit; 0-40,000 Ohms; 4 and 40 Megohms.

Remember Booth No. 205—Radio Parts Show—New York City. . . Many New Triplett Items Will Be Displayed.



one of a series of co-related single unit testers made in standard sizes, the most economical method yet devised for completely equipping the all-around radio service shop with high quality instruments. Catalog gives complete information regarding other Triplett Volt-Ohm-Milliammeters.

### New LABORATORY TEST BENCH PANEL AS SHOWN CONTAINS:

- 1210-A Tube Tester
- 1232 Signal Generator
- 1209-A A.C. Voltmeter
- 1209-D Volt-Ohm-Milliammeter

#### OTHER LABORATORY MODELS

Model 1402 with compartments for any two Deluxe Testers; Model 1403 with accommodations for any two Master Units and one Deluxe Tester.

MODEL  
1404  
Dealer  
Price

**\$92.18**

(complete  
less lamp)



THE TRIPPLETT ELECTRICAL INSTRUMENT CO.,  
199 Harmon Ave., Bluffton, Ohio.

Please send me more information on Triplett Model 1200-E;  Model 1404.

Name .....

Address .....

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

For More Information  
SEE YOUR JOBBER  
...OR MAIL COUPON TODAY!





# Peace of Mind WITH CORNELL-DUBILIER Condensers



**H**ERE'S ONE lad who'll rest well tonite—secure in the knowledge of a job well done. He uses Cornell-Dubilier condensers exclusively—he KNOWS they're the BEST.

If a task is worth doing at all—it's worth doing well. And servicing jobs "stand up" when C-D condensers go into 'em.

No matter what the radio circuit—there's a rugged, dependable C-D condenser designed for it. The use of C-D in servicing means . . . .

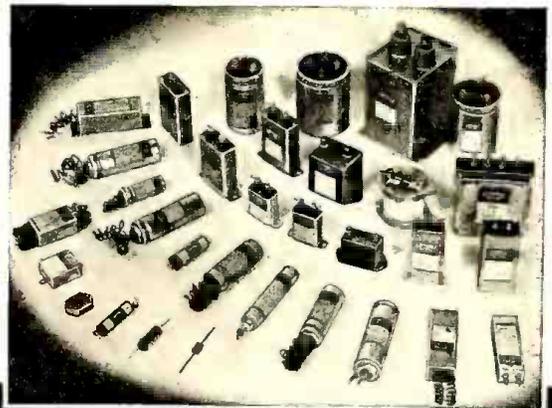
### Profits • Satisfied Customers • Peace of Mind

For complete description and listing of Cornell-Dubilier capacitors, send for Catalog No. 151A today. Available at all C-D authorized distributors.

WORLD'S LARGEST AND OLDEST EXCLUSIVE MANUFACTURERS OF CAPACITORS

### MICA • PAPER • DYKANOL WET & DRY ELECTROLYTICS

*Photograph illustrates several of the convenient C-D capacitors for every day modern A.C.-D.C. receiver servicing.*



# CORNELL-DUBILIER

## ELECTRIC CORPORATION

South Plainfield, New Jersey



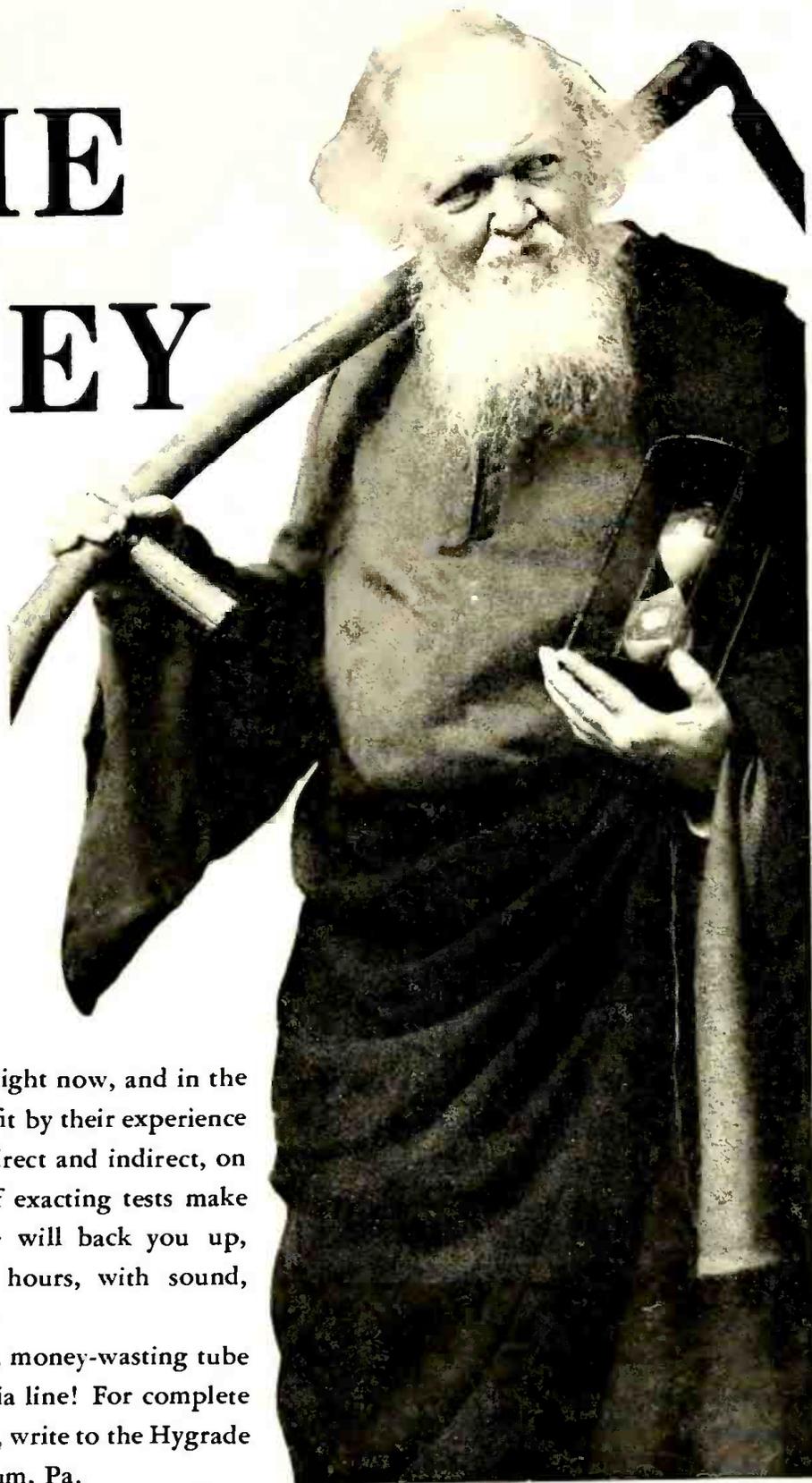
# TIME IS MONEY

***Why waste both in defective tube replacements, when there's a line like Sylvania on the market?***

Poorly-functioning or defective tubes can raise the devil with a retailer's business. Tube replacements waste time and—according to that old proverb, Time itself is money.

Why trifle with so important, so vital an item? Thousands of dealers have found that the most profitable line of tubes—right now, and in the long run too—is Sylvania. Profit by their experience—and you'll make a profit, direct and indirect, on every tube you sell. Scores of exacting tests make sure that every Sylvania tube will back you up, through thousands of useful hours, with sound, dependable performance.

Rid yourself of time-killing, money-wasting tube troubles! Switch to the Sylvania line! For complete sales and technical information, write to the Hygrade Sylvania Corporation, Emporium, Pa.



# SYLVANIA

THE SET-TESTED  
RADIO TUBE

# DEMAND

# OHMITE



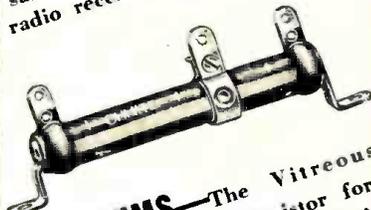
**BROWN DEVILS**—Vitreous Enamel—ideal for use under humid conditions.



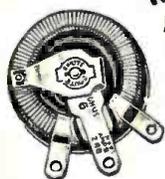
**RED DEVILS**—The resistor that will take heavy overload.



**WIREWATTS**—The universal 1-watt resistor for use in any radio receiver circuit.



**DIVIDOHMS**—The Vitreous Enameled Adjustable Resistor for experimental work and an excellent voltage divider.



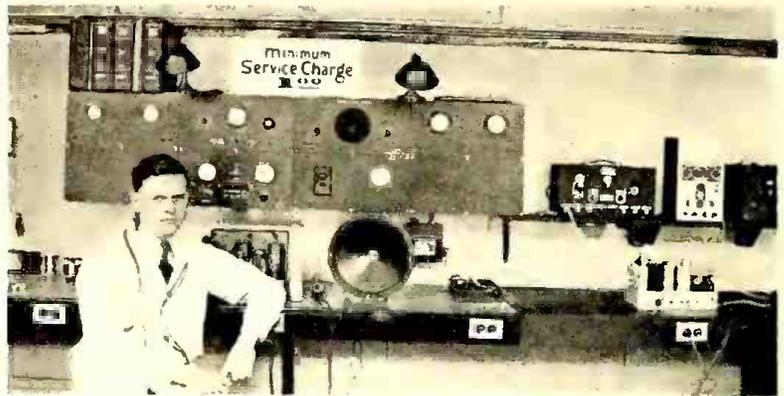
**RHEOSTATS**—All-Porcelain— from 25 Watts to 1,000 Watts.

Ask your Jobber for Ohmite  
Write for complete catalog.

# OHMITE

## MANUFACTURING CO.

4847 Flournoy St., Chicago, U. S. A.



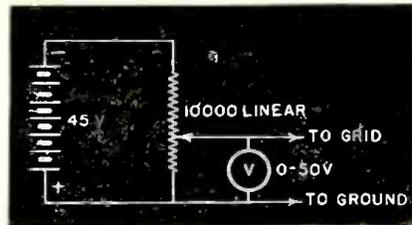
Serviceman Will Hayward of Chicago knows his condensers as evidenced by his winning Sprague's contest by estimating within 1%.

## HIGH RESISTANCE VOLTAGE MEASUREMENTS

★ Further radio set analysis based on using each tube as a vacuum tube voltmeter\* has resulted in the development of a voltage measurement method that is accurate and easy to use.

In the previous article a voltage measurement method was described that would give the serviceman a rough indication of what the voltages were.

By the use of small battery, linear potentiometer, and a voltmeter connected according to the accompanying diagram, it is possible to get extremely accurate measurements of grid voltages.



When the grid is negative with respect to ground, the positive side of the battery is connected to ground and the lead from the potentiometer slider is connected directly to the grid.

The slider contact is varied until the plate current (or cathode) reads the same as it did before the connections were made. When the current is the same, it indicates that the applied voltages are again normal. The grid voltage can then be read directly on the voltmeter.

Care should be taken when connecting the device to power tubes that the grid bias is not reduced too greatly so as to cause excessive plate current. Usually the potentiometer can be adjusted to approximately the correct voltage before connections are made. This device is simple and easy to use

and costs practically nothing to build since a spare voltmeter is usually at hand. A switch should be used to open the battery circuit when the device is not in use.

★ New plan by Supreme is to issue certificates to those servicemen owning a minimum of certain types of instruments. Copy states that Supreme's engineers believe that the owner of the certificate has the necessary technical instruments to properly service and align radio sets and similar equipment.

Complete details as to requirements and methods of qualifying are available from the company's Greenwood, Miss., offices.

★ A new "Hamannual" will be ready for Oct. 1 distribution by Standard Transformer Corp., 850 Blackhawk St., Chicago. It's a combination amateur catalog and construction manual, with circuits in blue-print style.

★ Solar Mfg. Corp., 599 Broadway, New York City, is distributing an elaborate 85-page booklet titled "Capacitors." The catalog, No. 3-C, has a list price supplement included.

*Listen!*

I'M TELLING YOU THAT YOUR CONCEPTION OF THE LATEST TRENDS IN RADIO TEST DEVICES PUBLIC ADDRESS AND REPLACEMENT PARTS

**WON'T MISS** IF YOU SEE THE DISPLAYS AT THE **RPM. TRADE SHOW**

BE COMPLETE

FRIDAY  
SATURDAY, SUNDAY  
**OCTOBER 1, 2, 3-1937**  
COMMERCE HALL-111 8th AVE. NEW YORK CITY

RADIO PARTS MANUFACTURERS NATIONAL TRADE SHOW

\*Radio Today, July, 1937, page 55.

# SELL

## BEFORE YOU

# BUY

**H**OW would you like to have a good stock of nationally advertised radio tubes on your shelves—without paying a nickel until they're sold?

That's how the Tung-Sol Consignment Plan works for radio dealers who can qualify. You don't pay for the tubes until you've collected your cost and profit. That's worth looking into—to see if you are eligible for this unique plan.

More than 8,000 dealers have

qualified—and are going places in the tube business.

Full profit—no investment—no dead numbers to write off a loss. Easy to sell, because your trade knows that Tung-Sol means top flight tube efficiency.

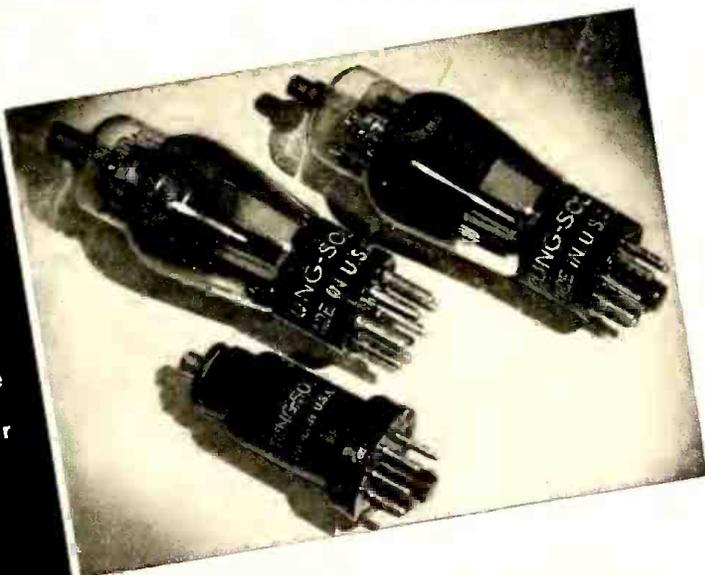
## TUNG-SOL

*Tone-flow Radio Tubes*

TUNG-SOL LAMP WORKS, INC.  
Dept. C Radio Tube Division

SALES OFFICES: Atlanta, Boston, Charlotte, Chicago, Dallas, Detroit, Kansas City, Los Angeles, New York  
General Office, Newark, N. J.

The Tung-Sol franchise is still available to a limited number of dealers who can qualify. Write for the name of your nearest wholesaler.



## COLORFUL DISPLAYS

★ Two displays, a 14-foot permanent illuminated floor display and a smaller table model one, are being made available by Philco to those dealers who purchase fixed amounts of merchandise.

The larger one forms a gold and purple stage setting for two floor models. It has removable sections for table models, figures dramatizing "No Squat—No Stoop—No Squint," concealed flasher bulb and a cut-out model of an attractive girl.

Smaller one fits against the wall, will display up to 6 table models among shelves and panels finished in two-tone gold, royal-purple and ivory-white.

"Philco Week," which the company has made a national event, is set for Sept. 16th to 25th. Magazines, newspapers, radio, billboards and extra dealer promotion helps are parts of this campaign.

## POST CARD CARTOONS

★ Series of four direct mail post cards made up in cartoon style are being made available to dealers by Stromberg-Carlson. Each card carries the dealer's name and address and tells about some new receiver feature in a lively way.

★ Four new directors of the RMA, chosen from the parts division, are S. I. Cole, president of Aerovox Corp.; Jerry Kahn of Standard Transformer Corp.; H. E. Osmun of Centralab; and Ray F. Sparrow of P. R. Mallory Co.



Alfred Crossley is a new and special consulting engineer for Belden Mfg. Co., Chicago.

★ M. W. ("Tommy") Thompson is the new advertising and sales promotion manager for General Household Utilities Co., named by president Harry Alter. He takes the place recently occupied by Tod Reed, now a member of the sales staff of the magazine "Look." Thompson's wide experience includes work with such radio firms as DeForest, RCA, Majestic, and Stewart-Warner. At his new job, he will again be working with Majestic associates W. C. Grunow, Harry Alter, Sid Arneson, J. J. Davin, Frank Hart, Ray Shadley, et al.

★ Elaborate new display and salesroom has been opened by Wholesale Radio Service Co., Inc., at 110 Federal St., Boston, Mass. Michael Scott is in charge. The 16-year old firm, whose headquarters are at 100 Sixth Ave., New York City, also has branches at Bronx, N. Y.; Chicago; Atlanta, Ga.; Newark, N. J.; and Jamaica, Long Island, N. Y.

★ Charles B. Shapiro, general sales manager for Howard Radio Co., has finished a series of dealer and distributor meetings along with the firm's western representatives, C. C. Smoot and Wm. Swartz, in California cities.

★ Board of Directors of Decca Records, Inc., New York, at a recent meeting declared a dividend of 30¢ per share to stockholders.

★ Emerson has launched its biggest promotion campaign with ads in 8 of the country's leading popular magazines. New angle of the drive is that each of the advertisements is a different presentation of the line. Store and local advertising tie-ins are suggested through distributors.

★ C. W. Pederson has recently been named sales manager for the Fairbanks-Morse appliance line for Brown-Camp Hardware Co., distributors of Des Moines, Iowa.

★ J. H. Weymouth has been named district sales manager in Texas and western Louisiana for Howard Radio Co.

## CURTAIN GOES UP ON THESE EXHIBITORS AT NY PARTS SHOW, COMMERCE HALL, OCT. 1-3.

	Booth
Aerovox Corp., Brooklyn, N. Y.	20
Alpha Wire Corp., New York, N. Y.	11
American Microphone Co., Inc., Los Angeles, Calif.	204-A
American Phenolic Corp., Chicago, Ill.	203
Amperite Co., New York, N. Y.	301
Arcturus Radio Tube Co., Newark, N. J.	403
Atlas Resistor Co., New York, N. Y.	715
Belden Mfg. Co., Chicago, Ill.	211-212
David Bogen Co., Inc., New York, N. Y.	14
Brush Development Co., Cleveland, Ohio	64
Bud Radio, Inc., Cleveland, Ohio	23
Allen D. Cardwell Mfg. Corp., Brooklyn, N. Y.	307
Centralab, Milwaukee, Wis.	22
Clarostat Mfg. Co., Inc., Brooklyn, N. Y.	16
Clough-Brengle Co., Chicago, Ill.	312-313
Continental Diamond Fibre Co., Newark, Del.	21
Cornell-Dubilier Elec. Corp., South Plainfield, N. J.	716
Coto-Coil Company, Inc., Providence, R. I.	206
Crowe Name Plate & Mfg. Co., Chicago, Ill.	303-304
Drake Electric Works, Inc., Chicago, Ill.	101
Hugh H. Eby, Inc., Philadelphia, Pa.	63
Electro Acoustic Prod. Co., Fort Wayne, Ind.	308
General Industries Co., Elyria, Ohio	515
Hammarlund Mfg. Co., Inc., New York, N. Y.	615
Hickok Elec. Instrument Co., Cleveland, Ohio	402
Hygrade Sylvania Corp., Emporium, Pa.	209-210
International Resistance Co., Philadelphia, Pa.	9
J. F. D. Mfg. Co., Brooklyn, N. Y.	408
Jefferson Electric Co., Bellwood, Ill.	15
Kester Solder Co., Chicago, Ill.	66
Kraeuter & Co., Inc., Newark, N. J.	404
Lenz Electric Mfg. Co., Chicago, Ill.	305
Lifetime Corp., Toledo, Ohio	5

Magnavox Co., Fort Wayne, Ind.	309
P. R. Mallory & Co., Inc., Indianapolis, Ind.	102-103
Meissner Mfg. Co., Mt. Carmel, Ill.	310
Muter Co., Chicago, Ill.	314
National Company, Inc., Malden, Mass.	311
National Union Radio Corp., New York, N. Y.	17-18
Ohmite Mfg. Co., Chicago, Ill.	201
Operadio Mfg. Co., St. Charles, Ill.	68
Oxford-Tartak Radio Corp., Chicago, Ill.	401
Pioneer Gen-E-Motor Corp., Chicago, Ill.	106
Precision Apparatus Corp., Brooklyn, N. Y.	616
RCA Mfg. Co., Inc., Camden, N. J.	701-702
Radiart Corp., Cleveland, Ohio	410
Radio City Prod. Co., Inc., New York, N. Y.	213
Radiotechnic Laboratory, Evanston, Ill.	65
RADIO TODAY, New York, N. Y.	409
Raytheon Production Corp., Newton, Mass.	407
Readrite Meter Works, Bluffton, Ohio	105
Recoton Corp., New York, N. Y.	
Shure Brothers, Chicago, Ill.	8
Simpson Electric Co., Chicago, Ill.	12
Solar Mfg. Corp., New York, N. Y.	207
Sprague Products Co., North Adams, Mass.	302
Standard Transformer Corp., Chicago, Ill.	10
Supreme Instruments Corp., Greenwood, Miss.	24-25
Technical Appliance Corp., New York, N. Y.	
Thordarson Elec. Mfg. Co., Chicago, Ill.	
Tobe Deutschmann Corp., Canton, Mass.	6-7
Triplett Elec. Instr. Co., Bluffton, Ohio	205
Tung-Sol Lamp Works, Inc., New York, N. Y.	27-28
United Catalog Publishers, Inc., New York, N. Y.	306
United Sound Products, Inc., Chicago, Ill.	412
United Transformer Corp., New York, N. Y.	601-602
Utah Radio Products Co., Chicago, Ill.	67
Vulcan Electric Co., Lynn, Mass.	
Ward Leonard Elec. Co., Mt. Vernon, N. Y.	414
Ward Products Corp., Cleveland, Ohio	104
Webster Co., Chicago, Ill.	208
Weston Elec. Inst. Corp., Newark, N. J.	405-406
Wincharger Corp., Sioux City, Iowa	
Wirt Co., Philadelphia, Pa.	13



G. Earle Walker, ably performing as merchandising manager for Crosley.

★ Henry W. Faulstich, who has been with the Grunow organization since 1932, has been appointed chief of the refrigerator engineering staff of General Household Utilities Co.

★ J. P. (Jim) Quam, president of the Quam-Nichols Co., was a recent visitor to the New York trade, calling upon the manufacturers with Milt Schetcher and Bob Breuer, who represent Quam speakers in this territory. Mr. Quam found the set manufacturers working at capacity and took back with him to Chicago substantial orders to emphasize this optimism around the trade.

★ R. B. Karet, director of sales of the wholesale division of the Utah Radio Products Co., Chicago, has been out on the "firing line" several weeks, including in his itinerary Cleveland, Detroit, Pittsburgh and Youngstown. At Detroit, September 4-6, he attended the annual "ham" show, where a complete line of Utah amateur kits was exhibited by the Radio Specialties Co., Utah jobber.

★ Charles B. Shapiro, general sales manager of the Howard Radio Co., is back in Chicago after a trip to the Pacific Coast, where he found Howard jobbers keenly enthusiastic regarding the new line. At San Francisco, the Kaempfer-Barret Corp., and at Denver, the Easy Housekeeping Shop, both report dealer interest in the new products far beyond their anticipation.

★ C. L. Pugh is the new sales promotion manager for Standard Transformer Corp. He has been in radio since 1923, leaves his post as parts manager of Detroit's Radio Distributing Co. for the new position with Stancor.

★ I. Isaacson, of the Rodney Boone organization, New York, recently suffered painful injuries in an auto accident, but is now recovering nicely.

★ Business done by the Wilbur B. Driver Co., Newark, N. J., has been added up for the first half of the year and found to be the best in the firm's history. Sidney A. Wood, sales manager, reports vigorous activity in the electrical appliance, resistance device and radio tube fields.

★ New production facilities have been installed at the Fairbanks-Morse plant in Indianapolis and the company is breaking all previous records in shipping radios. On a recent day, according to W. Paul Jones, general manager of the home appliance division, shipments to distributors in the U. S. and 9 foreign countries passed any previous single-day business in the history of the company.

★ Check-up by Charles Verschoor, president of International Radio Corp., reveals production of Kadette radio to be now at the highest point in history. Orders are currently running 3 times what they were last year, and about 3 times as many persons are employed at the plant as were on the payroll last year. A new addition to the Kadette plant is under construction.

★ Newcomer to the staff of Reiss Advertising, Inc., RKO Bldg., New York City, is Robert A. Burns. Reiss handles advertising for Bruno, Cincin-audagraph, Cornell-Dubilier, Electric Soldering, Hytron, Pilgrim Electric, Presto, Wholesale Radio and Bud Radio.

# QUALITY Proven by actual PERFORMANCE



... in the field  
... year after  
year Radio Service  
Specialists have  
PROVEN the consistent  
superiority of National Union  
tubes. It's this kind of testi-  
mony from the boys on the firing  
line that really counts. When a Na-  
tional Union tube goes into a socket  
the man who puts it there has full con-  
fidence that he's used the finest product  
tube making science can provide.

## FREE SERVICE EQUIPMENT!

### FREE EQUIPMENT

Let N.U. equip your service shop free with your pick of the latest and best radio testers. Free equipment includes: Tube testers, set analyzers, oscillographs, signal generators, modulators, meters and other servicing instruments. In shop equipment items available include stock cabinets, coats, display signs, electric clocks, etc. All items absolutely free the National Union Way.

### THE NATIONAL UNION WAY

Through National Union's help, radio service dealers everywhere have been able to set up better equipped shops to do better work; also to obtain sales helps that produce more customers. National Union has constantly put the latest advances in scientific equipment as well as modern selling aids within reach of the service dealer. The National Union Deal calls for a dealer deposit which is rebated when the specified number of tubes have been purchased. Over 70,000 completed deals. Every dealer should investigate.

**THE ROAD TO BETTER BUSINESS**

1. Full guarantee on highest quality radio tubes.
2. Cut price business not solicited.
3. Price Protection.
4. N.U. jobber stocks are complete...No hunting for odd types.
5. Timely business building aids.

National Union Radio Corporation, RT-937  
570 Lexington Avenue, New York City.

I am interested in the following equip-

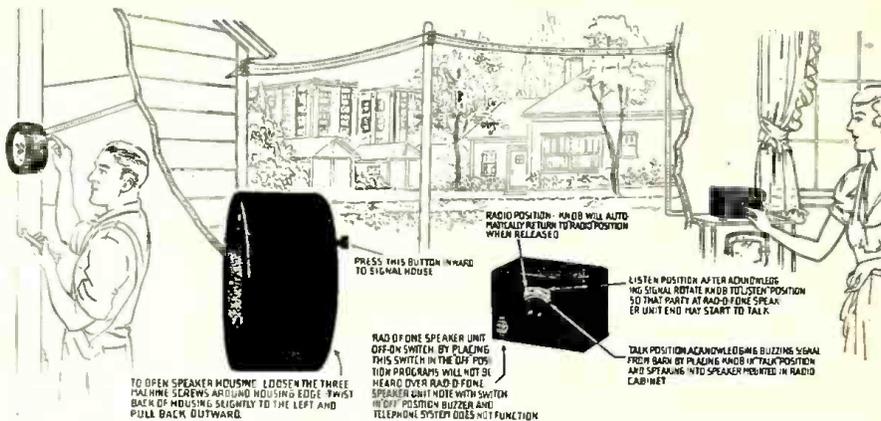
ment .....

Name .....

Address .....

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

## HOME RADIO BECOMES INTER-PHONE



Picture shows method of installing Sentinel's novel new Rad-o-fone kit, by which Sentinel home radio set becomes one end of intercommunicating system, with remote speaker in barn, garage or other distant location, up to 400 ft. Switch handle, when released, automatically returns to "radio" position, in which radio programs can be heard in home receiver as well as remote speaker.

## SHORT WAVES FROM WAR ZONE

★ It's up to the short wave fans on the Pacific Coast to tell the rest of the country what Chinese and Japanese stations are best received. The whole nation is eager for news of the Sino-Japanese brawl.

L. H. Sullivan, RCA executive, in-

vestigated Coast reception and found that these stations are the best bets:

	mega-	
	cycles	
ZBW3—Hong Kong	9.52	2.5 KW
XGOX—Nanking	6.820	0.5 "
	15.16	
JZK—Tokyo	11.80	50 "
	10.70	

## NEW YORK RADIO PARTS TRADE SHOW PROGRAM AT COMMERCE HALL

FRIDAY, OCT. 1

- 8.00 p.m. Technical Session Opens "New RCA Amplifiers and Speakers"—M. M. Brisbin, RCA Mfg. Co.
- 9.00 p.m. "Present and Future Education of the Radio Service Engineer"—John F. Rider, J. F. Rider Publications.
- 10:00 p.m. "New RCA Test Equipment and Methods of Use"—H. S. Schrader, RCA Mfg. Co.

SATURDAY, OCT. 2

- 8.00 p.m. "Transformers and Their Uses"—Robert Kenyon, Kenyon Transformer Co.
- 9:00 p.m. "Application of Amplifiers to Musical Instruments"—Charles Connors, Hygrade-Sylvania Corp.
- 10:00 p.m. "Technical Features of Touch Tuning"—Earl Reihman, General Electric Co.

SUNDAY, OCT. 3

- 2:00 p.m. "Errors on Sweep Circuits and Their Correction"—Bruce Burlingame, Supreme Instruments Corp.
- 3:00 p.m. "Manufacturing Parts, Paging Systems and Amplifiers"—Pere Collison and John J. Wolfe, Stromberg-Carlson Telephone and Mfg. Co.
- 3:30 p.m. "Break-Down of Radio Receiver Troubles and Their Cures"—Robert Herzog, Service Magazine.
- 8:00 p.m. "Modern Test Equipment"—Kendall Clough, Clough-Brengle Co.
- 9:00 p.m. "Selling Sound"—Earl Sandwick, Electro-Acoustic Products Co.
- 9:30 p.m. "Servicing Automatic Tuning"—Charles Gerhard, Philco Radio and Television Corp.

Arthur A. Berard, president of the Sales Managers Club, eastern group, has called a joint meeting of the eastern and western Sales Managers Clubs at 10:30 a.m. Friday, Oct. 1, at the Victoria Hotel.

At the same hour and day, Leslie Rucker, president of the National Association of Radio Parts Distributors, has called a meeting of regional delegates. Membership meeting of the organization is set for 10:30 a.m., Sunday, Oct. 3, also at the Victoria.

Offices of the Radio Parts Manufacturers National Trade Show are now located at 53 W. Jackson Blvd., Chicago.

★ Group of new factory representatives have been announced by Howard Radio Co.; C. C. Smoot, San Francisco, and Wm. P. Swartz, Los Angeles, to cover the West Coast; E. T. Rice, Boston, to handle the New England states; R. B. Nall and Jean Mannion, both of Chicago, to cover the Middle West.

## SELL

### New Moderate-Cost Combinations with Automatic Playing

TAKE advantage of this fine opportunity. The general run of people can afford automatic playing as now placed within their reach by General Industries Record Changer Units. You can make more sales and better profits by installing these units in radio-phonographs to sell at popular prices. Easily done with low labor cost. Dependable for long trouble-free service.

Have You Ordered Your Test Samples?

Shown above, Model "L" Changer Unit. Changes eight 10-inch records or seven 12-inch. Model "K" changes eight 10-inch records and plays 12-inch records changed by band. Please specify exact frequency and current needed for your samples.

The GENERAL INDUSTRIES CO. • 3738 Taylor Street, Elyria, Ohio



### INSIST ON WARD AERIALS!

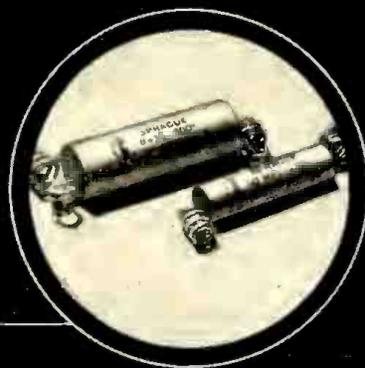
MODEL AL, FRONTIERSMAN Inset MODEL ALT, ALL RANGE

These models may also be mounted in V shape on the car roof. Adjustable—full length! A popular model you can put on in many ways to please ALL customers.

Write for Catalog NOW!

The WARD PRODUCTS Corp. WARD BUILDING CLEVELAND, O.

We're glad most condensers are bought on the basis of hard-boiled engineering tests rather than advertising claims. When quality is allowed to speak for itself there can be no mistaking what it says. That's why *Sprague Condensers* are today specified by leading radio and electrical manufacturers throughout the world.



# SPRAGUE

GOOD CONDENSERS—EXPERTLY ENGINEERED—  
COMPETENTLY PRODUCED

SPRAGUE SPECIALTIES COMPANY, NORTH ADAMS, MASS.

# TODAY'S TRADE TOPICS



## Noise \$ \$ \$ \$

- ★ **AEROVOX** interference analyzer diagnoses noises and recommends exact cures. Only \$7.50 (Serviceman's Net Cost).
- ★ Carry a few **AEROVOX** noise filters. A type for every noise source or for use at set.
- ★ Distribute the new **AEROVOX** Radio Noise folder to set owners. Paves the way for your call.
- ★ Finally, think, talk and sell noise suppression. There's money in it for you.

### New CATALOG . . .

Just issued. 32 pages. Entire section on noise suppression. Ask your jobber or write us direct for copy.



A group of South American boxers were recently guests at the Zenith plants, Chicago. Left to right, Maurao Russell, Brazil; Paul Bryant, assistant to Zenith president; Arquimedes Romdini, Uruguay; and Alberto Festall, Buenos Aires. Back to each country went a new receiver.

★ Sprague Products Co., North Adams, Mass., has announced a price slash on their TC tubular condensers. Net prices of 15c have been reduced to 9c on condensers from .0001 mfd. to and including .01 mfd., and other price cuts have been announced. Salesmanager Harry Kalker states that the reduction enables service-

men to use the product on every replacement job.

★ Ralph J. Orner, active in radio engineering since 1930 when he worked with DeForest, has been named chief radio engineer for General Household Utilities Co., by W. C. Grunow, chairman of the board.

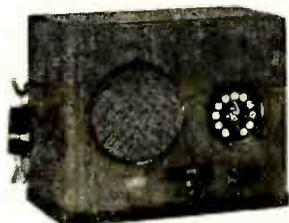
★ Two new sales representatives have been appointed by Emerson Radio & Phonograph Corp., to call on distributors and to aid the jobber in his promotion work with the dealer. Harry Elkan will cover the area of Westchester County, N. Y., Altoona, Pa., and the state of Virginia. Carl Lewis will operate in North and South Carolina, Georgia, Alabama, Florida and Tennessee.

★ H. C. Bohack Co., Inc., Brooklyn, N. Y., operators of 28 retail radio and accessory stores in the area, have started a drive on Fairbanks-Morse radios. Campaign will feature newspaper ads, store displays, and display ads on the delivery trucks of the 600 Bohack food stores. A. J. Steffens, Bohack exec, is supervising the event, with the help of FM district manager, Henry L. Bear.

★ The huge daylight factory of Ruralite Engineering Co., Sioux City, Iowa, is now being equipped to produce 200 Ruralite units per day. According to Jimmie Jones, president of the concern, the volume of recent orders for Ruralite wind chargers is the basis of the current expansion. The company has noticed lively demand for each of its 3 sizes of chargers, the Junior and the Senior, which are 6-volt units, and the new "1000" model which has an output of 1,000 watts—32 volts.

★ Norman A. Triplett, of the Triplett Electrical Instrument Co., Bluffton, Ohio, and Miss Marjorie Hofer of that city were married at the local First Presbyterian church Aug. 1.

## Cash in ON A WINNER



**TOKFONE Master Unit**

**Tokfone**—adaptable to meet all requirements—from 2 to 40 stations—Systems are Wired or Wireless—Tu-way communication can be carried on without the use of a talk-listen switch. . . . *No Fancy Prices—All Net—All New Merchandise—No Preferences—No Tricks—No Makeshifts—Special Units If Necessary—No Quotas—No Contracts—Buy Them As You Need Them—Manufactured in Our Own Factory—We Stock Them—Beautifully Hand Rubbed Cabinets.*

Communication between master station and any remote station in which any remote station can call the master, and the master is the only one that can call all remote stations separately, or altogether. Master comes equipped with Earphone. Works on AC-DC current. List Price \$47.50 for 1 master and 1 Remote and 50 ft. wire.

**\$12.95 Net**



**TOKFONE Remote Unit**

Wireless communication two way station to station only without the use of wires. Ideal for the home, office, shipping department, doctors, factory or any place requiring station to station communication. Works on AC-DC current. List Price \$69.50 per pair.

**\$17.50 Net**

We also Manufacture P.A. Equipment in the following sizes: 6, 12, 15, 30, 60 Watt—Amplifiers—Parts used are: Aerovox-Thordarson—I.R.C.—Parmet-Rola-Clarostat-Eby and Holyoke—Nothing but the best.

**CATALOG NOW ON PRESS VISIT OUR SHOW ROOM DISPLAY**  
Licensed, By Agreement with Electrical Research Products, Inc., Under Patents Owned or Controlled By Western Electric Co. and American Telephone and Telegraph Company.

**REGAL AMPLIFIER MANUFACTURING CORP.**  
14-16 WEST 17th STREET NEW YORK CITY

# There's a 'NEW DEAL' in EQUIPMENT DEALS!



**QUICK DELIVERY  
TO YOU!**

**SMALL DOWN  
PAYMENT**

**TUBES AT STANDARD  
LIST PRICES**

**ARCTURUS  
HELPS YOU SELL**  
The finest line of dealer helps  
on the market today...  
Write for descriptive catalog.

**ARCTURUS makes it easier than ever before to obtain up-to-the-minute shop equipment! . . . .**

Here is your chance to keep your shop absolutely up-to-date with standard equipment. The new ARCTURUS PLAN makes it possible for you to get the equipment you need, even the most expensive unit—and get it quickly, with only a small down payment.

**AND REMEMBER**—when you buy ARCTURUS TUBES under this plan you pay STANDARD LIST PRICES, less standard discounts. We haven't added one cent extra. This means that ARCTURUS offers a sensational Equipment Deal and **STILL SELLS TUBES AT STANDARD PRICES!**

The small monthly tube requirements make it easy for you to own this equipment. Some deals require the purchase of less than one tube per day! No need to "oversell" yourself on tubes.

Equipment offered includes Tube Testers, Set Testers, Oscilloscopes, Analyzers, Signal Generators, Combination Unit Assemblies, Portable Typewriters, a Genuine Neon Sign and a long list of other high quality shop equipment.

**MAIL THIS COUPON FOR DETAILS**

Arcturus  
Radio Tube  
Co., Newark,  
New Jersey.

Gentlemen:  
Send complete details of your new Equipment Deal.

- I am a Dealer
- I am a Serviceman

# ARCTURUS

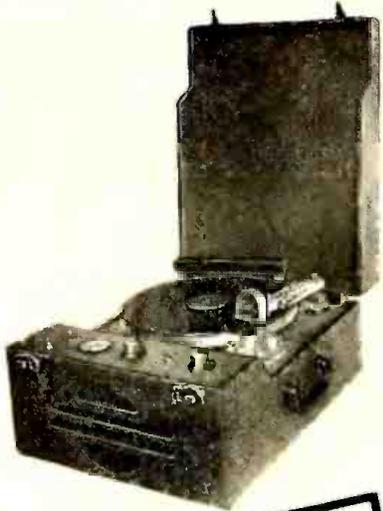
**INDEPENDENT TUBES FOR DEALERS WHO  
DO THEIR OWN INDEPENDENT THINKING**

Name .....

Address .....

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

T-1



**NEW PRESTO  
SOUND RECORDER  
RETAILS AT \$149**

Distribute some literature on this new instrument.

You will be surprised at the interest in home recording among your own customers.

A supply of 3 1/2" by 6 1/2" folders will be sent you free upon request.

**PRESTO**  
RECORDING CORPORATION  
137 West 19th Street, New York, N. Y.



President S. I. Cole of Aerovox is host at a Maine outing: left to right, bottom row, Howard Rhodes, Aerovox; Bert Champlain, Tury Durin Co.; Walter Lasker; Charley Golenpaul, Aerovox; Aaron Lippman. Back row, Jack Simberkoff; Lew Hatry, Hatry & Young; Fred Ellinger; Harry Gerber; S. I. Cole; Morris Green, Radio Electric Co.; Bill Schoning, Lukko Sales; Hall Gayhart, Radio Parts. In the rear, Jules Beneki.

★ Detrola Corp., Detroit, Mich., makers of Detrola radio and refrigerators, have moved to a new modern plant which covers 7 acres of ground and which will allow the firm to meet greatly increased production schedules. Detrola has recently announced its new policy of national distribution through distributors and dealers, and will continue its expansion.

★ Standard Electrical Products Co., St. Paul, Minn., now occupy new offices and factory at 317 Sibley St. Company is developing and will soon begin production on a line of variable voltage transformers for industrial and laboratory use. Trade name for all products is Starco.

★ Covered Wagon Co., Mt. Clemens, Mich., manufacturer of trailers who have made one specially designed for RCA, report that following the wide use of the trailers by distributors there is now a lively interest among dealers.

★ A service organization which contacts 1,500 small town newspapers throughout the U. S., has been employed by International Radio Corp. to offer to dealers, through local newspapermen, mats of ready-made dealer Kadette ads. This move supplements Kadette's regular mat service through jobbers.

★ Alfred Crossley has been named as special consulting engineer for Belden Mfg. Co., Chicago. Crossley has been active in radio for more than 25 years; he has had experience with several large radio firms, was formerly a U. S. Naval radio officer, and is a holder of patents here and abroad. Belden and its new appointee are working on the design and production of advanced types of aerial systems and transmission lines.

★ Wincharger Corp. has announced a new sales set-up on 32-volt, 650-watt giant Winchargers. To act as dealers, Wincharger Service Stations are being authorized all over the nation, under a new system which has hiked the profit involved in selling the equipment. The giant chargers are merchandised as complete farm power plants which provide enough power to light a house, barn and out-buildings, as well as to run radio, washer, vacuum, iron, water pump, small motors and other appliances. Wincharger officials recently found that in the 30-day period ending Aug. 15, sales of these chargers were unprecedented.

## 110 VOLTS AC ANYWHERE

### KATOLIGHT, JR., AC PLANTS

Sells itself! 55 pounds. Self-cranking 300 watts, and rope-cranking 350 watts. Also 6, 12, 32 and 110 volts DC.

### 300 TO 10,000 WATT AC PLANTS

Specially designed for sound-truck, amplifier, P.A., radio and other work. Self-contained. Self-cranking by connecting to auto batteries.

### DIESEL PLANTS

Full Diesel AC & DC plants. 2, 3, 5, 6 KW sizes.

AC, DC Generators, Rotary Converters; DC Plants; Windmill Lighting Plants.

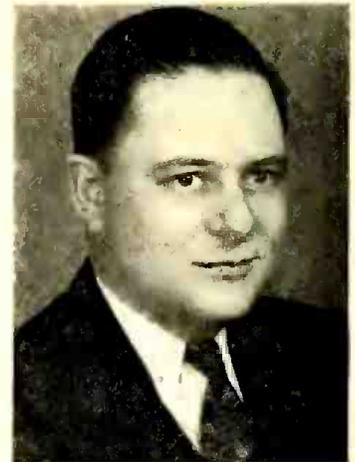
Dealers, Jobbers, write for details and discounts

## KATO ENGINEERING COMPANY

MANKATO, MINNESOTA, U. S. A.



NEW YORK OFFICE: 259 WEST 14TH ST.  
CHelsea 2-7330



Clarion Corp. has named Lloyd A. Gerstenberger district manager for Iowa and Nebraska areas.



"Gene" Carrington, veteran sales exec, has joined Clough-Brengle, to head a new division soon to break.

★ Wholesale Radio Service Co., 100 Sixth Ave., New York City, has announced a "best letter" contest in which \$1,000 in merchandise vouchers will be given away. Contest ends Oct. 31. Letters are to be written on "Why I Have Found the Wholesale Radio Service Catalog Valuable," and will be judged by Joseph Reiss, president, Reiss Advertising agency; Lawrence Cockaday, editor, Radio News, and Dr. O. H. Caldwell, former Federal Radio Commissioner and editor of RADIO TODAY. First prize will be \$250; second, \$150; third, \$100, and 50 other prizes of \$10 each.

★ Wright-DeCoster of St. Paul, Minn., have published a bulletin (A16) on "Methods of calculating load impedance and power division for multi-speaker installations." Free to sound men upon application.

★ Opening 3 additional offices during the first two weeks of September, C.I.T., national sales finance company, will have 195 local offices operating in the United States and Canada by the middle of that month. Most recent openings are in Fayetteville, N. C., Johnstown, Pa., and Midland, Tex. Canadian Acceptance Corp., the C.I.T. affiliate, now has 15 local offices since the addition of one in Edmonton, Alberta. The other 180 C.I.T. local offices are all in the United States. Marked increase in offices is due to the greater dealer interest in the C.I.T. Budget Plan for their installment sales and C.I.T.'s policy of affording localized service with national strength. Among the C.I.T. local offices opened in August were those at Corpus Christi, Tex., Quincy, Ill., Long Beach, Cal., Green Bay, Wisc., El Dorado, Ark., and Flint, Mich. Offices opened since June 1st include Decatur, Ala., Stamford, Conn., Twin Falls, Idaho, Asbury Park, N. J., Shreveport, La., Presque Isle, Me., and South Bend, Ind.

## THE 1938 CHALLENGER LINE of



### The Greatest Line in Grebe's 25 Year History!

In its long history of radio manufacturing, Grebe has given the trade many outstanding lines. But, nothing like the present one! Pictures and words cannot do it justice. You'll be thrilled by the beauty, the marvelous new dial, the superb tone quality and the easy selling of the new Challenger line.

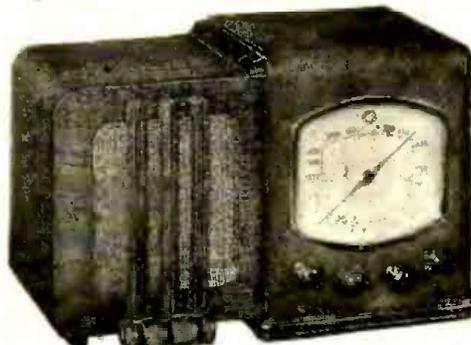
Modern to the minute in styling and features, the new line gives you everything that a winning line should have. No experiments or tricky innovations; no disappointed customers. Every Grebe owner is a Grebe salesman. Every Grebe set will uphold your name and ours.



MODEL 3016-4 AUTOMATIC. 16 tube A. C. superheterodyne with automatic tuning. 3 Bands 13-41 meters, 40-130 meters and 173-555 meters. Tunes American, foreign, amateur, aviation and ships at sea. Handsome walnut cabinet, size: 45 inches x 28 inches x 16 3/4 inches.

### Get the Grebe Line NOW, Before it is too late!

Distributors and dealers are urged to wire or write for full details of the line. Learn all about Grebe's liberal dealer policy, liberal discounts, and the exclusive franchise that protects every dealer, giving him the full benefit of his effort. Find out about the Grebe cooperative plan of local advertising.



Model 206-L. 6 tube A. C. Superhet 2 bands covering 17 to 53 and 173 to 555 meters. Cabinet in Walnut or Ivory trimmed with Gold. Size 10 1/4 inches x 16 3/4 inches x 8 3/4 inches.

### THE LINE IS COMPLETE

Over 50 models, from 5-tube compacts to 16-tube automatic combinations. AC—AC-DC—Battery sets. Radio phonograph combinations. 1 to 5 band short-wave and broadcast sets, some including European long-wave.

### MAIL COUPON TODAY

GREBE MANUFACTURING COMPANY,  
119 Fourth Avenue, New York, U.S.A.

Send full details of 1938 Challenger Line.

Name .....

Street .....

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

I am ... Dealer ... Distributor

◆ The World Knows No Higher Standard Than Grebe Quality ◆

## JANETTE ROTARY CONVERTERS

### FOR CONVERTING DIRECT TO ALTERNATING CURRENT

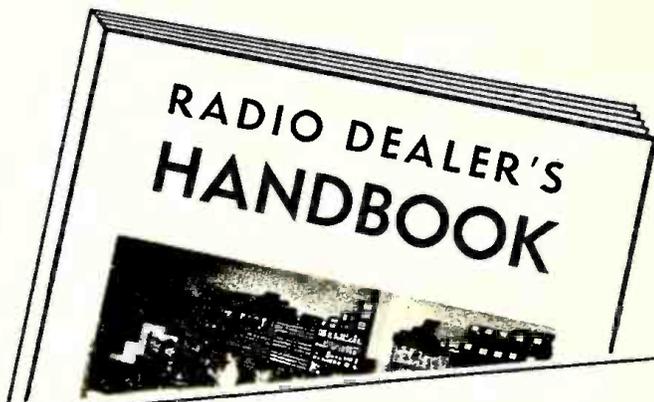


● Built in capacities from 35 to 3250 volt amperes—with or without all wave filters. Dynamotor construction—economical to operate—ruggedly built for years of trouble-free service—used or recommended by the largest manufacturers of sound apparatus—in use in all countries of the world—Send for prices and data.

Janette Manufacturing Company

556-558 West Monroe Street Chicago, Ill. U.S.A.

BOSTON - NEW YORK - PHILADELPHIA - CLEVELAND - MILWAUKEE - LOS ANGELES  
DETROIT - SEATTLE



**THIS HANDBOOK  
is a MONEYMAKER  
for DEALERS and is  
absolutely FREE**

Vital Merchandising Data and Helpful Selling Hints Condensed Into One Handy Pocket Manual

**T**HE industry's No. 1 magazine—**RADIO TODAY**—now offers you a valuable PLUS service, one that will help make your sales-work more effective and increase your profits.

Every monthly issue of **RADIO TODAY** gives you a tangible and timely magazine service, with special attention to merchandising matters, but you also need reference material of the kind that appears in the Radio Dealers' Handbook. It will cut waste time, put an end to needless troubles and prevent the loss of sales.

The Handbook is sent **FREE** as an extra service with new subscriptions or renewals to **RADIO TODAY**. It is not **SOLD** and is obtainable in no other way. In addition, you will receive, free, two issues of *Selling Sound*—

**SOME OF THE FEATURES:**

- Set Specifications • Trade-in Allowances • Cost of Doing Business
- Table of Salesmen's Wages • Markup Table • Calendar of Selling Opportunities •

a new promotional magazine and handbook of sound, published semi-annually as a separate section of **RADIO TODAY**.

Sound is no longer a radio sideline. It is a major specialty. If you are not selling sound, but planning to do so, this new all-sound magazine will help you get started. If you are already in the business, *Selling Sound* will help you tremendously.

**ORDER AT ONCE • EDITION STRICTLY LIMITED**

Enter your subscription now and you will receive the greatest bargain in radio publishing.

[ 1 Issue of **RADIO DEALERS' HANDBOOK**  
2 Issues of **SELLING SOUND**  
12 Issues of **RADIO TODAY** ] **→ \$100**



Tube huddle—left to right, M. H. Willis, pres., Spokane Radio Co.; Paul Ellison of Hygrade; and A. F. "Speed" Horton, also of Spokane, Wash.

★ National advertising campaign of \$100,000 proportions has been undertaken by Wincharger Corp., Sioux City, Iowa. Designed to sell new battery radios to the farm market and intended to send prospects direct to radio dealers, the ads will accent "new worlds of radio enjoyment open to farmers, with the new 6-volt battery radios powered by Wincharger." They will appear in farm papers, radio publications, local newspapers, direct mail, state, county and local fairs and consumer exhibits. Ads in 2,522 local newspapers will read "clip this ad . . . it's worth \$7.50 on the purchase of a new farm radio equipped with Wincharger."

★ New radio shop at 2406 10th Ave., N., Seattle, Wash., has been opened by H. Cohen.

★ Printed in digest form and mailed bi-monthly free of charge is a new magazine released by Cornell-Dubilier Elec. Corp., South Plainfield, N. J. Titled "The C-D Condenser" the new publication will carry a lively series of features of interest to servicemen, amateurs, engineers and experimenters.

★ Fred E. Stable, Inc., Denver, Colo., has been named as sales representative for Allen B. DuMont Laboratories, Upper Montclair, N. J. Stable will handle the DuMont line of cathode-ray tubes, oscillographs, etc., in the sales areas of Wyoming, Colorado and New Mexico. DuMont recently displayed their resonoscope at the New York City convention of the National Association of Music Merchants and attracted great attention in the musical world with the cathode-ray pitch indicator. Lester B. Holmes, DuMont engineer in charge of the display, reports a new pitch-consciousness among musicians.

★ Entire personnel of Ward Products Co., Cleveland, were recently treated to a full day frolic at Willo Beach, on Lake Erie. Three hundred of the "aerial makers" enjoyed games and contests at this the first of a series of annual picnics.

★ Newcomer to the sales staff of Northern Radio Co., Admiral jobbers of Seattle, Wash., is C. W. "Wes" Ball, a vet radio man who will call on the trade in western Washington.

*Meissner*

## WAVE TRAPS

Meissner Wave Traps are standard in many De Luxe custom built receivers. Catering to the world's largest set manufacturers, and working in close harmony with their laboratories, we offer here the finest in Wave Traps.



### DUAL UNIVERSAL MODEL

The only wave trap that will eliminate both channels of interference at the same time. . . . I.F. & BROADCAST INTERFERENCE. Tunes from 400 to 1950 Kc. Easily adjustable for quick changes.

Cat. No. 8048 \$2.65  
List Price . . . . .

### DUAL BROADCAST ONLY MODEL

Similar to above except to be used for broadcast only, where the signal strength of the interfering station is unusually large.

Cat. No. 8478 \$2.65  
List Price . . . . .



### DUAL AMATEUR MODEL

Designed to eliminate interference from Amateur stations. It will eliminate any two amateur bands at the same time. Either 40 & 80 or 40 & 160 meters.

Cat. No. 8148 \$2.65  
List Price . . . . .



### STANDARD WAVE TRAP MODELS

These traps are designed for use where a specific coverage is required. There is a trap for every purpose from I.F. to 20 meter band. Because of low price they are ideal for low priced receivers.

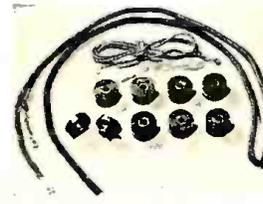
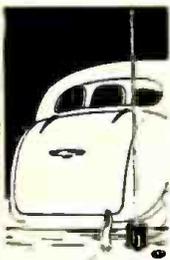
- LOW FREQUENCY MODEL—400 to 700 Kc.—Cat. No. 8479
  - MEDIUM FREQUENCY MODEL—650 to 1000 Kc.—Cat. No. 8480
  - HIGH FREQUENCY MODEL—950 to 1600 Kc.—Cat. No. 8481
  - 20 METER MODEL—14.43 to 13.95 Mc.—Cat. No. 8482
  - 40 METER MODEL—7730 to 7000 Kc.—Cat. No. 8483
  - 80 METER MODEL—4350 to 3610 Kc.—Cat. No. 8484
  - 160 METER MODEL—2100 to 1713 Kc.—Cat. No. 8485
  - 456 Kc. I.F. MODEL—Cat. No. 7518
- ALL STANDARD MODELS \$0.85  
LIST PRICE . . . . .

**MEISSNER MFG. CO.**  
Mt. Carmel Illinois

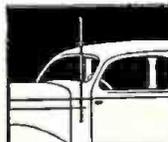
## J.F.D. AUTO RADIO ANTENNAS

### 13 MOST POPULAR TYPES

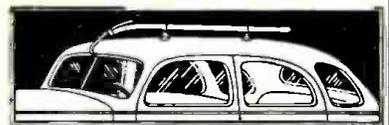
Double grip all rubber covered running board antennas. . . . Cowl antennas. . . . Four different toppers—fit all cars. . . . Door hinge antennas. . . . Bumper antennas. . . . Special insulators for Oldsmobile and Buick cars.



Ask  
for Our  
Complete  
Catalog



**J. F. D.**  
**MANUFACTURING  
COMPANY**  
4111 Ft. Hamilton Parkway  
Brooklyn, N. Y.



# NEWS AT WHOLESALE

## JIM QUAM

*Says*



You parts dealers have quite a job on your hands at that. I listened in on some over-the-counter talk today. What impressed me was that you fellows not only carry a few thousand items on your shelves, but a selling talk for each one in your heads. When someone asks for a brand you don't stock, you've got to be an orator, a technician and a diplomat—all rolled into one. Then if something goes wrong with the brand you recommended, you give your talk all over again—only it has to be twice as good!

It made me feel glad we make speakers like we do. I KNOW that any dealer can stake his reputation on Quam speakers—and make friends in the bargain.

**QUAM-NICHOLS CO.**

33rd Place & Cottage Grove CHICAGO 1674 Broadway NEW YORK



## PARTS-JOBBERS' PRESIDENT BACKS SINGLE-LINE IDEA

★ "In answer to RADIO TODAY's question, 'Should the radio parts jobber push only one line?' it is my emphatic personal belief that the most successful road to follow is to definitely concentrate all efforts behind one product," declares Leslie C. Rucker, parts jobber of Washington, D. C., and president of the new National Radio Parts Distributors' Association.

"If we are selling the best there is no reason for us to sell a second best, because then we only cut down on the turnover on our first choice. If we do find it necessary to carry a second line of a real low price type of merchandise then I definitely feel that the smallest possible quantity should be stocked in order to 'have it' but not to 'push it.'

"After all, profits are made through turnover, and turnover is gained through buying and selling; therefore, if we concentrate our efforts behind one name, one product of a kind, one inventory and continually buy and sell that product, believing that we are handling the best that money and science can build, then we are very definitely on the road to bigger and better profits."



John F. Ditzell, left, who is Stewart-Warner's radio and refrigerator sales manager, presents the 1937 executive award for radio sales accomplishment to L. M. Stratton, Jr., of Stratton-Warren Hdw. Co., Memphis, Tenn.

★ R. H. McMann, Inc., Westinghouse jobber, attracted wide attention recently in the New York metropolitan area with a 2-day showing of 1938 Westinghouse radios, Proctor appliances, 1900 washers, etc. On the first day, the show was staged at the Hotel Astor, New York City; the second event was held at the Hotel St. George, Brooklyn, N. Y.

★ At C. M. McClung & Co., the Knoxville, Tenn., jobbers for Fairbanks-Morse, Ken W. Shirlev has been appointed dealer sales councillor for the McClung refrigerator territory.

★ Additional new jobbers for Admiral have been announced by Continental Radio & Television Co. These include Henderson Bros., Sacramento, Calif.; Southwest Radio & Equipment Co., Oklahoma City, Okla.; MacIntosh-Imput, Inc., Portland, Me.; Haw Hardware Co., Otumwa, Ia.; and Capital Radio Wholesale Co., Washington, D. C. The Admiral distributor at Flint, Mich., the Radio Tube Merchandising Co., has been given additional territory including several counties in central Michigan and Lansing. This firm recently held a big dealer showing.

★ Added to the personnel of Valley Radio Distributors, the Clarion jobbers of Appleton, Wisc., is Val Preissner, in the wholesale service department. Company also has a new secretary, Miss Ziechert.

★ Pitt Appliance Co. is the new firm formed to distribute Grunow products in the Pittsburgh, Pa., area. Pitt Co. is headed by J. P. Miller, who has been in charge of the branch of General Household Utilities Co. formerly serving the territory.

★ Over 700 Massachusetts radio dealers went to the big Magic Keyboard show staged recently by Hunt-Marquardt, Inc., the Boston, Mass., jobbers for Stewart-Warner. Meeting turned out to be one of the liveliest affairs of the season.



**LOWEST PRICES**

**GUARANTEED QUALITY**

**FASTEST SERVICE**

1938 Radolek Radio Profit Guide contains complete showings of Radio Repair Parts, Radio Receivers, Public Address Amplifiers, Speakers, Microphones, Test Instruments, Technical Books, Special Tools. Leading Standard Brands! Everything you need in the Radio Business all at Lowest Prices. You save money at Radolek!

Every item you get from Radolek is guaranteed. It must be right or we make it right. Standard merchandise produced by leading Manufacturers with Radolek's guarantee added!

Everything in Radio promptly when you want it—and exactly what you want. Radolek's efficient organization insures you the fastest service in the Radio Business. 25,000 Servicemen depend on Radolek service and benefit by Radolek's LOWEST PRICES. Radolek Radio Profit Guide will help you make money.

**RADOLEK**

601 W. Randolph, Chicago, Dept. D-11  
Send me the 1938 Radolek Radio Profit Guide FREE.

Name \_\_\_\_\_  
Address \_\_\_\_\_  
Serviceman?  Dealer?  Experimenter?

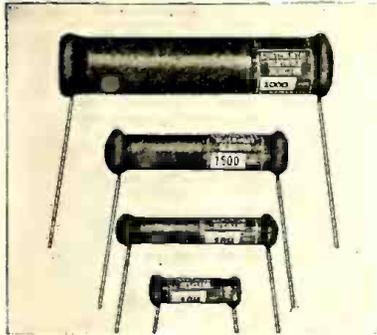
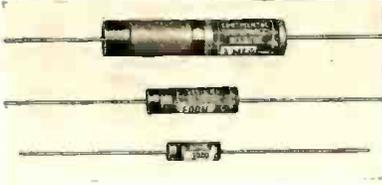


Touring the nation from Noblitt - Sparks' headquarters at Columbus, Ind., a trim trailer becomes a factor in new-style merchandising.

# Quiet, Insulated, and Reliable RESISTORS

CONTINENTAL CARBON bakelite insulated resistors are impervious to moisture, conveniently small and noiseless in high gain circuits. They are recommended for use in compact amplifiers and radios.

M3, 2" x 1/2" 3 Watt, \$.30  
M1, 1" x 3/8" 1 Watt, .20  
M 1/2, 3/8" x 3/8" 1/2 Watt, .17



CONTINENTAL CARBON ceramic insulated resistors have withstood the tests of time in actual service. Where space permits, ceramic insulated resistors are recommended for the utmost in stability and long life. In close tolerance applications, these resistors are the choice of leading test instrument manufacturers of precision equipment and meters.

H5, 3" x 1/2" 5 Watt, \$.50  
E2, 2" x 3/8" 3 Watt, .30  
D2, 1 3/4" x 1/4" 1 Watt, .20  
G4, 1" x 1/4" 1/2 Watt, .17

Send for Bulletins 104B, 105, 103A, and 101A

## CONTINENTAL CARBON Inc.

13910 LORAIN AVENUE, CLEVELAND, OHIO  
Also Toronto, Canada

*Money Talks*



● But so does the Spieler — reels and realms of talk — even expensive printed talk won't make pretty do as pretty says. It's results that count. Play Safe — Buy Exact Duplicate Radiart Replacement Vibrators from your Dependable Radiart Jobber.

# TRIAD

TRIPLE CHECKED  
RADIO TUBES

IMPROVE YOUR RECEPTION

Used by Leading Set  
Manufacturers and  
Preferred by Expert  
Servicemen.

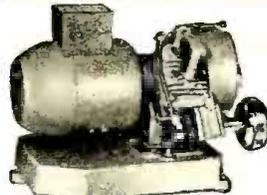
A PROFITABLE LINE TO HANDLE  
Write for Particulars

TRIAD  
MANUFACTURING CO.  
INCORPORATED  
PAWTUCKET RHODE ISLAND

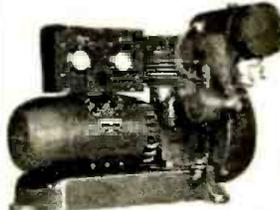
*The Quality Name in Radio Tubes*

# "PINCO"

THE ONLY  
COMPLETE  
GAS-O-LECTRIC  
POWER PLANT  
LINE



RED TOP  
COMBINATION A.C.-D.C.  
POWER PLANT



GOLD CROWN  
HEAVY DUTY  
POWER PLANT

## Cash in on this Market

Here is an exclusive dealer-jobber line of portable electric light, power and battery-charging plants, priced for quick sale and big profit. "PINCO" combination AC-DC and DC RED TOP and GOLD CROWN heavy duty power plants are a necessity for millions of farms, homes, industrials, etc., where "city" electricity is not available. Provide instant power for lights, radios, electrical equipment and appliances. Now is the time to cash in on this waiting market. Write for literature and discounts.

One Line for  
Every Requirement

"PINCO"—the only complete power plant line! Full price range; 100 to 2000 watts; alternating or direct current; air or water cooled; remote control; filter and ignition shielding; push button starting.

PIONEER GEN.-E. MOTOR CORPORATION  
Dept. No. R-21, 466 West Superior Street, Chicago, Illinois

Please send me complete information on:

"RED TOP"  "GOLD CROWN"  Converters  Dynamotors

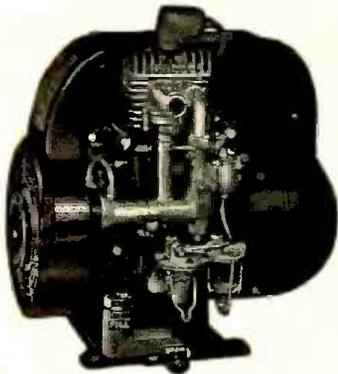
Name .....

Address .....

City .....

## ONAN ALTERNATING CURRENT PLANTS

operate **AC RADIO, PUBLIC ADDRESS, SOUND CAR** and **MOTION PICTURE EQUIPMENT** . . . . .



These **PLANTS** supply electricity for Domestic and Commercial places where current is not available. Operate Water System, Refrigerator, Household Appliances.

**SIZES TO SUIT EVERY PURPOSE:** Operate on Gasoline, Gas or Distillate. Sizes 350 to 50,000 watts, \$110 and up. Also 6, 12, 32 and 110 volt, DC Models. All Models furnished complete, ready to run. Write for Details.

**D. W. ONAN & SONS**  
577 Royalston Ave. Minneapolis, Minn.

## Quick-Touch DIAL 1938 KNIGHT 5 TUBE SUPERHET



**A REAL LEADER!**

Here's a new set that's perfect for a price-leader! An amazing Performer with latest features. New Quick-Touch Dial!—tunes 12 stations in 12 seconds! R.C.A. and Hazeltine licensed 5-Tube AC Superhet circuit. 4½" full-vision dial. Tone control, A.V.C., etc. Gets police calls. Priced low to sell. See this set and 64 other new 1938 KNIGHT "Extra-Value" Radios in ALLIED's new 1938 Catalog—just out. Investigate this great line of radio profit-makers today!

### New RADIO SUPPLY GUIDE Just Out!

Write for the new 1938 ALLIED Radio Catalog—your COMPLETE Buying Guide. 164 pages packed with Everything in Radio! Over 12,000 parts, latest test equipment, new KNIGHT Integrated Sound Systems, books, tools, etc. All standard lines at prices that save you money. Send coupon now!



ALLIED RADIO CORP.  
Dept. 15J-8, 833 W. Jackson Blvd.  
Chicago, Ill.  
 Send your FREE new 1938 Radio Catalog.  
Name .....  
Address .....  
City ..... State .....



H. W. Forman, Pittsburg, Kan., jobber, who supplied winner G. F. Chastain in Raytheon's recent contest for servicemen.

★ E. Garnich & Son Hardware Co., Ashland, Wisc., jobbers for Fairbanks-Morse, have announced the addition of Ben Stoltzman as specialty man.

★ Appointed by J. H. Larson Co., the Hudson, Wisc., jobbers, to handle the company's operations in Eau Claire, Wisc., is E. E. Miller.

★ Hudson Valley Asbestos Corp., Albany, N. Y., distributors for Stromberg-Carlson, have completed a successful trailer sales tour among dealers in eastern New York. "Bill" Fraser, Stromberg field engineer, accompanied the trailer. Mr. Pursel, Hudson Valley president, reports that the tour opened several new dealerships, and also that there's a trend to higher-priced models.

★ Four new distributors have been announced by Detrola Radio Corp., Detroit, Mich.: Elliott-Lewis Elec. Co., Inc., Philadelphia, Pa.; Emmons-Hawkins Hardware Co., Huntington, W. Va.; Refrigeration and Appliance Corp., Cleveland, Ohio; Sanford Corp., New York City. Lively activity on Detrola lines is scheduled for these areas, with emphasis on the company's special electric tuning.

★ Two new accounts who have recently lined up with Arvin are A. Baldwin & Co., New Orleans, La., and A. S. Hatcher & Co., Macon, Ga. Also, to distribute Arvin throughout the north Alabama area, The Radio Elec. Co., Montgomery, have opened a store at Birmingham. New models are being added to the Arvin line of home sets and a big Fall campaign is under way in national magazines.

★ Two new salesmen have been added to the sales staff of Dakota Radio Corp., the Yankton, S. Dak., distributors for Sparton, Clarion and Wilcox-Gay.

(To page 78)

## CINAUDAGRAPH

# Speaker



## CINAUDAGRAPH Magic Magnet Speakers

—extensively utilized by all leading radio receiver and P. A. equipment manufacturers—are available in a complete range of sizes from 5½ to 18 inches, to meet your every radio requirement.

If you demand utmost dependability and fidelity of reproduction from your equipment—in-  
sist on Cinaudagraph P. M. speakers. Carried in stock by all progressive distributors. Free descriptive literature on request.



**CINAUDAGRAPH CORPORATION**  
Speaker Division • Stamford, Conn.



## PROFITABLE

### Install Under Each Turntable a Strong Silent Salesman

**I** NSTALL the kind of phonograph and radio-phonograph motors that YOU like. The kind that invite inspection—that you can talk up and sincerely promise to give superb service. General Industries FLYER Motors, famous for smooth, steady, unwavering operation, independent of variations in record drag and regardless of pickup weight. Providing accurate playing of fine records to the complete satisfaction of most critical listeners. Noiseless—completely free from motor whir or hum. Precision-built for long trouble-free service.

General Industries governor-controlled, induction type, self-starting Flyer Motors have every newest modern electrical and mechanical advantage. Backed by over 30 years of success in designing and building specialized precision-built phonograph motors—more than a million sold. AC, DC or universal AC-DC types for all commercial voltages and frequencies.

{Have You Made Your Tests?

Order a sample now, for a thorough testing. Please be sure to specify exact voltage and frequency of current you use.

**The GENERAL INDUSTRIES CO.**  
3738 Taylor Street, Elyria, Ohio

# Announcing THE NEW RIDER MANUAL

The Greatest



**ADVANCE SALE** of any RIDER MANUAL

Enthusiastic ordering even before it was published, that is the story of Volume VIII, out November 10th. Jobbers ordered heavily merely from a description of its contents. They visualized the value of the "plus" services which it offered to servicemen.

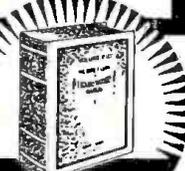
**VOLUME VIII IN TWO SECTIONS**

1. **MANUAL:** Over 1600 pages giving complete circuit information on 1937-38 models of over a hundred manufacturers.
2. **INDEX:** Of about 118 pages makes it easy to quickly find the data in all eight Rider Manuals.
3. **"HOW IT WORKS":** A separate section giving a description of the Technical Features of new sets, such as A. F. C.—motorized tuning, etc.

**PRICE \$10.00**  
**ORDER TODAY FROM YOUR JOBBER**

**JOHN F. RIDER, Publisher,**  
1440 Broadway, New York

**VOLUME VIII**  
*Rider*  
**MANUAL**  
OUT NOVEMBER 10TH

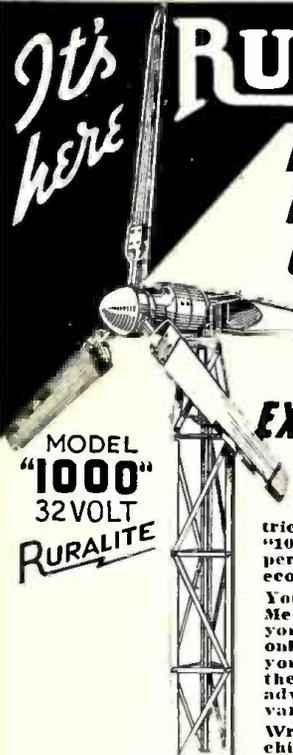


**OVER 1600 PAGES**  
**PLUS THE NEW SUPPLEMENT**

*It's here*

# RURALITE

**LEADERSHIP IN  
DEALER PROFIT  
QUICK TURNOVER  
FINER  
QUALITY  
EXCLUSIVE TERRITORY**



MODEL "1000"  
32VOLT  
RURALITE

You will search in vain for a more efficient and more economical 32-40-volt wind electric plant than the Ruralite Model "1000." No charger at any price performs so nicely and operates so economically.

You naturally want to sell Quality Merchandise with genuine pride, so you'll want to sell Ruralite. The only 1000-watt charger that gives you the height of quality and all the new worthwhile wind-electric advancements with the added advantage of low price.

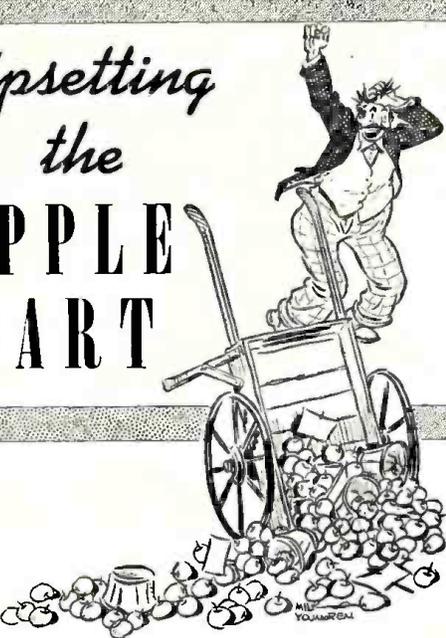
Write for exclusive territory franchise Today—tomorrow may be too late.

Wherever there's a windmill, you'll find a prospect for Ruralite.

**Write**

**RURALITE ENGINEERING CO., SIOUX CITY, IA.**  
for literature and information on 32-volt and 6-volt Ruralite chargers.

# Upsetting the APPLE CART



"Who'd'y' meon — upsetting the apple cart?"

No! Stancor is not upsetting prices, for the Stancor price policy is firm. Stancor often gives better-than-usual value, but by manufacturing improvements, not shorter margins.

No! Stancor is not violating the ethics they have tried so hard to help establish in the industry.

But Stancor is upsetting the apple cart with . . .

the most complete transformer line,  
the most compact transformer line,  
the finest new catalogs and manuals ever  
issued by the industry,  
and . . . a new brand of jobber promotion.

It's too long a story to tell, here. Ask our nearest representative or drop us a line and say, "Let's hear the news."

# STANCOR

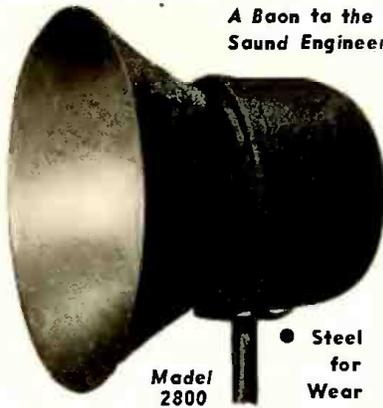
PRODUCTS

**STANDARD TRANSFORMER  
CORPORATION**

850 BLACKHAWK STREET • CHICAGO

# METALEX HORNS

A Boon to the  
Sound Engineer



Model  
2800

● Steel  
for  
Wear

● "EX" for Objectionable Resonances

The enthusiastic expression we are receiving regarding the Metalex Horn makes us want everyone interested in public address work, to try one.

These efficient exponential horns should not be confused with the so-called parabolic units. Spun from steel and coated with the material "Ex," these Metalex horns give almost unlimited wear and have no objectionable resonances. Stocked in 3 sizes.

The Model NM2900—12" Nokoil speaker installed in a Metalex Horn gives almost unbelievable reproduction.

Write for interesting literature.

Wright-DeCoster Distributors are  
always anxious to cooperate.

**WRIGHT-DeCOSTER, Inc.**  
2265 University Ave. St. Paul, Minn.

Export Dept.: M. Simons & Son Co., New York  
Wm. F. Kelly Co., Toronto, Ont., Canada  
Taylor & Pearson, Ltd., Edmonton, Alta., Canada

★ Michigan Detrola Sales Co., jobbers for Detrola, are currently working with the big Detroit retailers, Grinnell Bros., on a large-scale promotion of the line. Extra newspaper ads and special window displays are being used on Detrola electric tuning. World premiere of the line was held recently in Detroit by the jobber, with dealers of the state as guests. Representing Detrola Corp. were John J. Ross, president, who presented the new line, and Horace H. Silliman, sales director, who toastmastered and outlined the national sales drive.

★ Z. C. M. I. Wholesale Hardware Co., Salt Lake City, Utah, one of the most famous marketing organizations of the country, have been announced as distributors for Fairbanks-Morse radios. Zion's Co-operative Mercantile Institute was founded by Brigham Young almost 70 years ago, has been doing a distinctive quality job in the Intermountain area ever since. The institution has created new divisions, expanded its scope, erected new buildings as it went along. Latest expansion is the announcement of a special new building for major appliances. Z. C. M. I., which has distributed FM refrigerators for some time, has as its motto, "Winning the West and the Public Confidence."

★ Stromberg-Carlson's contest for distributor salesmen will continue through Oct. 16. According to Jack Kennedy, sales promotion manager, there is a 100 per cent enroll-



Sentinel Radio presents Phil Krumm, left, purchasing agent, and Bill Schnell, chief engineer.

ment among jobbers and their salesmen, with enthusiasm running high.

## FLASHING SIGNALS!

### EAR PHONE! NOISE TEST!

**FLASHES** a brilliant red signal for a bad tube—amber signal for a weak tube—and green signal for a good tube. Signals are translucent ivory until you press the button. The customer listens to the noise test through a permanently attached earphone. Shorted or leaky tubes cause intense glow, spreading lengthwise in long glass cylinder. Makes test of grid control. Fast and simple to operate.

Crystalline Metal Case

Lustrous Chrome Panel — Steel Slide for Chart.

**NET PRICE TO DEALERS \$54.00**

ON DEMONSTRATION AT YOUR JOBBER'S

On Display, Booth 65, National Trade Show!

**THE RADIOTECHNIC LABORATORY**  
1332 SHERMAN AVE. EVANSTON, ILL.

**SEE  
YOUR  
JOBBER**

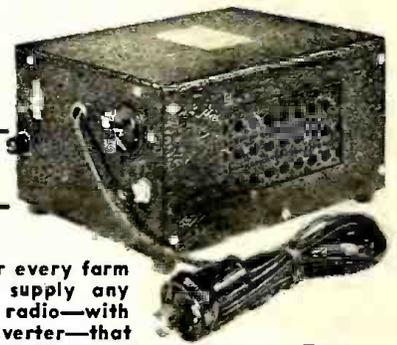
A Complete Line of  
Tube Test Equipment

**RADIOTECHNIC**

## NOW

NEW THRILLS FOR FARM RADIOS  
Any 110 volt A.C. Radio  
Operates From 32 volts D.C. with an  
**ELECTRONIC CONVERTER**

Also Models for Converting  
Any DC Voltage to 110 AC



● Now you can offer every farm with a 32V power supply any model 110 volt AC radio—with an **Electronic Converter**—that will give new radio thrills to your customers. They want big time reception and a wide selection of models rather than be limited to a few 32V sets that have no trade-in value and are obsoleted when the high line arrives. The **Electronic Converter** not only opens the great remaining farm market for easy-to-sell 110V radios—but there is a nice cash profit in every converter you sell. Only **Electronic Converters** offer a record of proved satisfaction. Tested, recommended and used by leading manufacturers including

Arvin, Canadian Marconi, Clough-Brengle, Eastman Kodak, Fairbanks-Morse, General Electric, Mohawk Radio, Ltd., Northern Electric, Rogers Majestic, Simplex, Sparton, Sparton of Canada, Stewart Warner-Alemite of Canada, Stromberg-Carlson Tel. Mfg. Co., Stromberg-Carlson Tel. Mfg. Co. of Canada, Ltd., Universal Battery Co., Zenith Radio Corp.

Tie with Electronic and boost your profits.  
Write for full details.

**ELECTRONIC LABORATORIES, INC.**  
Dept. RT-937, Indianapolis, Ind.

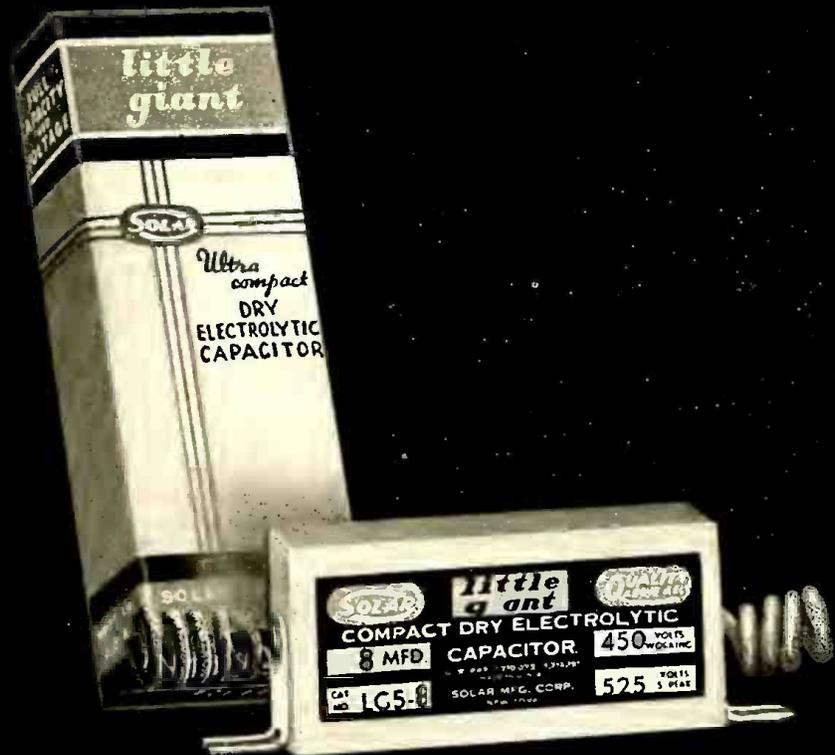
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While every precaution is taken to insure accuracy, we cannot guarantee against the possibility of an occasional change or omission in the preparation of this index.

"We Don't Keep Them—We Sell Them" is what any Solar jobber can say about "little giant" Dry Electrolytics. The reason is in the condenser itself: it is there you find **QUALITY ABOVE ALL!** . . .



**SOLAR MFG. CORP., 599-601 BROADWAY, NEW YORK**



## THE BRUSH TRANSFILTER FILLS THE GAP

• The transfilter fills the selectivity gap between the electrically tuned circuit and the quartz filter. A transfilter can be employed in any superheterodyne whose intermediate frequency amplifier can be tuned to 465 kilocycles.

Technical data on request.

**The BRUSH DEVELOPMENT COMPANY**  
3313 PERKINS AVENUE  
CLEVELAND, OHIO



## It Fits!

- ★ Yes, sir . . . this CLAROSTAT Exact-Duplicate Volume Control Replacement slips in place without fussing, fuming, fumbling.
- ★ Precisely matches initial equipment . . . electrically and mechanically.
- ★ You save time, trouble and unnecessary expense . . . and you know the job is RIGHT.

### Free MANUAL . . .

Over 200 pages of listings. Indispensable. The most accurate compilation. Ask your lobbyist or write us for copy.

**CLAROSTAT**



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

## NEW BOOKLETS

★ Philco has issued a 16-page booklet called "Tubes for 1938" describing and illustrating merchandising helps, promotion material and newspaper mats available to servicemen and dealers. Broadcast "shorts," for suggested use on local radio stations, are included.

★ New 1938 catalog has been released by Allied Radio Corp., 833 W. Jackson Blvd., Chicago. It has 164 pages and a special convenient arrangement of parts sections, and separate amateur, public address, test equipment and radio sets sections. Allied will send it free to those writing.

★ Issued by Thordarson Electric Mfg. Co., 500 W. Huron St., Chicago, Ill., are two new publications: a "Replacement Transformer Encyclopedia" with 32 pages, and a catalog No. SD291 called "Universal Duplicate Replacement Transformers."

★ United Electronics Co., 42 Spring St., Newark, N. J., have published a new catalog and specification book covering some 34 models of electronic tubes for all types of transmitting equipment such as used in professional and amateur broadcast stations, aeroplanes, police depts., motion pictures, industrial and electro-surgical applications. Requests on letterheads will bring copies.

★ 1937 Service Manual on auto radio has been issued by Philco's Transitone Automobile Radio Corp. The 112-page volume contains diagrams, base views, parts list, major changes, adjustments and general dope on every Philco auto radio ever produced. It is available from distributors.

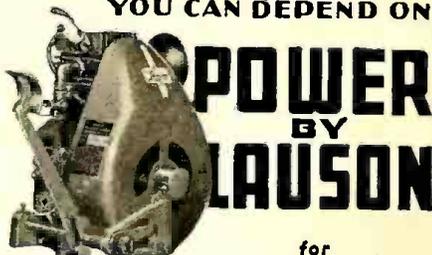
★ Two-color bulletin describing features of the new DuMont all-purpose 5-inch oscillograph is available by addressing the Allen B. DuMont Labs., Inc., Upper Montclair, N. J.

★ Centralab has just published a 12-page catalog describing their complete line of volume controls, fixed resistors, selector switches, and auto radio noise suppressors. Series of new items are included. Copies will be sent to those writing Centralab at 900 E. Keefe Ave., Milwaukee, Wis.

★ Just published by Jefferson Electric Co., Bellwood, Ill., is bulletin PA-14, describing the firm's automatic bias for Class "B" modulators. It has a general engineering discussion of the principles involved, diagrams of circuits and necessary instructions. Jefferson has also issued a new catalog No. 371-MT, illustrating and describing Ferro-Tube mercury contacts.

★ Announced by International Resistance Co., 401 N. Broad St., Philadelphia, Pa., is a new handy pocket size volume control replacement guide of more than 200 pages. The guide lists IRC controls for replacement use on practically every standard receiver made up to the present time, and includes other v.c. dope, resistance calculation data, etc. Available from jobbers or direct from IRC.

YOU CAN DEPEND ON



for

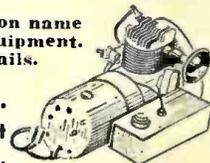
**SMALL LIGHT SYSTEMS, BATTERY CHARGERS, POWER UNITS, WASH MACHINES**

Lauson Smoothflo motors are being used by the thousands in leading makes of small generator and battery charging sets, because they have proven themselves to be reliable, trouble free, power plants.

Light weight . . . sturdy . . . economical in price and operation. 1/2 to 5 hp., 4-cycle, air cooled, fly-ball governors hold speed uniform and assure smooth operation. Roller bearing crankshaft. Conveniently located factory service stations. 45 years of engine building experience assures dependable design.

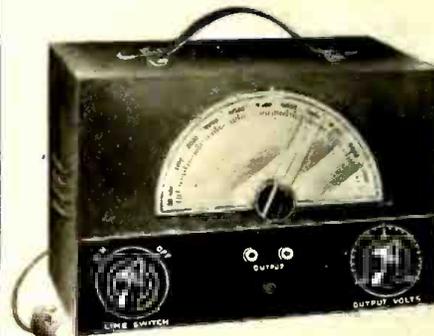
Look for the Lauson name on gas-powered equipment. Write for details.

**The Lauson Co.**  
54 Michigan Street  
New Holstein, Wis.



**LAUSON "Smoothflo" MOTORS**

It's only \$14<sup>40</sup> and it's real good!



AT last a beat frequency audio oscillator at a low price, and a very good instrument it is—the Superior Audiometer, 0-10,000 cycles. It works on 90-130 volts AC or DC (AC of any frequency), and it delivers full two volts output. That's a hefty output voltage, but then there's a two-stage amplifier built in.

Output is calibrated in volts, so that both the generated frequencies and the output volts are direct-reading. The frequencies are imprinted on a 7.5-inch diameter scale behind a windowed opening. The dial mechanism is planetary drive, with 8-1 vernier. A frequency-adjuster is located under the output posts.

The Audiometer has two separate r-f oscillator tubes, two amplifier tubes and a rectifier tube, is contained in a black-crinkle-finished case with handle and louver, and delivers pure sine wave output, practically flat. Shipping weight 7 lbs. Net price (complete, with five tubes and test leads.) **\$14<sup>40</sup>**

**SUPERIOR INSTRUMENTS COMPANY**

136 LIBERTY ST. Dept T-10 NEW YORK CITY



# TOUCH TUNING

*Just press a button—that's all*



**MODEL F-107—10 TUBES—3 BANDS  
—16 BUTTONS**

**More SALES  
More PROFITS**

## FOR RADIO DEALERS EVERYWHERE

It's a natural sales scoop — packed with sales features that **GIVE YOUR CUSTOMERS MORE FOR THEIR MONEY**. It's packed full with sensational features that give you more to talk about — more to demonstrate — more to sell — a bigger opportunity for profits.

**G-E TOUCH TUNING** — with 16 button controls. Fully automatic. Just press a button — that's all.

**G-E TONE MONITOR** — an amazing improvement . . . this newly perfected circuit corrects tone distortion.

**G-E LOUVER DIAL** — "easy to read as a ruler" from natural standing or sitting position. Incorporates **VISUAL 4-point TONE and VOLUME CONTROLS**.

**G-E "Custom-Craft" CABINETS** — smartly styled. Beautiful and rare veneers — plus 10 additional sales features.

## GENERAL ELECTRIC IS BACKING ITS SENSATIONAL NEW LINE WITH THE MOST FAR-REACHING AND SWEEPING ADVERTISING PROGRAM IN ITS HISTORY

- in **MAGAZINES** — a smashing schedule that will help you sell G-E Radios.
- in **NEWSPAPERS** — Right now . . . 637 newspapers in 473 cities are telling the G-E Radio story to still more millions.
- **ON THE AIR** — every week the G-E "Hour of Charm" tells the G-E Radio story to still more millions.
- **ON BILLBOARDS** — throughout the nation the G-E Radio story is told to America's outdoor population.
- with **ACTION WINDOW DISPLAYS** — in thousands of windows telling the G-E Radio story.
- and 10 **SALES-MAKING SALES PROMOTION ITEMS** — to help you sell G-E Radios.

## GET ABOARD THE G-E BANDWAGON FOR EXTRA SALES AND PROFITS

*The New*  **GENERAL ELECTRIC**  
**RADIO**

FOR REPLACEMENTS SPECIFY GENERAL ELECTRIC PRE-TESTED TUBES

Appliance and Merchandise Department, General Electric Company, Bridgeport, Connecticut

**QUIET!**

**FOOL-PROOF!**

**COLORFUL!**

**FAST!**

# Motorola

## NETWORK TUNING

### with 19 Electric Push Buttons

THE CLEVEREST AUTOMATIC TUNING IDEA ON THE MARKET

PUSH THE COLORED BUTTON FOR YOUR FAVORITE NETWORK PROGRAM



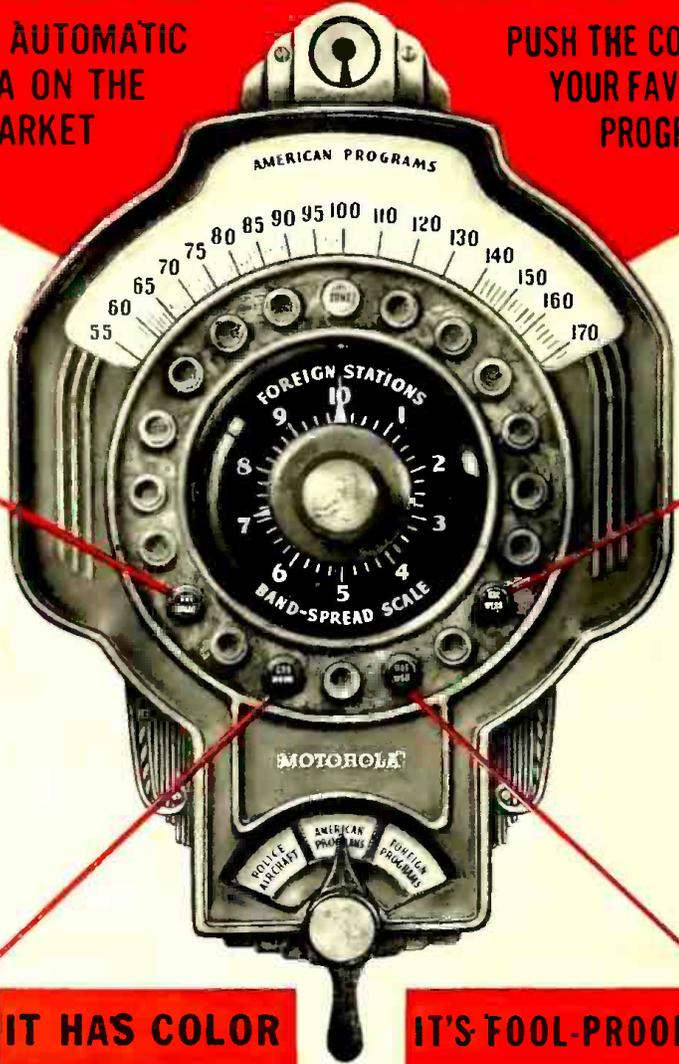
JACK BENNY

**PUSH THE RED BUTTON**  
for  
**N.B.C. RED NETWORK PROGRAMS**



WALTER WINCHELL

**PUSH THE BLUE BUTTON**  
for  
**N.B.C. BLUE NETWORK PROGRAMS**



### IT'S QUIET

Motorola's Electric Tuning uses a quiet drive with no motor-gears to clash, grind or squeal.

### IT HAS THE MOST BEAUTIFUL DIAL IN AMERICA

Motorola's Talking Dial and electric push-buttons are designed as a part of the whole cabinet and not as a mechanical after-thought. Women appreciate this harmony of design.

### IT'S SET FROM THE FRONT

The buttons are "set" for their stations, from the front. And it doesn't require a service engineer for the job.

### IT HAS FEWER PARTS

Fewer parts mean greater durability, less chance for trouble. There's only one switch for all buttons, instead of one for each.

**PUSH THE GREEN BUTTON**  
for  
**COLUMBIA NETWORK PROGRAMS**



HOLLYWOOD HOTEL

### IT HAS COLOR

Color attracts the prospect's eye in the store and makes tuning easier in the home. The four colored Network Tuning buttons stand out as if alone; yet there are fifteen additional buttons for other stations, too.

### IT'S FOOL-PROOF

Holding down all the buttons at once can do no damage. The motor simply stops at the first button it comes to. Pressing buttons rapidly in succession enables you to "scan the dial" with great speed and precision, with no possible harm to the mechanism.

**PUSH THE YELLOW BUTTON**  
for  
**MUTUAL NETWORK PROGRAMS**



LONE RANGER

**SEE YOUR MOTOROLA DISTRIBUTOR FOR A CONVINCING DEMONSTRATION!**

**GALVIN MFG. CORPORATION - CHICAGO**

# Selling Sound

Caldwell-Clements, Inc., 480 Lexington Ave., New York, N. Y.

## Tell 'em about Sound!

**T**HOUSANDS of businesses today need sound! Thousands of buildings, halls, and entertainment places need sound installations! Tens of thousands of offices and plants need intercommunicating systems!

Yet because, in each case, *some responsible person does not know* about sound reinforcement, or *does not understand* how sound can be applied in that special instance, such sound sales are delayed.

True, the sound sales story is spreading rapidly. Tremendous progress has been made in the last three years. But the missionary work must be speeded up, if sound is to fulfill its destiny.

Every sound man, every radio man interested, every distributor, is needed to *help tell the sound story by personal contact and verbal selling* in his own town and circle. Even if a particular prospect does not yet

seem quite ready, explain to him nevertheless the merits of sound, the advantages that would result from a proper sound job—and note how the period of waiting is thereby shortened before that sale is actually made!

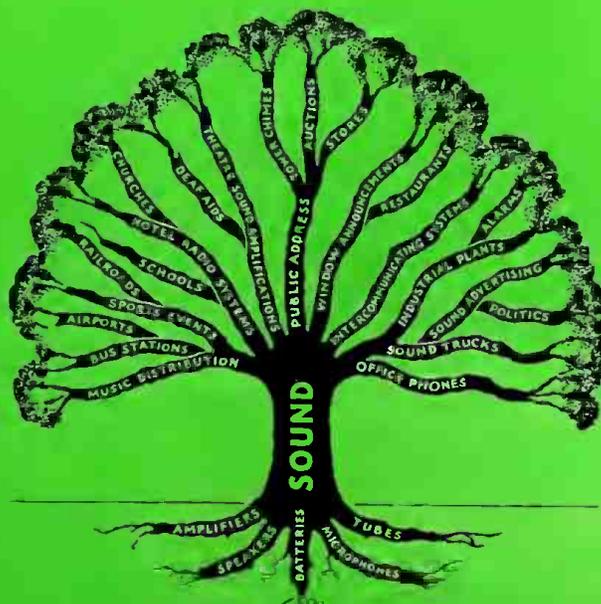
For even running as it does, into tens of millions of dollars in yearly volume, the sound business is not yet big enough to enable manufacturers to do national advertising to reach the widely-scattered prospects for sound jobs.

So sound men themselves must take up this educational and publicity work for sound. Morning, afternoon and night, the effort must go on — “talking sound.” By personal calls, by telephone,

by letters, by circulars, every possible prospect must be told what sound can do for him.

Tell 'em about Sound! And ask them to Buy!

O. H. CALDWELL,  
Editor



IN TWO PARTS • PART TWO

SEPTEMBER, 1937

Twenty-one thousand business men interested in sound will receive this magazine. Including the pass-on circulation to the members of their organizations, nearly 100,000 potential missionaries for sound can be counted on to see this message. This 100,000—already familiar with sound in one way or another—can be a mighty and effective force to “sell sound” to every possible prospect.

FINEST IN QUALITY ... yet COMPETITIVE in price ...

**AMPERITE**

**VELOCITY**



PREFERRED by leading P.A. Men the world over!

**FEATURES**

Compact, streamline, modern, the Amperite Velocity now features ...

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 pickup.
5. Acoustically designed to eliminate any possibility of cavity resonance.

The remarkable success of the Amperite Velocity is the result of Amperite's P.A. Policy—to give P.A. Men the finest possible microphones at prices no higher than what they would pay for other mikes. A letter from Ridley's P.A. Systems is typical of the general response of the P.A. industry. It says: "Your Velocity is the finest type of microphone I have ever used. . . . Please duplicate my order."

You, too, will duplicate orders . . . improve installations . . . and enjoy better quality at a competitive price by using Amperite Velocity Microphones. There's a model for every type of installation.

CONSULT YOUR JOBBER NOW!

**LEADING MODELS**

MODELS RBHn (High Impedance); RBMn (200 ohms); with Cable Connector and Switch. \$42.00 LIST

MODELS RBSn, RSHn, streamline design, slightly lower output than above, with switch only. \$32.00 LIST

With Cable Connector . . . \$34.00 LIST

FINISHES: All microphones have the new standard gunmetal finish, Chrome or Egg Shell, . . . Extra \$1.00 LIST

Other pastel shades . . . Extra \$2.00 LIST

**NEW! Desk Stand**

NAME



New and novel. Ideal for desk, pulpit, footlights, banquets. Microphane can be rotated in the horizontal plane, and used in various positions, as desired. LEAF SPRING SUSPENSION ACTS AS AN EXTRA SHOCK ABSORBER. Unusually stable. STAND ONLY. \$4.00 LIST. Name plate with maximum of 10 letters, \$2.00 LIST.

**NEW! "Ham Mike"**

W2AM



No peaks! No splashing! Real broadcast quality. Output, -68 db. RF Choke Circuit included in microphane. Operates directly into grid of tube. Rugged. Not affected by temperature or pressure changes. MODEL HAM (high impedance); MODEL HAL (200 ohms) . . .

\$22.00 LIST

Price includes new special Ham Desk Stand, call letters, and 6 feet of cable.

**AMPERITE JUNIOR**

A "lapel" Velocity of surpassing quality. Size of a match box. Ideal for lectures and specialty acts. Can be hidden under coat. Output constant with any position of the head. Transformer included in microphone case. MODEL 7J (200 ohms); or MODEL 7J-H (2000 ohms) \$30.00 LIST



**FREE**

WINDOW DECAL advertising your Sound Service. Size 5 1/4 x 9 1/4, finished in 4 striking colors. WINDOW DISPLAY, 11 x 17, and . . . New illustrated bulletins. Write for these valuable sales helps today.

**A POPULAR AMPERITE VELOCITY \$22.00 LIST**

A Velocity Microphane of very high excellence. Built to Amperite standards. Used for both speech and music with great success. No peaks. Flat response over audible range. Output, -68 db; Triple shielded. Fitted with shock absorber and swivel bracket. Model RAL (200 ohms) with 8 ft. of cable; Model RAH (2000 ohms) high impedance, with 12 ft. of cable.



**AMPERITE** © 561 BROADWAY, N. Y. U.S.A.

Cable Address: Alkem, New York

VELOCITY

**AMPERITE**

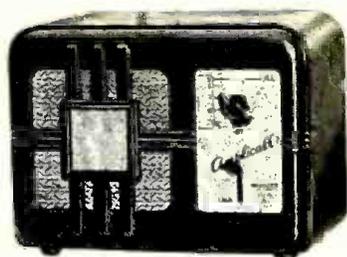
MICROPHONES



# BIGGER SOUND PROFITS

## ANOTHER FIRST

### SELECTIVE PAGING SYSTEM WITH TALK-BACK FEATURES



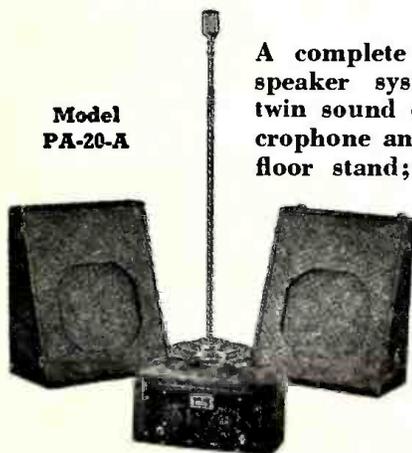
MODEL FC-7-R

- 7 Watts of Power
- Talk to any Station
- Talk back from remote position through speaker

• Again Webster-Chicago blazes the trail of Sound Progress, opening a vast new market for the Sound Dealer. Previously a paging or call system consisted of an amplifier, microphone, and the required number of speaker stations. Now for smaller factories, hotels, auto stations, departmental installation in larger factories . . . a new low priced design having in addition a selective switch so that the operator can talk to any one station only, or can throw the switch so as to talk to all stations. Transmitter shown will handle up to 5 stations.

## COMPARE THIS 20-WATTER

Model PA-20-A



A complete 20 watt, two speaker system having a twin sound cell crystal microphone and a full length floor stand; all stowed in two easily handled portable cases. A sound system of wide appeal; very economically priced.

~ With the very latest in Sound Equipment... Built to give Satisfaction... Priced to SELL.

**WEBSTER-CHICAGO**, the fastest selling sound line.

Everything in Sound. Amplifiers, speakers, microphone P.A. Systems of all sizes, fixed and portable, interoffice systems, School Systems, Factory Systems, Hotel installations, Marine installations, etc.

Designed by Specialists. Webster-Chicago have been popular priced leaders in the Sound Field for more than 12 years. All engineering personnel have had long experience with actual Field problems.

**Technical Help and Information.** Special service is rendered to the trade on sound problems. Dealers with Webster-Chicago can approach any size installation with confidence.

Extensive and sustained advertising to Consumers. All inquiries are referred back to the dealer. Hundreds of sales each month result from these direct leads furnished to dealers.

Dealer Helps that definitely open doors. Folders, displays, signs; special letters, etc., make it easy for the dealer to go after business.

See Your Jobber—Write for Catalog

## WEBSTER-CHICAGO

WEBSTER-CHICAGO,  
5622 Bloomingdale Ave., Chicago, Ill.

Without obligation please send me complete catalog.

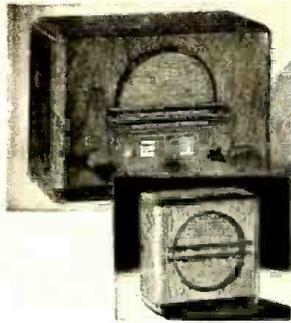
Investigate  
"Sound"  
OPPORTUNITIES

I am particularly interested in.....

Name .....

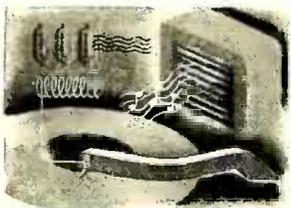
Street .....

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



## A New Model Teletalk

Webster Electric announces a new low priced Teletalk! This model consists of a master unit that is selective and up to five speaker stations. The cabinets are solid walnut with a hand-rubbed finish. Master unit, \$39.50; Speaker units, \$9.50. Send for new book.



## There's a New Pick-Up Coming

Webster Electric announces a new electric phonograph Pick-up that will be unlike any other ever developed. New in design. New in principle. New in performance characteristics. Write for information as to how you can profit by the increasing replacement demand.

IF EVERY EAR KNEW *Perfect*  
*Tone Pitch* YOU WOULD SELL  
ONLY WEBSTER ELECTRIC

● When you sell sound you sell an intangible thing. Few people can recognize true tone pitch. Therefore, it is highly important that you choose only the finest sound equipment—the World's finest—Webster Electric.

Webster Electric Sound Equipment was voted the best at the last Radio Parts Show. It is the result of skilled engineering. It is checked and tested by men who know. Its exterior design is the product of an outstanding industrial designer. Its component parts assure flawless performance and a wide margin of safety.

Many of the better distributors are now stocking this fine Sound Equipment. You can get it quickly—with little investment.

WEBSTER ELECTRIC COMPANY • RACINE, WISCONSIN, U. S. A.  
Established 1909

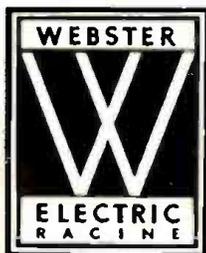
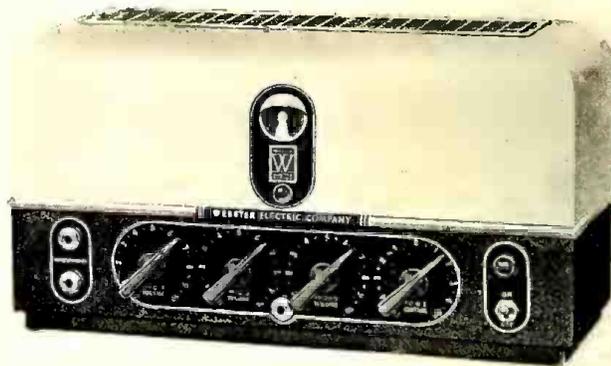
Export Department—100 Varick Street, New York City

Cable Address "ARLAB" New York

## FROM 5 TO 50 WATTS

In addition to this range of sizes, the line also includes a 4-Position Mixer, a new Mobile Unit and all the usual accessories. The line is streamlined and finished in three tones—red, silver and black.

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



# Webster Electric

PORTABLE AND SEMI-PORTABLE SOUND SYSTEMS • ELECTRONIC INTER-COMMUNICATING SYSTEMS • ELECTRIC PHONOGRAPH PICK-UPS • TRANSFORMERS AND FUEL UNITS FOR OIL BURNERS

Staff--

DARRELL BARTEE  
 FOWLER DURST  
 M. H. NEWTON  
 B. V. SPINETTA  
 VINTON K. ULRICH

LEE ROBINSON  
*Sales Manager*

# Selling Sound

SECTION

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*Publisher*

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RADIO TODAY FOR SEPTEMBER, 1937. IN TWO PARTS, PART TWO

## WHEREVER PEOPLE GATHER

★ "If I were a dealer, a service-man, or a sound specialist, this is what I would do at the outset of selling sound," says Electro-Acoustic's L. M. Sandwick, who used to sell at retail himself. "I would say to myself 'Here is a product I can sell wherever a group of people gathers. Now, how many gathering places are there in my natural territory?'"

"Then I would systematically list the food stores, garages, parking lots, churches, schools, material yards, ball rooms, theatres, industrial plants, taverns, hotels, lodge halls, and warehouses within easy access of my place of business.

"The number of prospects will be astonishing. In fact, it will be necessary in most cases for the city dealer, to pick particular types of prospects on which to concentrate at the outset. For profitable sales in the next twelve months, my personal choice would be industrial plants, stores and markets, churches!"

## SPONSORED SOUND FOR FOOTBALL GAMES

★ Have you ever tried to put on a PA show for your local football games—only to find that the top price obtainable wouldn't begin to cover the costs?

Well, here's how one sound company has made good returns over a period of years, not only for portable work, but for semi-portable and permanent installations as well. This sound specialist gets an advertising "sponsor" to pay the costs, and gives this sponsor verbal advertising between quarters.

"Dress the whole job up," says he. "Get a good sports announcer—furnish the music from records. And maybe you can throw in a small field system for the cheer leaders and game officials to use.

"Do it right—put on a good show and you won't have much trouble finding sponsors who will pay you a fair price for your work.

"But don't stop with portables," adds this sound man, "this same idea has been expanded by us in many other directions, even to instances where wealthy members donate installations for churches and schools."

## REVAMPING OLD "SOUND" JOBS

★ Plenty of old sound systems can stand revamping these days. And now that there are good permanent-magnet loudspeakers on the market, one of the quickest means of demonstrating the sound man's ability to a customer is to take one of these new speaker units for test at some school job where the old magnetic-type cones are still in use.

Substitute the new unit in some classroom where one can step across the hall and compare it with an old type speaker. Or rig it up with the replaced unit for a comparison test.

Most of these new speakers can be obtained with adjustable transformers so that the impedance relations need not be disturbed. It is quite convincing, too, to find that the new type speakers are more efficient than the old ones. In a lot of cases they will fit into the same boxes the old one did. Sometimes in the case of a

school it will help to keep the costs down, if the sound man suggests that the woodworking classes make new face plates for the speaker cabinets where they are necessary.

## REAL OPPORTUNITIES

★ "The editors of *Selling Sound* are to be congratulated on the comprehensive effort they are making for the sound industry," comments John Erwood, vice-president of Webster-Chicago.

"The very nature of sound makes each installation to some extent individual. Thus the aggressive dealer and high-class technician—those radio men who are interested in engineering as well as sales—are finding the sound field a business of real opportunities.

"That a publication like *Selling Sound* has come into the field to give up-to-date knowledge on the industry and to help solve the difficulties of merchandising a specialized product, is bound to be a great aid and a wonderful incentive."

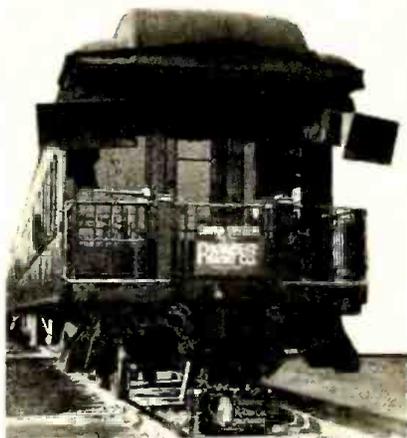
## UNDERTAKERS USE 'PHONES FOR HOME SERVICES

★ Undertakers have proven to be unexpected prospects for intercommunicator systems.

When funeral services are held in a private home, the members of the immediate family usually prefer not to come downstairs to the ceremonies, but to remain secluded in their own rooms while the services are going on. With a set of intercommunicators, explains S. R. Hurt, of the American Carrier-Call Corporation, one unit can be plugged in downstairs and turned on as a microphone, while other units are plugged in in the upstairs bedrooms so that the bereaved family can hear every word of the services without exposing their grief to outsiders present.

Undertakers who have introduced this plan find it a great selling point for their services, as against undertakers not offering interphone privacy.

## "ALL ABOARD" WITH SOUND



"Plaster your name on all jobs," says Pioneer, Wichita, Kan., sound specialist.



Wisconsin politics; PA job by Madison Radio Shops.



Night clubs are starting their winter pace, sound-equipped.

# THE MARKET FOR MODERN SOUND

*Industry's complete list of prospects, with reasons why they will buy*

## **ADVERTISING AGENCIES**

can demonstrate the nature of amplified voices  
arrange convincing auditions

## **ADVERTISING TRUCKS**

broadcast effective messages  
can keep within city ordinances

## **AIRPORTS**

can talk up the safety angle  
will handle more passengers

## **ALARM SYSTEMS**

can cut burglar-insurance costs  
complete house modernization

## **AMUSEMENT PARKS**

can widen their concession grounds  
govern crowds more readily

## **ARENAS**

can increase seating capacity  
like box office receipts

## **ARMORIES**

can communicate house bulletins  
improve social relations

## **ATHLETIC FIELDS**

can communicate instructions accurately  
like staff efficiency

## **AUCTION ROOMS**

will save time in bidding  
cut the number of complaints

## **AUDITION STUDIOS**

can conduct several hearings at once  
contact more artists and sponsors

## **AUDITORIUMS**

can stage more varied events  
must correct their acoustics anyway

## **BAND STANDS**

can attract greater audiences  
increase popular value of music

## **BANQUET HALLS**

can improve table and dining arrangements  
offer faster service

## **BASEBALL PARKS**

can report scores promptly  
attract more clubs and fans

## **BATHING BEACHES**

can establish atmosphere of safety  
cut life-guard costs

## **BEER GARDENS**

can widen entertainment scope  
publicize improved service

## **BUS TERMINALS**

can cut porter costs  
reach passengers in all depot rooms

## **CABARETS**

can make appropriate recordings  
keep all guests within range

## **CHAIN STORES**

can stage more special sales  
increase clerk efficiency

## **CHURCHES**

can do dignified broadcasting  
emphasize large social gatherings

## **CIVIC CENTERS**

can improve local business relations  
sponsor more varied events

## **COLLEGES**

can issue rapid campus bulletins  
improve student-faculty relations

## **CONVENTIONS**

can contact the "last-row" audience  
increase power of speaker

## **COOKING SCHOOLS**

can demonstrate more equipment  
get more novelty in exhibitions

## **DANCE HALLS**

can distribute music properly  
conduct detailed supervision

## **DINING ROOMS**

can speed up service  
add appropriate music

## **EXHIBITIONS**

can explain complicated displays  
add speaking specialties

## **ELOCUTION SCHOOLS**

can handle more students  
use recordings effectively

## **FACTORIES**

can improve labor relations  
create pleasant working atmosphere

## **FAIRS**

can increase entertainment area  
broadcast ads and announcements

## **FOOTBALL FIELDS**

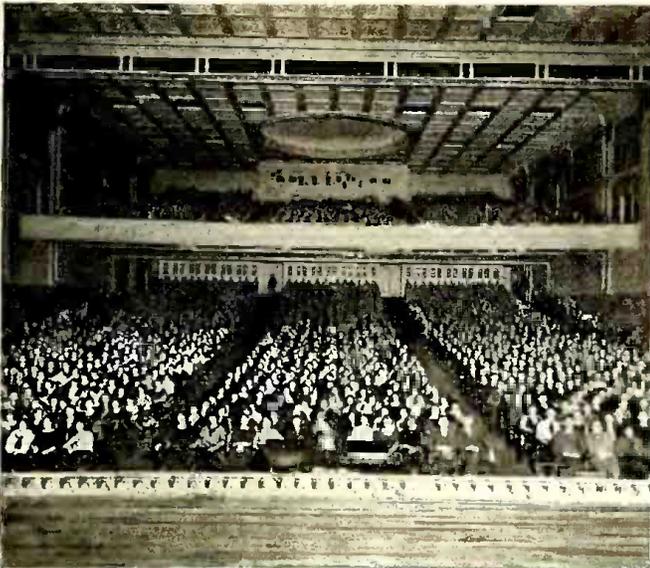
can simplify the coaching job  
report what spectators miss

## **GOLF CLUBS**

can stage more tourneys  
publicize modern facilities

## **GYMNASIUMS**

can increase general capacity  
broadcast instructions at right moment



PA-tailored by Electro-Acoustics, a Dayton, O., auditorium.



St. Mary's church, Cicero, Ill., successfully sound-treated.

### HOSPITALS

can circulate important bulletins  
save time when split seconds count

### HOTELS

can distribute news flashes and music  
make a point of house communication

### LAWN FETES

can simplify the hostess' job  
knit guest groups together

### LECTURE ROOMS

can advertise perfect acoustics  
increase room drawing power

### LODGES

can meet emergencies  
distribute more music

### MARKETS

can spot necessary price changes  
stop thieving

### MEMORIAL PARKS

can offer impressive outdoor music

### MUSIC SCHOOLS

can stage more and bigger recitals  
amplify juvenile voices

### NEWSPAPERS

can circulate flash instructions  
operate the organization as a unit

### ORCHESTRAS

can sponsor new sound effects  
depend on light touches being appreciated

### PAGING SYSTEMS

can increase coverage and fees  
advertise dependability and clarity

### PARKS

can organize 100 per cent supervision  
accent larger social events

### PICNICS

can control wandering crowds  
simplify work of entertainment

### PLAYGROUNDS

can enforce new safety measures

### POLITICAL GATHERINGS

can offer front and last rows equal clarity  
making more lasting impressions

### PRISONS

can regulate matters of discipline  
relieve tension within walls

### RACE TRACKS

can connect judges with attendants  
offer spectators flash bulletins

### RAILROAD STATIONS

can reach all rooms simultaneously  
improve general passenger well-being

### RAILROAD YARDS

can handle emergency situations  
connect dispatchers with operators

### RESTAURANTS

can advertise speedy service

### SALES MEETINGS

can explain plans to large groups  
assist the process of note-taking

### SANITARIUMS

can pleasantly connect all wards  
arrange quiet distribution of voices

### SCHOOLS

can enlarge recreational activity  
improve staff operation

### SHIPS

can quicken action of crew  
proceed with more safety

### SOAP BOX DERBIES

can keep spectators informed  
instruct all scattered entries

### STADIUMS

can widen the scope of events  
instruct crowds arriving and leaving

### STEAMSHIP PIERS

can organize scattered workmen  
distribute docking bulletins

### STREET DANCES

can keep standers pacified  
offer notes of explanation

### STOCK EXCHANGES

can avoid sending messengers  
through crowds

### STOCKYARDS

can reach scattered attendants  
assist auctioneers

### STORES

can improve staff efficiency  
reach all sections quickly  
halt shoplifters

### SUMMER RESORTS

can announce social and sports schedules  
accommodate additional guests

### SWIMMING POOLS

can broadcast warnings  
advertise complete safety

### TALKING SIGNS

can get novel and mysterious effects  
advertise more types of goods

### THEATRES

can expand entertainment schedules  
reduce balcony complaints

### UNDERTAKERS

can eliminate noisy messengers  
avoid interruptions of privacy

### VAUDEVILLE

can experiment with freak effects  
play to bigger houses

### WEIGHING STATIONS

can save time for patrons

### WINDOW DEMONSTRATIONS

can furnish striking "stoppers"  
bring models to life

### YACHTS AND STEAMSHIPS

can broadcast lifeboat drill instructions  
save passengers climbing narrow stairs

# THE OUTLOOK FOR SOUND SALES

Manufacturers' optimistic views on 1937-38 prospects  
Counsel distributors and dealers on going after business

★ TO GIVE readers of "Selling Sound" a general picture of the present situation, the editors sent invitations to a number of sound-industry leaders, asking their views regarding the most important problems in the sound-equipment field.

What, we asked is the general outlook for the development of sales in the sound-equipment field for the next twelve months? What types of markets can be most profitably developed by dealers, servicemen, and sound specialists? How can the jobber best cooperate with his dealers in stimulating the demand for sound equipment?

## Thousands of prospects ready

A combination of good business conditions generally—plus the rapidly growing public acceptance of sound-reinforcing systems as a positive necessity wherever groups gather—makes the sales outlook for the next year extremely bright, declares L. M. Sandwick, sales manager, Electro-Acoustic Products Co., Fort Wayne, Ind.

As a result of the improvement in general business, numerous institutions, such as churches, schools, hotels and stores, are now in position to pro-

ceed with sound installations which they recognize the need for, but which, a year and two years ago, they were unable to finance.

The growth of public acceptance of sound equipment has resulted from three major factors. First, radio. Second, sound pictures. Third, successful sound reinforcing installations. The first two factors, while indirect, have focused public attention on sound reproduction and have created an acceptance by people in general of hearing and enjoying reproductions of speech and music.

The third factor—the successful sound installation itself—is the key to the present intense interest. Beginning with Chicago's "A Century of Progress" in 1933, millions of the public have heard and reacted favorably to sound equipment at the great fairs and expositions throughout the country. Countless others have realized increased enjoyment at sports events in ball parks, race tracks, gymnasiums, stadiums and arenas, through timely announcements or running accounts of the play or action.

## How to sell sound

Surprisingly enough — for sound equipment manufacturers almost without exception have failed to capitalize these favorable openings—the public itself has begun to reduce these spectacular installations to everyday requirements.

The time has now come to consider "sound" selling less as an engineering exercise and more as specialty merchandising.

Viewed in this light, there are three easy ways for the dealer to win the confidence of his prospect.

First, by visiting the job during working hours and making an actual survey of the requirements. This shows his interest.

Second, by asking questions regarding the uses and applications which the prospect may have in mind. This goes a long way to convince the prospect that the dealer has a service to render, and that he wants to render it honestly and conscientiously.

Third, by a straightforward presentation which avoids technical discussion as much as possible, makes no extravagant claims for the equipment and leaves the prospect to expect a good, workmanlike job, at a fair price—but not a cutthroat price.

Remember, the dealer in sound equipment—more than in any other business—is advertised by his own good works. The prospect who has been sold by conservative claims and reasonable promises will be the finest possible advertisement for the dealer whose performance exceeds his sales talk.

## Bumper crops, bright outlook

We feel that the general outlook for the development of sales in the sound equipment field for the next twelve months is probably the best it has ever been, particularly so in the Middle West and Southwestern states, declares Laurence A. King, sales manager, Operadio Manufacturing Co., St. Charles, Ill. This, of course, is due to the bumper crop of small grains and corn which they will have this fall. Also we feel that more and more people are realizing the necessity of sound—this being particularly true in the industrial field. Therefore, because of these factors, the general outlook for the next twelve months is probably as good if not better than at any previous time.

As to how the jobber can best cooperate with his dealers in stimulating the demand for sound equipment, we feel that this is not primarily a problem of the jobber but one that is a dual responsibility between the jobber and the manufacturer. It is the

At the left is the center of a sound job in Texas, which handles 10,000 spectators strung along 4 city blocks watching a Soap Box Derby. Chap with the goggles is Elliott Wilkinson.



duty of the manufacturer and the jobber, from a selling standpoint, to develop as many leads as they possibly can for dealers and then to pass these leads on to the dealers. In addition to this, of course, the jobber as well as the manufacturer must have the product available for the dealer when he makes a sale so the dealer's customer will be able to obtain his sound material a reasonable length of time after he has ordered it.

By adhering to these two policies, plus the aggressive selling every dealer must do, a nice volume of sales should result for all concerned.

### Must know product

In order for a dealer or sound specialist to make a proper estimate and solicit business which will ultimately result in the satisfactory installation, it requires a very thorough knowledge of the product he is selling. Therefore, one of the first duties of the dealer or sound specialist is to become absolutely familiar in every detail with his product. He can do this by consulting his jobber or the factory men. Of course, the average sale, such as of "package merchandise," should then be a very simple problem for him to handle.

In larger installations, he should gather together complete data pertaining to the particular job and then from his own experience make his recommendations and submit these back through the jobber to the manufacturer for their okay and approval.

### Quality, reliability essential

One of the fundamental differences that should be understood about P.A. is that it is used for business purposes and not for home use, points out S. Ruttenburg of the Amperite Corporation, New York. Since such sound apparatus is being used for business purposes, its quality and reliability must necessarily be greater. The equipment is expected to stand hard usage and continuous service. Replacement after approximately three years is not objectionable.

It is, therefore, of paramount importance to use equipment that will stand up, hence the sound man can charge a little more because of the service that is usually demanded, and the fact that the number of jobs are at best limited.

Because the jobber himself knew very little about sound and the sound business, the P.A. man received very little cooperation. Most P.A. men carried as large a stock of equipment as his jobber, and often larger. By giving a P.A. man fast service on his requirements as well as a little help on financing jobs, the jobber could put himself in an enviable position and increase his business on sound equipment tremendously.

For the money invested, sound business is much more profitable to a jobber than other small parts businesses. The number of items are few, the unit of sales is large and the possibilities of equipment becoming obsolete are practically negligible.

At the right, entertainers test their "sound" personalities for outdoor presentation to the mob.

It has taken even the larger jobber a long time to "get wise" to the possibilities in sound and, in fact, they are just about "catching on."

### Selling "sound re-enforcement"

Sound as we know it today is a new entity. No longer is "public address" or more properly "sound re-enforcement" considered either a novelty or form of ballyhoo. Sound re-enforcement and acoustical treatment are man's method of controlling his most important means of inter-relationship, comments A. Pletman, president, Wholesale Radio Service Co., Inc.

Ten years ago public-address amplifiers were considered as merely "chopped off" portions of radio receivers. The idea of having a person speak to a gathering through the medium of a microphone and amplifier was considered more a novelty than a necessity. Sound equipment was then being bought as a luxury item for the purpose of either imitating radio broadcasting or providing very loud phonograph music.

But now we find sound re-enforcement a part of the modern technique of music. Mr. Average Man realizes that radio has brought about a new style of orchestration, tone blending and relationship of individual instruments. What were formerly simple accompaniment devices have now been transformed into solo instruments. Sounds formerly lost to the normal ear have now become integral parts of modern rhythm and style. Orchestra leaders, without sound equipment, have found themselves in the embarrassing position of not being able to duplicate their radio programs to "flesh" audiences. Their patrons were overheard remarking, "This orchestra does not sound as well here as on the radio." This condition has resulted in the development of one of the richest sections of the vast sound re-enforcement market. Today every or-

chestra leader, however small, is a sound prospect.

Today sound systems are being sold for use in locations where sound re-enforcement is most certainly not required when considered entirely from the standpoint of loudness. Neither are they being obtained as novelties. These systems are being used to improve the quality of certain portions of the sounds occurring at that point. When selling sound to music groups, quality and special effects should be stressed.

### Standardize selling methods

"The modern methods of introducing articles for public use are now found in the sale of sound equipment," states S. A. Loeb, president, Webster Electric Co., Racine, Wis. "Amplification of sound now finds a definite use in our industrial and social life. Better merchandise soundly merchandised, unit packages and standardization of selling methods will result in a tremendous sales volume for all manufacturers."

Henry G. Kobick, also of Webster Electric, Racine, adds that "applications for the use of sound systems have become so universal that the business of their sale finds that its volume is only limited by the outlets offering it to the public. The same principles of sales and application which are found in other commodities are equally as fundamental in the sale of sound.

"Amplification now finds new avenues of selling, new methods of use and foremost of all the educational and recreation features which sound makes available will result in increased sales.

"Industrial and commercial uses for amplification of sound and its use as an aid to reducing operating costs in almost every type of business will," concludes Mr. Kobick, "result in a large sales volume."



# DISTRIBUTOR-DEALER PROBLEMS

Candid discussion from those in middle of sound sales

★ TO PRESENT the low-down on the distribution situation in sound equipment, RADIO TODAY's editors asked jobbers and dealers to give us their candid comments on present sales methods and how they can be improved—and what sound offers to distributors and dealers during the next 12 months.

## Planning for big future

We feel there is everything to be done in the selling of sound equipment, declares Lew J. Bonn, Lew Bonn Company, distributors, Minneapolis, Minn. By "selling sound equipment" we mean *creating a demand or a desire to have*. As soon as some conscientious effort is made by distributors to sell sound and *sell good equipment*, the manufacturers will take more interest in its development. I claim it is principally a selling job.

Sound should be the dealer's and serviceman's business, but many purchasers have found it necessary to go direct in order to get satisfaction, and that has encouraged every manufacturer of sound equipment, especially the small independent company, and also mail order houses from all parts of the country, to "quote direct." This evil should be overcome, and this we have been trying to accomplish, but we find invariably we lose a sale because of direct quotations by some Eastern mail order house.

Every institution of any size is a potential prospect for some sort of sound, from the large amplifier down to interoffice communication. As it requires quite an investment, naturally the buyer wants to know what he is getting, and it is a semi-engineering and salesman's job to produce this

business. Even the small amplifiers sold to orchestra leaders, night clubs, and so-called "beer parlors," require sales talent and technical knowledge.

We are setting ourselves up for the future of sound business and believe it is going to be large. Practically every hotel is inadequately equipped, and lots of money is paid every month for telephone interoffice communication, which can be much more economically administered through intercommunicating mediums.

## Greatest opportunity in sound

I think there is more opportunity for increased sales in the sound-equipment field for the next twelve months than any other field, writes Robert Henry, radio distributor, Butler, Mo.

The market that has the greatest possibility for development is the market among those prospects which are best financially able to buy new equipment of any sort that they are convinced will be of use to them. All you have to do to make profitable sales is to show them how they can use sound-equipment. Sound-equipment sales should be handled by a department that devotes the greater part of its time to this work and whose members can become specialists in sound-equipment.

## Jobber cooperation vital

My frank but humble opinion is that selling sound along the lines sold in the past has none too bright a future. But this practice of manufacturers selling anyone and everyone that comes along will now yield benefits to the jobber who gets out and makes personal contacts, for the public is

loaded down with obsolete and discredited sound equipment. Therefore, they are in the market for reputable equipment, backed by companies financially and ethically sound and having an intelligent sales policy, concludes W. H. Edwards, wholesale radio supplier, Providence, R. I.

The market is business houses, advertising firms, amusement places and specialty sound men. Schools, state and public buildings will also have to be sold. But again, only good equipment, backed by intelligent salesmanship, will have a chance.

Cooperation of the jobber with the retail dealer is absolutely essential. Three hundred dealers out selling sound are better than one expensive jobber salesman. Also cooperation creates good-will for the jobber for his other lines. This part of the program is up to the jobber. His personal contacts with the dealer must be utilized to the fullest in explaining the "sound" business and the methods of selling, also the different types of installations. But, as for selling the public buildings, the jobber must do that himself. The primary reason for this is that public officials insist upon discounts.

## Make "sound conscious"

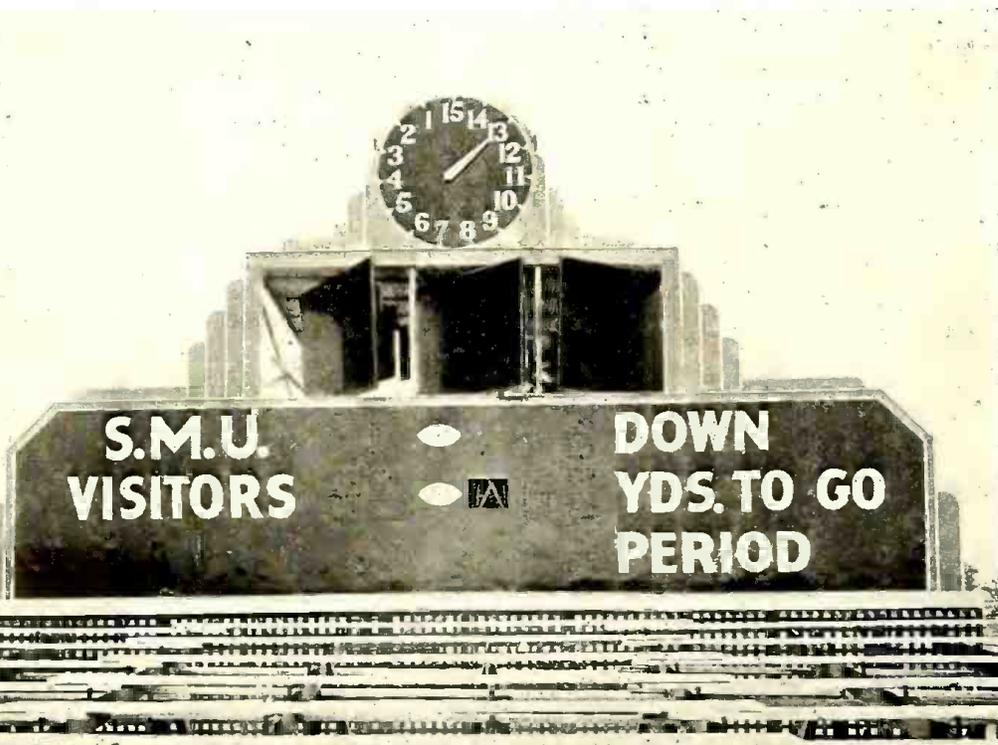
The immediate outlook for sales is slow unless manufacturers do enough advertising to make America "sound conscious," thinks E. L. Grimm, of Radio Television Co., Washington, D. C. Some people think an amplifier is a converted radio set, some other people think it falls in the price range of the cheapest radio sets.

The dealer and serviceman seem in the best position for supplying and installing inter-communication systems for business and homes, but haven't the necessary training for engineering the problems of high-powered amplifiers, which should be covered by sound specialists.

The jobber stays in the background as a supply depot for the dealer. It is up to the manufacturer to stimulate the demand for sound equipment through advertising to reach all types of consumers.

In soliciting new business and giving estimates the most important thing is to break down any wrong impressions the customer has regarding sound systems. And, above all, to keep "Sound" out of the classification that surrounds cheap radio sets and cheap radio service—also the peculiar idea of the customer that a sound system can be tailored to fit and installed in a few minutes. It would be best to

At the left, sound equipment becomes an important part of the scoreboard on the football field at Southern Methodist University, Dallas, Tex.



lose the job rather than have to skimp on it in any way—therefore, you would have to charge them for what they get and give them what they pay for.

One should also advise all dealers not to try to take a \$20-per-week radio man and call him a "sound engineer." To do so will mean customer dissatisfaction and a black eye for sound in general, unless the sound outfit is of the simplest low-powered type.

### Too much inexperience

I find that in the amplifier field there have been too many inexperienced people. First, there are too many manufacturers who do not make quality amplifiers, and who do not use the proper microphones and speakers because the amplifier is a price proposition, comments Perry S. Graffam, treasurer, Stern Wholesale Parts, Hartford, Conn. However, for all those who are not qualified to manufacture sound equipment, there are plenty of responsible manufacturers who are qualified. But, as the old saying goes, you only get what you pay for; naturally, the prices of the better systems are higher, and the equipment is consequently harder to sell to the average buyer.

Now, as far as the jobber is concerned, most any jobber with a sound sales engineer would be qualified to sell amplifiers. But the biggest problem is the buyer. There are several types of buyers. First, there are those who know nothing of what they are buying; they are part-time musicians who also work, we will say, during the day for the city water department, perhaps as a machinist in a typewriter factory, or maybe as a barber. They get together small orchestras and look for work in small taverns, restaurants or clubs for a night or two a week. Most restaurants require that the orchestra furnish its own sound equipment. So consequently the orchestra leader goes out shopping and buys something low priced that looks as if it would qualify him for the job. Usually the sound systems are not very good, and the orchestra may not be much better, so they don't hold the job very long.

### Sound technician

Every good sized city should support at least one high-class sound technician, continues Mr. Graffam. These men usually get good prices for their time and equipment. They can take care of any type installation, such as places remote from a.c. lines, motorcycle races, carnivals, and so forth. My idea is to work through such people, letting them make the sales and allowing them to make the profit between the wholesale and retail prices. They are also in a position to go out and find out what the customer requires, and to make proper recommendations. When the sale is completed, the sound engineer should make the installation. There are so many tricks to a proper installation that even the best equipment will not perform properly unless correctly installed.

Such a sound technician can make a substantial living. A truck properly equipped to handle a.c. or battery-operated equipment, and capable of



taking care of a ball park, should net the owner not less than fifty dollars per day of operation. For contract jobs, such as two evenings a week at the motorcycle races, equipment permanently installed should net the owner about ten dollars per evening for only a few hours' work. I have one such operator who told me last year his gross income was \$2,250.00 from this equipment—most of which was for rental.

### Jobber bills customer

I believe the best market for the serviceman in the coming year will be inter-communication equipment. In this field the market is practically unlimited, explains G. W. Hudson, Hudson Radio Supply Co., Richmond, Va.

In most cases the serviceman's capital is limited and he is unable to finance a sound installation. I have found it the best policy for the distributor to make the installation and bill direct to the customer. The serviceman is then given the difference in the list price and his net price on the equipment. The serviceman is responsible for all service within the 90-day guarantee. In case the customer wishes to have the installation financed over a period of time we have found it best for the distributor to handle the financing. If the distributor can handle the time-payment it will work out much better than the various propositions offered by the manufacturers. The distributor is better able to get credit information in his section than either the serviceman or the manufacturer.

In soliciting new business it is always best, if possible, for the salesman to find out what type of equipment the customer can use. If the salesman goes to the customer with a definite proposition rather than "can you use an amplifier set or do you need communication in your plant?" he stands a much better chance of making the sale. If there is any doubt in the mind of the salesman as

Above, PA invades the physical education field. A Gym class at Oyster Bay, N. Y., High School gets its directions from a ceiling speaker.

to the price of equipment he should take the matter to the distributor. The sound distributor should have at least one man on his staff who is thoroughly capable of furnishing information on all types of equipment as well as estimates.

In closing, I would like to say that the sound field opens a market to the dealer and serviceman which in the next few years should prove as profitable as the set market has been in the past.

### Practical advice

Inasmuch as we have enjoyed an average gross on sound business of \$1,400 per month in a city of 80,000 population, I believe that we may be able to offer some sound suggestions which may be helpful to others, answers George Sharpnack, manager, Program Service Co., Lincoln, Neb.

1. Direct contact by a good man or sales force is the best way, by far, to get the rental and sales business.

2. Advertising in local papers is usually a failure because you do not strike when sound is needed.

3. If you must advertise—use the "gift" method. Paper weights with your ad on them, a miniature microphone or some such article will stay on the desk of your "potential" customer.

4. Free sound jobs to churches, Boy Scouts or other such groups cause more trouble than good. A better way is to offer your regular set-up at half the usual price—and then stick to it.

5. Most of your sales result from well planned demonstrations of new or latest type equipment. As an example, to show a prospect how much better a new velocity microphone will operate will very frequently result in a sale of complete new equipment.

(To page 31)

# FOOT-WORK IN SELLING 'PHONES

Ways to tap today's big market in intercommunicating systems

\* GENTLEMEN carrying small traveling cases are all over town.

They're plying briskly between the radio store and its hundreds of prospects for intercommunicating systems. The luggage contains one master station and one remote speaker—or pairs of intercommunicators—all polished and neatly packed. In the side pocket of the bag is a complete supply of circulars, instruction books, price lists, etc.

Salesmen know that office bosses are beginning to get back from vacations. On the salesman's side also is the fact that the public is now better educated to the conveniences of modern inter-phones. Effects of the first promotions of the equipment are now being felt—business executives are definitely 'phone conscious. Time-payment plans have been adjusted.

## Offers to demonstrate

Some of the shoe leather is being spent as a result of letters written by dealers to a selected list of prospects. These were personal in nature, and were essentially offers to demonstrate the intercommunicators. Only very brief attempts were made in the mailing pieces to outline the features of the merchandise — the point was

chiefly a friendly request for a chance to show the phones and let them sell themselves.

In other cases the outside selling is being done "cold." Then's when the salesmen must pick up some knowledge of the profession in which he circulates, with a view of filling, with his inter-room gadgets, the particular needs involved in that branch of business.

For instance, if he calls at a publishing office, it will help him to know how and in what way the editorial department needs to communicate with the advertising department.

## Selling modern business

(It has been found that offices or organizations which are involved in the production or distribution of electrical products, are particularly easy to approach. Executives in such places are naturally interested in the operation of the inter-phones, and will allow themselves to be shown the instruments for that reason at first.)

Retailers of this equipment have the "be modern" angle on their side. If the prospect is advised that modern business certainly includes the use of the intercommunicators, he will begin to think that his competi-

tors are using the equipment to advantage.

Executive persons are just as unwilling to be outclassed by neighbors or competitors as anyone else. This is presented not as a sweeping sales argument, but as an important undercurrent.

Sales demonstrators can be fairly sure that female office workers are generally more anxious to save steps than the men in the office. So it turns out that one of the tricks is to sell the receptionist first. She can't do the actual buying, but she can have a whale of an influence on it.

If tactfully demonstrated to while the salesman is waiting to see her boss, the receptionist will be pleased to discover that she is important, and will be in the mood and in position to cooperate if the demonstration occurs between her desk and that of her boss.

## Busy spots

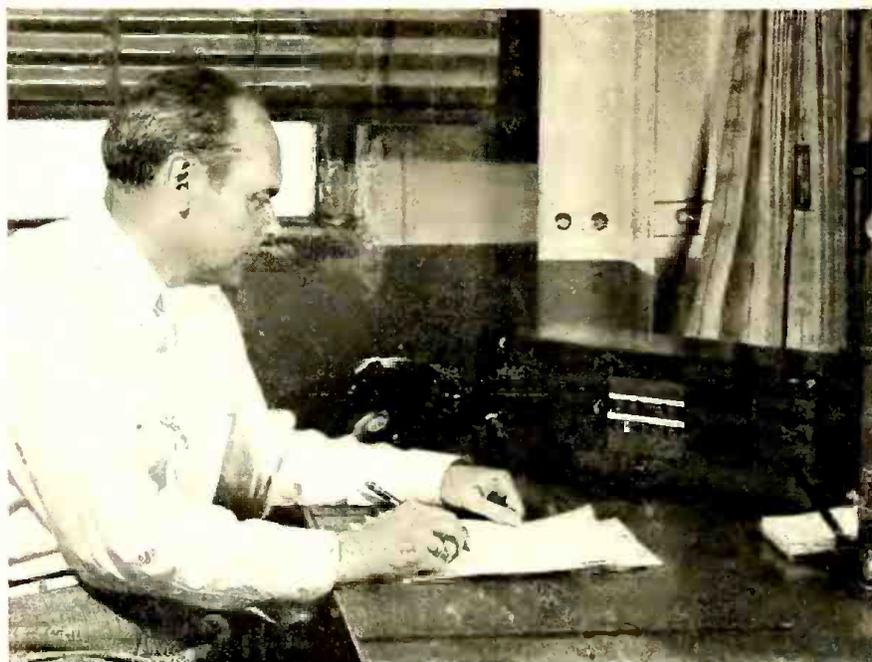
Since interphones are sold to deliver instant communication, a salesman with confidence in his instrument will offer to demonstrate in the "rush-spots" of an organization. It seems the best way to show instantly how the phones will hike efficiency and save money for the outfit.

Obviously a salesman cannot do this in a few minutes; he should be willing to spend considerable time to allow the equipment to prove its value. Unless company executives exhibit some special interest in watching the demonstrator being set up, the salesman may excuse himself during the process. This is done out of respect for the prospect's time.

If the demonstration does occur in a rush spot, salesmen must take care to keep themselves and their gadgets out of the way until the inter-phone goes into action.

## Training angle

Naturally, prospects will wonder whether it will be difficult to train employees to operate the intercommunicating units. Some of them may feel that their office workers, particularly the women, will be mystified when confronted by a series of switches and levers.



Webster Racine's 2-way, no-switch, loud-speaking intercommunicator.

The "education to operate" becomes simple when the salesman picks out the brighter persons to teach, when possible, and operates the 'phones himself several times under their very noses. The trade itself knows that modern equipment is simple and fool-proof, but from the viewpoint of the consumer who finds his organization routine changed, operation of the equipment may seem at first confusing.

The more tricky aspects of using the 'phones are left until the essentials are mastered. In some cases a file clerk can report the contents of a file into an interphone located half-way across a room, when time is valuable. A novice might bungle this stunt until he has had some experience with how the voice is carried.

### Argument for secrecy

Some organizations will get the idea that the minute they install a sensitive intercommunicating system, that the private affairs of a single executive will become a public broadcast. Actually, there is no necessity for private and confidential matters to be aired around the premises, when the inter-phones are used.

Some of the newest intercommunicators are built so that an earphone may be used for listening to reports which the listener's companions shouldn't know about. Other systems may be adapted for the same kind of situation, if in no other way than by placing the instruments at strategic positions.



Here's a demonstration of Central-Call equipment to an interested office prospect.

In organizations where calling or paging systems are needed, a multiple station inter-phonue system will often fill the need exactly. The only other way to do the trick is to use a central PA speaker which covers a whole room rather than sections. This is often unsatisfactory because the person called can only be paged, since the whole room is listening. To tell him why he is wanted and what to do would be undesirable when large groups are also held at attention.

Intercommunicators used as paging systems allow the persons called to be addressed in a semi-private fashion. More details may be communicated without creating a disturbance. This is particularly true in factories, where an interruption of large groups of workers represents a definite loss of time and money.

While the emphasis continues on the outside work in merchandising the equipment, dealers figure out new methods of display and demonstration in the store.

In many stores it is no longer enough to have a demonstrator system which connects the front of the store with the back. One of the greatest appeals is that the gadgets save the effort and the time involved in going up and down stairs. Hence, dealers want to be sure that their model installations in the store run vertically as well as horizontally. They make special arrangements with tenants upstairs if there is no department in the basement.

Some radio stores are hooking themselves up to neighbors on either side, for demonstration purposes. This stunt has more novelty appeal than anything else, as it in no way demonstrates the intra-organization need for inter-phones.

An effective method of display is the use of two small desks in windows—one on each side of the entrance if the store front is arranged in that way. On one desk is displayed a master unit; on the other a remote speaker.



Dentists are among the hundreds of prospects for General Electric's Handy-Phone.

# RADIO-MUSICAL INSTRUMENTS

## New artistic possibilities achieved by tube outfits

★ "MUSIC is an art, indeed a fine art, a *very* fine art.

"But music is not *all* art. Behind every art lies a vast accumulation of scientific knowledge and experience, and considerable in the way even of engineering practice.

"But when we compare music with the other arts, and particularly with other fields of human endeavor, we find *tradition* enthroned, instead of progress!" declares B. F. Miessner, radio and musical inventor of Millburn, N. J., before the recent New York Convention of Music Merchants.

### Age of progress

"The graphic arts have evolved photography and moving pictures, even in color—and television. The drama has availed itself of every conceivable device to intensify the arts of make-believe. Communication has made tremendously great strides by telegraph, telephone and radio. Transportation, likewise, has tremendously accelerated the pace of human movement, with steamships, railroads, automobiles and airplanes. Illumination today is very far ahead of the oil lamp of the dark ages. Agriculture

and industry leave no stone unturned to press improved machinery into service.

"But what of music? In this age of progress in every conceivable field, music and musicians still use the traditional instruments and apparatus of hundreds of years ago.

### Aborigine music

"One musician scrapes the tail of a horse across the intestines of a cat—and the older his instrument is, the more he prizes it. Another blows lividly through a brass tube or a wooden pipe. Another hammers on the drum of the aborigines made from the hide of a cow. Another, sometimes with terrific physical exertion, pounds on a keyboard to rouse his audience through the physical vibrations of struck strings and huge soundboards. Another with aggregations exceeding 10,000 pipes—some as long and large as a forest log—and with hundreds of other complicated and bulky appurtenances, produces the sounds of the organ.

"That most of these have reached the limit of their development is amply supported by their almost fixed

design for hundreds of years. The principles upon which they are based have been carried through all these years of development, to the end of their capabilities.

"Electrical methods have revolutionized many other industries, and the music-instrument industry is next!

### Guitars and ukuleles

"Electrically amplified fretted instruments, particularly guitars and ukuleles, are rapidly supplanting the old types. Bowed string instruments are also coming on the market with the same effect. In carillons, huge bells are now being supplanted by tiny ones, electrically amplified. New solo instruments, fingered like a violin, but requiring no bowing, and with a wide tonal range, electrically generated, are being developed. The latest addition to the electrical instruments are the electronic pianos. Music of rare new beauty is being produced. Tools of marvelous facility and power are given the composer and artist.

### Change tone colors

"Pianos in the last few years have trended towards smaller, cuter and cheaper types. But tone has steadily been sacrificed more and more. Now with the new electronic-amplified pianos we have not only recaptured the lost tone, but we have, even in these smallest instruments, exceeded the performance of the largest grands, and at a far lower cost.

"These pianos are not nearly so complicated electrically as modern radio receivers, and they are well within the service knowledge and facilities of the average radio servicemen.

"The advantage in using electrical amplification instead of mechanical principles for tone production lies not alone in the ability to produce bigger, louder, or more sustained tones—although these are important.

"But the ability to change these tones in color, in power and in other ways, gives to the artist a control over his instrument never before experienced and thus greatly extends and enriches his performance."

"At the same time for present radio men, this new expansion of the radio-tube art opens up a new volume of sales and maintenance business. If the standard music store is to hold its place in this new advance of musical instruments, it will have to take on qualified radio men or join forces with now established radio-service organizations, familiar with the radio and 'sound' arts."



Lew Green and Ferde Grofe, well known orchestra leaders, follow the trend to electrically amplified music. Here, it's Epiphone's new electric guitar.

# ELECTRO-ACOUSTIC SOUND SYSTEMS

*Every Job Sells Another One!*

## NO SATURATION IN THIS MARKET HERE'S HALF A MILLION PROSPECTS

290,000 STORES AND MARKETS • 80,000 LARGE INDUSTRIES • 50,000 CHURCHES • 33,000 COAL AND MATERIAL YARDS • 25,000 HIGH SCHOOLS • 22,000 THEATRES AND HOTELS—are going to be busy this winter. They're going to need Electro-Acoustic Sound Equipment—the modern necessity wherever people must hear. They have the money to pay for it



You have a right to expect perfect performance in the sound equipment you sell. Electro-Acoustic Systems give it to you because they're carefully engineered and built of the highest quality materials in the finest plant in the industry. They're built by people who "know how"—backed by twenty-six years of experience and leadership in this field.

That's why the "Electro-Acoustic" label is your customer's guarantee of a perfect installation.



## THE LINE IS COMPLETE

Electro-Acoustic is the line with which you can get your share of this mighty untouched market.

It's the line with systems, amplifiers, power stages, microphones, baffles and all accessories for every permanent and portable installation requirement.

It's the line that features advanced design—matchless flexibility—modern appearance—perfect performance.

Complete systems from \$53.00 up, with adequate discounts to qualified distributors and dealers.



**ELECTRO-ACOUSTIC SYSTEMS ARE FULLY LICENSED**

# MAGNAVOX SPEAKERS



An outstanding new line of Magnavox Speakers for every application of sound distribution. The latest in radio replacement models Joo. All types and sizes—electro-dynamics and permanent magnet dynamics—5" to 15"—distinctively labeled and packaged. Built to satisfy every requirement of high fidelity voice and music reproduction.

## MAIL THIS COUPON

ELECTRO-ACOUSTIC PRODUCTS COMPANY  
Dept. SS, Fort Wayne, Indiana

Please send me catalog on Electro-Acoustic Sound Systems and the name of my nearest distributor. I am also interested in receiving complete information on  
 Electro-Acoustic Portable Systems.  Electro-Acoustic Amplifiers.  
 Magnavox "EA Special" Speakers.

Name .....

Address .....

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

**ELECTRO-ACOUSTIC**  
SUBSIDIARY OF THE MAGNAVOX COMPANY

**PRODUCTS COMPANY**  
FORT WAYNE, INDIANA

# STEREOPHONIC SOUND

- "Acoustic perspective" with distant actors, at Dallas Fair
- C. C. Langevin devises new methods to sell novel sound effects

★ WHEN the San Diego fair was opened, three years ago, Carl C. Langevin sold the Associated Oil Company the idea of *sponsoring* public-address and radio-pickup facilities for the fair. He put in a wide-range system for outdoors reproduction. It was the hit of the exposition. It soothed the nerves of foot-sore spectators. Only wide-range vertical-cut records were used for reproduced music. People went away talking about the quality of the music which covered every square foot of the exposition grounds.

## Cavalcade of Texas

In addition to the public-address equipment Langevin installed remote radio pick-ups all over the grounds. The fair ran a second year, and a delegation of Texans came to hear and see the sound equipment. They were planning an exposition of their own at Dallas.

Naturally Langevin got this business, too. This time he persuaded the Gulf Oil Corporation to sponsor the public-address facilities. In addition he made the installation of sound at the feature attraction, "The Cavalcade of Texas."

"There was a show, the like of which no one had ever seen before," comments Walt Whitmore of the Western Electric Company. Hundreds of actors re-enacted memorable

events in Texas history on a great outdoor setting 300 feet wide. Capacity crowds of 3,000 persons witnessed almost every performance, and everyone heard each word of dialogue in the mighty pageant. Few realized that the actors did not speak their lines, so cleverly had the dialogue, spoken into microphones by unseen performers, been cued to the action and pantomime of the actors on the set. The recorded music used as background and dramatic embellishment to the action of the pageant was a thing of beauty not soon forgot. It was the sound reproduction which made the pageant. For the first time on a large scale, dialogue spoken offstage had been cued to the action of actors on stage. Truly it was a sensation.

## Remote actors

This year, 1937, "The Cavalcade of Texas" has grown into "The Cavalcade of the Americas," and sound equipment installed by Langevin is again the sensation of the show. Langevin has again introduced a new feature in sound reproduction. It is the first time that "stereophonic sound" has ever been used for a show of this kind. Again as last year unseen performers speak the lines for the actors on the set, but unlike last year's performance, the voices produce a perfect illusion in that they

seem to be coming from the lips of the actors no matter where they may be on the giant stage. It is a realism never before achieved.

In one scene, a member of the cast walks from one end of the set to the other, and his voice follows him with complete illusion of coming from his lips, although his lines are being spoken by another person into a microphone in a soundproof booth 300 feet distant.

## Loud enough

Langevin's success is based on one thing—his insistence upon quality of reproduction. By quality, he means three things: The sound coming out of the loudspeaker must be an exact copy of that going into the microphone; the volume must not be too great, but loud enough for every listener to hear, without straining, each word or sound clearly and distinctly above all extraneous noise and third the illusion that the reproduced sound is coming from its original source must be perfect. These are requirements difficult and costly to meet.

"Failure to meet these requirements is the reason why so many men fail in public-address business," says Langevin. "Others are too afraid of their competitors. They haven't the courage to charge enough to make a legitimate profit, for fear a competitor will underbid them. We never think about competitors. We charge what we know the job is worth to do it right, and trust to our ability to sell them on the idea that they must have a quality system.

"In all our experience we have never sacrificed quality to meet a price. The best is none too good."



These actors in their sound-proof booth, supply all voices heard from the 300-ft. stage, through the mixing panels above.

# CARRIER-CALL

WIRELESS-PORTABLE

T M REG APP U S PAT OFF

The SYSTEM  
that made a new  
INDUSTRY!

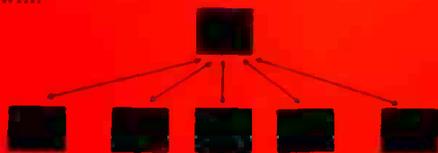


The new Carrier-Call-Radio, consisting of a radio receiver and Carrier-Call inter-communicating station, combined in one unit.

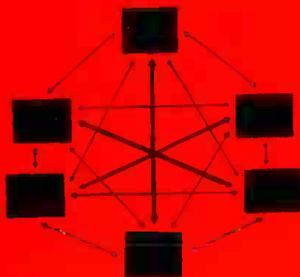
## CARRIER-CALL STANDARD SYSTEMS



Carrier-Call Two-Way System. The original wireless system. Simplest type of equipment. Instant two-way conversation between any two points on the house or office wiring system. Merely plug in and operate. Portable. Movable at will.



MONITORS AND CUBS—Wireless system of master station and five outlying stations. Private two way conversation from master to any outlying station and vice versa but not between outlying stations themselves



MULTIPLE-SELECTIVE SYSTEM—Composed of six master stations permitting secret two-way conversation between any two stations and simultaneous conversation between any three pairs of stations. Heavy lines show typical simultaneous conversation between three pairs of stations. Light lines show other possible conversations.

If a desired station is busy, signal is given by Carrier-Eye on each unit. Wireless. Movable anywhere at a moment's notice. For privacy, can be equipped with earphone.

Again leads the way with a startling new feature in inter-communicating equipment

## CARRIER-CALL-RADIO

... a RADIO RECEIVER and CARRIER-CALL combined in a single unit!

NOW, in addition to the standard Carrier-Call Systems, you can offer your customers a totally new type of instrument—a system that gives complete radio and communication facilities in any room of the house, any part of the office, without wiring or installation cost—ALL at a SINGLE LOW PRICE.

Plug into any lighting socket, AC and DC.

No wires; no batteries; no installation cost.

Portable—move it anywhere in a jiffy.

Radio reception can be transmitted from master station to outlying stations.

Radio cuts out automatically when unit is used as a communicator by any station. Resumes automatically and immediately conversation is through.

Can be sold where other types are unsalable.

Widens the inter-communication market enormously.

Perfect for executives needing market reports and other broadcasting receptions.

Ideal for homes; the residence market now wide open to Carrier-Call dealers.

Surest opportunity for profitable selling.

Complete merchandising and technical cooperation.

The Carrier-Call-Radio is a NATURAL for dealers. So, get the Carrier-Call franchise for your territory before it is too late. Distributors and dealers are urged to wire or write for complete details.

Licensed by Electrical Research Products, Inc., under patents owned or controlled by American Telephone and Telegraph Co. and Western Electric Company, Inc.

AMERICAN CARRIER-CALL CORPORATION

39 WEST 60th STREET

NEW YORK, N. Y.

# SELLING AN AUDITORIUM SOUND JOB

## Tips which will help figuring any large sound system and will simplify the installation

★ ARE you making a bid on that auditorium P.A. system? If so, here are a few suggestions which will help you—not only in figuring the job to make your price right, but also in producing results that will give your “sound” business prestige and favorable advertising for the future.

In planning such a system there are two definite steps to be taken:—  
1. Get clearly the customer's requirements, and 2. Make a careful survey. Here's why!

First of all, the requirements determine what equipment is necessary. That sounds simple doesn't it. But do you know that probably *half your competitors won't figure on the proper equipment* and as a result their prices will be out of line. You don't want either to lose your shirt or to be too high, so get the story *straight*.

If just speech reinforcement is needed a better system will result if the low frequency end is chopped off completely. However, if the system is used for music reproduction, it will need some “low-frequency response” or power depending upon the fre-

quency absorption characteristic of the auditorium.

The ideal P.A. system should have a characteristic which is the converse or opposite of the auditorium's natural characteristic. It's not so easy to get a curve like that and it would cost a lot of money for equipment if done completely and scientifically. Herein lies the need for making a careful survey.

### Speaker location

But before getting into the subject of acoustics let's see what else the survey should accomplish. A set of drawings from the architect will be of aid in determining the power output and speaker requirements. A side elevation drawing and a floor plan are sufficient. (The architect is a good man to know—he can help you a lot, and he will usually do so if he sees you are going about your job in the right way.) If the drawings aren't available, take measurements and make sketches to *scale*.

It used to be a standard method to group all the loudspeakers in one

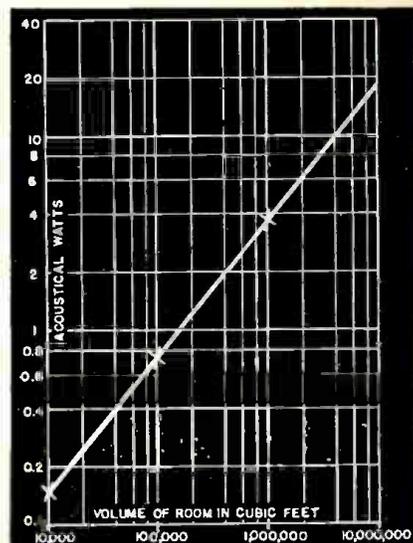


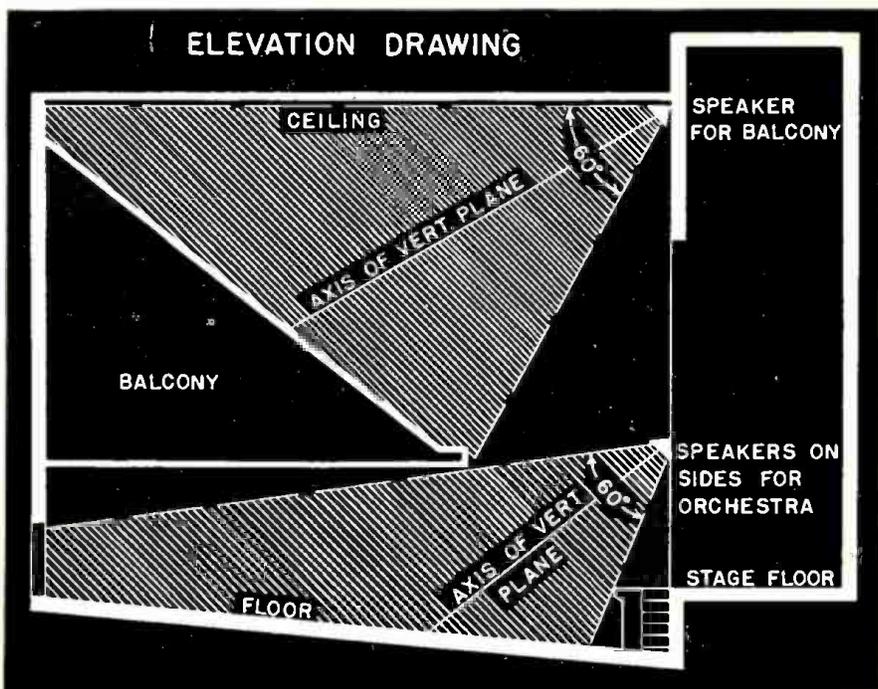
Chart showing the amount of acoustical power required by rooms of various size. Values are approximate only.

central spot just forward of the stage, on the center line of the building. That's still good practice in churches or where there is a speaker's stand and only one microphone location. If there are going to be microphones all along the foot lights, it makes a better job to spread your loudspeakers across the top of the proscenium arch.

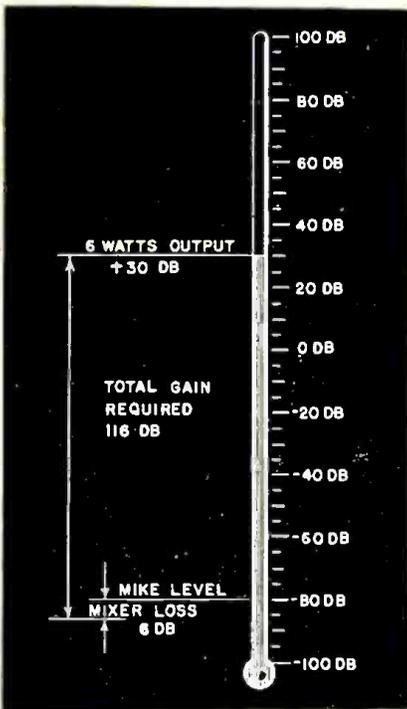
By using the floor plan and knowing the distribution angle of the loudspeakers, they can be laid out so as to give even coverage. Remember that with dynamic speakers, the low-frequency spread is very wide and the high-frequency output is not much more than a beam. If it is a speech reinforcement job, the lows should not get through anyhow, therefore not any more than a 60° spread should be figured unless your loudspeaker manufacturer specifies differently.

If there is a balcony, the loudspeakers across the top of the proscenium arch should be used for reinforcement in the balcony only. Don't try to bend the sound waves down under the balcony to the rear orchestra seats. Sound waves won't bend. Cover the back of the orchestra with loudspeakers located on each side of the proscenium.

The elevation drawing comes in handy in determining the right height



Elevation of an auditorium having a balcony. Separate speakers are used for coverage up and downstair. Note how the sound envelope is paralleled to the ceiling to avoid reflections.



DB gain required is dependent upon power output and the mike level.

for these side speakers. Aim them so that the upper envelope of the distribution angle parallels or coincides with the ceiling under the balcony.

### Use of absorption material

If with this layout there is too much sound on the front wall of the balcony, it is desirable to put on some heavy absorption material such as velour hung in deep folds across the front of the balcony. When installing the loudspeakers for balcony coverage, use the same theory—that is let the upper envelope parallel the ceiling line as nearly as possible. The axis of the speaker in the vertical plane should be aimed near the middle of the balcony seats.

### Keep sound off walls

The ideal sound system may be described as one where everyone hears perfectly without having the slightest idea that any electrical or "sound" apparatus aid is being used. If the audience doesn't realize there is a sound system, it must be right in sound quality and distribution. For that reason, the back rows should not get as much sound as the seats further front. And remember the people in the front seats don't want to be knocked over either.

Direct the speakers about three quarter ways back; and if the sound waves are kept off the side and back walls, they won't bounce off and stir up a lot of reverberation troubles. Half of this business about "poor

acoustics" in walls can be overcome by using some good old horse sense in placing and aiming the loudspeakers.

While a sound level meter is an ideal tool for figuring out the power requirements for an auditorium, because of expense it is usually out of the question for most sound men. However, the cubical content of the room gives fairly good results for figuring in most cases. First of all the cubical content of the hall must be calculated—deducting the mass of balconies and sloping floors.

### Dividing power between speakers

The accompanying chart shows the number of acoustical watts required for various size installations. The efficiency in per cent and also the power handling capacities should be obtained from the manufacturer of the loudspeakers. If the efficiency is 20 per cent you must multiply the acoustical power by 5 to get the audio output power of the amplifiers (20 per cent is  $\frac{1}{5}$ ) or if only 8 per cent efficient multiply acoustical power by  $12\frac{1}{2}$ , etc.

If only one loudspeaker is used, its power capacity must be great enough to handle all the soup the amplifier puts out. If two are used, each one will get 3 db less than the maximum, and so on. Each time the load is doubled, half the power is applied to

each unit. When the electrical power is converted to acoustical power these are going to add again in the same ratios so don't worry about that.

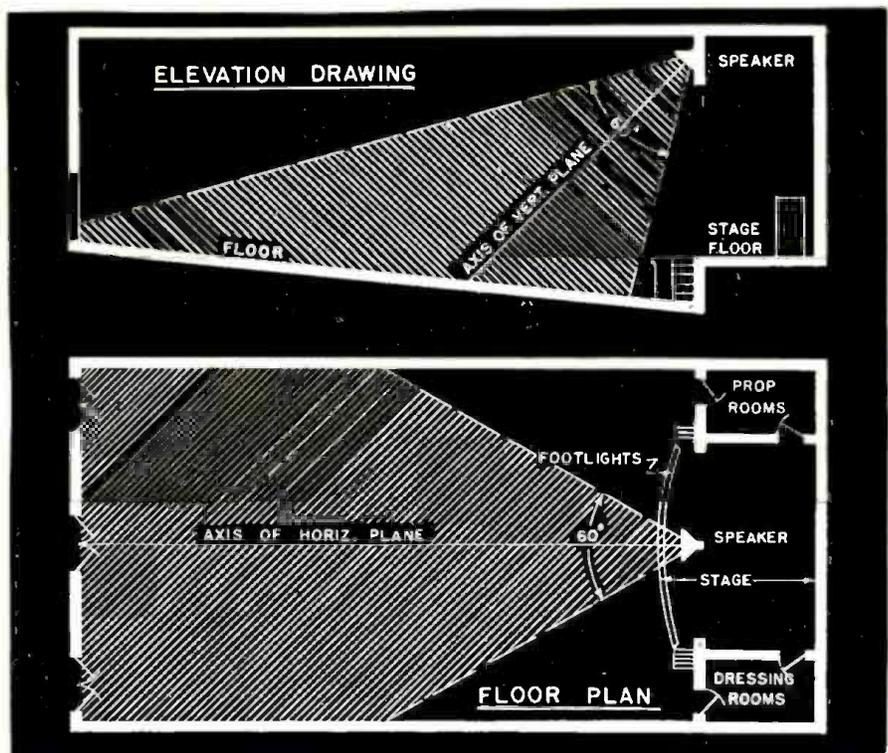
One must remember, however, that the same amount of sound energy may not be wanted from each speaker. In this case the level differences may be adjusted by working from different taps on an auto transformer. Or if the maximum in quality is desired and power dissipation is not a factor, T type attenuators in the individual loudspeaker circuits can be used. Make sure, though, that the amplifier output is matched into the impedance of your combined load.

### Gain requirements

The overall gain of the amplifier system depends upon the efficiency of the microphones and the insertion loss of your mixer circuits. Microphone manufacturers will furnish the necessary data on output levels at various distances and angles of incidence. This will aid in determining the spacing required between microphones if they are to be arranged along the footlights and also allow calculations of the total system gain.

If the microphone output is —80 db. and your electrical power required is 6 watts or +30 db. and the insertion loss of your mixers 6 db. your gain must be the algebraic sum or

(To page 31)



Above—by keeping the sound beam off the walls much reflection is eliminated. Below—horizontal sound coverage provided by a single speaker.

# SERVICING PA SYSTEMS

★ Without question there is a lot of "sound" servicing business to be had these days for the alert serviceman.

School installations which are idle all summer need to be tested out thoroughly at the beginning of every fall term. Auditoria systems which are only used two or three times a year should be carefully inspected and tried out prior to each time it is used as these events are apt to be of considerable importance.

## Systems need attention

Some of the larger companies have sold inspection service with their installations but there are today probably thousands of systems which have not had any expert attention since they were installed. In some cases it will be found that it is just as easy to sell a combined servicing and operating contract, particularly where the system is only used a few times a year. Churches offer a very good field for both servicing and operating contracts.

In attempting to sell service, one should have a fair idea of the magnitude of the installation. With this in mind, an itemized statement of what you will do and how often is an excellent approach to a prospective customer. Be specific but make your story complete. The following lists some of the more important items which should be covered particularly with the older installations:

Check batteries (or rectifiers) recharge if necessary.

Check AC line voltage.

Inspect and test *all* fuses—replace corroded or defective ones.

Clean and lubricate all mixers and other step type controls.

Test all vacuum tubes and replace faulty or border line tubes.

Test microphones—if double button carbon type see that units are well balanced and that button currents are normal.

Test all loud speakers—if electrodynamic, make sure that the fields have normal currents. If the diaphragms of cone type units have been subject to high humidity, see that they are thoroughly dried out (damp diaphragms not only cause loss of efficiency but create abnormal frequency response patterns). Be sure that the speakers are properly matched to the output of the amplifier.

Test all accessories such as phonographs for correct speed and flutter, radio tuners for good reception, cable connectors for good contacts, etc.

## Noise and hum

Test system overall for noise level—electrolytic condensers almost always need to be reformed, particularly after long periods of idleness. This is also the time to check mixer noise—key clicks—transmitter hiss if carbon button units are used. In testing for noise, it is well to terminate the input ahead of all mixer controls, and monitor the output increasing the amplifier gain to its maximum.

It may sometimes be found that the loud speakers are of a type which have a low frequency cut-off well above the AC hum region. In such cases it is important to monitor with a speaker which will reproduce this noise, as sometimes through a fault in the filter circuits, this hum may be of such proportion to modulate part of the speech signals.

Test the overall system response using a frequency record or a piano

or other musical instruments. A portable audio frequency oscillator is, of course, the most desirable test instrument for measuring the system characteristic.

Finally, make an actual talking test, checking the range of pick-up of the microphones and the coverage of the loud speakers. Make this test having someone read as this generally produces the most constant level. Check all parts of the auditorium for loudness and naturalness of sound, noting any discrepancies which might be remedied by better angling of or distribution of energy from the loud speakers. Also include the singing test—that is, advance the gain to a point where singing occurs and then decrease it until it stops. This point should be marked so that the operator will *never* exceed it. Determine the best setting for operation where the sound is most natural and compare this with the one used when the auditorium is full of people. The difference will give you an indication of the absorption value of the audience.

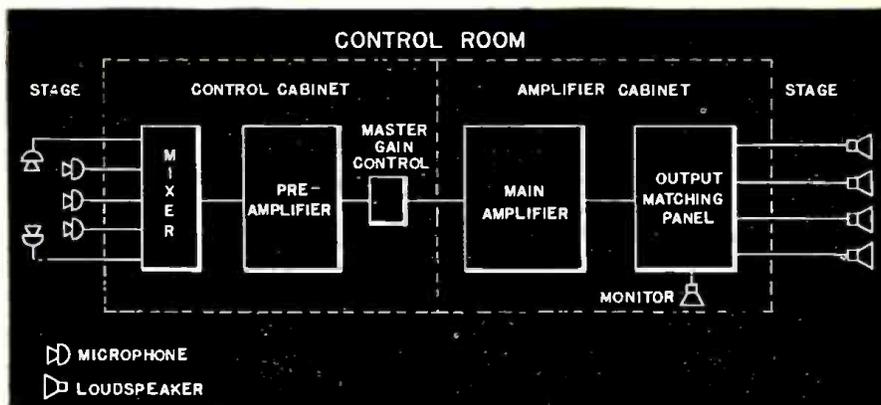
Above all—*keep a record* of conditions as you find them and whatever changes were made. Send a nicely prepared report to your customer—it is impressive and accomplishes two things—it helps to justify the money he has paid you and shows him the necessity for a periodic service of this type. And besides, you will find these records keep increasing in value. They are time savers for you, and they help you *sell* new replacement parts or a modernization job.

## CLEANING ATTENUATOR CONTACTS

★ While the procedure for cleaning mixers and other step type gain controls is very simple, the *Don'ts* are extremely important. Briefly the procedure is as follows:—

1. Wipe the contacts clean with a *clean soft cloth*. *Never* use any form of abrasive or cleaning fluids. Carbona, carbon tetrachloride or the like are *all harmful*. If you find that someone has previously used vaseline or some other grease or gummy oil—remove as much as possible with your cloth.
2. Put a few drops of a high-grade light oil which is *non-corrosive* and will *not gum* on the contacts. Rotate the switch arm until the old dirt is loosened up.
3. Wipe clean with clean soft cloth and lubricate with the same oil using only enough to give smooth operation.

Repeat No. 2 as often as necessary to properly clean all contacts and keep the rest of the unit, particularly the contact plate and the resistance units, free from oil and dirt.

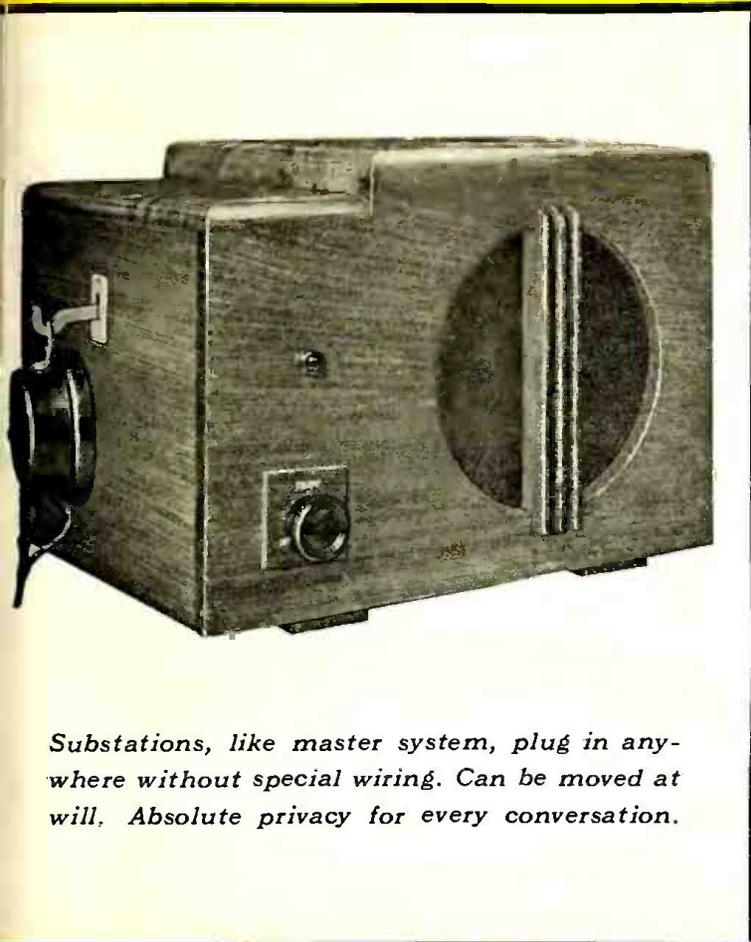


Block diagram showing various components of a sound system.

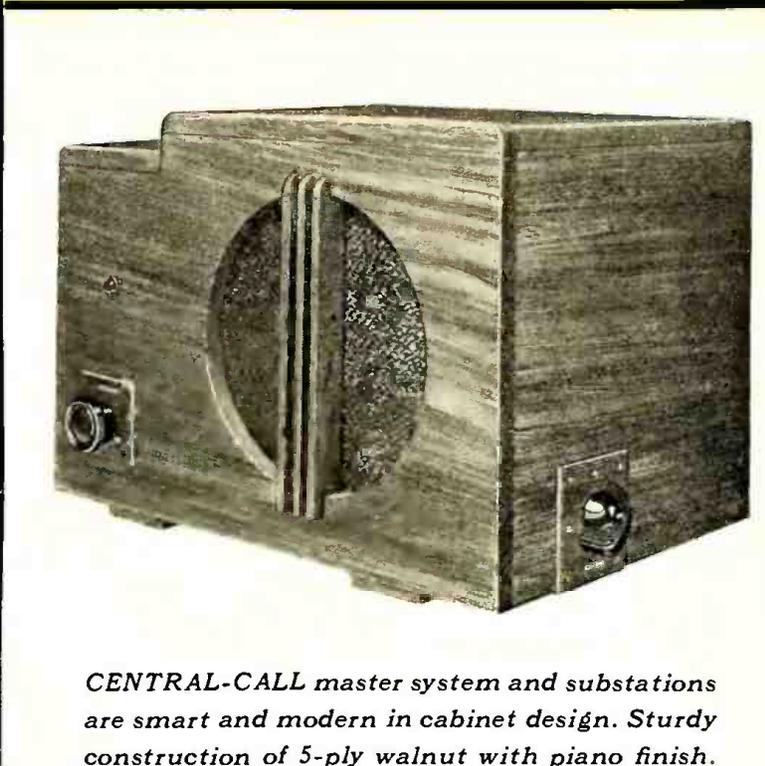
# CENTRAL-CALL<sup>\*</sup> FIRST MASTER OFFICE COMMUNICATION

TRADE MARK REG.

## SET ALLOWING SIMULTANEOUS SPEECH WITHOUT TALK-LISTEN SWITCH AND SPECIAL WIRING



*Substations, like master system, plug in anywhere without special wiring. Can be moved at will. Absolute privacy for every conversation.*



*CENTRAL-CALL master system and substations are smart and modern in cabinet design. Sturdy construction of 5-ply walnut with piano finish. Substation switch makes easy selection. Call by loudspeaker—simultaneous talk as by telephone.*

★ PATENT PENDING

**All Metal-Glass Tubes give better tone, greater volume — operates on AC or DC**

**M**ODERN executives have been demanding an inter-office communicating system like CENTRAL-CALL for a long time. Speaking delays and awkward interruptions caused by the talk-listen switch are eliminated entirely by the CENTRAL-CALL System. Simultaneous conversation can be carried on privately between master and any one of the substations. So completely selective that no interference or cross talk is possible from other substations.

CENTRAL-CALL adds speed and easy exchange to office communication. The metal-glass tubes and 6 inch speaker assure the finest voice reproduction with plenty of volume in reserve.

*No special wiring is needed. Plug in anywhere on the office or house lighting circuit. Saves time and money in wiring . . . quick installation and immediate operation make big selling features.*

Manufactured under license from Electrical Research Products, Inc. U. S. Patents of American Telephone and Telegraph Company and Western Electric Company, Inc.

CENTRAL-CALL will sell at once on demonstration and by comparison. Territories are open for aggressive distributors who will appreciate the liberal profits. Write or wire at once for complete details.

**CENTRAL COMMUNICATION DEVICES, INCORPORATED**  
140-144 WEST 22<sup>nd</sup> STREET, NEW YORK CITY • PHONE—CHELSEA 2-7144-5

*When*  
**YOU GET TO THE PARTS SHOW**  
**don't fail to visit the**  
**SPECIAL SHOWING**  
**FOR THE TRADE of the**  
**1938 Lafayette**  
**PUBLIC ADDRESS LINE**  
**100 SIXTH AVE., NEW YORK**  
**OCTOBER 1-2-1937**

Obviously, it would be impossible for the entire LAFAYETTE line to be properly demonstrated in a hotel. We have, therefore, arranged for a Super Showing of the entire line at our auditorium, ten minutes from the Parts Show.

Have you ever seen \$10,000 worth of sound equipment on demonstration? You'll see it here! Comfortable demonstration rooms permit leisurely complete inspection. Competent sound engineers will gladly explain anything you want. You'll find values never before thought possible—see Sound Systems styled to sell!

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Take 8th Ave. express subway at Port of Authority Bldg. We are just half a block from Canal St. Station at 100 Sixth Avenue.

*Why Sound Men favor Lafayette!*

—Lafayette P.A. prices are consistently lower because of our tremendous turnover, production of many thousand units each year, PLUS a distribution policy that eliminates heavy handling costs.

—Lafayette delivery is lightning fast! Three completely stocked warehouses of the Wholesale Radio Service Co., Inc., and seven branches with complete demonstration facilities carry the Lafayette line. Teletype intercommunication and complete stocks in the key centers of the country guarantee swift service.

—“WHOLESALE” carries the complete Lafayette line, in every price range, every system. The greatest line of P.A. equipment in the world.

And at each of the seven branches you will find complete demonstration facilities



**Lafayette**

“PUBLIC ADDRESS of PEERLESS PERFORMANCE”

**FREE SOUVENIRS!**  
 ADMISSION FREE

# GLOSSARY OF SOUND

**Tweeter**—A loudspeaker unit designed to reproduce high frequencies only (above approximately 3,000 cycles).

**Woofers**—A loudspeaker unit designed to reproduce low frequencies only.

**Baffle**—A partition physically increasing the distance for sound traveling from the front to the back of a loudspeaker diaphragm.

**Acoustic watt**—Unit of sound energy (based on a reference level of  $10^{-16}$  watt per sq. centimeter).

**Mixer**—Adjustable microphone volume controls used to mix one microphone output with others.

**Beam power**—(Tubes)—Flow of electrons directed in beam formation to increase efficiency otherwise lost in secondary emission.

**Turret speaker**—Speaker with dome-shaped metallic housing—“turret top.”

**Harmonic content**—Percentage of harmonics present in signal based on ratio to fundamental frequencies.

**Db. gain**—Amount of voltage or power (or combination of both) amplification calibrated in decibels.

**Response**—Reaction of any equipment unit to applied signal energy.

**Response characteristic**—Contraction for “response frequency characteristic”—relative measurement of equipment’s response at various frequencies.

**Low-pass filter**—A combination of elements which excludes high frequencies but not lows (passes the lows).

**High-pass filter**—A combination of elements which excludes low frequencies but not highs (passes the highs).

**Band-pass filter**—A combination of a low and a high pass filter which passes a single band of frequencies.

**Phase shift**—A change in signal polarity.

**Dividing network**—Combination of elements intended to divide signals into two or more frequency channels.

**Angle of incidence**—Angle from perpendicular at which sound waves impinge upon a given surface.

**Reverberation**—Persistence of sound energy in an enclosure through repeated reflections.

**Rate of decay**—Time involved in absorption of sound energy.

**Insertion loss**—Attenuation caused by the introduction of elements, combination of elements, or equipment units in any circuit.

**Power loss**—When the attenuated energy is actually dissipated.

**Transmission loss**—When input signal is greater than the output signal—may include insertion, power, reflection or transition losses.

**Transmission gain**—When output signal is greater than input signal.

**Optimum reverberation**—Desirable average for overall frequency range and various size and shape of enclosure.

**Reverberation time**—Time required for sound energy to decay to one millionth of its starting value.

**Echo**—Concentrated sound reflections where noticeable time interval occurs.

**Interference patterns**—Resultant effect of two or more sound waves arriving simultaneously at same location.

**Acoustic feed-back**—Sound waves emanating from loudspeakers feeding back to the microphones.

**Phasing or polarizing loudspeakers**—Connecting speakers so that they will receive the same instantaneous polarity of signals so that their diaphragms will vibrate in unison.

**Boomy**—Term to describe lack of high frequency response or over-emphasis of low frequency.

**Thin**—Term describing sound lacking in low frequency response.

**Lows**—Low frequency energy, either acoustic or electrical.

**Highs**—High frequency energy, either acoustic or electrical.

**Loss**—Loss of power.

**Wow**—Effect of pitch change due to variation of speed in recording or reproducing machine.

**Beating**—A phenomenon in which two or more period quantities react to produce a resultant having pulsations of amplitude.

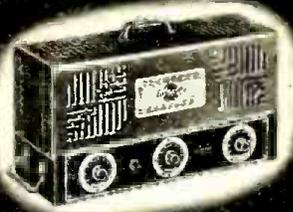


# WE challenge the field

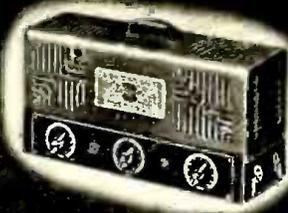
... challenge with a line of sound equipment for 1938 that cannot be matched! Light non-corrosive steel cabinets - streamlined designs - new colors - new values! Lafayette offers you wide range, high fidelity, P.A. equipment ... built for lasting performance. Every part perfectly matched ... every unit styled to sell itself. Look at all lines ... you'll choose Lafayette.

**1938 is definitely a Lafayette Sound Year!**

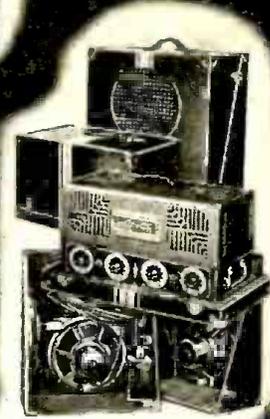
MODEL 134-A



MODEL 101-A



MODEL 371-P



MODEL 134-A Price  
20-30 Watt Amplifier **\$29.95**

MODEL 101-A Price  
15-20 Watt Amplifier **\$21.75**

MODEL 375-P Price  
20 Watt DeLuxe Portable System **\$98.50**

MODEL 292-A Price  
60-90 Watt Amplifier **\$58.50**

MODEL 249-A Price  
5-8 Watt Amplifier **\$13.95**

MODEL 371-P Price  
30 Watt Portable System **\$77.50**

MODEL 321-P Price  
20-30 Watt Portable System for both 6 volts D.C. and 110 volts A.C. **\$89.50**

MODEL 364-P Price  
30 Watt Studio Model System **\$116.50**

MODEL 710-P  
Facsimili-tone Theatre System  
Descriptive Booklet and Prices on Complete Line Available Use Coupon

MODEL 358-P Price  
15 Watt Portable System **\$42.50**

MODEL 267-A Price  
30-40 Watt Amplifier **\$39.50**

MODEL 369-P Price  
20 Watt Portable System **\$59.95**

Above prices less tubes and protective steel cover

MODEL 375-P



MODEL 292-A



MODEL 249-A

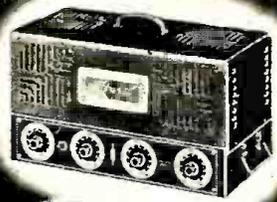


## CO-ORDINATED Lafayette SOUND SYSTEMS

MODEL 321-P



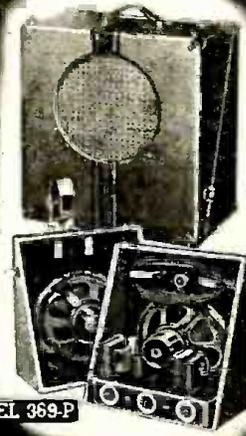
MODEL 267-A



**FREE**  
Catalog

**RUSH COUPON NOW**

MODEL 369-P



MODEL 358-P



MODEL 710-P



WHOLESALE RADIO SERVICE CO., INC.  
100 Sixth Avenue, New York, N. Y.

Please rush FREE Catalog No. 69-977 listing complete line of Lafayette Public Address Systems.

Also Facsimili-Tone Theatre System Catalog No. T-977.

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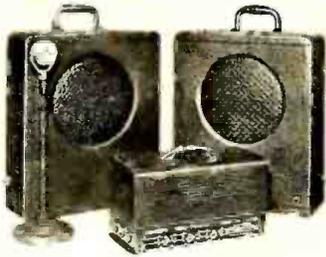
City..... State.....

**WHOLESALE RADIO SERVICE CO., INC.**

NEW YORK, N.Y. CHICAGO, ILL. ATLANTA, GA.  
100 SIXTH AVENUE 901 W. JACKSON BLVD. 430 W. PEACHTREE ST., N. W.  
BOSTON, MASS. BRONX, N. Y. NEWARK, N. J. JAMAICA, L. I.  
110 FEDERAL STREET 542 E. FORDHAM RD. 219 CENTRAL AVENUE 90-08 - 166TH STREET

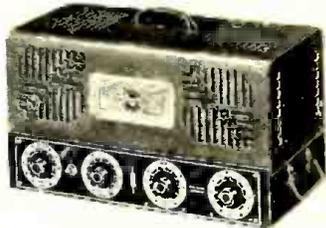
# NEW SOUND EQUIPMENT

## Electro-Acoustic sound system



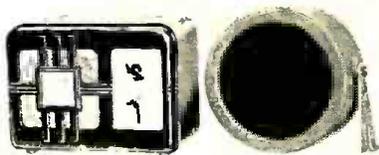
★ 18-watt portable type sound system. Twin speaker carrying case with dual 10-inch units. Crystal microphone with adjustable floor stand. Input channel for 2 mikes and phonograph. Harmonic content of 2 per cent at rated output. Complete with speaker and mike cables. Model AP-1832B. Electro Acoustic Products Co., Beuter Rd., Fort Wayne, Ind.—SELLING SOUND—see also advt. p. 13.

## Lafayette amplifiers



★ Streamline styled amplifiers with advanced circuit design. Reverse feed-back, automatic volume expansion, separate bass and treble tone controls, glow-lighted neo-dials, variable automatic volume control. Outputs range from 5 to 90 watts for all applications. Wholesale Radio Service Co., 100 Sixth Ave., New York, N. Y.—SELLING SOUND—see also advt. p. 20 and 21.

## Selective paging system



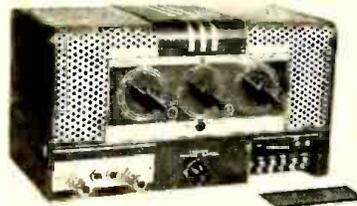
★ 7-watt interphone system for factory paging, institutions, small hotels, etc. Handles up to 5 remote stations—will select any one or all. Talk back feature operates up to 20-40 feet from speakers. Sufficient power for factory floor spaces of 20 to 30 square feet at average noise level. Webster-Chicago model FC-7R. Webster Co., 5622 Bloomingdale Ave., Chicago, Ill.—SELLING SOUND—see also advt. p. 1.

## Aircraft microphone

★ Single-button carbon type mike for use in aircraft and other communication services in noisy locations. All extraneous noises excluded. Held in

hollow of hand—push button contact to talk. Double contact switch operates transmitter relay. Molded bakelite case with shielded cable. Universal Microphone Co., Inglewood, Calif.—SELLING SOUND—see also advt. p. 26.

## RCA amplifier



★ 24-watt high fidelity amplifier. Flat within 2 DB 60-10,000 cycles. Gain of 107 DB. Distortion of 7 per cent at rated output. Beam power output tubes with inverse feedback. 4 input channels—remote mixing, either permanent or portable. Output impedances 4, 7½, 15, 60, 500 ohms. Speech-music switch. Continuously variable tone control. Ultra-modern housing. Model MI-4284. List \$133.50 less tubes and remote mixer. RCA Mfg. Co., Front & Cooper Sts., Camden, N. J.—SELLING SOUND—see also advt. back cover.

## Velocity Hand-i-mike



★ Smallest complete velocity mike ever made with a high or low impedance output, designed for use as a hand type, but also can be employed as a desk or mounted on regular floor stand. Flat response from 60 to 7,500 cycles. Output only 3 DB below standard type of velocity microphone. Head measures 2¼ x 1 x 1½ inches. Molded rubber case. List \$22. Amperite Corp., 561 Broadway, New York, N. Y.—SELLING SOUND—see also advt. inside front cover.

## Oil-filled capacitors

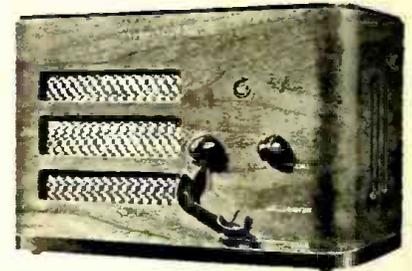
★ Round-can oil-filled condensers for inverted mounting in limited space. Hermetically sealed aluminum can with insulated center terminal. Fittings supplied for insulating can from chassis. Units available in 600, 1,000, 1,500 volts DC and capacities of .5 to 4 mfd. Aerovox Corp., 70 Washington St., Brooklyn, N. Y.—SELLING SOUND.

## Ramco sound system



★ 15 watt deluxe amplifier system with split carrying cases. Dual input channels with mixing and fading controls. Variable impedance output. 114 DB gain with response from 30 cycles up. Velocity mike, banquet stand, speaker and microphone cables. Model 150. Regal Amplifier Corp., 14 W. 17th St., New York, N. Y.—SELLING SOUND—see also advt. p. 29.

## Crosley interphone



★ Low-cost intercommunicating system for homes, offices, etc. 2-way loudspeaking communication. Uses power lines for transmission. Cabinet of walnut measuring 7½ x 11 x 6¾ inches. Crosley Chatabox—list \$19.99 per unit. Crosley Radio Corp., 1329 Arlington St., Cincinnati, Ohio—SELLING SOUND.

## Mobile sound system



★ 6-volt and 110 AC amplifier for mobile use. Has phono and microphone inputs which can be mixed. Four speaker receptacles with change-over switch to match speaker load. Crystal pick-up. Modernistically styled base and hood. Webster Electric Co., Racine, Wis.—SELLING SOUND—see also advt. p. 2.

## Crystal mike

★ Microphone with both velocity and pressure operated elements. Uni-directional response with both elements. Velocity element alone gives bi-directional response, while non-

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- Satisfy Customers
- Flexibility to meet EVERY requirement

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Remler Inter-Communication Systems are backed by the reputation and stability of a trustworthy firm continuously under the same management for twenty years. Write for catalogue sheets, price lists, illustrated folders, sales helps and name of nearest distributor.

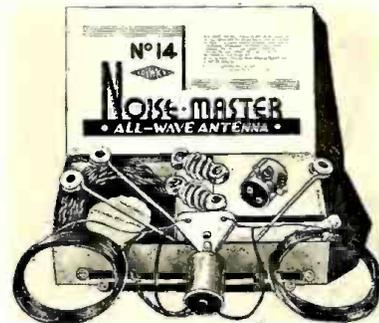
REMLER COMPANY, Ltd., 19th at Bryant, San Francisco



**N**OT in years has there been such a heavy demand for wire in connection with the Serviceman's business. You have noticed it—you have noticed it.

With Public Address going like a prairie blaze and Radio a seething hotbed of activity which promises to be sustained, you will be needing **GOOD WIRE.**

CORWICO Wires are scientifically produced to do their job 100%. Antenna Systems, P-A Cables, Hookup Wires—"made by engineers for engineers." Use CORWICO on your next contract.



*Eliminates "Man-Made" Static on Broadcast as Well as on Shortwave Bands*

Licensed by Amy, Aceves & King, engineered with traditional CORWICO care, this masterly aerial system fits every set and every location. Filters out nuisance noises caused by electrical devices. Improves reception generally—widely endorsed by Service men.

No. 14 (illustrated above) **\$675** List

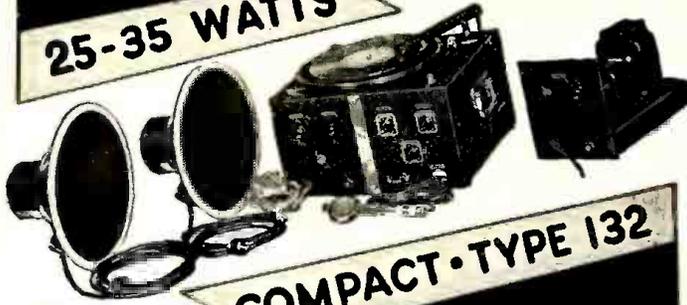
For broadcast and shortwave frequencies, designed to eliminate "man-made" static and afford better reception. 2 to 6 sets can be operated at the same time with an additional lower transformer for each added unit. Other "Noise-Master" units available. **WRITE FOR INFORMATION.**

## CORNISH WIRE CO., Inc.

30 CHURCH STREET NEW YORK CITY  
CORWICO Wire Catalog available to Service men.  
Distribution is exclusively through jobbers

**6 VOLT D.C.  
110 VOLT A.C.**

**25-35 WATTS**



**RUGGED • COMPACT • TYPE 132  
MOBILE  
P.A. SYSTEM**

Uses Beam Power Tubes . . . Electronically mixes one Microphone and one Phonograph . . . Includes Dual Diaphragm Crystal Microphone Hand Type . . . Two 12" Heavy Duty Permanent Magnet Speakers . . . Interchangeable Power Packs . . . can be used in conjunction with Radio Set by using a Model A-3960 Radio Matching Unit.



**Model 108  
8-15 Watt Portable Unit**

Complete with Model 813 Amplifier, velotron microphone with combination hand and banquet stand, 10" Electrodynamic speaker and tubes . . . . . **\$83<sup>00</sup>**

Model 813 Amplifier alone including **\$38<sup>00</sup>**  
Tubes . . . . .

● Extremely rugged, compact and ready to go in every case where a temporary installation is required. A simple change of parts and it's ready for 110 Volt A. C. or 6 Volt D. C. Beautifully finished in baked black stipple, this unit never falls down on the job expected of it.

PRICE—Unit only, 6 Volt D.C. **\$142<sup>50</sup>**  
operation including Tubes . . . . .

Additional for two 12" Permanent Magnet Speakers and Crystal Micro- **\$75<sup>00</sup>**  
phone . . . . .

A. C. Power Unit only, with Tubes. **\$22<sup>50</sup>**

(Above prices subject to usual jobbers' and dealers' discounts.)

The Most COMPLETE Line of Intercommunicating Systems, P. A. EQUIPMENT, P. A. SPEAKERS AND RADIO REPLACEMENT SPEAKERS THE MARKET AFFORDS. EASY TIME PAYMENT PLAN.

**THE PRICED RIGHT LINE . . . THE LIBERAL  
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For NEW 1937 Illustrated Catalog address Dept. R9T

TO ESTABLISHED IMPORTERS ABROAD: The MOST VALUABLE FRANCHISE in the PUBLIC ADDRESS SYSTEMS field is still available for some countries. Write TODAY for details.

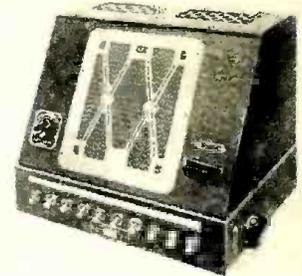
Foreign Division: 145 West 45th Street  
New York City, N. Y. Cable Address  
Lopreh, New York

**OPERADIO  
MANUFACTURING COMPANY  
ST. CHARLES • • • ILLINOIS**

## NEW THINGS

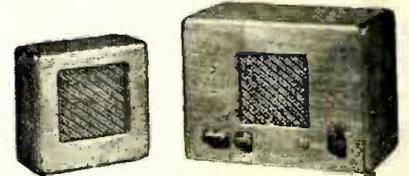
directional pick-up is obtained with the pressure element alone. A switch selects either one or both elements. Model 720A—list \$39.50. Shure Bros., 225 W. Huron St., Chicago, Ill.—SELLING SOUND—see also advt. p. 30.

### Interphone paging system



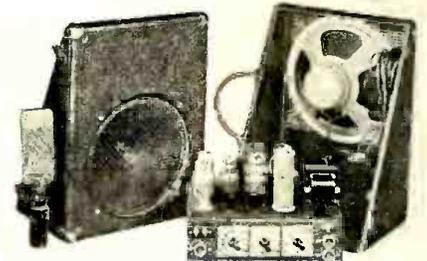
★ High-powered interphone system for paging and 2-way communication. Master switch for calling all outlying stations simultaneously. Toggle switches for selecting outlying stations. Use of 1, 2, or 3 master stations possible. Unlimited number of outlying stations—can talk with master station. 8-15 watt output, Operadio Mfg. Co., St. Charles, Ill.—SELLING SOUND—see also advt. p. 24.

### Espey intercommunicator



★ Master type interphone system accommodating up to 4 remote stations. 2-way conversation from any one of outlying points—or simultaneously with all. Uses ordinary twisted pair for interconnection. Attractive walnut cabinets. Master unit \$39.50—remote stations \$10. Espey Mfg. Co., Inc., 124 E. 25th St., New York, N. Y.—SELLING SOUND.

### Portable sound system



★ 10-watt P. A. system complete in one carrying case. 2 10-inch PM speakers with cables and plugs, Velotron hand mike with cable. Inputs for microphone and phonograph with electronic mixing. Has tone control. Model 610-VT—list \$89.50 with carrying case. David Bogen, Inc., 663 Broadway, New York, N. Y.—SELLING SOUND—see also advt. p. 30.

**SELLING SOUND**

### Intercall communicator

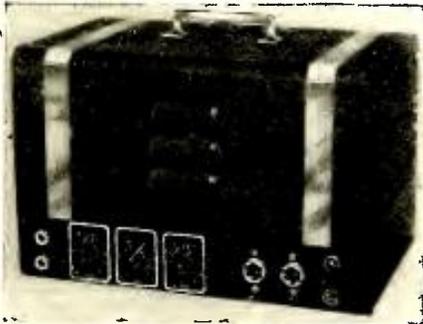
★ Wire and wireless type interphone systems for home and office uses. Office systems for 5 or stations with all-master units, permitting full intercommunication. Headphone for privacy use—speaker cuts out. Push-button connects with desired station or stations. Intercall Systems, Inc., Dayton, Ohio—SELLING SOUND.

### Speech relay system



★ Master type interphone system handling up to 4 remote stations. 2-way conversation controlled at master station. Selector switch for any one or all of outlying stations. Model A permits party line operation whereby remote stations may talk among themselves. Aluminum cabinets with silk suede finish. AC-DC operation. Complete systems priced from \$39.50 up. Turner Co., Cedar Rapids, Iowa.—SELLING SOUND.

### 30-watt amplifier



★ Four-stage amplifier with 30-watt output using push-pull 6L6 tubes, high and low-gain channels—master control—tone control. Field excitation supply of 30 watts. Sold assembled but unwired—model K-30 net \$17.75. Eastern Radio & Television Co., 136 Liberty St., New York, N. Y.—SELLING SOUND.

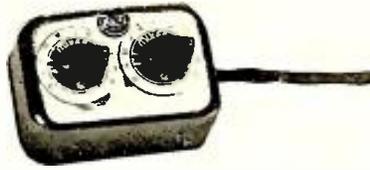
### Audio oscillator



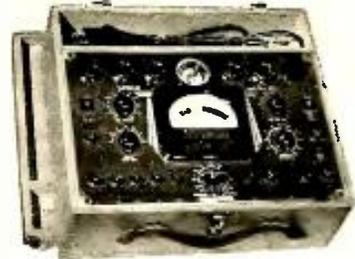
★ Beat-frequency type audio oscillator with frequency range up to 11,500 cycles and essentially constant output of 2 volts to 500 ohm load. Attenuation independent of output impedance. Walnut cabinet and German silver dial. Hand calibrated over 3-month period to insure against thermal unbalance. Net \$35. Televiso Co., 127 N. Dearborn St., Chicago, Ill.—SELLING SOUND.

### Remote mixer control

★ Two-channel remote mixer for newest RCA sound system. Mixer is



### Supreme tube checkers



connected into circuits so that no signal circuits are taken out of amplifier. Provides same operation as mixer at amplifier—no hum or noise pick-up. Enables operator to monitor sound at a position in auditorium with consequently better sound reinforcement effects. List \$24.25 with 30-ft. cable. RCA Mfg. Co., Camden, N. J.—SELLING SOUND—see also advt. outside rear cover.

★ Tube tester with floating filament selector. Five tests possible—inter-element leakage, open element in each circuit, short check between any 2 elements, quality test of complete tube elements, separate sectional test of dual purpose tubes. Model 501 il-

## VOCAGRAPH Thirty Watts "Hushed Power"

net only **\$39.90**



### Compare these STARTLING Sound Values!

See what other leading manufacturers ask for a full thirty-watt, dual high gain input, beam power amplifier! Then ask your own parts supply house to demonstrate this amplifier. Here are a few of the many other VOCAGRAPH values he offers you:

Thirty-watt, fully portable system, Model 30-30PV complete with velocity microphone, three piece case, and two 12-inch p.m. speakers, only \$100.80.

Eighteen-watt, high gain amplifier, Model 30-18C for only \$29.70, or complete with velocity microphone, two 12-inch speakers, and three piece case, etc., only \$85.80.

Ten-watt, high gain amplifier, Model 30-10C for only \$17.70 or complete with crystal microphone and carrying case with 12-inch speaker, only \$47.40.

Whatever your sound needs may be, from ten to ninety watts, get the new VOCAGRAPH catalog. It shows you how to make bigger sound profits.

### New 6-v and 110-v Mobile Amplifier

The lowest price combination 6-v battery 110-volt line operated amplifier ever built, with full rated 30 watts output from generator or a-c pack built in. Phono record player optional. Complete amplifier prices start at \$66.00. Write for full details.

### FREE ENGINEERING BULLETIN



### VOCAGRAPH SOUND SYSTEMS

Division of Electronic Design Corp.,  
162-C N. May Street, Chicago, Ill.  
Send at once complete data and prices.

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



## FUNCTIONAL DESIGN "V" SERIES VELOCITY MICROPHONES

The smooth trim lines and screen housing are more than just style. They contribute to the top performance that typifies the "V" Series. No side-wall reflection. No Resonance.

Priced from \$25 to \$75 list.

WRITE FOR CATALOG • SEE YOUR JOBBER

## ELECTRO-VOICE MFG. CO.

338 E. COLFAX AVE.

SOUTH BEND, IND.

Export Office: 100 Varick St., New York, N. Y.

# New Business for SOUND ENGINEERS



• You can attach the Presto 112-D recording mechanism to any radio-phonograph combination to record radio programs off the air. No pre-grooved records needed. The Presto mechanism cuts the groove as it records the sound—makes permanent high quality records that can be played 50 times or more.

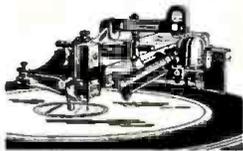
Net price to P.A. and service men complete with installation data \$64.00



## PRESTO

RECORDING CORPORATION  
137 West 19th St., N. Y. C.

## RECORDERS



Professional and portable models for acetate, aluminum or wax recording. Scientific. Rugged. Efficient. Modern. Discs, needles, styli and accessories.

(Recording Division)

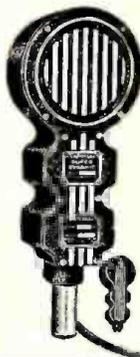
**UNIVERSAL MICROPHONE Co., Ltd.**  
424 Warren Lane

Inglewood, Calif., U. S. A.

## MICROPHONES

New dynamic. An amazing sound development. Also crystals, carbons, condensers, velocity, ribbons, stands and accessories.

(Microphone Division)



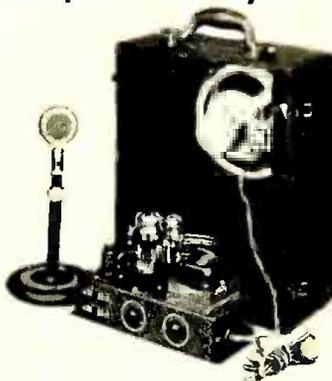
Illustrated—net \$36.95. Model 502 same as 501 but with 19-range AC-DC multimeter—net \$49.95. Supreme Instruments Co., Greenwood, Miss.—SELLING SOUND.

### Universal type sound system



★ AC and 6-volt amplifier with 26-watt output. Built-in genemotor and AC power supplies. Gain of 115 DB. Output impedance to match line or voice coils. 2 channel mixer for mike and phonograph. Genemotor stand-by switch saves battery. Net \$36.50 less tubes. Amplitone Products Co., 152 Washington St., New York, N. Y.—SELLING SOUND.

### 8-watt portable PA system

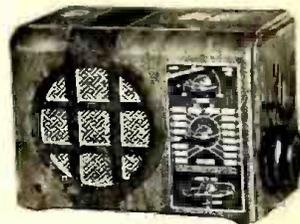


★ High-gain portable sound system using crystal microphone. 6L6 beam power output stage, 8½-inch dynamic speaker with 25-foot cable and polarized plug. Banquet mike stand. Housed in case 8½ x 12¾ x 16¾. Model 8. Autocrat Radio Co., 3855 N. Hamilton Ave., Chicago, Ill.—SELLING SOUND.

### Communications microphone

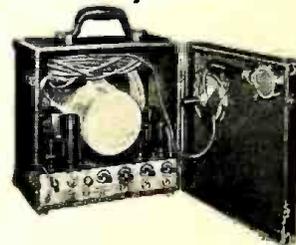
★ Combination microphone and desk stand with "Grip to talk" switch. Frequency response especially appropriate for communication in all types of commercial applications. Crystal type unit. Complete with 8 feet of cable. Astatic Microphone Lab., Inc., Youngstown, Ohio—SELLING SOUND.

### Master Communo-phone



★ Intercommunicating system consisting of any number of master stations up to 19. Two-way conversation without depressing switches. Any station can call any other station. Optional headphone for privacy. Model 19C—list \$45 per station. David Boger, Co., Inc., 636 Broadway, New York, N. Y.—SELLING SOUND—see also advt. p. 30.

### Sunco sound system



★ 12-watt portable system with self-contained microphone, amplifier and speaker. Gain of 126 DB. Powerful enough to cover indoor audiences up to 3,000 and outdoor areas of 25,000 sq. ft. 3 input channels for mike or phono. Operates from 110 AC. Sundt Engineering Co., 4238 Lincoln Ave., Chicago, Ill.—SELLING SOUND.

### Set tester



★ High-sensitivity multi-range meter for set testing. DC ranges 0/10/50/250/500/1000/2000 at 25,000 ohms per volt. AC voltages same as DC at 1000 ohms per volt. DC mills 0¼/1/10/50/250/500/1M/2M/20M. Resistance 0/500/20M/200M/2meg/20meg. Capacitance and decibel calibrations. Free point tester makes all series and parallel meter connections. Triplett Electrical Instrument Co., Bluffton, Ohio—SELLING SOUND.

### Speaker and amplifier cases

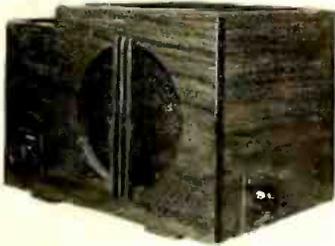
★ Complete line of portable carrying cases for speakers, amplifiers, phonographs, etc. Made of heavy plywood covered with black fabricoid. Reinforced corners, rust-proof hardware. Custom Auto Trunk Co., 300 W. 19th St., New York, N. Y.—SELLING SOUND.

### Portable amplifier system

★ 30-watt sound system employing beam power output tubes. Electronic mixing on 2 input channels. Cathode

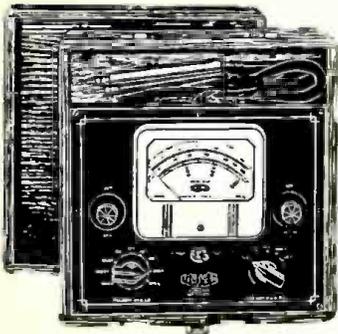
ray eye monitor. Bass booster and high frequency controls. Dual 12-inch PM speakers, velocity mike, amplifier and split speaker cases. Model HFP30 complete with tubes and cables—list \$203.60. Radio Amplifier Labs., 59 Walker St., New York, N. Y.—SELLING SOUND.

### Central-call interphones



★ Master office intercommunicating set allowing speech without talk-listen switch. Has headphone for privacy of operation. Operates on AC or DC. Handles up to 5 sub-stations. Metal-glass tubes and 6-inch speaker unit. Cabinet of walnut. Requires no special wiring—plug in on light circuit. Central Communications Devices, Inc., 140 W. 22nd St., New York, N. Y.—SELLING SOUND—see also advt. p. 19.

### High-sensitivity multi-meter



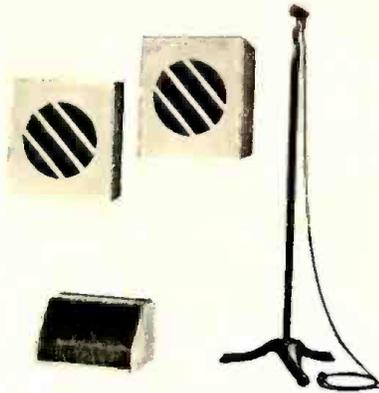
★ AC-DC multi-range meter using rotary range selectors. Ranges chosen so that commonly measured values fall on upper section of meter scale. Ranges—AC and DC volts 0/3/15/30/150/300/600—DC at 20,000 ohms per volt—AC at 2,000 ohms per volt. DC mils 0/30/300/3M. Resistance ranges 0/500/50M/20meg with self-contained battery. Model 320—net \$38.50. Triumph Mfg. Co., 4017 W. Lake St., Chicago, Ill.—SELLING SOUND.

### Vocograph amplifiers



★ Low-priced line of amplifiers with many features. Series thirty available in 10 watts at \$32.90, 18 watts at \$49.50, 30 watts at \$66.50. Electronic Design Co., 164 N. May St., Chicago, Ill.—SELLING SOUND—see also advt. p. 25.

### 20-watt sound system



★ Beam power amplifier with 20

watts output. Dynamic microphone with floor stand. Dual 10-inch PM dynamic speakers with baffle boxes. Sound Products Co., 704 N. Curson Ave., Hollywood, Calif.—SELLING SOUND—see also advt. p. 31.

### Microphone stands

★ Line of "select-ur-own" mike stands. Base and tubing for stands available separately so that any desired combination may be had. Bases available with 5/8, 3/4, 7/8, and 1-inch pipe threads to fit all tubing sections. Gun-metal, bronze, chrome, black or silver wrinkle finishes on bases. 77 distinct combinations possible. Eastern Mike-Stand Co., 56 Christopher St., Brooklyn, N. Y.—SELLING SOUND—see also advt. p. 28.

# A pair of Aces for P.A. pick-ups!



**B**ETWEEN them, Western Electric's famous "8-Ball" and "Salt-Shaker" mikes meet every Public Address need. Both can be used for non-directional work—both can be transformed quickly for directional work by simply putting on their acoustic baffles. Both are popular

with P. A. engineers and dealers all over the country. At their low prices, you can't afford anything less than the true Western Electric quality these mikes give you! For full details: Graybar Electric Co., Graybar Building, New York.



# Western Electric

Distributed by GRAYBAR Electric Co.

In Canada: Northern Electric Co., Ltd.

**We do not**

manufacture amplifiers,  
horns or microphones . . .

**but! we do**

manufacture the largest and  
most complete line of Micro-  
phone *Stands* and  
*Mountings* for  
every type of mi-  
crophone.



Eastern "Mike"  
Stands are high qual-  
ity products designed  
to meet every re-  
quirement. Oversized  
material used  
throughout, thereby  
insuring the Best  
Mike Stand Value for  
the Money.

WRITE for our  
new illustrated  
catalog TODAY.

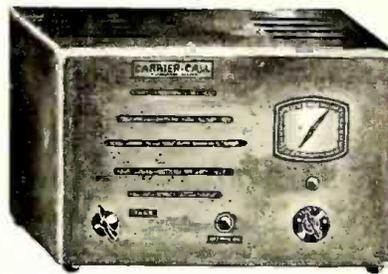
**EASTERN MIKE-STAND CO.**

56 Christopher Ave., Bklyn., N.Y.  
Phone Dickens 2-3538

Factory Representatives—Territory Open

## NEW THINGS

Combination interphone  
and radio



★ Midget type broadcast receiver incorporated in a new intercommu-  
nicating unit. Two-way conversation  
may be carried on between a monitor  
station and five outlying stations.  
Radio reception at the monitor may  
be transmitted to any outlying station.  
Radio cuts out automatically when  
system is used for communication by  
any one of the stations. Resumes in-  
stantly when conversation is com-  
pleted. Manufacturers expect new unit  
to widen interphone market and open  
up new channels of distribution.  
American Carrier-Call Corporation, 39  
West 60th Street, New York—SELLING  
SOUND—see also advt. p. 15.

★ Extensive alterations are being  
made at the big electrical store,  
McCoy's, at Norristown, Pa. Head  
man at the place is Earl L. McCoy.

## METALEX HORNS

A Boon to the  
Sound Engineer



• Steel  
for  
Wear

Model  
2800

• "EX" for Objectionable Resonances

The enthusiastic expression we are receiving regard-  
ing the Metalex Horn makes us want everyone inter-  
ested in public address work, to try one.

These efficient exponential horns should not be con-  
fused with the so-called parabolic units. Spun from  
steel and coated with the material "Ex," these Metalex  
horns give almost unlimited wear and have no objec-  
tionable resonances. Stocked in 3 sizes.

The Model NM2000—12" Nokoil Speaker in-  
stalled in a Metalex Horn gives almost unbelievable  
reproduction.

Write for interesting literature.

Wright-DeCoster Distributors are  
always anxious to cooperate.

**WRIGHT-DeCOSTER, Inc.**

2271 University Ave. St. Paul, Minn.

Export Dept.: M. Simons & Son Co., New York  
Wm. F. Kelly Co., Toronto, Ont., Canada  
Taylor & Pearson, Ltd., Edmonton, Alta., Canada

## SOURCES OF SOUND SUPPLIES

An alphabetical list of sound manufacturers whose advertisements have  
appeared in RADIO TODAY or SELLING SOUND. Companies having ad-  
vertisements in this issue are listed in the ADVERTISERS' INDEX, P. 23.

**Amplifiers . . . . . AMP**  
**Inter-Communicating Systems . . . . . INT**  
**Kits (Amplifier) . . . . . K**  
**Microphones . . . . . M**  
**Record Playing & Recording Equip. RP**  
**Speakers . . . . . S**

ALLIED RADIO CORP., 833 W. Jackson Blvd., Chi-  
cago, Ill.—AMP, INT  
AMERICAN CARRIER-CALL CORP., 39 W. 60th St.,  
New York, N. Y.—INT  
AMERICAN MICROPHONE CO., INC., 1915 South  
Western Ave., Los Angeles, Calif.—M  
AMPERITE CORP., 561 Broadway, New York, N. Y.  
—M  
ANSLEY RADIO CORP., 240 W. 23rd St., New York,  
N. Y.—RP  
ARISTON MFG. CORP., 4045 Diversey Ave., Chicago,  
Ill.—S  
ASTATIC MICROPHONE LABORATORY, INC., 40  
Hubbard Rd., Youngstown, Ohio—M, RP  
ATLAS SOUND CORP., 1451 39th St., Brooklyn,  
N. Y.—AMP, INT, K, M, S  
BDGEN CO., INC., DAVID, 663 Broadway, New York,  
N. Y.—AMP, INT  
BRUSH DEVELOPMENT CO., 33rd & Perkins Ave.,  
Cleveland, Ohio—M, S  
CENTRAL COMMUNICATIONS DEVICES, INC., 140  
W. 22nd St., New York, N. Y.—INT  
CINAUDAGRAPH CORP., 110 Davenport St., Stam-  
ford, Conn.—S  
CONSOLIDATED RADIO PRODUCTS CO., 618 W.  
E. 8th St., Chicago, Ill.—S  
CONTINENTAL CARBON, INC., 13900 Lorain Ave.,  
Cleveland, Ohio—M  
CONTINENTAL MDTORS CORP., 12801 E. Jefferson  
St., Detroit, Mich.—S  
CORNISH WIRE CO., INC., 30 Church St., New York,  
N. Y.—Hook-up wire  
DICTIONARY PRODUCTS CO., INC., 580 Fifth Ave.,  
New York, N. Y.—INT, M

EASTERN MIKE-STAND CO., 56 Christopher Ave.,  
Brooklyn, N. Y.—Mike stands  
ELECTRO-ACOUSTIC PRODUCTS CO., 2131 Bueter  
Rd., Port Wayne, Ind.—AMP, INT, K, RP  
ELECTRO-VOICE MFG. CO., 324 Colfax Ave., South  
Bend, Ind.—M  
ELECTRONIC DESIGN CORP., 164 N. May St., Chi-  
cago, Ill.—AMP  
GENERAL INDUSTRIES CO., 3537 Taylor St., Elyria,  
Ohio—RP  
INSULINE CORP. OF AMERICA, 23 Park Pl., New  
York, N. Y.—M  
JENSEN RADIO MFG. CO., 6601 S. Laramie Ave.,  
Chicago, Ill.—S  
KREISLER COMMUNICATIONS, INC., 250 W. 57th  
St., New York, N. Y.—INT  
LEDTONE RADIO CO., 63 Dey St., New York, N.  
Y.—S  
MARCONIPHONE, INC., 679 Madison Ave., New York,  
N. Y.—RP  
MILES REPRODUCER CO., INC., 813 Broadway,  
New York, N. Y.—INT, K, M, RP, S  
OPERADID MFG. CO., 13th & Indiana Sts., St.  
Charles, Ill.—AMP, INT, S  
OXFORD-TARTAK RADIO CORP., 915 W. Van Buren  
St., Chicago, Ill.—S  
PHILCO RADIO & TELEVISION CORP., Ontario &  
C sts., Philadelphia, Pa.—INT, S  
PILGRIM ELECTRIC CORP., 44 W. 18th St., New  
York, N. Y.—M  
PORTOMATIC CORP., THE, 1013 Madison Ave., New  
York, N. Y.—RP  
PRESTD RECORDING CORP., 139 W. 19th St.,  
New York, N. Y.—RP  
QUAM-NICHOLS CO., 33rd Pl. & Cottage Grove Ave.,  
Chicago, Ill.—S  
RADOLEK CO., 601 W. Randolph St., Chicago, Ill.  
—AMP, INT  
RADID RECEPTOR CO., INC., 251 W. 19th St.,  
New York, N. Y.—AMP, M, S  
RADIO SPEAKERS, INC., 1338 S. Michigan Ave.,  
Chicago, Ill.—S

RCA MANUFACTURING CO., INC., Front & Cooper  
Sts., Camden, N. J.—AMP, M, RP, S  
REGAL AMPLIFIER MFG. CO., 14 W. 17th St.,  
New York, N. Y.—INT  
REMLER CO., LTD., 2101 Bryant St., San Francisco,  
Calif.—AMP, INT, M, RP  
SHURE BROS., 251 W. Huron St., Chicago, Ill.—M  
SILVER, INC., McMURDO, 2900 S. Michigan Blvd.,  
Chicago, Ill.—AMP, S  
SIMPLEX RADIO CO., THE, Sandusky, Ohio—INT  
SONORA ELECTRIC PHONOGRAPH CO., INC., 160  
Varick St., New York, N. Y.—RP  
SOUND PRODUCTS, 704 N. Curson Ave., Hollywood,  
Calif.—AMP, M, S  
STANDARD SOUND PRODUCTS CO., 19 Rector St.,  
New York, N. Y.—INT  
STANDARD TRANSFORMER CORP., 850 Blackhawk  
St., Chicago, Ill.—K  
STROMBERG-CARLSON TELEPHONE MFG. CO., 100  
Carlson Rd., Rochester, N. Y.—AMP, INT, M,  
RP, S  
THORDARSON ELECTRIC MFG. CO., 500 W. Huron  
St., Chicago, Ill.—K  
TRANSDUCER CORP., 30 Rockefeller Plaza, New  
York, N. Y.—INT, M  
TRANSFORMER CORP. OF AMERICA, 69 Wooster  
St., New York, N. Y.—AMP, INT, M, RP, S  
TROY RADIO MFG. CO., 1142 S. Olive St., Los  
Angeles, Calif.—RP  
UNITED SCIENTIFIC LABS., 62 W. 14th St., New  
York, N. Y.—INT  
UNITED SOUND ENGINEERING CO., 2233 University  
Ave., St. Paul, Minn.—AMP, INT, M  
UNIVERSAL MICROPHONE CO., LTD., P. O. Box  
299, Inglewood, Calif.—AMP, INT, M, RP  
UTAH RADIO PRODUCTS CO., 820 Dreans St.,  
Chicago, Ill.—K, S  
WARD & CO., MONTGOMERY, W. Chicago & N. Larr  
Sts., Chicago, Ill.—AMP  
WARD PRODUCTS CORP., 1523 E. 45th St., Cleve-  
land, Ohio—AMP  
WEBSTER-CHICAGO, 5622 Bloomingsdale Ave., Chi-  
cago, Ill.—AMP, INT, M, RP, S  
WEBSTER ELECTRIC CO., Racine, Wis.—AMP, INT,  
RP, S  
WESTERN ELECTRIC CO. (Graybar Elec. Co.), 195  
Broadway, New York, N. Y.—AMP, M, S  
WHOLESALE RADIO SERVICE, INC., 100 Sixth  
Ave., New York, N. Y.—AMP, INT, K  
WRIGHT-DeCOSTER, INC., 2233 University Ave., St.  
Paul, Minn.—S



David Bogen, maker of sound equipment, uses new Bogen Commu o-phone.

★ One of the season's biggest public address jobs in New York City went into the Metropolitan Hospital, Welfare Island, when Wholesale Radio Service Co. recently installed a new Lafayette centralized system for the institution. The set-up handles 70 loudspeakers distributed throughout wards and departments for radio programs and announcements. Equipment also supplies the P.A. requirements for the main auditorium.

★ Central Communications Development Corp. now have new headquarters at 140 W. 22nd St., New York City. The layout includes space for offices, factory and laboratories; the firm manufactures Central-Call intercommunicators for national distribution.

★ Regal Amplifier Mfg. Corp., 14 W. 17th St., New York City, have completed an agreement with Electrical Research Products, Inc., whereby they are licensed to make and sell public address and intercommunication equipment under patents owned or controlled by Western Electric and American Telephone & Telegraph Co. Regal products will be merchandised under the trade name of Ramco.

The company makes a complete line of amplifiers, 5 to 100 w., portable and fixed, and also produces intercommunicating systems of both the wireless and wired types. Walter Spiegel is sales and advertising manager.

★ American Carrier-Call Corporation, makers of intercommunicator systems, have moved to larger quarters on the eighth floor of 39 W. 60th St., New York City, where the company's research laboratories and its plant for the manufacture and assembly of systems are now combined under one roof. A new operating head of the Carrier-Call organization was announced by President Gatter at a recent meeting at which changes were voted by the board. T. Stockton Gaines was elected executive vice-president. There will be no successor to former sales manager Gottschall, who died soon after his withdrawal from the company.

★ Leaflets describing microphone floor stands, bases, shock absorbers, etc., as well as new desk and banquet stands, have been released by Eastern Mike-Stand Co., 56 Christopher Ave., Brooklyn, N. Y.

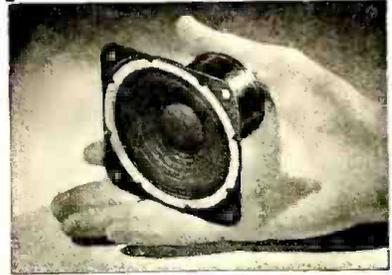
★ Amplitone Products Co., 152 Washington St., New York, N. Y., will send on request a new catalog on Amplitone amplifiers.

★ "The Brightest Star on the Intercommunicating Horizon" is the name of a new booklet published by Operadio Mfg. Co., St. Charles, Ill.

**SOUND  
VALUE**



★  
**OXFORD SPEAKERS**



ELECTRO-DYNAMIC and "PERMAG" Speakers by Oxford, in a wide range of sizes and models for modern Receivers and Public Address systems. Write today for full details!

**SEE US at BOOTH 401  
NEW YORK RADIO TRADE SHOW**

New York Office: 27 Park Place, N. Y.

**OXFORD-TARTAN**  
RADIO CORPORATION  
915 W. VAN BUREN ST. • CHICAGO, U. S. A.

*Cash in* **ON A WINNER**



**TOKFONE Master Unit**

**Tokfone**—adaptable to meet all requirements—from 2 to 40 stations—Systems are Wired or Wireless—Tu-way communication can be carried on without the use of a talk-listen switch. . . . *No Fancy Prices—All Net—All New Merchandise—No Preferences—No Tricks—No Makeshifts—Special Units If Necessary—No Quotas—No Contracts—Buy Them As You Need Them—Manufactured in Our Own Factory—We Stock Them—Beautifully Hand Rubbed Cabinets.*

Communication between master station and any remote station in which any remote station can call the master, and the master is the only one that can call all remote stations separately, or altogether. Master comes equipped with Earphone. Works on AC-DC current. List Price \$47.50 for 1 master and 1 Remote and 50 ft. wire.

**\$12.95 Net**

Master to Master selective system which enables any outlying master to call any other master station; up to 18 separate stations and 9 separate and distinct conversations between station to station or any group of stations while any two or three, or more, stations are talking. Are equipped with earphone also without the use of the Talk-Listen switch. Works on AC-DC current. List Price \$45 each.

**\$12.00 Net**



**TOKFONE Remote Unit**

Wireless communication two way station to station only without the use of wires. Ideal for the home, office, shipping department, doctors, factory or any place requiring station to station communication. Works on AC-DC current. List Price \$69.50 per pair.

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We also Manufacture P.A. Equipment in the following sizes: 6, 12, 15, 30, 60 Watt—Amplifiers—Parts used are: Aerovox-Thordarson—I.R.C.—Parmet-Rola-Clarostat-Eby and Holyoke—Nothing but the best.

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# — and HOW THEY PERFORM



**Shure "ULTRA"** offers you the highest performance available today in general purpose microphones. 8 exclusive built-in features give thrilling life-like reproduction and sturdy dependable service . . . yet "ULTRA" is unusually low in price. Because of this, "Ultra" Crystal Microphones are standard equipment with nationally-known sound-equipment manufacturers and eminent sound engineers everywhere. Available in Swivel, Grille, and Spherical models. **List Price, complete with 7 ft. cable, \$25**



## ★ SHURE "TRI-POLAR"

**3  
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1**

Uni-Directional  
Bi-Directional  
Non-Directional

### All in ONE Crystal Microphone

Here, for the first time, is one microphone that does everything! Gives you all three directional characteristics (1) Uni-Directional (2) Bi-Directional (3) Non-Directional—in one unit, each instantly available through a 3-point selector switch.

The Shure "TRI-POLAR" is the most advanced microphone available anywhere at any price! It enables you to select just the sound you want . . . gives you better results under adverse acoustic conditions.

Model 720A, complete with 25 ft. of cable, **List Price, only \$39.50**



### ZEPHYR CRYSTAL PICKUP

The Shure ZEPHYR "Balanced-Tracking" Crystal Pickup reduces record wear . . . increases record life. Improved wide-range response gives finer reproduction. **Model 99B, List Price \$12**

Specially designed Arm-Rest available at 50c. List additional. Press arm down on post to lock. Releases when lifted.

For complete details ask your jobber, or write for Bulletin 144P today!

Shure patents pending. Licensed under patents of the Brush Development Company.



# SOUND NEWS



Sales Mgr. D. P. O'Brien of Cinaudagraph.

★ Winners of the Clarion Amplifier contest sponsored by Transformer Corp. of America at the National Radio Parts Trade Show in Chicago have been announced: first prize, a \$62.95 portable sound system, Charles C. Tyler, chief electrician of the Chicago Opera House; second prize, a \$49.10 amplifier, Arthur G. Mohaupt, Devon Radio Labs., Chicago; third prize, a \$31.50 amplifier, W. M. Emery, radio service engineer, Coon Rapids, Iowa. More than 2,000 persons were in the competition.

★ Fowler Durst, long associated with the sound and communication industries, has resigned as vice-president and chief engineer of Guided Radio, Inc., where he also was in charge of commercial applications. Mr. Durst is a graduate of Bucknell University and the A.T.&T. courses in transmission engineering and accounting practices. For fifteen years he was with the Bell System, serving from 1920 to 1928 in the long-lines department of the American Telephone and Telegraph Company, and later as transmission engineer at Washington, D. C., and in 1928 transferring to Electrical Research Products, Inc., New York City, in design and commercial engineering capacities. Mr. Durst's home is at 29 Colgate Road, Great Neck, L. I., N. Y.

★ Universal Microphone Co., Inglewood, Calif., is under way with the production and distribution of a line of crystal microphones, incorporating the crystals of the Brush Development Co. First model is called the Handi-Mike and others will follow.

★ Epiphone, Inc., 142 West 14th St., New York City, makers of tube-amplifier musical instruments, have announced their exclusive national distributorship for DuMont Laboratories' new Resonoscope, an instru-

ment for determining the pitch of musical instruments or the voice.

★ A carbon microphone is offered by the Electro-Voice Mfg. Co., 338 E. Colfax Ave., South Bend, Ind., as a prize for suitable questions for the newly published Electro-Voice fun department. First volume of this new publication carries a list of 20 questions with the multiple-choice type of answers.

★ H. A. Kapit, president of Atlas Projector Corp., and also head of W. O. Gutlohn, Inc., jobbers of 16 mm. sound-on-film, has announced that early this Fall, they will market a popular priced portable 16 mm. sound projector. The equipment is described as ideal for home and classroom use.

# BOGEN SOUND SYSTEMS

## ALWAYS FIRST WITH THE LATEST

This organization has not been content merely with keeping abreast of modern trends and developments. Repeatedly we have been

## "FIRST WITH THE LATEST"

In keeping with this policy, we will present for the first time in commercial sound equipment . . .

## BINAURAL AMPLIFICATION

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Don't fail to hear these radical and different methods of sound amplification.

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**DAVID BOGEN CO., Inc.**  
663 Broadway New York City

# PIONEERS IN PUBLIC ADDRESS DEVELOPMENT

SELLING SOUND

## DISTRIBUTOR-DEALER PROBLEMS

(From page 9)

6. By all means, *never* "build your own"—at least for sales purposes. You are a thousand per cent better off to offer a factory-made outfit, for several good reasons. Such a product has a resale value. It offers good design, which the average man cannot possibly give. This may hurt the average sound man's ego, but if he is after profit, he had better heed this.

7. Sound equipment has a rather rapid depreciation. For this reason at intervals sell your obsolete equipment, or even junk it—you will be money ahead to "keep up with the parade."

8. Price your service and equipment *properly*, and then if some other firm wants to underbid you, let them have the job. Underbidding them will only cause them or you to lose money. Better let the other fellow be a victim to his folly.

9. Watch your accounts. Credit only those whom you know to be "good." Service to a dead beat means your time and money thrown away.

### Jobbers see rapid growth

"Our own opinion is that unit sales of sound equipment are perhaps 100 per cent larger now than they were last year," says Seattle Radio Supply Co., Inc., Seattle, Wash. "We notice that the over-all dollar volume in the business is increasing rapidly."

"Out here in Wisconsin, sales of sound equipment look to us about 100 per cent better than they were last year," reports Valley Radio Distributors, Appleton, Wisc. "The over-all volume done in the business is definitely on the increase."

"We will say that sales of sound equipment are about twice as good as a year ago," writes J. H. Larson, Hudson, Wisc. "And the activity is such that total dollar volume done in the business here is certainly increasing."

### SELLING AN AUDITORIUM JOB

(From page 17)

116 db. (80 + 30 + 6), as shown in accompanying chart.

In earlier paragraphs mention was made about absorption characteristics and acoustics. As a general rule most auditoria which haven't been treated acoustically have a high reverberation time at the low frequency end. That's why when a flat system is used it sounds boomy and unnatural.

### Too much bass objectionable

One of the most recent P.A. jobs that is really good, used horns that didn't have any response below about 400 cycles. You may recall some of the older type horns that didn't sound so natural. One of the reasons was that a lot of people tried to make low frequencies come out of those

horns and others tried to squeeze too much power out of them.

It is surprising what improvement can be made both in the singing point of a system and the naturalness of the sound if an equalizer (adjustable if possible) is used to attenuate the lows. It is preferable to insert it in near the input stages or right after the mixers. Sound picture recording engineers use them most all the time and they call them—dialogue equalizers. By taking the auditorium characteristics into consideration, one will save a lot of trouble and save the customer a lot of expensive acoustical treatment.

One of the most practical ways to determine what equalizing is needed is to turn up the gain until the system sings. The frequency it sings at is the natural peak of the auditorium characteristic if a substantially "flat" sound system is employed. With a set of tuning forks (can be borrowed from local high school) or a frequency record or piano the value of the frequency can be determined. Then attenuate that part of the frequency band with a resonant circuit if necessary. Put in just enough attenuation to make the system sound natural and the singing frequency will be high enough to avoid low frequency difficulties.

# 5 MINUTE TONE TEST

Try it with a "Bullet" Microphone!

● Believe your own ears! Try the five minute tone test. Here's what you do. Listen to sound reproduction using any velocity or crystal mike comparable in price to a "Bullet" model. Listen to it for a full five minutes. Then disconnect it and immediately hook up a "Bullet" mike . . . and listen. You'll be amazed at "Bullet" superiority! Nothing we could say would be as convincing as this testimony of your own ears. Try the tone test and you'll agree that "Bullet" is the big buy in mikes.

When our engineers created the new 1938 "Bullet" dynamic microphones they built a line unsurpassed in quality and performance. "Bullet" mikes are remarkably sensitive, rugged and dependable.



You who appreciate fine quality in sound reproduction will do well to get complete data on the new "Bullet" line, Models TR-5, 6, 7, 8 and 9 range in list price from \$27.50 to \$90.00. There's a model to fill your need. For complete data and prices, write now to Dept. SS.

**"BULLET" MICROPHONES**

Made only by

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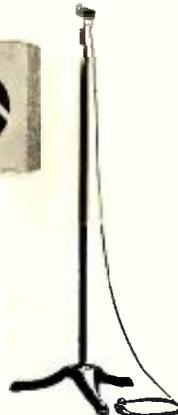
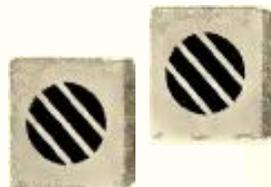
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**THIS COMPLETE**

**20 WATT**

**BEAM POWER ULTRA**

**MODERN SYSTEM**

**\$150.00**

**READY TO OPERATE**

- 1—Dynamic microphone
- 1—Floor stand
- 2—10" P.M. Speakers
- 2—Speaker boxes
- 1—P.A. 20 amplifier

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**N**OW that you have your first issue of *Selling Sound*—and it will speak for itself—you owe it to yourself to take two important steps that will serve your own self-interest. First, read it from cover to cover, in order that you will know what it contains and how to put it to work.

Second, make sure of getting all future issues of *Selling Sound*, because each succeeding issue will be even better than the first, and you must keep abreast of things if you don't want to be at a competitive disadvantage.

This publishing service puts in your hands a continuous and complete source of information on sound. Every month RADIO TODAY brings you feature articles and news of sound—new merchandise, technical and installation data, selling hints, etc.—and semi-annually, you receive a complete specialized service in an all-sound magazine.

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*Selling Sound* will be sent only to paid subscribers of RADIO TODAY whose subscriptions include the months in which *Selling Sound* is published, viz: September and March.

For example, if your subscription to RADIO TODAY expires with the September issue, you must renew your subscription in order to receive the next issue of *Selling Sound*.

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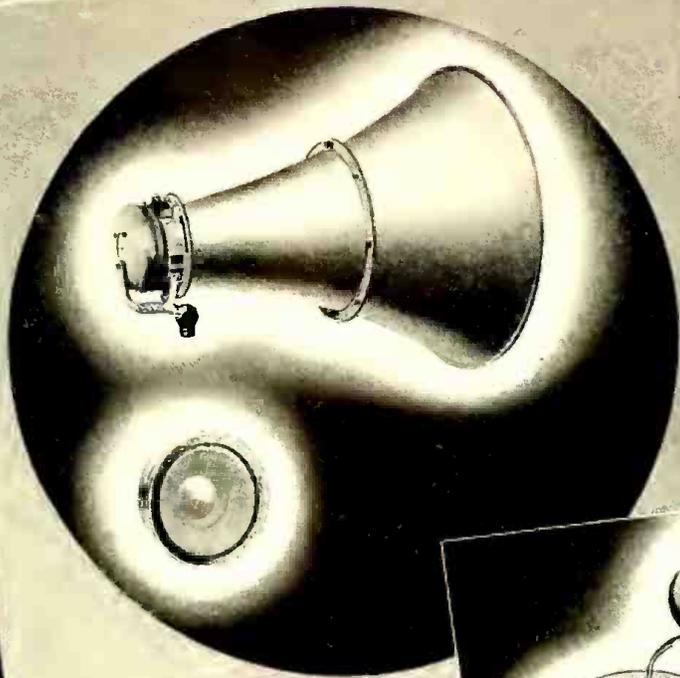
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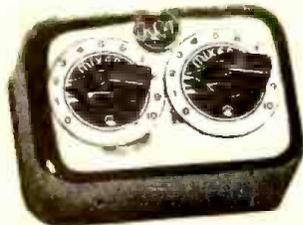
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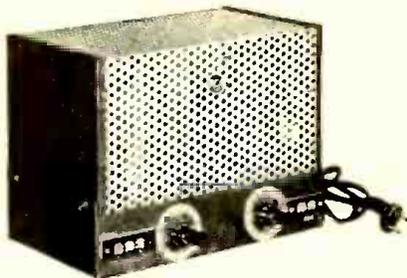
A complete line of Magic Magnet Speakers ranging in size from 5 to 18 in.

# ANOTHER RCA FIRST

## REMOTE ELECTRIC MIXING



● (at left) The most important and valuable item ever developed for use in connection with PA equipment. Permits mixing of input circuits at any desired point remote from the amplifier. Shielded signal circuits not required. An absolute requisite for ball park, auditorium and similar installations.



● (above) A new high gain, general purpose, quality amplifier at low cost. Beam power output. Excellent frequency response... continuously variable tone control, reverse feed back circuit... microphone and phonograph inputs... wide variety output impedances... attractively finished in silver gray and aluminum. MI-4264, Price \$36.50 (Less Tubes).



● (above) A de luxe, 24-watt amplifier with remote electric mixer. Splendidly shielded and cushioned input circuits insure quiet operation. Inverse feed back circuit... continuously variable tone control... automatic bass compensation for phonograph reproduction... two 250 ohm and two 0-5600 inputs... variable output impedance 4 to 250 ohms... finish, silver gray and aluminum. MI-4284, Price \$133.50 (Less Tubes and remote electric mixer unit).



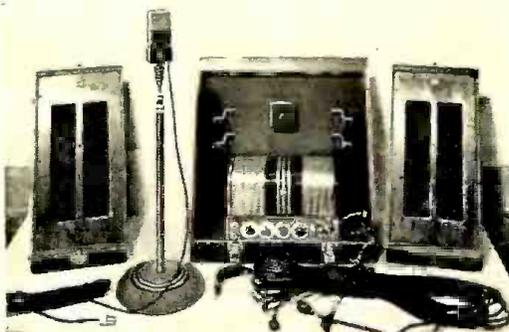
● (above) RCA quality at low cost. Here's a portable RCA unit that will find numerous ready buyers because of its highly efficient, general purpose amplifier. Record reproduction alone, or as a background to voice. Complete in every respect, as illustrated. PG-111, Price \$99.50.



● (above) A remarkably efficient 12-watt amplifier. Operates from either 110 volts AC or 6-volt dynamotor. Excellent mobile unit for sound trucks, buses, etc. 250 or 500,000 ohm inputs. Finished in silver gray and aluminum. MI-4274, Price \$78.60 (Less Tubes).



● (above) Two ace microphones for PA use. Left, RCA Junior Velocity "Mike." Provides real reliability and long life. New alnico magnets—marked increase in sensitivity, much higher signal to noise ratio. High, intermediate, or low output impedance. Adjustable mount, highly flexible. Unaffected by temperature or pressure changes. Bi-directional with null plane. MI-4036, Price \$43.50. Right, RCA Aerodynamic "Mike." Small enough to fit the hand. Excellent frequency response. High sensitivity. Excellent for close talking. No external excitation or power required. MI-6226, Price \$26.50.



● (above) A universally adaptable PA System Operates from 110-AC or 6-volt storage battery and dynamotor. Permanent or mobile installation. 12 watts output, two powerful dynamic speakers with RCA velocity microphone. Provides a highly efficient PA System for numerous locations where good sound is paramount. PG-112, Price \$199.50.



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