

Radio Journal

**& ELECTRIC
APPLIANCE**

Radio Merchant

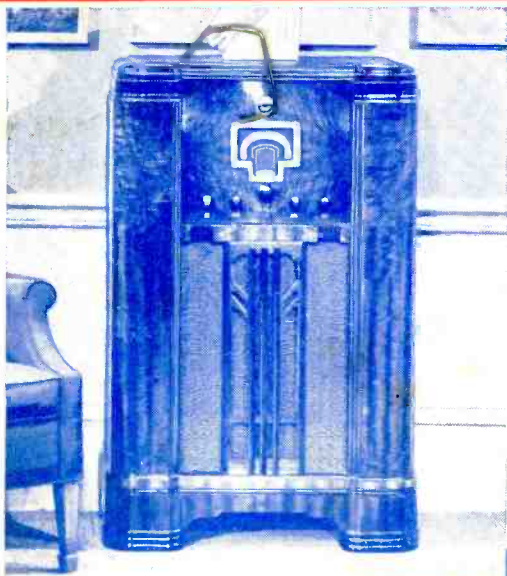
Glad Henderson
Editor

AUGUST, 1936

RCA VICTOR'S SALES

111.5%

**OVER
LAST
YEAR !**
(FIRST 7 MONTHS)



*Dealers making more money than ever
by featuring RCA Victor's sensational*
NEW MAGIC VOICE SERIES!

RCA Victor sales for the first seven months are up 111.5% over those for the same period last year! All over the country dealers are reaping a profit harvest by featuring RCA Victor's great 1937 Magic Voice radios with Magic Brain, Magic Eye and RCA Metal Tubes.

Why? Because RCA Victor enables dealers to offer values that MAKE SALES. Because RCA Victor backs its splendid merchandise with a gigantic color advertising campaign in the Saturday

Evening Post and Collier's, as well as advertising in other powerful national magazines. Because RCA Victor's Magic Key radio program and the numberless sales aids made available to dealers, still further make the public RCA Victor conscious.

Get behind this thrilling MAGIC VOICE SERIES. Feature, too, the fine low priced EXTRA VALUE SERIES. Push both series with all your might. It will pay you—well!

● **MAGIC VOICE SERIES...** Model 10-K, a five-band, 10-tube superheterodyne with Magic Voice, Magic Brain, Magic Eye, Metal Tubes, plus many other sparkling features that will help make sales. Tuning range: 150-410 and 530-60,000 kcs. \$150. (Other Magic Voice models as low as \$129.95.)

● **EXTRA VALUE SERIES...** Model 5-X, AC or DC, 5-tubes, 2 bands, superheterodyne. Tuning range: 540-6500 kcs. Domestic and short wave, police, aviation, amateur. Only \$32.95; (27 other models from \$20 to \$99.95.)



RCA Victor

RCA MANUFACTURING CO., INC.

CAMDEN, NEW JERSEY

A Service of the Radio Corporation of America

Get in on the

Westinghouse landslide!

*the right models!
the right features!
the right prices!*



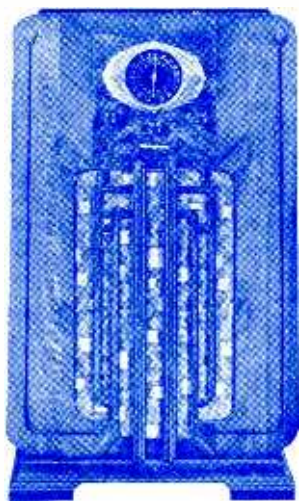
CONSOLE, WR-311, Weather, Police, Foreign and Standard Bands, Precision Tuner, Precision Eye, Precision Hand, Spectrum Dial.



Sound business is like sound politics. You can't win without popular appeal.

A pre-season poll of thousands of prospective radio buyers has already given Westinghouse the popular vote. Based on a nation-wide survey, we *know* that this new line *has what the people want* . . . not just a single "appeal" . . . but all the worthwhile developments of radio science, built into a complete line of good-looking sets, priced at just the right level for profitable sales.

For complete information, call your nearest Westinghouse Radio Distributor or write Merchandising Headquarters, Westinghouse Radio, 150 Varick Street, New York.



CONSOLE, WR-310, Standard and Police Bands.

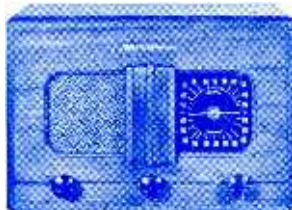


TABLE MODEL, WR-102, AC-DC, Standard and Police Bands.



TABLE MODEL, WR-209, Standard and Police Bands, Spot-lite Tuning, Spectrum Dial.



CONSOLE, WR-312, Standard, Foreign and Police Bands, Precision Tuner, Precision Eye and Spot-lite Tuning, Low Volume Bass Compensation.

FEATURE PLANKS in the WINNING Westinghouse PROFIT PLATFORM

- PRECISION TUNER
- PRECISION EYE
- PRECISION HAND
- ALL-METAL TUBES
- SPECTRUM DIAL
- SPOT-LITE TUNING
- STATION STABILIZER
- DUAL SELECTOR DRIVE
- AUDITORIUM SPEAKER
- PUSH-PULL OUTPUT
- LOW VOLUME
- BASS COMPENSATION
- THREE-POSITION
- BASS TONE CONTROL
- THREE-POSITION
- TREBLE TONE CONTROL
- HIGH FIDELITY CONTROL
- BEAM POWER AMPLIFIER

Westinghouse

Radio

C.I.T. Localized Finance Service Now Available for Radio Dealers

RADIO manufacturers, from A to Z, are now providing their dealers with the C. I. T. Budget Plan.

This makes available for radios the same quick, personalized service that has helped dealers build record sales for refrigerators and other major household appliances.

Furthermore, you can now offer your customers a combination C. I. T. Budget Plan sale of any two or more acceptable articles in one contract.

With the advantage of this new and better selling weapon the 1936-37 season should be one of the most profitable that radio dealers have ever known.

C. I. T. with Local Offices throughout the country is as near to you as your telephone. For quick credit service and the purchase of paper call the nearest C. I. T. office.

AS SALES GO UP - PRICES COME DOWN

Once a Luxury for the Few - Now a Pleasure to all
- with the aid of Instalment Buying

The earliest radio, whether home made or shop-made, didn't even vibrate or work very well. Later models were more efficient but expensive - luxuries obtainable only by those who could pay cash. Then the industry followed the trail blazed by automobile builders in sought the aid of instalment buying. Responsible families with small incomes could pay part cash and the balance out of earnings.

Better Sets at Lower Prices
Sales swung up and prices dropped down - spurred on by increased sales, engineers improved radio sets. Today, people on all walks of life enjoy superior entertainment in their own homes - whether they buy by cash or on the C. I. T. Budget Plan.

Age in and again incentive groups, mass production and instalment selling have - by placing superior luxuries within the reach of the average pocketbook - increased vastly unimproved products and decreased prices.

C. I. T. has been privileged to take an active part in this advance. From a small beginning in 1918, C. I. T. has grown to be the largest independent sales financing institution in America. Today the C. I. T. Budget Plan is enabling thousands of Americans to enjoy radios while paying for them out of income. So naturally, millions of families are enjoying the full benefits of automobiles, refrigerators, washing machines and other modern household conveniences which promote health, comfort and happiness.

Send for This Free 16 Page Booklet
The C. I. T. Budget Plan by those who understand instalment buying. Shows you all the details of the C. I. T. Budget Plan and how to get the most out of it. Send for it today. It's yours for the asking. No obligation. Free. Write to C. I. T., Commercial Investment Trust Corporation, 100 Broadway, New York, N. Y.

C.I.T. COMMERCIAL INVESTMENT TRUST CORPORATION

WIDENS THE SCOPE OF BUSINESS

This advertisement is one of a series appearing in leading weekly magazines and newspapers throughout the country, having a total circulation of over 12,000,000.

Abilene - Akron - Albany - Altoona
Amarillo - Asheville - Atlanta - Augusta
Bakersfield - Baltimore - Bangor - Bay Shore
Beaumont - Beckley - Billings - Binghamton
Birmingham - Boise - Boston - Bridgeport
Bronx - Brooklyn - Buffalo - Butte - Camden
Cape Girardeau - Carbondale - Cedar
Rapids - Charleston - Charlotte - Chattanooga
Chicago - Cincinnati - Clarksburg - Cleveland
Columbia - Columbus - Cumberland - Dallas
Dayton - Denver - Des Moines - Detroit
El Paso - Erie - Evansville - Florence
Fort Wayne - Fort Worth - Fresno - Glens Falls
Greensboro - Greenville - Hagerstown

Harrisburg - Hartford - Hempstead - Hickory
Houston - Huntington, W. Va. - Indianapolis
Jacksonville - Jamaica - Jamestown
Jersey City - Johnson City - Kansas City
Knoxville - Lexington - Lincoln - Little Rock
Los Angeles - Louisville - McAllen - Manchester
Memphis - Miami - Milwaukee - Minneapolis
Mobile - Montgomery - Montpelier - Mt. Vernon
Nashville - Newark - Newburgh - New Haven
New Orleans - New York - Norfolk
Oklahoma City - Omaha - Orlando
Paducah - Paterson - Peoria - Perth Amboy
Phoenix - Philadelphia - Pittsburgh

Portland, Me. - Portland, Ore. - Portsmouth
Poughkeepsie - Providence - Raleigh
Reading - Reno - Richmond, Ind.
Richmond, Va. - Roanoke - Rochester
Rome, Ga. - Sacramento - St. Louis - Salisbury
Salt Lake City - San Antonio - San Diego
San Francisco - San Jose - Savannah - Scranton
Seattle - Spartanburg - Spokane - Springfield,
Mass. - Springfield, Ohio - Stockton - Syracuse
Tampa - Texarkana - Toledo - Tucson - Tulsa
Utica - Washington - Watertown - West
Palm Beach - Wheeling - White Plains
Wichita - Wilkes-Barre - Wilson - Worcester
Yakima - Youngstown - Zanesville

C.I.T.

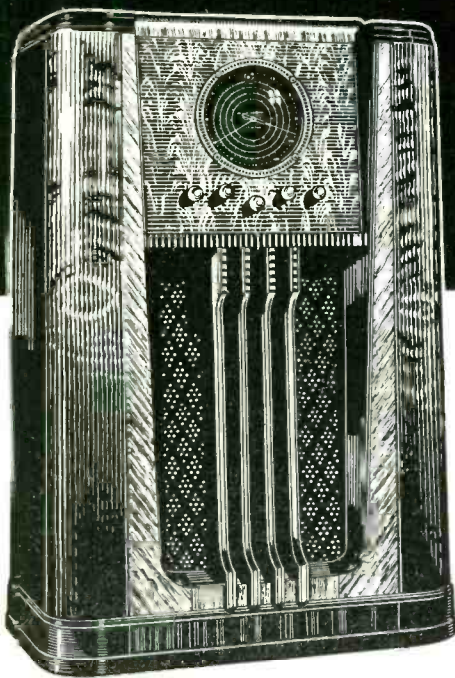
C. I. T. CORPORATION • NEW YORK • CHICAGO • SAN FRANCISCO
A UNIT OF COMMERCIAL INVESTMENT TRUST CORPORATION
CAPITAL AND SURPLUS MORE THAN \$100,000,000



HELPING DEALERS TO WIDEN THE SCOPE OF THEIR BUSINESS

THE SECOND "big parade" OF 1936 IS ON!

In Radio — As in Refrigeration — You'll Ride the Band-Wagon if You Ride with Stewart-Warner!



MASSIVE NEW COPPER PHOTO-TONE S P E A K E R

EVEN you hard-boiled radio dealers will cheer when you hear and see this great new Stewart-Warner line. What Stewart-Warner did in refrigeration—with the stand-out models of 1936 and a sales gain of 127% over the preceding season—Stewart-Warner has done again in both AC and farm radio. And smart dealers all over America have already told us they'll go to town with Stewart-Warner this fall.

That great new Copper PHOTO-TONE Speaker alone is enough to sell most prospects—because a brand new kind of construction sets a brand new standard of tone mellowness and perfection. But it's just one of the most impressive list of features we've ever wrapped up in one radio. These sets have everything!

And they—and you—are backed up with the most amazing finance plan the industry has ever seen—plus the most powerful merchandising in Stewart-Warner history. It includes everything from envelope stuffers to a national radio broadcast series featuring Horace Heidt and his popular Alemite Brigadiers. Get on the band wagon now! Your distributor has the whole story—and it's worth listening to.

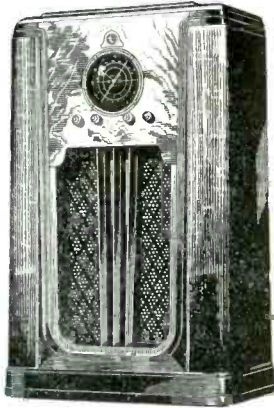
Radio's Biggest Money's Worth! Here's "The Most of the Best" In Real Features — Real Enjoyment

- ★ TWIN Copper PHOTO-TONE Speakers
- ★ ELECTRON BEAM Power Amplifiers in Push-Pull with driver stage giving 20-watt undistorted output
- ★ SHADOW BEAM Tuner using new-type Cathode Ray Tube
- ★ 12-Tube Duo-Circuit FERRODYNE Chassis—19 tuned circuits
- ★ Huge 7-inch MAGIC DIAL with new Automatic Band Indicator
- ★ True ALL-WAVE, including Weather Band
- ★ New Trilinear AUTOMATIC VOLUME CONTROL
- ★ New 5-point TONE CONTROL giving both bass and treble control including true Hi-Fidelity
- ★ Independent SELECTIVITY CONTROL
- ★ Dual BASS COMPENSATION
- ★ Automatic Antenna Control
- ★ Antenna and Power Line Filters
- ★ Hand-rubbed CRAFT-BUILT Cabinets
- ★ And Many Other Improvements

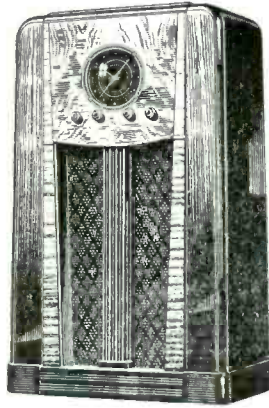
STEWART-WARNER CORPORATION
CHICAGO, ILLINOIS



5-Metal-Tube Ferrodyne Receiver. Covers American Broadcasts and both Police Bands.



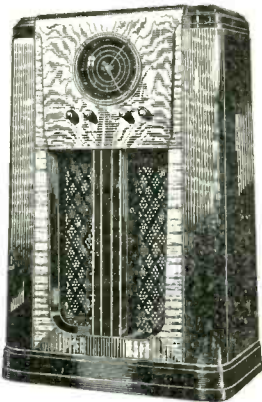
8-Tube All-Wave Ferrodyne Receiver with Shadow Beam Tuner and new PHOTO-TONE Speaker.



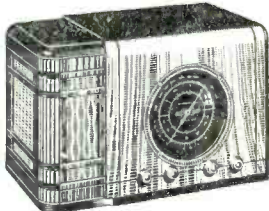
7-Metal-Tube All-Wave Ferrodyne Receiver with 12-inch Copper PHOTO-TONE Speaker.



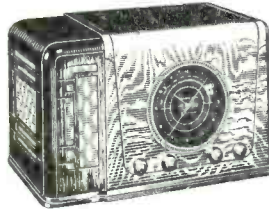
6-Metal-Tube All-Wave Ferrodyne Receiver with new 6-inch Two-Ratio Magic Dial.



10-Tube All-Wave Ferrodyne. Electron Beam Amplifier. Shadow Beam Tuner. 12-inch Copper PHOTO-TONE Speaker.



6-Tube Ferrodyne Receiver—with 3-band All-Wave Magic Dial and many other features



7-Tube All-Wave Ferrodyne Receiver, with all-metal tubes and big 6-inch Magic Dial.

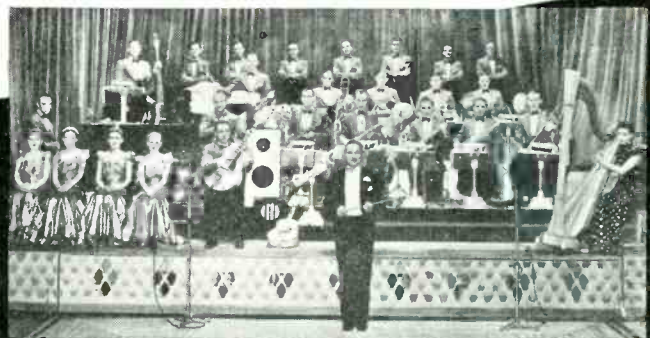


• Massive new Copper PHOTO-TONE Speaker brings entirely new mellowness to radio tone.

NEW! AMAZING NON-RECOURSE FINANCE PLAN NOW READY!

You'll scoop competition plenty with Stewart-Warner's brand new finance plan! It's as far ahead of the field as Stewart-Warner's refrigerator finance plan was last spring! Non-recourse—100% advance—very low financing charge. Administered through all 144 C.I.T. offices. Ask nearest C.I.T. office or Stewart-Warner distributor for the complete details.

ON THE AIR for Stewart-Warner Radio!
Horace Heldt and his Alemitte Brigadiers



STEWART-WARNER

3 Profitable Years

for RCA Radio Tube Dealers

Soon the RCA Radio
Check-Up will start
on its third year

Check-Up activities will be more vigorous and resultful than ever during the new season starting in the fall.

Spot announcements on stations that blanket the country.

Interesting, convincing advertisements in *Saturday Evening Post* and *Collier's*.

Local newspaper advertising with which you can tie-in.

Direct-mail material and lots of it.

Window and store displays.

RCA Radio Tubes are the only ones promoted in such an aggressive manner, the only ones backed by a continuous promotion program that brings great benefits to you and your customers. It pays to stock, sell and push RCA Radio Tubes.

RCA MANUFACTURING CO., Inc.

Camden, New Jersey

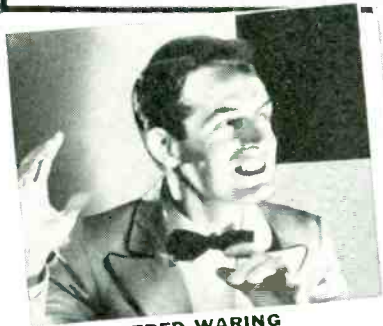
A Service of Radio Corporation of America



Radiotrons

These Great Orchestra Leaders

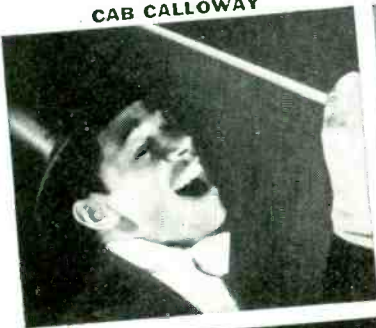
PARADE ACROSS THE PAGES OF THE SATURDAY EVENING POST
TO SPEED YOUR "SUCCESS IN THE RADIO BUSINESS"



FRED WARING
CAB CALLOWAY



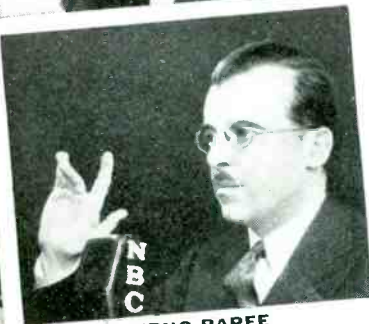
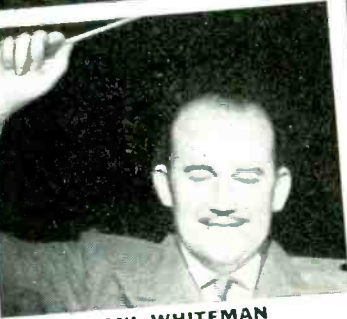
RUDY VALLEE
BEN BERNIE



PAUL WHITEMAN
GUY LOMBARDO



ERNO RAPEE
FRANK BLACK



THE trade has already ordered over 4 times as many American-Bosch CentrO-matic Radio sets as a year ago. American-Bosch *must* have something worthy of your investigation.

It certainly has! . . . It has the "Automatic Maestro," latest and greatest radio engineering development. It has a market-measured line that embraces every price class. It has the exclusive band-stand baffle, over-size speakers, super-size black dials, woman-captivating cabinets, amazing prices—these and other selling advantages total 24 all-star features that are making American-Bosch CentrO-matic Radio the fastest moving line of the year.

And it has the year's outstanding promotions—both in point-of-sale and consumer advertising. National advertising stars great orchestra conductors, to emphasize the role of the "Automatic Maestro." Point-of-sale advertising features Paramount movie stars, living room backgrounds, challenging literature and the most beautiful, sales-compelling demonstration display stand in radio history.

American-Bosch is hitting a winning stride—in a big way. You can find greater success in the radio business with American-Bosch. Mail coupon below and learn why.

UNITED AMERICAN BOSCH CORP.
SPRINGFIELD, MASS. New York, Chicago, Detroit

American-Bosch Radio is licensed under patents and applications of R. C. A. and Hazeltine Corp.



UNITED AMERICAN BOSCH CORP.
SPRINGFIELD, MASS. Dept. RJ-8

Please send copy of "Success in the Radio Business" containing complete information about the new American-Bosch line.

Name

Address

AMERICAN-BOSCH

HERE'S A PAIR TO THE BIGGEST SHOW

Grunow "TELEDIAL TWELVE"

All-Wave, All-World,
"Self-Tuning" 12-tube set
with *Metal* tubes and "Violin-Shape" Cabinet

\$99.95



THERE is no precedent in the radio industry for this announcement. No manufacturer of radio sets ever before has announced a policy of *concentrated mass production*.

Ford did it in the automobile business. *Now Grunow does it in radio!*

Every item in the 1937 line of Grunow radios will be a price and quality LEADER.

The Grunow dealer will be enabled thereby to concentrate on a *few* fast-selling, strongly advertised sets.

Starting immediately, Grunow advertising spotlights attention *both* on TELEDIAL, the No. 1 radio sensation of the year—the new self-tuning radio that brings in 15 stations in 15 seconds, perfectly tuned; *and* on the new, patented "VIOLIN-SHAPED" cabinets which remove the last trace of cabinet resonance. The last word in All-Wave, All-World radios, *plus* TELEDIAL and "VIOLIN-SHAPED" cabinets!

And that's not all the story. Look at the prices. Low price levels never before reached in radio. TELEDIAL sets priced *way down under* conventional sets *without* TELEDIAL. Mail-order-chain, private-brand competition stopped cold by their own kind of prices on more attractive and higher-quality products.

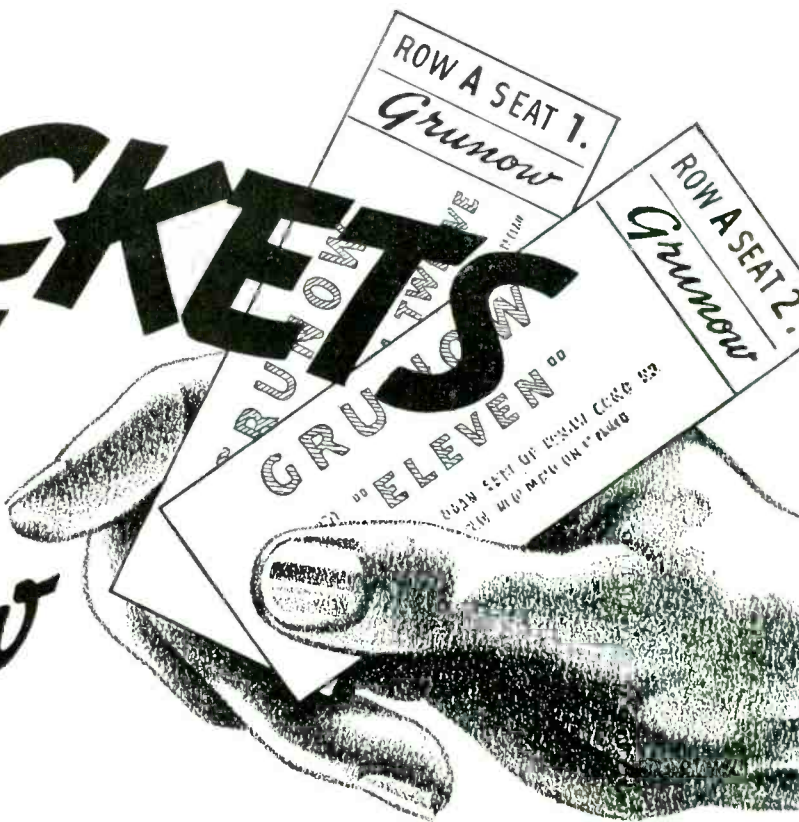
Backed by powerful promotion, Grunow will write radio history in 1937. Let us send you full details of this advanced step in radio merchandising. Write today.

And SHIRLEY TEMPLE

Shirley is the Grunow Teledial girl! At the same time you read this, the first ads in a smashing national magazine drive will appear directed to over 12 million homes—featuring the lovely little 20th Century-Fox star, whose newest release is "The Poor Little Rich Girl." By special arrangement with the studio, a local tie-up promotion which will net hundreds of prospects is available to all Grunow dealers, from your distributor.

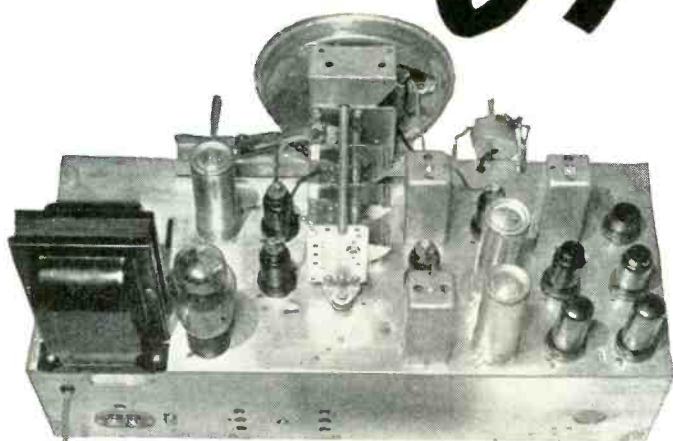
OF TICKETS IN RADIO!

Grunow "ELEVEN"



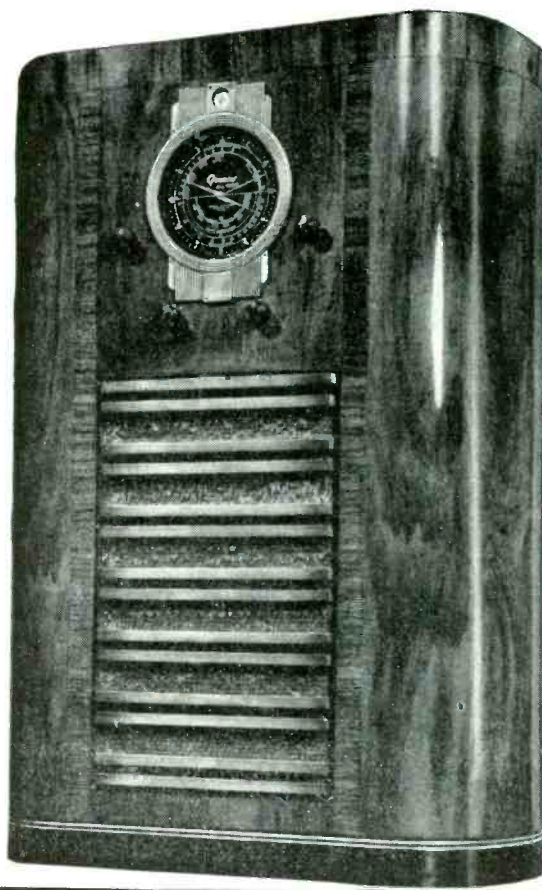
A quality, 11-tube set with
Metal tubes, "Violin-Shaped" Cabinet, and
All-Wave, All-World reception at the price of a "Six"

\$69⁹⁵



Look At This "GRUNOW ELEVEN" Chassis

This tells the quality story! The cleanest chassis
for service you've ever seen! Its size and metal
tubes are impressive selling features.



GENERAL HOUSEHOLD UTILITIES COMPANY
CHICAGO, ILLINOIS • MARION, INDIANA

Manufacturers of Grunow Super-Safe Carrene Refrigerator • Grunow Household Radios • Grunow Automobile Radios

"COMPLETENESS" Sums Up the New 1937 Line of

Emerson

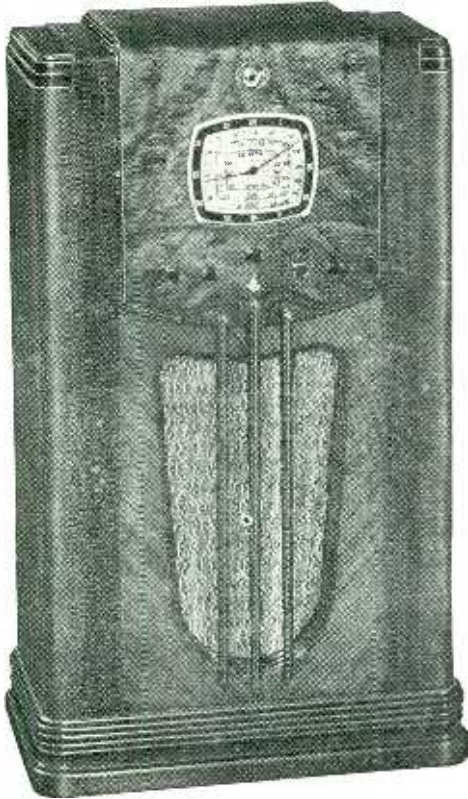
"RE-CREATES THE ARTIST



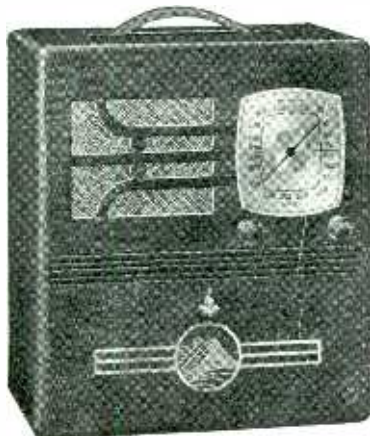
Radio

IN YOUR HOME"

30 Models Meet Every Need—\$14.95 to \$149.95



Model D-139
High Fidelity . . . **\$99.95**
American and Foreign, 16 to 555 meters—10-Tube Superheterodyne. Walnut console.



Portable Battery Radio
American Broadcast and Police Calls. 6-Tube Superheterodyne. All Batteries in cabinet. **\$39.95**
Less Batteries

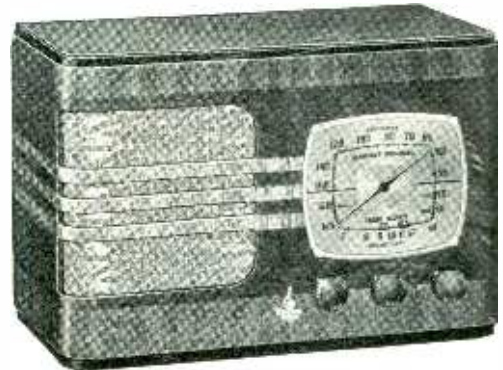
Send for Broadside Describing Complete Emerson Line.

CONSOLES— Outstanding values in all types, from \$44.95 to \$129.95.
COMPACTS and TABLE MODELS— AC-DC and AC in a wide selection, from \$14.95 to \$79.95.
COMBINATIONS—RADIO AND PHONOGRAPH. Table Models, Portable Sets, Consoles, \$59.95 to \$149.95.
BATTERY SETS— Consoles, Portable Sets, Table Models—various voltages—from \$29.95 to \$54.95. AUTO RADIO—\$39.95.

Emerson Model B-131
(at Right)

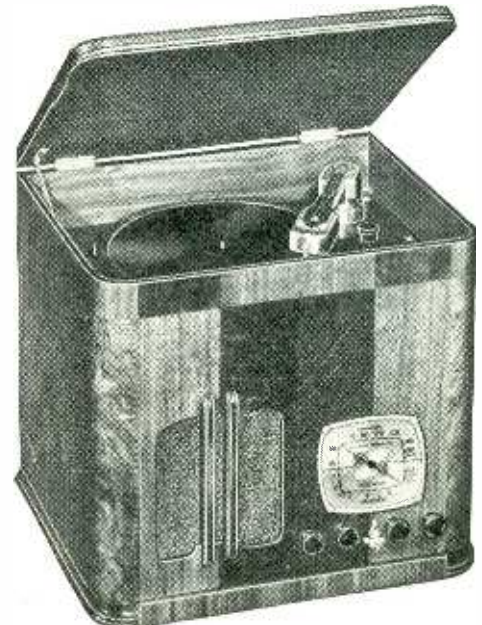
American-Foreign-Police 6-Tube AC-DC Superheterodyne with Indirectly Lighted Gemloid Dial. Walnut Cabinet.

\$29.95



Combination Radio and Phonograph Model L-143

American-Foreign-Police 5-Tube AC Superheterodyne with Gemloid Dial. Phonograph plays 10-inch and 12-inch records. Walnut Cabinet. **\$59.95**



As We See the Business

The Conclusions of Yesterday

The Interpretations of Today

The Predictions of Tomorrow

NOW THAT YOU'VE SEEN OR heard of the new radio lines, it is presumed that you've decided on what to sell, and are selling . . . but are your sales up 25% minimum over last year, and is your unit of sale at \$80—and not \$60 as last year? Public demand for radio is so great that the half steps in prices of sets are being eliminated. The \$34.50 and the \$44.50 are being dropped in favor of the \$39.50 and the \$49.50. Next unit is \$69, and then \$99, roughly speaking. Any alert dealer can sell on these figures, and it certainly isn't brainy to "sell up" in \$5 jumps. Furniture factories loaded with orders and not delivering radio cabinets well, so if you have some numbers selling well, don't worry about "stocking." Worry about the models you've bought that don't move. When you sell a console, push in a small set, too, for another room—difference in terms not enough for any customer to object. Get as much of your customer's money as you can — if you don't, the money goes out with the customer and is spent elsewhere.



SPEAKING OF TERMS: Instead of \$100 balance payable \$8.33 for 12 months, make the terms \$12 a month for 6 months and \$4.67 for 6 months. This pushes collections, the ownership factor becomes larger quickly, and you'll be less liable to have "returns" should market conditions change. It will cost the customer less in charges; your capital is increased for cash buying, and a chance for advertising "new plan of payment, etc., only at Moon Radio Co., etc., etc."

AGAG WOULD BE TO PAY 20% commission to salesmen on all sets in which the trade-in aggregates 20%, by letting him have the trade-in for his commission. He can't kick, as he himself, made the allowance. On no trade-in sales, pay regular commission, plus 4% of the cash down payment beyond the lowest accepted. A little bonus on the additional down payment will help the cash

account. Ever stop to think that \$20 allowance for an old set on \$100 sale is worse than the 5-year refrigerator guarantee? \$100 set sold for \$80 (\$20 trade-in) less \$55 cost of set is \$25 left. Take out \$15 for advertising and selling, leaves \$10. Take out \$5 for rent, leaves \$5. Take out your overhead, salaries, etc., and you're \$10 in the hole. Figure your profit of 10% or \$10, and you're \$20 in the hole represented by a junk set. Now to break even, the \$20 set must be sold for \$35, for there is a contingent selling expense, etc., on the second-hand set.

AMUSING ANGLE OF THE foregoing is that dealers tell distributors and manufacturers that they "can't live" on less than 40%, 40-5 or 40-10%, and then think they're doing swell to sell at \$80, a set costing \$55, which is doing business on 31%. For in most cases, the \$20 trade-in rates on the re-sale thermometer at zero.

CONDEMNATION OF CANVASSING during the past two years has aroused the ire of certain dealers who tell us it is profitable with them. But these are rare dealers, for the value of using canvassers is dwindling each month, particularly as the public is in a buying mood. More good dealers will have nothing to do with canvassers, and a recent experiment by Bloomingdale's, one of New York's aggressive department stores, resulted in a very costly knowledge that could have been found herewith for a few cents. In few words, Bloomingdale's has dropped canvassing. Good dealers and salesmen know how to get prospects without chasing through cornfields.

SINCE RADIO STARTED IN 1922, about 45,000,000 sets have been made. Broadcasting stations and other authorities estimate 23,000,000 radio sets, evidently indicating almost 50% of all radio sets made to be non-existent, a very high percentage. On January 1, 1929, there were about 11,000,000 sets, of which about 7,500,000 were battery sets. Eliminating export sets, and automobile sets (about 2,800,000 sets, which could be classified as listeners) nothing remains in the homes but the production of 1930, 31, 32, 33, 34, 35 and 36, which totals about 23,000,000 sets. Sets made in 1929, 4,000,000 and the 11,000,000 sets made by January 1, 1929—14,000,000 sets are not even counted in today's group. Two things are open for discussion: — that there is a much greater radio audience today than is suspected, indicating that the replacement market is bigger than believed; or that our dealers have taken in and destroyed at least 1,500,000 sets a year for 10 years, which of course, they haven't. Answering "no" to the second, indicates that the first is correct, so it is evident that the broadcasting companies are bending backwards in reducing the "radio audience" to a sure minimum. There is an indication herein that radio is to be a good business for the next three years, surely, for dealers who "work," as very few sets in public ownership today are worth owning or hearing. Any set made in 1932 or prior to that year is "obsolete."

DEALERS KICKED PLENTY at the recent Convention of Music Merchants (97% of them sell radio) at the radio distributors selling direct to the public at dealers' discounts. Particularly bad on West coast and in cities where radio factories sell to employees. Estimated by them

that 10% of radio, refrigerators and washers sold via courtesy channels thereby cutting dealers out of millions in sales and profits.

MAIL-ORDER HOUSE PRICES on refrigerators made a profound impression on the industry, and manufacturers were obliged to give dealers a model or two to meet that competition. In radio, mail-order prices create no particular alarm and radio manufacturers made no attempt to either cut-price or meet mail-order radio activity. Explanation is that a refrigerator is now practically a commodity except with two or three brands, and goes into the kitchen as a "kitchen appliance." Pride of possession is a factor with a radio set; it goes into the living room; it is seen and heard by all guests, and name prestige is very important to an owner. Then again, radio manufacturers are alert on promoting "prestige of ownership," which, plus the fascination of radio and the aim of the public to "get the best" aid dealers to point out the wisdom of purchasing "known radio."

IN MOTOR CAR FIELD ANY number of salesmen sell 100 cars a year, even in towns of 10,000. Some companies have a 100 cars-a-year Club for the eligible salesmen, with an annual "Convention." 100 cars would aggregate from \$60,000 to \$150,000 yearly volume. Idea could be duplicated in radio by manufacturers or distributors, say a "\$44,444.44 Club" for retail salesmen selling that amount or more in a year.

IN SPRAYBERRY'S SERVICE Section of this issue is a good article on "selling service."

WABC estimates that 10% of all radio sets are out of repair right now—over 2,500,000 sets—which is too high a potential market to be constantly available. There are said to be 150,000 radio service men in the country; 100,000 on part time working from their homes and 50,000 with dealers, distributors, factories, service companies or operating their own stores. For such a big business — volume runs into over a hundred millions annually, service men are notorious for poor salesmanship and a lack of understanding of building a reputation for reliability. Radio service has developed too much along the lines of car service, which is so unreliable that unless one stands and watches, one will get beautifully gypped, and my 20-year car ownership experience with auto service is that it is based on amateurish mentality and a crooked heart.

RADIO SERVICE ISN'T MUCH better—the kind my friends and myself have had. The old gag—if the set were in the store it could be fixed in 1/2 jiffy but in the home, the dopes are 100% perfect for a job in a harem. It might be that a radio service man has such a mechanic's complex that he cannot absorb just a little merchandising twist, so that people will know that he is reliable. Frank Sprayberry, who knows more about radio service men than any other authority, says the greatest weakness of radio service men is SELLING. And selling includes good workmanship. Poor radio servicing might be the build-up for new set sales, especially by service men working for dealers, particularly on old sets.

Glad. Henderson

Profit-Conscious

servicemen and salesmen have helped Ed Lowe triple his business in three years



FOUR persons are employed by Ed Lowe of the Lowe Electrical Co., Inc., New Rochelle, N. Y., and every one is a profit-maker. Four of them bear the title of servicemen, three straight salesmen, one sales and collection man, two office girls, but every one is sales and profit conscious. This is the reason why Lowe in three years was able

to boost his business from a \$6,000 start to a \$20,000 value. Last year he moved \$75,000 worth of radio, refrigerators, washers and small appliances, with the amazingly small write-off of \$240 uncollected.

Ed Lowe treats everyone in his staff as a member of the firm, with equal opportunities of making more money for themselves. As he boasts, "Every person here can go to the cash register." He takes credit for no sales, all of them given to the salesmen. He pays them a good salary and commission. Even the servicemen have a vacation with pay. Every man knows exactly what the firm is doing. There is a "Beat Yesterday" book which gives day-by-day sales comparisons since the business started, so the salesmen can see in dollars and cents how they are doing. This year they are watching the figures running more than 25 per cent ahead of last year.

Service department is one of the most valuable sales producers for Lowe. For every lead later closed by a salesman, the serviceman gets 2½ per cent commission. This is gladly paid by the salesman and actually costs Lowe nothing. When a serviceman makes a home repair, or delivers a repaired set, he asks for the cash. If he brings back the money, Lowe credits him with 5 per cent of it. If the job is billed, he gets nothing. Sales of parts and tubes made by the serviceman net him 5 per cent if he gets the cash. With a weekly salary of \$30, this gives the serviceman a chance to make good money. Last month one man collected \$235 on his calls, which added nearly twelve dollars to his salary.

Not only does this set-up bring Lowe's salesmen inval-

Ed Lowe counsels, directs, does not sell

uable leads, but it pays very well for itself. Last month the service work totaled \$620. Deducting salaries, commissions, materials and other charges, there was a \$23 net profit. Not much in money, but it covered all costs of installation and free service. Of the four servicemen, one is a specialist in radio, able to solve practically every problem in the modern sets, and another is an expert on vacuum cleaners.

Lowe has done some excellent promotional work since he has been in business in Westchester. For instance, he contacted all rug stores in his city and thoroughly sold each salesman there on the ability of his vacuum cleaners to keep their customers' carpets in the best of condition. He has made sure that every doctor in town owns a washing



Four service men, expert at repair work and skilled in uncovering sales leads

machine, so that he can tell each prospect that his doctor for his own family finds a washing machine more sanitary than public laundries. Lowe sells no radio sets under \$20 and sells no automobile radio. "More grief than profit" is his estimation of those markets.

Lowe's salesmen do not canvassing. The fact that the service and collection departments of his store are so alert to sales possibilities, however, means that the salesmen are furnished with plenty of hot outside leads. Actually, his men spend a greater part of their time outside of the store following up such leads. As soon as a sale is brought in, a letter from Lowe records it: "This will acknowledge receipt of sale as given our representative, Mr. _____, as per Sales Agreement book enclosed, for which we wish to thank you very much indeed. If there are any discrepancies in the enclosed book, we will be pleased to hear from you at once in order that our records may be properly adjusted." This precludes later trouble from small misunderstandings.

Outstanding is the success Lowe has achieved in collections. He works with one of the large credit companies,

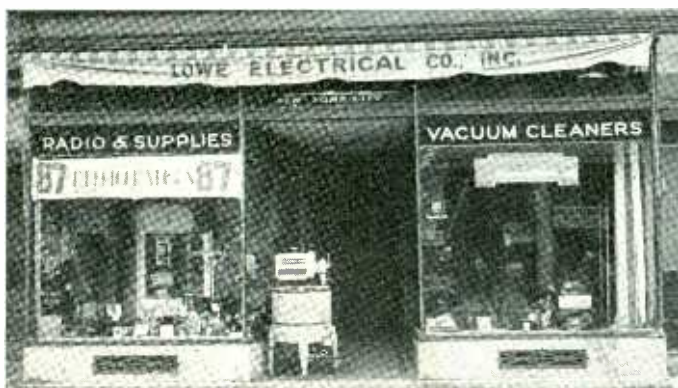




Lowe's store has the massed "crowded" display proven so successful for store leads

but he insists on using his own plan. He does all his own collecting under this plan. Credit investigation is nominal, for Lowe believes that a prospect's credit is only as good as the payments he makes. If the prospect will make a down payment, Lowe will trust himself to get the rest of the money. In lax hands this policy might be dangerous, but its value to Lowe is proved by the fact that last year he wrote off only \$240 as uncollected. His repossessions

branches, he was made manager of the New Rochelle store. When that went out from under him, he had a good local reputation as a radio and appliance dealer as well as \$6,000 in cash. The result was the present store, opened about three years ago under his own name. The first year he sold about \$20,000 worth of radios and refrigerators and last year he had almost quadrupled that figure. Loyalty of his sales and service staff, under fair and friendly treatment, has kept at least one of his men with him during the entire eight years.



Compact, challenging are these Lowe windows

Large measure of Lowe's success is his ability to inspire his staff with an eagerness to make sales and to watch the firm's profit figures rise. This is more a matter of mental attitude on the part of the men than any special training. They know that they have "the boss" working whole-heartedly with them, for Lowe is not afraid to let his men earn just as much money as they are able to do. He knows that the payment of a commission to a salesman, when he could have taken the sale himself, brings him back more in enthusiastic sales alertness than the extra money. Each person in the firm has the feeling of a partner and each knows that it is up to himself to draw a larger salary.

run high. A past-due notice, followed by a sharp final notice gets action or else the merchandise is repossessed.

No payments lapse more than sixty days. The result is that Lowe takes back 5 per cent of the merchandise he sells.

Lowe's early training was with the local public utility. Eight years ago, when Morrison Electric was opening

Almost unique is the sales minded service department. As we stood in the store chatting with Lowe, a woman brought in a vacuum cleaner for some minor repair. The service man recognized it for an old model and while he was checking it talked the advantages of the new. The woman finally went home with a "demonstrator" and told the service man to hold up the repair job until she had tried the new model. That's the sales mindedness which is tripling Lowe's business.

LOWE'S SALES FOR FIRST SEVEN MONTHS OF 1936

	RADIO	REFRIGERATORS	WASHERS	CLEANERS	IRONERS	TOTAL
Jan.	43	2	8	18	1	\$4969
Feb.	37	1	7	22	0	4644
Mar.	29	3	8	22	0	4880
Apr.	31	9	10	22	1	6794
May	32	15	10	19	0	7578
June	38	22	10	15	4	9967
July	18	27	7	7	3	7686

Lowe Electrical Co. sells General Electric, Crosley, Philco and Zenith radio; Crosley and General Electric refrigerators; Easy washers and Hoover cleaners

Grab-Bag

method of disposing second-hand sets taken in trade on new radio models gives good publicity and excellent results

by John C. Hall



JUST what do you do with your old sets taken in trade as an allowance on new sets? Perhaps one of the most novel methods of exploiting these second-hand sets, is the one used by a department store in Philadelphia (Snellenberger's), wherein twice a month is featured a trade-in sale.

This trade-in sale is usually held on Monday night, at 7 o'clock. A special price of \$6.50 is put on all sets in the sale, regardless of what make they are. In other words, it is a form of a "grab-bag" idea, with a \$6.50 price.

The method of handling this sale is that each set has a card attached to it known as a sale card, with the make of radio set and its number on the card. The back of the set is marked with the number of the card so that every person buying one of these sets gives his name and address for, we hope, subsequent follow-up by salesmen to get this second-hand set again traded in.

The method of handling the sale is: At 7 o'clock, the manager of the department rings a bell and there is a rush for the sets. Sometimes a woman might come in at 6 o'clock, stand in front of the set she wants, but she can't buy it until the bell is rung at 7 o'clock.

So there is a general commotion at 7 o'clock, and, generally, all the sets are sold in a period of 5 minutes.

Naturally, there is a build-up of this special second-hand sale in newspaper space. The entire affair is handled with such showmanship that people buy these sets in a delightful mood, except in a case where two women want the same set, and now and then there are some swell scraps among the women.

With all the sales tickets turned in with

the name and address for delivery, (incidentally, all sets are sold for cash) then the salesmen have some excellent leads to go out and get those sets traded in again for the new sets sold by the store.

It is a swell idea, and Snellenberger's are to be congratulated on this example of handling the second-hand set problem in such an efficient manner.

Incidentally, the sets are all playable, but there are no guarantees attached and nothing promised but the exchange of a playable second-hand set for \$6.50.

It is true that radio dealers have no second-hand set problem as confronts the automobile dealers, many of the latter having their entire profit hanging in second-hand cars. There are many ways of getting rid of the second-hand sets, even to giving them away, or to hold a monthly bon fire and publicize the event.

A dealer in Houston, Texas, also has an excellent way of handling the second-hand set problem. He gives them away to the institutions designated by the buyer of the new set, as per reproduced advertisement. J. G. Bradburn, who owns and operates the Lil' Pal Shops at Houston, Texas, does a good sized volume of radio business with ingenious marketing ideas.

In both of the foregoing cases, the dealer adds a dash of showmanship and changes a loss problem into a smart promotion stunt, developing store traffic and hot leads. "Something for nothing" and "bargains" still have a captivating appeal for nine people out of ten when dramatized. Another stunt would be to offer the used sets as premiums to anybody turning in a sales lead later closed. This brings in many prospects who may be sold a new set and costs nothing until a sale is made. It's a matter of capitalizing on liabilities.

... misadventure...
... folk lore...
... who comes to a sad and unseemly end...
... on the gallows after a lifetime of practical jokes. (KTRH)

... will be guest

Other...
"Trauma"...
No. 1, in G numbers, the "Magic opera," "Die

Ole Ma...
Georgia Cot...
tle Sam Bee...
Mammy Agne...
Cunnel Hal...
will celebra...
ing their bra...
These "d...
of Dixie wi...
ern skits w...
Southern...
featuring...
the Seven...
sent a ne...
arranged...
(KTRH)

Director...
By...
GALVE...
Election...
during the...
annual m...
Country o...
Paul E. N...
R. H. Pe...
Atackien, E...
kins, R. E...
bell,

Legion...
Dis...
PAMPA...
naires and...
many coun...
for the con...
trict of the...
extends thro...
Activities...
and 8" par...
tion, and a...
Mrs. Mel...
cago, nation...
scheduled...
Sunday

FREE

RADIOS TO NEEDY

Unusual Opportunity Offer

We want one hundred radios given absolutely free to unfortunate shut-ins, charity wards, boys and girls' homes, prison camps and needy or worthy individuals and institutions. We want to brighten the lives of these unfortunates and give them pleasure and happiness.

WE SHARE THE PROFIT

Select from our large stock of new 1936 modern radios your choice of any model, priced from \$13.50 to \$99.50, either compact, table, console, auto or battery radio. Trade in your old radio now; full trade allowance credit to apply on immediate or future purchase, and we will give away your old radio which we accept as part payment. This is a bona fide offer and applies to standard current models—Not Obsolete, Dumped or Cut-Priced. Do Not Confuse with Sucker Bait Allowances.

This unusual offer is our way of showing our sincere appreciation of your generous patronage of our 100% RADIO BUSINESS.

More Radio Value Per Dollar

Liberal Trade Allowance --- Easy Terms

Lil' Pal

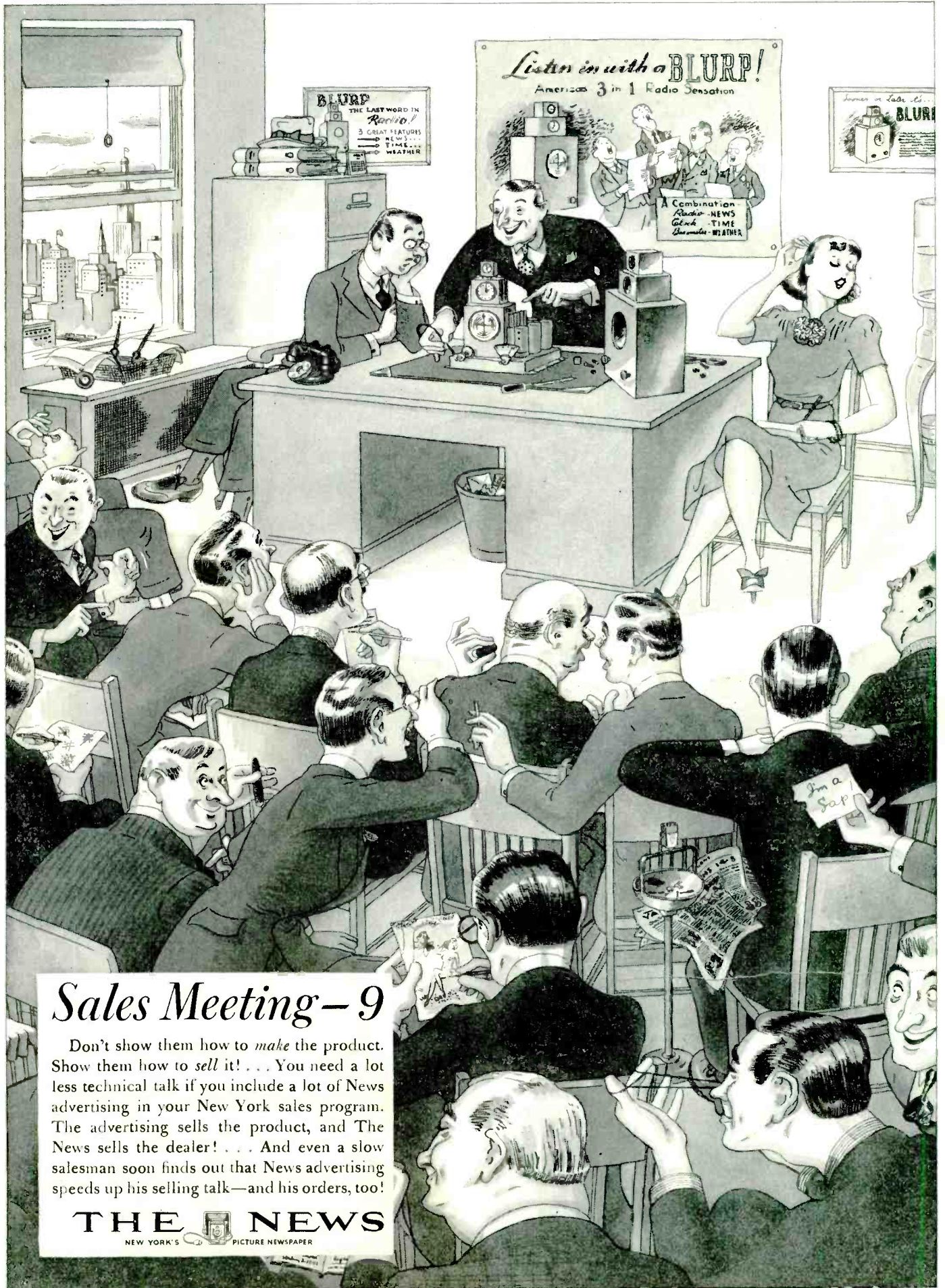
BRADBURN RADIO CORP.

1817 MAIN ST. PHONE P-2949

AFFILIATED DEALERS IN 98 SOUTH TEXAS TOWNS

SERVING SOUTH TEXAS

One method of handling trade-ins is used by J. G. Bradburn in Houston, Texas.



Sales Meeting—9

Don't show them how to *make* the product. Show them how to *sell* it! . . . You need a lot less technical talk if you include a lot of News advertising in your New York sales program. The advertising sells the product, and The News sells the dealer! . . . And even a slow salesman soon finds out that News advertising speeds up his selling talk—and his orders, too!

THE NEWS
NEW YORK'S PICTURE NEWSPAPER



'round



**SOUND
ENGINEERING**

Pan-American Airways...swift transportation system linking the United States with 33 foreign countries. Similarly, RCA Communications joins 32 large American cities and 47 nations with fast radiotelegraph service... Above is pictured the famous *China Clipper*, Pan-American Airway's mighty transpacific airliner, one of a fleet of new and super-powered sky giants.

RADIO CORPORATION OF AMERICA

EVERYTHING IN RADIO FOR SERVICE IN COMMUNICATIONS

the World by Radio

TWENTY-FOUR HOURS EACH DAY, the Radio Corporation of America, through RCA Communications, Inc., provides the world with dependable, efficient, economical domestic and international radiotelegraph service.

Messages sent "Via RCA" flash across nations with the speed of light, winging along invisibly over snow-capped mountain peaks, scorching deserts, mighty seas and sunken valleys, to swiftly bring together thousands separated by time, distance or raging elements.

The communications systems with which RCA achieves this far-flung service extend across thousands of miles, forming an invisible bridge between 32 important metropolitan centers in this country and 47 foreign lands. At Rocky Point, Long Island, RCA owns and operates Radio Central, world's largest and most powerful radio station. From this point and several others, domestic and trans-oceanic messages are shot into space. Next time *you* send a message *anywhere*—send it "Via RCA."

This, however, is but one of the RCA's radio services. This organization alone is engaged in *every* phase of radio. That's why the American public regards RCA as a house deserving of the utmost confidence. And because of this confidence, any product trademarked "RCA" sells well.

Hence, RCA dealers do a better business—enjoy finer profits. They are connected with Radio's Leader—the institution that has been *first* with radio's greatest *sound* achievements—the organization that some day will thrill the world with radio *sight*—RCA!

RCA MANUFACTURING CO., INC. • NATIONAL BROADCASTING CO., INC.
RCA COMMUNICATIONS, INC.
RADIOMARINE CORPORATION OF AMERICA • RCA INSTITUTES, INC.

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

Covering the World "Via RCA"

RCA Communications, Inc.,
offers direct radiotelegraph
service between:

32 AMERICAN CITIES

including

New York	New Orleans
Boston	Detroit
Philadelphia	Chicago
Camden	San Francisco
Baltimore	Los Angeles
Washington	Seattle

—plus efficient, fast transfer service to
hundreds of communities

and

47 FOREIGN COUNTRIES

Argentina	Italy
Belgium	Japan
Brazil	Macao
Chile	("Via RCA" Manila)
China	Mexico
Colombia	Norway
Cuba	Panama
Curacao	Philippines
Czechoslovakia	Poland
Dominican Republic	Portugal
Dutch East Indies	Porto Rico
Dutch Guiana	Russia
Fiji Islands	Siam
("Via RCA" Honolulu)	("Via RCA" Manila)
France	Society Islands
French Indo-China	("Via RCA" Honolulu)
Germany	Syria
Great Britain	Sweden
Guatemala	Switzerland
Haiti	Spain
Hawaii	Turkey
Holland	Venezuela
Hong Kong ("Via RCA" Manila)	

—plus rapid transfer service to all other
points in the world!

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

TURNBULL

to direct Hotpoint sales nationally through
Edison G-E Appliance Co.

The withdrawal of Hotpoint refrigerators and Hotpoint home laundry equipment from the appliance lines marketed by the G-E appliance and merchandise department was announced on July 26 by C. E. Wilson, vice-president of the General Electric Company, at the company's Camp Merchandising Conference at Association Island, Henderson Harbor, N. Y.

Concurrently, George A. Hughes, president of the Edison General Electric Appliance Company, Chicago, announced that company's decentralization and reorganization as a company acting independently in the specialty appliance field. This new organization will assume responsibility for the sale of a Hotpoint specialty appliance line, which will include new and improved Hotpoint refrigerators and home laundry equipment in addition to the already famous Hotpoint ranges, water heaters and dishwashers.

The election of R. W. Turnbull, formerly manager of the G-E traffic appliance sales division, as a member of the board of directors and as vice-president and general sales manager of the new Hotpoint organization, was also announced by Mr. Hughes.

The new company will function according to accepted merchandising practices, and it is expected that its policies will provide for rapid development of kitchen and laundry specialties. The line will be marketed through independent wholesale distributing channels, the Hotpoint field organization, the oldest in the industry, already covering the country through eleven district offices. To this organization will be added the refrigeration and laundry sales organizations, to further augment the field service now rendered to distributors.

Mr. Turnbull, in his new capacity, gives the organization the benefit of twenty-six years' association with the electrical appliance business. He began his career with the Southern California Edison Com-

pany in 1910. The following year he joined the Pacific Electric Heating Company, Ontario, Cal., original manufacturers of Hotpoint products. In 1912, he entered the employ of the General Electric Company, as Pacific Coast heating device specialist, continuing in that position until 1917, when he was granted a leave of absence to enter the army air service.

On January 1, 1918, the G-E heating device section was merged with the Hotpoint Electric Heating Company and the Hughes Electric Heating Company to form the Edison Electric Appliance Company. Mr.



R. W. Turnbull

Turnbull returned to the new company in 1919 and was placed in charge of Pacific Northwest sales, in which capacity he took a leading part in pioneering and developing the electric range business in that territory. In 1924, he was made manager of the entire Pacific Coast district, with headquarters at San Francisco.

In 1931, Mr. Turnbull was called to Chicago to become vice-president in charge of sales, a position he held until the traffic appliance business was moved to the G-E merchandise department at Bridgeport, Conn., in 1932, where he assumed the position of assistant appliance sales manager. In November, 1935, he was appointed manager of the traffic appliance sales division, continuing in that capacity until the present time.

AMERICAN - BOSCH

offers dealers sales help
of movie stars

Through a tie-up with Paramount Pictures, American-Bosch is offering a new idea in local radio sales promotion. Popular feminine radio stars have been "put to work" selling radio sets—not in person of course, but by means of realistic life-size photographic cut-outs in full color.

The stars have been photographed in such a manner that the cut-outs may be displayed with any American-Bosch console radio model. On each display is a panel appropriately reading "Lovely to look at, Delightful to hear—AMERICAN-BOSCH RADIO." The beautifully gowned, life-size figures are startling in their realism and are causing tremendous interest in windows and on show room floors.

Aside from their value in displaying radio sets, these movie star displays are providing opportunities for original publicity stunts. Dealers are making tie-ups of these displays with the appearance of the stars in local movie houses; and in many cases have arranged to place the displays with an actual American-Bosch set in the theatre lobby.

The displays are mounted on ¼ inch board, saw-cut in silhouette, and eased ready for use.

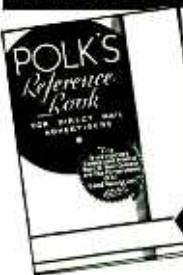
EASY

elects Nelson president
and general manager

At a meeting of the board of directors of the Easy Washing Machine Corporation held at Syracuse, N. Y., June 15, 1936, the following officers were elected: J. C. Nelson, president and general manager; H. L. Babcock, vice-president and treasurer; H. Paul Nelligan, vice-president and general counsel. The following officers will retain their former titles: S. C. Stivers, secretary, and G. K. Chrismer, assistant secretary and assistant treasurer.

Mr. Nelson succeeds John Derschug, late former president, who was fatally injured in an automobile accident June 2nd. He has served the corporation as vice-president and general manager since November 1920. Under Mr. Nelson's management, the company maintained its cash position unimpaired throughout the depression period and has shown substantially increased business both in 1935 and 1936. As of both March 31st and June 30th, 1936, the corporation has declared a 12½ cents extra dividend in addition to its regular quarterly dividend of 12½ cents.

MAILING LISTS



GET OUR FREE
REFERENCE
BOOK and
MAILING
LIST CATALOG
FREE

Gives counts and prices on accurate guaranteed mailing lists of all classes of business enterprises in the U. S. Wholesalers—Retailers—Manufacturers by classification and state. Also hundreds of selections of individuals such as professional men, auto owners, income lists, etc.

Write today for your copy

R. L. POLK & CO.

Polk Bldg.—Detroit, Mich.
Branches in Principal Cities

World's Largest City Directory Publishers
Mailing List Compilers. Business Statistics. Producers of Direct Mail Advertising.

"The World's Best Value"



KADETTTE RADIOS

INTERNATIONAL RADIO CORPORATION, ANN ARBOR, MICHIGAN, U.S.A.

SILVA**joins Arvin radio engineering department**

A. D. Silva, who for the past eleven years has been radio engineer of Atwater-Kent Company, has joined the engineering department of Noblitt-Sparks Industries, Inc., Columbus, Indiana, makers of Arvin radios for car and home.

Mr. Silva, better known as "Duke," has had wide experience in radio research and development. From 1910 to 1917 he was transformer and sales engineer for General Electric Company. During the World War, he served as captain in the Signal Corps overseas.



A. D. Silva

Mr. Silva, in the development of super-heterodyne, convoyed the first set to this country and delivered it to the Signal Corps in Washington. At a later period, he was vice-president and chief engineer of the Wireless Improvement Co., Jersey City, N. J. In 1928 he went to Panama to investigate short wave reception in that country.

DISTRIBUTORS**add Stromberg-Carlson**

Stromberg-Carlson Telephone Manufacturing Company has just added nine distributing organizations to the sales organization. These are: Parks and Hull of Baltimore, Md., serving the Baltimore area; American Sales Co. of Columbus, O., covering fifty adjacent counties in Ohio; Hefty Sales of Madison, Wis.; Farrar-Brown of Portland, Me., serving the entire state of Maine; Graybar Electric Company of Detroit for the Eastern half of the state of Michigan; Graybar Electric Company of Pittsburgh for southwestern Pennsylvania and northern West Virginia; Graybar Electric Company of Syracuse, N. Y., for the Syracuse area, and the Graybar Electric Company of Buffalo, N. Y., covering the area adjacent to the city of Buffalo.

STEWART-WARNER**six months net income \$1,054,362, an increase of \$33,871**

Consolidated net income of the Stewart-Warner Corporation and subsidiaries for the six months ended June 30, 1936, after all charges including depreciation and Federal taxes, was \$1,054,362, equivalent to 85 cents a share on the 1,241,847 shares of common stock outstanding in the hands of the public, which constitute the entire capitalization. For the six months ended June 30, 1935, net income was \$1,020,491, equivalent to 82 cents a share on the 1,246,847 shares of common stock then outstanding.

For the three months ended June 30, 1936, net income after all charges was \$622,035, equivalent to 50 cents a share on 1,241,847 shares of stock outstanding. For the three months ended June 30, 1935, net income after all charges was \$524,428, or 42 cents a share on 1,246,187 shares.

Federal income tax provision for the six

months ended June 30, 1936 has been computed at the normal rate. No provision has been made for the surtax chargeable under the Revenue Act of 1936 on undistributed profits.

Consolidated balance sheet as of June 30, 1936, shows current assets totalling \$9,286,923, including cash of \$3,022,417 against current liabilities of \$1,616,006, or a working capital ratio of 5.7 to 1. At December 31, 1935, current assets totaled \$8,056,535, including cash of \$2,412,188 against current liabilities of \$1,630,325.

Consolidated net sales for the first half of 1936 were materially larger than in the first half of 1935, with refrigerator sales for the period showing a gain of 141 per cent. The refrigerator division of the company in the six months to June 30, 1936 showed a book profit for the first

DENT**director of RCA-Victor educational division**

Appointment of Ellsworth C. Dent, former chief of the motion picture division, U. S. Department of Interior, as director of the RCA-Victor educational division, was announced by Thomas F. Joyce, advertising and sales promotion manager, under whose supervision the educational department activities will be carried on.

In recognition of more than forty years of distinguished service in music appreciation work, twenty-five of them with Victor and RCA, Dr. Frances E. Clark, who pioneered and developed the idea of using

and the scope of its activities under Mr. Dent, to promote a more widespread application to recent developments in the radio and sound arts to the problems of education. These supplementary teaching aids now include, besides phonograph records for several branches of teaching, sound motion picture projection equipment; slide film projectors; centralized sound distribution and communications systems, school radio systems and special books and publications on music appreciation.

MAGNAVOX**stockholders elect four new directors**

At the annual meeting of stockholders Wednesday, June 24th, at the company's general offices in Fort Wayne, Indiana, four new directors were named to the board from executive positions in the company. They are: Joseph B. Brennan, works manager; J. Irving Cornell, chief engineer; Stanley S. Sondles, sales manager, and Frank Freimann, president of Electro Acoustic Products Company, a subsidiary of the Magnavox Company. Other board members are E. S. Pridham and M. W. Dobrzensky, both of Oakland, Cal.; Gerard M. Ungaro of Chicago, and R. E. Field of Cincinnati.

Richard A. O'Connor, president and treasurer, was re-elected to those offices by the board. Mr. Pridham was re-elected vice-president and Mr. Dobrzensky was re-elected secretary.

Burgess Dempster has been appointed manager of the Magnavox Philadelphia office at 401 North Broad St. He is a well-known electrical engineer and has been associated with Magnavox and its associates since 1929. For three years recently he was chief radio engineer for Benjamin Electric Co., Ltd., London, Eng.

J. C. Koonz, formerly Philadelphia manager, has been promoted as manager of the company's new etched and printed glass dial division, with headquarters at the factory in Fort Wayne, Ind.



E. C. Dent

phonograph records for teaching music appreciation in the schools, has been appointed director emeritus of the RCA-Victor educational department. In this capacity the company will retain the benefit of Dr. Clark's invaluable experience and counsel.

At the same time Mr. Joyce announced that the educational department will ex-

PRESIDENT
NORTHEASTERN RADIO INC.

ADOLPH ULLMAN
209 COLUMBUS AVENUE
BOSTON, MASS.

*Many thanks, Adolph
Glad*

August 1, 1936

Mr. Glau Henderson,
Henderson Publications, Inc.,
Rockefeller Center,
1270 Sixth Avenue,
New York City, N. Y.

Dear Glad:

I just read your July editorial and cannot refrain from expressing my deepest appreciation to you for the wonderful lesson you are giving the radio dealer toward a better understanding of the problems of the independent dealer's distribution.

Your analysis of the dealer's discount mindedness against his salesmindedness is just great. Also your keen analysis of the department store business is something that every merchandiser in the radio business will thoroughly understand and should wholeheartedly agree with you.

However, as you say, "only dopes think this way" and I am happy to put myself in the same classification with you.

I should like to send out a copy of this editorial to everyone of my dealers with a personal letter. Have you a suggestion on how I can do it?

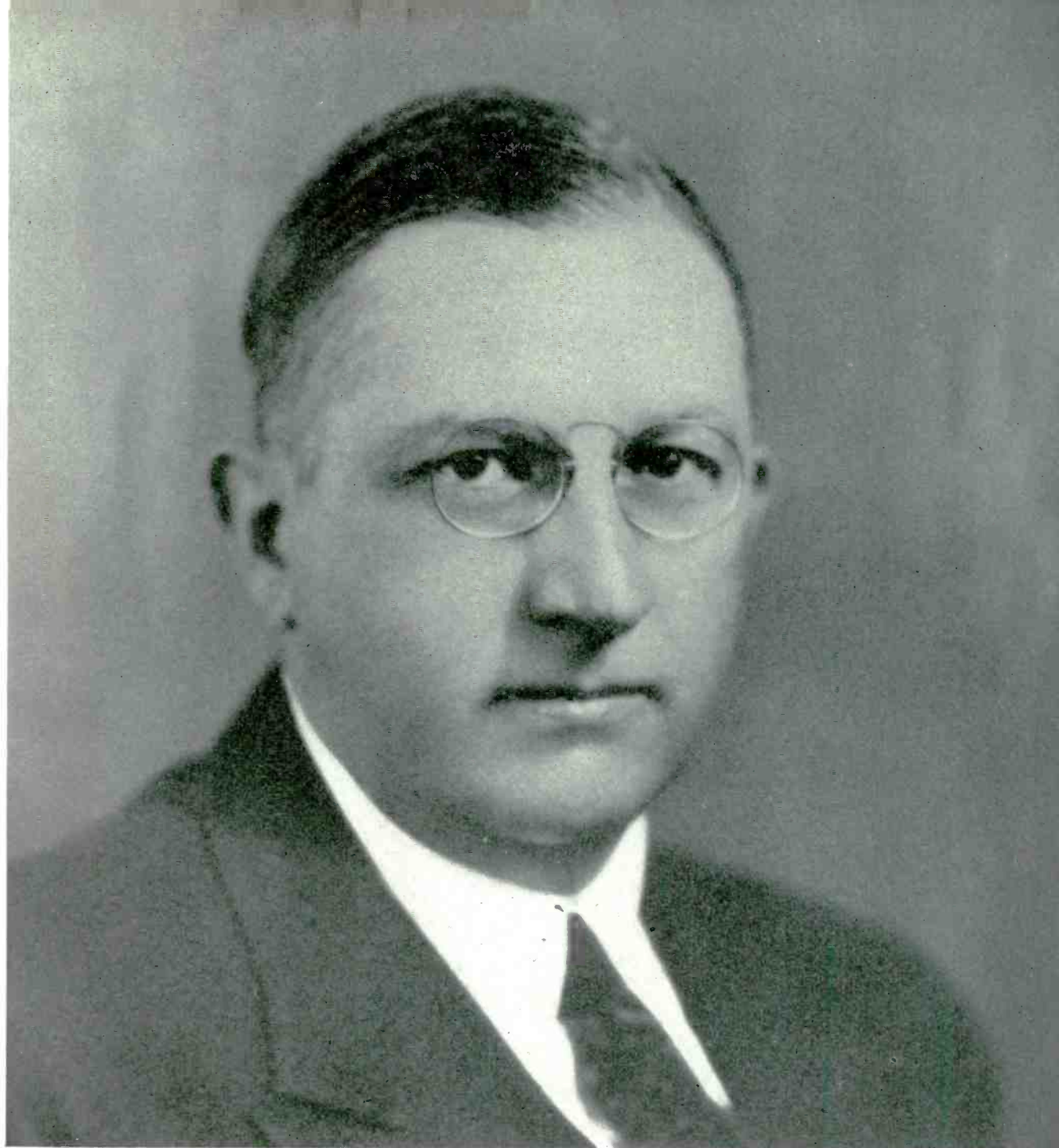
Good luck to you. Keep up the good work. It is fine educational work. It might not penetrate on a good many, but even if a few get it, it helps. And that is all we ought to hope to do with educational work

My very kindest regards to you

Sincerely yours,

Adolph
Adolph Ullman

DU:ML



J. C. Nelson
President and General Manager
EASY WASHING MACHINE CORP.

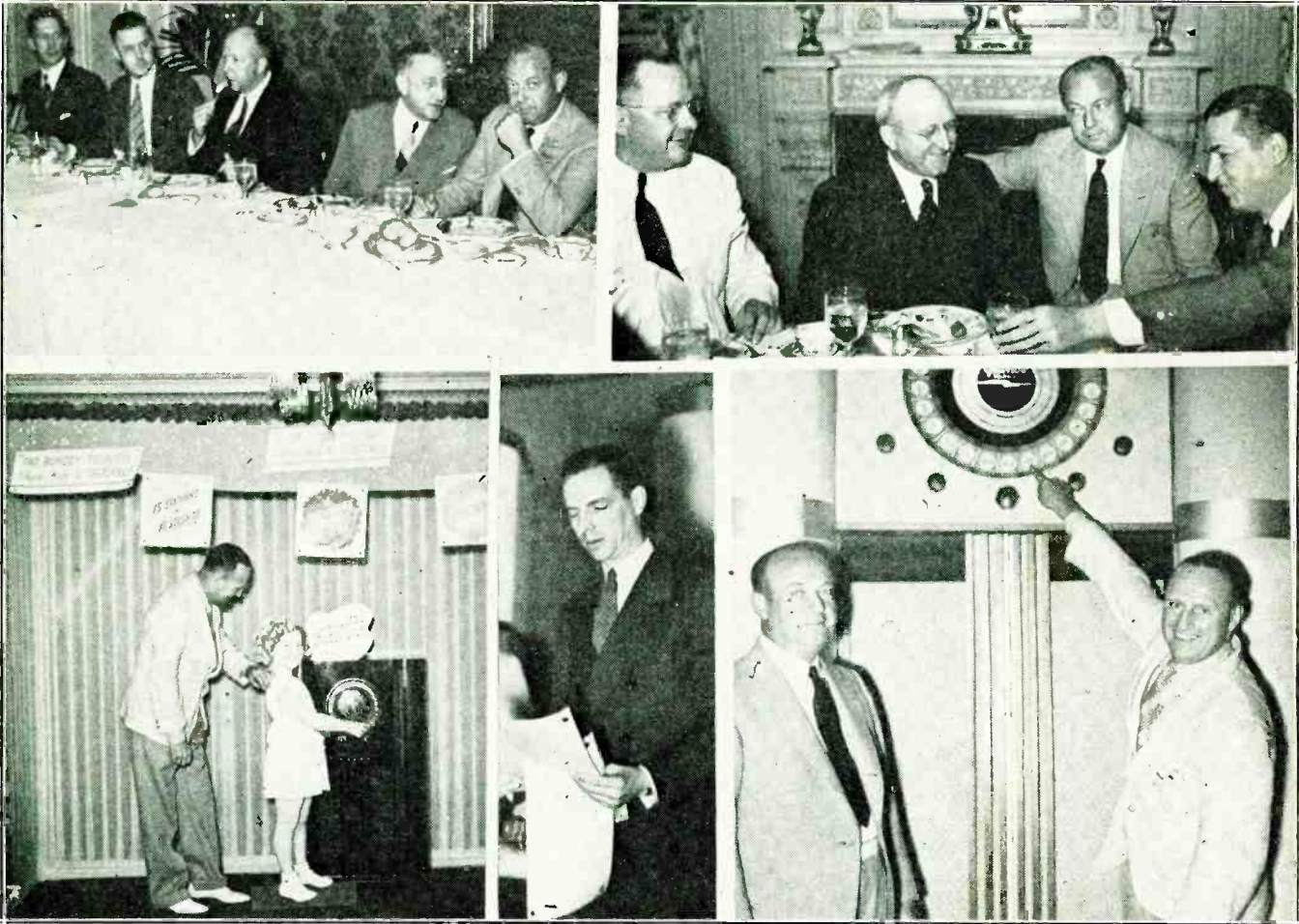
Prominent Members of the Seven Associated Industries

A Portrait Series Published

in the



AUGUST, 1936



Candid cameraing the Grunow convention. Top, left group, left to right: Lt. Commander F. H. Schnell, engineer; M. W. Kenney, director of engineering; H. J. Shartle, sales manager; W. L. Eckhardt, director of sales; Wm. C. Grunow, president of General Household Utilities Co. Right group, left to right: Fred H. Wiebe of Brown Supply Co., St. Louis; Clyde E. Whitehill, member board of directors; W. C. Grunow, president; W. C. Griffith, president Griffith Distributing Co. of Indianapolis. Bottom row, left to right: Jim Davin introduces Shirley Temple and Teledial. Tod Reed, advertising manager, discloses some of the promotional plans. Bill Grunow and Jim Davin explain the giant Teledial display.

TELEDIAL

twelve tube set at \$99.95 launched at
Grunow convention

A 12-tube radio incorporating "Teledial" tuning to retail for \$99.95, and an eleven tube, all-wave, all world set priced at \$69.95 were presented by General Household Utilities Company at its second radio convention this year, in Chicago's Blackstone Hotel.

Since the introduction last June of Grunow's "Teledial," one of the outstanding developments of the radio season, distributors have asked for a lower priced set equipped with this selling feature. They were hardly prepared, however, for the announcement made by Mr. Grunow that

the company was now prepared to market a new 12-tube "Teledial" set at the astonishing price of \$99.95, and a "Teledial Super Twelve" in a more expensive cabinet style for \$139.95. General Household Utilities Company will also supply distributors and dealers with an 11-tube, all-wave, all-world set to retail for \$69.95. All three new additions to the present Grunow radio line are console models, and all have the new patented "violin-shape" construction which Grunow engineers claim reduces cabinet resonance to a minimum. All cabinets are of walnut with inlays of rare

woods. Chassis are equipped with metal tubes and present one of the cleanest appearances in the industry.

Specifications of the new sets include automatic antenna tuning, tone-tested resonator, color flash dial, electric eye on the Grunow "Eleven," clock-type tuning, new "beam" power tubes, 12 inch speaker, etc.

Swarming the stage after the presentation of the models, distributors could find nothing over which to quibble, much to assure them they had the key to greatly increased volume this year with these outstanding and unprecedented values.

Backing up the drive for increased business will be a comprehensive newspaper, farm paper and national magazine advertising campaign utilizing 127 newspapers in 87 cities, farm papers with circulations totaling some 12,000,000, full page advertisements in Time, Saturday Evening Post, Collier's, Esquire, American Magazine and Good Housekeeping. Rotogravure, which proved exceptionally successful in introducing the original 1937 line of radios, will be continued throughout the year. A national outdoor campaign is also scheduled.

"So simple a child can tune it perfectly," is the theme of the advertising. To demonstrate this feature, Grunow enlists the services of America's most popular and best known child, Shirley Temple. Shirley will be featured in both magazine and newspaper copy and also in a merchandising tie-up with theatres exhibiting her pictures throughout the country.

All the Leaders Can't Be Wrong!

The leading phonograph record manufacturers come to
the leading flock manufacturers for their supplies of
COTTON FLOCKS OF SUPERIOR QUALITY

Write for samples and quotations

CLAREMONT WASTE MFG. CO., Claremont, N. H.

RCA - VICTOR

appointments in field sales division

Effective immediately, G. K. Throckmorton, executive vice-president of the RCA Manufacturing Company, announced the following changes and appointments in the RCA-Victor executive sales organization.

Paul C. Richardson, has been appointed manager of field activities, with headquarters at Camden, N. J. Henry C. Bonfig, formerly manager of the Western division, has been transferred to Camden headquarters to take up new duties in the sales department. Vance Woodcox, formerly in the sales department, has been appointed manager of a newly created Central division, with headquarters at Chicago. James E. Francis, formerly in charge of Hollywood operations, has been appointed Western division manager with headquarters in Hollywood and John W. Griffin continues as Eastern division manager.

Prior to his association with RCA-Victor a few months ago, Mr. Richardson had been engaged in special merchandising activities for the Curtis Publishing Company and the Saturday Evening Post. He brings to his new duties several years of experience in the radio field where he served as general sales manager of the Pierce-Phelps, Inc., radio distributing company of Philadelphia. He was also advertising manager of the American Installation Corporation.

Mr. Bonfig was general sales manager of General Household Utilities Corporation, and for many years a prominent radio wholesaler. Mr. Woodcox was formerly director of advertising for Kelvinator Corporation.

Mr. Francis has for many years been an executive in charge of engineering, service and merchandising in the radio, electrical and motion picture industries. Mr. Griffin has had many years of radio selling and merchandising experience as an executive in the retail, wholesale and manufacturing phases of the business.

C I T

safety foundation offers \$10,000 contest

The C. I. T. Safety foundation formed recently by the C. I. T. Corporation, which finances the time sales of radios, refrigerators, major electrical appliances, and many other types of industrial and household equipment, has announced details of annual prizes totaling \$10,000. This is a part of the \$50,000 annual fund which the C. I. T. Safety Foundation has for use in forwarding highway traffic safety. The grand award will be \$5,000 presented yearly to that citizen of the United States deemed to have contributed most to forwarding public interest in traffic safety.

In addition to the cash awards, there will be bronze plaques presented for the best radio presentation and the best motion picture treatment dealing with public responsibility in motor car accidents.

The radio award will go either to a broadcasting company or a radio advertiser along with the individuals responsible, as both sustaining and commercial programs are eligible. Either individual or a series of programs may be submitted for consideration.

DIETRICH

manager Raytheon distributors' sales



Earl S. Dietrich

D. T. Schultz, vice-president and treasurer of Raytheon Production Corporation, announces the appointment of Earl S. Dietrich as manager of distributors' sales. Mr. Dietrich's headquarters will be at the New York office of the Raytheon Company, 420 Lexington Avenue, New York City. He will operate under the general supervision of the general sales manager of Raytheon, Edgar S. Riedel, whose headquarters will continue at the Chicago office of the Raytheon Company, 445 Lake Shore Drive, Chicago, Ill.

CONFIDENT that present markets are unusually receptive and offer more than ordinary sales opportunities, the country's leading electrical and radio manufacturers, distributors and service organizations are cooperating in a mammoth presentation of their products and services to the vast Metropolitan New York Public in "An Exposition Created by the Industry, For the Industry, and the Public it Serves."

The Electrical Association of New York, Inc., sponsors, take pleasure in presenting the following list of exhibitors in the 1936 National Electrical & Radio Exposition:

RADIO

- Kelvinator Corp.
- Norge Corp.
- Westinghouse Elec. & Mfg. Co.
- Ansley Radio Corp.
- Continental Motors Corp. (Speaker Div.)
- Crosley Radio Corp.
- Emerson Radio & Phono. Corp.
- Radio and Electric Co.
- Fairbanks, Morse & Co.
- General Electric Co.
- Halson Radio Mfg. Corp.
- International Radio Corp.
- Majestic Radio & Television Co., Inc.
- Midwest Radio Corp.
- Pierce Airo Inc.
- Pilot Radio Corp.
- RCA Manufacturing Co., Inc.
- Radiobar Company of America
- Radio Lamp Co., Inc.
- Sparks-Withington Co.
- Stewart-Warner Corp.
- Stromberg-Carlson Telephone Mfg. Co.
- United American Bosch Corp.
- Westinghouse Electric Sy. Co., Inc.
- Zenith Radio Corp.

RANGES

- Rex-Cole Inc. (General Electric)
- General Electric Co. (Hotpoint)
- Kelvinator Corp.
- Landers Frary & Clark
- A. J. Lindemann & Hoverson Co.
- Norge Corp.
- Westinghouse Elec. & Mfg. Co.

REFRIGERATION

- Apex Rotarex Corp.
- Rex Cole Inc. (General Electric)
- Crosley Radio Corp.
- Fairbanks, Morse & Co.
- Frigidaire Corp.
- General Electric Co. (Hotpoint)
- Kelvinator Corp.
- Majestic Radio & Television Co., Inc.
- Norge Corp.
- Sears, Roebuck and Co.
- Sparks-Withington Co.
- Stewart-Warner Corp.
- Westinghouse Elec. & Mfg. Co.

VACUUM CLEANERS

- Apex Rotarex Corp.
- Eureka Vacuum Cleaner Co., Inc.
- General Electric Co.
- The Hoover Company
- Premier Division Electric Vacuum Cleaner Co.
- Singer Sewing Machine Co., Inc.
- Westinghouse Elec. & Mfg. Co.

OIL HEAT AND AIR CONDITIONING

- Continental Motors Corp.
- Frigidaire Corp.

- Kelvinator Corp.
- Norge Corp.
- Westinghouse Elec. & Mfg. Co.

MISCELLANEOUS

- Bronx Gas and Electric Company
- Brooklyn Edison Company, Inc.
- Bruno-New York, Inc. (RCA Mfg. Co., Inc.)
- (Fairbanks, Morse & Co.)
- Bushwick-McPhilben Corp. (Sparks-Withington Co.)
- Caldwell-Clements, Inc.
- Davega-City Radio, Inc.
- Electrical Testing Laboratories
- Groler Society of London, Inc.
- House Furnishing Review
- The International Nickel Co., Inc.
- E. B. Latham & Company (Hurley Machine Co.)
- (International Radio Corp.)
- (Landers, Frary & Clark)
- McGraw-Hill Publishing Co.
- R. H. McMann, Inc. (United American Bosch Corp.)
- The New York Edison Company, Inc.
- New York and Queens Electric Light and Power Company
- Radio Today
- The Radio Weekly
- Radio & Elec. Appliance Journal
- Times Appliance Co., Inc. (Westinghouse Elec. & Mfg. Co.)
- Warren-Norge Company, Inc. (Norge Corp.)
- Wholesale Radio Equipment Co., Inc. (Stewart-Warner Corp.)
- E. A. Wildermuth (Kelvinator Corp.)

LAUNDRY EQUIPMENT

- Apex Rotarex Corp.
- Crosley Radio Corp.
- Fairbanks, Morse & Co.
- General Electric Co.
- Hurley Machine Co.
- Norge Corp.
- Westinghouse Elec. & Mfg. Co.

DOMESTIC APPLIANCES

- Rex Cole Inc. (General Electric)
- The Fay Company
- General Electric Co.
- General Electric Sy. Corp.
- McGraw Electric Co., Waters Genter Div.. (Toastmaster)
- National Enameling & Stamping Co.
- Proctor & Schwartz Electric Co.
- Silex Company, The
- Singer Sewing Machine Co., Inc.
- Waage Electric Co.
- Warren Telechron Company
- Westinghouse Elec. & Mfg. Co.
- Westinghouse Lamp Company
- White Sewing Machine Company

NATIONAL ELECTRICAL & RADIO SHOW

SEPT. 9-19

Grand Central Palace - New York Daily incl. Sunday 11 a.m. to 11 p.m.

SELL TUBES

WITHOUT INVESTING A CENT

TUNG-SOL

Flow radio Tubes

TUNG-SOL LAMP WORKS, INC.
 Radio Tube Division
 SALES OFFICES: Atlanta, Boston, Char-
 lotte, Chicago, Cleveland, Dallas, Detroit,
 Kansas City, Los Angeles, New York.
 General Office: Newark, N. J.

Tubes must be made right in order to be sold success-
 fully on such a basis. Tung-Sol tubes were the first and
 are today the only line sold nationally on consignment.

There are still desirable locations where independent
 service organizations who can meet requirements may
 be appointed as Tung-Sol agents. Ask your nearest
 Tung-Sol tube wholesaler who will supply details.



Sprayberry's Answers to Radio Service Men

Published Exclusively in The RADIO JOURNAL, Radio City, New York

Here is how to get Sprayberry's Answers to your legitimate questions on radio service problems: Address your letter to: SPRAYBERRY'S ANSWERS c/o The Radio Journal, Radio City, 1270 Sixth Ave., New York. We are in a position to solve your problems, for as a last resort and upon request to you from Mr. Sprayberry, we can permit the chassis to be shipped in and repaired at the Sprayberry Laboratories, without cost to you, except for express charges. You are assured of complete satisfaction, but do not ship in any chassis until requested, and only after the mail solution doesn't work. Questions of sufficiently wide appeal will be answered in columns of this magazine in the following issues.

J. L. Sprayberry
RADIO SERVICE EDITOR

How to Improve Your Personal Salesmanship in Radio Service

There is a general impression—not without some foundation in fact—that a salesman, like the poet, is born, not made. This idea is based upon the personal experiences of those who have attempted to sell, or who have, in imagination, put themselves in the position of a salesman. Selling is one of the few professions concerning a member of which it may be said that he is "born"—a "born salesman". Selling, in its highest plane, is an art that requires a specialized glandular and psychological combination that is largely prenatal, plus environment and training. The natural born salesman has no fear of a door being slammed in his face; he is as much at home on the telephone or in a house-to-house canvass as he is behind the counter, or dictating a sales letter in the privacy of his office. He does not know discouragement. Sales resistance, to him, is an appetizer, and he can sell anything from life insurance to oil stock, regardless of its merit, or his faith in his product. This last—faith in one's product—is important, as will later be brought out. Follow these principles and you can become a GOOD salesman. For while you may lack the qualifications that characterize the born salesman, the truth is that YOU, or anyone else with normal capabilities, can become a GOOD salesman.

RADIO SERVICING AND SALESMANSHIP

The question has often been asked—why should the radio serviceman be a salesman? Those who come to him do not have to be sold, anymore than a person who is ill and goes to the doctor has to be sold on medical attention. True enough. But first of all the customer had to come to you. Unless it was purely a matter of convenience—if you were just around the corner—or he didn't know anybody else, it required salesmanship to get him there. If he is a new client he has been attracted to your establishment for one or more of many reasons, in everyone of which is the element of salesmanship. It may have been word-of-mouth advertising—which means you have sold a friend, acquaintance or relative of the present customer on your servicing ability. Perhaps he read your advertisement, in the telephone book, newspaper, or tacked on the wall of a neighboring store, or saw your publicity. It may be that in passing he admired your window display. All of these things play an intimate part in the game of selling. In this article we are concerned with personal selling, and in the radio service business, this is a matter of first importance.

No business prospers on first and only sales. It is repeat business that rings up the cash-register consistently. A customer may wander into your shop to buy a tube. Your salesmanship should bring back again and again—for more tubes, service work, etc. A service job well done is a bit of salesmanship as well as a technical accomplishment, for the customer has been sold on you, and will return to you in the future. It should go without saying that the serviceman who is also interested in the retail sales of radio sets and sidelines should be, what he can easily be—A GOOD SALESMAN.

Much can be learned concerning the art of selling from one's everyday experience in the art of buying. Analyze the reasons you prefer to buy from a certain place rather than others, and you will learn much that will be of assistance to you in selling your own services.

It is a safe assumption that the reader or some member of his family owns an automobile, which is periodically gassed and serviced—probably, most of the time, at the same service station. Before reading the next paragraph, take pencil and paper and jot down the reasons why you, or your family, patronize this establishment. Then check your reasons with those given below.

REASONS FOR PATRONAGE

1—Quick service. 2—Courtesy. 3—The job is always finished on time—or before. 4—The mechanics know their business, the work is usually flawless, and the few occasions where the job has not been satisfactory, they have made good eagerly. 5—They do MORE than they are supposed to do—checking air, water, cleaning windshield, use of telephone, putting on chains, etc. 7—The service is unvaryingly pleasant and patient at any time, day or night. 8—The price has always been fair. 9—The quality of the materials used is always of the highest. 10—They make many helpful suggestions for more pleasurable and efficient summer and winter driving.

The persons associated with the automobile service station we have in mind are primarily mechanics and attendants—NOT SALESMEN. However, they have employed many devices of sound salesmanship WHICH ARE MORE IMPORTANT than the innate qualities of the "born salesman".

You will have no difficulty in bringing to mind some similar establishment or store which you do not patronize, or which has gone out of business, because of the lack of these very points of GOOD SALESMANSHIP that attract your consistent patronage to the first considered organization.

THE PSYCHOLOGY OF SELLING

All writers on the subject of selling agree that the psychological element of pleasure is associated somehow with the purchase of every article or service. This is obvious in most cases. A person buys an automobile for the pleasure or convenience of driving it. A book is bought for the entertainment of reading it, or for the acquisition of knowledge, which, if not a pleasure in itself, will be turned to uses ultimately leading to pleasurable results. The rule holds even in extreme cases, such as the "purchase" of an operation—or of radio service. Having an appendix out would hardly be described as a pleasurable experience, but the purpose of the operation is to rehabilitate the patient for the pleasurable things in life. There is little element of pleasure in a faulty radio receiver, but this element is reintroduced by its repair.

It follows that the heightening of this pleasurable element—by subconscious suggestion or otherwise—is sales stimulating, while any factor that tends to abate this subtle feeling is antagonistic to selling. The salesman who eagerly and pleasantly describes the features of down-draft carburetion in the car he is selling is implanting ideas of more mileage, better performance—in other words, pleasurable operation—in the mind of his prospect. All other factors, obvious or subtle, connected with the sale of the car—appearance of the salesman, appearance of the show room, reputation of the car, price, etc.—will effect the possibility of the sale one way or the other.

In other words, any factors that contribute to THE PLEASURE OF BUYING are elements of salesmanship. They include: Pleasant surroundings in which to make the purchase. An ability to see the customer's point of view and sympathize with it. A reasonable price. An assurance of satisfaction. The personable appearance of the salesman. A satisfactory knowledge of the product being sold. Conversely, any lack of these elements, or, still worse, the presence of contrasting elements, increases the sales resistance.

SOME FUNDAMENTAL RULES FOR RADIO SALESMANSHIP

We have now arrived at the point where it is possible to lay down fundamental rules for radio salesmanship which apply equally well to retail merchandising—the sale of sets and parts—and to the sale of radio service.

Let us consider first the SERVICEMAN OR THE SALESMAN HIMSELF. He should be neat both in appearance and habits. Slovenliness is usually a general, rarely a specific, characteristic. A person who is careless in one thing is usually careless in many things. In any event, no matter how good a serviceman may be as far as skill in his profession is concerned, a slipshod appearance suggests, consciously and subconsciously, that his work will be no better. It is definitely poor salesmanship. The radio serviceman should be neatly dressed, his shoes showing signs of recent attention. His trousers should be creased, his socks gartered, his collar and cuffs clean. The serviceman's work is seldom dirty work, and except when actually engaged in it, there is no necessity for him looking a part other than that of a clean and neatly dressed man in conventional garb. While working, he should wear a buttoned smock. This will protect his clothes, and at the same time preserve a neat, professional appearance should he find it necessary to leave the bench and interview customers.

Few of us were blessed with the features of a screen star or matinee idol. But nature has endowed all of us with the possibilities for a presentable appearance. The serviceman should never be badly in need of a hair-cut or attention with comb and brush. He should make it a practice to shave every day. For the sake of both his appearance and his health, his teeth should be in the best possible condition. Remember, a cordial smile will work wonders with homeliest of faces. Much of the serviceman's work is manual. His hands can hardly be expected to look as if they had just received the attention of an expert manicurist. However, there is no necessity for him going to a job with dirty hands, and his nails displaying long lack of familiarity with a nail-file. It will be well indeed to take a common sense hint from the halitosis and "B.O." ads—which exaggerated as they undoubtedly are, have some factual basis.

The serviceman should speak good English. This is a very difficult matter upon which to check one's self, for one who slips grammatically, or in pronunciation, rarely realizes it. As a rule his speech is in tune with his environment and the speech of his associates. We are all acquainted with someone a bit higher up—a bit better educated than ourselves. Don't be afraid to go to some such person or persons and ask them, frankly, to correct you every time you make an error in grammar or pronunciation. Assure them that you can "take it"—that you will be grateful, rather than otherwise.

(Continued on Page 29)



Question No. 1. What is the most effective way to stop reception in a receiver when a magnetic or other type pickup is used?

Answer No. 1. Any R. F. or I. F. plate circuit may be opened without readjustment of the circuit. For accomplishing this with the same switch that connects the pickup, the circuit preceding the pickup may be blocked in one of several ways. It may short the diode or detector grid to ground provided the detector in the latter case is not used as an audio amplifier, it may short the detector plate load or open the coupling unit from the detector to the first audio amplifier. In general the method will depend largely on the pickup connection itself as well as the receiver circuit.

Question No. 2. In aligning the I. F. of a superheterodyne, using a 2A7 or 6A7, how is the signal generator connection made and is the oscillator section of the tube permitted to operate?

Answer No. 2. Obviously the tube cannot be removed if it is desired to align the circuit, with the correct plate ground capacity of the 2A7 or 6A7. In this case, the signal generator is connected from the 2A7-6A7 signal control grid to ground. To avoid any undesirable frequency it is advisable to stop oscillation by shorting the oscillator tuned circuit or grounding the oscillator control grid.



A BETTER SERVICE BUSINESS FOR YOU

Chances are ten to one that YOUR business CAN be made better, more efficient, MORE PROFITABLE.

... You CAN get better jobs. You CAN expand to do all types of work quicker and easier. You CAN learn to merchandise your business to greater advantage.

Enthusiastic letters from many Sprayberry graduates offer convincing proof. I have helped them on the road to success. I honestly believe I can help you. Certainly, as a serviceman, you owe it to your business future to mail the coupon today and GET THE FACTS about Sprayberry's Practical Mechanics of Radio Service. It may be the turning point in your business career. You have nothing to lose—much to gain.

SPRAYBERRY ACADEMY OF RADIO
(F. L. Sprayberry, President)
2548 University Place, N. W.
Washington, D. C.

Without cost or obligation, please send your book "PUTTING PROFITS AND EFFICIENCY INTO SERVICING."

Name
Street
Address
Paste Coupon on Penny Post Card and Mail

RJ

Question No. 3. After aligning an all wave receiver to the broadcast band and progressing to other bands and then covering back to the broadcast band it is found to be somewhat off alignment. Is this normal?

Answer No. 3. Yes. The circuits are related in such a way that this is likely to occur to a certain degree. It will be necessary to repeat the alignment of each band until all are correct. This will not be found difficult as no band will require more than three adjustments for complete alignment.

Question No. 4. Why will a soldering iron become pitted and lose its tinning after use for a short time?

Answer No. 4. This indicates that the iron becomes too hot. Place a 75 or 100 watt electric lamp in series with it using a switch to short it out whenever it is used to solder.

Question No. 5. What is the best way to measure control grid voltage on A. V. C. controlled tubes?

Answer No. 5. Use a vacuum tube voltmeter, or an electric eye tube which is calibrated properly.

Question No. 6. Why are maximum grid resistance values specified for certain tubes used as audio amplifiers?

Answer No. 6. If these values are exceeded the bias will become unstable, because of emission of the tube or due to leakage of the coupling condenser from the previous stage.

Question No. 7. If there is already a complete grid circuit in an audio amplifier to which a crystal pickup is to be connected, is it necessary to have a resistor across the pickup?

Answer No. 7. No. One resistor is sufficient in this case. It may either be directly across the pickup or within the amplifier.

Question No. 8. How is a high-fidelity I. F. circuit adjusted having three tuned circuits?

Answer No. 8. If the third circuit is pivoted, turn it for minimum coupling with the primary and secondary and line the latter windings up as usual. Now with the rotating coil type, gradually bring it into maximum position watching the output indicator. Adjust this trimmer to resonance and readjust the others only if necessary. For the resistance type, gradually decrease the resistance while trimming the circuit, starting with maximum or open resistance.

Question No. 9. In installing a doublet antenna, should I use one coupling transformer or two?

Answer No. 9. For satisfactory operation, two transformers must be used, one at the antenna to match the antenna to the lead-in cable or feeders and one at the set to match the latter to the set.

Question No. 10. I aligned a superheterodyne at 1400 KC with the proper dial setting and then realigned it at 600 KC. The dial read 670 KC, and when I correct this end for proper dial reading, the upper end will be out. How may this be properly calibrated?

Answer No. 10. Open up all trimmers and padding condenser. Realign and set the dial scale correctly. Several adjustments in this way may be necessary before the correct one is found.

BUSINESS

The first authoritative volume to analyze and explain the best known methods and procedure of conducting a radio service business has just been released by RCA under the title "Radio Service Business Methods".

This 220-page volume, the most complete treatment of the subject ever published, was co-authored by John F. Rider, widely-known radio service expert, and J. Van Newenhizen, radio auditor and accountant, after a lengthy and comprehensive survey of thousands of service businesses. The book discusses such important topics as A Profit On Your Investment; What To Charge; Simplified Records and Bookkeeping and others closely allied with the conduct of a thriving service business. Primarily, the authors seek to help the radio service engineer, unfamiliar with bookkeeping, maintain an orderly accounting system which will keep him constantly informed of his financial progress with the minimum expenditure of time and effort.

To quote from the foreword of the book, "With adequate technical knowledge and equipment, and the ability to sell, any service engineer can keep as busy as a bee—and as poor as a churchmouse, unless he operates his business according to proven business principle. They must learn how much it really costs to make a call, or do a job, how much to spend on advertising, and how to collect for work" before they can expect to operate on a profitable basis. The Rider-Newenhizen book sets out to simplify these and other related problems so that service men may keep a close check and a discerning eye on the conduct of their business.

All service engineers may obtain a copy of Rider-Newenhizen's "Business Methods" by special arrangement with RCA Tube or RCA Parts distributors. The new book was originally offered as one of the units of a Three-Point Service System Plan, which was designed to help the radio serviceman get more business, simplify his handling of it and organize his procedure for greater profit. This plan is still open to those who have not yet made use of it through RCA Parts distributors. The other two units of the plan include a volume, entitled "101 Service Sales Ideas," in which have been gathered the business-getting ideas which have been most successfully tried and proven in a wide field of application; and a radio service "tip" file consisting of hundreds of easy reference, time-saving answers to difficult service problems likely to be encountered in the field, housed in a metal file cabinet. Both the "Sales Ideas" book and the tip file may be had separately through special RCA tube deals with the distributor.

OCTAL

Quite close onto the "heels" of metal tube development has come a series of glass tubes with octal base metal tube construction. With the exception of the plate to ground capacity being larger for metal tubes, the characteristics are generally identical with their metal tube counterparts. In some cases beyond the inherent superiority of glass construction certain characteristic advantages may be obtained. In any such cases, however, the glass equivalents of the metal tubes may be used in the same sockets and in the same circuits. Certain circuit adjustments must be made when a change is made from one to the other. The plate to ground or plate-to-shell capacity is somewhat higher in a metal tube than in a glass one and if this capacity shunts any high frequency periodic circuit, it naturally serves in part to determine the operating characteristics of the circuit of which it becomes a part.

While this is true of all R. F. and I. F. circuits, it is especially true of oscillator circuits where there is the possibility of changes of oscillator frequency rather than simply detuning a circuit. When a G tube is used in an oscillator circuit which is designed for metal tubes the capacity

of the circuit must be adjusted. In some cases the entire oscillator circuit may have to be redesigned—especially as regards the plate circuit—coupling, etc.

When glass counterparts of metal tubes are used in place of the metal tubes, tuning adjustments must be made both for the capacity differences within the tubes and the external capacity effects due to the position of the metal envelope on the receiver chassis.

Glass counterparts to replace metal tubes are identified by the letter G following the tube designation—thus 6H6 is a metal tube of the double diode type and the 6H6G is its glass equivalent. The "G" tubes, as they are called, have the standard octal base so that the sockets need not be changed for substitutions.

The technique of glass tube manufacturing has had sufficient long term field application, so that results may be predicted in advance. On the other hand, metal tube technique and field information is not as complete as for glass tubes. Glass substitutions therefore serve as a safe means of retaining satisfactory operation of all equipment pending stabilization of metal tubes.

It is likely that glass equivalent tubes may permanently replace all metal tubes unless new circuit refinements are forthcoming, which will favor the real advantages of the metal tube.

EXCHANGE COLUMN

There is no charge for listing your spare equipment in this column for sale or exchange, but listings are limited to eight lines.

In writing about any of the below offers, address care of The Radio & Electric Appliance Journal, 1270 Sixth Ave., New York, N. Y.

FOR SALE: Have a Million Neon Glow Tube Tester. Cost \$8.45. Make offer. J. D. H.

WANTED: Rider manuals from 4 to 6. Will also consider Gernsback volumes from 4 to 6. Will pay from \$4 to \$5 for each volume, depending on condition. H. F. K.

FOR SALE: Esco Motor Generator, 1000 volts, 300 watts—perfect condition, \$75. E. R. L.

FOR SALE: Leeds Noise Silencer and National Preselector with tubes. Best cash offer accepted. E. W. S.

FOR SALE: Clough Brengle Oscillograph. New and complete. \$65. B. L. S.

FOR SALE: Super Skyrider Model S9. Price \$59.50. B. W. R.

WANTED: U. S. Postage Stamps. Send your list. C. R. D.

WANTED: Rider and Gernsback Manuals. State what you have offer and price. M. R. P.

FOR SALE: Several speakers and odd lot of used audio and power transformers. J. R. K.

SALE — Janette Rotary Converter Type C16-3 Amp 3600 Rev. 60 cycle, 115 VDC to 110 VAC. Cost \$65 wholesale. Never used, sell for \$20. Trusting's, Red Bank, N. J.

UTAH

Ira J. Owen, well known throughout the radio field as one of the industry's leading administrative and industrial engineers, has been named president of the Utah Radio Products Company of Chicago.

Mr. Owen has made comprehensive industrial surveys of some of the largest manufacturers in the country, such as Cutler Hammer, Bissell Carpet Sweeper, Pepsodent, Federal Match Co., Western Electric, and Universal Match Company. He acted as chief engineer for Marwick, Mitchell, Peat, now known as Peat, Marwick, Mitchell. He was actively engaged in the \$25,000,000 modernization project of the Port of New Orleans, installing the most modern conveying equipment.

Early in February of this year Mr. Owen was engaged as a consulting engineer by Utah Radio Products to



Ira J. Owen

make a careful survey of factory operating conditions. As a result of this study, Mr. Owen was asked to become president of this progressive concern.

O. P. Smith has been appointed general sales manager of this well-known established radio parts company. Mr. Smith has been continuously engaged in sales work, and made his advent into the radio business as representative of the Automatic Electrical Devices Company of Cincinnati, later known as the Kodak Radio Corp., in the selling of the well-known "Homcharger," at the same time representing the Grigsby-Grunow Company in the sale of their ABC eliminators.

In recent years Mr. Smith has represented other manufacturing companies in the sale of radio parts to the trade, his most recent connection being with the Radiart Corp. of Cleveland, Ohio, and the Quam Nichols Company of Chicago in the sale of vibrators and speakers.

6B5 AMPLIFIER

A new amplifier circuit employing the popular 6B5 tubes in push-pull has just been released by Jefferson Electric Company, Bellwood, Illinois, and described in detail in Bulletin PA-11. This circuit features a double channel input from low and moderate level sources with gains of 138 or 98 DB. Input from either channel is controlled by a single center tapped potentiometer. Flat frequency response and low harmonic distortion contribute to give an amplifier of exceptional tone quality at all output levels.

This amplifier is adaptable to all types of public address and station amplifier work, the output being sufficient for one to four dynamic speakers.

High quality, low cost Jefferson components consist of the power transformer, two chokes, input and output audio transformers, the chassis base and the fuse and fuse block. A template furnished with each chassis base simplifies assembly and assures every constructor a perfect performing amplifier.

RAYTHEON

Development of a new AC-DC output tube, Raytheon Type 25B6G, is just announced by Raytheon Production Corp.

Typo 25B6G is a new 25 volt, 0.3 ampere output tube for use in series filament receivers. The output power, 1.75 watts, is materially higher than can be obtained from type 43, which has been the standard output tube for AC-DC series filament receivers.

With 95 volts applied to plate and screen, and with control grid bias of -15 volts, the plate current is 45 milliamperes and the screen current is 4 milliamperes. At maximum signal voltage the screen current rises to 12 milliamperes. The load resistance of the 25B6G is 2000 ohms and the mutual conductance is 4000 micromhos. The power output of a single 25B6G is 1.75 watts, and at this value total distortion does not exceed 10 per cent.

The improvement obtained in the Raytheon 25B6G tube is the result of structural changes, including the alignment of the control and screen grids. The tube is not of the so-called "beam" type like the 6L6, but the construction gives results about equivalent to those that would be obtained with the beam type tube.

The Raytheon 25B6G has an octal base with connections as follows: Pin 1—No Connection; Pin 2—Heater; Pin 3—Plate; Pin 4—Screen Grid; Pin 5—Control Grid; Pin 7—Heater; Pin 8—Cathode and Suppressor. In size and general appearance the 25B6G compares with the 43 except for base.

Cornell-Dubilier

Cornell-Dubilier Type TJ high voltage transmitting capacitor recently introduced to the broadcast and amateur fields has won wide acclaim among both the engineer and amateur. These sturdy capacitors, extremely compact (only 2 1/4 in. high for the 1. mfd.), filled and impregnated with Dykanol "A," are hermetically sealed in welded metal containers. Dykanol "A," a special non-inflammable liquid diphenyl impregnating medium of exceptionally high dielectric constant and dielectric strength, remains chemically stable under all temperature conditions. It has also been possible to materially improve the leakage resistance and power-factor change by the use of this impregnating material.

The Type TJ capacitors have been successfully operated at voltages exceeding 10 per cent above their rating. This condenser series is available in a complete capacity range at voltages up to, and including 6,000 volts, D. C. Capacitors up to 100,000 volts, D. C. can be obtained in the Type TB construction. Catalog No. 127, illustrating in complete detail, gladly supplied free of charge upon application at the home office of the company.

GEN-E-MOTOR

The Pioneer Gen-E-Motor Corporation of Chicago announces the New "Blue Diamond" Gas-Electric Plant—a full-sized AC, 110-volt, 300-watt generating plant, which already has gained much favorable attention from dealers and jobbers throughout the country.

This new unit rounds out the already complete line of gas-engine generating plants being manufactured by this aggressive concern. Including all practical sizes from 6-volt, DC, 150 watts, to 110 volts, either AC or DC, at 1000 watts capacity.

The "Blue Diamond" has been developed by Pioneer engineers to meet an urgent need for a light-weight, low cost electric plant with ample wattage to operate standard 60-cycle, AC radio equipment and electrical appliances. This is the first full-sized AC plant to sell for less than eighty dollars.

ALADDIN

A three-circuit continuous flat-top band-expansion i-f "transformer" is the latest development of Aladdin Radio Industries, Inc., 466 West Superior Street, Chicago, Illinois. This new coupling device, known as the Type D-101, makes it possible to obtain selective band expansion in an economical and efficient manner.

The new transformer uses Aladdin Polyiron cores in all three coils. The center inductor of this three-circuit transformer may be rotated with respect to the other two inductors, varying the selectivity while retaining a flat-topped steep-sided characteristic through all degree of bandwidth expansion with no appreciable loss in gain.

The Type D-101 is contained in an aluminum shield can 2 in. x 2 in. x 4 in. The selectivity may be controlled by a knob on the panel of the receiver, by attaching a suitable link mechanism to the center shaft which projects through the shield can as shown.

While the Type D transformer has three trimmer condensers, the initial adjustment is made in the same manner as in the case of an ordinary transformer, that is, merely by peaking each tuned circuit at the intermediate frequency. The user is then given the option of high fidelity or split-channel selectivity by manipulation of the selectivity control on the panel. So effective is this method of selective band expansion that audio tone controls can be dispensed with in 1937 receiver designs, since high audio-frequency attenuation may be secured through this means of control of side-banded amplification. The circuit diagram below shows schematically this new form of i-f coupling.

IRC

An economical, completely insulated wire-wound 1/2 and 1-watt resistor, altogether similar in size and appearance to the well-known IRC units, has just been announced by the International Resistance Company, of Philadelphia.

Thus an alternative to the usual carbon or metallized filament type resistor is now available in power ratings of 1/2 and 1-watt, and in resistance values of 0.25 to 500 ohms, and 0.5 to 2,000 ohms respectively, with respective lengths of 5/8 in. and 1 1/2 in. Completely insulated against short circuits or grounds and against the effects of humidity, Type "BW" consists of wire wound on a textile core of small diameter, to which wire leads are clamped under pressure for permanent contact, molded at high pressure in a special phenolic compound of excellent properties.

This method of assembly insures low noise levels and permanent contact. The result, the manufacturers state, is a stable, conservatively-rated, small, insulated wire-wound resistor, having all the electrical characteristics and stability of its type, together with compactness and complete protection against abnormal atmospheric conditions.

BRUSH

The Brush Development Co. has just announced the introduction of two new models of Brush crystal headphones to supplement the Brush Type A 2-phone model that has already won such wide popularity and customer acceptance throughout the country.

First of these two new developments is a single 'phone instrument with head band and soft rubber pad which holds the 'phone securely in place against the ear of the user. It is ideally suited for use in installations where the preference is for a single 'phone, rather than the double 'phone model, and brings to this service in a very low priced instrument the many advantages that can be secured only with Brush crystal operation.

Second of the new models is also a single 'phone instrument . . . but with the 'phone mounted on a 12-inch lorgnette handle. A five-inch extension—to 17 inches—is provided that enables the user to hold the instrument against the ear from any of several convenient and comfortable positions. Brush lorgnette handle headphones have already been used with outstanding success in connection with public address installations in churches, etc. They permit the hard of hearing to enjoy services that they otherwise could not hear . . . have been tested in actual installations against competitive types of instruments and selected by the hard of hearing themselves as being best suited for their use.

Both the single 'phone headset and lorgnette handle headphone are of typical Brush design and are representative of the company's traditionally high electrical manufacturing standards. They are extremely sensitive—can handle excessive volume without overloading . . . have no magnets to cause the diaphragm to chatter in the user's ear. They are of rugged construction and light in weight.

SENCO

Constant speeds with less than 1 per cent drift, variable from 0 to 1000 R.P.M. by turning a small calibrated dial are possible with the new Senco vari-speed drive developed by the Sundt Engineering Company of Chicago, affiliate of Littlefuse Laboratories.

The unit is powered by a 1/100 H. P. 110V. shaded induction motor and the speed is changed by means of special wear resistant friction disc clutch. Oilless bearings are used throughout. The average torque is 1.0 inch pounds. A 10 to 1 reduction is available for slow speeds. Attractively finished, the unit measures only 8 1/2 x 3 3/4 x 4 1/2 inches and weighs 10 pounds.

While this unit was designed primarily to provide a synchronous scanning system for use with the Senco Neon oscilloscope tube, it has many other shop and laboratory uses; sweeps for cathode ray tubes, stroboscope systems, timing and control devices, automatic switches, advertising displays and novelties, laboratory life tests, lecture room demonstrations, etc.

CHAMPION GLASS RESISTANCE TUBES


First Choice of Manufacturers of 4, 5 and 6 Tubes
AC-DC Sets

for Voltage Reduction.


Tapped for 1, 2 or 3 Pilot Lights

Write for Prices and Specification Charts

CHAMPION RADIO WORKS
LYNN, MASSACHUSETTS



TRIAD



THE QUALITY NAME IN RADIO TUBES

TRIAD MANUFACTURING CO., Inc. PAWTUCKET RHODE ISLAND

(Continued from Page 25)

Your best paying customers will be those in the higher stations of life—who appreciate good English, and who will be impressed by your command of it—or prejudiced adversely if you violate its precepts. Those of your customers who themselves are guilty of poor English will not be alienated by your correct usage. In other words, good English will often be a definite asset and never a handicap.

Deliberate attention should also be given to the manner of speech—the modulation of one's voice. While our fundamental voice characteristics are natural endowments and cannot be greatly modified, we are all capable of speaking loudly or softly, and of imitation to varying degrees. Sales psychologists have discovered that the best "sales voice" is one which tends to approximate that of the customer. A soft, quiet spoken man should be addressed in somewhat similar tones. The boisterous type prefers, subconsciously, a more hearty technique. As a general rule, women are best sold with a softer and more subdued style.

These things are all important—very important. We want to impress upon you once again that only a very small part of salesmanship is the matter of brow-beating into acquiescence. There is little room for this technique in the service business, and few of us have the "born" qualities which would enable us to put it over successfully. Real salesmanship is composed almost entirely of those factors which make it PLEASANT and EASY for your customer to BUY FROM YOU. Conscious sales EFFORT probably represents less than ten per cent of the influence brought to bear on the culmination of a sale.

THE SERVICE SHOP

Obviously, the service shop can be made an important factor in prompting ease and pleasure of purchasing. No matter how small the shop is, contrive some sort of display. Your jobber will gladly furnish you with the required material—posters, tube cartons, backgrounds, etc. Your technical equipment should be neatly arranged—with an eye for both your own convenience and the spectacular from the layman's point-of-view. There should be nothing hazy about the bench—this detracts from efficiency as well as appearance—and, for similar reasons, it should be in no greater state of disarray than is absolutely required for whatever job is in the works. A neat layout, with tools arranged in orderly fashion, impresses the customer, both consciously and subconsciously with the idea that the work you do for him will be satisfactory.

Always have one or two comfortable chairs and ash receivers around for the convenience of your customers. A potted fern or rubber plant is no superfluous adjunct to a radio service shop!

In larger establishments, where a window and perhaps a counter display is possible, proper and attractive arrangements will do a lot of silent and automatic selling for you—by making it easier and more pleasurable to buy from you.

CONFIDENCE IN YOUR PRODUCT

The finest FOUNDATION for successful salesmanship in the case of the average salesman—which means you and me—is confidence in his product. The "born" salesman, unfortunately for those who come in contact with him, can and often will sell anything from gold bricks to worthless oil stock—taking more pride in his salesmanship than in his integrity. The salesman without these innate qualities is completely lost unless he has one hundred per cent confidence in what he is selling. There is a simple psychological point-of-view, what the born salesman is selling is not the product so much as it is his own salesmanship—in which he has every confidence. Confidence in the product one is selling will do much to put one on a par with a natural salesman. The most reticent, self-conscious and retiring person will wax enthusiastic, even eloquent over something in which he has ABSOLUTE FAITH.

In other words, to do a real selling job of yourself as a radio serviceman, unless you are a born salesman and a *master of ballroom*, you must possess perfect confidence in your ability to service radios. In any case, it is the safer, more profitable bet, in the long run.

SERVICING IN THE CUSTOMER'S HOME

There is no place here to discuss pro and con the advisability of servicing minor troubles in the customer's home. That is a matter of policy, convenience and expediency which the individual serviceman must decide for himself. Many instances of home radio servicing are doubtless justifiable, and, as the customer will certainly continue, it is well to consider the selling aspects of this procedure.

When a specific time has been mentioned for the serviceman to call, he should appear ON THE DOT—neatly attired as previously described. While his carrying case may reasonably show signs of consistent usage, it should not be delapidated. It should contain, as an essential bit of equipment, a sheet of oil cloth which is spread on the floor to protect the rug or finish against abrasion from tools, parts and test equipment. If the serviceman removes his coat, he should not throw it on the nearest convenient couch or chair. Ask the master or mistress of the house—

SERVICEMAN: Could I hang this somewhere—?

Don't work in your vest. The serviceman with a keen eye for salesmanship will carry with him a buttoned smock, the utility of which has already been described.

If inspection indicates that repairs will require more than one half hour, it will be better to remove the receiver, or at least the chassis, to your shop. While it is excellent psychology—good salesmanship—to permit your client to watch you make a swift, deft repair, it is equally bad salesmanship and psychology if he watches you pattering around with-

out getting direct and immediate results. There are many times when even the expert is temporarily stumped. The customer should not be a witness to these inevitable but non-the-less unhappy occasions.

If you find the repair necessitates an instrument or tool not in your kit, remove the set or chassis to the shop. Don't apologize and say you'll "be back later." Don't forget the antisales ridicule heaped upon the plumber who is always forgetting his tools.

PROMISES

With the exception of some minor repairs in the customer's home, always give an outside estimate of the cost. Never permit your bill to exceed this estimate, and, if possible and reasonably profitable, charge a little less than the estimate. This is excellent sales psychology, and will do much to promote repeat business.

The same psychology holds for the promise of delivery. Give yourself ample time so that the receiver can be returned on schedule or, much better yet, before it was promised.

It goes without saying that all service work should be guaranteed. The more liberal the guarantee, the more potent its influence on future service jobs. Most servicemen guarantee their work for a period of ninety days. There is no reason why this three months warranty should not be multiplied four-fold. *This guarantee, of course, covers only the repairs made by the serviceman on the specified job.* If he uses good parts, and does first-class work that particular part of the set repaired by him should be as good as new, and there is no reason why it cannot be profitably guaranteed for one year. Of course, this is somewhat dependent upon the customer's attitude. For example:

SERVICEMAN: I can repair this power transformer, but I don't know how long it will last. It is somewhat under size, and the primary winding has started to char. I can fix it temporarily, but I'd hesitate to guarantee it. I'd much rather put in a new transformer. It would only cost you two dollars more, and I'll guarantee the job for one year.

EXTRA SERVICES

Nothing so pleases a customer—nothing so contributes to his pleasure of buying (i.e., to good salesmanship)—as getting more than he or she expected.

When a service job is finished, always polish the cabinet. This should be done in the presence of the customer—in his home unless he calls for it at your shop. (If you transport it from the shop to his residence, the polishing should be done after the set is reinstalled, as it will quite likely be finger-marked in the process of transportation and reconnecting.)

Loan the customer a receiver while his is being repaired. This is a courtesy and a convenience that is invariably appreciated. In the course of time the serviceman will accumulate quite a number of second and third hand receivers which, in his spare moments, he can modernize for this purpose, and for resale. As a matter of fact, the loan of such a receiver often results in its sale as a spare set.

UTAH

VIBRATORS



Tear out this ad and pin to your letter-head for FREE copy of the NEW UTAH General Catalog of vitalized radio parts

UTAH RADIO PRODUCTS CO., Orleans St., Chicago

Philco Television System

To the radio press of 60 guests a demonstration of television was given by the engineers of the Philco Radio & Television Corporation, Philadelphia, showing the latest results achieved by that organization in its development of television broadcasting and television sets. Guests seated 7 miles away in the home of Wm. H. Grinditch saw images in approximately black and white tones of a boxing match, of several singers, of a quartet, of a motion picture film, of a radio commentator and also saw televised a watch with the second hand moving, a package of cigarettes showing the possibilities of a later commercial presentation of products, of a newspaper with the headlines readable and a telephone conversation between the guests and a radio commentator being televised.

Demonstration was conducted by Al Murray, Philco television expert.

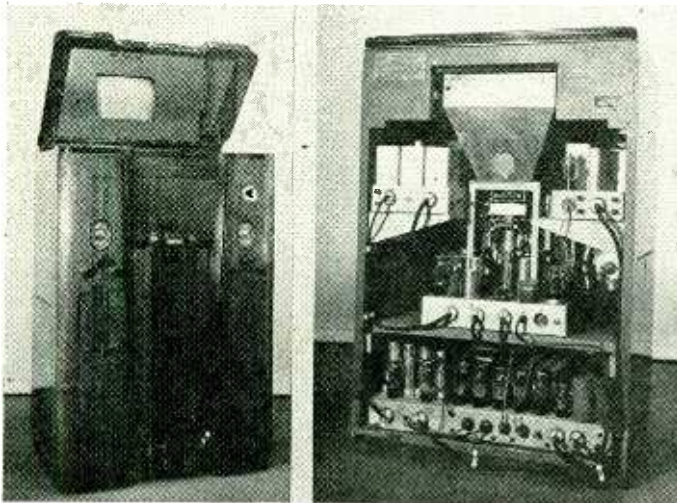
At luncheon the master of ceremonies was Sayre M. Ramsdell, sales promotion manager, who explained the purpose of the display and then introduced Larry E. Gubb, Philco president, who explained that a great deal of work must still be done, not only to improve today's television but for securing transmitting facilities for programs for prospective television audiences. Mr. Gubb said that his company doesn't believe that television is right around the corner but if and when it does appear, a tremendous industry will result.

Reproduced herewith are two photographs showing the front view of the television receiver as well as the rear view. Below is given the memorandum released by Philco, covering many features of the Philco set as well as the modus operandi of transmitting television.

"In 1928 Philco engineers experimented with 60 line scanning discs—the birth stage of development. It was followed by a picture of considerably more lines using electronic methods. During the time of these experiments, the license for the visual broadcasting station W3XE was received and experimental transmissions were commenced in 1932. We thus passed from the second stage into the third, in which 240 line pictures were transmitted.

"To secure a picture was not such a great task, but it was the removal of all of the small but nevertheless conspicuous defects that was the real job. The engineering staff being familiar with the difficulty existing in the leading systems at that time, concentrated on these very problems, the nuts that were most difficult to crack. These, when solved, permitted the laying of a foundation for a television system which gives truly high-definition pictures of acceptable quality.

"Hand in hand with Philco's television circuit research work in our vacuum tubes laboratory, is carried on in the special tubes used in our system. Picture quality equal to that of home movies was and still is our goal. Such a requirement forced our engineers to be careful of small defects, distortions and the like, whether due to the camera tube,



Front and back views of the Philco television receiver

the picture tube or the system. This led to larger, brighter cathode ray tubes, and camera tubes of improved sensitivity and detail. Cathode ray projection tubes were built to explore the path leading to larger pictures. One conclusion drawn from these experiments was the desirability of using more than 240 lines.

"The next progressive step appeared to be a 345 line picture. Some reasoned that a good 240 line system would give better pictorial results than a fair 345 line system. However, it was decided to try 345 lines. In due course amplifiers were improved, special tubes designed to meet the new requirements, and new scanning equipment built. Once again defects and distortions had to be eliminated one by one.

"Again a satisfactory image was obtained, first by wire. The next step was to reproduce this at a distance by radio. Philco's experimental television transmitter W3XE, was rebuilt, and with power increased to 1.5 kw. Images again were flashed over the roof tops of North Philadelphia. This was the beginning of the fourth stage in the development.

"The job of transmitting over the city of Philadelphia and its suburbs, television signals of sufficient strength to give usable high-definition pictures at a distance of at least seven miles from our plant, was not an easy one on the ultra high-frequency used for television. The newest ideas in u. h. f. transmitters, antennas and transmission lines were

tested. Considerably more power was required at the transmitter to cover the desired distance than sound broadcast experience would indicate.

"One of the most difficult problems to be solved was the modulation of the transmitter by the very high video frequency (generated by scanning) necessary for high-definition television pictures. It is a relatively easy matter in a sound transmitter to modulate from 30 to 10,000 cycles, but when the upper limit of the modulation band is pushed to 2.4 megacycles the problem of constructing amplifiers and modulators appears at first insurmountable. The solution was the invention of a new and unique type of modulation which is being used by Philco.

"Concurrently ultra high-frequency radio receivers (42-86 MC.) were being developed to faithfully reproduce these high modulating frequencies necessary for clear, high definition pictures. Receivers for the accompanying sound were also developed so that the apparatus necessary to receive a television program (sound and picture) could be placed in an ordinary console.

"With all of the units of a complete system developed and operating satisfactorily, field tests were ushered in on December 23, 1935, by a one-hour program reproduced at a distance of seven miles from the transmitter. This demonstration was witnessed by a number of Philco executives. It showed the system lacked many desirable features. Nevertheless the results were sufficiently promising to warrant pushing development work with greater speed. The engineers once again concentrated on the weaker links of the system, to remove the cause of weakness and to improve pictures. Subsequent demonstrations made at frequent intervals (to Philco executives and their guests) showed rather slow but steady progress up to that point where scheduled programs were broadcast nightly by Philco covering Philadelphia on 51 MC (picture) and 53.25 MC. (sound). These were started June 18, 1936.

"This date marks the beginning of the fourth stage of our development—engineering field test. This is the stage in which we are at present. Experimental console type of receivers are in the homes of our various engineers in Philadelphia, who receive and report on the Philco program. These reports, together with suggestions concerning receiver improvement, etc., form data helpful in the design of future models. You will participate in one of these field tests today. At the conclusion our engineers will appreciate your suggestions.

"The Philco television system is known as the Philco System. The electrical specifications for the Philco System are given briefly in tabular form:

Channel width	6 MC.
Spacing between television and sound carriers	3.25 MC. approximately
Polarity of transmission	Negative
Number of lines	345
Number of pictures per second	60 interlaced
Aspect ratio	4:3
Percentage of television signal devoted to synch.	20 per cent
Synchronizing signal	Narrow vertical
Carrier frequency of picture transmitter	51 MC.
Carrier frequency of sound transmitter	54.25 MC.

"These specifications, you will note, agree with the standard recommended by the R. M. A. at a recent hearing before the F. C. C., that is, except the number of lines. As soon as our equipment can be changed we will conform with the new suggested standard of 440-450 lines. This matter of having one television standard for the U. S. A. is very important. It will be appreciated by every future television user.

"It naturally enhances your interest in the demonstration to know the conditions under which it is given and, briefly, how the equipment functions. The logical starting point is the studio, where the television signal is generated. The studio is located in our main laboratory, C and Tioga Streets. A camera employing a Philco camera tube generates, by electrical scanning, voltages corresponding to the light and shade of the television picture which is focused by a lens on the signal plate of the tube. This signal is amplified in cascaded stages (about 10,000 times) in the control room until it has sufficient amplitude to modulate the u. h. f. transmitter. Mixed with this television signal, in the proper proportions, are synchronizing and blanking impulses. These control, at the various television receivers in the field, the movement of the electron beam in the picture tubes and place around two sides of the picture a black border. To pick up the sound accompanying the picture the studio is equipped with microphones and associated equipment, which permits transmission of high fidelity sound from our u. h. f. sound transmitter operated on a frequency spaced 3.25 MC. above the television carrier wave. Further description is unnecessary since there is nothing unusual about the sound panel.

"Motion picture film, when passed through a specially built projector, is transmitted by flashing pictures intermittently into the so-called "electric eye" or camera tubes. This projector is designed so that the film and its sound tracks is moved at a speed of 24 frames per second, for satisfactory sound, and at the same time 30 frames per second are transmitted to secure 60 interlaced pictures per second.

"For outdoor television scenes the camera is placed on a motion picture tripod and motion picture technique is used in its operation.

"The latest experimental model of cabinet comprises a sound and television receiver tuning over the frequency range of 42-86 MC. For flexibility these receivers are separately tuned, although it is easy to secure single knob control. The number of control knobs, you will notice, is only slightly more than on the usual sound receiver. These are not difficult to operate. Our field test has shown that inexperienced persons can address the knob to secure satisfactory pictures. The deflecting chassis is the name given the unit which incorporates the synchronizing and deflecting equipment. The power supply units are placed at the bottom of the cabinet. The total number of tubes used is 36.

"Two television questions come up continually—"When" and "How much?" Larry E. Gubb, president, Philco Radio & Television Corporation, answered the former question the first of this year by saying "Commercial television will not come during 1936." This was a definite statement. Just when commercial television will arrive no one can say. A great deal of work must be done in transmitter and receiver development and a great deal of money must be spent to assure transmitting facilities and programs for the prospective television audience. There are many other problems as well.

"It is too soon to answer the question of "How much." Estimates have been made that television receivers will cost, upon their introduction, \$500."

LANSING

Extending its line of speakers for the radio and public address field, Lansing Manufacturing Co., Los Angeles, is adding the new "Lansing Monitor," designed primarily for program monitoring, high quality speech reinforcement, and de luxe radio receiver use.

The "Monitor" is a direct outgrowth of the development of the now well-known Lansing-Shearer Two-Way Horn System, used primarily in motion picture theatre work. Though the size of the entire "Monitor" system is only 50 in. wide by 27 in. high by 27 in. deep, its performance closely follows the general characteristics of the larger Theatre system in so far as size will permit. Tests show comparable high efficiencies and smooth response curves over the entire rated range from 50 to 8000 cycles.

Like the Lansing-Shearer theatre system, the new "Monitor" is equipped with a high and a low frequency unit of Lansing make, together with suitable horns and dividing network. Standard "Monitor" equipment includes the Lansing No. 199 moving coil type unit for frequencies from 500 to 8000 c. p. s. and the Lansing 15x29 unit—a 15 in. dynamic cone-type speaker, delivering from 40 to 500 c. p. s. with high efficiency and low distortion. If desired, the larger No. 284 unit may be substituted for the No. 199.

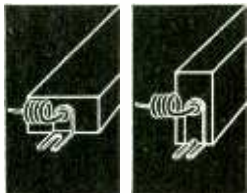
The "Monitor" is offered to the trade particularly for direct program monitoring, for quality public address work in either temporary or permanent installations and for use in the best type of radio receivers.

The manufacturers invite those interested to write for particulars and claim that an adequate realization of the perfection of the new equipment cannot be had without a demonstration.

SOLAR

Permitting easy mounting in any position "little giant" dry electrolytics are now available with an adjustable mounting lug at each end of the container. This "FlexMount" is a Movable universal tab which makes the condenser actually reversible. It may be mounted either flat or on edge, and position is changeable at will.

Although the connecting wires are generally sufficient support for these light midgets, the Solar Manufac-



turing Corporation has designed "Flex-Mount" to take care of tight corners and difficult installations where it is advisable to mount the condenser more rigidly.

WESTINGHOUSE

To augment theoretical discussion with a practical demonstration, a new type WL-787 triode tube for visualizing the electronic effect when changes are made in the grid and plate voltages of a vacuum tube, is announced by Westinghouse Lamp Company, Bloomfield, New Jersey. By using a tube of this type, entire class rooms or the individual student may actually see the effect of changes in both plate and grid volt-

ages. This leads to a better understanding of A. C. resistance, mutual conductance and amplification factor.

The filament consists of several parallel oxide coated wires, all of which are located in one plane so that the plate current will be uniformly distributed. The anode is the fundamental flat plate mounted parallel with the plane of the filament. The grid comprises a fairly open and conventional structure mounted between the filament and plate. The side of the anode facing the grid and filament is coated with Willemite which shows a bright greenish fluorescence when bombarded with electrons of the plate current. A pronounced and clearly visible glow shows up at all points where the electrons strike, resulting in a definite pattern of the grid on the plate. Plate size is such that the action can be observed by everyone in a room of reasonable size. Either A. C. or D. C. power may be used to heat the filament and to supply voltages for the grid and plate.

KEN-RAD

Ken-Rad Tube & Lamp Corporation was recently host to Wallace Clarke of the firm of H. W. Clarke, Ltd., Wellington, New Zealand. Mr. Clarke, who is making his first visit to the States, spent several days at Owensboro learning how tubes are made and going over various plans for increasing the sale of Ken-Rad tubes throughout New Zealand.

Mr. Clarke and his father, H. W. Clarke, who visited the Ken-Rad plants about a year ago, have been distributing Ken-Rad tubes for the past four years. They report a constantly increasing demand to the point where imports of Ken-Rad tubes into New Zealand represent a very substantial portion of the total imports.

UNIVERSAL

Universal Microphone Co., Inglewood, Cal., has added to its recording accessory line a professional steel cutting styli to be used in conjunction with its professional blanks, Silveroid discs and all nitrate or acetate records. It is said to be the closest approach to sapphire yet produced commercially. The styli are not mass machine production items, but are entirely hand finished, of special alloy steel, lapped to a mirror polish and razor edge.

Universal has published instruction sheets for recording on its line of Silveroid blank records. The Silveroid discs can be modulated with full frequencies from 20 to 10,000 cycles and, if properly cut, are unusually brilliant and can be played back without the fuzzy objectionable tone often caused by wave form distortion. This type of recording blank is dense, easy to cut and hold the highs.

CENTRALAB

Centralab has developed a new switching device for use in radio circuits where a low loss, low capacity multi-section switch is required. This switch incorporating a true Isolantite base, to which are attached sturdy, double-bite clips with low contact resistance and free from all looseness or rocking, is available in a multiplicity of designs.

The wax impregnated Isolantite base, incorporating material with an exceedingly low loss factor, will find great usefulness in any high frequency or ultra high frequency switching circuit where excessive losses become the controlling factor in design.

TODAY! TOMORROW!
KEN-RAD
ALL-METAL TUBES



You'll be proud to handle Ken-Rad genuine All-Metal Radio Tubes. Finest engineering. Finest workmanship. Better reception. This means more satisfied customers... increased profits. Write for our complete sales plan.

Ken-Rad
Radio Tubes
DEPENDABLE LONG LIFE

The Ken-Rad Corporation, Inc., Owensboro, Ky.
Division of The Ken-Rad Tube and Lamp Corporation
Also Mfrs. of Ken-Rad Incandescent Electric Lamps

Your Guide to Profits!

JUST OFF THE PRESS

EVERYTHING IN Radio

FREE!

New Radolek Radio Profit Guide

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

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

Rely on Radolek for Radio!

Send this Coupon

R A D O L E K
616 W. Randolph St., Chicago
Send the Radolek Profit Guide Free
Name
Address
Serviceman? Dealer? Experimenter?

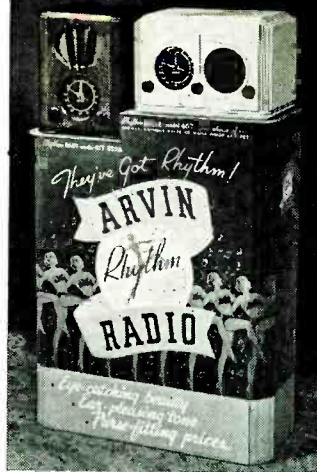
THERE'S

Sales Punch

IN

ARVIN

ADVERTISING
AND
MERCHANDISING



The selling support back of the new 1937 Arvin Rhythm radios packs a tremendous sales wallop. Full pages in The Saturday Evening Post and Collier's Weekly start next month.

The floor display demonstrator, above, is free with an order for one each of the two Arvin models illustrated with it: Rhythm Baby Model 417, walnut cabinet finish . . . list \$19.95. Rhythm Belle Model, choice of walnut, antique white or maple cabinet finish . . . list \$24.95. It is typical of the kind of helps Arvin gives the trade.

A complete kit of effective selling helps is supplied free for other Arvins in the complete line of 14 beautiful models. See the Arvin Line.

NOBLITT-SPARKS INDUSTRIES, INC.
Columbus, Indiana

Also Makers of Arvin Tailor-Fit Car Radios

ROSKIN

BOSTON, MASS.
ALBANY, N. Y.
MIDDLETOWN, N. Y.
WORCESTER, MASS.

DISTRIBUTORS

PHILCO RADIO

Tubes — Transistones — Parts

FAIRBANKS-MORSE

Refrigerator *with* Conservador
Washing Machines and Ironers

Exclusive Distributors for

Eastern New York — Massachusetts
Rhode Island — New Hampshire
Vermont

CROSLEY

Shelvador Refrigerators

&

Crosley Radios

Exclusive Distributors for

Eastern Massachusetts and New Hampshire

**GEORGE COLLINS
COMPANY**

15 Deerfield Street Boston, Mass.

BRANCHES: Quincy—Brockton—Lynn

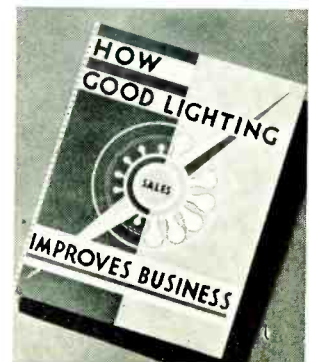
FREE BOOK

for **STORE OWNERS**

THIS 32-page, fully illustrated book has been prepared by your electric company as a free, helpful service.

Latest information on *how good lighting helps in making good business*. Up-to-date ideas that are working profitably in stores, showrooms, show-cases, wallcases and show windows. "Before and after" pictures. Examples from some of New York's leading stores. Common faults in lighting, and how to remedy them. How money is sometimes saved by mere rearrangement of light sources.

Whether your business is large or small, you need this book!



AFFILIATED COMPANIES OF

CONSOLIDATED EDISON COMPANY OF NEW YORK, INC.
ELECTRIC, GAS AND STEAM SERVICE FOR BUSINESS AND THE HOME

MAIL THIS COUPON TO YOUR ELECTRIC COMPANY

Gentlemen Please send me, without obligation, your free book, "How Good Lighting Improves Business." *†

Name _____

Address _____

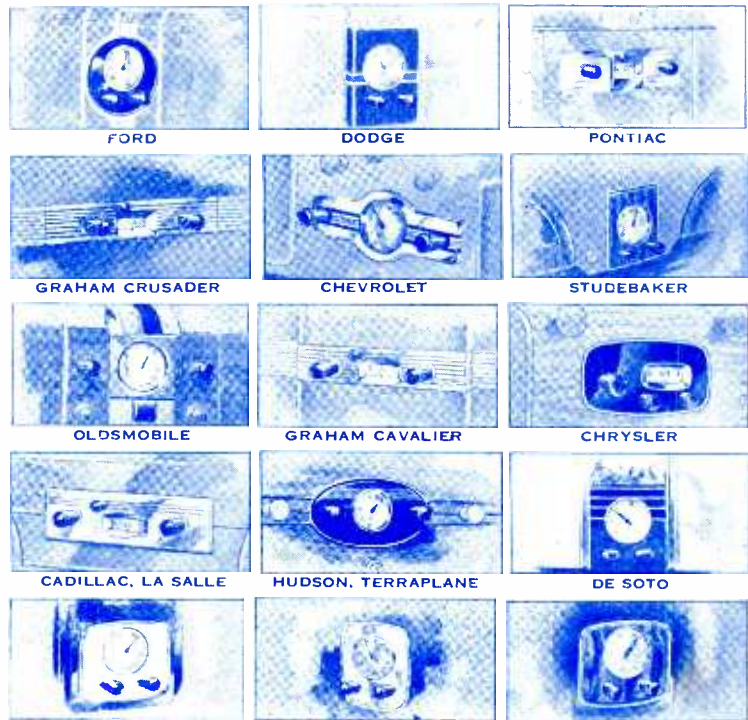
A Custom-Built ROAMIO

for every car!

The passenger car registrations are about 22,640,000. Only about 10% of these cars have radios. Almost 90% of the automobile radio market is still wide open to the right radio receiver and the right kind of merchandising effort.

Crosley crashes this market with two brand-new Roamios and with custom-built controls for all modern cars. These Roamios represent the kind of performance that automobile drivers have been looking for—the kind of value that means quick sales, large volume.

Study the specifications, look over the new controls, compare the value . . . and you'll realize that here's your chance to get more than your share of the automobile radio business in your territory.



FORD DODGE PONTIAC
 GRAHAM CRUSADER CHEVROLET STUDEBAKER
 OLDSMOBILE GRAHAM CAVALIER CHRYSLER
 CADILLAC, LA SALLE HUDSON, TERRAPLANE DE SOTO
 HUPMOBILE 8 HUPMOBILE 6, REO
 35 Chrysler, De Soto, Dodge, Hupmobile, Graham, Plymouth, Reo and '34 Ford

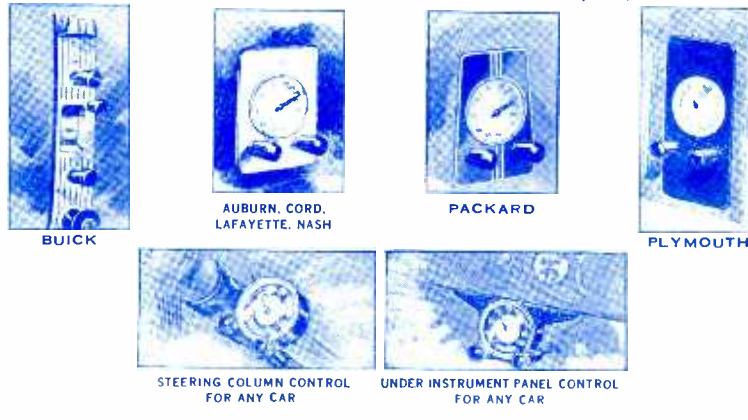
CROSLY ROAMIO A-266



Six-tube superheterodyne automobile receiver with eight-tube effectiveness . . . no spark plug suppressors . . . balanced antenna tuning system . . . seven tuned circuits . . . full wave interruptor type vibrator . . . newly developed automatic volume control . . . automatic setting of dial logging . . . three gang tuning condenser . . . single housing . . . full floating moving coil electro-dynamic speaker . . . custom-built remote control with illuminated airplane type dial. Instrument panel controls that match the dash of any car are available. If preferred, however, steering column or under-dash controls are available.

\$39.95

(Prices slightly higher in Florida, Rocky Mountain States and west.)



BUICK AUBURN, CORD, LAFAYETTE, NASH PACKARD PLYMOUTH
 STEERING COLUMN CONTROL FOR ANY CAR UNDER INSTRUMENT PANEL CONTROL FOR ANY CAR

CROSLY ROAMIO A-366



Six-tube superheterodyne automobile receiver with nine-tube effectiveness . . . no spark plug suppressors . . . balanced antenna tuning system . . . seven tuned circuits . . . full wave synchronous type vibrator . . . newly developed noise reducing automatic volume control . . . bass compensation on volume control . . . automatic bass booster . . . push-pull amplification in output stage . . . full variable tone control . . . automatic setting of dial logging . . . three gang tuning condenser . . . full floating moving coil electro-dynamic speaker . . . adaptable to either header or under-dash speaker or combination of both . . . custom-built remote control with illuminated airplane type dial. Prices include choice of remote control.

\$54.95

With matched dual speakers \$61.95

THE CROSLY RADIO CORPORATION, CINCINNATI POWEL CROSLY, Jr., President

GE
Focused Tone
 IS "THE SALESMAN'S LINE"

**Step-up Values That Make It Easier
 For Salesmen To Step Up In Price**

There are EXTRA and BIGGER PROFITS in store for you when you go after the "sell up" business with General Electric Focused Tone Radio. Every step up in price is fully justified by a step up in demonstrable values. Features that the buying public can understand and appreciate. Features that are really "hot" with reason-why selling arguments. Features that fit every price bracket and meet the standard of performance demanded by every type of customer. Features your salesmen CAN show and demonstrate. It's a matter of simple salesmanship to break sales records and cash in on this "trade-up", profit-making opportunity.

See Your G-E Radio Distributor For Complete Information On General Electric's "STEP UP" Selling Plan.

**FEATURES THAT HELP
 YOU
 "SELL UP" FOR PROFITS**

- G-E Colorama Dial—automatically flashes from red to green when the receiver is in perfect tune.
- G-E Automatic Frequency Control—instantly and automatically lines up the receiver on peak of resonance with the incoming signal.
- G-E Local Station Personalizer—a "custom-made" scale that flashes the station's call letters as you tune in.
- G-E Silent Tuning—eliminates all noise while tuning between stations.
- G-E Metal Tubes — for stabilized performance.
- G-E Sentry Box — directs and controls reception.
- G-E Sliding-rule Tuning Scale—lists all stations in a straight line, using a separate scale for each band. It's "as easy to read as a ruler."



GENERAL  ELECTRIC

Focused Tone Radio

APPLIANCE AND MERCHANDISE DEPT., GENERAL ELECTRIC COMPANY, BRIDGEPORT, CONN.

