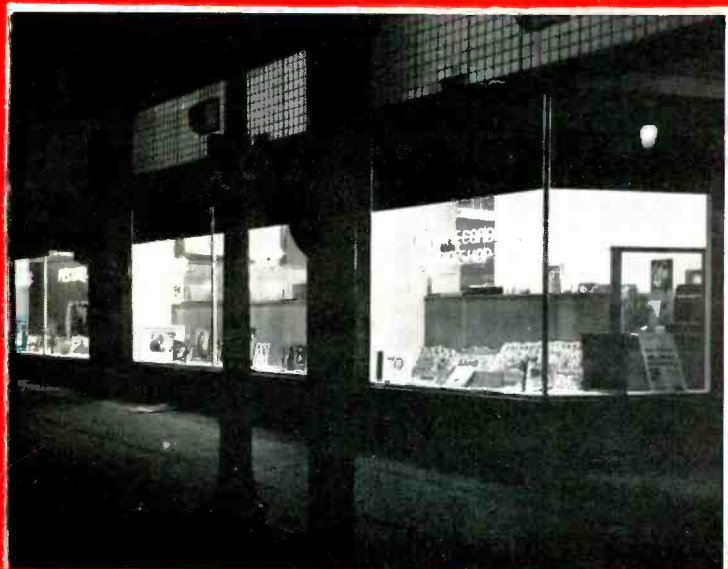


RADIO & TELEVISION JOURNAL

March, 1946



Night view of Lee's Radio Shop, in St. Joseph, Mo.

THERE'S A SONG OF PROFITS IN

Motorola
AUTO Radio



You'll hear sweet music from your cash register when you feature Motorola!

THERE are many reasons why it will pay you to feature Motorola Auto Radios . . . a gigantic advertising program, powerful dealer support, many exclusive features, etc. . . . but there is one basic reason that stands out above all others: *Motorola is the Finest Auto Radio ever built—regardless of price!*

Your customers don't have to be electronic engineers to appreciate the superiority of Motorola. It is apparent the moment they turn the switch. Its Vita-Tone is richer and more life-like! Its selectivity is razor-sharp! Its sensitivity is extremely fine! Truly Motorola Auto Radio sells itself. To hear Motorola is to want it.

It will pay you to feature the Finest

— MOTOROLA AUTO RADIO



There's a Control Head and dashboard Speaker to exactly fit and match your customer's car—no matter what make or model he's driving!

GALVIN Mfg. Corporation • Chicago 51, Illinois

Motorola AUTO Radio

F-M & A-M HOME RADIO • AUTO RADIO • AUTOMATIC PHONOGRAPHS • TELEVISION • POLICE RADIO • "HANDIE TALKIES" • RADAR

Only Philco has it!



SENSATIONAL DYNAMIC REPRODUCER

Patented! Exclusive!

The costly Dynamic Reproducer, used by the best-equipped broadcasting studios, has long been recognized by science as the finest principle of sound reproduction. For the first time, Philco engineers have developed *and patented* a Dynamic Reproducer for the *home* phonograph. And now Philco owners may enjoy in their homes the wonderful fidelity and purity of tone formerly heard only from the best broadcasting studios. *Only Philco has it...* and it brings to Philco dealers their greatest opportunity for profits in the *quality* radio-phonograph field.

PHILCO

Ten Years Ahead of Four Years Ago

What the Patented Philco Dynamic Reproducer Brings to Recorded Music:

- Greater fidelity of tone; crisper, more solid reproduction of all frequencies.
- Only $\frac{3}{4}$ ounce pressure; sensational reduction of surface noise and record scratch.
- Flexible mounted jewel; dropping or rough handling of tone arm can't injure jewel or record. Records last ten times longer. No needles to change.
- Humidity-proof; positively unaffected by moisture or weather changes; ideal for humid climates.



• You can build your own paper capacitor banks or combinations — whatever capacitances and voltage ratings you require — fitted into any space or container you prefer — by means of the Aerovox Type UC uncased paper sections. Or again, you can use these handy units as replacements in filter-block repair work. **These are non-inductively wound uncased paper sections, neatly shaped and wrapped in black varnished paper with ends sealed with pitch and provided with insulated wire leads 8 in. long. Available in 200 v. D. C. W. .1 to 1 mfd.; 400 v. .1 to 4 mfd.; 600 v. .25 to 4 mfd.; 1000 v. .5 to 2 mfd.**

• **Ask Our Jobber . . .**

Ask to see these handy uncased paper sections. Ask for copy of latest Aerovox catalog—or write us direct.



FOR RADIO-ELECTRONIC AND INDUSTRIAL APPLICATIONS

AEROVOX CORP., NEW BEDFORD, MASS., U.S.A.
Export: 13 E. 40th St., New York 16, N.Y. • Cable: 'ARLAB'
In Canada: AEROVOX CANADA LTD., Hamilton, Ont.

25 YEARS AGO
IN THE
JOURNAL

Twenty-five years ago today dealers all over the country were apparently still in the throes of the same type of postwar hang-over that we are experiencing today. The feature story in the Journal then was titled: "Use Brains to Save Profits." The main theme was that the dealer then should be convinced that business can be stimulated. However, as the author was quick to point out, this immediately brought up the pertinent question—How? Among the devices urged were stunts, free concerts, tie-ins, an entire promotion scheme embodying the use of a series of circulars, combined with increased rather than decreased use of newspaper advertising columns, and many others. Then, as now, dealers were told not to take the short view, and pull in their horns just because they may not sell any sets during the first day or two of this campaign. It was explained that they were doing themselves, their store, and the whole business structure a great deal of good merely by booming things along.

* * *

Another editorial feature along the same vein in this issue was titled: "Keeping the Business Buoyant" and stressed the need for streamlining the dealer's operation with the idea in mind of reducing needless expense and waste of time and effort—to say nothing of money.

* * *

With Easter just around the corner dealers are urged to prepare their promotions and other stimulus now, in order to be on the band wagon at the right time. Many types of window displays were suggested and described. Also featured was a round-up of the larger department stores in the New York area and what

they were planning for their own windows. This ranged all the way from a real tulip bed to a replica, fanciful of course, of Peter Rabbit's home, complete with rabbits.

* * *

Like a breath of the future, the March, 1921, issue of the Journal carried a feature about the relationship which was said to exist between veneers, new waterproof glues, and our even then diminishing timber supply. Even today this is a very serious problem, and the use of veneers and other substitutes such as plastics, has undoubtedly meant a great saving in our valuable hardwoods.

* * *

Editor Glad Henderson had quite a bit to say this month. Among the subjects discussed and the predictions that were made, he mentioned that it was his belief that 1921 would turn out to be a record year for record sales. However, generally speaking, either one of two things happens in a case like this. Either this indicates a trend towards traffic in lower priced items, reflecting a generally non-profitable operation, or dealers overstock and find themselves at the end of the year with shelves loaded with outdated records—records in which their main profits are tied up.

* * *

Another thing that keeps coming up from time to time is the various ideas many people seem to have about the proper amount of money needed to go into the dealer business. Estimates range all the way from \$500 to \$5,000 and over. Henderson goes on record as saying "at least \$5,000 are needed to operate successfully."

* * *

Advertising seems quite profuse, and there seems to be no sign that manufacturers are pulling in their horns on this score. Apparently they were operating on the theory that when business slumps the proper thing to do is to increase rather than decrease their advertising appropriations. Seems to us that this is still sound today, in spite of the current trend towards curtailment.



A Promise Fulfilled ZENITH IS REALLY BRAND NEW, CLEAR THRU

with the Sensational

NEW WAY TO PLAY RECORDS

The Most Outstanding Development In Postwar Radio



Zenith promised you completely new radios, and the ringing acclaim of those who have seen Zenith's 30th Anniversary Line is proof of how well we fulfilled that promise. For here are definite, tangible, *new*, sales-making features—advantages you can demonstrate.

Zenith's new Cobra Tone Arm makes any records sound better from the first note. In fact, it provides such rich, full, noise-free quality of reproduction that F-M and A-M stations all over America are buying Cobras for broadcasting records. Yet, amazingly, the Cobra can be dropped on a record—can be pressed down and scraped across the playing surface without damage to tone arm or record.

Zenith's new Silent-Speed Record Changer changes 10- and 12-inch records, intermixed, automatically, in less than $3\frac{1}{2}$ seconds.

And Zenith has *more* than this new way to play records. Here is perfected *Armstrong* F-M, on both bands, with a patented device that makes outside antennas or di-poles unnecessary, even for table model F-M sets. Just plug in and play.

Zenith also offers new portables, even finer than Zenith's famed prewar portables... compact table models with full tone quality made possible only by Zenith's improved super-powered Consoltone.

Here are new circuits, new features, new cabinets. Compare, and you will agree that Zenith has really fulfilled its promise—these radios *are* brand new, clear thru.

ZENITH RADIO CORPORATION
6001 Dickens Ave. • Chicago 39, Ill.



Model 12H092R



Model 6R084



Model 8H034



Model 6G001Y

DESIGNED FOR SALES



DESTINED FOR LEADERSHIP

No wonder we're investing
plenty in your business . . .

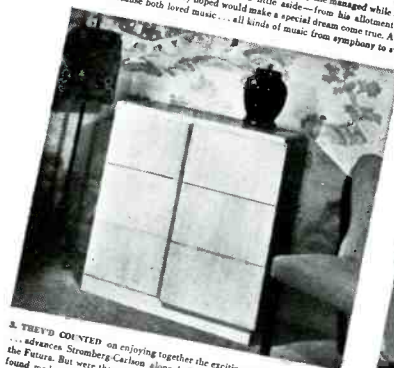


1. JOHNNY'S STILL MARVELING over Sally—the way she managed while he was away. How she held their home— even put a little aside—from his allotment checks and her own pay—money they hoped would make a special dream come true. A dream both shared because both loved music . . . all kinds of music from symphony to swing, 80 . . .

ARE THEIR DREAMS
 TOO BIG FOR AN EX-PRIVATE . . . ?



2. THEY'D LOOKED FORWARD to the day they could own a radio-phonograph. Not an ordinary one, but one rich in tone, beauty and tradition like the Stromberg-Carlson Hepplewhite which is such a revelation to people who want the finest in complex FM and Standard Broadcast reception and record reproduction.



3. THEY'D COUNTED on enjoying together the exciting new advances in radios . . . advances Stromberg-Carlson alone builds into glorious instruments like the Futura. But were these dreams too big for their bank account? What they found made their hearts leap up . . . actually made their dreams come true!



4. NOW SALLY AND JOHNNY have their own handsome Stromberg-Carlson radio-phonograph, the lovely Federal . . . For new production techniques—and the skills of 52 years of experience—make it possible for Stromberg-Carlson to offer more people more for their money than ever before. Today the proud privilege of owning a Stromberg-Carlson can be yours at prices ranging from about \$27.50 to \$500. See your nearest Stromberg-Carlson Authorized Dealer. Consult your classified phone directory.

THE DYNAMIC—one of the remarkable new small Stromberg-Carlson radios with an astonishing degree of "big set" performance. Hear us tomorrow . . . and every such a Stromberg-Carlson!



For the main radio in your home . . . there is nothing finer than a

STROMBERG-CARLSON

After 52 years of successful merchandising, we think we know a good business prospect when we see one.

Prospects for our Authorized Dealers this year seem to us the brightest in all Stromberg-Carlson history. How can you miss with a line so brilliantly styled for sales, so captivating in appearance, so superb in performance?

That's why we're again backing our Authorized Dealers to the limit with a large advertising investment, both in national magazines and in newspapers from coast to coast. Here you see the first ad in the new national magazine campaign.

Production problems are with us—but sets are being shipped daily. Sights are set high. Our money's on you—our dealers—to win!

STROMBERG-CARLSON

ROCHESTER 3, NEW YORK

Radios, Radio-Phonographs, Television
 Sound Equipment and Industrial Systems,
 Telephones, Switchboards, and Intercommunication Systems

RADIO TELEVISION JOURNAL

MARCH

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 JIMMY KENT.....*Merchandising Editor*
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 Brussels, Belgium
 JULIAN BLOCK, Manager

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Volume
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Number
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Picture Parade

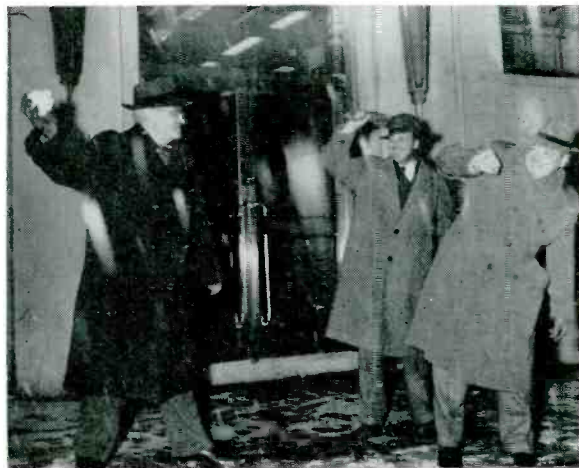


To the right we have United Airlines Stewardess Virginia Aylward with one of many Zenith sets shipped via 'plane to Los Angeles. Photo was taken in Chicago, shortly before the take-off. On the left we see how Associated Stores conduct their sales meetings. (Editorial comment: Wot-ta life!)

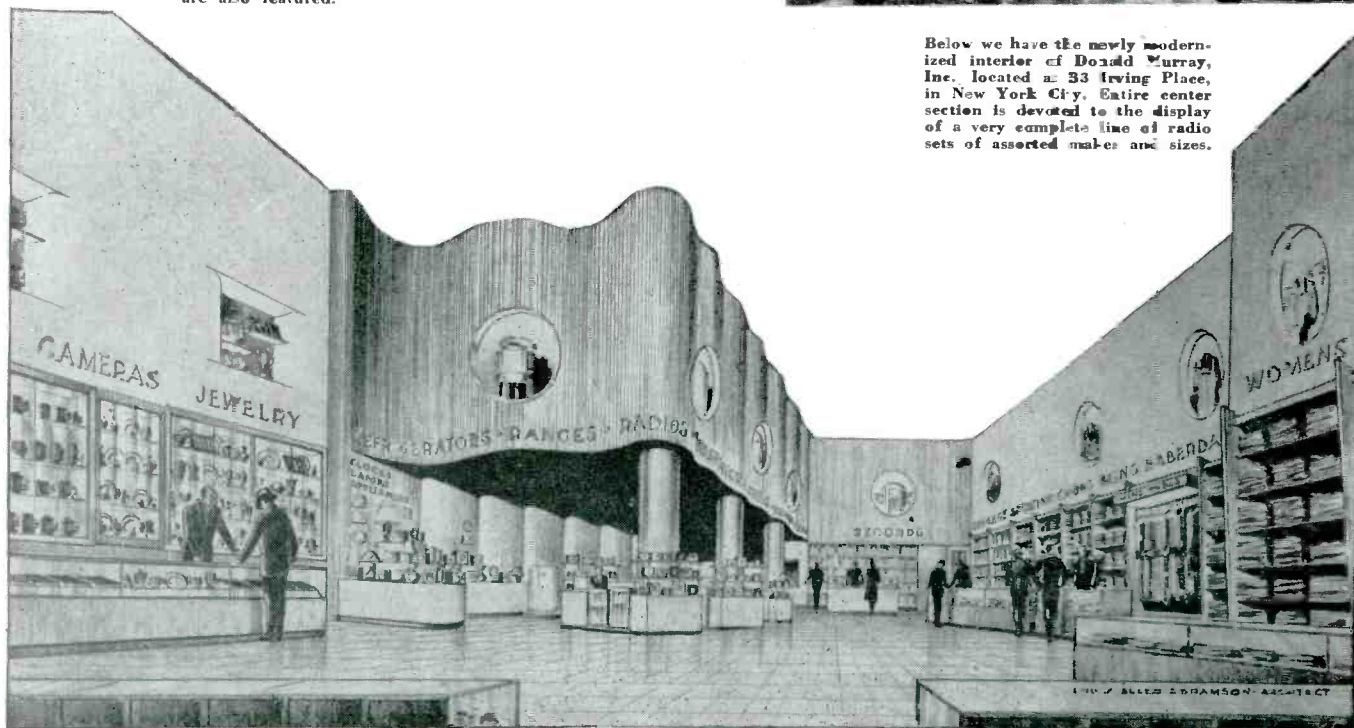


Above is Fada Radio's 6 tube superheterodyne 196 Model 1002. Set features walnut case, 8 tube performance, and a noise reducing RF stage. Automatic volume control and both AC and DC are also featured.

In the photo on the right, David Levinson, over on a business trip from Palestine, prepares to fire a broadside if he doesn't get any radios. Targets are J. DeLind and T. Lett, both of Crosley.



Below we have the newly modernized interior of Donald Murray, Inc. located at 33 Irving Place, in New York City. Entire center section is devoted to the display of a very complete line of radio sets of assorted makes and sizes.





Reflecting the finest traditions of 18th Century furniture design, the "Chippendale," Farnsworth's Model EK 158, combines FM reception with Farnsworth's improved automatic record changer and storage space for record albums.

NO DARK CORNERS FOR THIS NUMBER!

**The leader in Farnsworth's *streamlined* line of
phonograph-radio combinations with FM**

This is *it* . . . the coming sales leader in the profit-full line of Farnsworth automatic phonograph-radio combinations with FM. You'll want it right up in your window, and in your feature display area. By its appearance alone, you'll find the "Chippendale" giving your store the "quality look" that comes to every Farnsworth dealer.

But wait until you *hear* it! Wait until you and your customers hear *all* the sets in Farnsworth's *streamlined* FM line! *Then* you will realize how the seventeen years of pioneering

in electronic research has enabled Farnsworth to develop the finest in this new art. *Then* you will understand why Farnsworth's basic engineering know-how . . . Farnsworth's development of trouble-free record changers . . . have contributed to Farnsworth's reputation for *quality* products.

Then you will realize, all the more, how your Farnsworth Selected Dealer Franchise means more profit for you!

Farnsworth Television & Radio Corporation, Fort Wayne 1, Indiana.

FARNSWORTH

TELEVISION • RADIO
PHONOGRAPH - RADIO

**Automatic
radio**

**DESIGNED to MEET
Your DEMAND!**



Model
650

Classic modern phono-radio combination with automatic record changer that automatically changes ten 12" records or twelve 10" records — also equipped with automatic reject switch. Light weight crystal pickup, long life needle, powerful six-tube superheterodyne with eight-tube performance. A.C. operation only. Richly grained hand-rubbed walnut cabinet.

OPA APPROVED PRICE
Zone 1 — \$94.50
Zone 2 — \$99.25

A five-tube phono-radio combination record player — has two dual-purpose tubes — built-in Automatiscope loop and automatic volume control. Plays records up to 12" with lid closed. Cabinet is beautiful walnut finish with smart distinctive lines.

Model
640

OPA APPROVED PRICE
Zone 1 — \$54.95
Zone 2 — \$57.70

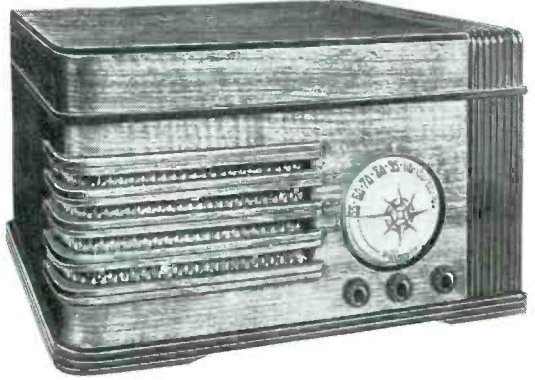


Model
C-60

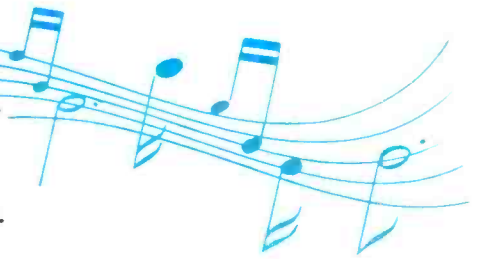
REJUVENATION
Pat. No. 2222196

Powerful portable operates on batteries and A.C.-D.C. current — five-tube superheterodyne with seven-tube performance. Large built-in Automatiscope loop and equipped with Automatic patented battery rejuvenator — increases life of batteries 2 to 3 times normal. Case is finished in two-tone simulated leather.

OPA APPROVED PRICE
Zone 1 — \$37.95
Zone 2 — \$39.85



Automatic
RADIO MANUFACTURING CO., Inc.
122 Brookline Avenue, Boston, Mass.



Editorially Speaking

MAL PARKS

Editor

Alex H. Kolbe

Publisher

DURING the past few years, the dollar value of retail sales has made such heavy gains that there is a tendency among most radio and appliance dealers to overlook the fact that this rise in dollar value of sales has been accompanied by a similar rise in the cost of making these sales.

Most dealers with whom I have talked recognize this and yet they find it a little difficult to put their finger on exactly where the rising cost is taking place. And, naturally, many of them are paying no attention to this at all, preferring to go along believing that the good times will last forever and they will somehow muddle through any problem which might arise when full production is once resumed.

However, the alert and progressive retailer will study these rising sales costs in comparison with the industry-wide trend towards lower discounts, because once competition gets in stride again the average retailer will be confronted with the necessity of restoring many prewar services which add up when computing the cost of making each sale.

As a matter of fact, one of the best ways to hold these rising costs in check is to study the cost of each sales transaction. Department stores, for example, have figured out that the increase in delivery expense is 0.8%, newspaper advertising costs 1.5%, wrapping and packing expenses 0.5%, credit costs 0.4%, and miscellaneous services 0.5%. The aggregate of these items amounts to 3.7% and in many instances is the difference between making a profit or showing a loss for the merchant involved.

Most radio dealers who were in the business before the war and remember the excessive cost per transaction of trade-ins, special services, upholding the manufacturer's guarantee and various other similar items find that the department store figures are very low. Yet, the fact remains that department stores are considered among the country's most efficient merchandisers, and when we find them worried about an increase of 3.7% in their sales cost, it is time for each radio and appliance dealer to start worrying about his own increased cost of selling.

It is a fact, of course, that sales expense and sales productivity are so closely related that they cannot be separated. Therefore, the answer to the problem would seem to lie in developing a program of getting more sales per employee at the lowest possible cost. This means that many things which we can afford today will have to be cut out, and it also means that each radio and appliance dealer will have to study his selling cost figures very carefully. If, as many predict, discounts are lowered while at the same time sales expense rises, we are going to reach the situation where many dealers who have weathered the war years will find it impossible to continue in business under peacetime conditions. A recent survey shows that the increased selling expense among the average independent dealer is almost 10%. When the first flush of consumer buying is over and competition really gets down to the blue chip level, this extra eight or ten per cent may spell the difference between success and failure for the average radio dealer.

Now, while dollar values per sale are highest and when efficient personnel is becoming easier to secure, is the time to start training your selling employees to do a better, more efficient and more productive job. At the same time, the cost of making each sale should be scrutinized very carefully and every element that goes into it should be checked to see where it can be lowered or eliminated entirely. It is only through the twin efforts of making more sales at lower cost that the average independent radio and appliance dealer will be able to meet the tough competition he will be up against once production gets in full swing.

Whole Number 362
Volume 60

Mal Parks



Gentlemen:

I have been engaged in radio sales and service in and around St. Louis for the past fifteen years. I subscribe to your publication, but have been so busy of late that the copies pile up on my desk for a couple of months before I get an opportunity to read them.

I have just been looking over the December '45 issue, and I came upon your timely article "Are There Too Many Radio Dealers?" This is a masterpiece of understatement generally from where I sit. The man who said there are one hundred new radio "handlers" in his vicinity is in the same canoe with me.

The place I am operating now (Ed. note: See photo on this page) has been a radio shop for the past fifteen years. I bought it in '43 and installed about \$4,000 worth of new fixtures and equipment. It has been operating profitably since then despite the fact that I was engaged during the past few years in war work (TNT manufacture). Before the war this shop handled several of the name brands, i.e., RCA, Philco, Zenith, etc., but while I was away all the local distributors signed up coal dealers, automobile agencies, confectioners, etc., and now they tell me "they are very sorry but the factories will not allow them to add more dealers until production catches up, they will appreciate my parts business however, and would I be interested in some lamps, coffee makers, or possibly some beautiful utility cabinets?"

When I read the paragraph about the advantages of service-dealers in

name brand radios I was prompted to write, but what can I do with a set-up like this? People are coming in every fifteen minutes asking when I am going to get their Philcos, RCAs, Zeniths, etc. Some even want to give me deposits, and I can't tell them that this is only a radio shop, and that we won't have radios, but that they will have to go down the street to the bakery for their radio. Do you have any suggestions?

Respectfully,

Fred Ruckman.

**A.B.C. Radio & Elec. Co.,
1549 S. Broadway,
St. Louis, Mo.**

** * * It's mighty nice to hear from good friends and readers like Mr.*

Ruckman, particularly when he says such nice things about your Radio & Television Journal articles. Commenting on some of Mr. Ruckman's thoughts, we feel, along with him, that the problem of indiscriminate distribution of radios is going to become increasingly severe. But, it is a problem that has to be worked out by manufacturers, distributors and dealers themselves. We have always found manufacturers a pretty fair bunch of fellows and, despite the fact that many of the things we print might seem opposed to some of their policies, we haven't yet lost much advertising by standing on principle and telling the truth as we see it.

And, we would like to hear from other radio service-dealers about the situation as it seems to them. Perhaps, if enough of you would write in and give us your view, it might be instrumental in setting up some sort of grievance committee that would take up the problem with the national manufacturers and their local distributors. So, if you are seriously concerned with the problem of unethical distribution methods in the radio industry, add your voice to the subject and let's have lots of comment. After all, manufacturers and distributors are vitally interested in what you think, and this is your opportunity to tell them. And . . . we'll pay \$10.00 for the best letter on this subject so send in your letter now.

Below we see the exterior of friend Ruckman's radio-less A.B.C. Radio & Electric Company. In spite of the attractive appearance Mr. Ruckman's place makes, he is facing quite a problem in his fight for continued business existence. For further details, see his interesting letter above.





RCA Laboratories provides another great achievement in television—the “mirror-backed” Kinescope, or picture tube.

New “searchlight brilliance” for home television !

Now, large screen television pictures are twice as bright—yes, *twice as bright* as ever before!

You can “count every eyelash” in the close-ups. You’ll almost want to shake hands with the people on your television screen—so great is the illusion that they are actually in your living room.

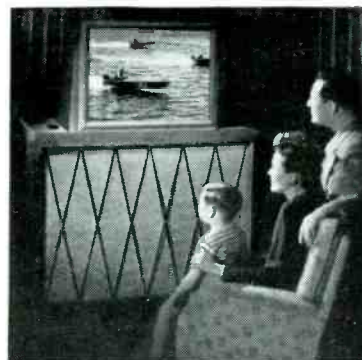
This new sharpness and brilliance is achieved through the new RCA “mirror-backed” Kinescope, or picture tube, perfected at RCA Laboratories.

It has a metallic film—eight-millionths of an inch thick. This metallic film acts as a reflector, allowing electrons to pass through to the screen but preventing

light rays from becoming lost through the back of the tube. Just as the reflector of a searchlight concentrates its beam—so does this metallic film reflector double the brilliance and clarity of detail in home television receivers.

Similar progress-making research at RCA Laboratories is being applied constantly to all RCA Victor products—assuring you that anything you buy bearing the RCA monogram is one of the finest instruments of its kind science has achieved.

Radio Corporation of America, RCA Building, Radio City, New York 20. Listen to The RCA Victor Show, Sundays, 4:30 P.M., Eastern Time, over the NBC Network.



RCA Victor home television receivers will be available in two types. One model will have a direct-viewing screen about 6 by 8 inches. The other type will be similar to the set shown above—with a screen about 15 by 20 inches. Both instruments are being readied for the public with all possible speed and should be available this year.



RADIO CORPORATION of AMERICA

DEALER DOINGS

Appointment of Frank Colombo as assistant merchandise manager of electric appliances, housewares and lamps of the J. L. Hudson Co. department store, in Detroit, Mich., has just been announced. He was formerly assistant housewares manager.

* * *

Herman Roessler, president of Herman Roessler, Inc., 89-91 Market Street, Newark, N. J., large furniture-appliance store, will remodel its quarters shortly, it was announced recently. Mr. Roessler and Sidney Mittler, electrical appliance buyer for the store, are attending the furniture, appliance and housewares shows in Chicago.

* * *

The Satterfield Radio Supply Co., 326 West Gorham Street, Madison, Wis., has filed articles of incorporation listing capitalization at \$50,000. Incorporators are Alvis W. Satterfield, Norman T. Baillies, and Marjorie J. Satterfield.

* * *

The William Hardy & Co. department store, in Muskegon, Mich., has just announced the appointment of Harold J. Bassett as sales manager of the gas and electric appliance sales and service department. Mr. Bassett was formerly with the Norge Division of the Borg-Warner Corp., Detroit.

* * *

Earl, Elvin and Cleo Rains have opened the new Rains Furniture Store at 1006 Main street, Stillwater, Okla., and will handle a complete radio and electrical appliance line and operate a radio and electrical appliance repair shop.

* * *

R. R. Lindsey of the Lindsey Radio Appliance Store, Wichita, Kansas, has announced acquisition of the Lear radio franchise.

The B. and C. Electrical company, has been opened in Enid, Oklahoma, by A. C. Cornelsen, just returned from overseas duty with the army, and A. D. Barton. They will handle a complete line of electrical appliances and operate an electrical repair business.

* * *

Bill Farha has opened the Farha Appliance Store in Bristow, Okla., with Ralph J. Roberds as manager. General Electric, RCA, Universal, Admiral and Hoover lines are under franchise by Farha.

* * *

Harry Krantz, who formerly operated the World Radio & Television Co. at 90 West Broadway, New York, has moved from New York and will open shortly a new store under the same name at 110 East William street, Decatur, Ill. Mr. Krantz is widely known throughout the radio industry.

* * *

Specializing in repairing and servicing electrical and mechanical home appliances and oil burners, the Electric Home Appliance and Service company, recently opened at 16 Horlbeck street, Charleston, S. C. C. W. Neyle and H. B. McKay are operating the business.

The motto of the firm is "If it can be repaired, we can do it."

Mr. Neyle has passed 20 years in selling and servicing oil burning furnaces and heating appliances. Mr. McKay, who will have charge of electrical repair, also has had considerable experience.

* * *

Announcement has just been received that the Standard Tire & Supply Company, owned and operated by the brothers, Phil and Hy Seligman, has changed its name to Seligman Bros. Phil Seligman, general manager, also announced that the firm will carry a complete line of major and small appliances, as

well as a complete line of radio sets. Firm is located in Toledo, Ohio.

* * *

In Waycross, Georgia, the Ware Electric, Inc., has just been organized. The new firm will handle radios, appliances, and will also operate as an electrical contractor. Owner-operators are L. N. Pickett, R. G. Fraley, and F. G. Breeden.

* * *

Walter Bourned, formerly associated with the Carolina Power & Light Company, in Rockingham, N. C., has announced that he is now connected with Arnold Safrit of Hamlet, N. C., as full partner. They will jointly operate the Hamlet Appliance Service. Mr. Safrit was with the Gordon-Land Furniture Company of Hamlet, until he recently resigned.

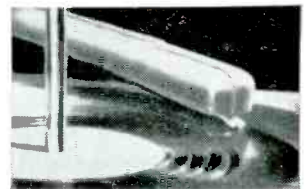
* * *

The Morgan-Jarvis Electric Company, with its home office located at Greensboro, N. C., has been chartered with an authorized capital of \$50,000 and a subscribed stock of \$3,000. The new firm will deal in appliances and radios.

* * *

More than 325 dealers and salesmen attended a sales conference for Zenith staged by the Southern Equipment Co., distributors for Southwest Texas, at San Antonio, February 15, in the Plaza Hotel. Basil C. Karcher, sales manager for the Southern's appliance division, supervised the meeting which was generally conceded by all to be a great success. It seems to be the trend in the industry today to have mass meetings such as these. A few years ago most executives felt that dealers would not travel any great distance to attend a sales meeting such as this. However, as more and more companies encouraged these meetings it was soon proved beyond all doubt that this formula was not only practical, but did a great deal of good as well.

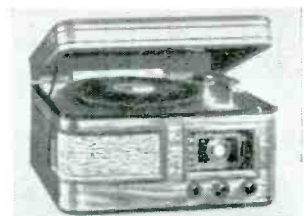
These 18,047,028
resident salesmen
work for me?



ON ONE RECORD!—an actual demonstration of the Crosley Floating Jewel® Tone System and the Master Tone Control. Hearing is believing—and you can hear this record at your nearby Crosley dealer's store.



NO MORE NEEDLES TO BUY—or change—or hear! Floating Jewel® Tone System uses a permanent sapphire stylus on delicately balanced tone arm. It plays on the sides of the record groove—cannot dig in (like sharp metal needles) to cause scratching, hissing or chattering.



THIS Crosley Combination Radio-Phonograph, table model, is one of nineteen new Crosley instruments. It is an electronic achievement, a mechanical masterpiece, in a high-styled cabinet. Equipped with Floating Jewel® Tone System. *Patented

CROSLEY is sending these millions of printed salesmen to live and work in the homes of prospects, demonstrating Crosley Radio-Phonograph Combinations. (Note pictures and captions to the right).

These prospects are urged to come to my store and YOUR STORE to hear actual demonstrations of the Crosley Floating Jewel® Tone Sys-

tem and Master Tone Control to prove that "Hearing is Believing."

The 1946 Crosley line of 19 Radios and Record-Playing Combinations, from newly designed modern table sets to de luxe combinations that have everything, tops all previous standards in beauty of design, quality of materials and mechanical excellence.

Crosley has it! Wise and alert dealers know it!



REFRIGERATORS RANGES HOME FREEZERS LAUNDRY EQUIPMENT KITCHEN SINKS AND CABINETS

CROSLEY

THE CROSLEY CORPORATION, CINCINNATI 25, OHIO.

REFRIGERATORS • HOME FREEZERS • KITCHEN SINKS AND CABINETS • RANGES • LAUNDRY EQUIPMENT
RADIO • RADIO PHONOGRAPHS • FM • TELEVISION • SHORT WAVE • ELECTRONICS • RADAR
HOME OF WLW—"THE NATION'S STATION"

Distributor News

Matthew Slap and Harold Lasky have announced a partnership for the wholesale distribution of both small and major appliances. The firm will have their showrooms and warehouse located in Philadelphia, Pa. Mr. Slap was associated with Raymond Rosen & Co. for the last five years, serving in several different departments.

* * *

Construction has started on an addition to the building in Richmond, Va., where the Radio Supply Co., of Norfolk, Va., will establish a new distribution center. Company plans call for an "L" shaped addition which, when completed, will just about double the present amount of floor space. There is also ample land to cover future expansion as well as provide parking facilities. The firm's distribution area now covers forty counties in Virginia.

* * *

Returning from a sales conference at Chicago, J. P. McMillan, president of the Southern Radio Corp. of Charlotte, N. C., announced that his company has been appointed North Carolina-South Carolina distributor for the home refrigeration equipment produced by the Coolerator Co., Duluth.

* * *

Federal Household Industries has been appointed exclusive distributor in the Chicago area for

Coldaire home freezers and compact vacuum cleaners, Charles Davis, owner, said.

* * *

Morris S. Segal Corp., co-distributors of the Thor automatic Gladiron, held their first training course for buyers and head salesmen of retail stores at their quarters in the New York Furniture Exchange recently.

To be held every Friday afternoon, the course lasts about 1½ hours and is designed to instruct key retail personnel in the use of the ironing machine so that they can instruct their store salespeople who, in turn, will teach customers how to make the best possible use of the appliance.

The distributing company, in carrying out the recently-reported program instituted by the Hurley Machine Division of the Electric Household Utilities Corp., Chicago, Ill., was host to buyers and head salesmen for the Vanity Vacuum Co., 20-store New Jersey chain at the initial session.

* * *

Al Deal is a new member of the sales staff of Shobe, Inc., Memphis, Tenn., wholesale distributor of Zenith radios and appliances, electric and kerosene refrigerators, frozen food units for the home, home heating equipment, washing machines, sewing machines, fans and ventilating equipment, Nu Enamel and many other products for the home and farm. He

was formerly with Memphis Power & Light Co., People's Light & Gas Co., Miami Beach, Fla., and Carolina Light & Power Co., Raleigh, N. C. During the war he was executive secretary of Dunn, N. C., Chamber of Commerce and then at Wilson, N. C. He goes to Shobe, Inc., from Firestone Tire & Rubber Co., Memphis, where he was supervisor of production in the tread room.

* * *

Luke W. Brown, Jr., was appointed vice president of the Chas. S. Martin Distributing Co., Atlanta, Georgia distributors of the Youngstown postwar kitchen units, it is announced by Chas. S. Martin, president.

Mr. Brown, who was formerly manager of the Athens branch, will serve as special assistant to Mr. Martin. He has just returned to the company after three years in the Navy.

Other officials of the firm are Abit Nix, vice president and treasurer, and the following department heads: J. M. Waller, household appliances; A. T. Wilson, Bendix home appliance division; W. S. Pierce, heating, and S. D. Buice, refrigeration.

* * *

The formal opening of the J. H. Peres Distributing Co.'s new showrooms in New Orleans, was held today. The Peres firm is exclusive distributor in Louisiana and Southern Mississippi for Aireon Manufacturing Corp., makers of two-way radio, communications, industrial electronics, phonographs and many other accessories.

PLEASE PLACE YOUR ORDER WITH YOUR REGULAR RADIO PARTS JOBBER. IF YOUR LOCAL JOBBER CANNOT SUPPLY YOU, KINDLY WRITE FOR A LIST OF JOBBERS IN YOUR STATE WHO DO DISTRIBUTE OUR INSTRUMENTS OR SEND YOUR ORDER DIRECTLY TO US.



The New Model CA-11 SIGNAL TRACER

Simple to operate . . . because signal intensity readings are indicated directly on the meter!

Essentially "Signal Tracing" means following the signal in a radio receiver and using the signal itself as a basis of measurement and as a means of locating the cause of trouble. In the CA-11 the Detector Probe is used to follow the signal from the antenna to the speaker — with relative signal intensity readings available on the scale of the meter which is calibrated to permit constant comparison of signal intensity as the probe is moved to follow the signal through the various stages.

Features:

- ★ SIMPLE TO OPERATE — only 1 connecting cable — NO TUNING CONTROLS.
- ★ HIGHLY SENSITIVE — uses an improved Vacuum Tube Voltmeter circuit.
- ★ Tube and resistor-capacity network are built into the Detector Probe.
- ★ COMPLETELY PORTABLE — weighs 5 lbs. and measures 5" x 6" x 7".
- ★ Comparative Signal Intensity readings are indicated directly on the meter as the Detector Probe is moved to follow the Signal from Antenna to Speaker.
- ★ Provision is made for insertion of phones.

\$18⁷⁵

The Model CA-11 comes housed in a beautiful hand-rubbed wooden cabinet. Complete with Probe, test leads and instructions.....Net price

The New Model 450 TUBE TESTER

Specifications:

- Tests all tubes up to 117 Volts including 4, 5, 6, 7, 7L, Octals, Loctals, Bantam Junior, Peanut, Television, Magic Eye, Hearing Aid, Thyratrons, Single Ended, Floating Filament, Mercury Vapor Rectifiers, etc. Also Pilot Lights.
- Tests by the well-established emission method for tube quality, directly read on the scale of the meter.
- Tests shorts and leakages up to 3 Megohms in all tubes.
- Tests individual sections such as diodes, triodes, pentodes, etc., in multi-purpose tubes.
- New type line voltage adjuster.
- **NOISE TEST:** Tip jacks on front panel for plugging in either phones or external amplifier will detect microphonic tubes or noise due to faulty elements and loose internal connections.
- Works on 90 to 125 Volts 60 Cycles A.C.



SPEEDY OPERATION assured by newly designed rotary selector switch which replaces the usual snap, toggle, or lever action switches.

The model 450 comes complete with all operating instructions. Size 13"x12"x6". Net weight 8 lbs. **\$39⁵⁰** Our Net Price.....

The Model PB-210 MULTI-METER

Features:

- ★ SPEEDY!
- ★ PUSH-BUTTON OPERATION!

Measures:

- ★ A.C. Volts
- ★ D.C. Volts
- ★ D.C. Current
- ★ Low Resistance
- ★ High Resistance
- ★ High Resistance
- ★ Low Capacity
- ★ High Capacity
- ★ Decibels

Specifications:

5 A.C. VOLTAGE RANGES: 0 to 10/50/250/500/1000 Volts
 5 D.C. VOLTAGE RANGES: 0 to 10/50/250/500/1000 Volts
 5 OUTPUT METER RANGES: 0 to 10/50/250/500/1000 Volts
 4 D.C. CURRENT RANGES: 0 to 1/10/100 Ma. 0 to 1 Amp.
 2 CAPACITY RANGES: .0005 Mfd. to .3 Mfd. .25 Mfd. to 100 Mfd.
 3 DECIBEL RANGES: —10 to +15; +10 to +35; +30 to +55
 4 RESISTANCE RANGES:
 0 to 2,000/20,000/200,000 Ohms. 0 to 20 Megohms

Model PB-210 comes housed in hand-rubbed oak portable cabinet, complete with cover, self-contained battery, test leads and instructions. Net Price.....

\$35⁷⁵

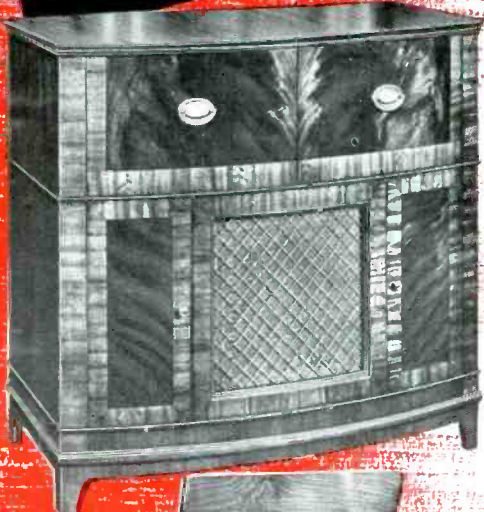


SUPERIOR INSTRUMENTS CO.

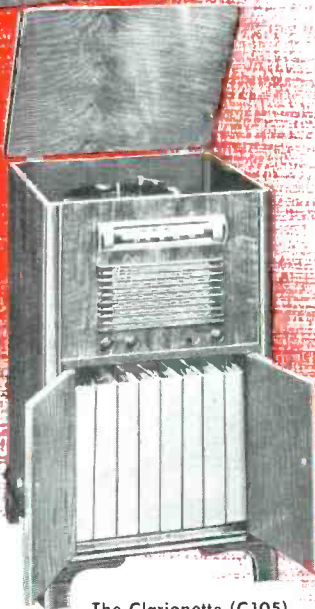
Dept. TJ 227 FULTON ST., NEW YORK 7, N. Y.

Clarion

AMERICA'S FIRST
AUDIBEL RATED RADIO



The Masterpiece
AM-FM Grand
(C109)



The Clarionette (C105)

EIGHT GREAT FEATURES

Plus Audibel Warranty

- 1—New postwar FM circuit.
- 2—Touch-button electric motor tuning.
- 3—New low impedance Super-Interceptor Antenna.
- 4—New Iso-Tron "climate protected" coils.
- 5—Large Alnico No. 5 speaker magnet.
- 6—3-Dimensional "magnascopic" dial.
- 7—Jam-proof, rapid cycle automatic record changer.
- 8—Latest full-floating, high fidelity record-saving Transducer, with permanent needle.

WARWICK MANUFACTURING CORP.

4640 W. Harrison St.

Chicago 44, Illinois



The Saratoga (C101)

The Aristocrat (C103)



ILLUSTRATED ARE 4 OF THE COMPLETE NEW CLARION LINE

YEARS OF PROVED PERFORMANCE

Merchandise.. Determination.. Success

By Frank Bartonek

One of the Midwest's record and radio retail stores met with instant success in spite of the fact that very few appliances were available at the time of the store's opening.

Obviously, some methods and tricks of the trade had to be adopted to make the shop unique in its line, as well as build up a following until the traffic appliances were again available in volume.

Lee Droher, owner of Lee's Record and Radio Shop, at 6th and Francis Streets in St. Joseph, Missouri, used several ways of capturing the interest of the St. Joseph trade.

For about eight days prior to the opening of his shop, Mr. Droher used the teaser advertisement, pointing to his location in relation to his neighbors. Not once was any hint of the store's identity or type of business given. This aroused con-

siderable speculation and comment, since several new businesses had been reported to be planning to open stores in St. Joseph's downtown district. The announcement of the store's opening was made in a half-page ad in the local daily newspaper. The ad also carried a copy of the teaser ad in a prominent location.

On opposite corners are located a chain drug store, a national bank, and a popular department store. The corner on which Lee's Record and Radio Shop is located, is also the transfer point for virtually all of St. Joseph's public conveyances. The location of the store is another factor contributing to its success.

One of Mr. Droher's opening day specials made the shop the talk of the town. Nationally advertised electric irons, complete with cord, were advertised at \$8.57 each, tax in-

cluded. Several hundred of these irons went to eager buyers at a time when new electric irons were in most cases only a display item. Some mail orders from as far away as Oklahoma City, Oklahoma, were received by the store. Also eagerly received was a limited supply of electric razors and alarm clocks.

Lee's Record and Radio Shop also offers its customers radio repair service and a completely outfitted full length basement is devoted to this phase of the business. The radio shop is managed by an experienced radio mechanic, whose work will also include "tune-up" services when new radios are again available. Although the radio repair department of the shop was not advertised in the opening ads, several customers nevertheless brought in their radio sets for repairs.

When a dealer is able to make a success in days of severe shortages, your Editors feel that we can all learn something from his story. Therefore we take pleasure in bringing you this article on the success of the Record & Radio Shop.

To the left we see part of the spacious interior, where all available space has been utilized for records, because no other merchandise was to be had. The store is quite large, and therefore Lee probably can boast one of the largest record departments in his territory.



At present, the musical record business forms over 90 per cent of the stores trade. Although future plans include carrying a complete line of traffic appliances such as radios, record players, combination sets, razors, heat pads, toasters, mixers, alarm clocks and similar items. The shop will feature several nationally advertised trade items in the future.

The selection of records was an appropriate choice by Mr. Droher for his new shop. Mr. Droher is the



Above we see another view of the spacious interior, of the Lee Record & Radio Shop.

Below and to the left we have the combination reception and cashier's desk, where customers both pay for their purchases, and obtain information on stock location as well as what are the latest releases, and when they may be expected to be in stock.

To the right is another view of the interior of the store, showing the long wall display racks featuring albums. Browsing is heartily encouraged, and leads to many "extra" sales.

owner and operator of the Coin-O Amusement Company which provides and services juke boxes in St. Joseph. This experience gave Mr. Droher a close insight in record popularity as well as providing him with a following.

In charge of the record department is Mrs. Tillie Fankhauser, who has had about fifteen years experience in record merchandising. Mrs. Fankhauser has an excellent following and is considered an authority on all records. She is also a local piano and voice teacher.

Lee's Record and Radio Shop features the popular self-service merchandising methods. The various types of records are arranged and stocked in separate display racks which are marked to guide the customer in making his selection. The browsing shopper has five comfortable, enclosed listening booths available for his use as well as five "stand-up" listening booths. The sales staff serves the browser mainly in an advisory capacity, and their "platter" knowledge must be diversified.

One person is always on duty in the cashier's cage and it is here that the stores instant sales service is provided. Near the cashier is a complete indexed file of the store's supply arranged in numerical order. The customer requests the desired record, and is served in less time than intakes to tell about it. Thus the customer may make his purchases between "transfer" stops.

All display racks carry a varied

line of record albums, with several counters containing the individually filed records. The racks and counters are painted a light green, and the sales portion of the store is illuminated by twenty-two four-foot fluorescent fixtures with four bulbs in each fixture. Neon signs carrying the stores name line the windows of the shop, while small spotlights accentuate the window displays.

At present Lee's Record and Radio Shop uses a daily five inch display advertisement. Five outdoor billboard signs located in strategic sections of the city, and taxi ads form the stores present advertising campaign. The taxi ads are signs about two by four feet in diameter which are on the rear of the city's Yellow Cab Taxicabs. The shop is featured every fifth week in these ads for a total of thirteen weeks during the contract year.

Lee Droher was born and reared in St. Joseph. His employees have all been residents of the city for many years, each following their present line, or an allied line prior to their association with Lee's Record and Radio Shop. The following the employees obtained in this manner was another factor contributing to the shop's success.

Until the days when traffic appliances are again available in quantity, the merchandising of records will form the bulk of the business of Lee's Record and Radio Shop, but even then, the "platter" trade will still form an important part of the store's future scheme of business.



How To Figure Your MARK-UP

By W. F. Schaphorst

A prominent manufacturer of power plant devices asked this writer to prepare the accompanying chart. The manufacturer said he wanted a chart that would be helpful in determining the selling price of his products. He was not satisfied with mere percentages. He said, "If I add a certain percentage, what is the selling price? That is what I am most interested in. Percentages don't mean much to me."

So here is the chart, and the writer feels that it will also prove valuable to sellers of radio equipment. Perhaps it will assist you, too, in determining the selling price of your products, regardless of first cost.

Thus for example, if the cost to you of a given piece of radio equipment is \$10 and you want to add 100 per cent to the cost, run a line through the \$10, column A, and the 100%, column C, and the selling price, \$20, is instantly found in the intersection with column B as shown by the dotted line drawn across the chart.

Should the cost be \$10 and should you want to add 200%, a straight line through the \$10, column A, and the 200%, column C, gives the answer as \$30 in column B. There is no "hand figuring" whatever.

In other words, any straight line across the chart solves a problem for any percentage added to cost between nothing and 300%. The dotted line drawn across this chart shows only one of the millions of problems that may be solved. Or, if you know the cost and have decided on \$20 as the selling price the same dotted line tells you that the percentage added is 100%. Which means that if any two factors are known in columns A, B, and C, the third factor is instantly found without pencil figuring and without brain fatigue.

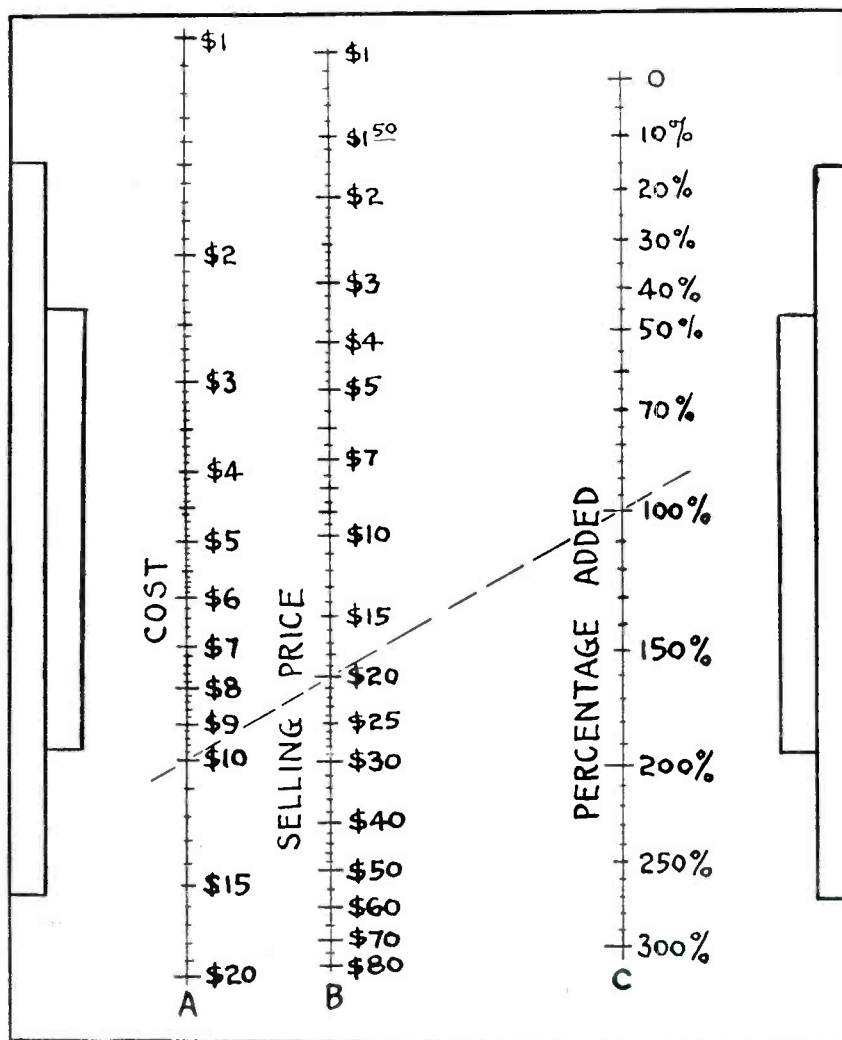
The chart will take care of any price. Column A as shown varies only from \$1 to \$20 but it is a simple matter to add ciphers and extend the range to any amount. Thus if the cost is \$100 and you wish to add 100%, the selling price will be \$200, column B. In other words, you simply add ciphers to the figures in columns A and B simultaneously. If you add one cipher to the figure in column A you must

add one cipher to the answer in column B also. And so on. Add as many ciphers in column B as you add in column A.

The same dotted line therefore tells us that if the cost is \$1,000 and the selling price is \$2,000, the percentage added is 100 per cent.

Do a little experimenting with the chart and you will soon discover its convenience and value.

Learn to use this handy chart. Just follow the simple directions in the above article and avoid making costly markup mistakes.



The Truth About The FARM MARKET

By James Lockhart

"A lot of people have figured out just what the farmer needs," a prosperous Ohio farmer told me recently, "but I'm afraid that a good many of them have made a mistake that will be apparent to everyone who ever made a dollar off the land. One article I read went on to show how they had checked a thousand farms in Illinois. The investigators took great care to get their figures right—they found out what each farm should have in new equipment and multiplied by all the farms in the country.

"Among a lot of other things, I need an electric milk cooler and I'm going to have one. But my brother has a farm in Pennsylvania and although he makes as much money as I do he has no intention of getting a milk cooler now or ever," the farmer continued. "He doesn't have a cow on the place. What I am trying to tell you is that every section of the country is different and the cash crops are different. Naturally, farm needs are just as different as the crops!"

What does all this mean to the radio and appliance retailer? Just this: No one far removed from your immediate locality can tell you precisely what you should promote. Of course, there are certain lines that are in demand everywhere, but a great many worthwhile sales are going to be missed unless a personal investigation is made of what the farmers need in any community.

All this would appear to make the

selection of appliances a difficult one for the retailer. To determine how this problem was solved with relative ease a careful check was made and the following plan is a resume of the best features employed by a number of radio and appliance dealers: Personal calls were made by the dealer and one or two of his sales personnel—visiting from 100 to 200 farm homes in the evening between the hours of seven and nine. The farm family was immediately told that the call was made without any thought of selling anything—all that was wanted was information that would help the store offer better service.

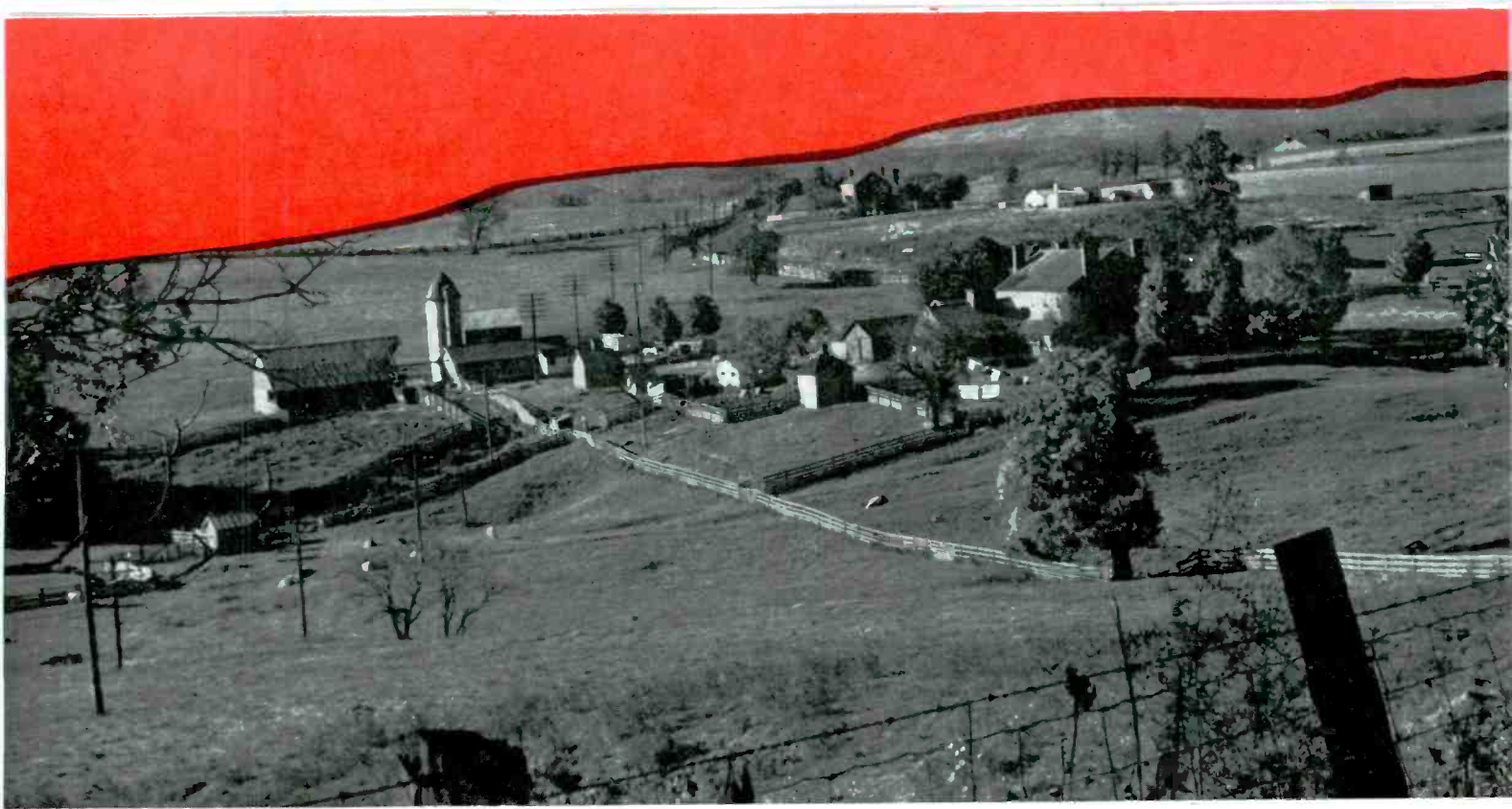
The calls were arranged to cover an excellent cross section of the entire local farm community, and in every case a report was turned in showing essential data that would later serve as a first class direct mail list as well as a means of making direct sales calls. All data was typed

on a card showing the source of electric power used; the appliances used in the home; the new appliances used in farm buildings, etc. There was also space to show what special services were in demand. Some farmers did not appear to be willing to furnish this information, but at least 80% were more than willing to talk freely.

In a matter of two or three weeks of making these calls it was apparent that the farmers were not only willing but anxious to purchase labor saving devices for both the home itself and the farm buildings as well. Then, too, they were especially interested in SERVICE, and expressed a strong desire to buy from the dealer offering the most *complete lines and the best service*. Further, they wanted to buy from a representative who appreciated farm problems and who could talk with them intelligently. ("What's the use," said one, "of trying to buy an electric milker from

Every day we see at least one new survey intended to prove beyond the slightest shadow of doubt that there are fortunes lying just around the corner for any and every seller of appliances and radios. In a great percentage of these cases the main bulwark for this contention is the unknown but guessed at farm market.

In this article, we have had one of our correspondents investigate this "gold mine" for you, to see if this was really the case, or whether we were all being misled by wishful thinking. Your Editors feel that you will find his conclusions just as interesting and logical as we did, and that you will be in a much better position to truly evaluate the rural business of the future than you would be if you relied overly-much on any or all of the many surveys that have recently seen the light of day.



a man who doesn't know which end of the cow you hook it up to!")

With the survey completed as to what is needed, the next step in catering to the farm market is to determine what the local competition (or lack of it) may be in this field. One appliance man reported he first estimated a small demand from local farmers until he also made a survey of what his competition was doing. He reduced the whole problem to one in black and white—how many radio and appliance stores? How many were offering genuine service to back up their sales? All these things were put down clearly and he observed for the first time how little real competition he had to face.

The next step was to assemble all the facts as to what was really wanted with what could be done. In many towns the only place the farmers had to turn for many appliances was to the mail order houses or to local farm cooperative organizations. They were not buying from independent appliance men simply because no one took the trouble to understand what they needed or went out of the way to try to help fill those needs.

Best sales results were obtained by those dealers who established a complete farm department staffed by one or more men who knew the down-to-earth problems of the local farmers. One such dealer, for example,

found from his survey that the bulk of the farm income in his area was from milk production. He hired a young veteran who had been born and reared on a farm and who had the advantage of several years in the state agriculture school. Together they cleared up a large rear portion of the store that had always been used as a storeroom. Why waste valuable first floor potential sales space when storage could be handled in the basement or on an upper floor?

Again going back to the personal survey data they found that many of the farmers wanted milkers and could increase farm profits by using them. Many wanted electric cream separators, milk coolers, sterilizers, water heaters, etc. Almost all of them wanted electric motors for various power units. Some intended to use nothing but electric fencing and that called for either high line or battery controllers. Virtually all farms required better farm building lighting.

By arranging these necessities in a special department with adequate advertising support an almost immediate demand was created and store traffic was built up substantially. Nearly all household appliances were left in their usual position on the sales floor, but it was found that there was a strong call for table model radios for use in the barn or

other farm buildings. Some farmers laughed at this suggestion but many of them ordered one—for they found it was handy to get crop reports or prices and weather reports while they were working.

And what about the electric equipment for the farm home? In one survey of approximately 300 farm homes the leading item on the "want list" was a new radio. Better than 90% of all homes using electric service in this check already had one or more radios but were anxious to buy a new one. Women especially wanted a table model for use in the farm kitchen. Many wanted radio-record player combinations.

As for appliances, women voted first for electric ironers. Most complained that they spent at least twice the time in ironing as they did in the actual washing, and only 5% of the women questioned had these ironers. Men favored deep freezers first and ordinary electric refrigerators as a close second. Also high on the list of needed appliances were new washers, sweepers, and electric ranges.

Bear in mind that this is a limited sampling of opinion and it will not be necessarily true in every section of the country by any means. It is presented as an idea of what may be found in an individual survey, but nothing that can be said or done

by any agency can remove the pressing need for a thorough check on these local farm requirements by each dealer. Without such an investigation every promotion and every advertisement must be based on guesswork alone.

Now that we have established a sound background for radio and appliance merchandising to the rural market, what can be done toward special merchandising and advertising activities. Here again we can go back to the dealers who have proven their methods in pre-war years. Starting with a separate department staffed by personnel fully acquainted with local farm problems, the only possible solution for obtaining top volume in selling the farm field is by means of:

1. Personal selling direct to the home.
2. Practical demonstrations.

A radio and appliance retailer, in discussing this topic recently, said that he saw no reason to worry about selling. He was much more bothered about being able to take care of the potential buyers already filling his sales room. The only fault with that line of reasoning is that it does not take care of the day not too far off when selling will be a necessity. That day may well come much sooner than is now thought possible once manufacturers begin to swing into full production.

Long experience with selling the

farmer has shown that he is very apt to delay buying until he is fully convinced he is getting the most for his money, and the best place to conduct the "convincing" is right on his own home ground. For that reason the well handled demonstration is a necessity—and don't forget that farmers will go miles out of their way to see such a demonstration no matter how busy they are. As proof of this, note the tremendous crowds of farmers at the rural auction sales—all complaining as one man that they are too rushed to be there!

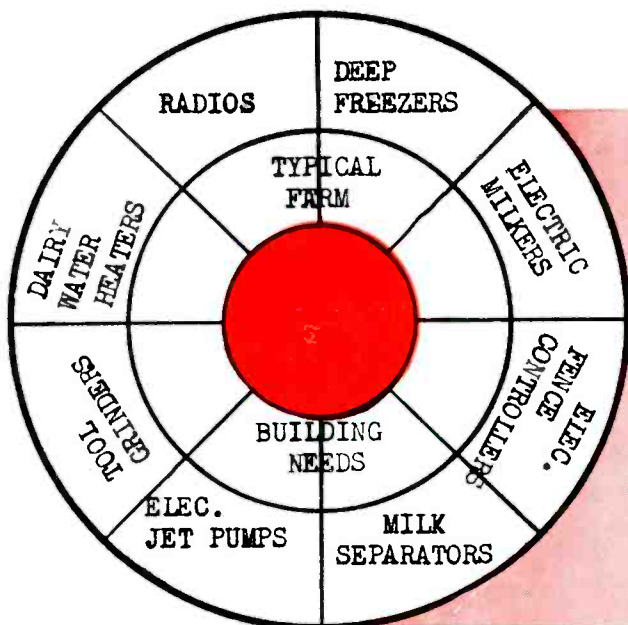
For the sake of a practical example only, let's go back to the matter of selling electric milkers. Your own local survey has shown you how many farmers have these devices and some idea of how many more could be interested. With that in mind the dealer calls on a farmer milking ten or more cows and explains what the new equipment will do for the farmer in the way of added profit and labor saved. Don't bother about the price or the good looks of the thing—*stress only what it will do for him!* For instance, he will be told how the milker will enable him to handle many more cows in the same time, or how he can complete the milking chore on the present herd in one third to one half the usual time. He will be told how this milker will actually produce more milk and how it has 100% trouble-free action. He will be told that it requires only a few minutes to keep it clean and that

the time saved in extra hired help alone will pay for it in one year. All these points should be brought up before a word is mentioned of price. And don't forget the average farmer has money in the bank after several excellent years—he wants to make more money and save work, so sell that idea first.

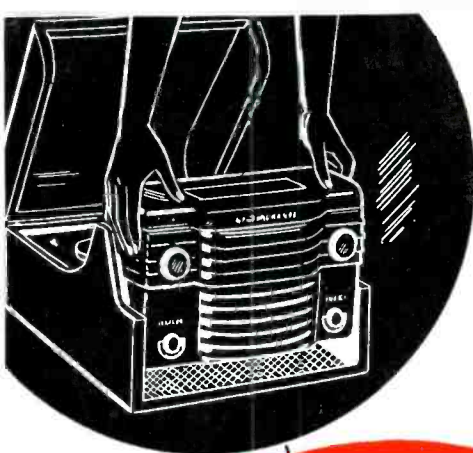
After one or more farmers install the system and prove it thoroughly satisfactory to themselves, go to one of the most prominent and ask permission to arrange an actual demonstration. Tell him frankly that you want other farmers in the neighborhood to see how worthwhile it is and how he has modernized his dairy equipment. It's a good bet that you can secure this permission and all that is left to do is to mail out cards or letters inviting nearby farmers to stop at a certain hour and see the device in action. A number will come and sell themselves on the spot. Some appliance men like to make these demonstrations more elaborate by handing out a light "snack" but that's up to the dealer to decide and usually isn't called for at all.

The milker is only one of many things the farmer will buy in this fashion, but the prime requirement is that the salesman knows every detail before he tries it. He must be prepared to answer questions quickly and not have to grope through a catalog for a solution. If it is a milk cooler, what is the capacity? What time is required to do the job effectively? How much cur-

(Continued on page 26)

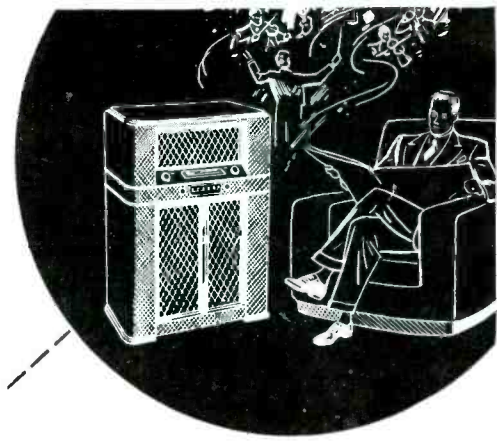


The needs of a typical farm are portrayed in this chart. These appliances and pieces of electrically operated equipment will vary somewhat from community to community depending on local demand. There is no "saturation point" for this market since millions of rural homes are still seeking electric power in addition to the many millions already "fixed" for power but lacking in appliances. The farm "home" itself requires all the usual household appliances from ironers to roasters.



The Revolutionary New WESTINGHOUSE DUO

It's a radio-phonograph with automatic record changer . . . but you can lift out the radio and play it anywhere. The hottest sales feature of 1946!



The Amazing PLENTI-POWER CIRCUIT

This exclusive feature gives a low-priced Westinghouse 7-tube set more undistorted output than most 12-tube sets had prewar. *Anyone* can hear the difference . . . *everybody* likes it. It means sales to the millions who want 12-tube performance on a 7-tube budget.

NEW IDEAS
That sell radios

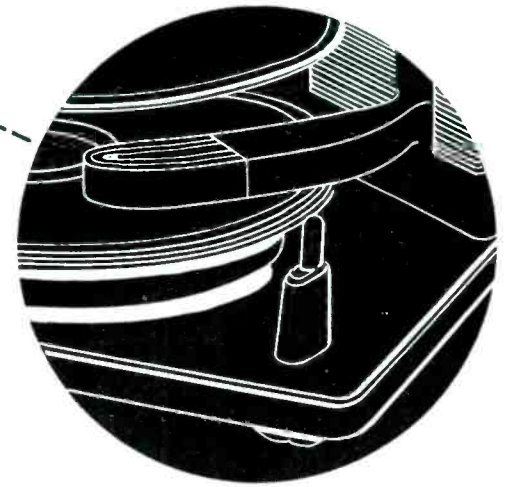
more proof that you can depend on **WESTINGHOUSE RADIO** for originality

For more information call your Westinghouse Distributor or write Home Radio Division, Westinghouse Electric Corporation, Sunbury, Pa.



A POWER-HOUSE IN A JEWEL CASE!

Never before has such performance been packed into a set of this size. You'll have to hear it to believe it!



THE EAR-LEVEL SPEAKER

Something new you can demonstrate. The sound originates at the *most natural level* for listening enjoyment. No acoustical loss or distortion from the carpet or floor.



6 TO 10 TIMES AS MUCH RECORD STORAGE SPACE

In most of the new radio-phonographs, Westinghouse has made the entire cabinet width available for record storage space . . . 6 to 10 times as much as prewar cabinets of the same size . . . a real selling feature for people with record libraries.

A completely new AUTOMATIC RECORD CHANGER

Single-button control! No changeover levers to push! No complicated operating instructions.

When you want to operate the tone arm by hand, do so . . . no danger of throwing the automatic mechanism out of adjustment. After the last record is played the tone arm returns to rest and the turntable shuts off automatically.



RADIO'S FIRST NAME IS

Westinghouse
Radio Television

(Continued from page 24)

rent will it use per day and at what cost? How many moving parts are there to wear out? The farmer literally says "Show me" and the man who can do that trick can take a lot of orders in spite of all the mail order competition ever devised.

Farm appliance advertising requires equally diligent care and attention. "DEEP FREEZER SAVES L. M. TYLER \$125 PER YEAR" is the type of headline that draws farm attention. First, it happens that the headline mentions the name of a prominent and successful farmer known and respected in the community. Second, it stresses a large saving made possible by home slaughtering of meats and preserving of this meat right at the farm rather than driving to a locker plant miles away or buying from the meat market in town. The body of the ad goes on to prove these things in clear, simply worded style. The testimonial ad is far from dead in pulling power and has more effect on the farmer than ever if backed up with sound logic.

Radio and appliance men express

particular interest in the use of direct mail advertising when selling the farmer, and they have every reason to believe they are on the right track. In fact, one dealer reported how he had mailed post cards telling about a water heating device



for stock tanks that brought in better than 40% response. His method involved the use of hand written cards mailed in lots of ten to twenty per day. The dealer wrote these cards himself and usually added a personal

note to the effect that he wanted to show the prospect how quickly and effectively the device worked in providing ice free water for all stock during the winter months. Many farmers considered the invitation as a personal one and came in promptly. He called on others and they admitted they had read the card and were interested.

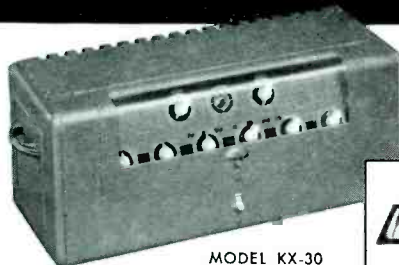
To sum up, radio and appliance advertising to farmers doesn't need to depend on fancy phrases or beautiful layouts. "Keep Water Tanks Free of Ice This Easy Way" is a line that gets the attention and the same system can be used in selling electric ranges or deep freezers alike. The farmer seeks practical and helpful information—but he resents being "talked down to" more than he will admit.

Here then, is the key to volume selling to the farm market:

1. Determine precisely what the farmers in a given area demand in merchandise and service.
2. Determine the variety and scope of sales competition. Pick out the weak points in that competition and go after it hard.
3. Employ sales and service personnel that know something of farming.
4. Establish a complete farm department within the store.
5. Make direct selling calls on the farm homes.
6. Employ advertising that talks to the farmer in terms of what you can do for him that will add to his profits and save labor.

In the months ahead when selling becomes something to be accomplished rather than put off, the farm and the demands of the farmer will begin to look good to a lot of retailers. Now is a fine time to prepare to gather in a major portion of this ever-growing and waiting rural demand!

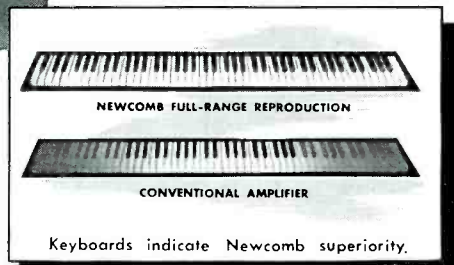
SOUND REPRODUCTION at its BEST



MODEL KX-30
30-WATT AMP.

THE Newcomb range of tone effects far exceeds usual amplifier performance. Overload and volume level indicators guide operator when not in position to hear loudspeakers. Master volume control regulates overall volume without disturbing balance between various input mixer controls. The protective keylock cover prevents accidental misadjustments.

An amplifier to satisfy the most discriminating judge of sound equipment. Any way you look at it, or listen to it, you'll appreciate this powerful piece of sound engineering.



Exclusive plug-in transformer permits changing standard high impedance inputs to low without rewiring.

Write for specifications of complete line of Newcomb amplifiers.



THE SOUND OF QUALITY

Newcomb

AUDIO PRODUCTS CO.

MANUFACTURERS

DEPT. H 2815 S. HILL STREET, LOS ANGELES 7, CALIFORNIA

5-TUBE AC-DC

including rectifier and 2 dual-purpose tubes

MOLDED PLASTIC CABINET

ivory or walnut

BUILT-IN LOOP

with external antenna connection

5-INCH SPEAKER

permanent magnet type

ILLUMINATED DIAL

large, attractive, easy-to-read

ALL \$ 15.65*
for
ONLY 15 LIST



MODEL 544A is a typical Arvin Top Flight value. With its many features, at a price so low, customers will be buying three and four at a time!

It's a fine chair-side companion in the living room, essential equipment to keep the cook in the kitchen, and a basic necessity in every bedroom . . . good buying reasons that build multiple sales.

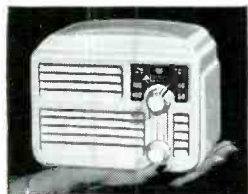
To see it is to want it. To hear it is to buy it . . . for every room and everyone in the family. *You'll write high-dollar sales tickets on this and other Arvins.*

*Model 544—in walnut finish lists at only \$15.40. All prices include federal tax—slightly higher in far west.

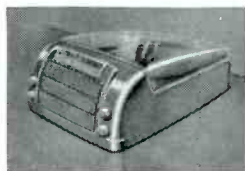
The Complete ARVIN Line Includes 19 Models

FROM THE *Tiniest* TO THE *Finest*

At Prices Your Customers Can Afford



THE TINIEST ARVIN—one of seven table radios in a variety of styles and sizes including two battery models—with top flight value in every price bracket.



UNUSUAL radio record player in small, distinctive, durable, easy-to-carry case. There'll be a big demand for this combination.



ONE OF A GROUP of beautiful table combinations with many new radio, record-player and automatic record-changer developments.



THE FINEST ARVIN with FM-AM, automatic record-changer, and all the newest radio-phonograph features. Also three other floor models.

ARVIN is the Name on Many Fine Products of **NOBLITT-SPARKS INDUSTRIES, INC., Columbus, Ind.**

Radics • Electric Heaters, Electric Irons and Appliances • Outdoor Metal Furniture • Metal Chrome Dinette Sets • Laundry Tubs • Car Heaters

\$100⁰⁰ A MONTH

. . . To Start

By Harold Ashe

Probably the least known piece of legislation pertaining to veterans rights—certainly one of the most enlightened—is that by which self-employed veterans will be eligible for unemployment insurance benefits on terms comparable to those available to job-seeking veterans.

Intent of such unemployment insurance aid to the newly self-employed is to give veterans a hand during the first few trying months when, in many instances, even soundly conceived ventures may not permit of personal withdrawals and which, thanks to service, have less working capital than might otherwise be the case. The legislation will go far toward insuring ultimate success for

such business venturers and may have the long range effect of making many veterans self-supporting who, otherwise, might be forced upon the relief rolls. After all, through no fault of their own, such veterans are getting a late start in business.

Wisely, the amount of the unemployment insurance to which the self-employed are entitled is limited to \$100 a month, as compared to approximately \$87 a month (\$20 weekly) available to job-seeking veterans. The differential is hardly likely to inspire job-seekers to become self-employed, so that those qualifying as self-employed may be expected to be making a conscientious effort to be just that.

Who Is Eligible?

To be eligible the applicant must have served in the armed forces at least 90 days unless sooner discharged for a disability incurred in service in line of duty; must have been on active duty after September 16, 1940, and prior to the termination of the present war, and must have been discharged or released from active service under conditions other than dishonorable. Benefits are payable only for a period not later than two years after discharge or release from active duty or the termination of the war, whichever is the later date. However, in any event, payments will not be made for any period commencing more than five years after the termination of the war.

A veteran who is self-employed in an independent establishment, trade, business, profession or other vocation is eligible for readjustment allowance being the difference between his net earnings and \$100.

How It Works

It works like this. Say a veteran

is self-employed and after all business expenses have been met he has a net return available to himself of, say, \$40. He would make application for benefits setting forth these facts and, in due course, would receive a check for \$60, representing the difference between the maximum benefit and his month's net return.

Self-employed veterans claims for allowances for months of self-employment should be filed at the nearest public employment office in the same manner as though such applicants were job-seeking veterans applying for unemployment insurance. However, self-employed veterans will not be required to register for employment.

The period for filing claims for readjustment allowances for the self-employed is the first twenty days of each month for the previous month. At the time the first claim is filed the veteran's discharge or separation papers must be presented.

Length of Benefits

The amount of benefits that a veteran may draw under this Act is graduated upward from two months to one year, depending upon the length of the applicant's service in the armed forces. Within the one year limit, the total eligibility is determined by allowing eight weeks of benefits for each month of the first three months of active service, and four weeks of allowances for each month or major fraction thereof, thereafter. For example, a person who serves from September 10, 1944 to May 5, 1945, would have eight months service, entitling him to 24 weeks benefits for the first three months, and 20 weeks benefits for the final five months, or 44 weeks benefits altogether.

(Continued on page 36)

Every passing day brings more and more veterans back into civilian life, and sees them start their attempts to remake their economic future. One of the most popular fields for those who want to start small businesses of their own is that of dealing in radios, radio service, and both small and major appliances.

While a great many of these men have some idea of the benefits that they are entitled to under the G.I. Bill of Rights, it may safely be said that the vast majority of them are not fully aware of ALL of the benefits that they are entitled to. Mr. Ashe, in to clarify the situation for these expert in these matters, here tries veterans.

GENERAL ELECTRIC'S GREAT NEW INVENTION

The revolutionary



ELECTRONIC REPRODUCER

will be installed in every G-E automatic console and table radio-phonograph!

*Available first in the new
G-E Radio-Phonograph model #326*



THIS AMAZING ELECTRONIC REPRODUCER now provides listening pleasure *never before possible!* Such superior performance has been attained only by alert attention to every design, engineering and acoustical detail of the entire reproducing system.

LOOK AT THESE FEATURES—they tell why the G-E Electronic Reproducer is better:

- Revolutionary, Flexible Mounted Pick-Up with Permanent, Self-Retracting Sapphire Needle—Fully Protected Against Dropping and Mechanical Abuse!
- Virtual Absence of Needle Chatter, Scratch and Hiss!
- Lightweight Tone Arm—Low Record Wear!
- New Volume and Tone Control Devices!
- Wide Frequency Response of Pick-Up—Ideal Balance Between Low and High Frequencies!
- Extremely Rugged Mechanically—Built to Take Abuse!
- Unaffected by Temperature and Humidity—Top Performance Anywhere!

For complete information, consult your nearest G-E Radio Distributor or write today to Electronics Department, General Electric Company, Bridgeport, Connecticut.

MODEL #326—A WINNING NUMBER! AC; 7 tubes (including rectifier); standard and shortwave bands; 12" Alnico 5 speaker—increased sensitivity, greater acoustic output; tone control; automatic record changer; and the amazing G-E Electronic Reproducer.

THE FIRST AND GREATEST NAME IN ELECTRONICS

GENERAL ELECTRIC

175-83

PORTABLES • TABLE MODELS • CONSOLES • FARM SETS • AUTOMATIC PHONOGRAPH COMBINATIONS • TELEVISION

Modernize To Merchandise

By Walter Rudolph

Just before the turn of the year, the Markham Music Co. of Erie, Pa., leased floor space enough right next door to double its salesroom area—the old area underwent a transformation into one of the city's most modern record departments, while the new area became the focal point for selling sheet music, musical instruments and electrical appliances.

The record department, still getting finishing touches here and there, experienced a record-breaking (no pun intended!) volume of sales during the Christmas season while remodeling was going on! C. V. Sanborn, general manager of the business, while giving credit to the modernization for attracting record fans, also points to a large selection of all kinds of recordings, the musicianship of the clerks and the retailing of used records as factors of merchandising which have stepped up the store traffic and subsequent frequent repeat sales.

Gross sales have been upped by the selling of items that go with record playing and handling many lines of radio-phonographs.

In layout, the new record department is more or less conventional. Fronted by a nice sidewalk-show-window display, as the store is entered the four self-service racks against the left wall attract attention. A rubberized floor runner absorbs the heavy traffic in front of these racks and saves the flooring, which got a \$200 sanding and staining job before the store was opened.

One feature of these racks emphasizes Sanborn's policy of getting rid of what he terms "semi-self-service" which is common to most dealers who have what they term self-service. His racks have no boarded edges, extending out several inches

from the flat surface of the rack. These edges, perhaps thought essential by some to hold the albums and records from falling, are an impediment to self-service in that the customer doesn't like to "dig" the albums out of compartments.

Sanborn comments on another feature of Markham's, the use of mir-



rors, as follows: "We've broken up the left wall with three mirrors, one adjacent to the street, shaped like an arched doorway with panels, and two circular mirrors evenly spaced along the wall, above our custom built record players for use convenient to the racks. Another mirror, hexagonal in shape, is on the wall to the right as the store is entered. Attractive mirrors are also in the two listening booths, just over the turntables, and two long, rectangular mirrors are on the short booth walling besides the doors.

"We have a special peach glass in these mirrors which is a point in flattering customers and pleasing them with the store in general. This type of mirror glass is used often in ladies stores where hats and dresses are sold exclusively, for instance," concluded Sanborn.

The two custom built record players commented on above are simple constructions of plywood, stained and varnished, flush against the wall about five yards apart and outfitted with Magnavox speakers. Although there is some conflict when both are played simultaneously, the disadvantage is probably offset by having a quicker turnover with the turntables right on the selling floor.

The desirability of private booths is acknowledged with Markham's placement of two at the rear on the left, just beyond the sales counter racks, or crowded mass library, storehouse of odds and ends. The inside walls of the booths are decorated with sales posters of current favorites. A fancy scroll-like decoration is on the end wall back of the phonograph and two chairs are standard equipment besides a shelf in the corner. Booth floors are carpeted.

Markham's sales counter tops a showcase full of needles, record preservatives, small racks and other accessories. Besides the number of different needles sold, this store does very well with a line of Duotone Star Sapphire needles, from 10c to \$5 in price. Records blanks, both aluminum and glass base in all sizes, are sold, along with some literature on music in general, album storage racks, record carrying-cases and other items. All of the above are merchandised through suggestive selling, for the main part.

Over the library in the left rear corner of the store is an attractive red neon sign, "Columbia Records," which does a nice piece of institutional advertising.

Directly back of the booths is a private, enclosed office. To the right of this room a stairway has been cleverly camouflaged with parallel-striped lavender wallpaper which fits into the regular color of the salesroom walls. The opening is hardly noticed now, whereas it was an eyesore before this change was made.

(Continued on page 32)



Mary Livingstone Benny shown with daughter Joan listening to the new Olympic. This picture in full color features the first of many national magazine ads telling the satisfying experiences of "best judges of radio" with Olympic's exclusive 'tru-base.'

and Top Radio Stars' wives... in Olympic's National Campaign!

FULL COLOR PAGES in leading magazines beginning in April... plus ads month after month after month!...

An audience of 19,850,000 each 30 days... 178,650,000 by the end of 1946!

178,650,000 messages selling America's best radio prospects a powerfully convincing story unique in radio annals!

That's the Olympic Radio campaign of 1946—a campaign packing sales power unmatched by anything ever seen. For it gives the reactions of the world's best judges of radio tone—the wives and children of America's top radio performers.

They're *able* judges—for none knows so well as they the voices, the music... every intimate note... of the stars whose comedy and music America loves best.

They're *critical* judges... vitally interested in the performance and future

of their husbands and fathers... *sensitive to how well that performance is captured by radio receivers.*

And they're *authoritative* judges—the Supreme Court of radio-listening—Mrs. Jack Benny, Mrs. Kay Kyser, Mrs. Phil Harris, Mrs. Andy Russell, Mrs. Edgar Bergen... the children of Fibber McGee and Molly.

So think of the impact on America's millions by the sight of these experts thrilling to the pleasure only Olympic can bring... to the wonder of 'tru-base'—bringing in compact table radios the realistic tone of large costly consoles.

It's a great cast... in great pictures by famous Hollywood color-photographer Paul Hesse... doing full justice to the styling of Olympic—the cabinets of precious hardwoods and lustrous modern plastics by celebrated designers.

Table radios, radio-phonograph combinations, portables.

Take the magnificent realism of 'tru-base'... dramatized in experiences of Olympic's famous "radio wives"—and you know Olympic is headed for *millions* of homes.



OLYMPIC DIVISION OF HAMILTON RADIO CORPORATION • 510 AVENUE OF THE AMERICAS • NEW YORK, N. Y.

RADIO-TELEVISION JOURNAL, MARCH, 1946

(Continued from page 30)

The right-hand rear portion of the store is given over to a display of radio-phonographs, album racks, etc., and an open space which leads through an arched passage into the sales floor for sheet music and so forth.

Direct mail and institutional advertising in local dailies are used to push the merchandising of radio-phonographs in this record shop, other than through attractive displays in the area just mentioned and occasionally in the show-window.

Although Magnavox is the big, exclusive franchise at Markham's, they also recommend and deal in such well known names as Stromberg-Carlson, Philco, Victor, Stewart-Warner, Emerson and Crosley. Sanborn believes the availability of many popular makes of radio-phonographs is more worthwhile than doing a solo flight with one machine.

The remaining space along the right wall is cut up by another stairway going to the basement, not concerned with the store proper, and temporary record racks or tables awaiting replacement by plywood structures. Sanborn believes most record dealers could benefit themselves by using plywood construction plentifully throughout their stores.

Through the center portion of the record department's sales floor are evenly spaced tables. Sanborn pointed out a practice here that he has found beneficial to his creed of self-service. The tables, the ends of which,



again, are attractively paneled with plywood down to the floor, are really two table sections joined with a board which covers the crack and is screwed down. If another arrangement of these sections is ever desired, the screws can be loosened and the boards removed.

Sanborn purchased what are sometimes called "doll sticks" in the five-and-ten, resembling the longer pieces of tinker toy sets. These sticks are so placed on the board between table sections that albums can be stood up and easily removed and replaced between the sticks.

The table tops are also divided into record-stacking sections with shorter pieces of these sticks. This is better than the usual recessed record piles, believes Sanborn, in that it allows quick removal of records for inspection or auditions. Sticks are also being placed at the head of each pile of records with a little removable index card which tells the name of compositions on both sides of the records in the particular stacks.

From the floor to the top of the table nearest the store's front, and similarly at the rearmost table, are built more self-service racks, adding more square feet of actual record or album display.

"The more self-service handling of records that we can make possible," states Sanborn, "the less storing of records we have to do in the library behind the sales counter at the rear of the store. We want customers to come in, browse, select their records themselves or with our help, try them if they wish and then take them to the cashier."

The ceiling is painted white and six four-tube units of fluorescent lighting make the interior practically shadowless, further enhancing the possibility of comfortable surroundings for the customers. Floor ash

Exterior is shown above. Below we have a front view of the spacious interior.



(Continued on page 36)



The first postwar expansion of the appliance and radio division of Hale Bros. of California, will take place in San Francisco, it has been announced by Marshal Hale, Jr., president. Most unusual feature planned is a 200-seat auditorium for demonstrations, which will be included in the downstairs section.

Property has been leased at 753 Market Street, facing Grant Avenue, with floor space of 16,000 square feet. Opening is planned for mid-summer, depending on availability of construction materials and merchandise. Prior to 1942, the west coast firm operated nine appliance units in San Francisco, Oakland, Sacramento and San Jose, but all were discontinued during the war except those originally housed as sections of one of the department stores. However, the new unit will be considerably larger than any of the previous ones, and will include a number of important new features.

**Streamlined;
"Fluid Floor Arrangement"**

The Market Street building will be completely remodeled, and blue-

prints show both interiors and exterior modern throughout. "Fluid Floor Arrangement", developed after five years' experimentation in the other stores, will emphasize customer convenience and strategic merchandise display.

Basic features of the floor plan are curved fixtures, no straight aisles, and no wall angles. Each section will be semi-separate, yet easily accessible from any other. The entire front of the store will be enclosed with plateglass windows and double-plate-glass entrance doors.

Related Units Together

Radios will occupy one-half the main floor, and small appliances the other half. Entire length is 168 ft., the full depth of the block. Left of the main entrance will be electrical appliances in the health, food, personal and comfort categories. The space to the right of the entrance is allotted to small radios.

Extending from the right center to the back of the store will be fourteen demonstration rooms, six for radio and eight for record-players. Refrigerators, washers and ironers will be

displayed in the left rear section.

Auditorium, Model Rooms Downstairs

The auditorium will be in the downstairs section, where major appliances and model rooms are located. Store executives plan to schedule cooking, washing, refrigeration and possibly radio or television demonstrations, daily Tuesday through Friday. These demonstrations will tie in with displays occupying the remainder of the basement, including gas and electric stoves, home and water heaters, two morel kitchens and a model laundry.

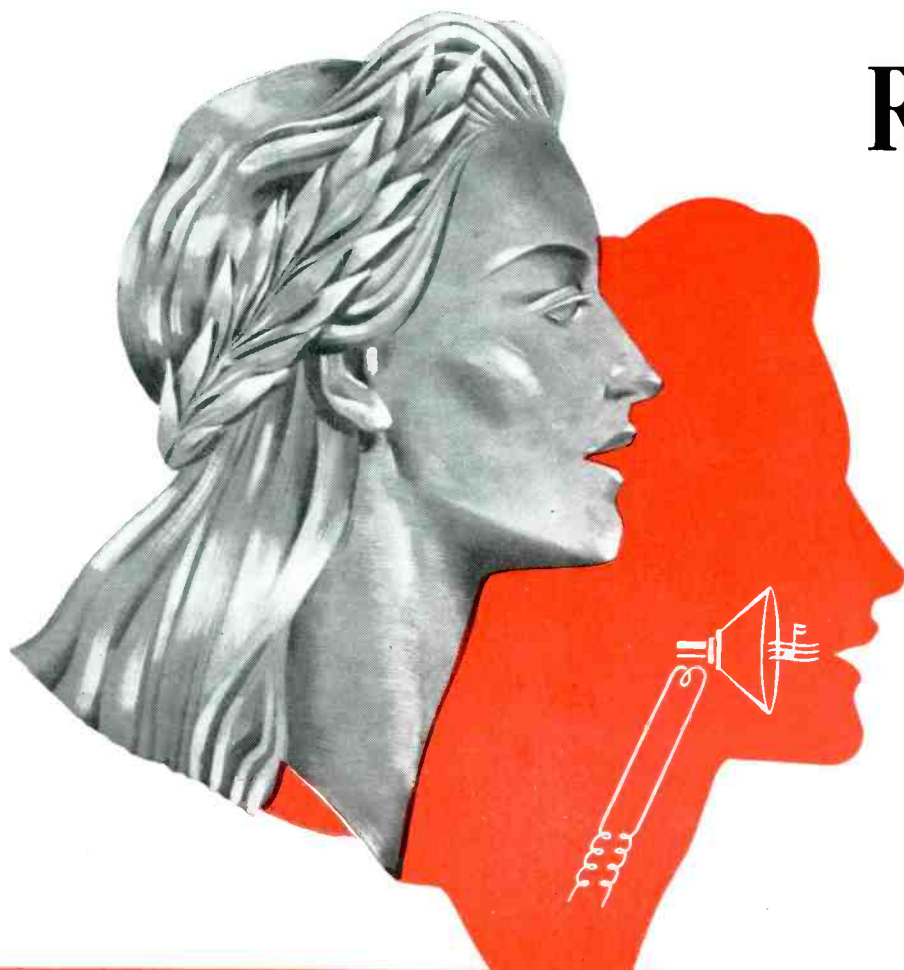
Major appliances and large radio stocks will be stored in Hale Bros.' main warehouse, so that floor space may be fully utilized for display. However, the store will carry stocks of smaller appliances. A fully qualified repair-man will be on hand at all times, although the Market-Grant unit will serve only as a "feeder" for the concern's central repair shop.

Appointment of a general manager for the unit has not yet been made, although officials of the firm hope to be able to make this announcement in the very near future.

Don't Forget the Auditorium!

Impartial "Curtain Tests" Prove

RCA Victor



56X

56X2

56X3



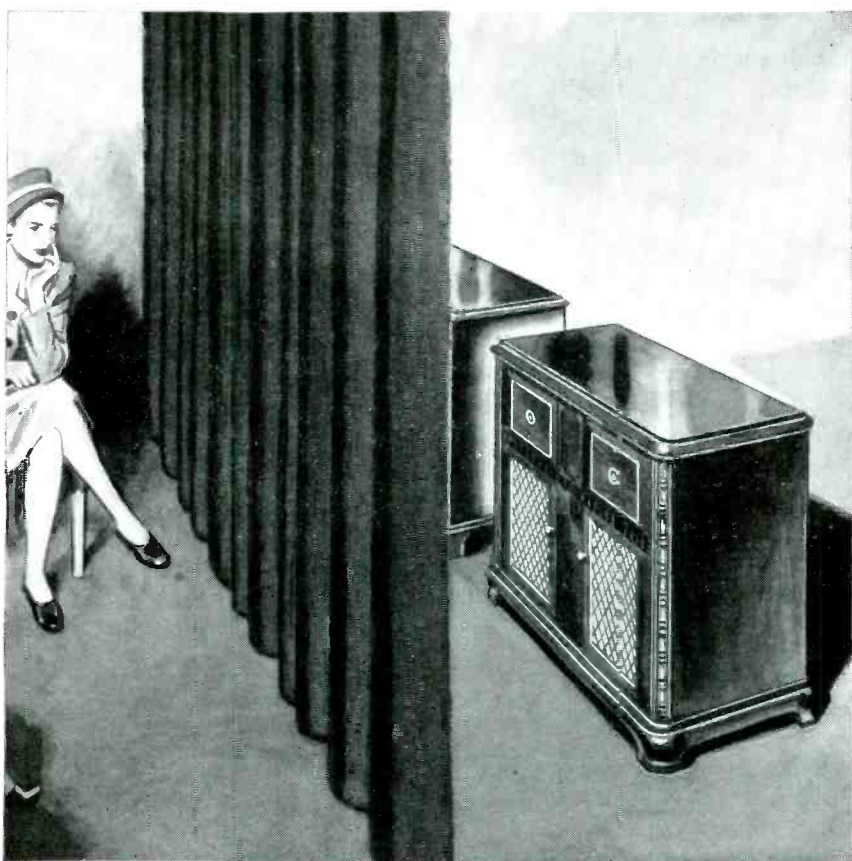
No. 1 Value in low-priced radios—has the famous "Golden Throat." No aerial or ground required. Cabinet molded of rich walnut plastic (RCA VICTOR 56X) or antique ivory enamel (RCA VICTOR 56X2) OPA list price incl. Fed. tax—56X \$24.10—56X2—\$25.95.

Classic Modern Design in Walnut Finish. No aerial or ground required. Recessed-angle, Spread Vision Dial. Has "Golden Throat." Operates on AC or DC current. RCA VICTOR 56X3. OPA list price incl. Fed. tax—\$32.95.

For further information on the RCA VICTOR line with the "Golden Throat," see your distributor, or write: RCA Victor Division, Radio Corporation of America, Camden, N. J.

Tone Superiority of

“Golden Throat”



This is how the famous “Curtain Tests” were made—all chances of partiality were eliminated!

RCA VICTOR'S “Golden Throat” is an outstanding achievement of RCA engineering “know-how” and of Victor's 47-year leadership in musical reproduction. Years of study and thousands of laboratory tests by RCA engineers have resulted in the exact co-ordination of electronic amplification, loud-speaker and cabinet—which is the “Golden Throat.”

BUT—RCA VICTOR'S engineers were not content with scientific measurements only. They also conducted a series of impartial listenership “Curtain Tests”—in which hundreds of men and women participated.

Here's how the “Curtain Tests” were made: Identical music was played behind a curtain on RCA VICTOR and competitive instruments. Results *proved* that the “Golden Throat” was overwhelmingly preferred over competitive makes.

Proved superiority of RCA VICTOR'S “Golden Throat” feature—plus a huge advertising campaign, in leading national magazines, the New RCA VICTOR Show (NBC Sunday 4:30-5:00 p.m. EST) and other media mean easier sales—more profit for you!

ONLY RCA VICTOR MAKES THE VICTROLA*



Victrola® TM Reg. U. S. Pat. Off.

RCA VICTOR



RADIO CORPORATION OF AMERICA

Modernize To Merchandise

(Continued from page 32)

stands are placed here and there as an invitation to patrons to help keep the floor clean and home-like.

As previously stated, the sales people are all musicians in their own right and literally roam the sales floor to assist in record selections and trials. Eric Stevens, recently returned to the store after three years, seven months in the service and a master sergeant at discharge, is an excellent pianist. Florence MacDonald, with years of experience in record retailing, has a wide general knowledge of music and is capable in the classics. Dorothy Waller attends to details or ordering and the perpetual inventory of records which brings the history of record sales up-to-the-minute, and also fills in on the sales floor when needed.

Recently this dealer devised a new signature cut for use in advertising also, and possibly on letterheads. The name Markham's is embellished with the G clef, which identifies it very definitely with music.

"We are rather proud of our used record sales volume, along with our first class lines," said Sanborn. "Other stores of any caliber, I have heard, feel it rather beneath their dignity, shall I say, to handle used records. We've done very well with them and we'll handle them as long as we can get them, especially with record retailing enjoying a tremendous boom right now."

Markham's get phone calls from men who use records in juke spots all over Erie and the immediate area. The seller offers huge lots of used records at rates from 7c to 10c. Markham's stacks these records indiscriminately in one spot and sells them for 20c each or six for \$1. The trade name on each record is crossed through with crayon, which lets the cashier know that regular, new stock is not being purchased.

Frequently, Sanborn says, a record fan will come in looking for an old favorite and it will not be stocked new. He will almost always take a look through the used stock and many times will find what he wants. He isn't allowed to play it. He buys

a "pig in a poke," as it were. But usually he is so pleased at finding what he wants that he'll take a long shot and select five more records, paying \$1 for the lot.

Sanborn estimates that about 10,000 used records were sold last year. Although the customer did not find what he wanted in a new record, Sanborn explains, he was pleased and it has been learned that he quite often returns, a satisfied customer, for further record purchases. Exterior identification of this record department is gained through an attractive, colored neon sign in the middle of the show window and a painted board sign which hangs just below the regular Markham sign, over the sidewalk.

\$100 A Month To Start

(Continued from page 28)

allowance time against months they anticipate will be slack or for seasonal slumps if such are characteristic of the business in which they are engaged.

Word of Warning

Veterans should also be warned that the use of fraud in getting benefits carries all the customary penalties for fraudulent acts. In addition, veterans may be deprived of all other benefits available to them.

Self-employed veterans receiving unemployment benefits should be prepared at all times to present intelligently kept books revealing all of the salient facts upon which their claims for such aid may be based.

Needless to say, no so-called self-employed veteran will be eligible for such assistance if he is holding down some form of employment elsewhere while conducting a business venture at the same time, any more than would a pretended job-seeker under similar conditions be entitled to unemployment allowances. He must be literally self-employed and such self-employment may neither be of a part-time character nor be a subterfuge to get allowances to which he is not entitled. Uncle knows all the dodges.

The veteran should also bear in mind that such allowances may be deducted from any future bonus or

adjusted compensation pay that may accrue to him by any act of Congress at some later date. It is not certain such an act will be passed; neither is it certain that unemployment payments will be deducted if such an act is passed. It is merely something that the veteran should keep in mind.

Claim Appeals

Where claims are denied, the veteran has recourse to appeal. If the claim has been denied by the local office he is entitled to a hearing before an impartial tribunal of the state agency. If adverse, this may again be appealed to the representative of the Administrator of Veterans Affairs, the Readjustment Allowance Agent. His decision also may be appealed to the Administrator of Veterans Affairs.

A veteran may not receive readjustment allowance for the same period that he is in receipt of subsistence allowance for education or training under Title II of the Act, or increased pension for vocational rehabilitation under Public Law No. 16 of the 78th Congress.

However, the veteran will not be ineligible by virtue of receiving any pension, compensation or retired pay paid by the Veterans Administration.

Veterans Administration officials urge eligible veterans to exercise extreme care in taking advantage of the readjustment allowance provisions. They wisely point out that many veterans are strongly tempted now to take advantage of the unemployment benefits, even though work is plentiful—if not always in the veteran's preferred lines—thus prematurely exhausting their claims which may be of more value to them at some later date. Veterans contemplating starting businesses in the future, but now unemployed job seekers might especially profit from this advice. That is, take work other than their first preference, rather than use up their readjustment credits.

The self-employed should guard their readjustment allowance time zealously. This time may be exhausted as easily by receiving a \$5.00 differential in a month for another month where net return is considerably less. Veterans might well consider the advisability of passing up months where amounts earned less than \$100 are slight to conserve their

electric APPLIANCE JOURNAL



The Cover

THE COVER: The above photograph illustrates the model method used by Westinghouse to display the equipment and wiring needed in a complete modern installation for Electrical Living, as drawn up by the Westinghouse Better Homes Department.

MARCH

1946

LOOK TO UNIVERSAL FOR THE

ONLY COMPLETE LINE OF HOME CLEANING EQUIPMENT



Today, Universal is the only manufacturer offering dealers a complete line of Home Cleaning and Floor Maintenance Equipment. Included are Universal's famous Tank Type Clean-Air Cleaner with the "Tattle-Tale" Light, Super-Value Brush Type Cleaners, Hand Cleaners, the sensationally new Sani-Tray Carpet Sweeper for occasional cleaning and the Floor Polisher.

This line spearheaded by America's top Tank Cleaner means greater profits through multiple sales. No other manufacturer can offer dealers such a big money-making future in Home Cleaning Equipment—for no other manufacturer offers this complete line. See your nearest Universal distributor today for full details on Universal's big "Clean-Up" Program for 1946.



UNIVERSAL

LANDERS, FRARY & CLARK • NEW BRITAIN, CONN.
Universal Electrical Appliances distributed in Canada exclusively by Northern Electric Company, Ltd.

LEADERSHIP THAT BUILDS YOUR DEALERSHIP!

How To Use . . .

DIRECT SALESMEN

By James Knowles

Doubtless in planning for the aggressive promotion of your electrical appliances you will include the services of men and women "bell pushers." There are some fundamentals which should be observed before sending out a group into the field. There are also important checks to be made from time to time.

In choosing men and women to represent your firm be sure to select the type of individual that would be a credit to any business. Pleasing personality is extremely important since the housewife will immediately be impressed favorably or otherwise. Dress, education, and gentleness are qualities important in selling oneself and one's firm. One should have a certain amount of dignity and pride.

There are types of individuals which would be no credit to any firm. They might even drive business away instead of bringing it in. Certainly some would not be conducive to the maintenance of the good will and reputation which you have established through the years.

Enthusiasm comes next in the essential qualities of direct selling. Even good sales tactics and thorough knowledge of salesmanship bog down helplessly with the lack of enthusiasm. The unimaginative fellow, who believes the only requirements for success in direct selling, is a stated number of calls each day is to be avoided. A representative must feel that he is an important part of your organization. He must treat the customers with the same courtesy that would be accorded him should he visit the store. He should not be like a clerk who, when a customer complains, say curtly, "Sorry, lady, I only work here." Instead of knowing why a thing is not so-and-so, or why the management has made such regulations, the clerk heaps coals on the fire by such curt remarks.

Your direct salesman should know

the basic fundamentals of good salesmanship not only to equip them for selling, but to instill confidence which is so necessary. Instruction in the proper approach, presentation of merchandise, selling high points, creating desire, obtaining action and actually closing the sale. If the person is anxious to learn and desires to make a success of selling, he can soon acquire the necessary basic factors.

One of the oldest ways to increase appliance business known to dealers is to use house-to-house canvassers. The mere fact that this is about the oldest speaks well for the method's efficiency — otherwise it wouldn't be the oldest and still in use, but would be a long-forgotten method that was tried and found wanting. We feel that this article will prove to be of great help to you in setting up and operating a sales campaign along these lines. As the author points out, you can't be too careful in your selection of men, as the right people can make or break the most carefully thought out effort you can possibly organize.

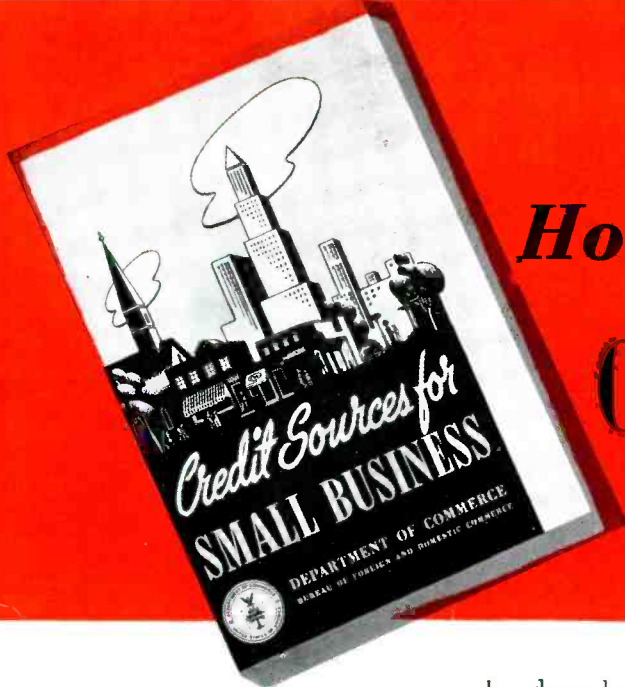
Initiative is another important characteristic contributing much in the actual production of sales. While knowledge of salesmanship is important, without initiative on the part of the salesmen, many sales will slip through one's fingers. Initiative is the power or ability to originate or to devise new methods and new approaches. Through initiative the salesman is able to go on to greater and greater volume and through "using his head" to actually represent your firm as you would want it. Knowledge of logical steps of a sale may bog down because that is theory, but initiative is able to take up there and go on to devising of a way

around each obstacle to thus gain the ultimate objective.

One's organizing ability plays no small part in the successful coverage of a territory. Time and territory are two important objectives in the salesman's program, that is, he is using his time in such a way as to properly cover his territory. Only through a well arranged schedule of territory coverage can he expect to adequately represent his firm in the field assigned to him. Without proper scheduling of calls and planning of periodical coverage of territory, the salesman is apt to bog down, miss appointments, never actually reach every possible prospective customer in his territory and hopelessly fail.

A further important factor in the selection of direct salesmen is to attempt to obtain those who will be permanent fixtures. No one will work as well, as consistently or as enthusiastically if he figures on being "in the racket" for just a few days and then move on. He may misrepresent his wares since he does not intend to call back on the customer. He may even go the limit to make a few ready sales in order to get ready spending money. Be sure your representative is looking for a permanent position. That will justify the time and expanse necessary to train the person and will result in much better good-will for your firm.

To be successful a direct salesman should fit into the firm, its program and plans. Not only should he be sold on the firm and be enthusiastic about his job, but he should be sold on your appliances. He must feel that he fits into your firm; he must be one of you; be on a par with the rest of the sales staff. No matter how good a salesman may be, unless he can enter into your employ with zest and go out "biting at the bit" he will not be the type of direct salesman you should have.



How To Solve Your CREDIT PROBLEMS

A number of careful surveys that have been taken during the last days of the war and continuing through to the present time indicate that dealers and servicemen, both newcomers and those long established in their businesses, are having an increasingly difficult time meeting their credit and capital needs. This is rendered all the more acute by the fact that very many of them really are not fully aware of the function of credit, how to use it, and how to go about getting it.

Every business at one time or another needs a greater amount of operating capital, or liquid assets than it possesses. At such a time there is only one real sound practical solution to the problem and that is credit. Many dealers seem to feel that borrowing money is an indication of an unsound business status, and therefore something to be avoided at all costs. However, this is not at all true. Modern business demands the occasional use, and in some cases the frequent use, of money that it doesn't have. Therefore, realizing this necessity, banks and various other types of business institutions invented the several types of credits that may be obtained today by smaller businessmen.

Of course, there are other ways of obtaining money. However, if you have ever tried to meet your needs for longterm funds from venture capital supplied by private individuals, you know just how difficult this can be. Local venture capital, upon which small businesses former-

ly depended for their long-term funds, has largely disappeared, or sought other channels. Some financial experts are of the opinion that this is due to our tax set-up today. They say that nowadays it is better for the individual with money to invest to put it into government securities and other bonds. The reason for this is that today the return on the original investment — after taxes have been taken out—does not

Now, as in the past, one of the most important problems to be faced by all dealer-servicemen is the determination of the amount of credit he will need, and will be able to extend. In this article we take up the sources of credit, and suggest several methods of handling the money when obtained, as well as give quite a few points of caution if credit is to be used to greatest advantage.

yield enough to make the great risk involved worthwhile.

In spite of the fact that many dealers and other types of small business men have had considerable trouble in borrowing from their local banks in the past, nevertheless your commercial bank still remains your best bet for loans.

However, before making any decision, you should first carefully analyze your own individual problem, and decide whether or not you actually *need* credit. The best way to get your bearings on your credit problems is to studiously think of all forms of credit as a sort of tool, such as an additional soldering iron or another display counter. In this way you can quickly determine whether or not you will be able to

use any additional credit EFFICIENTLY, or whether you had better hold off for awhile.

It is very poor economy to skimp on sufficient funds to run your business properly. Even the largest and wealthiest corporations in this country take out frequent loans in order to have sufficient operating capital at all times. In fact they **HAVE TO HAVE** borrowed funds in order to run efficiently. However, it all boils down to the fact that the trick is "EFFICIENCY."

Never hesitate to borrow money if it will enable you to run your business more efficiently. It is not wise to use too much of your own personal funds for operating, when borrowed funds are available. However, you must ascertain beforehand that you will be able to repay this money when your notes or other papers come due.

Here is an excellent working rule to tell you when you need additional credit: **YOU NEED MORE CREDIT WHEN YOU CAN USE IT TO CUT COSTS OR OTHERWISE INCREASE EFFICIENCY BY MORE THAN THE COSTS OF OBTAINING THE ADDITIONAL FUNDS.**

If you are thinking of using credit to expand your business you should not only bear this rule in mind, but should also avoid getting out of line with your ratio of fixed assets to inventory.

Notice that the above rule says nothing about the rate of interest you should pay. This brings up our next important consideration:

What Should Credit Cost?

It is generally conceded that radio dealers and servicemen's operations

(Continued on page 42)

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IN KITCHEN SINK SALES



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● Lifetime Stainless STEEL TOPS

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(Continued from page 40)

come under the heading of "small businesses," and therefore this means that you are usually engaged in active competition with other concerns of equal or even greater size than your own. This competition not only covers all phases of your business operations, but even extends to the obtaining of necessary credit. This immediately leads to a second rule: **REMEMBER THAT COMPETITION FOR CREDIT IS JUST AS VITAL TO THE FUTURE OF YOUR BUSINESS AS ANY OTHER ASPECT OF COMPETITION, AND THAT (OTHER THINGS BEING EQUAL) THE COMPANY THAT GETS THE CREDIT IT NEEDS AT THE LEAST EXPENSE—WINS.**

Therefore, although it may be true that you will be able to operate more efficiently with expensive credit than with no credit at all, if you want to win out competitively you must pay close attention to the actual costs involved in obtaining your credit.

It would be a very difficult thing to make an arbitrary ruling as to what exactly credit should cost. This is because interest ranges from as little as 1% per annum (from large commercial paper houses catering exclusively to large concerns) all the way up to 42% for private loan corporations.

In order to help make sure that you are getting the best terms that you can get you should systematically compare before you jump. Use the same procedure you would if you were after a printing job, or some other article or merchandise. However—a note of caution is necessary at this point. Extreme care should be taken not to offend your regular sources of credit if you have any. After all, they are under no obligation or legal binding to loan money to you.

In comparing prices, always reduce each to a per cent per annum effective interest rate on the average amount of the loan. There are many different ways of quoting interest; the situation is further complicated by investigation charges, minimum deposit balance requirements, service charges, collection charges or delinquent accounts, and the like. The one sure way to make valid comparisons is to reduce the total credit charge to the basis of a per cent in-

terest rate per annum on the *average available unpaid balance.*

For example, if you borrow \$1,000 for 1 year at a stated rate of 6 per cent, with interest (really a discount) amounting to \$60 deducted in advance, and you are required to maintain an average deposit balance of 20 per cent, or \$200, you are paying \$60 for the use of \$740 for 1 year—an effective rate of 8.11 per cent per annum. Or suppose you borrow \$1,200 for 1 year at a stated rate of 6 per cent, discounted in advance, and you agree to pay back the principal in \$100 monthly installments. The discount amounts to .06 times \$1,200, or \$72. The amount of money you have available from the loan during the first month is \$1,200 minus \$72, or \$1,128. During the



This article was adapted for you from material supplied by the Department of Commerce (seal above.)

second month it is \$1,128 minus \$100, or \$1,028; and so on. The average amount of money you have available from the loan during the year is therefore \$1,128 plus \$1,028 plus \$928 plus \$828 plus \$728 plus \$628 plus \$528 plus \$428 plus \$328 plus \$228 plus \$128 plus \$28, all divided by 12, or \$578. (Another simpler way to get the available average amount on a constantly amortized loan of this type is to take the average of the balance during the first month and the balance during the final month; in this case, \$1,128 plus \$28 equals \$1,156, divided by 2 equals \$578.) The effective interest rate on your available unpaid balance is \$72 divided by \$578 or 12.46 per cent per annum.

When all is said and done your private commercial bank is still your best source for business credit. Small companies like dealers and servicemen have even greater reason to turn to their banks for credit than do larger firms, since the latter have come more and more to depend on

internal financing and the issuance of stocks and securities for their credit needs. Naturally, it is very important that you choose your banker carefully. He must be a man of character and with the courage of his convictions. If he is progressive, he will recognize current business trends, and will be willing to take the necessary risk involved in any money transaction where credit is extended to a small business.

Generally speaking your smaller local bank will prove to be much more receptive to your problem than will the large business bank in the nearby metropolis. On the other hand larger banks frequently charge lower rates than the smaller ones do. The only thing to do in this case is to compare them carefully, and then make your decision.

Once you have chosen your banker, consult with him frequently, show him around, make friends with him, ask his advice, and don't hesitate to call his attention to even your critical financial problems. This data will be quite safe with him, because bankers have the same code of ethics that doctors, lawyers, and other professional men have: they do not betray confidences.

If possible you should try to establish a **LINE OF CREDIT** at your bank. This means an advance guarantee from your bank that they will lend you money up to a certain established maximum. This is more flexible than the usual type of short term loan, in that it makes funds available in whatever amounts are needed without any delay at all. It acts in the same manner as actual cash in your bank account.

One note of caution at this point. A line of credit is a great thing to have and not too easy to get, so don't abuse it. Don't use it to remodel your store, when it was originally granted for seasonal purposes. Short term money should never be used for this purpose anyway. Keep it working and turning over, or your banker will soon tire of the arrangement when he sees this money lying idle.

Whether you need it at the moment or not, it might be an excellent idea to discuss this matter with your banker so that when and if the time comes you will know just where you stand on this important matter.

NATIONAL
COVERAGE
FROM
COAST TO COAST

ELECTRIC APPLIANCE JOURNAL

N E W S

LAST MINUTE NEWS
ABOUT PEOPLE
AND EVENTS
IN THE INDUSTRY

Volume 27

MARCH, 1946

Number 10

Van Wagoner Starts Large Training Program

An international program to instruct and train distributors and their representatives in the operation and servicing of products of the Heating and Appliance Division of Evans Products Co., Detroit, is being or-



C. C. VAN WAGONER

ganized by C. C. Van Wagoner, newly appointed Service Manager. Appointment of Van Wagoner is announced by R. B. Evans, vice president in charge of the Heating and Appliance Division.

Van Wagoner's program includes the training of dealers' service departments throughout the United States, Canada and Mexico. Westinghouse Electric Supply Company will handle distribution of the Evans oil-burning home heaters in the United States and Mexico, and Fairbanks Morse Co., Ltd., will handle distribution in Canada. Other products of the Heating and Appliance Division includes water heaters, furnaces, floor furnaces and the Waste-Master garbage disposal unit.

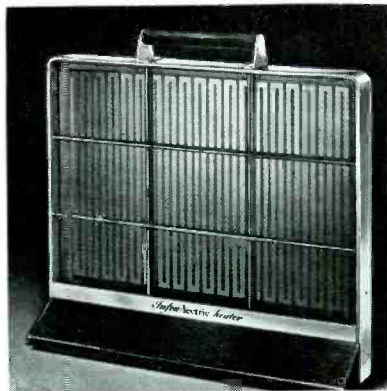
Prior to joining Evans Products Co., Van Wagoner had 15 years experience with the service departments of Montgomery Ward & Company and Crowley Milner & Company.

Infraelectric Heater Works On "New" Principle

The "Infraelectric" heater—a new type of portable radiant heater de-

veloped by the Radiant Heater Corporation, of New York City—introduces a completely new principle in heating science as well as design. Where conventional heaters first warm the air in the room in order to warm its occupants, the new "Infraelectric" heater heats the occupants in the room by means of invisible radiant rays. These rays actually heat things, objects and persons from the inside out. It utilizes the same principle that makes Sun Valley such a unique place—where one can play in the snow in a bathing suit and be perfectly comfortable.

The "Infraelectric" doesn't even look like any home heater you have ever seen before. It consists of two glass plates fitted into an upright stand. And when it is in operation there is no flame. No glow, no



NEW HEATER

fumes—nothing to indicate that the heater is on—yet a person standing clear across the room from it will feel comfortably warm. Its heat penetrates even through drafts.

It is one of the safest heaters ever designed. Paper or fabrics can be placed against it when the heater is in operation without being burned or scorched. Persons accidentally touching it will not be seared and if the heater is knocked over by a child or a romping dog it will not burn or scorch the rug or floor. Wet bodies

brushing against it will not receive shock.

Another important feature of the new "Infraelectric" heater is its wide range adaptability—it can be connected to any voltage, AC or DC and to any circuit of fifteen or more amperes.

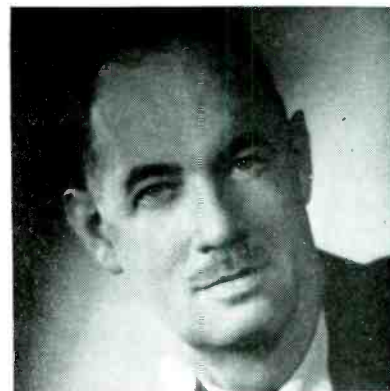
Its electric consumption is about 1,000 watts per hour — far more economical than most of the conventional type heaters. Additional features of the heater are that it will not deoxidize the air in the room nor will it ignite inflammable gases or fumes. Exhaustive tests have been made to prove the heater's toughness and durability. Hammer blows will not break its glass plates and water splashed upon it fails to affect its operation.

J. H. Emery New Quality District Manager

Robert & Mander Stove Company, Hatboro, Pa., has announced the appointment of John H. Emery as District Manager for Metropolitan and New York States Areas.

R. S. Agee, Vice President of Roberts & Mander Stove Company also announced the opening of a new factory branch office and showroom at 1 Park Avenue, New York City, where Mr. Emery will make his headquarters. Modern kitchens and Qual-

(Continued on next page)



J. H. EMERY

ity Ranges will be on display in the showroom, which also serve as a training center for utility and dealer sales and service personnel. Sales of Quality products for new construction and apartment house modernization in the Metropolitan area will also be directed by Mr. Emery from this new branch office.

Mr. Emery, a graduate of the University of Michigan, was in the U. S. Naval Reserve during World War I. He was formerly a partner in the Gale Engineering Company, serving the New York Metropolitan and Northern New Jersey areas since 1939. Prior to that time he was Manager of the New York Branch of the Sullivan Machinery Company. His past duties have given him wide experience in marketing, merchandising and servicing industrial and domestic equipment.

Eureka Vacuum Changes Name To "Eureka Williams Corp."

Stockholders of the Eureka Vacuum Cleaner Company approved the change of the company's corporate name to the "Eureka Williams Corporation" at the annual meeting, H. W. Burritt, president, has announced.

Re-election of the company's directors and officers was also voted, he reported.

"The new name more properly represents the combined operations of the company's Eureka and Williams divisions which were established following the merger of Williams Oil-O-Matic Heating Corporation with Eureka last year," Burritt declared.

George T. Stevens, vice president, is manager of the Eureka division, and W. A. Matheson, vice president, is manager of the Williams division.

Production of new products is being accelerated at the company's plants at Detroit and in Bloomington, Ill., Burritt said, pointing out that output will soon surpass the prewar rate, assuming adequate flow of materials.

"Introduction of our new complete home cleaning system is meeting with a record public and trade response," Burritt said, "and we are stepping up shipments as quickly as possible to meet the demand all over the country."

Noma Buys Estate

Noma Electric Corporation, producer of Christmas tree lights and novelty lighting effects, has purchased the Estate Stove Company, Hamilton, Ohio, one of the country's best known manufacturers of gas and electric cooking ranges and one of Ohio's oldest industries, it was announced recently by Henri Sadacca, president.

Sadacca announced that Noma paid \$2,000,000 cash and 35,000 shares of Noma common stock in exchange for all common and preferred shares of Estate stock. David Bertrand, Albert and Lucian Kahn, descendants of the founders of Estate Stove Company and the four principal stockholders, will obtain the majority of the Noma stock and will maintain a proprietary interest in the company.

"David Kahn, president and general manager of Estate since 1924, will continue in office, as will all other officers of the company. No changes are planned either in the management or in the policies which have made Estate Stove one of America's leading names in stove manufacture."

Noma's president announced that a greatly increased merchandising and production program was expected to increase the sales of Estate Stove products to approximately \$12,000,000, an almost 100 per cent increase over the company's previous peak sales record.

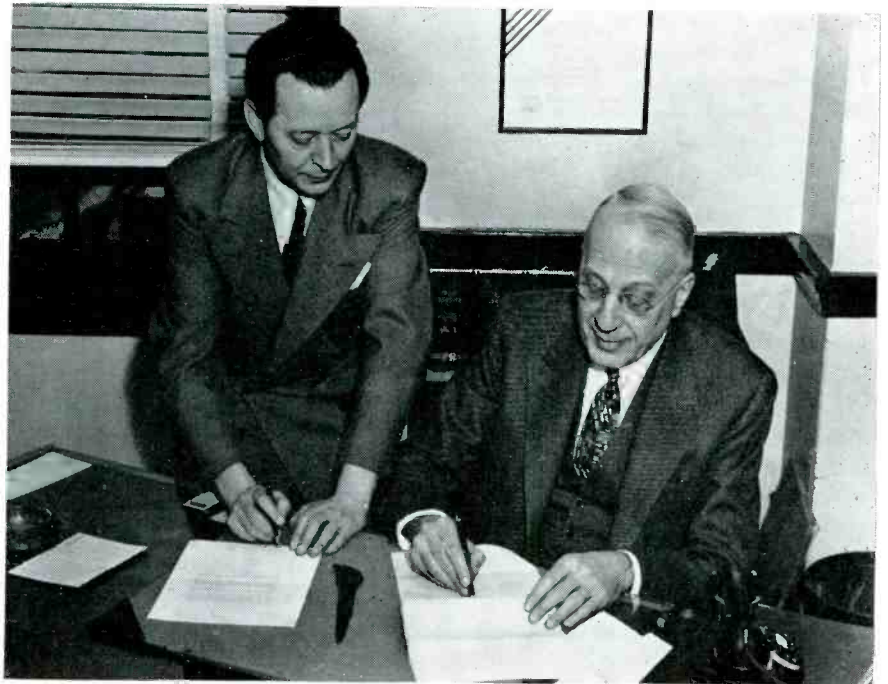
Noma Electric Corporation also recently purchased in Cincinnati, through its wholly-owned subsidiary, Triumph Industries, Inc., the K-D Lamp Company, one of the country's leading manufacturers of accessories.

Meier Develops New Heavy Cooling Unit

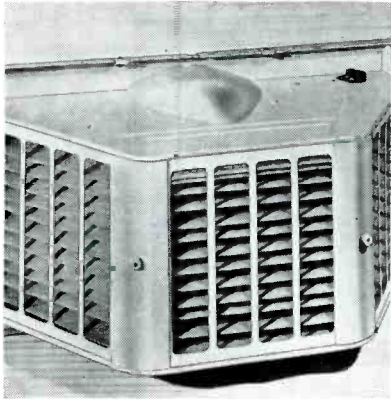
An entirely new idea in cooling and ventilating units for homes, offices, hotels, apartments, hospitals and other public buildings and institutions has just been announced by the Meier Electric and Machine Company of Indianapolis.

It is called the Meier *Nu-air* Filt-R-Fan. This efficient, low-cost filtered-air unit can be easily adjusted for use in any standard size window frame in less than five minutes. It requires no special skill or tools and takes up no extra space in the room, as it rests securely on the window ledge, plugs into any ordinary light socket and turns on or off like an electric light.

The *Nu-air* Filt-R-Fan is designed to create a draftless circulation of clean, fresh filtered-air throughout the room summer or winter. It is equipped with three removable filters that are said to remove dirt, soot and many irritating impurities from the incoming air. Actual tests show, according to the makers, that, in many cases, these filters remove sufficient pollen from the air to bring



HENRY SADACCA (standing) and DAVID KAHN, AT THE TIME OF THE SALE.



relief and comfort to hayfever sufferers. The filters can be easily removed by anyone by simply loosening two thumb screws on the front of the case—and as easily replaced when renewal is necessary. This requires no special service on the part of the dealer, but offers him an opportunity to develop a desirable replacement business by simply carrying a reasonable stock of the filters.

The case, enclosing motor, fan and filters is a compact unit, made of steel in modern design and finished in practically indestructible white enamel—baked on by infra-red rays.

The motor is the 3-speed type and the fan is of the same quality and efficiency that has won for the Meier company an enviable reputation for dependable quality in industrial ventilating equipment.

New Musical Door Knocker

Combining the architectural beauty of a solid brass door knocker with the tonal beauty of door chimes, the new AuthOtone "Suburban" chime is an extremely simple, *mechanically* operated unit that mounts right on the front door, with no added expense for wiring or push buttons.

One dulcet tone is sounded when the knocker is raised, and a second tone follows when the knocker is released. Attractive small chime box mounts on inside of door. Notes are clear, and can be heard easily throughout the average home or apartment. Tamperproof (cannot be

removed from outside of door), it is strongly built to withstand severe abuse.

Mounting is easy and quick; requires only a hand drill and screw driver. Installation savings are considerable on multiple dwellings. For any door from ½ to 2 in. thick, with special adaptors available for thicker doors. Knocker is polished brass. Chime box is ivory.

Lighting Industry's Leaders Plan Exposition Program

A full parade of What's New in Lighting plus a Conference Program studded with many of Lighting Industry's outstanding authorities on engineering, contracting, installation, merchandising and selling is assured visitors to the International Lighting Exposition, next April 25-30, at the Stevens Hotel.

Conference Program Announced

With the announcement of a complete sellout of Exposition space, assuring visitors of a complete viewing of What's New in Lighting, as portrayed by some 70 producers of commercial and industrial lighting equipment, lamps and allied products, comes also the announcement by Rudolph W. Staud, Program Chairman of the complete program of subjects and speakers for the conference sessions. These conferences are to be held the mornings of Friday, Saturday, Monday and Tuesday, April 26, 27, 29, 30. Exposition will be open 12 noon to 6:00 p.m., Friday, Saturday, Sunday, Monday and Tuesday, April 26-30, with a preview for Electrical Wholesalers on Thursday afternoon, April 25. The program, as released by the Committee, follows:

Thursday, April 25, 1946—12:00 noon to 6:00 p.m.

Exposition open to members of the National Electrical Wholesalers' Association and their employees.

Friday, April 26, 1946—9:30 a.m. to 12:30 p.m.

FORUM ON NEW LIGHTING TRENDS AND METHODS
WHAT'S AHEAD IN INDUSTRIAL AND COMMERCIAL LIGHTING—S. B. Williams, Editor, Electrical World.

SOME FUNDAMENTALS OF GOOD LIGHTING—Ward Harrison, Director, Engineering Division General Electric Company, Cleveland

LIGHTING RESEARCH AND THE FUTURE—Samuel G. Hibben, Director of Applied Lighting, West-

inghouse Electric Corp., Bloomfield

Friday, April 26, 1946—12 noon to 6:00 p.m.

Exhibition open to invited guests.

Saturday, April 27, 1946—9:30 a.m. to 12:30 p.m.

LIGHTING SALES FORUM FOR ELECTRICAL CONTRACTORS
A PROGRAM FOR DEVELOPING MORE LIGHTING SALES—W. H. Robinson, Jr., Manager, Advertising Division, Lamp Department, General Electric Company, Cleveland

FLUORESCENT LIGHTING MAINTENANCE AS A BASIS FOR INCREASING SALES—Harris Reinhardt, Manager, Commercial Engineering Dept., Sylvania Electric Products, Inc., Salem, Massachusetts

PRACTICAL SALES METHODS FOR THE ELECTRICAL CONTRACTOR—S. C. Sachs, S. C. Sachs Co., St. Louis

Saturday, April 27, 1946—12 noon to 6:00 p.m.

Exhibition open to invited guests.

Sunday, April 28, 1946—12 noon to 6:00 p.m.

Exhibition open to invited guests.

Monday, April 29, 1946—9:30 a.m. to 12:30 p.m.

LIGHTING INDUSTRY ROUND TABLE

WHAT NEW METHODS AND MATERIALS FOR TECHNICAL AND SALES TRAINING ARE NOW OR WILL BE AVAILABLE
New market development plans by Manufacturer, Utility, Wholesaler, Contractor and Electric Associations.

PARTICIPANTS

S. R. Naysmith, Chairman, Industrial and Commercial Lighting Equipment Section, National Electrical Manufacturers' Association.

F. M. Spaugh, Chairman, Floodlighting Section, National Electrical Manufacturers' Association.

A. F. Dickerson, Chairman, Street and Traffic Safety Lighting Bureau, National Electrical Manufacturers' Association.

A. F. Wakefield, President, Illuminating Engineering Society.

Henry Steinmetz, Chairman, Better Light Better Sight Bureau.

J. S. Schuchert, Chairman, Sales Personnel Committee, Edison Elec. Institute.

G. B. Roscoe, Director of Public Relations, National Electrical Contractors' Association.

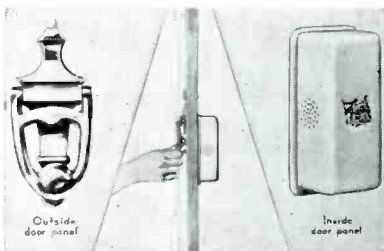
C. G. Pyle, Managing Director, National Electrical Wholesalers' Association.

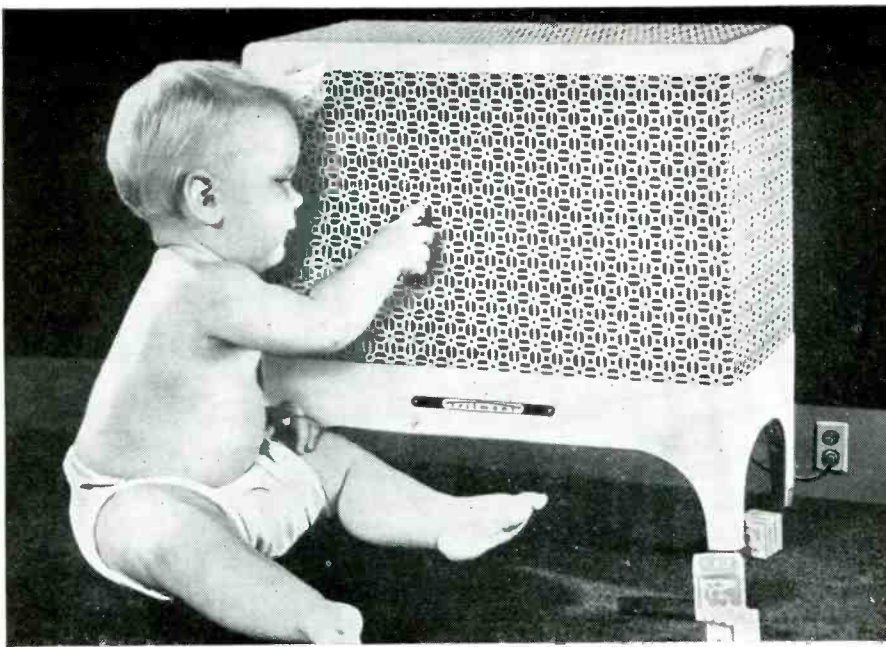
Harold H. Green, Advertising Division, Lamp Department, General Electric Company, Cleveland.

D. W. Atwater, Manager, Commercial Engineering Dept., Westinghouse Electric Corp., Bloomfield, New Jersey.

Garlan Morse, Lamp Merchandise

(Continued on page 46)





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24th & WALNUT STS • PHILADELPHIA 3, PA.

(Continued from page 45)

Manager, Sylvania Electric Products Inc., Salem, Massachusetts.

Monday, April 29, 1946—12 noon to 6:00 p.m.

Exhibition open to invited guests.

Monday Evening—Annual President's Night and Electrical Industry Dinner, Chicago Section, Illuminating Engineering Society—Stevens Hotel

Tuesday, April 30, 1946—9:30 a.m. to 12:30 p.m.

FORUM ON LIGHTING SERVICE AND LIGHTING APPLICATION

I. L. Illing, Assistant Sales Manager, Wisconsin Electric Power Company, Milwaukee.

H. A. Stroud, Sales Promotion Manager, Monongahela Power Co.

R. W. Butts, Lighting Director, The Ohio Public Service Company, Elyria, Ohio.

HOW MANUFACTURERS' DATA SHEETS AND SPECIFICATION SHEETS MAY BE MORE EFFECTIVELY USED IN A UTILITY LIGHTING PROGRAM

A. A. Brainerd, Illuminating Engineer, Philadelphia Electric Company, Philadelphia, Pa.

James J. Oberhausen, Illuminating Engineer, Commonwealth Edison Company, Chicago, Illinois.

H. P. Steele, Vice President, Benjamin Electric Mfg. Company, Des Plaines, Illinois.

W. P. Lowell, Jr., Chief Engineer, Lighting Fixture Division, Sylvania Electric Products, Inc., Ipswich, Massachusetts.

THE TRENDS IN LIGHTING EQUIPMENT DESIGN AND LIGHTING PRACTICE AS REVEALED BY THE EXHIBITS AT THE INTERNATIONAL LIGHTING EXPOSITION

Marshall N. Waterman, Electrical Testing Laboratories, Inc., New York, N. Y.

B. J. Jensen, Assistant General Lighting Representative, Public Service Electric and Gas Company, Newark, New Jersey.

Tuesday, April 30, 1946—12 noon to 6:00 p.m.

Exhibition open to invited guests.

Early Hotel and Train Reservations Urged

With a sellout Exposition at which over 70 Exhibitors will be represented and with a full program of conference meetings, all indications point to an Exposition attendance of over ten thousand. The hotel and transportation situation in Chicago, while not as acute as in recent months, is such that the Exposition's General Chairman, E. C. Huerkamp, is warning all those intending to visit the Exposition to avoid disappointment by making their Hotel and Train Reservations as far in advance as possible. Further information and copies of program may be obtained by writing A. B. Coffman, Exposition Manager, 111 W. Jackson Boulevard, Chicago, Illinois.

Master Servicing

A SECTION OF RADIO & TELEVISION JOURNAL

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Ohmmeter

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Television

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MARCH
1946

Masco MA 50 Amplifier 50 Watts of Truly rated power output for big PA systems

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How To Use The OHMMETER

By Iz Zam

Technical Editor

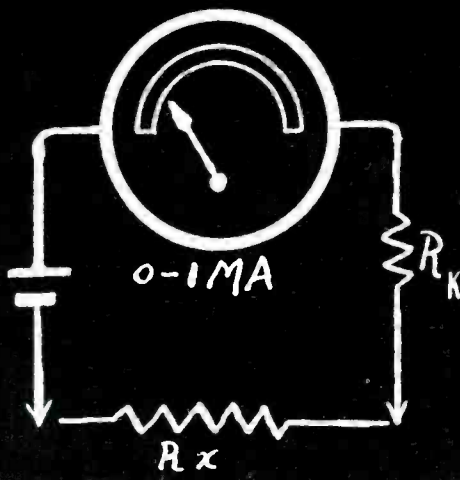


Fig. 1. Above is illustrated the basic ohmmeter circuit which is in most general use for circuit testing and resistance measurement.

The necessity of an ohmmeter in radio service work is well known, and the relative merits of the various types on the pre-war market are told in the manufacturers' advertisements. However, in view of the fact that in many urban and rural centers the supply of electrical measurement devices still has not caught up with demand, and that therefore many servicemen must make their instruments do for a little while longer, it is felt that a short discussion of the nature, shortcomings and potentialities of the indispensable ohmmeter will be helpful.

The simplest type of direct-reading ohmmeter—the one in most general use for radio-circuit testing and resistance measurement—consists of a direct-current milliammeter, a known resistance, and one or more dry batteries, all connected in series, as shown in Figure (1).

The series resistor, R_k , is made of such a value that, with the ohmmeter leads shorted to each other, the voltage applied by the dry cells will send a current through the meter equivalent to cause full-scale deflection. It follows, then, that any unknown resistance introduced across the leads, will cause the meter to read less than full scale, the amount less being proportional to the amount of the unknown resistance.

The "heart" of the ohmmeter (as of the direct-reading voltmeter and ammeter) is the meter coil or the meter movement. Conventionally its relative merit is expressed as "deflection sensitivity," that is, the amount of current needed to cause the meter to deflect to its full scale

without, of course, its burning up. Thus meters are said to contain 1.5 milliamperes - movements, 1.0 mil movements, 0.10 mil movements, and so on, in order of increasing sensitivity.

When the manufacturer doesn't rate his product, he expresses the same relationship in units of ohms per volt. Thus a 1,000 ohms per voltmeter is, by simple Ohm's Law, a 1 milliamperes movement.

An additional, and from the repairman's viewpoint, equally important relationship is what might be called the "deflection recognizability"—that is, the least value of current needed by the meter coil to cause an easily recognizable deflection of the meter needle. This value is ascertained by reading to $1\frac{1}{2}$ scale divisions on the lowest mil scale of the ohmmeter (combination ohmmeter-milliammeter) or by extending the highest ohms scale division line into the mil scale. On a typical portable ohmmeter, using a Weston type No. 301, 0 to 1 mil movement, the deflection recognizability comes out to be very close to 0.03 mils. This determination may be checked or, for that matter, originally arrived at,

by using Ohm's Law, as in the following example:

Given the Weston type 301 movement, a self-contained applied e.m.f. of 1.5 volts, and a known resistance (R_k) of 1,500 ohms, the highest unknown resistance that can be directly measured is seen on the scale to be 50,000 ohms. Neglecting the very small resistance of the meter coil itself (which is usually in the order of 1 to 2 ohms) this means that 1.5 volts is being applied across a total resistance of 1,500 plus 50,000 equal 51,500 ohms—a current of 0.03 milliamperes is just enough to cause a recognizable reading on the meter.

Since radio circuits use resistor values up to about 10 megohms, the desirability of increasing the meter's range always exists. This can be achieved by increasing the applied voltage and the series known resistor (R_k) by the same multiplying factor. (The reason why R_k must also be increased is to retain the original calibration of the meter scale.)

For illustration, suppose it is desired to increase the range of the meter 15 times. Then R_k is increased to 1,500 times 15 equal to 22,500 ohms; the applied voltage is raised

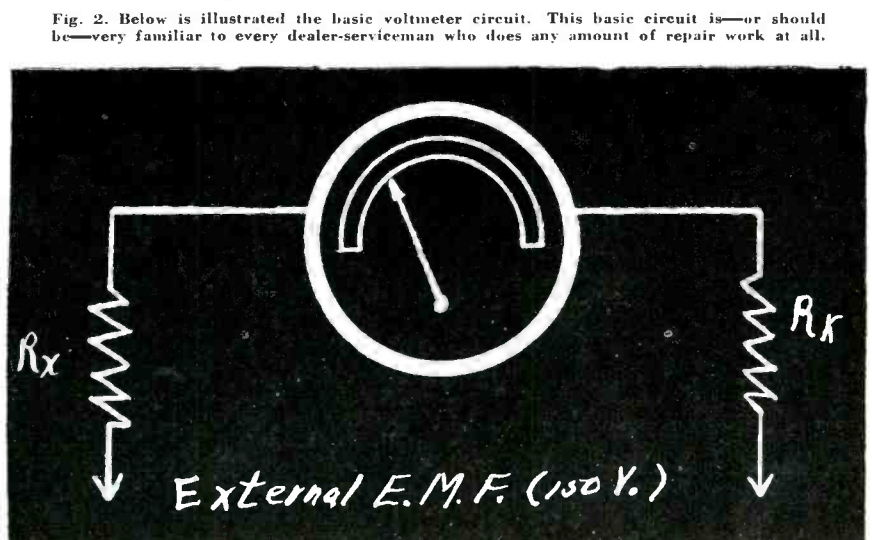


Fig. 2. Below is illustrated the basic voltmeter circuit. This basic circuit is—or should be—very familiar to every dealer-serviceman who does any amount of repair work at all.

to 1.5 times 15 equal to 22.5 volts, and the scale indication is increased to 15 times 50,000 equal to 750,000 ohms, the new maximum range of the meter. That a 22.5 volt dry battery will serve the purpose can be checked by dividing the total resistance (22,500 plus 750,000) equal to 772,500 ohms into that voltage, which gives again 0.03 milliamperes, the current needed to produce a recognizable deflection of the meter needle.

Using the same original meter movement, to increase the original range by a factor of 30, a 45 volt battery would be needed, the series known resistor would have to be 45,000 ohms, and the maximum range would now become 1.5 megohms.

As we try to increase the range of the meter still further, the bulkiness of the required battery becomes an objectionable feature. Thus a meter movement of greater sensitivity can be appreciated.

For example, a meter coil having a deflection sensitivity of 0.10 milliamperes (that is, 0.10 milliamperes for full scale deflection) is ten times as sensitive as the one described in the above calculations. (It would be designated as a 10,000 ohms per volt meter by the manufacturer.) The repairman can see that in using such a movement in conjunction with the above method to increase the range, a 45 volt battery would be adequate to effect a maximum range of more than ten megohms. The "deflection recognizability" in this case would be a current value of only 0.003 milliamperes.

Lacking such a sensitive meter movement, however, and still desiring to overcome the need for a large battery, the serviceman yet has another simple and accurate method for determining high values of unknown resistance. This is known as the voltmeter method.

The resistance of the voltmeter must be known, and can be ascertained from the manufacturer or by measurement with an ohmmeter. A typical voltmeter has a series resistor of 100,000 ohms and a full-scale reading of 150 volts. That is, when an external e.m.f. of 150 volts is applied across the meter leads, the needle reads a full-scale deflection of 150 volts.

Should an unknown resistance be

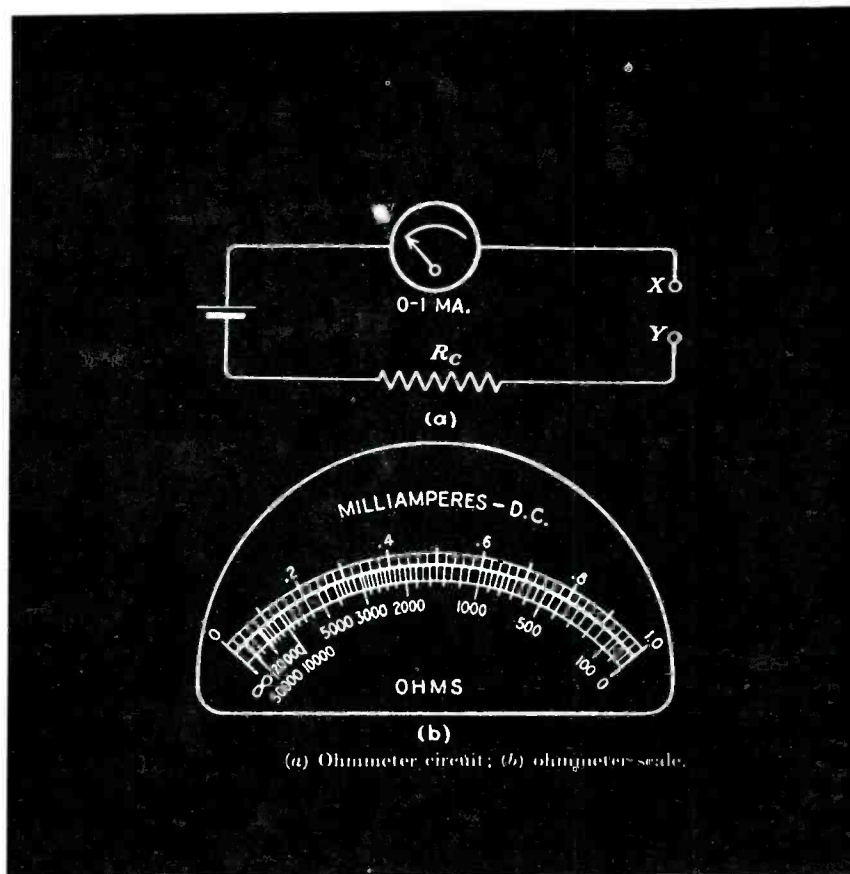


FIG. 3.—TYPICAL OHMMETER DIAL

connected in series with the meter and then the leads applied across an e.m.f. of 150 volts, owing to the IR drop across the unknown resistor, the value read on the voltmeter scale will obviously be less than 150 volts. Computation by Ohm's Law easily gives the value of the unknown resistance.

For example, assume that the above conditions are complied with, and the voltmeter now reads a value of 125 volts. This means that the known 100,000 ohm resistor is dropping 125 volts and the unknown resistor is dropping 25 volts. The current through the 100,000 ohm resistor can be determined by and since this whole arrangement is a series of one, 1.25 milliamperes is also the value of the current through the unknown resistor. And since we now know the voltage across the unknown resistor and the current through it, Ohm's Law gives us the value of the resistor. Thus:

A condensation of the above steps permits the calculation of the unknown resistance to be arrived at in one computation. The equation expressing this is:

where R_x stands for the value of the

unknown resistance, R_m is the value of the meter (that is, of the series multiplier), E_1 is the externally applied voltage, and E_2 is the voltmeter reading (that is, the IR drop across the known series multiplier).

Substituting for the case cited above, we get:

Considering that the voltmeter can be accurately read to a lowest reading of 1 volt, simple calculation shows that this voltmeter method can be employed to read resistances of values up to 14.9 megohms.

It probably has occurred to the reader that the voltmeter method and the ohmmeter method herein described are essentially interrelated. Since an external source of about 150 volts is not always easily available, and since the ohmmeter method achieves relatively greater portability and permanence, the ohmmeter method was discussed first. Which method to use is a matter of expedience for the serviceman to decide.

In conclusion it should be stated that, reliable and proven as these methods are, they are no substitutes for the many excellent measurement instruments that will soon be back on the market again.

BOOKS

What Radar Is and How It Works; by Orrin E. Dunlap, Jr., Harper & Brothers, N. Y., 208 pp. \$2.50.

It would be hard to gainsay that there is hardly an adult living today who has not heard of the magic word "radar." But it has remained for Mr. Dunlap, who authored such well-written books as *The Story of Radio*, *Marconi: The Man and His Wireless*, and *The Future of Television*, to present the first popularly written story of this new miracle of science.

When, a few days after Pearl Harbor, it was announced in the press that Joseph L. Lockard, a Signal Corps sergeant, had discovered "what he thought was a large flight of planes slightly east of Oahu at a distance of 130 miles," the first inkling of radar's existence was made. Ever since, there has taken place a deluge of reports, "disclosures" and "eye-witness" accounts, some reliable, some fantastic,—all baffling to the average reader. The importance of this latest volume is directly due to the fact that the author has plowed through the masses of details to the core of the story and of the nature of radar.

The book is therefore at once a history and a technical explanation of the subject, comprehensive, painstaking, yet alive to the spirit of the radar adventure.

It traces the history of radar—the art of radio detection and ranging—from the early reflected-wave experiments of Hertz and Marconi right up through the application of the radio "echo" to push-button warfare. It explains the workings and manifold functions of radar in 27 pages of questions and answers, in language

lucid enough for the lay reader. And then it looks ahead to radar's bright future in peacetime applications.

"Radar is detecting and ranging by radio. Ra-radio; d-detection or direction-finding; a-and;r-ranging. There you have the make-up of the word r-a-d-a-r. . . . When a radio pulse projected into space strikes an object in its path it returns as an



ORRIN DUNLAP

echo within a fraction of a second, thereby detecting the presence of objects, determining their direction and range, also identifying their character, whether ship or submarine, airplane or blimp, island or buoy. . . ."

In 1886 Hertz produced electromagnetic waves and showed they had quasi-optical properties, that is, that they could be reflected from plane and curve metal surfaces in accordance with the same laws that govern light waves; and he calculated the velocity of radio waves, showing they traveled at the speed of light. Tesla theoretically defined light as a sound wave in the ether, saying that the shorter the radio waves, the more penetrative they are. In 1902, Sir Oliver Heaviside accounted for the ease with which radio waves reflect-

edly hop and skip around the globe by positing the radio "ceiling," "roof" or "mirror."

"The next step was to capture the echo and make practical use of the reflected waves." Karl F. Braun took the cathode rays used by Sir William Crookes and Roentgen and harnessed an electron gun, deflecting plates, and a fluorescent screen to trace patterns, thus enabling the examination of fluctuating voltages and currents even of extremely high frequency.

The chapter on "How Radar Works" is an admirable piece of explanation. Precise terminology and many diagrammatic illustrations give the reader the heart of the majority of radar systems.

"Most radar units consist of four basic elements—a microwave transmitter, a sensitive receiver, a cathode-ray tube indicator, and a directive antenna system—all working in exact synchroization." One system generates a series of high-powered radio pulses of short duration which, when they strike an object, are reflected back to the receiver. "The receiver picks up the returning signals and impresses them on the cathode-ray tube known as the scope. At the same instant that the pulses leave the transmitter the controlled beam of the C-R tube starts to trace a horizontal line across the calibrating view chart on the face of the scope." The reflected ray produces a "pip" in the tracing line. "The presence of a pip anywhere on the scope indicates the object detected; the position of the pip gives the exact distance, or range, of the object."

How Frequency Modulation is used in conjunction with radar systems; how a circular map-type of cathode-ray tube is integrated into the radar systems; How identification of friend or foe is accomplished, how long range navigation is achieved—all by radar; what is the magnetron; what is the Doppler effect as used in radar;—these, and a host of other important questions, ably clarified, with care taken to point out not only what radar can do, but also what it cannot do.

The book ends with a helpful glossary of terms most common in radar, and a complete bibliography of the subject for suggested reading.



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ANOTHER REASON WHY IT PAYS TO QUALIFY AS A RAYTHEON BONDED ELECTRONIC TECHNICIAN

Transmission Lines in F. M. & Television

The purpose of transmission lines is to achieve, with a minimum of loss, the transfer of power from a source to the circuit in which the power is to be usefully expended. It is well known that in radio transmitter systems every wire carrying r-f currents tends to emit electromagnetic waves, and that therefore special care in the construction of transmission lines is necessary in order to reduce objectionable radiation to a minimum and to bring as much as possible of the energy to the load. Equal care is needed when considering transmission lines for FM and Television receivers. This is true not only because strong signals are wanted at the primary of the antenna transformer, but also because the principal problem in FM and Television lies in attenuating or avoiding reflected signals coming from proximate buildings or trees and from within the antenna system itself.

As has been discussed in a previous article, if the reflected signal is separated from the direct-ray (or from the "wanted" signal, considering the reflection is the fault of the transmission line) by an appreciable time delay, then the result is a "double" or "ghost" image. If this

In view of the fact that one of the most important fields of the future for both dealers and progressive servicemen will be FM and television, we bring you this article on the theory of transmission lines. Several surveys taken during the past few months have proved beyond the slightest shadow of doubt that the average serviceman does not know enough about this important phase of his business. Engineers all over the country also point out that he will have to know both theory and actual practise thoroughly before he will be able to take advantage of this opportunity for expansion and profits.

time delay is reduced but not completely eliminated, i.e., the reflected and wanted signals are almost coincident, then no ghost image will result, but an indistinctness in the image will be discernible due to the impairment of the fineness of detail. Investigation has shown that the loss of fine image detail from this cause is equivalent to the loss caused by inadequate high-frequency response in the video amplifiers.

From the fore-going facts alone, it is obvious why the conventional wire-and-lead-in type of receiver antenna system is useless for FM and Television receivers. It should be noted, however, that the proper design and careful loading of such a system *could* make it satisfactory for *one channel* in the range of 44 to 108 MC. But we are here concerned

with satisfactory performance over the full range of the television channels, and this involves additional consideration.

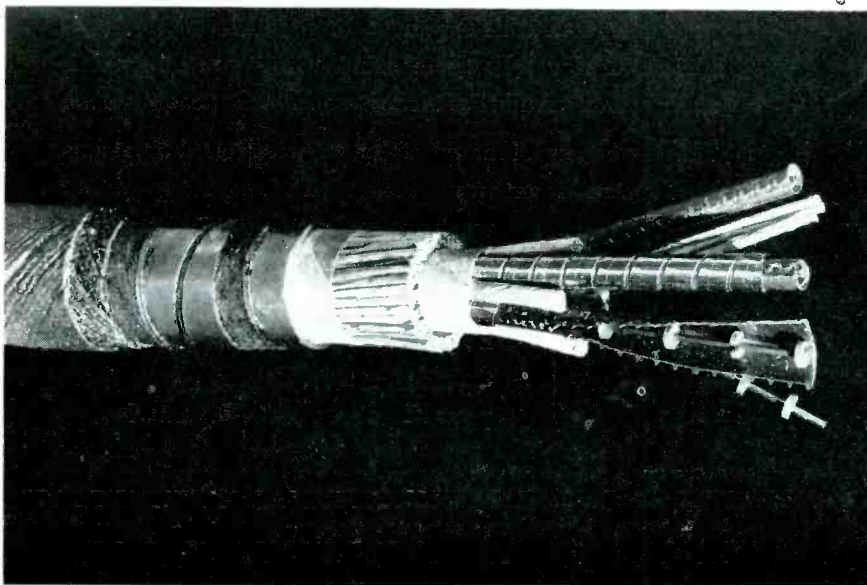
The Tuned Antenna

The desire for the greatest possible signal strength at the receiving antenna has emphasized the utilization of tuned antenna systems and lead-in transmission lines having no signal pick-up.

The tuned antenna is a wire or rod which, when cut to the necessary electrical length dependent upon the frequencies to be received, possesses characteristics equivalent to those of a resonant circuit. This means that, just as in the conventional resonant circuits in a superhet, maximum signal voltage is applied across the circuit (antenna) when its resonant frequency is equal to that of the radio wave sent out by the transmitting station. It follows, then, that greater signal strength at the antenna produces greater signal input to the receiver.

The Dipole

We have previously seen that a half-wave antenna—an ungrounded rod constructed to one-half the wavelength of the frequency to be received—is the smallest length of conductor that will resonate at the wanted frequency. In consequence, this is the type most often used for television receiving antennas. A simple half-wave antenna (also called a simple dipole) is shown in Figure 1. Each section is a one-quarter wavelength rod, the two rods adding up to one-half wavelength. Each wire connected to one rod of the dipole, and the line is then connected to the of the lead-in transmission line is



To the left we see a section of co-axial cable that has been cut away to show you the many strands and layers that this new type cable is composed of. It is readily apparent that this cable is of a far more complex nature than any that most servicemen and engineers have ever worked with in the past.

primary of the antenna-coupling transformer.

Computation of Antenna Length

The basic determinants of the electrical length of dipole employed are: the type of directivity needed, and the number of stations to be received. Consideration of the directional response patterns of dipoles of various length—see Figure 2—shows that an antenna several wavelengths long has the much stronger pick-up than the shorter antennas. Fortunately, it has been found that the longer antenna is necessary only in cases of extreme interference or when the receiver is located close to the limit of the area served by the transmitter station; and that ordinarily the half-wave dipole suffices.

Furthermore, experience has shown that for satisfactory reception it is not necessary to erect a separate antenna for each frequency channel

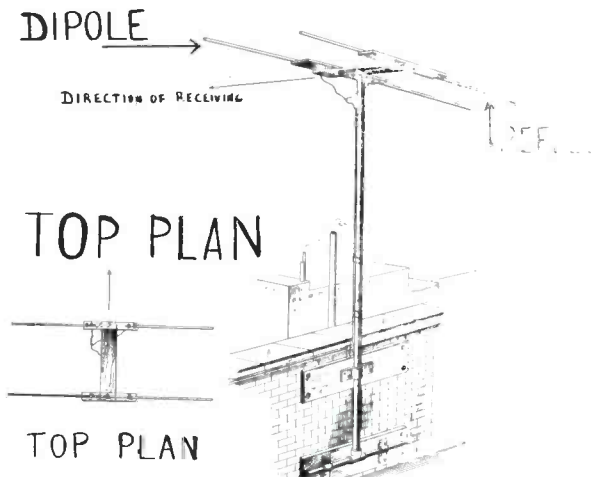
meters, or 6 feet 6 inches. Thus each rod of the half-wave dipole is 3 feet 3 inches in length.

The Transmission Line

Transmission lines take the following common forms:

The "open-wire line" consists of two wires parallel to each other and kept at a pre-determined fixed spacing by means of insulating spacers or spreaders at appropriate intervals. At the ultra-high frequencies, it is usual to keep the spacing between the wires at about 2 inches because, when the spacing is small compared to the frequencies being received, then radiation and signal pick-up are reduced to a negligible amount.

The "twisted-pair line" consists of two rubber-insulated wires which are twisted together to form a flexible lead-in without the use of insulating spacers. The line is usually taped to the antenna mast and fixed to



On the left is a schematic drawing of a typical television antenna. While this drawing is greatly simplified, nevertheless one can readily see many of the details that will be present on nine out of ten typical antenna installations. However, each installation will bring problems of its own that will only be solved by the serviceman having a thorough knowledge of this field.

to be received. Although it is obvious that an antenna that is $\frac{1}{2}$ wavelength at 40 MC becomes a full wavelength long at 80 MC and a $1\frac{1}{2}$ wavelength antenna at 120 MC, and that therefore the antenna performance will vary widely over the full range of the television channels from 44 to 108 megacycles, proper calculation of the one antenna used can accomplish good results over the whole range.

This is achieved by constructing the antenna to the geometric center of the range. Thus the square root of 44 MC times 108 MC equals 70 MC. In free space, the wavelength corresponding to 70 MC is 4.3 meters. Since the velocity of propagation in the antenna itself is approximately 90% of that in free space, then 90% of 4.3 meters is 3.9 meters or 13 feet. One-half wavelength is 1.95

the side of the building by use of stand-off insulators to prevent flapping in the wind and rubbing against the building—which would tend to weaken the electrical connections at the dipole rods.

The "coaxial or concentric line" consists of one wire inside and coaxial with an outer conductor. The outer conductor may be rigid or soft tempered copper tubing insulated from the inner conductor by "beads" at regular intervals; or it may be copper or metal braid separated from the inner conductor by solid rubber insulation, in which case greater mechanical flexibility is achieved.

The attenuation of the open-wire line is in the order of 0.1 db per wavelength; but because it has a higher surge impedance than the other lines, and because it is more

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(Continued from previous page)

difficult to balance against signal pick-up, it is progressively falling into disuse.

For moderate lengths of line, the twisted-pair is probably the most widely employed. It is the least expensive to install and, for lengths up to fifty feet, it will give good results. The surge impedance is usually 50 to 150 ohms, with the average about 100 ohms. Connected to the half-wave dipole, which has a center impedance of 72 to 73 ohms, the twisted-pair line will not cause too great a mismatch. However, the attenuation is about 1 to 2 db per wavelength: this is useful in suppressing reflections if the line is improperly terminated, but this will produce serious loss of signal strength if a line greater than 50 feet is used.

The twisted-pair line is often referred to as a balanced transmission line. What is meant is that electrical balance must be achieved for the line to act satisfactorily: The wires of the line will tend to act as receiving antennas, picking up signals which combine with those from the dipole and cause time-delay troubles. In the manufacture of this line, the

object is to accomplish maximum cancellation of the fields about the wires, i.e., the currents in each wire be equal in amplitude and phase, and the capacity and inductance per unit length of each wire be equal. As far as the serviceman is concerned, he can visually check to see that the line is symmetrical throughout its length and that the two wires have exactly the same physical relationships to proximate objects and to ground. Since conventional receiver input circuits consist of antenna-coupling transformers the primaries of which are tapped, it is the serviceman's job to see that a balanced arrangement for the transmission line is obtained. It is to be remembered that in the case where the primary of the antenna transformer is connected to the transmission line, it is the characteristic impedance of the line itself that acts as the loading. The impedance of the primary coil must match the impedance of the transmission line, and the primary coil must be balanced with respect to ground.

The impedance usually specified for the receiver end of the transmission line is commonly the same

value as that for the center impedance of the half-wave dipole, that is, about 73 ohms.

The Coaxial Line

For lengths of lead-in greater than fifty feet, the coaxial transmission line possesses the greater advantage. Its concentric construction very effectively insures insensitivity to stray fields and signals, so that the signal absorption is restricted to the dipole elements.

The extremely low attenuation ratio, 0.01 to 0.05 db per wavelength, is what permits longer lengths to be used with little loss of signal strength. But this very fact gives rise to the need for closer matching tolerances because, if any significant mismatch occurs, reflections in the line will be set up which will be able to persist for a relatively longer time, producing blurredness and distortion of the image.

We have seen how the problem of impedance matching is concerned with the connection of the transmission line to the antenna (the input end) and the connection of the line to the receiver's antenna coupling coil (the output end). The average resonant impedance at the center of the half-wave dipole is 73 ohms; at the center of a 7 half wavelengths dipole, the impedance is 125 ohms. Therefore a line having a surge impedance of 50 to 150 ohms, when connected to a dipole whose length is one-half to 7 half wavelengths, will introduce no serious mismatch.

Since the coaxial cable is fundamentally an unbalanced line, because the sheath of the cable is usually grounded, no center connection to ground of the antenna coupling coil is possible, and hence the line is connected to an unbalanced primary in the input transformer.

Because it is simple to install, dependable, and capable of giving long trouble-free service, coaxial cable is becoming more and more widely used for connecting transmitters or receivers to antennas, and for interconnecting R-F circuits in transmitters, video equipment, and similar equipment.

Completely weatherproof, it may be readily installed in exposed locations, or buried underground. From a service and maintenance standpoint,

(Continued on page 5)

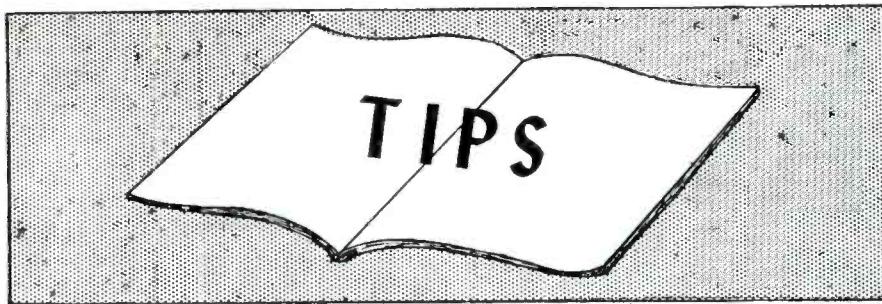
† Loss in db per thousand feet at one megacycle, when properly terminated.
* Velocity of propagation, per cent of free space velocity.
1 These are recommended maximum RMS powers. See text.
2 For 100 ft. line terminated in surge impedance.
All figures on this page are nominal values, from which some variation is to be expected.

Mechanical Properties

Outside Diameter (in.)	¼	⅜	½	⅞	1	1¼	1½	2	2½	3
Type	20	83	23	737	33	87	88	55	94	98
Price/Ft.	0.18	0.25	0.40	0.60	0.42	0.90	1.35	2.80	5.25	7.30
Temper	Soft	Soft	Soft	Soft	Hard	Hard	Hard	Hard	Hard	Hard
Bending Radius (in.)	3	6	8	12						
Standard Length (ft.)	100	100	100	100	20	20	20	20	20	20
Weight Lbs/Ft	.083	.16	.32	.50	.53	1.1	1.7	2.2	3.4	4.7
Outer Wall Thickness (in.)	.025	.032	.032	.040	.045	.049	.058	.049	.058	.065
Diameter Inner Conductor (in.)	.051	.081	.162	¼	¼	½	¾	¾	1½	1¾
Inner Wall Thickness (in.)	Solid #16 Wire	Solid #12 Wire	Solid #6 Wire	.025	.025	.025	.028	.032	.035	.042
Bead Spacing (in.)	1	1¼	3	4	12	12	12	12	12	12

Electrical Properties

Surge Impedance	65	70	65	64	67	66	69	73	74	75
db Loss†	1.67	.99	.54	.37	.35	.18	.14	.09	.07	.06
Capacity Mmf/Ft.	19.8	17.0	17.9	17.3	15.7	15.7	15.1	14.3	14.1	14.0
Inductance Microhenry/Ft.	.084	.032	.076	.071	.070	.068	.072	.076	.078	.079
Velocity*	79	86	87	92	97	98	98	98	97	97
Max. Power Watts‡	100	250	1000	2000	2000	5000	10,000	20,000	30,000	50,000
Efficiency At 100 MC²	66	78	86	91	92	96	97	98	98	98



From A Serviceman's Notebook

Slipping Drive Cables

For dial drives that have a tendency to slip, we use a mixture of Fuller's Earth and shellac, about 1-3 Fuller's Earth and 2-3 shellac and a small amount of resin. This brushed lightly on the drive cable only and left to dry for an hour or so, will make it taut and ready to drive the condenser. A small brush of the camel's hair type is just the thing. The solution should be well shaken and very sparingly used.

* * *

Philco Models 608P, 610P

Those phone combinations and all beam of light jobs may have a hum, sounding like an open grid circuit, when the radio band switch is set to "Phono". This is magnetic pick-up of the flux field of the power transformer. To check remove the black shielded lead from the coupling transformer to the set. The noise should stop. Insert this lead again and remove the brown lead from the pick-up to the coupling transformer. The noise should continue. To remedy, remove the coupling transformer from the top of the cabinet and mount on the left hand side of the cabinet about 8 inches from the top. This will cause all the hum to disappear.

* * *

RCA Model R32

Duplicate replacement of original volume control in these sets often becomes noisy. An effective method of eliminating this trouble may be employed by using 1 100,000 ohm volume control with a few circuit changes as follows:

1. Tie together two black wires on back of original volume control. Cut off yellow wire.

2. Cut off both yellow wires on front of control (next to end of shaft).

3. Disconnect two white wires

from phono. switch.

4. Disconnect white wire from first audio transformer and connect to grid of first audio 26 tube. Connect other end of same wire to center top of 100,000 ohm volume control.

5. Ground right hand side of control, looking from front of control.

6. Cut off other white wire which was disconnected from phono. switch.

* * *

RCA Model 46X1

This is a 1941 model and is in a plastic cabinet, the tubes used are one

12SA7, one 35Z5, one 12SK7, one 50L6 and one ballast tube M86892-9. When this set is very noisy, there will likely be found an intermittent open condenser in the loop aerial circuit. This is an 0.01 mfd. condenser found on the back rear panel. It is located close to the 50L6GT tube and no doubt the heat from this tube is the cause of the trouble. This defect has shown up in different sets and in replacing the condenser they come back to the shop with the same trouble. Now when I replace the condenser I move it over to a cooler location. This corrects the trouble.

* * *

Philco Models Pt-2, Pt-6, Pt-25, Pt-26

If these and other Philco AC-DC sets have a loud persistent hum only when the set is turned to a signal, this is generally caused by a leaky filament resistor. This is a candohm unit which will have a high resistance to the chassis when both ends are unsoldered. This defect results in a-c being fed into the return of the a-v-c circuit, as can be seen.

(Continued on next page)

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Wholesale RADIO LABORATORIES

(Continued from previous page)

Lafayette Model C-38

This receiver was brought to me during one of the recent high humidity periods, with a very annoying audio hum. I happened to move the resistor that connects from the volume control 175,000 ohm tap to the tone control. (This is R12 on the Lafayette C-38 diagram.) When moved, the hum decreased very noticeably. I found that the trouble was caused by a faulty piece of insulation over the lead from this resistor to tone control. The lead is placed so close to the chassis that the insulation breaks down causing the hum when a damp condition exists. The remedy is to move the lead away from the chassis until the hum disappears. A new piece of insulation will also do the trick.

* * *

Philco Models Th4, Pt26

High and low volume, which is not from faulty filter condensers, is often from the a-v-c lead (blue) and bypass condenser being connected to the socket lug of the 35Z3 tube. The trouble is caused by high resistance leakage between socket lugs. The a-v-c lead and condenser are connected to an unused lug of the 35Z3 socket, adjacent to the high voltage connection of the tube.

* * *

Portable Receivers

Many three-way portables use a line cord dropping resistor to heat the rectifier tube when used on 110 a.c. or d.c. These cords are hard to get now, but you can substitute a Sylvania 117Z6GT/G for the original rectifier and then omit the dropping resistor. Follow the socket diagram in the Sylvania Technical manual for wiring the connections to the new tube.

* * *

Stromberg Record Changer

When the arm and needle scratches across a record at the beginning of the rejection cycle, the trouble is due to a stiff piece of spaghetti covering a lead coming out of the pickup arm. This lead wire is twisted 3 or 4 times and the tension causes the trouble. Untwist this wire and allow it to hang loosely.

* * *

AC-DC Sets

These sets have a habit of burning tubes out in different locations where the line voltage has a tendency to go

up. The sets in mind have 6 tubes, four 12-volt types and two 35-volt types. This adds up to 118 volts. I have checked line voltage as high as 123 volts. These sets come in often so I have asked the customer if he has trouble with tubes right along. If he does I install in place of the 35L6GT power tube a 50L6GT tube which does the trick. This does not affect the set if you balance the set after installing the 50L6GT tube. This will work on any ac-dc set using 35L6GT power tubes.

* * *

Philco Pt-25 Code No. 121

Heavy a-c hum, sound indicated open filter condenser or possible open grid. Test showed that neither of these were the cause. Trouble was located in resistor No. 29 (see Riders 12-4 under Philco). This dual resistor is in the filament circuit and has a resistance of 53 and 175 ohms, and was grounded to the chassis, thereby feeding raw AC to the grids through several condensers. The cure—replace it. Or I have found that the ground very seldom affects the resistance in which case insulate it from the chassis.

* * *

Emerson AX-211, AX-212 ETC.

If the sensitivity of this model is low, and if the antenna trimmer on the condenser gang will not resonate, also if the wave-trap will not tune to resonance, the probable cause is a broken lead to the ground lug of the antenna coil.

To repair, remove the coil and carefully scrap away black pitch near the ground lug, also clean the enamel insulation off the wire, then resolder. Install the coil and realign in the conventional manner.

* * *

Philco Mystery Control Console Radios

Mystery control does not work. Open mystery control box and check loop which acts as primary for 30 oscillator tube. Usually open and best bet to replace even if good to avoid repeat call.

* * *

Aetna AC-DC Sets

When these sets are operative on 500 to 650 kc. only, look for open in coil in pentagrid converter circuit (6A7 or 6A8), especially when the station which is heard on this frequency tunes very broad.

(The above reprinted from PRSMA.)

Remler 21-3. Some of the Remler 21-3 models use different tubes than the factory information (this was noted long before tube substitutions became the order of the day.) The 47 audio output tube is replaced with a 2A5 which has the cathode grounded direct to the chassis. Much better tone quality can be had by inserting a 400 ohm 2 watt resistor in the cathode circuit. It may also be bypassed if desired.

* * *

Shorts in I. F. Coils. When shorted I. F. Coils are indicated in sets using shielded units, set receiver upright and jar slightly to dislodge any small shake-proof washers and pieces of solder which might have found their way into the shield cans and onto the trimmers shorting them. If shaking does not remove the trouble, remove the shield can before unsoldering the leads from the coil and examine to see if the trouble is a trimmer short. It is surprising the number of cases of "shorted" I. F.'s which can be cleared up in this way.

* * *

Time Saver for Starting Nuts. Get three pocket size screw-drivers (three different lengths for easy selection), grind off the edges until you can, with a little force, start the blade in the nut, 6-8-10-32 machine nut or any other size. The 6-8-10-32 machine screw is the most used on a radio. You will find you can start a nut that is almost impossible, or that will be a nerve-racker to put on in any other way. It can also be started at any angle required.

* * *

To Tin Soldering Iron Quickly. Mix about equal parts of powdered rosin and clean sharp sand and place in a container (a small pie plate is excellent) and melt together. Then allow to cool.

Place this in a handy place on the service bench and when your iron needs tinning rub the hot iron on the mixture adding a little solder at the same time. It gives a good clean job quickly and does not cut the copper tip away as a file does.

(The above is Reprinted from *Sylvania News*.)

Holder for Parts. To prevent knobs, bolts, screws, etc., from being lost or getting mixed with those of another set, they may be kept in small glass jars. The half pint square variety is best, because they fit together nicely and line-up well against the back of the bench.

As soon as the parts are taken from the set they may be dropped into a jar and a small slip of paper with the set identification should also be dropped in.

This method saves a great deal of lost time looking for lost parts.

* * *

Truetone D 731. Occasional oscillation and distortion, especially when the set was touched or the volume was loud, was traced to a loose ground lug which was fastened under one of the i. f. shield mounting screws. The screen grid by-pass condenser of the 6K7 tube and the grid shield lead of the 6Q7 tube are connected to the chassis at this point. Screwing the nut of the transformer shield down corrected the fault.

* * *

RC A Victor Model 13K. This set was operating intermittently. By tracing the signal progressively from the speaker back towards the antenna the trouble was isolated in the first detector stage. When the voltages were checked at the prongs of the 6L7 tube, the screen grid voltage was found low when the set would fail. The screen grid by-pass condenser was suspected. It was found, on checking, to have a low resistance leak. This same trouble has been found in a number of these receivers.

* * *

Noisy Fluorescent Lamp. A customer complained that every time a certain fluorescent lamp was turned on it created a great deal of noise in his radio. The trouble was traced to the florescent lamp starter. A new starter eliminated the noise. When the faulty starter was torn up to see what was generating the noise a poorly soldered joint was found. Similar cases of trouble have since been found.

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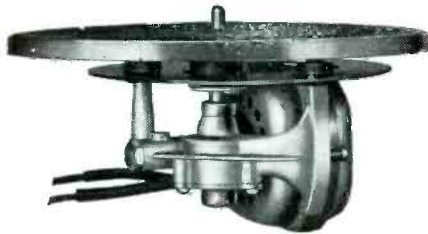


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Philco 50 and 50A. Hum is often present in these models when a strong local station is tuned-in. This is caused by the a.c. voltage modulating the receiver when a strong carrier is picked up. This can usually be cleared up by installing a condenser filter on the primary of the power transformer. Two .015 mfd. 400 volt condensers are connected in series between the primary leads at the transformer. The middle tap of the condensers is grounded to the chassis. Refer to Fig. 1 for the connections.

Other makes of receivers that have this same type of hum can also be cured by this method. However, most sets are made with some type of filter arrangement between the line and the chassis.

* * *

United Motors Model 982006. When there is low volume or the set is completely dead, it may be found that the plate voltage of the 42 output tube is low. This trouble is usually caused by the tone control condenser becoming leaky or shorted. When this condition is found it is always best to examine the tone control to see if it is badly burnt. The leakage current of the condenser passes through the control to the ground.

Occasionally when this condenser shorts the tone control burns completely open. When this happens the plate voltage of the 42 tube returns to normal and the set operates but the tone control has no effect over the tone of the set.

Stewart-Warner Model R-100-A

The set was completely inoperative. A thorough check revealed a burned-out rectifier tube and a shorted input filter condenser. The original filter condenser in this receiver, according to a service encyclopedia, was a dual 8 mfd. unit, but it had been previously replaced by individual units. After replacing the type 80 rectifier tube and the 8 mfd. 450 volt filter condenser the set was turned on for a test run.

The repair job did not turn out so good. In a short time smoke began to roll from beneath the chassis. I snapped the set off and

investigated to see what was getting hot. The filter condenser had all but melted down. However, the rectifier tube still tested okay. After blowing up the condenser it was about time to refer to the schematic to see what voltage rating was needed on this input filter condenser. Yes, now I know that it should have been 600 volts. Not having a 600 volt unit, something else had to be done. The next best thing was to put two 16 mfd. 450 volt units in series and shunt each with a 50,000 ohm one watt resistor. This gives the equivalent of an 8 mfd. 900 volt condenser. The resistors were used to make sure that the voltage divided equally across the condensers.

The set played perfectly this time and the condensers remained as cool as if there were no load on them.

Feeling of a condenser at frequent intervals tells if anything is wrong. If it begins to get hot it should be taken out of the circuit and replaced by one with a higher voltage rating.

Intermittent Operation

An unusual difficulty was experienced with an Emerson Model 125, a.c.-d.c. receiver. When turned on for a test the set operated a short time then failed. The set would come back on again in a short time. The pilot light went off and on with the set. This seemed to be a filament opening up, but the tubes tested perfectly in a tester. Each tube was then tested, while working in the set, by connecting an a.c. voltmeter across its filament terminals. While across the terminals of the 25L6 power tube, the filament opened, the pilot light went out, and the voltmeter reading changed from the filament voltage reading of the tube to approximately full line voltage. This indicated that this tube was at fault.

Montgomery Ward Battery Set

This set, which is operated by one 6 volt storage battery, squealed when turned on and no signal could be brought in. Upon checking the cable to the battery for polarity, it was found that the red and black terminal caps on the battery had been reversed at the charging station. This caused the owner to connect the battery wrongly. Reversing the terminal connections made the receiver operate okay.

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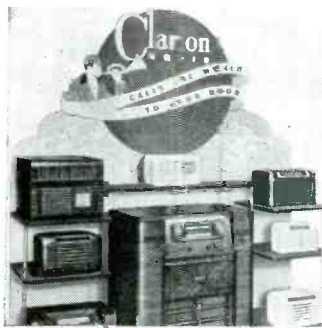
Volume 60, Number 3

MARCH, 1946

25c per copy

New Clarion Display

Designed by experts to function as a unique and compact "store within a store," the merchandising display illustrated was available to Clarion radio distributors and dealers early in February, according to Reau Kemp, sales



manager. Striking in appearance with a colorful red, blue and gold background featuring the Clarion Red Hunter trade mark and slogan, the unit provides ample space for displaying ten Clarion radios, including a full size console.

Mr. Kemp advises that the display was exhibited with great success at the Chicago January Furniture Mart where it demonstrated its ability to stimulate interest, invite industry and help salesmen make sales.

Measuring 7 ft. 6 in. by 6 ft. 11 in. wide, the display is sturdily built with shelves of Masonite reinforced with wood strips and supported by steel tubing.

New Radio Carries Voice On Elec. Circuit

Two prominent electronics engineers have, through the modern miracle of Electronics, just invented and produced a revolutionary radio receiver that, besides providing radio entertainment, also carries your voice over electric light wires from point to point without special interconnecting wires. By simply plugging it into the nearest electric light socket, you can talk in-

stantly to another person who has a similar instrument in another room or office, or on another floor—even in the basement or garage. There are no wires to install.

Mr. Levy is the originator and patentee of this new means of plug-in intercommunication over the power lines which requires no additional wiring installation. He has patents issued in the United States, Canada and seventeen foreign countries.

These instruments operate on the principle of carrier-currents, superimposed on the electric light wires. Each instrument, when talked into, becomes a small radio frequency transmitting station which delivers "wired radio" to the electric light circuits. The voices can be picked up, amplified, and reproduced through a loud speaker without distortion or loss of distinction. So sensitive are these instruments, that a person talking in a natural conversational tone of voice at five or ten feet distance, can readily be heard.

Aireon Appoints New Treasurer

Walter A. Bowers has been appointed treasurer of Aireon Mfg. Corp., R. C. Walker, president, has announced.

Mr. Bowers comes to Aireon from Lawrance Aeronautical Corp. of Linden, New Jersey, where he was vice president and treasurer. Prior to joining Lawrance in 1944



WALTER BOWERS

he was in government service.

He is widely known in banking circles throughout the Middle West. Mr. Bowers was born in Illinois and was assistant to the vice president of Harris Trust & Savings Bank of Chicago, and later was Assistant Southwest Group Manager for Halsey, Stuart & Co.

Electronic Laboratories Names Sales Manager

F. Theodore Hegeman, 3055 Ruckle Avenue, Indianapolis, was named sales manager of the distributor division of the Electronic Laboratories of Indianapolis, it was announced by William W. Garstang, president. He will work directly with more than 500 national distributors in the sale of E-L products.

Hegeman, who was at one time in the lumber and fuel field in Milwaukee, was with Packard Motor and Indiana Oxygen Company in Indianapolis before joining and organizing the jobber sales department at Electronic Laboratories in 1945.

Ray George Returns To Philco

Following four years' Army service with the Signal Corps, Raymond B. George has returned to Philco as sales manager of the accessory division, it was announced by Thomas A. Kennally, vice president in charge of sales of Philco.



RAY GEORGE

George served as manager of tube sales and, later, as manager of all accessory sales for the New York branch of Philco Distributors Inc. from 1936 until he entered the Army shortly after Pearl Harbor.

Shobe Plans Plaques

Shobe Inc. will award two handsome plaques for the best merchandising of the new Zenith Radios. One will be awarded to the dealer who has the best display of new Zenith Radios. In this connection the general appearance of his store will be taken into consideration. The other plaque will be awarded for the best presentation of the new Zenith Radio to a dealer's community. In both cases



modernization, including painting up of the dealer's store, if advertised specifically as in preparation for the coming of the new Zenith Radios will be taken into consideration.

Displays and presentations must have occurred within fifteen days of the date the dealer first receives new Zenith Radios, and entries must be in the hands of the judges within thirty days from date Shobe Inc. made shipment to the dealer.

The handsome plaques suitable to hang on the wall will become the property of the winners. Judges will be Cy Shobe, E. F. Lindgren of the Zenith Radio Corporation, and Theodore Allen Johnson, a noted public relations counselor of Memphis, (above).

Majestic Tells Plans At Distributor Panel

Fourteen Majestic Radio and Majestic Record distributors met with E. A. Tracey, president, and other executives of Majestic Radio & Television Corporation and Majestic Records, Inc., in Chi-



cago last week in another of Majestic's series of Distributor Panel meetings.

Among the subjects discussed at the one-day meeting were product and merchandising plans for both Majestic Radio and Majestic Records during the next few months. The panel members were given a preview of a program which is to be presented to the entire Majestic distributor organization in a series of meetings to be held throughout the country.

Philco Announces New Parts Directory

Covering all accessories from the Electronic Circuit Master test equipment to phonograph needles, the new 1946 Philco Quick Selector Parts Directory has been mailed to distributors throughout the country, it was announced by J. M. Skinner, Jr., manager of the accessory division of Philco Corporation.

"The loose-leaf construction and convenient arrangement," said Mr. Skinner, "makes the new parts directory an easy reference book for dealers with all the infor-

mation needed on repair parts and accessories for Philco and other radios."

Details on test equipment as well as tubes, condensers, speakers, transformers, record blanks, vibrators and other items are included in the Philco Quick Selector Parts Directory, designed to speed servicing activities of distributor and dealer.

Raytheon Promotes Irving Brown

Irving C. Brown has been appointed sales manager of Industrial Electronics Division, Raytheon Manufacturing Co., Waltham, Mass., it was announced by John M. Cage, manager of the division.

Before joining Raytheon, Mr. Brown was sales manager of Thomson-Gibb Electric Welding Co., Lynn, Mass., manufacturers of resistance welding equipment. Mr. Brown



had charge of four district offices as well as the home office and sales agents throughout the United States and Canada and also supervised all advertising, sales promotion and service activities.

During the 14 years prior to his association with Thomson-Gibb, Mr. Brown represented Rolls-Royce of America, Inc. in the New York area, and for several years was the leader in sales volume among 65 salesmen.

Sonora Ups Benjamin

Appointment of Milton R. Benjamin as manager of the record division of Sonora Products, Inc. was announced by Edward L. Harris, president of the company. The ap-



pointment was effective as of March 1, 1946.

Benjamin's experience in the record field has been long and extensive. From 1921 through 1930, he operated a chain of phonograph record stores in the East, and from 1930 to 1935, he was a national distributor and wholesaler of phonograph records.

In 1935, Benjamin turned his energies to manufacturing Sonora Electric Phonographs, and when, in 1938, the Sonora Electric Phonograph Co. was sold to Joseph Gerl, Benjamin became associated with the Sonora Radio & Television Corp., as its sales representative in New York and New England.

Marden Asst. Ad. Mgr. for RCA Victor Home Instruments

Appointment of John C. Marden as Assistant Advertising Manager and Sales Promotion Manager of the RCA Victor Home Instruments Department has been announced by J. David Cathcart, Advertising Manager of the Department. Mr. Cathcart also announced the appointment of William H. Tindall and Frank Schmitt as staff assistants.

Mr. Marden, who was product manager for the Radiola line before the war and who served as a procurement official in Washington for RCA during the past four years, will be in charge of merchandising advertising, dealer-point-of-sale advertising and sales promotion, according to the announcement.

Mr. Tindall was formerly associated with Paul Block, the Philadelphia "Evening Ledger," and other Philadelphia organizations.

Mr. Schmitt was formerly associated with RCA as assistant advertising manager of the Tube Division. Prior to his new assignment, he was sales promotion manager for Krich-Radisco, Inc., RCA Victor distributors in Newark, N. J.

Legion of Merit Awarded To John F. Rider

At a formal military ceremony held at Fort Monmouth recently, John F. Rider, Lt. Col. Signal Corps (retired) was presented with the Legion of Merit Medal.

The Legion of Merit decoration reads as follows: "... rendered exceptional administrative service to the Signal Corps Publication Agency. ... His ability to organize and effectively utilize available personnel materially contributed to the preparation, production and distribution of vitally needed technical manuals containing instruction for the installation, operation, maintenance and repair of signal equipment."

G. E. to Make Sets At Utica, N. Y.

Table model radios will be manufactured by the Receiver Division of the General Electric Company's Electronics Department at Utica, N. Y., it has been announced by I. J. Kaar, manager of the Receiver

PILOT  RADIO

your beacon to a better business in better radios

er Division for the department, who disclosed that the company has leased a factory from the Utica Industrial Corporation.

Manufacturing operations are expected to start about the first of April and will employ about 400 people, Mr. Kaar stated.

Simultaneously, it was announced that N. J. Curlee, formerly of Bridgeport, Conn., will be manager of the new factory which will be known officially as the Utica Receiver Works. It has usable manufacturing area of about 56,200 square feet.

General Electric will continue to make radio receivers at its Bridgeport, Conn., plant until completion of receiver manufacturing facilities at Electronics Park, the new headquarters plant G. E. is building for its electronics department at Syracuse, N. Y. The Utica operation will be in addition to the Syracuse receiver manufacturing plant.

Handweg Directing Motorola Sales in North

After a wartime absence of three years, during which time he worked in the production department, Howard Hand-



werg is again back in action in the sales division of the Galvin Manufacturing Corporation, makers of Motorola Radios for home and car. Mr. Handweg is now busily engaged in contacting dealers and distributors throughout his territory.

Jensen Forms Committee

Postwar planning and sales for Jensen Radio Manufacturing Company, designers and manufacturers of fine acoustic equipment of this city, have been placed in the hands of a five-man committee, according to an announcement just made by Thomas A. White, president and general manager. Postwar plans for Jensen company include a complete redesign of both field



coil and PM speakers to incorporate the new and powerful Alnico 5 magnet material so successfully used by the Jensen company in its military production. Plans also cover new Coaxial speakers, and reproducers housed in Bass Reflex cabinets.

These department heads, reading from left to right in the photo are: Ralph T. Sullivan, Eastern District sales manager; Charles A. Hansen, Western District sales manager; Sherman K. Hughes, sales office manager; Harold S. Hoffman, city salesman and Bayard H. Clark, advertising and sales promotion manager.

W-J Issues 1946 Reference Book

Walker-Jimieson's 1946 Radio and Electronic Reference Book & Buyer's Guide will soon be ready for delivery. Published as an aid to **dealers and users of industrial electronics**, the volume has been designed to assist in the proper selection of radio and electronic parts and replacements.

The handy 6-by-9-inch reference book contains listings of over 10,000 parts, including complete sections devoted to public address and inter-communication systems, nationally advertised tubes, batteries, test equipment, and electrical maintenance supplies.

Featured in its compact 100 pages are clearly illustrated products developed through wartime research in the field and in the laboratory. Aviation, communications, electrical, and industrial engineers will find this book extremely valuable in solving electronic equipment problems. The technical data contained will assist engineers in the improvement of inspection, production, maintenance, and research facilities.

Sent free of charge upon request. Address inquiries to Walker-Jimieson, Inc., 311 S. Western Avenue, Chicago 12.

What you see here is the Lear advertisement that is appearing in the national magazines this month. It's another in the series that is keeping the name Lear, together with Lear Radios and the Lear Recorder, right up in the public eye.

Lear advertising appears in America's big circulation magazines and in the specialized trade press. Its appealing story is bringing an active response for Lear dealers.

This, plus the unusual qualities of Lear Radios themselves, makes the Lear Franchise a very valuable property. You should get all the details. Write today to: LEAR, Incorporated, Home Radio Sales and Merchandising Division, 110 Ionia Avenue, N. W., Grand Rapids 2, Michigan.



ENCORE! As many as you like on "The Tape that Remembers"

Put your own little sweetheart into this picture. Music was never as near. You'll recall it time and time again as years pass.

You can even do better than that record that sits on the shelf and sits and sits again over a lifetime. Because you can take down your own good times and even broadcast them from the air.

With **LEAR SOUND ON TAPE**, such recordings can be minutes or over an hour long. They can be heard again immediately or kept for the tapes recording store.

And if there's anything you don't want to keep, all it takes is to record something else on the tape.

SOUND ON TAPE is only one of the advanced features you find on Lear Radios. They'll have television, FM, automatic retuning, long short wave and an even truly new remote tuning control.

Watch for Lear Radios at your dealer's. When you see them you'll say, "That's for me."

LEAR, Incorporated, Home Radio Sales and Merchandising Division, 110 Ionia Avenue, N. W., Grand Rapids 2, Michigan.

LEAR RADIO



**Ed Furbish Covering
Motorola Territory**

Ed Furbish, veteran sales supervisor, is now contacting dealers in the Ohio and Allegheny territory for the Galvin Manufacturing Corporation, makers of Motorola Ra-



dio for home and car. Mr. Furbish, though new to the Motorola organization, is no tyro in the sales field. His history of sales and promotional activities dates back to 1921.

Since joining Motorola in August of last year, Mr. Furbish has inaugurated a program of close cooperation between Motorola, the distributor and the dealer. An advocate of the "hard selling" school of sales promotion, he plans to tie the dealer and distributor together in a tight relationship.

**Ericksen Named
Vice President of Majestic**

At a meeting of the Board of Directors of Majestic Radio & Television Corporation,



St. Charles, Illinois, Parker H. Ericksen, Director of Sales, was appointed a vice-president

of the company, it was announced by E. A. Tracey, president of the company.

"Mr. Ericksen, who has been with Majestic since 1943, has been associated with the radio and appliance industries for almost twenty years," Mr. Tracey said, "and his wide acquaintanceship with distributors throughout the country has been instrumental in building the strong distributor organization which characterizes Majestic today."

**West Coast Dealers See
Ultratone Phonographs**

The new Ultratone phonograph model PM-6 was unveiled to dealers from the northern California territory at a recent dealer meeting held by the Edward F. Hale Company, San Francisco, Ul-



traton distributors for that territory.

Shown above, left to right, are T. N. Biglieri, sales manager of the Appliance Division of Edward F. Hale Company; Al Pissagani, Oakland Radio Company of Oakland, and Spencer W. Clark, Radio Buyer for the City of Paris Dept. Stores.

Commins Joins Teletone

Major John Gray Commins, formerly director of procurement and production of receiving and transmitting radio, radar and meteorological test equipment for the Army Signal Corps, has joined Teletone Radio Corporation, New York, as purchasing director. Major Commins was formerly connected with B. F. Goodrich and U. S. Rubber companies.



J. G. COMMINS

**Seattle Radio Supply,
New Clarion Distributor**

Seattle Radio Supply, Inc., with Headquarters in Seattle, Wash., has been appointed distributor for the new Clarion line of radios and radio-phonograph combinations for the Seattle, Wash., Spokane, Wash., and Portland, Ore., territories, according to Reau Kemp, Clarion Sales Manager. The Franchise became effective February 10th. Glenn A. Reeves is president of the firm, which has branch offices in Spokane and Portland. Tom Howe is manager of the Spokane office and Art Fite is the Portland manager.

**Transmitter Division of G-E
Announces Booklet**

A new 8-page publication, Electronics for Education, has been prepared by the Transmitter Division of the General Electric Company's Electronics Department.

The booklet describes the ways in which electronics can be used in education. It is illustrated with charts, pictures of electronic equipment and actual scenes of the use of electronics for educational purposes. It also includes a complete bibliography of publications available to educators.

Television, FM radio, public address systems and specialized electronic equipment are among the electronic tools which, Electronics for Education predicts, "are destined to play important roles in the educational processes of tomorrow and provide the means to reach vast audiences not only in schoolrooms but also in homes throughout the nation."

Copies of the booklet (EBR-28) are available free on request to the Publicity Section, G-E Electronics Department, Thompson Road Plant, Syracuse, N. Y.

**Garod Designs
Sales Aids**

Garod Radio Corporation launches its 1946 merchandising and point-of-sales campaign with announcement of the Garod "Authorized Dealer Identification Program," according to Lou Silver, sales manager. "The Garod Dealer has the choice of several planned promotion packages, or separate display pieces, to fit the need of his individual store," explained Mr. Silver.

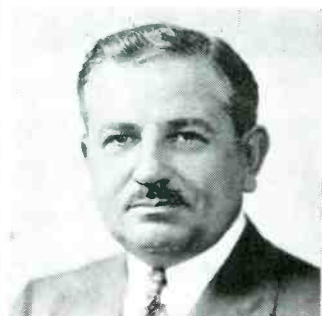
A typical display deal, Promotion Package No. 4, in-



cludes a four-color Rayon Banner; four-color process Window Display Card featuring lovely dancing star Zorina; a four-color process Counter Display Card featuring singing sensation Joan Roberts; a three-color Window Streamer; a set of 26 actual Photographs of the Garod line; a three-ring Binder for the photographs; an Indoor Electric Sign in three colors; a three-set Window Display Stand; a Floor type Small Set Display Stand; complete line Wall Chart; plus a quantity of complete line Consumer Folders.

**Frank M. Folsom
Gets Merit Award**

Secretary of the Navy James Forrestal, on behalf of President Truman, conferred the Medal for Merit on Frank M. Folsom, Executive Vice-President in charge of the RCA Victor Division, Camden, N. J., for "exceptionally mer-

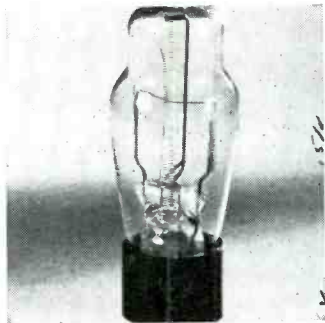


itorious conduct in the performance of outstanding services as Chief of the Procurement Branch of the Navy Department's Office of Procurement and Material," it was announced 1st week. In August, 1944, Mr. Folsom was presented with the Distinguished Civilian Service Award, the Navy's highest civilian honor, by Secretary Forrestal for his services to the Navy.

Ted McElroy
World's Largest Manufacturer of
Wireless Telegraphic Apparatus
COMPLETE CENTRAL OFFICE EQUIPMENT
McElroy Manufacturing Corp.
82 Brookline Avenue • Boston, Massachusetts

Sylvania Announces Thermocouple Tube

A tube with a hot junction of a thermocouple element centered on a filament heater and designed to measure gas pressure changes through variations in thermal conductivity of the gas has been announced by Sylvania Electric Products



Inc., Electronics Division, Boston 15, Mass. Used with a micrometer it will record pressures of 10⁻¹ to 10⁻⁵ millimeters with plus or minus 5% accuracy.

Applications include laboratory use as a pressure gage and leak detector in evacuating apparatus.

Clarion Ships by Air

The above photograph shows the first shipment of post-war Clarion Radios to reach the coast via TWA Transworld Airline.

These sets represent the first shipment consigned to Clarion's northern California distributors, E. C. Wenger Company, main office at 1450 Harrison Street, Oakland. In viewing the new units, E. C. Wenger stated: "My main office and branches will allocate new Clarions to our 290 franchised Clarion dealers in northern California in chronological order, according to a system that will give all of our dealers fair distribution." He continued, "We have received the second largest allocation of Clarion merchandise on the



Pacific Coast and intend that all of our dealers will share with us in the reward of many months of painstaking reorganization."

Eric Schemintz of Clarion is shown at the left shaking hands with Chas. A. Park, administrative assistant to E. C. Wenger.

Kaplan Appointed Emerson Inc., Sales Manager

Ira Kaplan, Assistant Sales Manager and Acting Sales Manager for Emerson-New York, Inc., since 1941, has been appointed Sales Manager of the Company, according to an announcement by Louis Abrams, President. Emerson-New York, Inc., is the distributor for Emerson Radio & Phonograph Corporation in the Metropolitan and Westchester County areas.

Harold Gilpin Upped At Sylvania

Sylvania Electric Products Inc. has announced the appointment of Harold P. Gilpin to Assistant Sales Manager of the Radio Division in New York City. Mr. Gilpin, who



has been with the company since 1932, was formerly Manager of Equipment Tube Sales. He is a graduate of Temple College and is a member of the Sales Executive Club.

McLoughlin to Clarion

Reau Kemp, director of sales for Clarion Radio, 4640 W. Harrison St., announces the appointment of James J. McLoughlin as advertising and sales promotion manager to succeed Lynn Saylor. Mr. McLoughlin, who will take over his new duties March 18, has been connected with the Conlon Company of Cicero for the last ten years as advertising manager. He is widely known in the electric appliance field.

Allan B. Mills Upped By RCA Victor

Appointment of Allan B. Mills as Merchandise Manager of the Home Instrument Department of RCA Victor is announced by Joseph B. Elliott, vice president in charge of the Department.

Mr. Mills has been active in all commercial phases of RCA Victor's home instrument business, including sales and product development, since 1932. Toward the close of the war, he was given the responsibility of planning the company's product for reentry into the home instrument field when commercial activities could be resumed.

Joining RCA Victor in a sales capacity in 1923, Mr. Mills handled commercial adjustments in the service department for two years, and in 1926 transferred to the company's Eastern District sales office in general sales and commercial activities. In 1927 he became assistant to

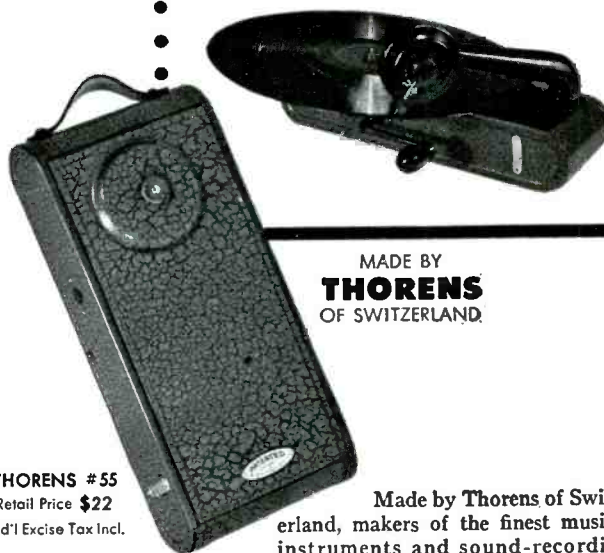


ALLAN B. MILLS

the vice president in charge of the company's home instrument business with headquarters in New York City. Two years later Mr. Mills became manager of the Southern District Office in Atlanta, Ga., and in 1932 transferred to company headquarters in Camden, N. J.

A native of New York City, Mr. Mills was educated at Columbia and Princeton Universities.

THE WORLD'S SMALLEST PORTABLE PHONOGRAPH



MADE BY
THORENS
OF SWITZERLAND

THORENS #55
Retail Price \$22
Fed'l Excise Tax Incl.

Made by Thorens of Switzerland, makers of the finest musical instruments and sound-recording equipment used throughout the world. Plays all your favorite 10 in. and 12 in. records with a fine, melodious tone quality. You carry it like a camera—weighs about 4 lbs. Size 11"x4 1/4"x2". This phonograph is so new that we have been unable to provide enough to supply the demand—it is extremely popular—"the life of the party" wherever it goes. Retail Price \$22. incl. Fed'l Excise Tax. Assorted colors.



295-5th AVE., NEW YORK 16, N. Y.

Hoffman Adds Two

Two additions have been made to the administrative force of the Hoffman Radio Corp., Los Angeles. Robert E. George becomes chief cost accountant at Plant No. 4 (cabinet factory). Hewas formerly a Lockheed Aircraft supervisor.

Cyrus S. Knowlton has become a sales engineer at Plant No. 5, devoted to the RFC sale of surplus electronic goods. He was at one time a field engineer for the Raytheon Mfg. Co. and more recently with Air Associates, Los Angeles, for five years.

New Distributing Firm Started in Maryland

Announcement has just been received that the firm of Milben Distributors, Inc., has recently been inaugurated in Hagerstown, Md. The new firm, located at 74 W. Washington Street, will handle general merchandise, as well as appliances and radios.

Mountjoy New E.C.A. Vice President

The appointment of Garrard Mountjoy to the post of

vice president of the Electronic Corporation of Amer-



ica has just been announced. In his new position Mr. Mountjoy will assume full charge of engineering for the firm.

Philco Develops New Lightweight Television Camera

A new 35-pound television camera and lightweight "suitcase-type" control equipment, so designed that a television crew can carry their studio with them and have it operating in a few minutes, has been developed by the Philco Television Engineering Laboratories, it was announced today by Frank J. Bingley, chief

television engineer of Philco.

"A unique feature of this new equipment," Bingley explained, "is that several television cameras can easily be operated from a single portable master control unit. Also, these new cameras give us a clearer, sharper picture than the heavy and awkward pre-war equipment. At a baseball game or track meet, for example, we can quickly set up three television cameras to cover the action from various angles, and control all three cameras from a single lightweight master unit operated by the program director. This director's unit may be 500 feet away from the cameras.

"With a total of only 14 portable units—including three television cameras—none larger than a good-sized suitcase, it is possible to televise outdoor or indoor scenes with excellent results. For instance, we proved our new television camera during commercial telecasts of all the University of Pennsylvania football games from Franklin Field last autumn."

Declaring that one reason for using this new lightweight video equipment at football games was to compare its performance with older, heavier television cameras, Bingley stated that the new camera outperformed pre-war models by a wide margin. "It gave us brilliant television pictures, with better definition and detail," he pointed out. "The new equipment was particularly useful for the close-ups of football action which have proved so popular with the television audience of Philco Station WPTZ in the Philadelphia area."

Bingley said that one reason for the improved picture quality obtained from the new camera is that it is designed to utilize the latest types of television camera tubes. Also, both the new Philco camera and its auxiliary units contain entirely new electronic circuits, including many advances based on wartime radar research.

Emerson Leads As Radio Producer

Current production of radio sets by the Emerson Radio and Phonograph Company ranges between 20,000 and 25,000 weekly, or roughly 30 per cent of the present output of the industry according to Benjamin Abrams, president. While it is understood that

this is the largest production presently being turned out by any one manufacturer, it is about 25 per cent under 1941 levels and about 50 per cent of capacity, which is expected to be reached by September or October. The sets comprise five basic models in table and portable versions.

While a tube shortage threatens because of the electrical strike, as the bases are supplied by the companies affected, one way of meeting this problem is the use of small tubes which have no bases.

No price relief is being sought by the company at this time, and none will be sought until the wage situation as it affects suppliers is crystallized and its effects upon parts prices are clear.

The company will offer a television set to retail at about \$200, with production under way by summer.

Farnsworth Director Honored by France

Captain Pierre H. Doucheran, U. S. Naval Reserve, now Director of Public Relations for the Farnsworth Television & Radio Corporation, has been awarded the Legion of Honor, rank of Chevalier, by the French Government for distinguished service during the liberation of France.

Vice-Admiral R. Fenard, Chief of the French Naval Mission in the United States, has advised Captain Boucheron of the honor, at the same time forwarding the distinctive Legion of Honor medal and diploma and an official citation signed by former French President Charles de Gaulle, Minister of Foreign Affairs Georges Bidault, and Navy Minister Pacquinot.

The citation praises Captain Boucheron for "his outstanding services as Communications Officer for the Commander of American Naval Forces in France, and the skillful and unflinching support which he devoted to the organization and efficiency of the communications branch of the French Navy during the course of combined operations against the common enemy."

Captain Boucheron, a veteran of naval service in World War I, was called to active duty in July, 1941, as a Lieutenant Commander and was sent to Greenland to establish a communications base. In July, 1943, he was ordered to Casablanca.



**Dynamic Balance
.. for better reproduction**

**MODEL 56
WEBSTER
RECORD CHANGER**

The shaded pole, 4-pole motor, in the new Webster changer is dynamically balanced and rubber mounted to insure minimum vibration. Such engineering niceties contribute to the greater enjoyment of recordings, with Webster changers.

The choice of music lovers

WEBSTER CHICAGO

5610 Bloomingdale Avenue, CHICAGO 39, ILLINOIS
32 years of Continuous Successful Manufacturing

other important features

- ★ Simple to operate.
- ★ Fast change cycle
- ★ Feather-touch pickup
- ★ Built to last
- ★ Automatic shutoff.
- ★ Longer record life

Transmission Lines in FM & Television

(Continued from page 54)

the underground installation should be avoided, although buried lines are frequently used to clear roadways and paths. Coaxial lines are more commonly mounted on a runway about two feet above ground, or strung from steel messenger cables about six feet above ground.

In FM and Television broadcasting applications, the first consideration in selecting a coaxial cable is usually concerned with choosing a diameter large enough to prevent flashover. Of almost equal importance, however, is the matter of restricting the total loss to a reasonable value, taking into account the length of line to be used. In almost every case, it will be found that a cable selected to restrict transmission loss to an economically justifiable value is larger than a cable selected on the basis of flashover alone.

Common applications of the one-quarter and three-eighth diameter lines are found in receiving systems, phase sampling systems, amateur, police and low power transmitters, and in factories for carrying standard signals to test positions. The five-eighth and seven-eighth lines are commonly used in one kilowatt broadcast stations, or in 5 kilowatt directional systems where the power carried by each line is less than the maximum rated power. Lines of one and five-eighths and larger diameter are intended for AM or FM broadcasting, television, and induction heating purposes.

For a particular receiver antenna and lead-in installation, three points should be noted:

1. The strength of the received signal is directly proportional to the height of the antenna.

2. Before permanent connections are made, the installation should be "set-tested" with an operational connection to the receiver.

3. Since in most cases reception of many stations is desired, the final physical positioning of the antenna must be a compromise. Only trial and error can determine the best placement.

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Journals End

BY *Mal Parks*

Hello there fellows, getting any sets? . . . if you are, you can thank the superhuman efforts of manufacturers who have shipped sets in the face of problems that most of us would consider insurmountable . . . in fact, I just don't know how so many sets have been made and delivered and, when I discussed this with a few manufacturers, they said they often sit back and wonder how they were doing it, too . . .

. . . Most deeply appreciated because so unexpected was that grand table model Bendix radio sent up with the compliments of good friend **Len Truesdell** . . . if I had any doubt about consumer demand for sets it was dispelled by the girls here in the office when Alex and I opened the sets Len sent us . . . the entire Parks menage thanks you, Len, and have constituted themselves as the four "Bendix Boosters" . . .

. . . Grand letter from Associated stores' **Herb Brennan** from way down there in Tampa, Florida . . . ah, Florida! . . . giving us a lot of facts tying in with our February Editorial . . . looking at it from the dealer's point of view, it just doesn't seem right that radio and appliance dealers who have stuck with the industry through the lean war years should see the few products now being shipped go to service stations, drug stores, etc. . . I had a little idea for Herb which I sent along and one of these days it may bear fruit . . . if enough of us get together we can at least present an organized and united voice to manufacturers so they'll have a better opportunity to study the merits of our case . . .

. . . Now that income tax time is almost here I really wish I knew who first said . . . "You can tell what God thinks of money when you look at the kind of people he gives it to" . . .

. . . Aside to Aerovox **Charley Golenpaul**, Hytron's **Johnny Adams**, Cornell-Dubilier's **Ken Burcaw** and Henry Loudon's **Ed Willis** . . . thanks a million for helping out at that Open Forum meeting of the Massachusetts Radio Technician's Guild meeting up there in Boston . . . I tell you, if it weren't for help like that I'd have to work on this job and then when would I ever get time to visit . . .

. . . Speaking of visits, had a swell one with Melville Clark's **Steve Carroll** down from Syracuse . . . I find that most large music stores are again turning to the selling of radio and the established radio dealers should welcome this because music stores provide the kind of clean competition we can thrive on . . . at any rate, Alex took us over to the Gloucester House and we had some of that wonderful fish chowder and a Florida snapper . . . ah, Florida! . . . that brought back those deep-sea fishing trips I had in the Gulf where I spent most of the time pushing that danged boat off the flats . . . oh well, we had fun, anyway . . .

. . . Agencyman **Ed Conlon** from Chicago's Burton Browner Agency and Pittsburgh wholesaler **Henry Grossman** in town and Alex took us to the Men's Bar in the Waldorf where we had some of those sweetbreads and mushrooms in French Pastry patty . . . all right, so I am getting a little stout, a fellow has to keep his strength up, don't he . . .

. . . J. N. Ceazan's **Mose Katzev** wrote in from Los Angeles and gave me the distributor's side of the facts as presented in the February Editorial . . . I'm inclined to agree with Mose that short-sighted distributors may be largely at fault where the selling of every

Tom, Dick and Harry is concerned and, as Mose suggests, manufacturers should scrutinize every dealer franchise for their own protection . . .

. . . Apropos of this, **Charles Wible** from way out in Tacoma wrote in and took the plight of the serviceman up from the February Editorial standpoint . . . hate to bring up that February Editorial, fellows, but nothing we've ever run has elicited so many letters, honest, there's just stacks of them . . . to all those who wrote, my sincere thanks and let's all get together to see if we can't correct some of these evils . . .

. . . Good friend **Mel Dibble** in from Decatur Industries, Decatur, Indiana, and once again poor Alex was our host at Toots Shor's where we had one of those famous hamburgers **without** the tomato sauce . . . finished up with Chocolate Graham Cracker pie and then couldn't work the rest of the afternoon . . . as Alex says, I don't do anything anyway so he couldn't tell the difference . . . he said he was mighty glad, too, that all he had to buy was my lunches or he'd never have any money left for himself . . .

. . . Congratulations are in order for Cornell-Dubilier's **Ken Burcaw** whose charming wife Marguerite presented him with a bouncing 7-pound, 6-ounce, blue-eyed baby boy Saturday, March 9th . . . you can reach him by writing to Kenneth Cowan Burcaw in New Bedford, Mass . . .

. . . Oh, shucks, here we are at the end of our space again and I haven't even started our visit . . . if I ramble along like that now what's going to happen to me when I really get old . . . at any rate, fellows, I'm real grateful to you for being here this month and I look forward to your letters and visits so much I hope you'll keep right on remembering that our latch string's always out and we're just as close to you as your nearest mailbox . . . so, until then, thanks again and have fun . . .

On the march with

FADA

The RADIO of Tomorrow — today

1946 MODELS NOW IN PRODUCTION

MODEL 1001
In Beautiful Walnut Wood Cabinet with Noise Reducing R.F. Stage.
6 tubes with 8 tube performance. Features include Slide Rule Dial; FADA-SCOPE built-in LOOP ANTENNA; Automatic Volume Control; Beam Power Output System and New Wonder Speaker ALNICO V.

1000 SERIES
6 Tube A.C.-D.C. Superheterodynes . . . in Gemlike "FADA-LUCENT" Cabinets with the New Gemoid-Illuminated Dial and Noise Reducing R.F. Stage.
8 tube performance with 6 full working tubes; FADA-SCOPE built-in loop ANTENNA; Beam Power Output System; Automatic Volume Control; New Wonder Speaker ALNICO V. Housed in beautiful "FADA-LUCENT" Cabinets in Five Gorgeous COLOR COMBINATIONS resembling precious stones.

652 SERIES
6 Tube A.C.-D.C. Superheterodynes with the R.F. Noise Reducing Stage with Slide Rule Dial in Gemlike "FADA-LUCENT" Cabinets.
6 tube radio with 8 tube performance. Features include the new Lock in type tubes; Beam Power Output System; New Wonder Speaker ALNICO V; Automatic Volume Control and FADA-SCOPE built-in LOOP ANTENNA. Housed in beautiful "FADA-LUCENT" Cabinets in Five Gorgeous COLOR COMBINATIONS resembling precious stones.

MODEL 1002
6 Tube Superheterodynes in Rich Walnut Wood Cabinet with R.F. Noise Reducing Stage.
6 tubes with 8 tube performance. Uses standard preferred type tubes; Beam Power Output System; FADA-SCOPE built-in LOOP ANTENNA; Automatic Volume Control; Illuminated Golden Glo Dial; New Wonder Speaker ALNICO V.

MODEL 605W
In Handsome Walnut Plastic Cabinet.
5 tube A.C.-D.C. Superheterodyne with 7 tube performance. Features include Horizontal type Slide Rule Dial; FADA-SCOPE built-in LOOP ANTENNA; Automatic Volume Control; New Wonder Speaker ALNICO V; Beam Power Output System.

609 SERIES
A.C.-D.C. Superheterodynes
5 tubes with 7 tube performance. Uses standard preferred type tubes; Beam Power Output System; FADA-SCOPE built-in LOOP ANTENNA for noise-free reception. Just plug in and play! Automatic Volume Control; Illuminated Golden Glo Dial; New Wonder Speaker ALNICO V. Available in Walnut or Ivory Plastic Cabinets.



FADA 6 tube models are equipped with the new FADA "Sensitive-Tone" . . . assuring greater sensitivity and clearer reception.



The name FADA has been synonymous with fine radio receivers since broadcasting began. Behind the name FADA lies 25 years of experience in building radios . . . PLUS 25 years of consistent advertising and sales promotion which have created unusual consumer acceptance.
The new FADA line is an achievement in tone quality and in beauty of design. FADA performance reaches peaks never before approached.
A part of the new 1946 line of FADA radio receivers is illustrated here.

YOU CAN ALWAYS DEPEND ON

FADA
Radio

Famous Since Broadcasting Began!

FADA RADIO AND ELECTRIC COMPANY, INC., LONG ISLAND CITY, N. Y.

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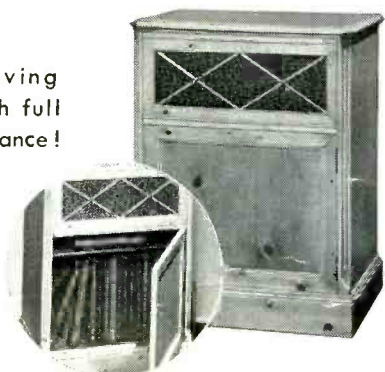
Bendix Radio

... for Only Bendix Dealers can Talk and Sell
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the space-saving
Console with full
console performance!



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the sensational *Invisi-
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models with conceal-
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There's bound to be sales-
closing punch to your demonstrations of these exclusive
Bendix features, for each of them was developed to
meet a definite public demand. Backed by the tremen-
dous Bendix national advertising campaign—your
customers will be largely pre-sold on these features
when they enter your store.

Remember! — these "firsts" are *exclusive* with
Bendix—advantages *you* have that no one else has.
We present them to you in fulfillment of our promise
that Bendix dealers would have the *best* chance of all
at pent-up consumer demand—that a Bendix Radio
franchise is truly *The Franchise With a Future!*

BUILD BEST WITH BENDIX ... FOR PRESTIGE ... PROFIT ... PERMANENCE!

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