

# RADIO & TELEVISION JOURNAL

February, 1946



First set to come off production line is examined by Bendix executives.

**SALES  
PROMOTION  
BUILDS  
FADA  
sales!**



*Yes* . . . THERE'S MORE TO IT THAN MEETS THE EYE!  
YOUR FADA DEALER FRANCHISE HAS AN INTRINSIC  
VALUE THAT GROWS AND GROWS AS TIME GOES BY.

For the name FADA has been synonymous with the very best in radio since broadcasting began. And the cumulative good will; the pent-up public acceptance for FADA radios is carefully nurtured and cultivated by an ingenious, fertile sales promotion plan.

Here are some of the point-of-sale dealer helps already available:

- Colorful decalcomanias for windows and show-rooms . . .
- Window streamers that bring prospective customers into your showrooms . . .
- Illuminated FADA NEON clocks and NEON signs that attract immediate attention . . .
- Sturdy, beautiful display stands to hold FADA Table model radios.

And there's more and more material ready—mats for newspaper advertisements . . . complete portfolios of glossy photographs and electros for use in your promotion.

All this is backed by a terrific consumer campaign in newspapers, magazines, billboards and radio. This constructive plan of promotion is designed to assure FADA dealers a steady, profitable volume of FADA sales!



YOU CAN ALWAYS DEPEND ON

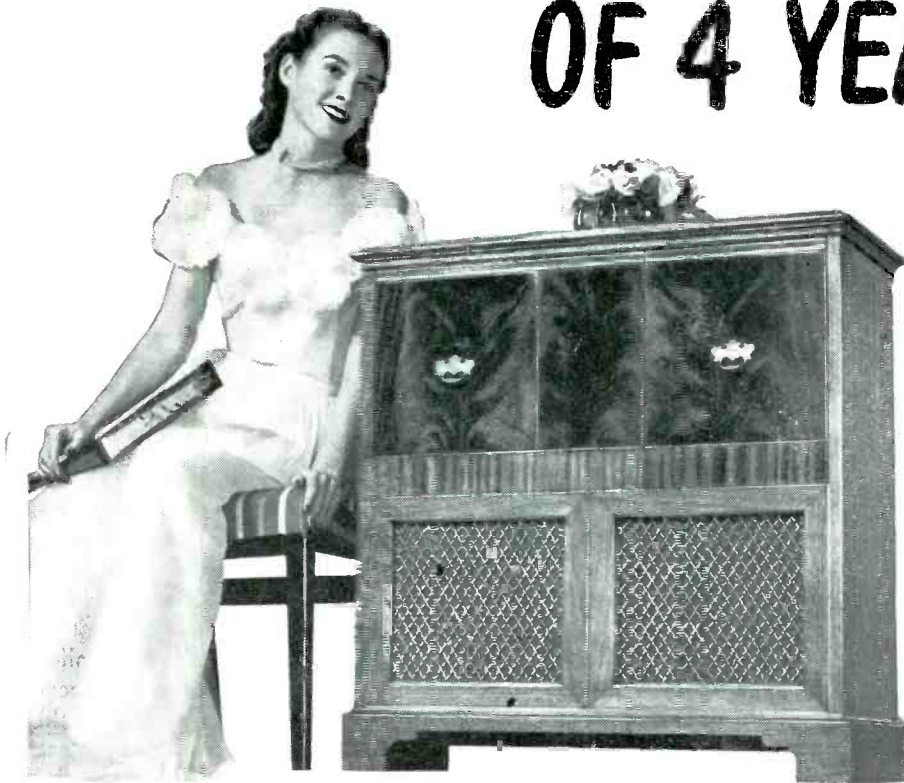
**FADA  
Radio**

*Famous Since Broadcasting Began!*

PHILCO RETURNS TO ITS UNBROKEN RECORD OF

RADIO LEADERSHIP

# 10 YEARS AHEAD OF 4 YEARS AGO!



Yes, the thrilling new radio and phonograph developments from the laboratories of Philco are the big news of the industry for 1946. They're brand new... *ten years ahead of four years ago*... exclusive, patented achievements of modern electronic research. And they're backed by the merchandising plans and experience which have built and maintained Philco's unbroken record of leadership. Again, Philco takes its place as the No. 1 source of profits for the radio and phonograph dealer.

**PHILCO 1213 RADIO-PHONOGRAPH.** An exquisite cabinet of authentic Chippendale design... in rare matched Mahogany woods... with the newest Philco developments for the full enjoyment of radio and recorded music. Advanced-FM... the new Dynamic Reproducer... a newly developed Automatic Record Changer... plus the most glorious radio-phonograph tone you've ever heard!



Just put a record  
in the slot...  
And it plays!

Amazing Philco invention makes the manual radio-phonograph Automatic.



**PHILCO 350 PORTABLE.** Far outperforms any portable radio ever built. Tested and proved in the most difficult locations. Plays on any house current or self-contained battery. Light in weight, perfectly balanced, *iruly* portable! New, distinctive cabinet. Sensational value!



**PHILCO 420 IVORY.** Outstanding beauty of tone... amazing performance in a compact radio. Gleaming ivory plastic cabinet of modern grace and simplicity. Colorful radial dial lights up to give the effect of a softly glowing dome. Superb tone and performance!

**PHILCO 1201 RADIO-PHONOGRAPH.** No more fussing with lids, tone arms, controls or needles! You just put any size record in the slot and close the door. It starts, plays and stops *automatically*. Exclusive! (Patent Pending.)



TUNE IN: The Radio Hall of Fame, Sundays, 6 P.M., EST; Don McNeill and the Breakfast Club, Monday through Friday, 9-45 A.M., EST; ABC (Blue) Network.

# PHILCO

*Famous for Quality the World Over*

# 25 YEARS AGO IN THE JOURNAL

*In closing Items Culled from the February, 1921 Issue of the Journal*



● These Aerovox twist-prong-base electrolytics are again available to you. And they're still **EXTRA GOOD** because: (1) They are tightly sealed. Note the unique rubber-sleeved terminals. (2) Rigid terminals, due to eyeletted construction. (3) Special provisions such as hi-purity aluminum foil throughout, minimize corrosion. Post-war listings provide outstanding selection of popular single and multiple section units in required capacities and voltages.

## ● Ask Our Jobber . . .

Ask for these extra-good Aerovox Type AF electrolytics. Ask for our post-war 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.

Interesting to note the "Edison Message No. 89" featured in the February, 1921 issue of the Journal, which reads: "Should the Government increase the excise tax on phonographs, we shall be forced to increase our prices." Shows the progress we have made during the last few years. Now we not only increase all types of taxes constantly, but we get sued if we even TRY to increase our prices. OPA frowns upon the procedure.

\* \* \*

Optimism seems to have been the general keynote at this particular item and several of the feature stories point out that business is on the verge of an upward swing. Guess the boys were suffering from wartime hangovers, just as we are today. And they say that the old expression "history repeats itself" is outmoded!

\* \* \*

With Valentine Day just around the corner, we are advised to dress our windows to attract the crowds of shoppers. Among the things that are urged are window displays featuring large hearts combined with cupids, arrows, and, of course, instruments. Sound familiar? Still another holiday is being stressed, good old St. Patrick's Day. Such devices as Shamrocks painted on the entrance floor, and replicas in the windows are already making their appearance in a few isolated cases. Within a matter of days, the Journal reports, there will be great numbers of such displays all over the country.

\* \* \*

Great emphasis is being given to the matter of record sales, and among the many semi-neglected markets that the Journal suggests for extensive exploitation is the cultivation of dancing school masters. The idea is not a bad one, as children are naturally credulous, and will blindly follow the master's suggestions as to records and instruments in the majority of cases.

\* \* \*

Another recommended dodge was the staging of a "Buy a Record Week" in your own locale. This,

with all the local trimmings, was practically guaranteed to banish your worries about profits and turnover almost immediately. The subject of credit again reared its head, and a somewhat new approach was given. Instead of the usual routine questions, the writer recommended a more subtle approach, leading around to the question, and judging the man by his attitude rather than mere factual information. The writer claims that this method works very well, but subsequent letters to the Journal's Editors proved that the average dealer put little or no faith in psychology at that time.

\* \* \*

In the picture section is shown a most interesting piece of merchandising. A Columbia dealer named Frank Solar had a special truck body built for his Model T in the shape of a huge phonograph. Inside this "dummy" was placed a smaller machine. At the time when local theatres were emptying, he would back up near the entrance and start to serenade. During the time the record was playing Frank was busy passing out circulars advertising his shop and merchandise. Claims that this is most effective merchandising. It must be, for the same trick is used today by many different companies, and your Editor has even seen trucks built in the shape of milk-bottles, and other tricky applications.

\* \* \*

In the news section of the Journal we note that the Edison plant is almost completely closed down, and a statement from the president expresses regrets that the shut-down is not complete.

\* \* \*

Amusing little item which proved that sometimes music DOES NOT have charms to sooth the savage beast. Man nettled at having come out second best in a contest, was so annoyed at a neighbor's playing of the "Oil Can Blues," that he went over and slipped a dirk between his ribs. He was arrested—the victim was sent to the hospital, and with nobody around to stop the machine, the record is believed to have been ruined.

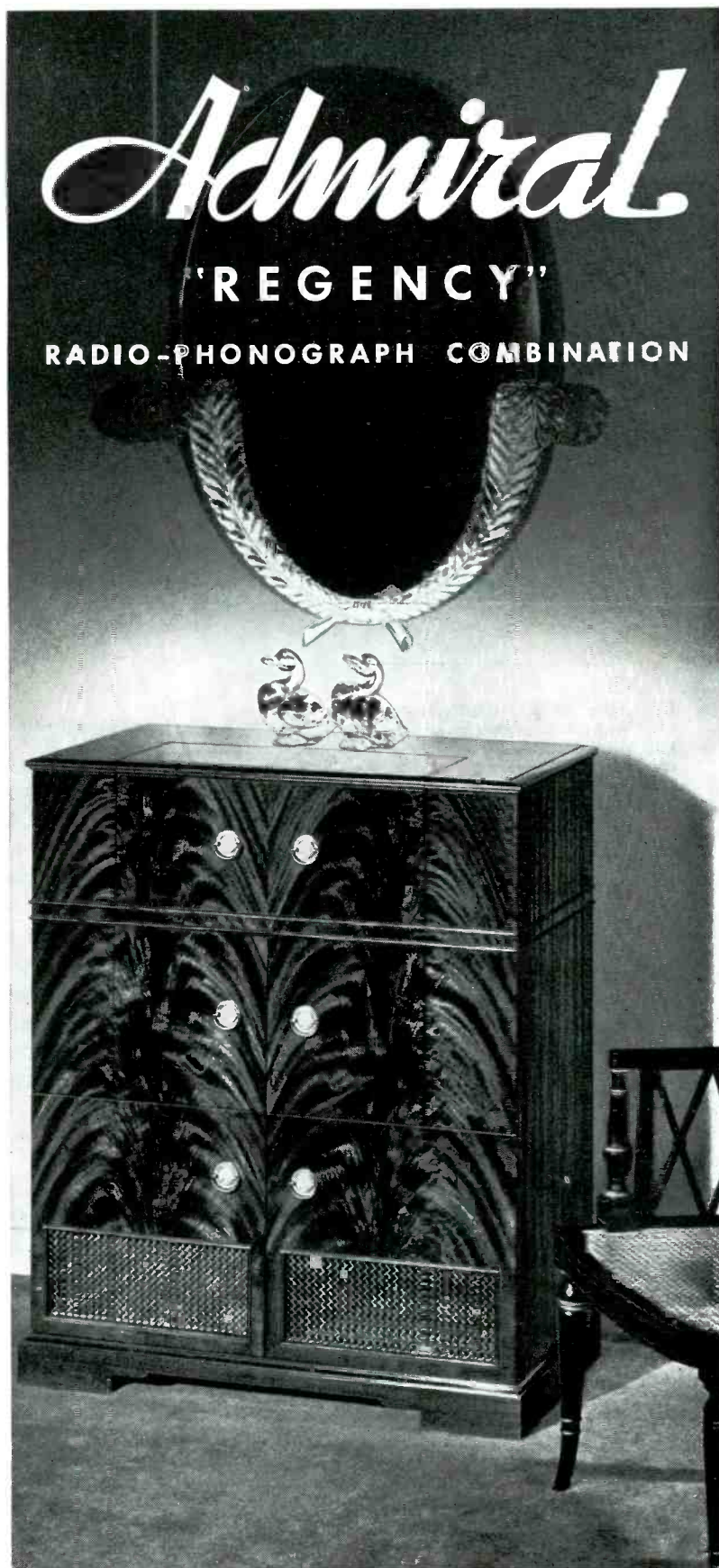
HERE'S NEW BEAUTY  
FOR THE TOP  
OF YOUR RADIO LINE

Here's new cabinet beauty and all-round performance that you can "sell up to." Beautifully finished and authentically styled by master craftsmen, the Admiral "Regency" Radio-Phonograph combination will be available in walnut, mahogany, or bleached mahogany.

Famous "Slide-A-Way" brings "child-proof" automatic record changer out in plain view for easy loading. Plays ten 12-inch or twelve 10-inch records automatically. Changes records in 5 seconds . . . only three moving parts . . . will not chip or break records.

Improved Superheterodyne circuit features new iron core tuning for higher sensitivity, greater selectivity . . . "automatic-trip" electric tuning for instantaneous station selection . . . individual treble and bass controls . . . 4 tuning bands for 'round-the-world reception . . . "Magna-Band" for precision short wave tuning . . . "Auditorium" electro-dynamic speaker for superb tonal quality . . . push-pull audio system for clear, natural reproduction . . . beautiful, easy-to-tune "waterfall" dial.

In the "Regency" you have a superb radio-phonograph combination to put at the top of your radio line.



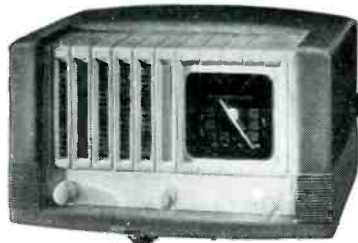
*Admiral Corporation* CHICAGO—DUAL-TEMP REFRIGERATORS • ELECTRIC RANGES

WORLD'S LARGEST MANUFACTURER OF RADIO-PHONOGRAPHS WITH AUTOMATIC RECORD CHANGERS  
RADIO-TELEVISION JOURNAL, FEBRUARY, 1946

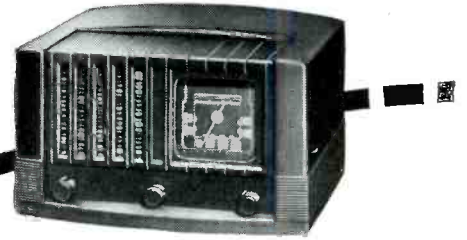
**"These New**

# **Stromberg-Carlsons**

**are the best ever!"**



**1100-HBI—The NEWSCASTER**—Meeting the most exacting requirements for a small radio, the NEWSCASTER is exceptionally attractive in this smart brown-and-ivory polished plastic cabinet. OPA approved retail ceiling price \$31.95 in Zone 1; 5% higher in Zone 2. Including excise tax.



**1100-HB—The NEWSCASTER**—Compact table model in a brown plastic case of modern design. Excellent standard broadcast reception. OPA approved retail ceiling price \$29.95 in Zone 1; 5% higher in Zone 2. Including excise tax.

**T**HAT'S the word we're getting from Stromberg-Carlson dealers in all parts of the country, now that they are having the opportunity to show the first samples of the new popular-priced 1946 models. We are happy to report that the current flow of new Stromberg-Carlsons from our factory to distributors and dealers is gaining momentum daily.

You've waited anxiously for the new 1946 Stromberg-Carlsons—and so have a host of your customers... Men and women who know that when it comes to the three basic elements, engineering design, cabinet artistry, and fidelity of reception, "There is nothing finer than a Stromberg-Carlson."

Let your prospects know that the vanguards of the 1946 Stromberg-Carlsons have arrived. Get them in to see... and hear... and learn at first hand just how very superior these new Stromberg-Carlsons really are!



**1120-LW—The CAVALIER**—This handsome console radio offers excellent performance on standard broadcast and international short-wave reception. Splendid acoustical system. OPA approved retail ceiling price \$99.95 in Zone 1; 5% higher in Zone 2. Including excise tax.



**1120-PL—The FEDERAL**—A compact, automatic radio-phonograph console in a striking cabinet of traditional design with Federal influence. Standard broadcast, and spread-band international short wave. OPA approved ceiling price \$179.95 in Zone 1; 5% higher in Zone 2. Including excise tax.

## **STROMBERG-CARLSON**

**ROCHESTER 3, NEW YORK**

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

# RADIO TELEVISION JOURNAL

## Contents

### MAL PARKS

Editor

BOB TICHE.....*Managing Editor*  
 IZ ZAM.....*Technical Editor*  
 B. F. HOLLEY.....*Washington Editor*  
 JIMMY KENT.....*Merchandising Editor*  
 FRED MERISH.....*Management Editor*  
 GORDON CHAMBERS.....*West Coast Editor*  
 E. H. COOKE.....*Canadian Editor*  
 BETTY BORIN.....*Circulation Manager*

### ALEX H. KOLBE

Publisher

E. THORNTON RICE, JR.  
*Eastern Advertising Manager*  
 1270 SIXTH AVENUE  
 New York 20, N. Y.  
 Circle 7-5842

#### BRANCH OFFICES:

20 EAST JACKSON BLVD.  
 Chicago 4, Illinois  
 Harrison 6360  
 NORMAN KOETKE, *Manager*

412 WEST 6th STREET  
 Los Angeles 14, Calif.  
 Vandyke 3815  
 FREDERICK STERN, *Manager*

#### EUROPEAN OFFICE:

6 RUE DE PASCAL  
 Brussels, Belgium  
 JULIAN BLOCK, *Manager*

### FEATURES

|  |    |
|--|----|
| HOW TO OPEN A RADIO STORE .....  | 18 |
| This down to earth practical treatise on the problems that every newcomer will face, is reprinted from Michael Gore's latest book, "101 Ways To Be Your Own Boss." |    |
| HOW ECKLEN GOT THE AUTO TRADE .....  | 24 |
| An operational feature with some unusual slants that can be adapted to your own locale.  |    |
| TURNING THE SPOTLIGHT ON TURNOVER .....  | 26 |
| Management Editor Fred Merish brings you the truth about turnover.   |    |
| BARKER BROS.—MERCHANDISERS DE LUXE .....   | 28 |
| How a west coast operator cashes in on merchandising instinct.   |    |
| IN SPITE OF SHORTAGES .....  | 32 |
| Shortages being the main bottleneck to newcomers today, we bring you this factual story of how one partnership licked them.  |    |

### ELECTRIC APPLIANCE JOURNAL

|   |    |
|---|----|
| WHEN THE CUSTOMER OBJECTS .....   | 40 |
| Ethel Morrison, your Sales Training Institute Editor, analyzes the various types of customer objection, and what to do about them.                |    |
| HOW ABOUT MUSIC .....   | 42 |
| An old theory brought up to date and applied to the modern dealer establishment.  |    |
| HOW TO PLAN AGGRESSIVE ADVERTISING CAMPAIGN .....   | 45 |
| While we all agree that advertising is a "must", far too few of us really know how to go about setting up a campaign. This article tells you how. |    |
| ELECTRIC APPLIANCE JOURNAL NEWS .....   | 47 |
| Late news about people and events in the industry.  |    |

### MASTER SERVICING SECTION

|  |    |
|--|----|
| UHF WAVE PROPAGATION .....   | 52 |
| Your new Technical Editor, Iz Zam, brings you this examination of the theories surrounding this new and interesting field. |    |
| TIPS FROM A SERVICEMAN'S NOTEBOOK .....  | 57 |
| Valuable hints and shortcuts that will help your service operation, and increase your profits.                             |    |
| BOOKS .....  | 62 |
| This new Master Servicing feature will bring you a complete review of the latest technical books every month.              |    |

### DEPARTMENTS

|                                   |    |
|-----------------------------------|----|
| 25 YEARS AGO IN THE JOURNAL ..... | 4  |
| PICTURE PARADE .....              | 8  |
| EDITORIALLY SPEAKING .....        | 10 |
| OUR READERS WRITE .....           | 12 |
| DEALER DOINGS .....               | 16 |
| RADIO JOURNAL NEWS .....          | 33 |
| ADVERTISERS' INDEX .....          | 65 |
| JOURNAL'S END .....               | 66 |

Volume  
60

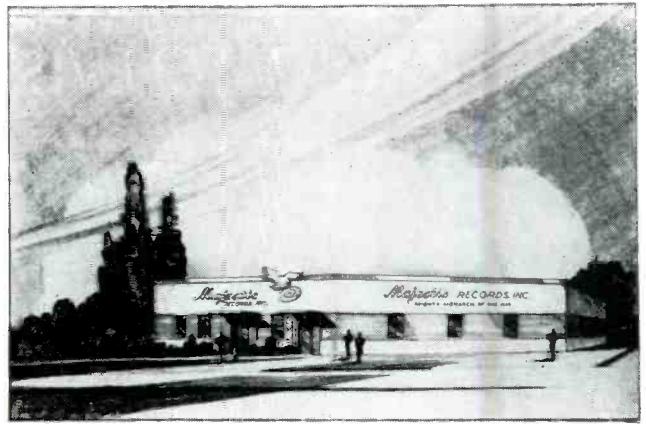
RADIO Television JOURNAL combines Master Servicing; and is published monthly for Radio-Television Dealers, Servicemen and Jobbers by Kolpar Publications, Inc., Radio City, 1270 Sixth Ave., New York (20), N. Y. Phone Circle 7-5842. Alex H. Kolbe, Pres. and Treas.; Mal Parks, Vice-Pres. and Gen. Mgr. Subscription price \$3.00 per year, 2 years for \$5.00 in U. S., its possessions and South America. Canadian Subscription \$3.50 per year, \$6.00 for 2 years plus any customs duties; all other countries \$4.00 per year, \$7.00 for 2 years payable in American money in advance. Price 25c per copy. Printed in USA.

Number  
2

# PICTURE PARADE



Above, the latest acoustical feature to be introduced into a radio set by the Electronic Corporation of America, called the "Di-fusa-tone," is demonstrated. Grill construction spreads sound evenly all over the room.



Architects drawing of the new record pressing plant now being built for Majestic Records, Inc., at Burbank, Cal. Plant will supplement firm's Newark, N. J. operations.



Above are pictured two models of the new MEDCO line. Firm, a new entry in the field, is headed by Henry Schein, president, and B. A. Golstein, ad manager. Both are "old timers" in radio.



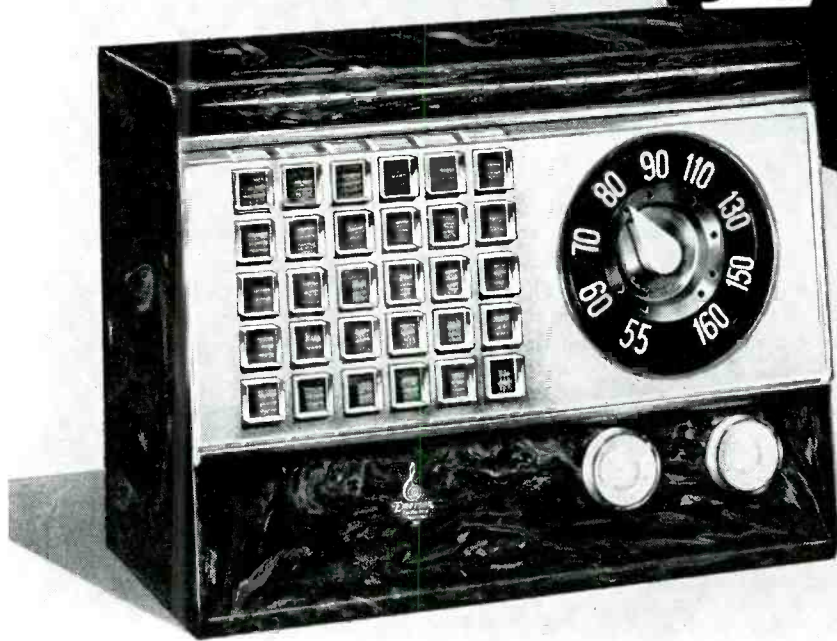
To the left we see Bob Hope, Jerry Colonna, and Frank Pierce, serious for the moment, discuss small-plane radio with GM vice president Albert Bradley and Bendix president Ernest R. Brech.



# A NEW *Quality* IDEAL

IS ACHIEVED IN THIS  
*Compact* PERFECTION

## THE NEW 1946 *Emerson* *Radio*



### The Sensational Model 502

A superb creation of radio art—new concepts of design, materials and engineering genius. The early leader in a distinguished line.

**\$35**

*OPA Approved*

*Better* **STYLE, TONE, PERFORMANCE, VALUE**  
With 3 Times the Power of Pre-War Radio

They have a CHARACTER all their own—with design, engineering and construction features distinguishing them from all others.

There's new Emerson QUALITY and VALUE in every category—in every price bracket starting at \$20.00—Table Models, Portables, Phonoradios, Pocket Receivers—with outstanding turnover and profit advantages.

Wherever you go, Emerson Radio is the most talked about proposition in the industry.



Ask your Emerson Radio Distributor

**EMERSON RADIO AND PHONOGRAPH CORPORATION** New York 11, N.Y.

World's Largest Maker of Small Radio

## Editorially Speaking

**MAL PARKS**

*Editor*

**Alex H. Kolbe**

*Publisher*

**W**E saw a news item just recently which told about a Lancaster, Pennsylvania, druggist who hit upon a rather ingenious scheme to build up his prescription department. This druggist opened up a radio and electronic store in connection with his drug business, and he's now distributing radio and electronic items to nurses and physicians at a "medical discount."

**O**N the surface, this may not seem to be very important, but if we analyze its implications, it has many serious threats to the accredited radio dealer.

**O**NE of the things we must ask ourselves is how this druggist was able to buy the radio and electronic items which he is now selling. If he buys recognized lines, why is there no way to control his re-sale price? If nothing is done to make this druggist maintain a legitimate retail selling price, we may wake up to find radio and electronic items being used as loss leaders for a great many other lines of business other than drug stores.

**T**HIS situation once again re-emphasizes the reason why some parts jobbers sell at retail in competition with their customers who are dealers and servicemen, why jewelry stores, hardware stores, service stations, and even grocery stores handle radios, why the dealers and the servicemen seem to be the one group in the industry who are never consulted or considered when plans and policies are being made by distributors and manufacturers.

**A**ND, we can't complain, because it is the dealer and the serviceman himself who is to blame for this situation.

**H**E is at fault because he rejects all opportunities to form a national association capable of dealing with national evils. It is ridiculous for an industry such as the radio business with thirty or forty thousand good dealers and servicemen not to have a national association to represent their interests.

**D**URING the past few years, we have been privileged to help organize over twenty local radio service dealer associations. Most of these are now strong, healthy, and functioning for the benefit of the members. But, whenever a national association is mentioned, the various groups get an acute attack of stage fright, because as they put it, it takes a lot of time, money and effort to put a national association on its feet.

**N**ATURALLY, it requires a lot of serious thought and discussion to evolve a competent, efficient national association. But we firmly believe that these efforts would be justified in the formation of a strong association, willing to fight the many evils that beset the industry today.

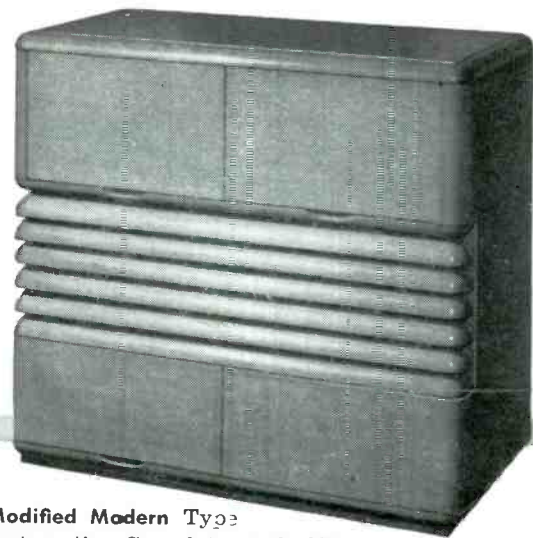
**H**OW else are we to combat loss leader tactics of druggists and similar alien groups? How else can we prevent vicious price wars among dealers themselves once sets become plentiful? How else can we protect legitimate servicemen from the disreputable practices of fly by night operators?

**I**F we are to put radio retailing on a sound financial basis, free from wild cat competition from all sides, we must organize a strong, courageous group that is willing and able to fight for its rights. It is futile to get together in small local meetings and bewail the state of the industry, when you have it in your power to set things right. By yourself, you are simply one radio dealer in competition with any other merchant in town who takes it upon himself to sell radios. But with an organization behind you, you could be protected from indiscriminate competition, and could enjoy your rightful share of the radio business in your community.

*Mal Parks*



Early American Type Automatic—  
Complete with FM



Modified Modern Type  
Automatic—Complete with FM

## Hit of the Chicago Show!

**Thanks fellows!** You said some mighty complimentary things about the new Sparton postwar line of radios and radio-phonographs.

You liked the styling. You raved about the tone.

No question about it! These sensational new Spartons offer real merchandising pos-

sibilities. They are *plus-value* radios in every sense of the term.

If you are interested in being the exclusive\* Sparton dealer in your community and in receiving shipments on a direct factory-to-dealer basis, write Ed Borcia, Sales Manager, The Sparks-Withington Company, Jackson, Michigan.

THE SPARKS-WITHINGTON COMPANY, JACKSON, MICHIGAN

# SPARTON

RADIO'S RICHEST VOICE SINCE 1926

\*All Sparton Radios are sold under the SCMP (Sparton Cooperative Merchandising Plan) to one dealer in each community



Compact Automatic  
Radio-Phonograph  
for small homes  
and apartments



Medium Priced  
Automatic Radio-  
Phonograph with  
Tilt Front



Dear Mal,

I greatly appreciate you and Alex giving me your time the other day to discuss those things which we are all interested in—the radio business.

I am going to work on some of the things you suggested, along the lines of radio service, with special attention.

I would also like to take this opportunity to tell you I enjoyed the beef stew at Toots Shor's.

kindest regards,

**E. Patrick Toal,**

**Sales Manager, Standard  
Radio Receivers**

**General Electric Company,  
Schenectady, N. Y.**

*\* \* \* Publisher Alex Kolbe and your Editor derive a great deal of pleasure from the privilege of working so closely with manufacturing executives like good friend "Pat" Toal of General Electric Company. We feel it is the function of trade publication people such as ourselves to bring the results of our experience and contact with you to these manufacturers in order to let them know the things which you are thinking and saying in your talks and letters to us. We don't boast about it much because it is our job, but the fact remains that your Radio & Television Journal has been responsible for many changes in the thinking of manufacturers as it applied to their dealer and service men policies. Since there is no National Association to represent dealers and servicemen, the work we have done in local Association organizing has inevitably led manufacturers to look on us as your*

*official spokesmen. The thousands of miles we travel each year and the personal contacts we have with you in these group meetings give us an insight into your problems which more and more manufacturers have come to rely on. We like this part of our job and it is significant that up-and-coming sales managers like "Pat" Toal recognizes its worth. It is only through such close liason that our mutual problems can be solved to the greater advantage and profit of us all.*

\* \* \*

Dear Mr. Parks,

If possible, please send me several tear sheets of your editorial, "Editorially Speaking," in the October issue of Radio Television Journal.

I have sent my copy to Senator Wagner. I have written him a number of times about the piano situation, and through him have received two letters which Chester Bowles wrote him in answer to my original letters. I feel it is more profitable to write to Senator Wagner than Senator Mead, since Senator Wagner seems to get more attention from the head of the OPA.

I have underscored some of the lines in the editorial which I mailed to the Senator.

Please forward these other copies as soon as possible.

Thanks a lot for your strong editorial.

Very truly yours,

**B. E. Neal, President.**

**Nela-Clark-Neal,  
682 Main Street,  
Buffalo 2, N. Y.**

*\* \* \* Mr. Neal's aggressive ac-*

*tion in using the October O.P.A. Editorial to influence his Senator in Washington is typical of the work which was done by readers with that Editorial. While we are naturally thankful that the Editorial in question met with such widespread approval in the industry, the fact remains that individual action by each one of us is the only thing that will achieve results. If we aren't careful of all this "pent-up purchasing power" we read so much about will be dissipated and we'll find that there just isn't enough money to go around when the public starts in to replenish depleted household inventories. And, it is only by CONTINUED individual and concerted action that we can be sure our actions will bring some measure of relief. The Labor and other lobbyists in Washington don't suspend their activities for even one minute and we must emulate them in keeping up a constant bombardment of letters and wires to our elected representatives in the Congress and Senate.*

Dear Mr. Parks:

If the public could think along lines as per your Editorial in the November issue we could soon get rid of labor rackets and the Petrillos, but the public seems to take but little interest. and Congress merely plays politics.

Yours truly,

**C. H. Lane.**

**Box 42,  
Eureka, Kansas**

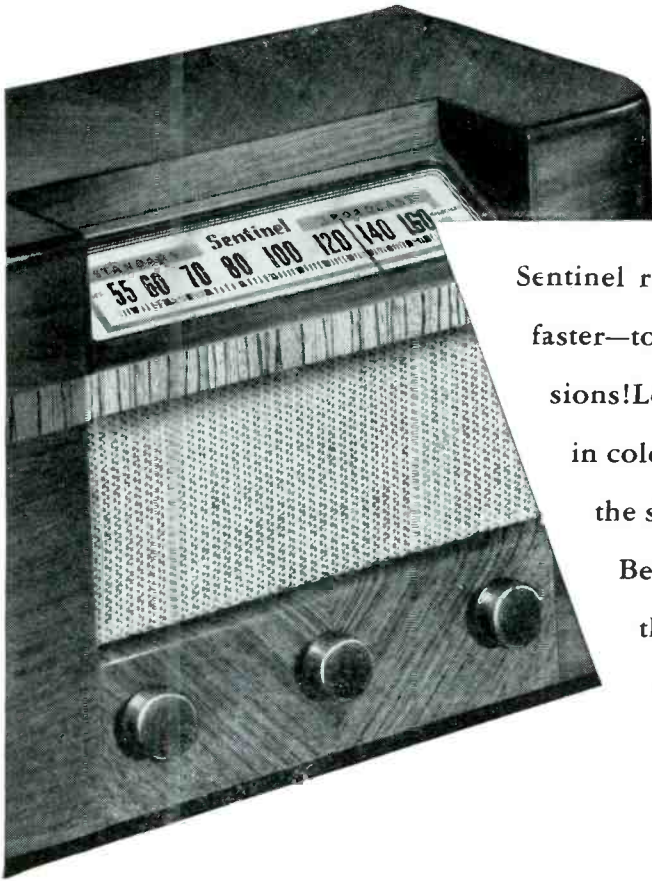
*\* \* \* Editor Mal Parks was really very pleased to hear from good friend Lane, especially when Mr. Lane so heartily endorsed his editorial sentiments. The issues involved are ones that we here on the staff of your Journal all feel very strongly about, and we really enjoy hearing from time to time that our collective efforts are thought about, argued about, and in many cases, acted upon. It is only when enough of us are aroused to the point of doing something about a bad situation that any real good for our industry is accomplished. It stands to reason that when a man gets as big and powerful as Mr. Petrillo has, he ceases to be a private individual, and becomes what is known as a public figure.*

# Sentinel...

*faster*  
**SALES**

*and*

# **PROFITS!**



Sentinel radios are designed and built to sell faster—to assure prompt, instant “I’ll buy” decisions! Lovely cabinets, both classical and modern, in colors and materials to please every taste—set the stage for a sales-clinching demonstration...

Because Sentinels’ beauty is equalled only by their remarkable performance—flawless reception! And there will be a Sentinel for *everyone*: battery or electric, FM or AM, table or portable, console or radio-phonograph.

Make Sentinel *your* line—the direct line to faster sales and profits!

*for Studio tone in Your Home!*

# **Sentinel** *Radio*

2020 RIDGE AVENUE, EVANSTON, ILLINOIS

# Automatic Radio

# Ready

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.

Model  
650

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



Model  
C-60

**REJUVENATION**

Pat. No. 2,522,196

Powerful portable operates on batteries and A.C.-D.C. current — five-tube superheterodyne with seven-tube performance. Large built-in Automatscope 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

Model  
630

Deluxe two-band six-tube set with eight-tube performance by the use of two dual-purpose tubes. Equipped with powerful P.M. Speaker — large built-in Automatscope loop and illuminated easy-vision dial. A new high in sensitivity, selectivity and tone control. Beautifully hand-rubbed grained walnut cabinet. Standard Broadcast and entire Int. Short Wave Band.

OPA APPROVED PRICE  
Zone 1 — \$39.95  
Zone 2 — \$41.95

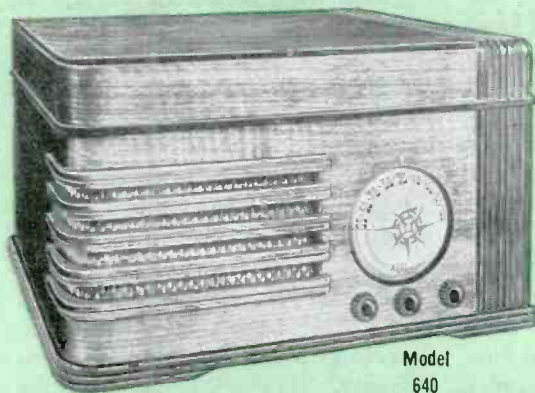


# to **MOVE!**

## ... COMPLETELY NEW — INSIDE AND OUT!

Yes, here they are—the completely new Automatic Radios—new circuit designs—new cabinets—new styling—new performance never before achieved. Ready to move because they are designed to meet the demand.

A word to dealers—if you want your share of the radio sales in your community, let us know at once. We will immediately put you in touch with the nearest Automatic Radio jobber. Don't delay—get set to sell now.



Model  
640

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.

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



Model  
601

Five-tube superheterodyne in beautiful walnut Bakelite cabinet—seven-tube performance packed into a small package. Full-vision illuminated dial—built-in Automatiscope loop. Operates on A.C.-D.C. current. Standard broadcast.

#### OPA APPROVED PRICE

Zone 1 — \$19.95  
Zone 2 — \$20.95

Model 602 same design except in Ivory Bakelite.

Zone 1 — \$21.95  
Zone 2 — \$23.05



Model  
612X

Eye-appealing modern design—six-tube superheterodyne with eight-tube performance. Features R. F. stage for increased sensitivity, P.M. dynamic speaker with new improved magnet. Built-in Automatiscope loop. Automatic volume control, A.C.-D.C. operation, beam power output. Beautiful hand-rubbed walnut cabinet.

OPA APPROVED PRICE  
Zone 1 — \$34.95  
Zone 2 — \$36.70



Model  
611

Beautiful hand-rubbed walnut cabinet—five-tube superheterodyne—P.M. dynamic speaker with new improved type of magnet. Built-in Automatiscope loop—beam power output—A.C.-D.C. operation.

OPA APPROVED PRICE  
Zone 1 — \$24.95  
Zone 2 — \$26.20



# Automatic

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



# DEALERS DOINGS - LATE NEWS

**Announcement of the opening** of a radio service and sales store in Richland Center, Wisconsin, has just been made. The new venture is headed by Stanley Watson, who was recently given an honorable discharge from the Navy. Shop will be located at corner of Orange and Union streets.

\* \* \*

**A "storewarming" was held** last week by the Atomic Radio & Television Company at their new store at 2 East thirty-third Street, in New York City. Reports indicate that it was a complete success, with George Laszlo serving as host.

\* \* \*

**Reports have just been received** that the Clark Radio & Electronic Store, in Cheyenne, Wyoming, has just been purchased from Charles F. Clark by Homer E. Mourer. Mr. Mourer states that he will operate the outlet under the name of the Cheyenne Radio & Electronic Service.

\* \* \*

**The appointment of Joseph P. Flynn** to the post of assistant to radio and appliance merchandise manager James Fisher, of Leath & Co., Chicago, has just been made public. During the war Flynn was radio and radar specialist for the War Production Board, operating from that agency's Milwaukee office. Prior to that he was associated with the Radio Specialty Company, also located in Milwaukee, where they were the Philco distributors in that area.

\* \* \*

**J. J. Casey, proprietor of the Casey Electric Company**, in Louisville, Ky., is a man who never lets his merchandising instinct take a back seat, even when faced with disaster. When thieves broke into his South Seventh St. store and stole every radio set in the place he mounted a large sheet of plywood behind the shattered plate glass window on

which he had lettered in three foot high type—"Sorry, He took the last radio."

\* \* \*

**Rodins, Inc. has just opened its doors** at 1152 Seventh Avenue in San Diego, California, it was learned recently. The new firm proposes to handle both radio and several lines of appliances. The new firm is under the leadership of Raymond Lowitz and Bernard Horrow, both veterans of the appliance business in Chicago. They will handle the complete Westinghouse line, as well as Emerson, Admiral and Zenith radios. In addition to the radios and appliances shelf space sufficient to accommodate over 10,000 records has been incorporated into the floor lay out. There will also be six comfortable listening booths, for the conveniences of both record and radio customers.

\* \* \*

**Another new store that opened its doors** at 3555 University Avenue, San Diego, recently is the A-1 Radio Sales and Service. This is operating under the proprietorship of Mrs. M. R. Wolf and Albert Wittenburg. Radio lines to be handled include Sonora, Arvin and Wilcox-Gay. Present plans also call for a record department as well as the sale and service of small appliances when they are released for sale.

\* \* \*

**William N. Freyer left his position** as head of the radio division of Montgomery Ward & Co. about the first of February, it has been learned. He is scheduled to join Bigelow-Sanford, New York, as Director of Products. As yet there has been no successor appointed to take his place at Montgomery Ward.

\* \* \*

**The renewal of radio repair service** was recently announced by the Modern Meyer Frank Furniture Store, located in Farrell, Pa.

**Newest enterprise in Decatur, Georgia**, is the Clark Equipment Company, which has opened for business at 111 Sycamore St. The new firm is lead by Mayo B. Clark, who has been a resident of DeKalb county almost all of his life. Mr. Clark intends to draw heavily on his nineteen years of sales and merchandising experience gained at the Atlanta branch of a nationally known organization, and will handle appliances, radios, and other types of merchandise.

\* \* \*

**It was recently announced that the Myers Radio Service** had opened its doors for business for the first time at 4140 El Cajon Blvd., San Diego, Cal. The new firm is headed up by Karl Myers, who announces that Bill Thompson will serve as manager. They will specialize in the sale and servicing of auto radios, and at the present time they hold a Motorola franchise.

\* \* \*

**A new retail outlet, designed to occupy 2,400 square feet of floor space**, will soon open at 639 Ninth Avenue in New York City, it was learned here recently. President of the new firm will be Samuel R. Reese, and they will handle various types of major appliances. Louis Lane will act as both secretary and treasurer.

\* \* \*

**Several new developments have been announced by Louis Hirsig**, president of Wolff, Kubley & Hirsig, Madison, Wisconsin. In the first place the appointment of John W. Bathey as Appliance Manager was announced. Mr. Bathey will operate in the new appliance department which is due to open for business in April, in the firm's new building.

\* \* \*

**Another new appliance store** has just received its state charter of incorporation in Andrews, S. C. The



# OF RADIO SERVICE DEALERS

new store will be called The Electric Appliance Company, and will commence operations with \$10,000 in authorized capital.

\* \* \*

**Samuel Weinberg & Sons, Inc.** has just acquired a new building in Scranton, Pa. The new building will house the firm's retail activities only, while the usual wholesale operations will be continued at the concern's present quarters. The announcement was made by L. I. Weinberg.

\* \* \*

**Another new firm has just been** incorporated in Cincinnati, Ohio, it was learned here recently. The concern will do business under the name of Avon Radio & Refrigeration Hospital, Inc., and lists capitalization of 250 share of no par stock, when the papers were filed at Columbus. The three incorporators are: Earl W. Bishop, Clayton Ahlburn, and William A. Caple.

\* \* \*

**A store building and adjacent** parking lot has been purchased by Barger, Inc. at 1879 South Poinsettia Street, West Palm Beach, Florida, it has been announced. The sale was handled through the West Palm Beach office of Studsill & Hollenbeck, Inc. Sale price was \$35,000. New owners are Mr. & Mrs. H. G. Barger, who originally came from Los Angeles.

The store will handle both domestic and commercial radios and appliances, and the Bargers announce that this company will be the only one in the entire United States where the demonstration unit, and a self service laundry will be combined with the retail sales and servicing of appliances. Firm also has another store in operation in the same city.

\* \* \*

**A new store called the Bala** Electrical Center has recently been opened at 5006 City Line Avenue, in Philadelphia. The firm features

everything electrical including radios, FM, and all types of appliances. Store is described as one of the most attractive in the city, and at present is being stocked with samples. The service department, however, is running full blast.

\* \* \*

**R. G. Feidler, vice president** of the Block & Kuhl stores, in Peoria, Ill., has announced the appointment of W. A. Somers as merchandise manager for the company's appliance departments. He will make his offices at the main store in this city.

\* \* \*

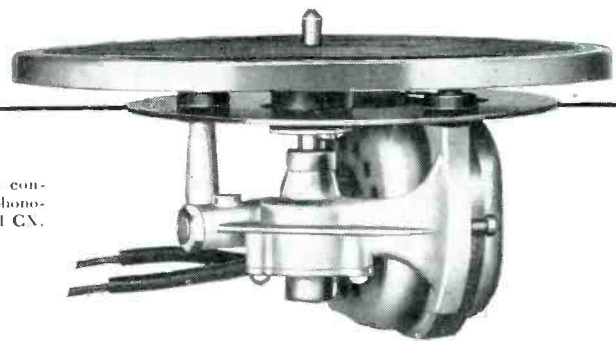
**Maesen, Inc., radio and electrical** equipment retail outlet, in Wilmington, Del., was incorporated for

\$50,000 with Samuel Wachtel as president; Leon Stern, vice president, and May Wachtel as secretary-treasurer.

The new firm plans to acquire new quarters where their corporate office is now located. The building will be entirely remodeled and the firm expects that alterations will be complete by next June. More than 8,000 square feet of space will be taken for a showroom, executive offices and workshop, to be located in the center of the city, where the headquarters will be located.

Among the lines which Maesen, Inc., will handle are: Westinghouse appliances and radio, Lear radio, Clarion radio, Garod radio, Majestic radio and Temple radio.

## READY... ON THE DOWN BEAT!



General Industries constant-speed electric phonograph motor—Model CN.

Grand opera, swing or sweet music is recorded or played back with equal fidelity on General Industries phonograph mechanisms. They're always ready for the down beat with instant starting and fast pickup.

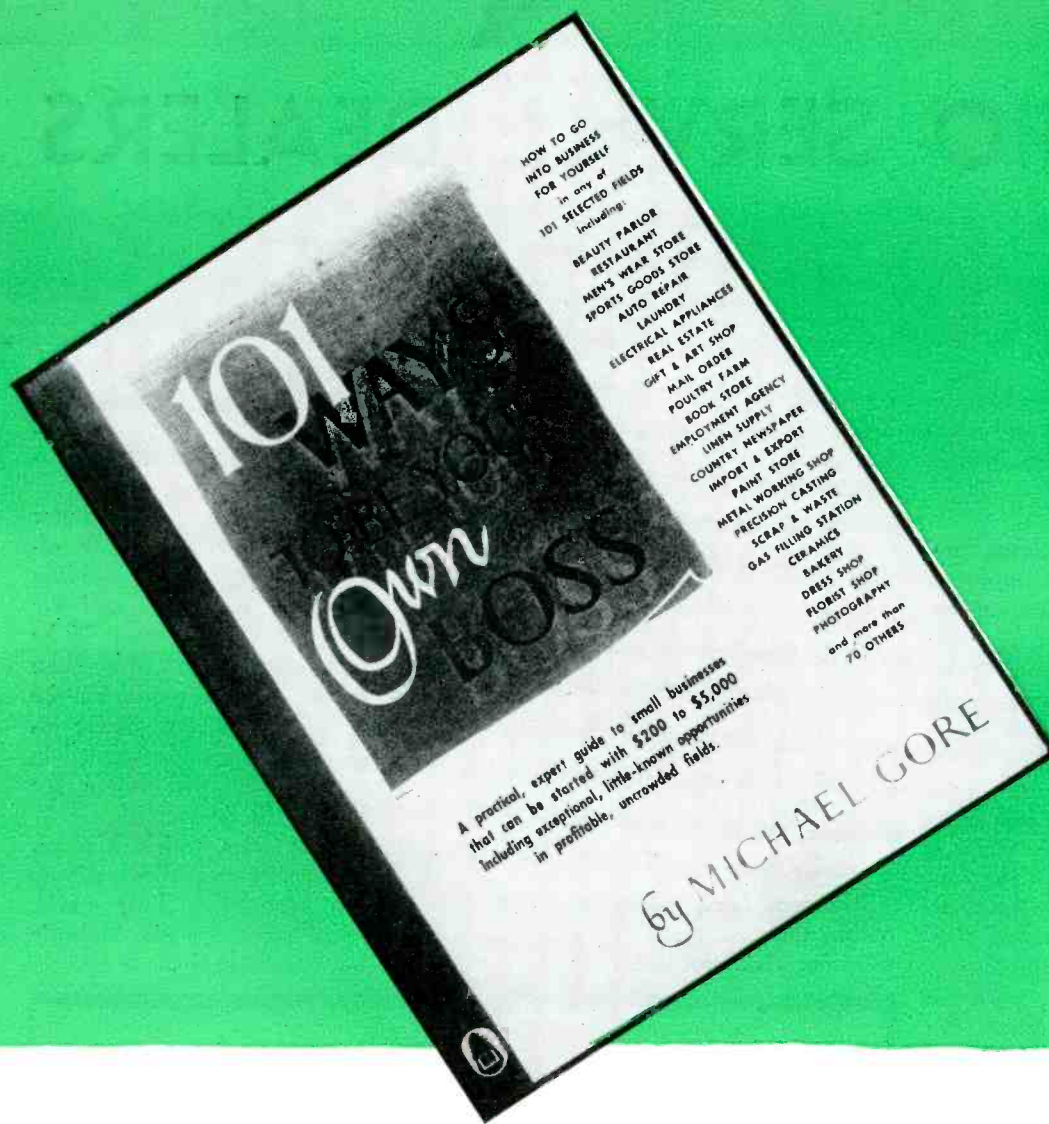
That's because they're driven by those velvety, *Smooth Power* motors, and because every detail of manufacture is carefully watched.

General Industries turntable motors, recorder assemblies and

combination record-changer recorders will, as always, bring outstanding satisfaction to you and your customers.



THE  
**GI** GENERAL INDUSTRIES  
COMPANY  
DEPT. M ELYRIA, O.



A practical, expert guide to small businesses that can be started with \$200 to \$5,000 including exceptional, little-known opportunities in profitable, uncrowded fields.

By MICHAEL GORE

If the war did anything for the radio service man, it cured him of his strange inferiority complex.

No more flat service charges of 50 cents and 75 cents. No more part replacements for the mere retail price of the part. No more free errand service, free estimates or free diagnosis. It has been some time now since the service man all but paid his customer for the privilege of repairing a receiver. Like so many other professionals, the technician has discovered that nine times out of ten, people take you at your own valuation and that it is just as easy to collect the full, fair value of your services as to sell yourself cheap.

These and other changes have cleared the air of "static" that used to interfere with good reception of opportunities for a respectable livelihood with the annual gross receipts existing. Today, there is good money

in qualified radio servicing and so great a nationwide demand for it that Lewis Winner, Editorial Director of *Service Magazine*, estimates that at least 10,000 additional outlets are badly needed in communities still lacking competent local facilities.

Here is how the leaders in the field size up your prospects:

Twice as many homes have radios as have telephones. At the end of 1943, *Radio and Television Retailing Magazine* reported approximately 57 million radio sets in use by more than 32 million American families. Of these, it is estimated that from 30% to 50% do not operate at full efficiency for reasons including obsolescence, age, improper handling, wear and tear. While spendings for repair and service rose to 75 million dollars in 1941, this is considered a drop in the bucket compared pecked in the future.

Investigations indicate that, in a

relatively few years, as many as 80 million home sets will be in use, plus 25 million automobile radios. Even more significant than their number is the fact that the new sets will include the highly complicated, critically adjusted mechanisms of Frequency Modulation, Television, Radio-Phonograph Combinations, Remote Control, "Walkie-Talkies," Recording Units, Home Intercommunication Systems, Facsimile, and the other applications of electronics now in various stages of development. A great many of these will necessarily be expensive sets, some reported to range from \$400 to \$700 per unit. Eventually, they will require more and more servicing. *Immediately*, their owners will need installations, adjustments and instructions which, on the more costly sets, may bring the radioman fees as high as \$25 each. A regular maintenance service at \$5 or more

# How To Open A Radio Store

per set (exclusive of repairs) may develop a bread-and-butter foundation sufficient to pay the rent, and provide a reservoir of ready-made repair and service business. Hourly rates for servicing television and other new electronic units will naturally be higher than those realized now for ordinary radio service. Some believe that the technical skill required will make rates \$4 to \$10 per hour a matter of course. For the retail seller of radio and electronic equipment, the radio technician will hereafter be a definitely integral part of the selling. In Television and Frequency Modulation alone, for example, proper antenna installation is the one greatest contribution to good reception. With the contemplated shift from a 42-50 mc band to the 88-106 mc band, with the special filters which will often be needed to eliminate electrical interference and special placement to cut down reflections, the radioman has his work cut out for him.

Being your own "boss man" in radio repair and service has many attractions. The work is boundlessly interesting. The field is gearing itself for tremendous expansion, with the radio technician destined for greater demand than ever. Users of your service have been educated to pay a respectable price for it. As your own employer, your time will be your own and you need punch no timeclocks. A pleasant feature of this cash business is that every day is pay day too. Moreover, you can start a spare-time radio service business with as little as \$200 to \$300 in tools and test equipment. Or you can establish a regular, full-service shop with as little as \$1,500 to \$3,000. There is only one important "but."

#### You've Got to 'Know Your Stuff'

The day of the putterer is over. The hit-or-miss tinkerer is on the skids. From here on out, it is the

### About the Author

Although Author Michael Gore gives pertinent facts and figures telling the would-be tyro in one hundred and one businesses just how to get started, he himself has succeeded in building and running only six simultaneously. At the present time he is head of an advertising agency, a mail order book selling company, a book publisher, editor and publisher of a trade magazine, and owner of a syndicated promotion service. In his spare (?) time he writes articles for many different trade magazines on a score or more of different subjects.

Commenting on his latest, a chapter of which we take pleasure in reprinting here, he feels that this book will be of real help to some of the many vets being discharged daily who wish to enter a business of their own. The chapter on entering the radio business is typical of the entire book. It was compiled with the data available from the industry and the leaders in it. It keeps in mind the limited capital of the returning veteran, and it offers a sound practical down to earth policy which will enable the newcomer to sidestep many of the costly mistakes made by their predecessors.

"101 Ways To Be Your Own Boss" is published by the Arco Publishing Company, 480 Lexington Ave., New York City, and is sold for one dollar.

professional radio technician who will collect the big money, the front-line opportunities in radio service and repair.

Frequency Modulation, Television and other electronic instruments operate on much higher frequencies than ordinary AM radio. These require the most critical, the fussiest adjustments. With less expensive radio sets, the trend is toward simplification which, paradoxically, involves the use of tubes and parts of utter precision and sensitiveness to mishandling. Manufacturers have been slow to reveal their new circuits, but it appears that many of

these will make the super-heterodyne constructions of the past mere schoolboy toys.

So you will really have to have the "know how." On this point, there is no kidding yourself, no compromise whatever.

John A. Vassar, General Service Manager of the Westinghouse Electric Supply Company, dreams up this imaginary telephone conversation for the day soon to come when the "super-serviceman" gets going:

"Mrs. Smith, this is Professor Electron's secretary calling. Professor Electron will be at your residence at 9 A.M. next Tuesday. Please arrange to have all the children away, remove all the furniture from the den except the Televisor. Also, please provide a table about two by six feet in size with a soft covering so that he will not damage any of his delicate instruments. Have lunch served promptly at 12:30, and I might add that he is very fond of avocado sandwiches and home-made apple pie." The point, of course, is that your professional standing will be heightened by the growing need for extensive technical training. As Mr. Vassar points out, "you will have to be not only a high grade technician-electrician-mechanic, but a first rate salesman and a diplomat as well."

If you have been a Signal Corps or Naval Communications specialist, act on these sage counsels from Lewis Winner of *Service Magazine* before seeking to reinvest your training in radio servicing:

Add to your basic knowledge of vacuum tubes and circuits with a good "refresher" course in modern commercial electronics. How? By serving for a couple of months as a bench-hand in a busy service shop, while supplementing this first-hand experience with a study of some of

the excellent books now available. Or, by taking a course at any of the very fine schools offering thorough training and practice to the radio technician. Or, by studying at manufacturers' plants, many of which have made arrangements for such instruction. Or, by enrolling in one of the superbly conceived correspondence courses, which come with actual training equipment and supervisory guidance by mail. And catch up with what has been going on in the field while you have been away, by scanning the back numbers of technical magazines.

The old idea of muddling through is out of date. The fumbler, the screwdriver mechanic, the half-baked service man have seen their day. Only the soundly trained, honest-to-goodness technician will be able to take in his stride the circuits about to confront him, or to understand much of what the engineers have learned during the war. Indeed, as suggested by Raymond Soward, radio engineering authority, the new conditions "will mean that the radioman will have to devote more and more of his time to the study of data furnished on various receivers by the manufacturers, as well as methods of securing increased efficiency from the new test equipment which is being built."

#### How Much Capital?

You can start a fairly decent part-time radio repair service with as little as \$200 to \$300 worth of equipment, using a corner of your basement, a room of your home or your garage for operations. A beginning on even so limited a scale has started many a competent service man on the road to a full-fledged, full-time business. Since most of your real assets are in your head rather than on your work bench, the kind of service you render and the salesmanship you exert will chiefly determine "how far you get, how fast."

To set up a complete, modern service and repair shop capable of handling all reasonably expectable jobs, you should plan on from \$700 to \$1,500 for equipment carefully selected to fit the kind of sets which predominate in your community. This equipment is the operational heart of your business and to a large extent the key to your sales volume and net profits.

Aside from your investment in testing gear and fixtures, you should have sufficient working funds on hand to see you through until current income takes over.

#### Equipment

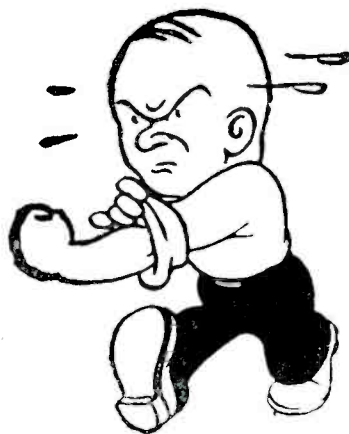
To go into the radio service business well equipped, one should have the equipment listed below.

Since radio service work is dependent on daily volume, the use of these instruments along with a good technical knowledge determines the number of repair jobs one man can do in a given day.

While some of these items may be considered as not absolutely necessary, they enable the service man to locate trouble in a receiver quickly and accurately.

#### Small Tools

Set of hand tools, consisting of:  
8 inch, 6 inch and 4 inch screwdrivers  
fibre screwdriver



DETERMINATION IS YOUR BIGGEST "MUST."

set of "Spinnet" wrenches  
pair of 8 inch and 6 inch side cutting pliers  
pair 4 inch cutters  
pair long nose pliers  
8 inch and 6 inch file  
small vise  
100 watt "radio" type soldering iron  
pocket knife  
small Link torch (Approximate cost \$35)

#### Service Equipment

Voltohmmeter, 20,00 watts per volt.  
Tube checker.  
Test oscillator.  
Set of Riders Manuals.  
Copy of Rider's "Automatic Record Changers."  
6V. auto radio power pack 6V.

D.C./110V.A.C.

The above items are "Capital" items and are needed to service the radio. (Approximate cost, \$310.)

#### Stock

300 various type tubes. 2 to 3 of the "preferred" types.

Volume controls.

Resistors.

Condensers.

Transformers.

Speakers.

Miscellaneous: solder, lugs, wire, mounts.

Vibrators and miscellaneous auto radio repair items.

(Approximate cost \$440.)

Total is for equipment and material only. Space, transportation and other items should be considered.

#### Shop Layouts Should Be Scientific

It is asking too much of your customer to expect that he will reconcile a cluttered, chaotic shop with the sense of engineering orderliness that bespeaks radio service efficiency. Give real thought, therefore to the arrangement of your store and workroom.

While preferences vary, an ideal shop has been pictured as having a soundproof, glass-windowed partition dividing the reception room, or display room, from the service shop. In this way, the noises, squawks and squeals incidental to radio servicing are kept from jarring the nerves of the customer while permitting him to watch the activities of the radioman, which are often of interest to the waiting customer. Another advantage of the glass partition is that the customer cannot interrupt the serviceman's work with conversation.

As far as the workroom is concerned, each of the benches should have all the ordinary items of service equipment—meters, tube-testers, substitute speaker, and such other instruments as are used in day to day repairs. A separate small service "laboratory" is provided for development work on specialized equipment, or to find the troubles in particularly difficult servicing jobs that resist repair.

Service Magazine also calls attention to shops now taking a cue from the speeded-up production-line methods of industrial plants, which provide for rapid yet courteous

counter attention—and bench, as well as field, servicing. Such arrangements are planned to minimize floor-walking to searching for equipment, instruments being mounted on snap panels with spade terminal strips that are removable for component repair or field work. Sectional shelves to permit incoming or outgoing receivers or sets held for the arrival of parts, from another feature of this method, as does provision for technical bulletins, service cards and circuits, properly indexed and filed. For every receiver, incidentally, there is a systematic instrument check method, similar to production-line technique, a procedure that starts with a substantial knowledge of circuit basics.

#### What Should a Radio Technician Charge For His Services?

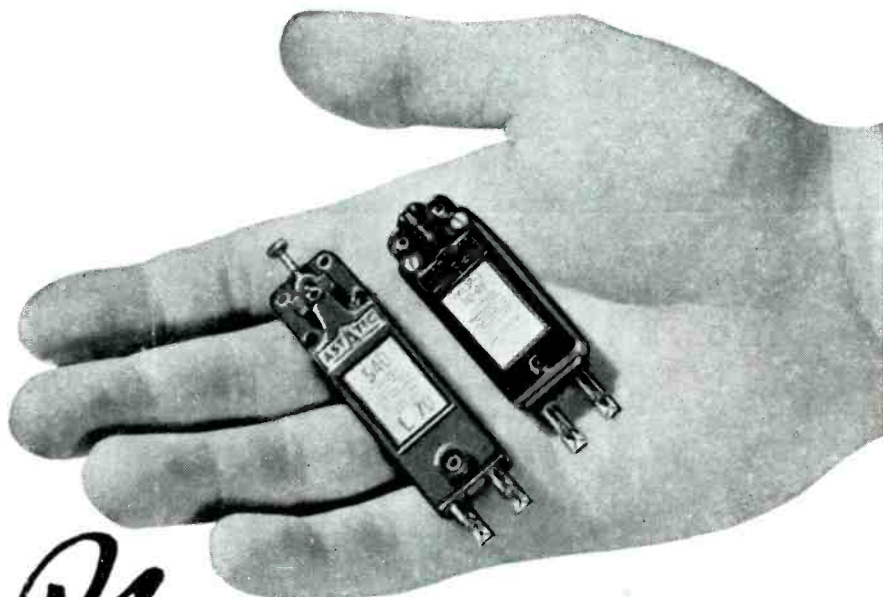
Today, repairmen are charging \$1.50 to \$2.50 per hour without fear that the shop down the street will fix the set for fifty cents. As already indicated, the professional expects that fees of \$4 to \$10 per hour will not be uncommon for work on the highly complicated combination, Television, Frequency Modulation and other costly sets.

A minimum fee, usually \$1 is already almost standard, this covering tube check-ups, routine examination and estimate. Where equipment is to be picked up at the customer's home, the "portal to portal" principle is being more and more applied by the radioman who knows his cost of doing business. An hour spent in pick-up and return to the shop is as costly to the service man as an hour spent at the bench, and he should certainly charge accordingly.

Various enlightened suggestions on the hotly debated question of pricing practices are worth noting:

1. Whenever possible, let your customer know the "inside story" of how the charge is fixed. Explain the job to the customer and don't let him think you pocket the whole repair charge. Point out how much is spent for parts, for pick-up and delivery, for time spent in diagnosis and inspection. Without bragging unprofessionally, give the customer some idea of the extensive technical training it has been necessary for

*(Continued on page 63)*



# New Astatic Cartridges

## Improve Phonograph Reproduction

INTENDED for use with both automatic record changers and manually operated equipment, these new Astatic Cartridges, in MLP and L-70 Series, assure a degree of fidelity heretofore unparalleled in the reproduction of recorded sound. All new Astatic Phonograph Pickup Arms will include these finer Cartridges.

L-70 Series Cartridges are of the replaceable needle type, are designed with streamlined housing, high output voltage and low needle pressure.

MLP Series Cartridges are of the permanent or fixed stylus type and are engineered to operate at one-ounce pressure, with increased vertical compliance, higher output voltage and reduced needle talk.

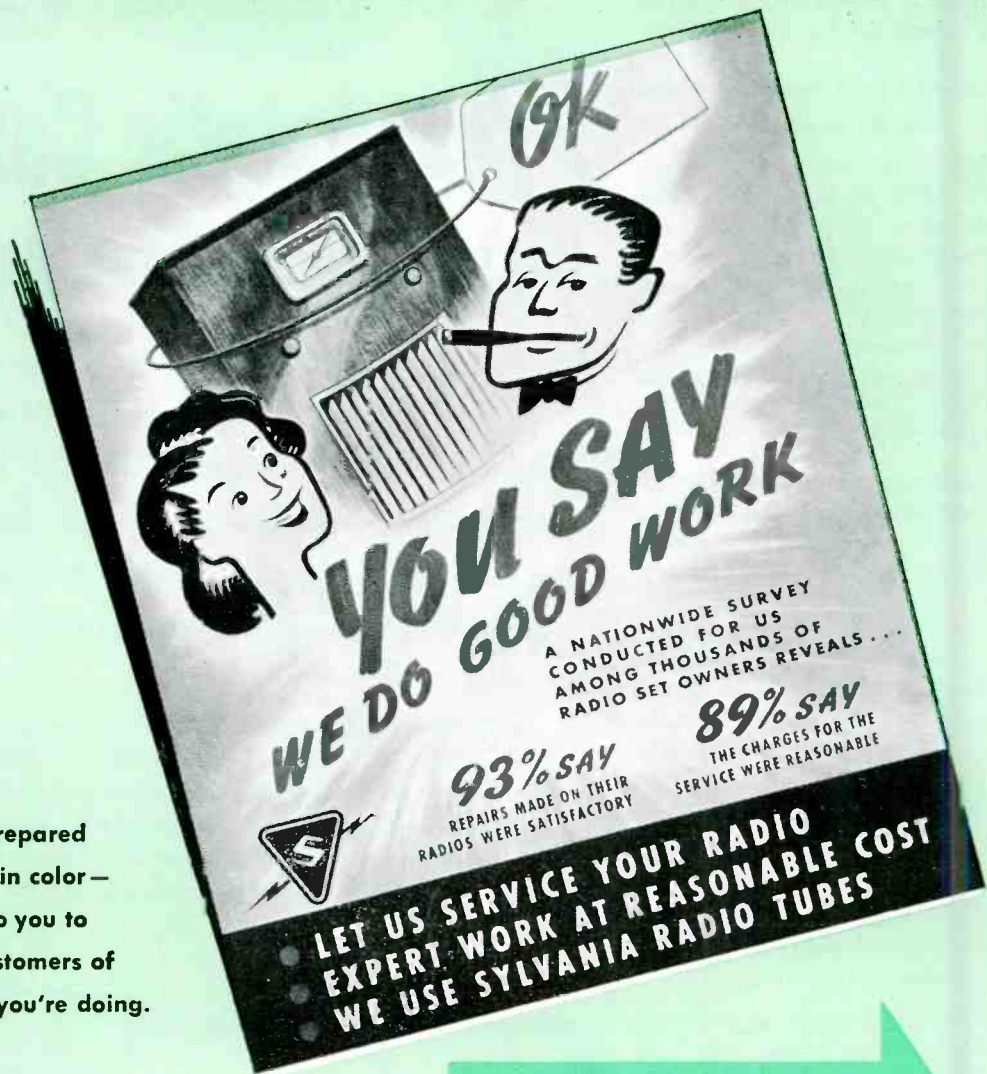
*"You'll HEAR MORE  
from Astatic"*

• Astatic Crystal Devices  
manufactured under Brush  
Development Co. patents.

THE  
**Astatic**  
CORPORATION  
CONNEAUT, OHIO  
IN CANADA. CANADIAN ASTATIC LTD., TORONTO, ONTARIO

# SYLVANIA NEWS

## MR. AND MRS. AMERICA SAY YOU'RE PLENTY OK



This specially prepared survey poster—in color—has been sent to you to remind your customers of the good work you're doing.

**SEE SECTION 2  
FOR FULL STORY...**

# SYLVANIA NEWS

SECTION 2

## RADIO SERVICE DEPARTMENTS RECEIVE COUNTRY'S COMPLETE CONFIDENCE, NATIONAL SURVEY SHOWS

A recent nationwide, *independent* survey—conducted by one of America's leading market research organizations—reveals that not only do 93% of the thousands of people interviewed firmly believe that the radio serviceman does a good job, but also that 89% say

he charges a fair price for his work!

That's a flattering record—especially since the ground covered in the survey was scientifically selected, both from the geographical distribution standpoint and income group. Yes, J. Q. Public says you're plenty O. K.

### WHAT THIS MEANS TO YOU

To radio service departments of retail stores this means an assurance of the continuation of this public trust in the busy years ahead. For, if this confidence was maintained throughout the past *difficult* period (hard-to-get tubes and parts), it is certainly expected to continue—and grow—in the following years, when the millions of radio tubes, mechanical and electrical parts needed will

be available. (This trust will also greatly help retail sales of new sets.)

All of this spells opportunity for radio retail stores with service facilities. Knowing that they have the public's confidence, they can combine the other ingredients of quality components and high class equipment to form an unbeatable formula for success. And we're here to help, in every way we can.

SYLVANIA  ELECTRIC  
Emporium, Pa.

MAKERS OF RADIO TUBES; CATHODE RAY TUBES; ELECTRONIC DEVICES; FLUORESCENT LAMPS, FIXTURES, WIRING DEVICES; ELECTRIC LIGHT BULBS  
RADIO-TELEVISION JOURNAL, FEBRUARY, 1946

# How Ecklen Got The Auto Trade . . .

By Otis Peterson

Looking for a good radio shop location?

Is there a good-sized public garage in town?

If there is, it may well be the solution to your problems.

Take, for example, the experience of E. C. Ecklen. After trying various locations, he settled about ten years ago at 20 North Ninth Street, Minneapolis, in the Pence garage in the loop district. Business increased twenty-five per cent almost immediately over that of his previous location. He was able to handle his customers better. His overhead was cut, his floor space increased.

Starting with two full time employees, he soon had to add another, and then another, until six were hired to care for the ever increasing business.

Specializing in radio service, the shop is located in one corner of the garage. Radios brought in for repair are received at the front of the shop, which is glass enclosed except for an opening to take care of customers. The front part contains the office and automobile radio repair equipment. A door opens to the rear of the shop, where house sets are repaired. The ceiling of the garage is high enough to allow a storage room above the shop.

The special equipment in the front room includes battery current, ranging from four volts to eight volts, to meet the varying needs for efficient automobile radio service, and test instruments. Batteries are concealed beneath the bench and kept up by a battery charger so arranged that it can be left on over night, replacing current used during working hours.

The test instruments are all recessed in the back panel with the exception of one small portable instrument which can be taken out on the garage floor to do preliminary testing before radios are removed from the cars. Suitable drawer and cabinet space provide ample room for tools and accessories, eliminating unnecessary cluttering up of the work bench. There are two telephones in the front of the shop; many times both are busy.

Of the several entrances to the garage, one opens almost in front of the shop. This could be called the Ecklen Radio Company entrance. The name of the shop appears on the outside above the door, together with a listing of types of radios for sale and of service offered. This door opens upon a broad aisle which runs past the radio shop and through the garage to another entrance.

Having a location where customers can drive in has proved a great advantage and business stimulant. Since parking places are at a premium in the district the drive-in feature is a real customer convenience and consequently a business builder. The customer can drive in and park his car only a few steps from the shop. This is particularly convenient for women drivers who bring in radios. It makes possible the radio shop employees carrying the radio from the car to the shop with little loss of time. It often enables the Ecklen shop to save a driver, picking up or delivering a radio, from getting out his car.

Another important attribute of this location is that it encourages people to bring their radios to the shop, rather than have a service man come to the home. Time spent going

EDITOR'S NOTE: We are pleased to present this factual operational story written for you by one of our correspondents in Minneapolis. There are several new angles here that will bear further excellent one. That the idea is a sound one is attested to by the fact that the Ecklen Company has attained great success. investigation and the thought of capturing the auto radio repair business by actually locating in or near a garage is an ex-

to and from a customer's home is always a headache, as service men hesitate to charge a profitable rate for travel time.

The location also provides a good place to keep care—no working out in a cold open lot or street. Tools are convenient. In the repair of car radios it is often necessary to perform operations on the automobile which are not a part of the radio—the removal of a heater from the car in order to service the radio, for example. This requires the use of garage tools, which are readily available. Sometimes, in installing a radio, to eliminate motor noise it is necessary to have access to the bottom of the car. The hoist used for greasing cars is used.

The location, however, is not the only reason for the success of the business. Mr. Ecklen insists that job be done right at a fair price. Complete honesty and fairness are





essential to the building of a business, he asserts. By far the best kind of advertising, Mr. Ecklen has found, is person to person. Establish good will among your customers, and they will work for you.

If in checking a radio it is found that the repair charge would be out of proportion to the value of the radio, or would come to more than the customer might have supposed, no repair work is done without first contacting the customer and discussing it with him.

Replacement of dead fuses offers another means of gaining customer good will. A quick check will reveal the cause of a dead radio if a fuse is blown. The Ecklen Company replaces the fuse without charge. They tell the customer that apparently the trouble is just a fuse but should the new fuse soon burn out the radio should be checked further.

This creates customer confidence. He is surprised at not being charged for the fuse. He feels Ecklen is not taking advantage of an opportunity to run up a bill. If the fuse should blow out soon, indicating trouble somewhere in the radio, the customer very likely comes back to Ecklen for further repair work. As the average patient doesn't know the actual necessity and value of work done on his teeth by the dentist, so the average customer doesn't know the actual necessity and value of work done on his radio by the service man. He is inclined to be suspicious, and frank discussion with him will do much to eliminate this suspicion.

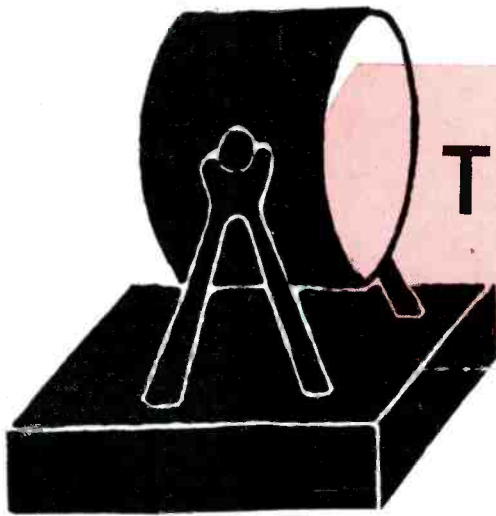
During this war time Ecklen does something else much appreciated by his customers. To prevent unnecessary trips he notifies customers when their radios are ready; he makes appointments with the customer for

the installing, or re-installing, of a car radio.

Keeping on hand a complete line of parts, especially parts generally unavailable, has helped Mr. Ecklen to build a good business. Jobs held up because of lack of parts are irritating to the customer.

Specializing in automobile radios, the Ecklen Company does installing for numerous dealers in Minneapolis and has a factory service arrangement to care for warranted maintenance with several large manufacturers, including Philco, Zenith, R.C.A., Spartan and the United Motors.

So—for that shop location don't overlook a good public garage. Top facilities for car work. Lower overhead. Customer convenience. These and fair treatment of the customer add up to *success* in the radio business.



# TURNING THE SPOT

By Fred Merish

Some years ago the retail business world went turnover crazy. The sole road to success was supposed to be "Quick turnover, small profit", or "Big turnover, big profit". Because of our war restrictions and shortages of merchandise, these credos were put in moth balls after Pearl Harbor but they take a new lease on life in the postwar period inasmuch as many retailers still think them infallible.

Nothing could be more askew, hence, we shall turn the spotlight on turnover so that you do not encounter foxholes in the postwar period when many new items will come to market, and old ones in new dress, when you will be expected to give a good accounting of yourself as a competent businessman. If you revert to the prewar mental status and judge results solely on the basis of turnover, you may walk the plank into a sea of red despite the big opportunities awaiting you after the Japs get their raps.

Turnover should be appraised in connection with other factors. Taken alone, it does not yardstick profit. Price level, margin, mark-up and average stock carried, may be considered with the turn to measure business efficiency. Moreover, there are two kinds of turns, item turn in units and inventory investment turn in dollars, the former far more important than the latter in gauging the profitability of turn, yet, many dealers put their entire trust in the turnover of inventory investment. The following tables will simplify understanding of this problem be-

**FIGURE 1.**

| Item  | Purchase price | Selling price | Margin % on sales | Average stock | Sales units | Average turn | Dollar spread |
|---|----------------|---------------|-------------------|---------------|-------------|--------------|---------------|
| #1  | .90            | \$1.50        | 40%               | 100 units     | 400         | 4            | \$240         |
| 2   | 1.20           | 2.00          | 40%               | 100 units     | 400         | 4            | 320           |
| Same turn, same margin percentage, yet, 33 1/3 per cent more spread on Item #2 because price level is higher. |                |               |                   |               |             |              |               |
| Item  | Purchase price | Selling price | Mark-up on cost   | Average stock | Sales units | Average turn | Dollar spread |
| #3  | \$1.00         | \$1.30        | 30%               | 100 units     | 400         | 4            | \$120         |
| 4   | 1.00           | 1.40          | 40%               | 100 units     | 400         | 4            | 160           |
| Same turn, same price level but 33 1/3 per cent more spread on Item #4 because mark-up is higher.             |                |               |                   |               |             |              |               |

cause it makes visualization easy.

A stock control system provides the best medium to check on the profitableness of item turn. Record units, not dollars, using this type form. See Fig. 2.

Profitable items beg profitable business. Stock control polices inventory and weeds out shelf-warmers and unprofitable lines. Figures under January show how recordings are listed from month-to-month. The dollar spread or margin earned on item sales for the period is the best yardstick of profit-productiveness. Summarize results at bottom of form.

So much for item turn. Now, we dissect inventory investment turn.

#### The Wrong Way to Figure Inventory Investment Turn

Purchases during year .....\$20,000  
 Inventory at end of year  
 at cost ..... 4,000

Turnover—\$20,000 divided  
 by \$4,000 ..... 5

If the inventory at the end of the year is lower than average during the year, your turn will figure higher than it really is. If ending inventory is higher than monthly average during the year, your turn will figure lower than actual.

#### The Right Way to Figure Inventory Investment Turn

Inventory beginning of year  
 at cost ..... \$6,000  
 On hand end of  
 January at cost ..... 4,000  
 February at cost ..... 2,500  
 March at cost ..... 5,500  
 April at cost ..... 6,000  
 May at cost ..... 7,000  
 June at cost ..... 5,000  
 July at cost ..... 5,500  
 August at cost ..... 4,500  
 September at cost ..... 5,000  
 October at cost ..... 5,800

# LIGHT ON **TURNOVER**



|                        |                    |
|------------------------|--------------------|
| November at cost ..... | 4,200              |
| December at cost ..... | 4,000              |
| <b>Total .....</b>     | <b>13/\$65,000</b> |

- \*Average inventory at cost .....\$ 5,000
- #Purchased during year 20,000
- ##Average turnover ..... 4

*\*Compare with current carry to denote trend and variance from average.*

- #From purchase records.
- ##Means little. Surveys show that dealers with 4 turns of inventory investment operate un-

On hand end of January at cost .....\$4,000

This formula presumes that you cost your sales, either with a code on each sales ticket, or by some other method. If you do not cost your sales, you may deduct your average mark-up margin from selling prices and enter the result as "Sales during month at cost" . . . Check the accuracy of this computation with a physical inventory taken quarterly, semi-annually or annually and adjust your records with the physical check.

Inventory, as a balance sheet as-

but this ratio is not dependable. The best yardstick is how you pay your bills. If you are prompt pay with your own money, and you are getting profitable item turns, our inventory is usually in safe ratio because you are turning it fast enough to meet obligations, indicating satisfactory working capital.

Contrary to business counselors, there is no fixed turn that will produce most profitable results. The turn will differ with the business, the item and business conditions. The average turn as shown by group studies is a guide, after a fashion, but do not place too much dependence in it. Find out YOUR most profitable turn on different items or lines by means of adequate recordings and maintain it as long as it is profitable. Profitable turnover will vary from time to time so you must keep watching this figure continually. At one time you may turn an item or line 5 times and lose money on it, at another time, you may get a stockturn of only 4 and make a nice profit.

In conclusion, we want to emphasize that a high turn is no assurance of big profit and the turn on inventory investment blankets so many imponderables that it blacks out the possibility of competent analysis. It keeps you too much in the dark and if you place dependence solely on this figure, you will stub your toe sooner or later.

**Figure 2**

| Item          | Supplier      |            |     | Size |      |     | Quantity      |     |     |     |     |     |
|---------------|---------------|------------|-----|------|------|-----|---------------|-----|-----|-----|-----|-----|
|               | Selling Price | Cost Price |     | Min. | Max. |     |               |     |     |     |     |     |
|               | Jan           | Feb        | Mar | Apr  | May  | Jun | Jul           | Aug | Sep | Oct | Nov | Dec |
| Beginning—    | 110           | 90         |     |      |      |     |               |     |     |     |     |     |
| Purchased—    | 50            |            |     |      |      |     |               |     |     |     |     |     |
| Sold—         | 70            |            |     |      |      |     |               |     |     |     |     |     |
| Ending—       | 90            |            |     |      |      |     |               |     |     |     |     |     |
| Average Stock | Sales         |            |     | Turn |      |     | Dollar Spread |     |     |     |     |     |

*profitable businesses, others with 3 turns operate profitably. The former had too many unprofitable item turns.*

**How to Get the Monthly Inventory Figure**

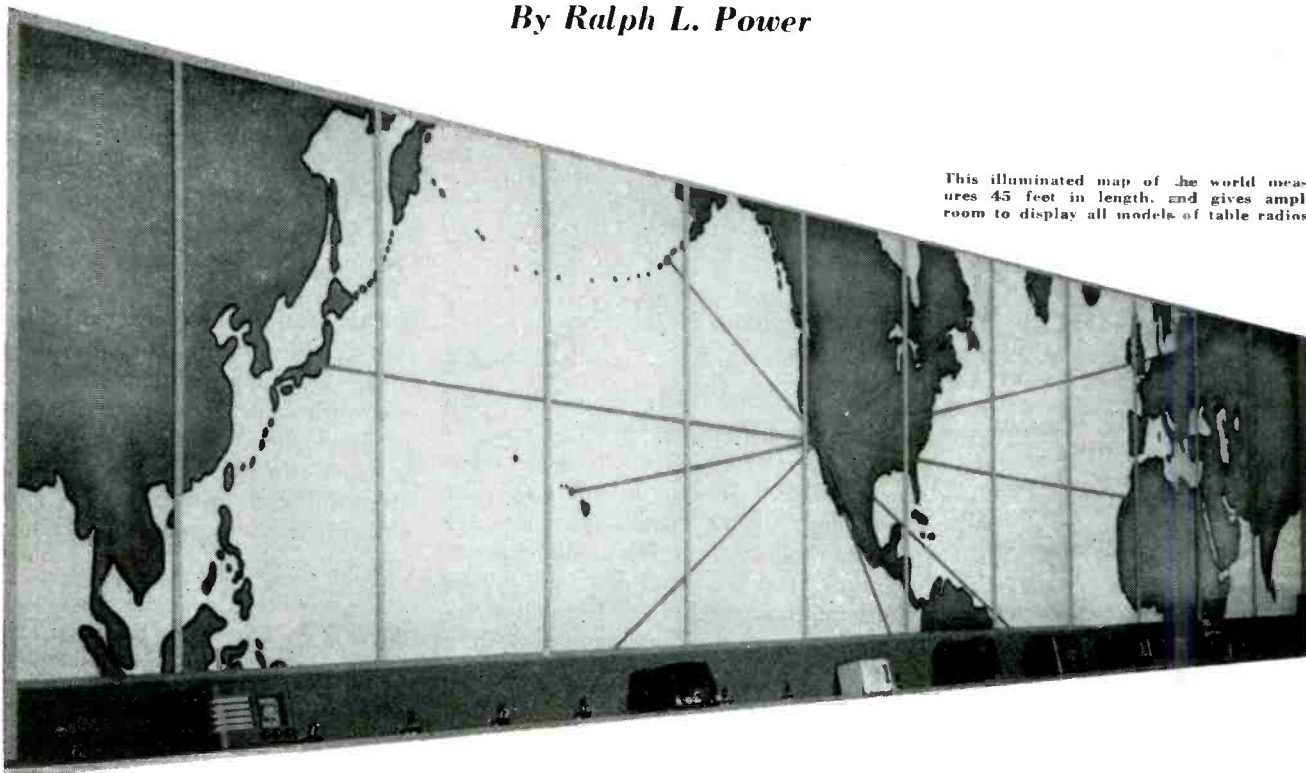
|   |         |
|---|---------|
| Inventory beginning of year at cost ..... | \$6,000 |
| Purchases during January....              | 1,000   |
|   | <hr/>   |
|   | \$7,000 |
| Sales during month at cost....            | 3,000   |

|  |         |
|--|---------|
| set, should be watched because too much capital tied in stock is bad. Take these balance sheet listings. |         |
| Cash .....   | \$1,000 |
| Receivables .....  | 1,200   |
| Inventory .....  | 4,400   |
|  | <hr/>   |
| Current assets .....   | \$6,600 |

It is generally believed that when the ratio of inventory to cash and receivables is 2 to 1, that all is well

# *Barker Brothers — Merchandisers DELUXE*

*By Ralph L. Power*



This illuminated map of the world measures 45 feet in length, and gives ample room to display all models of table radios.

Radio servicemen in Los Angeles have long had a champion in the person of O. R. Coblentz, manager of the radio department for Barker Brothers. He has been in the radio field in the west for a score of years. Now his utopian plan for putting servicemen on a higher plane is getting the acid test.

The Coblentz philosophy is good business. He does not consider servicing and installation as a "necessary evil and expense." Quite the contrary. He believes that the man who installs, being the last to see the buyer, is responsible for leaving the customer a satisfied one.

Barker Brothers, sixty-six years in business and the world's largest home furnishings store, besides the Los Angeles establishment, has ten other locations in nearby communities. This year a new branch is under construction in Pasadena. Their complete trading area runs from the northern boundary of Kern

county south to the border of Orange county. Riverside and Bakerfield loom up large in the expansion plans for new buildings.

But the immediate problem for postwar is the metropolitan territory. This has been divided into eight service areas . . . Pasadena, Hollywood, Gardena, Beverly Hills, Leimert Park, Long Beach, Westwood and, of course, Los Angeles.

There was a day when servicemen were poorly paid and much under-rated. Some of the low pay could be traced to the time-old custom of reporting at a central spot for daily assignments. Barker Brothers believe that radio men ought to receive a more adequate wage, made possible by economies in operating cost with de-centralization but with bulk buying power.

So Mr. Coblentz evolved a plan which L. B. Brittain is carrying out. Operating under the fictitious name of Central Electronics Service Com-

pany, the service department operates as a separate entity and is not owned or controlled by Barker's. The Company holds a contract for the exclusive Barker Bros. installation and repair work.

The Company licenses the eight services locations and each shop is owned as an individual partnership by the workers there. The locations are known as Central Electronics Agency number 1, 2 and so forth. Thus the plan is actually a cooperative movement.

Besides the fact that each worker has a vital interest in his work, the operating costs are pared down to a considerable degree. The buying of parts is done by group buying. One auditor travels around and looks after the books in each shop. Legal talent is available from Barker Bros. headquarters and the firm's advertising department handles community advertising, telephone classifieds and a projected radio rotating spot series



L. B. BRITTAIN

with costs pro-rated to each service center.

The proprietors of the agencies meet every two or three weeks for a dinner round table to summarize developments and iron out bugs in the deal. They believe that the public will pay well for service, if service is actually rendered and a legitimate profit merited. They believe that their cooperative venture will ultimately go a long way in dis-abusing the public's mind of the pre-formed idea that all radio servicemen are gyps. With this in mind, they plan annually to make a written report of their activities, including charges and profits, to the local Better Business Bureau.

The partner-workers are, of course, bonded and insured for their own protection as well as the public. Barker's has made arrangements to finance the buying of trucks for each service center, and eventually the plan calls for the servicemen to make deliveries of radio merchandise. This, too, will effect considerable saving in time and money when delivery and installation are made by one crew.

The Coblentz Plan calls eventually to extend from radio to include electrical merchandise, and particularly small household appliances.

Barker Bros. radio department is personally headed by Mr. Coblentz. He is pioneering in the radio retail field, as well as putting innovations in effect through the cooperative servicing angle.

One of the most potent arrange-

ments, when they have the stock, will be the use of the walkie-talkie by each salesman on the mezzanine floor of the home furnishings store where the radio department is located. This department, with the record annex, covers half a city block. So the sales force will use the walkie-talkie as a novelty demonstration to potential radio buyers, and also to communicate with different parts of the store's radio area . . . technicians, bookkeeping, credit and other personnel.

A Coblentz innovation will be the fashioning of an oscilloscope to demonstrate the difference between carrier waves of FM and AM signals. Of course by far the majority of radio fans wouldn't understand it. But it shows that the store is up-to-the-minute in adopting easy-to-take sales methods, and the public is conscious of efforts made to make things less difficult for them in making a decision.

The department is also getting ready for television, and it has some novel ideas in the fire, though it would be a bit premature to divulge them at this time.

There are some 20,00 square feet of space in the radio salesrooms. The spacious and ornate lobby is an eye stopper with a symbolic map that covers the entire front wall. After considerable experimenting, and finding that glass curtains would not do the work, an immense crystal plate was installed, and an outline world



O. R. COBLENTZ

map featured thereon. It depicts the continents with streamers used to spot world capitals. At the base a long stand-up counter with 48 electrical connections makes it possible to display and demonstrate that number of table models. The counter shelf, cushioned with carpeting, is tilted upward so customers can see the dial without stooping down to eye level. To prevent the theft of the instruments they are uniquely padlocked through an ingenious twist of the cord before locking. The models range from low cost styles is at one end of the higher priced units at the other end. A bevy of sales girls will be assigned to this portion of the sales salon.

Barker's has exclusive local rights to the GE de luxe Musiphonic line of high priced radio sets and combinations. It likewise has exclusive



Here we have a close up view of the unique modernistic "record bar" which is doing much to maintain the Barber Bros. sales volume.

on the ultra-ultra of the Meissner line. Then, too, it has its own name brands in the Tempo-Tone and the Tempo-Phonic, as well as fourteen other nationally known lines of radio receivers. The entire range of radio merchandise at Barker's will therefore run from low priced items selling for a few dollars up to custom-built radio-phono-records at \$1,500 or more.

The firm has just spent \$150,000 to entirely redecorate the radio quarters. The main salon will be used to house the general display in lounge fashion. There is an immense suite of individual air conditioned demonstration rooms that is actually the answer to a radio man's dream. There are color combinations of every conceivable hue. Period furniture enhances the chance of putting the customer in a buying mood. Hollywood atmospheric short cuts have been used to lend an air of glamor to the overall scene.

There are separate display and customer rooms for each brand the department handles. There are super

de luxe rooms wherein one single special high class item is artistically displayed on a miniature stage immediately facing the entrance. Everything focuses on one product. There are no other models or side lines that might tend to confuse the prospect. He, or she, can restfully center attention on a demonstration of a single item without distraction or confusion.

Something new under preparation at the west coast institution will be a brochure for builders who want to install radio facilities in buildings to be constructed. It has been planned as a good-sized publication, well illustrated with photos and complete blueprints. It will carry complete instructions for providing facilities for remote control operation, television set installation, built-in radio receivers in the walls, even public address systems designed for program pick-ups and inter-communication on estates to servants' quarters, garage, swimming pool and other places. The descriptions and instructions will include provisions of insurance underwriters and also for

patent license provisions when necessary.

The Los Angeles company has wiped off the old trade-in bugaboo with one sweep. It will not confuse the buying public with a lot of second hand sets for sale. On the other hand, it believes the trade-in prices will be fair to the purchaser and commensurate with good business principles.

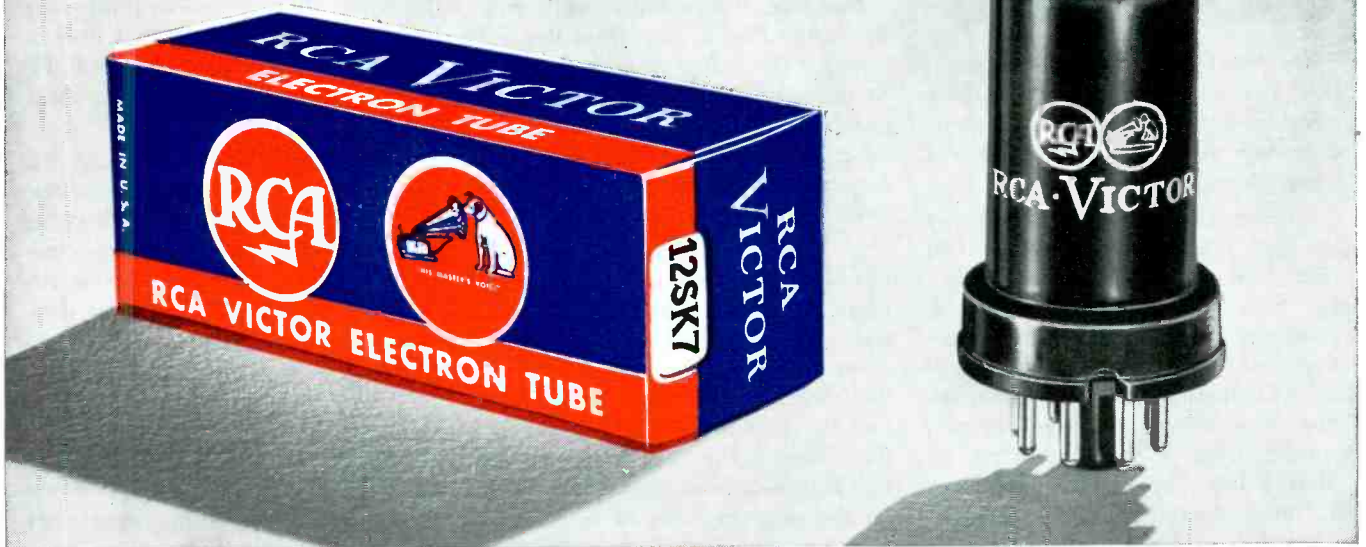
Arrangements have been completed with a former radio department manager, now in business for himself. This outside firm will do all the appraising of trade-ins and will pay the amount to the customer in the form of a sales credit on Barkers. It will operate its own sales store for the disposal of the trade-in sets with no connection to the household furnishings establishment.

West coast radio retail outlets have been eager to copy the best from standard practises in the East. But there is every indication that Barker's radio department has not been content to follow beaten paths. It is blazing some trails of its own.

Below we see another view of the "record bar," showing the striking display of complete albums located directly adjacent.



THE TUBE WITH A HERITAGE



# MAKE A NAME FOR YOURSELF WITH RCA VICTOR ELECTRON TUBES

THE NAMES RCA and Victor are as familiar as they are famous. Combined, they have stood as a symbol of the finest in music-producing instruments for over a quarter of a century.

Equally as familiar and famous are the RCA Victor Electron Tubes—the tubes with a heritage! For years they have been the selection wherever quality is demanded.

Your customers naturally want replacement tubes of unquestioned quality and performance at established

prices. You will find that they have implicit confidence in RCA Victor Electron Tubes.

And remember—RCA products serve to enlarge your patronage.

RCA  
sells a complete line of  
Preferred-Type Radio  
Batteries and Test Equipment.

Listen to  
"THE RCA VICTOR SHOW"  
Sundays, 4:30 P. M., EST  
NBC Network.

THE FOUNTAINHEAD OF MODERN TUBE DEVELOPMENT IS RCA



TUBE DIVISION

**RADIO CORPORATION of AMERICA**

HARRISON, N. J.

# In Spite of Shortages...



For every venture started in wartime that eventually succeeds there must be dozens that fail. However, every now and then we hear a success story that is outstanding.

Among these favored few that somehow "managed" we find two men (above) who made it. They are Sam Bezos and Fred Konkle, president and vice president respectively, of the K. & B. Radio & Appliance Company, located in Albuquerque, New Mexico. These two men started from a standing start on March, 1945, by renting a building 17 feet wide and about 60 feet deep. They then proceeded to negotiate for

the various franchises that they now hold.

However, the cessation of hostilities in the Pacific brought a decided turn for the better in both the K. & B. outlook, and the K. & B. headquarters. Anticipating a quickening business pulse, they contracted for a special building to be built to their own specifications.

Then came the necessity of finding the materials to build with. Plans called for a building 50 x 50 feet, with 88 feet of plate glass windows. The service room is 12 by 38 feet, the office is 12 by 12 feet, and the remainder of the space, 50 by 38 feet, is the sales floor. To say that materials were hard to get would be the grossest kind of understatement, as anyone who has tried to

build or remodel recently will testify. Even at the present time the building is not quite completed, although the firm is occupying it. Strikes have held up the completion of the Carrera glass front and the steel windows.

Expert and efficient radio service has done a great deal to give the new store a positive identification. This combined with honest and reasonable prices have in themselves made success an almost forgone conclusion. In addition to the service department there is a very successful record department. This is handled on the increasingly popular self-service basis, and latest reports would seem to indicate that this department is going to be a very profitable one.



At left is the interior of the new building's sales floor, illustrating the modern theme that is followed throughout the building's construction and appointments.

To the right we see a beautiful nighttime shot of the new K & B exterior, showing their outstanding neon sign. Exterior is not quite finished.





## REALISTIC PRICING URGED

### Farnsworth Presents Velvet Action Record Changer

The new 1946 velvet action type P-50 automatic record changer employs the use of three shelves, instead of the usual one or two shelves, which reduces to the minimum



chipping and enlarging the center hole of the record, according to E. S. Needler, manager of the special products sales division of the Farnsworth Television & Radio Corporation.

This record changer is being manufactured at the Marion, Indiana plant and full scale production of this medium priced unit started about the middle of December.

The operation of this streamlined record changer is velvety smooth as it plays through a stack of either ten twelve-inch records or twelve ten-inch records.

### FADA Names Lubet As Advertising Manager

Mr. Jack M. Marks, the president of Fada Radio has just announced the appointment of Herman N. Lubet as Advertising Manager.

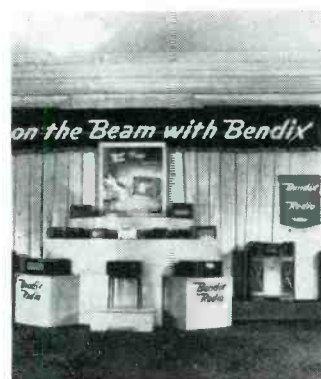
In announcing the appointment, Mr. Marks said, "We are entering upon a period in radio history that may well set the future manufacturing

and selling pattern for many years ahead. We here at Fada are planning our course in the knowledge that it must be a long range pattern, designed to bear fruit after the initial hysteria of radio buying has subsided. In two or more years hence, what will be the position of the radio manufacturer? What creed must the industry adopt in order to safeguard its proper position?

### 4,300 Dealers View Bendix Radio Displays

Over 4,300 dealers visited the Bendix Radio display booth at the American Furniture Mart, Chicago, during the Winter Market, according to L. C. Truesdell, General Sales Manager, Radio and Television, Bendix Radio, Division of Bendix Aviation Corporation.

Seventeen models were elaborately displayed. One of the outstanding attractions of the show was an invisible radio with a phantom dial. Other features of the 1946 line included plastic table models with enclosed, dust-proof backs and built-in, concealed handles; radio-phonograph combinations with a new magic hide-away device for the record changer; and furniture-styled cabinets.



### C.P.A. Head Takes Stand That a Policy of Realistic Pricing Will Pave Way for Peak Production

#### Westinghouse Receivers Displayed at Chicago Mart

Sixteen variations of nine original Westinghouse radio receivers for 1946 were featured in the Home Radio Division's new exhibit at the National Home Furniture Show in the American Furniture Mart Building in Chicago.

Engineering feature of the line is the radical new Westinghouse Plenti-Power Circuit which gives these new sets practically double the power output of pre-war sets employing the same number of tubes. All record players are fully automatic, controlled by a single button and will accommodate either 10 12-inch or 12 10-inch records.

Prices, some still to be approved by OPA, are expected to range from \$32.95 to about \$300, Manager Donley points out, with a striking 14-tube, AM-FM, standard band-short-wave, radio-phonograph combination in a stately mahogany cabinet of contemporary Chipendale design —

A plea for a policy of realistic and flexible price controls was voiced here in Washington recently by John D. Small, head of the Civilian Production Administration. Taking the stand that the quickest way to speed up reconversion was to make price concessions Mr. Small indicated that this policy applied to parts components especially. If this were done set manufacturers would react under the stimulus and a much greater column of sets would be produced thereby quickly attaining the state of balanced competition so much desired.

According to a recent CPA progress report dealing with consumer and producer durable goods and critical materials, shipments of domestic radio sets during the month of December totalled only approximately 100,000 units.

This small figure, when analyzed reveals that the set manufacturers, in spite of rose forecasts made during past months, were only able to produce and deliver an estimated 8% of the pre-war average monthly production. This does not take into consideration that this was figured against a pre-war average, rather than a pre-war month of December



(Continued on page 37)

"What about this  
that Westinghouse



# PLENTI-POWER

## Radio is advertising?"

Plenti-Power is a brand new radio circuit. It gives a low-priced Westinghouse 7-tube set more crystal-clear, undistorted power output than most 12-tube sets had prewar!



Why all the power? I'm not buying a set because it's loud.

Of course you're not—no more than you drive your car 90 miles an hour. But you do like the fire-ball pep and getaway you get from a 90-mile-an-hour engine! Right?



It's the same with a radio. If you want brilliant, true-to-life reproduction of your radio programs and records, your radio has got to have plenty of reserve power.

And they used to add more tubes to get more power?



Right . . . and that cost money. But today with Plenti-Power you can have real 12-tube concert-hall reproduction in a modestly priced 7-tube Westinghouse.



**PLENTI-POWER MEANS SALES TO THE MILLIONS WHO WANT 12-TUBE PERFORMANCE ON A 7-TUBE BUDGET . . . IT'S SALES POWER FOR YOU!**

*Seriously—there's no kidding about the Sales Power you'll have in Westinghouse Plenti-Power. It doesn't take an expert to hear the difference! Anyone can hear it—and everybody likes it. It's one of the features that makes it easy for you to convince your customers that the 1946 Westinghouse Radio is completely new—not a "warmed over" prewar set. Home Radio Division, Westinghouse Electric Corporation, Sunbury, Penna.*

Radio's first name is

**Westinghouse**  
RADIO TELEVISION

**Electrical Reactance Corp.  
Issues New Bulletin**

Hi-Q Silver Electrode Ceramic Capacitors are described in a new bulletin just released by the Electrical Reactance Corporation, Franklinville, N. Y. The bulletin relates to the CN type of capacitor with parallel leads. Attractively printed in two colors, the folder contains detailed diagrams showing construction of the capacitors together with photographs illustrating various steps in the manufacturing process. Included are complete specifications for the line and type designations according to JAN specifications.

**Carlos V. Del Mercado  
Named by Majestic Radio**

The appointment of Carlos V. del Mercado as assistant sales manager of Majestic Radio & Television was announced recently by E. A. Tracey, president of the Company.

Mr. del Mercado, who has been associated with the radio



**CARLOS DEL MERCADO**

industry for almost 20 years, has been Majestic's Export Manager for several years.

In announcing the appointment, Mr. Tracey said, "Mr. del Mercado brings to our domestic operation the wide radio merchandising knowledge which has characterized his achievements in the export field. His ability to gauge the market as to design and price requirements, and to create merchandising promotions to fit a changing market will

prove a valuable contribution to Majestic's sales plans and activities."

**Walter Norton Gets  
RCA Victor Post**

Expansion of the Education and Training Division of RCA Victor, in line with the company's extended activities in the manufacture and sale of equipment for audio visual education and personnel training is announced by Frank M. Folsom, Executive Vice President in charge of RCA Victor.

At the same time, Mr. Folsom announced the appointment of Walter M. Norton, leading merchandising executive, as Director of the expanded Division. Mr. Norton was for eighteen years engaged in merchandising and sales promotion activities for Montgomery, Ward and Company in Chicago and New York. Prior to that he was associated with Sears, Roebuck and Company in merchandising activities in Los Angeles and San Francisco.

months later the company was selling more hearing aids than all other manufacturers combined.

With reconversion, Taylor assumed charge of promoting Zenith's new line of radios. In his new post he will continue supervision of sales promotion, in addition to having full responsibility for the company's advertising program.

**Perkins New Admiral  
Regional Manager**

Wallace C. Johnson, Manager Field Activities, Admiral Corporation, Chicago, has announced the appointment of Edwin M. Perkins as Regional Manager.

Before joining Admiral Corporation, Perkins was Manager of the Component Sec-



**EDWIN PERKINS**

**Galvin Appoints Rogers  
As Canadian Representative**

Eugene Goebel, head of the Communications Division at the Galvin Manufacturing Corporation has announced the appointment of Rogers Majestic Limited of Toronto as Canadian sales representatives for Motorola Communications equipment. S. G. Paterson, Manager of the Communications Division at Rogers Majestic Limited will be in direct charge of sales and engineering field work for Motorola 2- and 3-way Radiotelephone throughout the Dominion, and will cooperate with Galvin in taking their expanding communications equipment sales program to Canadian prospects.

tion of the Chicago Signal Corps Production Field Office.

Before joining the Signal Corps, Perkins was District Manager of the McGraw Electric Company — Clark Water Heater Division.

**N. Y. Retailers Preview  
Olympic Radio, Phono Line**

Eight hundred retail dealers from the Metropolitan area recently previewed the advance 1946 Olympic Radio line and merchandising plans, at a meeting called by Joseph Kurzon, Inc., Olympic distributor in this city. The session, held at the Hotel Astor, was conducted by Fred J. Greene, sales manager of Kurzon.

Highlight of the session was a demonstration of 'tru-base', an electronic development in the audio circuit discovered by Olympic during the company's wartime production of radio and radar equipment for the government.

**Zenith Promotes  
E. R. Taylor**

Appointment of E. R. Taylor to become Zenith Radio Corporation's director of advertising was announced by J. J. Nance, vice president. Taylor joined Zenith in 1943, first taking charge of sales promotion for the new Zenith Radionic Hearing Aid at the time of its introduction. Within four months Zenith had assumed first place in the hearing aid industry; two



**MODEL 56  
WEBSTER  
RECORD CHANGER**



**LESS RUMBLE**

Rumble — a disturbing factor to record enjoyment—has been reduced to a new low in this post-war Webster Changer. Just one of many reasons for its preference by the public—and its selection by famous makers of radio phonograph combinations.

*The choice of music lovers*

**WEBSTER CHICAGO**

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

*Other important features*

Built to last • Fast change cycle • Simple, fool-proof operation • Automatic shut-off • Feather light needle pressure • Longer life for records • Reduced "wow" • Quiet running Webster 4 Pole motor —cushion mounted.

(Continued from page 33)

when shipments are always considerable higher than other months. This is due, of course, to the large amount of holiday buying that normally occurs.

The pre-war monthly average figures out to about 1,100,000 sets per month, or over thirteen million sets per year. It is expected that during the course of 1946 this figure will not only be attained by far exceeded, due to the great amount of over-expansion that has taken place within the industry during the war.

However at the present time there are many factors that are standing in the way of the manufacturer and his efforts to produce his sets and get them on the market in the shortest possible space of time. Among these is the fact that producers are having a very difficult time obtaining cabinets. While components of this type always have represented a problem, the problem is rendered even more acute at the present time because almost all set manufacturers find that they seem to be operating in direct competition with the furniture makers. This condition may take some time to overcome, which in all probability will result in a marked shortage of sets that are housed in wood cabinets. On the other hand those models that are designed for installation in plastic cabinets will be in a high state of production as soon as parts and other electronic components are released in quantity. This will take place as soon as someone—or government agency—awakes to the situation and comes to the industry's rescue by establishing a sound price program, as outlined in Mr. Small's report.

As the situation now stands there are few if any parts manufacturers who have prices granted them by the OPA which will allow them to operate at peak capacity at a profit. This has even given rise to actual cases where manufacturers have found that they can operate more profitably at LESS than peak capacity—say 75%—than at 100% capacity!!

In the meantime set manufacturers are forced, in some cases, to lay off

(Continued on page 63)

# Sensitive to a Pin Drop Yet Tough as a Bull



## Turner 211 Dynamic BROADCAST TYPE

- Faithfully Reproduces All Gradations of Tone and Volume with Lifelike Clarity
- Designed for Critical Applications including FM Transmissions

Put this precision-built TURNER 211 Dynamic to the toughest performance tests you can give a microphone. Use it indoors or out under the most difficult acoustic and climatic conditions. It's built to take rough handling and perform like a veteran.

Engineered for Highest Quality recording, P.A., sound system and broadcast work (including FM), the TURNER 211 utilizes a new type magnet structure and acoustic network. The high frequency range is extended and the extreme lows raised 2 to 4 decibels. A unique diaphragm structure design results in extremely low harmonic and phase distortion without sacrifice of high output level. It has a range of 30-10,000 cycles with a very smooth response. Finished in rich chrome, the TURNER 211 Dynamic is equipped with tilting head for semi- or non-directional operation, balanced line output connection, and 20-ft. removable cable set.

Ask Your Distributor or Write



FREE Catalog

Write for complete catalog describing dependable, precision-built TURNER Microphones for all communications purposes.

## The TURNER Co.

902 17th Street, N. E., Cedar Rapids, Iowa

Pioneers in the Communications Field



# TURNER Microphones

### CERTIFIED PERFORMANCE

Crystals Licensed Under Patents of the Brush Development Co.

(Continued from page 36)

'Tru-base', patent applied for, extends the tonal range of the table radio, providing tone comparable to that heretofore known only in large, expensive consoles.

One leader of the line is a 5-tube AC automatic radio-phonograph combination, featuring 'tru-base' in both broadcast and record reproduction. A permanent needle and featherweight pickup minimize surface noise and record wear, and the fully automatic record-changer plays ten 12-inch or twelve 10-inch records.

Olympic's advertising and merchandising plans were outlined by Jack F. Crossin, national sales director. These include use of newspaper, national magazine and radio advertising, together with a rounded complement of store displays and sales helps. Also present at the meeting were A. A. Juviler and P. F. Schoenen, president and executive vice president, of Hamilton

Radio Corporation of New York of which Olympic is a division. Hamilton for many years has been a leading manufacturer of radios for use around the world.

#### Arvin Display



A line of colorful displays for home radios is offered by Arvin. It's revolutionary in that the complete Arvin home radio line of 23 models can be

appropriately displayed by adding a combination radio phonograph at each end of the display set. The display requires only 15 feet of space. Another advantage to a dealer is the use of all five display units, any one or any desired combination, according to models he has in stock. They may also be spotted individually in various parts of the store.

#### Johnson Rejoins Sylvania Electric

Lt. Henry C. L. Johnson has returned to Sylvania Electric Products, Inc., after three years of service in the United States Navy. He will resume his position as Advertising Manager of the Radio Division, and in addition, he will direct the advertising and sales promotion of the Industrial Electronics and International Divisions.



HENRY JOHNSON

#### Grady L. Roark Musaphonic Sales Manager

Grady L. Roark has been appointed Sales Manager of Musaphonic receivers for the General Electric Company's Receiver Division according to an announcement by Paul L. Chamberlain, Manager of Sales for the Division. He will have his headquarters at the Bridgeport plant.

Mr. Roark succeeds W. Hayes Clarke who has been made Sales Manager of equipment tubes for the G. E. Tube Division.

A native of Oklahoma City, Okla., Mr. Roark has been associated with General Electric in various sales, customer relations and manufacturing capacities since 1933, except for a few months in 1945 when he served as merchandise manager with W. R.



GRADY ROARK

Grace & Company and was responsible for merchandise activities in South America.

Mr. Roark is a graduate of Oklahoma A & M College with a B.S. degree in electrical and mechanical engineering.

#### Astatic Service Engineer Appointed

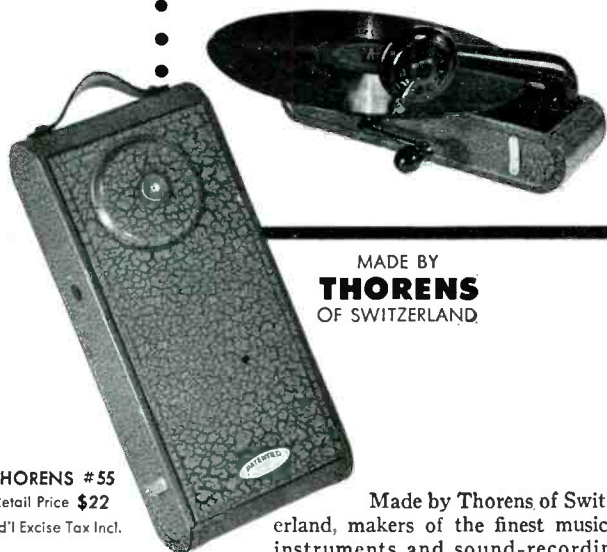
The Astatic Corporation has just announced the appointment of J. K. Poff, formerly of the U. S. Naval Reserve, as service engineer of its Jobber Sales Division. Mr. Poff has had a number of years' experience as a radio service engineer, and served during the war as a Chief Naval Inspector of electronic equipment. His new duties will bring him in frequent communication and contact



J. K. POFF

with Astatic Jobbers to whom he will supply technical information and otherwise assist in the servicing and sale of Astatic products. He will be located at the main plant of The Astatic Corporation, Conneaut, Ohio.

## 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 3/4"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.

**REXON**  
••• INC •••  
GENERAL  
DISTRIBUTORS

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

# *electric* APPLIANCE JOURNAL



## *The Cover:*

This month's cover features the striking and novel entrance to the Admiral Corporation's showrooms at the Furniture Mart in Chicago. Sign is of polished aluminum, and mirrors and trick lighting give spacious effect.

FEBRUARY

1946



MRS. ETHEL MORRISON

### EDITOR'S NOTE

Your Sales Training Institute Editor, Mrs. Ethel Morrison brings you this informative summary of some of the many techniques that have been carefully developed to aid the salesman overcome the various types of customer obstinacy that he is likely to meet from time to time. This material was written after a great deal of actual research, and countless interviews with salesmen, in order to bring you accurate and informative data.

There probably are a few sales made in the electric appliance field in which the customer voices no objections . . . in which he strides purposefully into the store or department, demands such and such an article at such and such a price, hands over the money, and walks out with his purchase. It is hardly necessary to point out that these uncomplicated sales are few and far between . . . and this, perhaps, is just as well, since they almost always concern the less expensive and less profitable merchandise.

In fact, it is a good working policy, if not an infallible one, to say: *beware the customer who makes no objections; he just isn't interested!*

# When The CUSTOMER

### Objections Show Intent to Buy

Before the average customer is willing to shell out his good, hard-earned cash, and before he is willing to make his final selection of an article that is of any importance or interest to him, he is going to voice objections. Some of these objections will be valid: there is something he doesn't understand or doesn't like about an appliance. Some of these objections will be made simply in an effort to get you to give him details and information which you should have given him without any prodding. And some of these objections will be nothing more than a sort of "stall"—a way of prolonging the time before he must make the decision to part with the price of the appliance.

### The Usefulness of Objections

Now, a certain number of objections is all to the good. A little harmless objecting often helps the customer to feel morally justified in making the expenditure . . . after all, he has not been rash . . . he has been "careful".

And where the objections are valid, they provide you with invaluable clues as to what information the customer still lacks, and what his real needs are. They constitute signs as to the correct merchandise to show . . . and may serve as warnings that you have so far been proceeding in the wrong direction, either in the selection of merchandise or of selling points.

When you think of all the useful information that it is possible to garner from customers' objections, it's easy to understand why objections have been called stepping-stones to the successful sale . . . and why, far from fearing them, the experienced salesman welcomes them and uses them to his profit.

It's interesting to reflect upon the fact that it would be impossible to proceed with many sales . . . if the

customer *refused* to make objections!

### When Objections Become Undesirable

Objections become a threat to the sale when they become too numerous,



Magic won't close sales, but effort will.

when they assume a heckling character . . . when they are permitted to dominate the discussion. Too many objections throughout the sale will:

1. Waste time, and prolong the sale to the possible loss of other prospective sales.
2. Put the customer in a chronically objecting frame of mind.
3. Emphasize the less desirable features of the merchandise.
4. Develop an atmosphere in which enthusiasm will wither.

Objections should be accepted, handled, and used as selling aids—but not stimulated or encouraged to the point where they prove obstacles to both the salesperson and the customer.

### Keeping Objections Within Bounds

Who's in control of the sale—the salesperson or the customer? If it's you . . . there will be just enough objections to help you in your selection of appliances, to guide you in your sales talk, and to help your customer blow off steam and ease his conscience. No more.

This presupposes, of course (since if you control the sale you must be at least an adequate salesperson) that you have so far handled the sale



# OBJECTS...

By Ethel Morrison

competently. It pre-supposes that you have given the customer to understand that you are delighted to serve him, and capable of serving him. It pre-supposes that you have sized him up with sufficient accuracy to suggest merchandise that is not unsuitable, and that your entire manner has inspired confidence and respect. These steps taken, you are not likely to have on your hands a customer who will devise objections for the sheer purpose of being ornery and beligerent.

So—the answer to keep objections within the limits which are useful to you, is to so conduct the sale that your customer likes you and respects you. It is up to you to establish the mood and the terms under which the sale is carried on.

## "Yes — But"

So far as handling the objections which are to be expected — and valued—in any sale is concerned, there are several specific methods which have been thoroughly tested on the selling floor and which have amply proved their merit. These tested methods will be explained and discussed in a later instalment. There is one over-all principle, however, which applies to the handling of all objections, no matter what specific method is used . . . and that is, that the objection must be handled tactfully.

Let us suppose that the customer



... when the customer starts to heckle . . .

makes a certain objection and let us suppose that she is wrong—dead wrong; and that you are right—dead right. Is it enough to point out to the customer that she is mistaken? Is it even necessarily wise? By no means. Human nature is such that we all resent any reflection on our knowledge or judgment. It's quite possible that you may prove to the customer that he is misinformed, or that his taste or judgment are poor . . . but your reward for these efforts will in all likelihood be a lost sale and an antagonistic customer.

Of what benefit is it to win the argument . . . if thereby you lose the sale?

Infinite tact and diplomacy are fundamental requirements for successful salesmanship. The customer is "always right", even though you know definitely that he is not.

What then, should you do in instances when you know that the customer is misinformed? Here is where the time-tested "yes-but" principle is brought into play.

*First*—agree with the customer at least partially, or in principle; indicate that you realize his viewpoint is logical and that you understand it.

*Then*—(and only then), present your viewpoint.

For example, let's take the simple case of a customer who has come in for, let us say, an electric percolater. Let's pretend that the following conversation takes place:

*Customer*: "I'm not sure that I want chromium. Silver is always correct."

*Salesperson*: "As a matter of fact, chromium is more correct than silver today. Haven't you noticed the ads and illustrations in the home furnishings magazines?"

The customer has made an ob-

jection . . . and how has that objection been met? Criticism of the customer's viewpoint and know-how



A lost temper is a lost sale.

has been implied; the objection has been ridiculed. And sales resistance has automatically been generated.

Now, let's take that same objection, applying the "yes-but" principle:

*Customer*: "I'm not sure that I want chromium. Silver is always correct."

*Salesperson*: "Yes, silver is always correct, isn't it? *But* so is chromium today. You'll find chromium in the most correctly appointed homes. Have you noticed how much space is being devoted to it in the home furnishings magazines. And chromium has this additional advantage . . . it will not tarnish . . ."

The salesperson first agreed with the customer. *Then* she presented her own viewpoint. The beauty of the "yes-but" method is that it inclines the customer to consider the merchandise in a frame of mind which is friendly and receptive.

Emerson said:

"A man convinced against his will, is of the same opinion still."

Always remember that the surest way to change a customer's mind and to make her want to agree with you is to *first agree* with her . . . then to proceed with the sale.



Librarian Pat O'Connor follows the schedule set up by Muzak's Programming Department. Library contains over 4,000 selections of various specific types of music and is said to be the only one of its kind in the world. Librarian turns platters over to turntable operators, after selection is made.

### EDITOR'S NOTE

For a long time it has been a known fact that certain types of music were useful in lessening workers fatigue. The use of drummers, and story tellers in the cigar and tobacco industry in olden days—especially in the tropics—started a very long time ago. However, it wasn't until the start of the recent war that American industry rediscovered this important technique, and many factories installed sound systems on which were piped recorded or "canned" music for the benefit of the workers.

During the past few years, the firm of Muzak, Inc. has developed this technique along several divergent lines. They have adapted music's ability to induce varying moods to the needs of industry, commerce, restaurants, and all types of retail outlets. Your Editors feel that you will find this article very interesting.

# How About MUSIC?

By Shirley Kay

The much talked of "post-war" world is here—and its theme? Modernization!

During the war years, with all sorts of shortages, priority lists and the O.P.A. and W.P.B. staring the dealer in the face wherever he turned, all that was left for him to do was to make his plans for the peacetime future.

Now these blue-prints are finally coming to life! Stores and showrooms are receiving their new faces! The dealer, finally released from all wartime inhibitions is able to—and is—merrily going his way—enlarging his store, adding new departments and completely new lines, streamlining interiors and exteriors to make way for the expected buying boom that will take place this year—we hope!

Progressive dealers are going all out to meet with ambitious advertising and publicity campaigns, special merchandising promotions and other plans being made by competition. Everything and anything that will attract customers into their stores is being carefully considered.

And right along with all this streamlining taking place, one of the newest—and from what we hear—one of the most exciting retailing aids to be discovered in some time is at the top of the list—Music by Muzak!

Everyone knows the effects of this service of scientifically planned and programmed work music. During the war music's benefits were well known to millions of workers on production lines throughout the country. Specially planned work music programs made factory tasks easier and pleasanter, raised the morale of the workers, and as a re-

sult—production was increased up to 11%.

And while this work music program helped accomplish this victory in production, similar astounding results were revealed as the result of music in offices throughout the United States and Canada.

Most everyone is familiar, too, with Muzak's "background music" programs designed for public places such as restaurants, hotels and other busy places where people come and go throughout the course of the day or night.

And now, taking up where the war interrupted, retail and department stores are showing renewed interest in Muzak.

Those retailers who discovered the value of music as a background where people conduct business agree that although there is no way of proving it by figures, there is no doubt that the subtle influence of a delightful musical background results in increased business.

So, you're a skeptic? How can music increase business? The answer is simple. Psychology!

It has been found that shoppers will remain longer listening while they look around the store, to music that relaxes without being loud, noisy or distracting.

Another important psychological aspect to be considered is the personality gap between the customer and the salesperson. It has been found that the soothing background of music helps bridge the gap and helps them to meet in a more harmonious atmosphere—in somewhat the same way as music at a party helps people to "loosen up" and act

(Continued on page 44)

# Teamed Up\*

FOR YOUR BIGGEST YEAR  
IN KITCHEN SINK SALES



*Precision Built*

## ● STEEL CABINETS

## ● Lifetime Stainless STEEL TOPS

- ★ KANT-RUST
- ★ KANT-TARNISH
- ★ KANT-STAIN
- ★ KANT-WARP
- ★ KANT-DISCOLOR



\*  
FIRST TIME  
ON THE MARKET  
AS AN ALL-IN-ONE  
PACKAGED UNIT

★  
**DUCHESS 160**  
NATIONAL  
RETAIL  
SELLING PRICE  
**\$245.65**

**PLACE YOUR ORDER  
NOW FOR EARLY DELIVERY**

*Call, Write or Wire*

**Paragon Utilities Corp.** 50 VAN DAM STREET, BROOKLYN 22, N. Y.

PERMANENT DISPLAYS: NEW YORK FURNITURE EXCHANGE • CHICAGO FURNITURE MART • SAN FRANCISCO WESTERN FURNITURE MART

natural.

It has also been found that customers will wait more patiently for service in a store while listening to favorite melodies.

The difference between Muzak and "just music" is the vast difference between functional music and entertainment music. Phonograph records employ every trick of the music maker to catch and hold the attention of the listener whereas Muzak transcriptions are specifically made for background purposes only.

Their library is the only one of its kind in the world—over 4,000 selections specially planned, transcribed and programmed for a definite purpose as a soothing background for business.

Top-notch orchestras in concert, popular and novelty fields make up the roster of names. "Names" ranging from Xavier Cugat, Arthur Fiedler, Carmen Cavallero, Ray Bloch to Edwin Franko Goldman record in their studios. Ninety-nine per cent of all the songs on the Hit Parade are played and thousands of other tunes selected from the music

that has stood the test of time, make up this vast library.

Transcriptions are cut via the exclusive Vertical-Cut method which results in the highest fidelity possible—and only high fidelity music can "cut through" noise and need not be played with distracting loudness in order to be heard in busy places.

The service includes facilities for sending out several kinds of programs simultaneously from central studios. Specialists and psychologists program the right music for the right place for the right time of day. Retail stores receive one type of program, while factories and offices receive their own types of programs planned for maximum effectiveness. Thus all local stores hear the same quality selections which are regularly transmitted to the finest stores, hotels, restaurants, etc., in 40 cities throughout the United States and Canada.

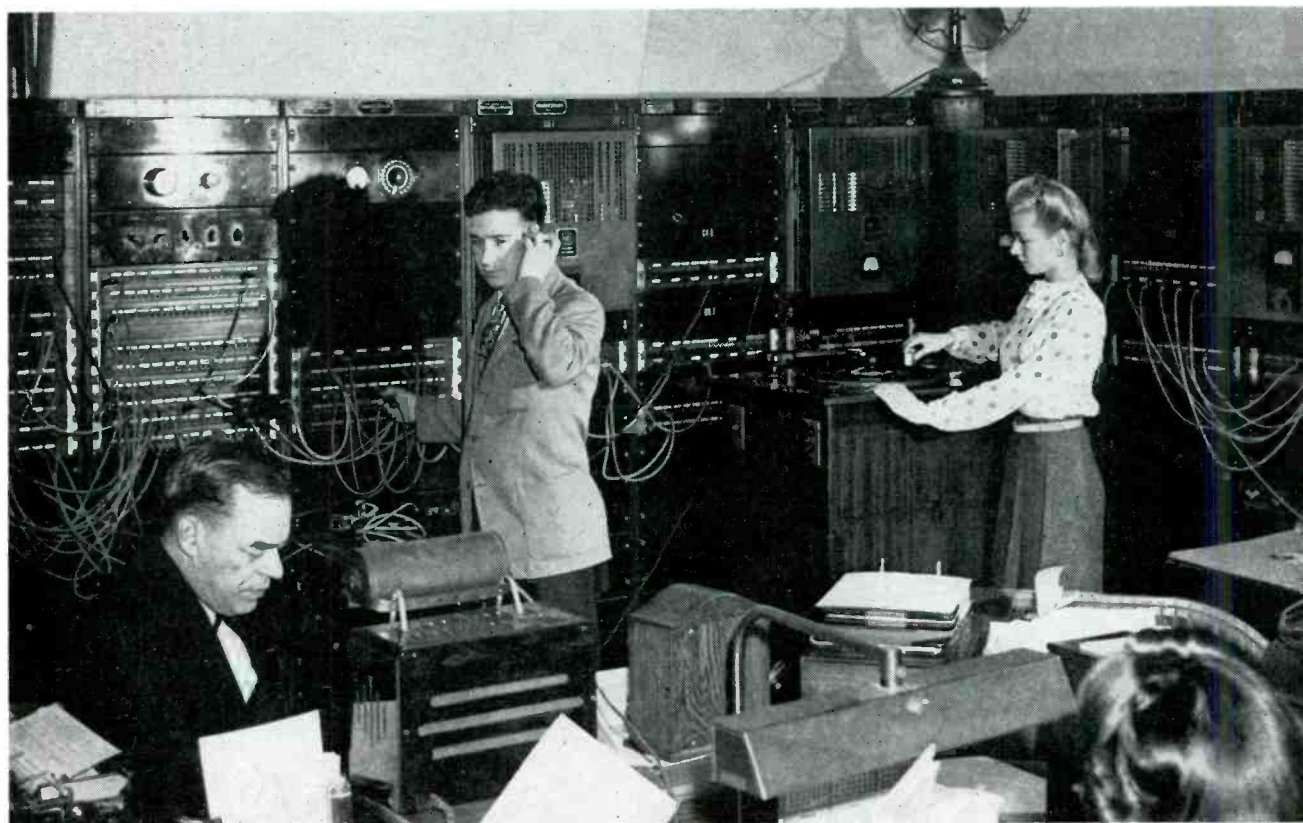
Muzak's service requires the use of electronic sound equipment, amplifiers, wires, etc.—all scarce. As a result of the paucity of this equipment for civilian use and the great demand for wired music in stores,

factories, restaurants, etc., all installations were necessarily regulated by the War Production Board and the O.P.A. with essential industries on the top of the list.

Now, however, with restrictions lifted, and more and better equipment available, C. H. Pfenniger, Vice President in Charge of Sales, reports that many dealers who were on the waiting list are now including it with their own modernization schemes. Mr. Pfenniger reports a 300% increase in subscribers in the New York area alone during the October-December period, 1945, over the same peak war period in 1944.

Before each installation is made, the Engineering Department makes a survey to determine the amount of speakers necessary, the most advantageous places for speakers, wiring problems, etc. There is no re-organization of merchandise, no re-building of the store, no valuable space taken up and no extra work of any kind involved. These systems may also be used as public address systems.

(Continued on page 63)



Above we see the Muzak master control room in action. Different programs, which may feature radically different types of music, are regulated and plugged into the board in a manner very similar to that of a telephone switchboard.

# How To Plan An Aggressive

# ADVERTISING CAMPAIGN

By Mark McMillin

One of the most successful electrical appliance stores on the Pacific Coast is the Mercury Appliance Store of San Bernardino, California. This company, which already ranks as the city's leader though only half as old as others in the city, conducts a continually aggressive campaign, carrying advertisements in the local papers at least once a week. And it is, no doubt, this campaign which is largely responsible for the high rate of sales.

The advertisements differ from the usual, in that they never deal in generalities, but advertise single, specific products, and quote definite prices so that any patron knows at once exactly what products are carried in stock and the price of each. Also, freely advertised are these three highly popular service pointers: 1—free pick-up and delivery service are offered to all patrons within a 20-mile radius of the city; 2—all work is backed by a written guarantee; and 3—no matter what make of electric appliance is brought in for repair, its six efficient repairmen are capable of servicing the appliance and make no charge unless the appliance actually works.

As an illustration of its "specialized" advertising campaign, during which each separate advertisement concentrates upon just one feature, take this ad, which concentrates upon vacuum cleaners: "Vacuum cleaner attachment sets. Brand new 5-piece set. Use them to clean furniture, drapes, clothing, furs, baseboards, car cushions, Venetian blinds . . . Fits all makes and models: Hoover, Royal, Eureka, Universal, Premier, G.E., Apex, Kenmore . . . Special, while they last—\$7.75. Limited number . . . We repair all vacuums. Prompt, efficient service on all makes and models . . . Free pickup and delivery within 20 mile

**VACUUM CLEANER Spray Guns**

Professional type sprayer, adjustable to throw a fine or heavy spray of liquid. May be used to paint, shampoo rugs, wax floors, spray insecticides in the victory garden.

**Special ONE WEEK ONLY \$1.98**

**FITS ALL MAKES AND MODELS:**

- HOOVER • UNIVERSAL
- ROYAL • PREMIER • G.E.
- EUREKA • APEX • KENMORE

**WE REPAIR ALL VACUUMS**

Prompt, Efficient Service on All Makes and Models

Free Pickup and Delivery Within 20 Mile Radius of San Bernardino  
Phone 623-07 for Free Pickup Service

**Mercury Appliance Store**

SAN BERNARDINO'S LEADING ELECTRICAL APPLIANCE STORE  
628 3<sup>rd</sup> Street, SAN BERNARDINO, CALIF. Telephone 623-07

radius of San Bernardino. Phone 623-07 for free pick-up service. All work backed by written guarantee . . . Mercury Appliance Store, San Bernardino's leading electrical appliance store, 628 Third Street, Telephone 623-07 . . . San Bernardino, California . . ."

As an example of an ad that concentrates upon another popular feature, the washing-machine wringer-rolls, here is another ad copy "Washing machine wringer rolls. High quality white rubber rolls. Now we can replace your old worn out rollers with these super-fine, water-repellent rolls—at prices that are right. Easy, Barton, Maytag, Speed Queen, Kenmore, G.E., Apex, Windsor, Horton, Thor . . . Washing Machines repaired by experts . . . Prompt, efficient service on all makes and models. Free pick-up and delivery within 20 mile radius of San Bernardino . . . All work backed by written guarantee . . ." This ad, like all other Mercury Appliance ads, is illustrated with a picture of the "special" being advertised.

Other advertisements specialize in vacuum cleaner spray guns, dust bags, attachment sets, and every other electrical accessory available at the

time. Recently, the company ran an illustrated ad on the lightning pak, and kept busy all day retailing this item to interested patrons.

The ad read: "Use Lightning Pak when your Doctor recommends Heat. Gives up to 160 degrees in a jiffy . . . Stays hot up to 10 hours, lasts 100 hours. This new heat pad is quick and safe. Its self-generating heat soothes minor ailments. Keep one handy at all times. Needs only cold water to operate—stays hot up to ten hours, and can be used again and again. Refills available . . . Only \$1.25. Mercury Appliance Store . . ."

Occasionally, the company goes off the usual beam slightly by advertising some non-electrical product of great popular appeal. Such an ad recently carried a big story on the genuine Fire King Heat-proof oven-glass. Profusely and attractively illustrated, this ad reads as follows: "NOW, enjoy a complete set of genuine FIRE KING HEAT-PROOF OVEN GLASS! The modern scientific baking ware! Lustrous, non-

**VACUUM CLEANER Floor Brushes**

Stop slaving over lint, threads, and surface litter! A new brush will give your cleaner the "zip" it had when new.

**Special \$1.98**

**FOR ALL MAKES AND MODELS:**

- HOOVER • ROYAL • G.E. • PREMIER
- DUPLEX • EUREKA • KENMORE • MW
- ALL OTHERS

**WE REPAIR ALL VACUUMS**

Prompt, Efficient Service on All Makes and Models

Free Pickup and Delivery Within 20 Mile Radius of San Bernardino  
Phone 623-07 for Free Pickup Service

**WRITTEN GUARANTEE ON ALL REPAIRS**

**Mercury Appliance Store**

SAN BERNARDINO'S LEADING ELECTRICAL APPLIANCE STORE  
628 3<sup>rd</sup> Street, SAN BERNARDINO, CALIF. Telephone 623-07

EXAMPLES OF MERCURY ADVERTISING

# Vacuum Cleaner DUST BAGS

## Discard Your Germ Filled Dust Bag

Replace it with this high quality, dirt retaining bag. A new bag will help restore your cleaner's "zip" too! For all makes including Hoover, Eureka, Royal, G-E, Premier, Kenmore, Singer, Universal, Hamilton Beach, M. W., and all others.

ONE WEEK ONLY  
**\$1.98**  
Regular \$2.50



MAIL ORDERS  
FILLED

### WE REPAIR ALL VACUUMS

Prompt, Efficient Service on All Makes  
Written Guarantee on All Repairs

Phone 623-07 for Free Pickup and Delivery



# Mercury Appliance Store

SAN BERNARDINO'S LEADING ELECTRICAL APPLIANCE STORE  
628 3<sup>rd</sup> Street Telephone 623-07  
SAN BERNARDINO, CALIF.

porous, heat-resisting. Cooks better, washes easier . . . 23 pieces for only \$3.98, complete . . . \$1.25 weekly . . . Limited Supply . . . SO HURRY." Then follows a list of the individual pieces included in the set. This ad got such a warm response from the public, with resultant heavy sales, that it was followed a short time later by a similar, but larger ad on the Ken Coffee Maker, also attractively illustrated, and by other new goods as they were received in the store.

Asked why the company carried on such an intensive newspaper advertising campaign, the manager replied, "Because we have found that such a campaign is highly profitable. The day we run such an ad, our store is filled with customers looking for identically the same product we have advertised. Then, too, many customers are skeptical of electrical appliance stores, especially in regard to repairs. During the war, it seems, these persons have had some mighty poor work done on their appliances so that they actually hesitate to take their appliances in for repairs. For this reason, in all our ads, we stress the fact that all our work is unconditionally guaranteed in writing, and we stand squarely

TWO MORE EXAMPLES OF MERCURY CAMPAIGN. APPROXIMATELY 2/3 OF SIZE SHOWN.

behind this guarantee every time."

"To what else do you attribute your outstanding success?" he was asked.

"To our excellent service. We've been fortunate in maintaining a staff of skilled repairmen, and we turn out work faster than perhaps any other shop in the city. Then, too, our pick-up and delivery service has brought us many customers—especially those who are now without cars, or A-card holders who haven't the gas to bring in their own appliances for repair. And last," he added, thoughtfully, "we maintain a phone and mail delivery service for all our customers who live out of town and often far out on the desert or in the mountains a hundred miles away. Whenever we advertise new goods for sale—and we advertise them as soon as they are received—we stipulate in the ad that all phone and mail orders will be promptly filled. This service has proved highly popular, especially with gift-buyers, and it is good advertising for the company as well."

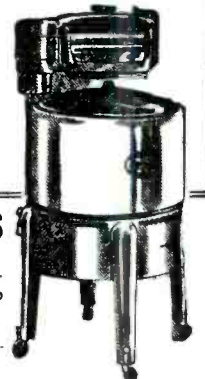
# WASHING MACHINE Wringer Rolls



## HIGH QUALITY WHITE RUBBER ROLLS

Now—We can replace your old worn out rollers with these super-fine, water repellent rolls—at prices that are right.

- EASY • SPEED QUEEN
- BARTON • KENMORE • G-E
- MAYTAG • APEX • WINDSOR
- HORTON • THOR



## WASHING MACHINES REPAIRED BY EXPERTS

Prompt, Efficient Service on All Makes and Models

Free Pickup and Delivery Within 20 Mile Radius of San Bernardino

Phone 623-07 for Free Pickup Service

ALL WORK BACKED BY WRITTEN GUARANTEE



# Mercury Appliance Store

SAN BERNARDINO'S LEADING ELECTRICAL APPLIANCE STORE  
628 3<sup>rd</sup> Street Telephone 623-07  
SAN BERNARDINO, CALIF.

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

FEBRUARY, 1946

Number 9

### Refrigeration Corporation Bought by Noma Electric

Henri Sadacca, president of Noma Electric Corporation, has announced the purchase of Refrigeration Corporation of America, pioneers in the de-



HENRI SADACCA

velopment of equipment for the frozen foods industry and manufacturers of "Frigid Freeze" home and farm freezers, frozen food lockers and air conditioning equipment.

The acquisition of Refrigeration Corporation marks the second step toward the completion of Noma's previously announced plan of expansion into the field of durable consumer goods. Noma entered the home equipment field in December with the purchase of The Estate Stove Company, Hamilton, Ohio, manufacturers of gas and electric ranges and "Heatrola" oil, gas and wood-fired space heaters.

John Bess, a leading figure in the electrical refrigeration field for the past 20 years, will continue as president of Refrigeration Corporation and there will be no changes in other offices, nor is any change in policy contemplated, Sadacca announced.

As a wholly-owned Noma subsidiary, Refrigeration Corporation will be in a position to obtain a large share of the post-war business for

home and farm freezers and other electrical goods, Sadacca said. Expanded production facilities and the application of Noma's famous merchandising techniques are expected to increase Refrigeration's sales for



JOHN BESS

1946 over 100 per cent above the 1945 level.

Bess announced that in preparation for greatly increased production, Refrigeration Corporation has purchased additional manufacturing facilities, amounting to 145,000 square feet, at Perth Amboy, New

Jersey. Commented Bess, "Our association with Noma will permit us to rush completion of the installation of new, modern machinery at Perth Amboy. And additional working capital now available to us will enable us to resume production of the Frigid-Freeze line of ice-cream cabinets, beverage coolers, refrigerated dairy cases, biological cabinets and air-conditioned candy display cases.

### Westinghouse Announces Fluorescents Progress

Developments continue to appear in the fluorescent lamp family at the high rate consonant with still young devices. The fluorescent lamp is less than ten years old. Yet the fact that about forty million of them were made last year (1945) is indicative of their popularity.

The first important variations from the familiar cylindrical shape of fluorescent lamps have appeared. A circular lamp has been developed. It is an even foot across and is rated at 32 watts. Because of the high light output in a small space and its



Howard E. Blood, president of the Norge division of Borg-Warner Corp., receives personal citation in connection with presentation of Naval Ordnance Development Award to the company for engineering achievements on Navy's new automatic, blind-firing gun director. He is being congratulated by Vice-Admiral George F. Hussey, Jr., chief of the bureau of Ordnance, who made the presentation.

symmetrical shape, it removes the principal obstacles to its use in portable lamps in the home. The Westinghouse Circline is now appearing as the light source in floor and table lamps and in other specially-designed household lighting units.

New fluorescent lamps are longer and slimmer. Four lengths—five-eighths and one-inch in diameter—are standard, from 3½ to 8 feet long. Their special place in the lighting picture is for showcase and decorative lighting where long lines of low brightness are required. The electrodes are designed for instant starting on high voltage. Long lamps present a starting problem in humid air which is overcome on the "slim-line" by painting a narrow silver stripe along the outside of the glass to within a short distance from each end. This metallic stripe acts as a capacitor facilitating starting.

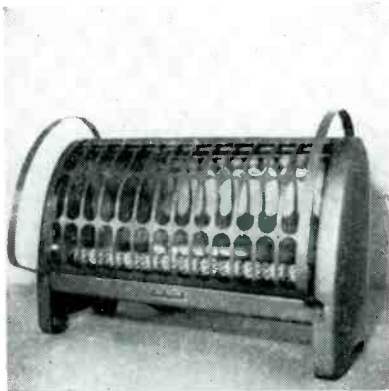
### Casco Helps Spur Sale Of Victory Bonds

Eleanor Cahill, selected as "Miss Stardust" in national contest, wears a bathing suit outdoors in mid-winter, to help sell bonds and distribute free boxes of donuts with each sale from the mammoth Donut-mobile which has been touring the country for the Treasury Department. Samuel Harper, of the Casco plant, hands her one of the first heating pads off the assembly line which should help keep her warm if she is going to wear that bathing suit for more bond selling this winter.



### Hydro-Aire Announces Electric Heater

The Appliance Division of Hydro-Aire announces a new electric heater. It is industrially designed for a strictly competitive market, both city and farm.



The heater is the reflector type, designed to give maximum heating with minimum economy. There is no convection. The heat is radiated in all directions.

It is sturdily built of steel and Underwriter approved.

Over-all dimensions: 12 inches high, 17 inches long, 10 inches deep. Wattage, 1320. Voltage, 110-120. Current, A. C., or D. C.

### Presteline Announces Eight Distributors

Eight additional distributors have now been appointed to sell Presteline major household appliances. A. Raysson, general sales manager, domestic appliance division of Press-

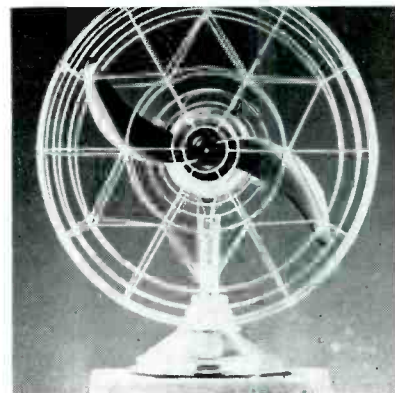
ed Steel Car Company, Inc., announced January 15.

"We have appointed a total of sixteen Presteline distributors in our five established zones. Some of these zones and territories in certain zones, are still open as no distributors have been appointed to handle Presteline appliance in Cincinnati and lower Ohio, most of Western Pennsylvania and some of Western New York."

The eight distributors recently franchised to handle Presteline appliances include:

Supplee-Biddle Company, Philadelphia, Pennsylvania; Midland Electric Company, Cleveland, Ohio; Sacks Electrical Supply Co., Akron, Ohio; RCA Victor Distributing Co., Chicago, Detroit; Suttle Equipment Company, Lawrenceville, Illinois; Schneiderhahn's Inc., Des Moines, Iowa; Associated Distributors, Indianapolis, Indiana.

### Fresh'nd Aire Company Announces 1946 Line of Circulators



The Fresh-nd-aire Company, Chicago, has announced that the line of Fresh'nd-aire circulators for 1946 will consist of six models — one to meet every home, commercial and industrial air-circulation requirement.

The Fresh'nd-aire line will include models 14R, 17R, 20R, 23, 26, and 35—the model number in each case also indicating propeller size.

The problems of the dealer have been kept in mind in formulating the Fresh'nd-aire design. By stocking only a low stand model plus sub-base and telescopic tubing, dealers can actually have the sales advantages of low stand, high stand, and wall model as well. The low





### Rood Appointed Camfield Advertising Manager

E. A. Rood, Jr. has been appointed advertising manager of the Camfield Manufacturing Company of Grand Haven, Mich., to take charge of the company's advertising campaign for its postwar products.



E. A. ROOD, JR.

These new products include a wholly automatic electric toaster, with many improvements over pre-war models in the top price bracket, and a light diffusing, glare eliminating fixture, called the Fluor-O-Shield, for the open type of fluorescent light fixtures.

### Perkins Appointed By Admiral Corp.

Wallace C. Johnson, manager field activities, Admiral Corporation, Chicago, announced the appointment



EDWIN PERKINS

of Edwin M. Perkins as regional manager.

Before joining Admiral Corporation, Perkins was manager of the Component Section of the Chicago Signal Corps Production Field Office.

Before joining the Signal Corps, Perkins was district manager of the McGraw Electric Company—Clark Water Heater Division.

From 1935 to 1936 Perkins was commercial and sales manager of the Kansas Power Company. He was in charge of all dealer relationships on major appliances, including refrigerators, ranges and also on radios and small appliances.

Perkins will be assigned a territory in the near future to cover Admiral products, which will include radios and accessories, Dual-Temp and conventional refrigerators, home freezers and electric ranges.

### A. W. Gilmore Appointed by G.E.

A. W. Gilmore has been appointed assistant to C. R. Pritchard, general sales manager of the General Electric Company's Appliance & Merchandise Department.

He will assist Mr. Pritchard in connection with sales of G-E construction materials.

A native of St. Joseph, Mo., Mr. Gilmore first worked with the B-R Electric Co., Kansas City, Mo., distributor; joined the General Electric organization in 1926. After a period as a salesman, then sales manager for the G.E. Supply Corporation in Kansas City, he was appointed district manager for that company in 1938.

He comes to Bridgeport as assistant to the general sales manager after three years' service as a lieutenant-colonel with the supply and service department of the Air Transport Command in Europe.

### Burkaw Appoints Jerome Herold

Burkaw Electric Co., 105 East 29th St., New York City, announces the appointment of Jerome Lee Herold as an executive. Mr. Herold is setting up the national sales policy and distribution for the company's new line of appliances which includes floor polishers, steam irons, heaters, and a line of phono amplifiers and

recorders.

Mr. Herold comes to Burkaw Electric Co. from Emerson Radio and Phonograph Co. where he served as Director of Purchases. Prior to that Mr. Herold was the assistant department purchasing agent for the Electronics Department of General Electric Co.

### Lee Wells Vice Pres. of Western Merchandise Distributors

Announcement is made by E. B. Ingraham, president of Western Merchandise Distributors, Inc., Buffalo, N. Y., distributors of Columbia Rec-



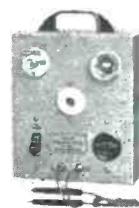
LEE WELLS

ords, Crosley and Universal Products, of the election of Lee Wells as vice president of the company.

Mr. Wells has been manager of the company for the past five years; has also held the office of treasurer.

He was formerly employed by the Westinghouse Electric & Mfg. Company in the Merchandising Department in New York.

### LOCATES TROUBLE INSTANTLY IN ALL ELECTRICAL DEVICES



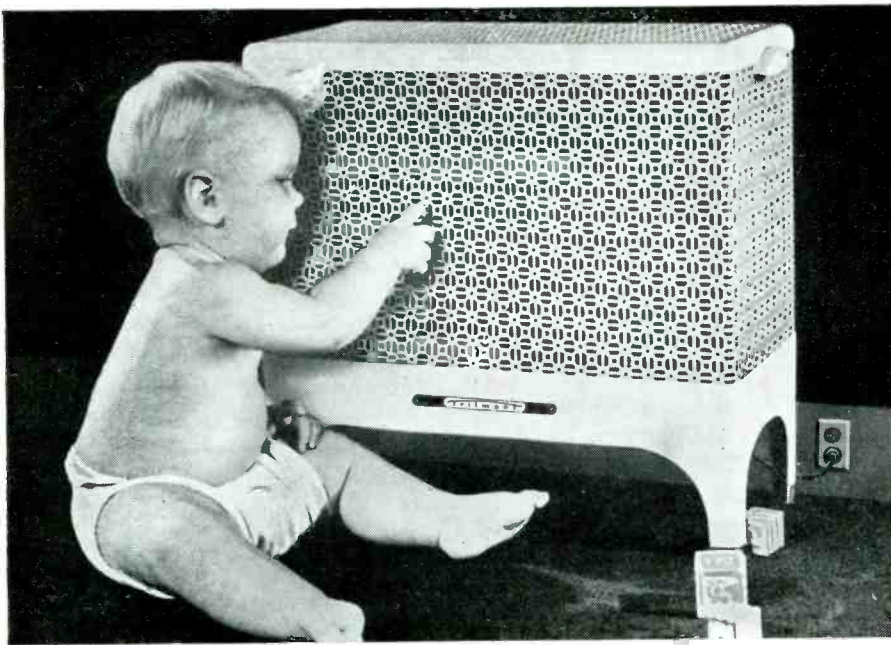
Pat. Pending

### HANLAN

#### Appliance Tester

In this single unit are combined all the necessary tests for examining every appliance. Checks thermostats under actual working conditions. Tells instant it opens or closes. Controls the heat on soldering irons—Prevents overheating. Tests continuity, open circuits, etc. Checks automatic irons, vacuum cleaners, motors, shavers, bulbs, fuses, appliances with 3-way switches, etc. Great time, effort and money saver! Only \$9.50 complete. WRITE FOR LITERATURE.

**FREE** with each Tester . . . New, Complete Practical Course in electrical appliance repairing. HANLAN CO., 1419-P West Jefferson, Los Angeles 7, Calif.



# SAFETY FIRST

*... and Last!*



**Safe** No need to tell the children "not to touch." All sides are always cool . . . no danger to youngsters or pets.



**Efficient** Radiates a gentle penetrating heat that warms but does not burn. No fans or noisy moving parts!



**Handsome** A lifetime investment in appearance and comfort. Ivory-enameled or brown to blend with your room.

**B**OTH Underwriters' Laboratories and The Good Housekeeping Institute subjected The Trilmont Safety Heater to exhaustive tests before awarding it their seals of approval. These are your warranty of Trilmont's inherent safety and in-built quality . . . your assurance that you can recommend this Nationally Advertised heater with absolute confidence.

Trilmont's two non-glowing "Black Heat" coils, which assure exceptionally long life, radiate healthful, cheerful warmth throughout the entire room—not just a spot. And because these oversize coils are enclosed in an insulated, dual-wall cabinet, all four sides of the heater remain cool—minimizing the chance of shock or fire hazard to children, pets or property . . . a sales point no parent will overlook! . . . Write today for complete data and name of nearest distributor.

**SPECIFICATIONS** . . . Width 19½", Height 18½", Depth 9¼", 120 Volts, 1200 Watts, AC or DC current. Weight 19 lbs. Carries Underwriters' approval.

APPROVED  
OPA PRICE **\$33<sup>00</sup>** Including Cord Set  
95c EXTRA AT AND WEST OF THE MISSISSIPPI



**TRILMONT PRODUCTS COMPANY**  
24th & WALNUT STS • PHILADELPHIA 3, PA.

## Thompson Appointed Premier Sales Manager

The appointment of C. A. Thompson as sales manager of the Premier Vacuum Cleaner Division, General Electric Company, Cleveland, Ohio, has been announced by Mr. R. B. Wilson, manager of the Premier Division.



C. A. THOMPSON

Mr. Thompson has served as sales promotion manager for Premier since Oct. 1, 1945. For ten years previous to joining the Premier organization, he was with Perfection Stove Company of Cleveland, as assistant advertising manager.

## Appliance Wholesalers Moves to New Quarters

Alterations and renovations have been completed and Appliance Wholesalers are now operating from their new location at 271-273 Halsey St., Newark 2, N. J.

The lighting fixtures in the offices and showrooms are unusual inasmuch as they are samples of the various fluorescent fixture lines we sell. Each fixture represents a manufacturer's product.

The building also will warehouse radios, traffic and smaller appliances. Our major appliances will be stocked at a public warehouse.

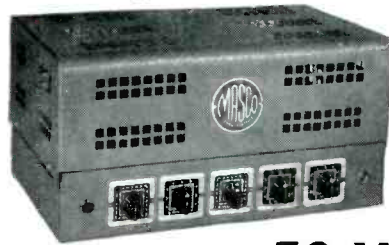
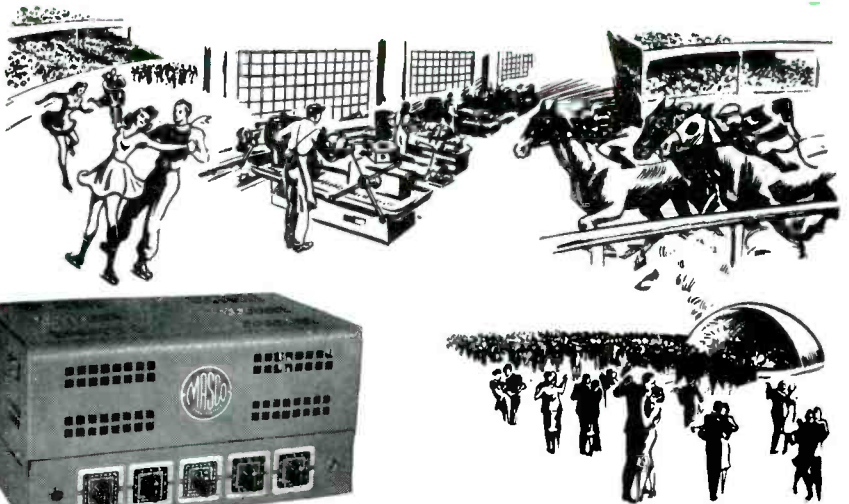
Myron David Rutkin, president of the firm, has announced that Albert Allan Eisenberg will serve as general manager, and Harry E. Mintz will take care of sales.

A dealer showing of the complete lines is being planned in the near future.

Both Mr. Rutkin and Mr. Eisenberg, while attending the Chicago Show acquired an additional new line, Kitchen Queen, which expects to be in production by March 1st.

# Master Servicing

A SECTION OF RADIO & TELEVISION JOURNAL



## 50 WATTS OF TRULY RATED POWER OUTPUT

Incorporating latest circuit designs

DELIVERY NOW

*At Ice Palaces, Industrial Plants, Race Tracks, Music Festivals, Football and Baseball Stadia, you'll always satisfy them with sound by Masco.*

Model MA-50 Amplifier operates 2 to 12 speakers. Other features include individual bass and treble equalizers; 2 high impedance microphone inputs and one for phono pick-up; dependable performance that has stood the test of years; excellent tonal quality; designed for long hour usage; tapped output; safety fused.

|   |                                     |
|---|-------------------------------------|
| Model MA-50 Amplifier with streamline cover, less tubes . . . . . | <small>List Price</small><br>100.00 |
| Kit of Matched Tubes for above . . . . .                          | 17.50                               |

## MARK SIMPSON MANUFACTURING CO.

MANUFACTURERS OF

*Masco Sound Systems and Accessories*

186-194 WEST FOURTH STREET :: NEW YORK 14, N. Y.

Telephone CHelsea 2-7112-3-4



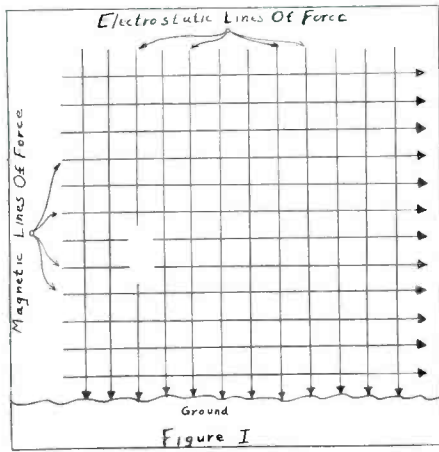
### In This Issue

UHF  
Wave Propagation

•  
Book Review

•  
TIPS  
From A Serviceman's  
Notebook

FEBRUARY  
1946



### EDITOR'S NOTE

We bring you this authoritative article and illustrations on UHF because it is generally conceded that this will become a field of ever increasing importance from now on, and therefore it behooves every serviceman to keep abreast of both theory and latest developments.

The advent of Frequency Modulation and Television makes essential, from the radio serviceman's viewpoint, an understanding of the properties of UHF (Ultra-High Frequency) waves in transmission and reception. The following discussion proposes to clarify the peculiarities of UHF waves by emphasis on the contrast between them and the low radionic frequencies.

Information in the electronics literature on the propagation of radio energy above 200 megacycles is far from profuse, but all the admirable results achieved by the various branches of the Armed Forces seem to indicate that the behavior of such frequencies is not appreciably different from that of waves from 50 to 200 megacycles. For all practical purposes, therefore, the information now available is applicable to the frequencies used in FM and Television.

All radio waves have this in common: that they are electromagnetic in nature, that they consist of traveling electrostatic and electromagnetic fields, that in free space these fields are always at right angles to each other in a plane perpendicular to the direction of propagation, that the energy of the wave is equally divided between the two component

fields, and that, having characteristics similar to light, they travel at the speed of 300 million meters per second and experience the phenomena of reflection, refraction, diffraction and polarization.

#### Polarization

By definition, the direction of the electrostatic component of a radio wave is the direction of the whole wave. Thus, a vertical antenna, which engenders a vertical electric field, is said to be vertically polarized, and a horizontal antenna, which sends out a horizontal electrostatic field, is said to be horizontally polarized. Since it is known that waves often may and do alter their sense of direction the farther they travel from the transmitting antenna, it is difficult to ascertain the polarization of a wave from observations made at the receiver. However, if the polarization characteristic of the transmitted wave is known, it can be advantageously employed—because the receiver antenna will usually receive the signal strongest when its polarization is the same as that of the signal. Thus, in FM and Television, the dipole is the most commonly used type of antenna for transmission; and is the most satisfactory type for FM and Television receivers. Polarization shift does reduce the sensitivity of the receiver antenna, but, unfortunately this is uncontrollable.

#### Reflection

When a radio wave propagated in air hits a medium that differs sharply in electrical and physical density, it bounces back at an angle equal to the angle of incidence (the angle at which it met the discontinuity). For the lower frequencies, the ionosphere, the earth, and any conductor of suitable dimensions and character-

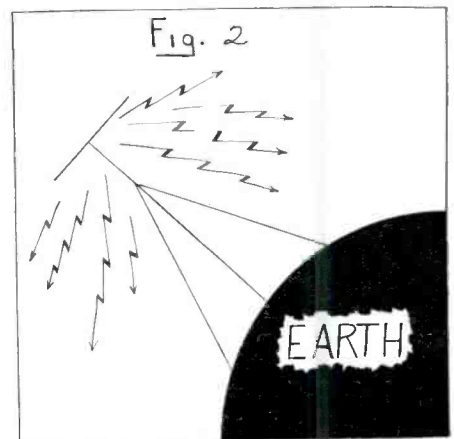
istics, will act as good reflectors. For the ultra-highs, only the earth (or water) and good conductors like wire and metal, will be effective. Directivity of transmission and reception is based upon this property.

To increase the gain of a receiver antenna, it is a common procedure to erect one or more reflectors for the FM and Television dipole. The parasitic element is placed behind and parallel to the excited antenna. For maximum directivity and gain, the length of the reflector is made slightly longer than the dipole, and is spaced 0.20 wavelength away from it.

#### The Ground Wave

Of the two types of waves (the ground wave and the sky wave) the ground wave is of paramount importance at the commercial broadcast frequencies (550 to 1500 kilocycles). It is in continuous contact with the earth's surface, and has a maximum range of approximately 500 miles. The ground wave experiences atten-

(Continued on page 54)



# U. H. F. Wave Propagation

By Iz Zam

Technical Editor

# Stock only **4** AUTO-RADIO VIBRATOR MODELS!



Model 1703  
serves 738  
auto-radios



Model 2089  
serves 237  
auto-radios



Model 2041  
serves 75  
auto-radios



Model 2088  
serves 72  
auto-radios

## **4** Vibrator Models cover 95% of all auto-radio replacement demand! Faster Turnover... Greater Profits

Think of it! To serve the 1122 auto-radio models comprising 95% of the replacement demand, you need stock only 4 models of E-L Vibrators. This is a *real standardization plan* that means increased profits for E-L dealers and distributors. Save on shelf space too! Not only fewer models to stock but E-L Vibrators are smaller in size than other makes as well.

### 33% Longer Life

E-L engineers devoted many months of thorough research to determine the exact requirements of auto-radios... and adapting to them E-L models whose design and exclusive features have been proved in the toughest of proving grounds... military service.

These E-L Vibrators synchronous and non-synchronous are of balanced resonance construction designed especially for heavy duty service. Tests show that they provide 33% longer vibrator life, with output and starting voltages held virtually constant at all times.

### See Your E-L Distributor

With your order, you'll receive your copy of the new E-L Auto-Radio Vibrator Replacement Guide. Designed to hang on your wall, it will tell you instantly which E-L Vibrator to use for most auto-radios as far back as 1936. See your E-L distributor!



**Electronic**

**LABORATORIES, INC.**  
INDIANAPOLIS

VIBRATORS AND VIBRATOR POWER EQUIPMENT FOR LIGHTING, COMMUNICATIONS, ELECTRIC AND ELECTRONIC APPLICATIONS

(Continued from page 52)

tuation because as it travels along the surface of the earth it induces a current in the ground; since the earth possesses appreciable resistance, the energy to overcome that resistance must be supplied by the wave, which is thus weakened. Because sea water is a good conductor, the ground wave's range will be greater over the ocean than over land. With increase in frequency, up to 10 megacycles, this attenuation is also rapidly increased so that, except for purely local radio communication, the ground wave is of little use. An example of the exception is in the case of police and other inter-vehicular communication, where the ground wave is utilized at the FM frequencies.

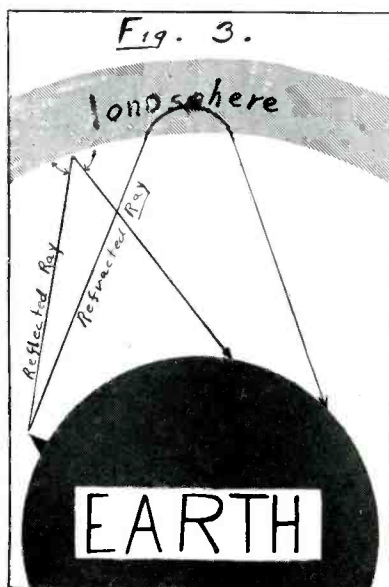
It is interesting to note that, with respect to polarization, the lower frequency waves (up to 10 megacycles) are almost always polarized vertically, because of the electrostatic sector of a horizontally polarized wave would be flat along the ground and would be short-circuited by the ground. For the frequencies above 10 megacycles however, this is not the case because the ground no longer exhibits the properties of a good conductor, but rather shows capacitive (dielectric) properties.

#### The Sky Wave and the Ionosphere

For long distance communication at frequencies up to 40 megacycles, it is the sky wave which comes into importance. Observations have shown that it travels upward at various angles, and that it would continue out into free space if the medium did not change sharply and thus bend it back earthward. The nature of the change in medium is the ionization of gas molecules and atoms present in the upper regions of the earth's atmosphere. Ionization is the dissociation of a gas molecule into a free positive ion and one or more free electrons, and is brought about by ultra-violet radiations from the sun. These free positive ions and electron, although everywhere present in the atmospheric upper regions, concentrate themselves in distinct layers, which investigators have named and described. Practically constant at 70 miles above the earth is the lowest layer, called the E layer. Its ionization density varies hourly

in accordance with the sun's ultra-violet radiations, the greatest density occurring about local noon and the least about just before sunrise. Even so, the variation of the E layer density is not quite as great as in the higher layers.

During the day there is an F-1 layer of ionization which is 140 miles above the earth, and an F-2 layer at about 225 to 250 miles. It is the F-2 layer which has the greatest degree of ionization density and therefore the greatest refractive index, and it is the layer which determines the refractibility of the higher frequencies—if a wave is not bent enough when it enters this layer, it will never come back to earth.



At night these two layers combine into the single F layer, which is about 180 miles up.

The "why" of wave-bending or refraction is explained by pointing out the fact that a wave of light or radio frequency will increase in velocity when it comes from a less rare medium into a rarer medium, as is graphically illustrated in Figure 5. The end result is that the wave is swung around to face earthward, which is what is desired, since long distance communication depends upon this occurrence. Refraction can be explained in another sense by saying that the ionosphere free electrons act in such a way as to bend the radio waves away from regions

of high electron density toward regions of lower free electron density (which is toward the earth).

#### The Direct Ray or Line-of-sight Method

Since it has long been known that in the ultra-high frequency spectrum the bending back of the sky wave is too slight to be of any use, and that the use of the ground wave is similarly futile because of the high absorption in the ground at these frequencies, three special methods of propagation have been devised. Of these, the *direct ray* has received the greatest attention and application. It travels directly from the FM or Television transmitter to the receiver.

Sometimes confusion is encountered in attempting to understand wherein lies the difference between the direct ray and the ground wave. Therefore it is worthy of note that the energy lost in ground absorption by a radio wave traveling close to the earth *decreases* quite rapidly as its height in *wavelengths* above ground *increases*. The ultra-highs, having the much shorter wavelengths, can be relatively close in physical length to the ground and still be electrically far above it. Thus the ultra-highs do not suffer the absorption effects which would occur at the same physical heights on the lower frequencies.

Line-of-sight transmission and reception means that maximum signal strength can be obtained only when the atmospheric path between transmitter and receiver is clear of any obstructions. The optimum positions for transmission and reception, therefore, are those of sufficient height to provide such paths.

Assuming a receiver located at ground level, the graph of Figure (?) illustrates the relationship between the height of the propagating antenna and the distance of maximum transmission. This can be expressed in the simple equation:

$$d = 1.23 \sqrt{ht}$$

where  $d$  is in miles and  $ht$  is in feet.

When the receiver antenna is raised an appreciable distance, it can

(Continued on page 56)



# New Jensen PM SPEAKERS with **ALNICO 5**

Newly designed in every detail . . . magnets, housings magnetic structures, voice coils and cones . . . and incorporating the new and powerful **ALNICO 5** magnet material, this new family of PM speakers will add an imposing and important series of speakers to the JENSEN line.

These new models are now being tooled for production and, when ready, complete specifications and prices will be issued to the trade in Data Sheet TD-133 . . . Watch for other post-war innovations soon to come from the JENSEN laboratories.

JENSEN RADIO MANUFACTURING COMPANY, #523 S. Laramie Ave., Chicago 38, Ill.  
IN CANADA: Copper Wire Products, Ltd., 138 Oxford St., Guelph, Ont.



*Specialists in Design and Manufacture of Fine Acoustic Equipment*

be easily seen that the unobstructed range between the two antennas can be increased, the maximum range now raised to

$$d = 1.23(\sqrt{ht} + \sqrt{hr})$$

where  $d$  is the distance between antennas in miles,  $ht$  is the height in feet of the transmitting antenna, and  $hr$  is the height in feet of the receiver antenna.

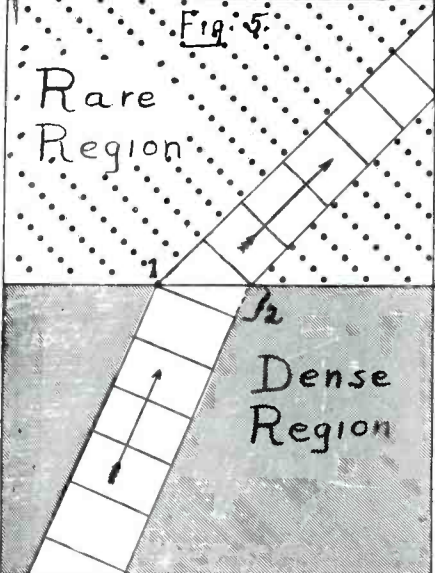
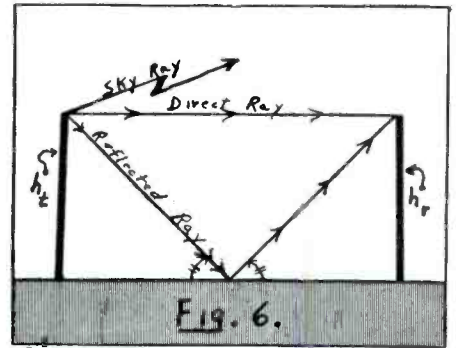
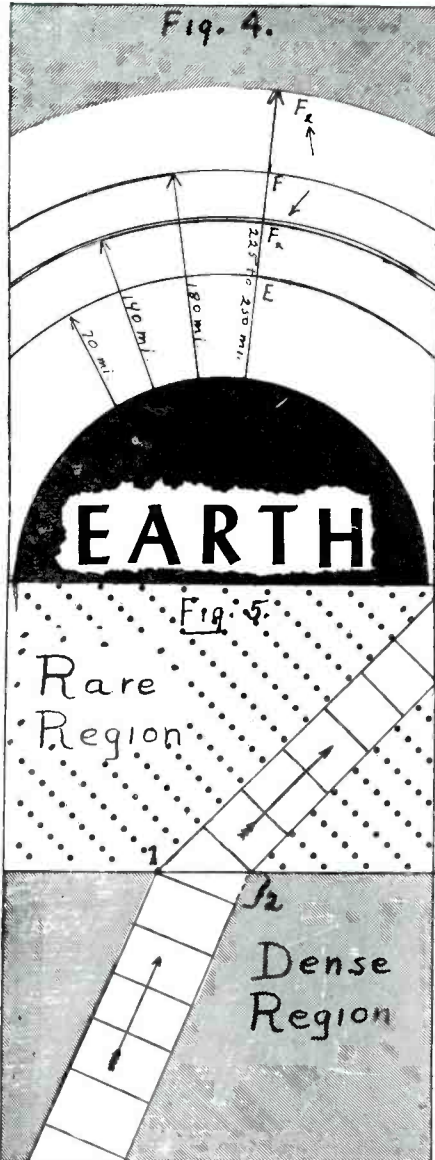
It is exactly because of these facts that FM and Television stations are located on the top of tall buildings or high plateaus. Relevant here is the recent announcement of a proposal for "stratovision" transmission of Television. Transmitting stations would be incorporated in a chain of airplanes flying in the stratosphere and circling over designated urban centers across the country. They would be equipped to receive the program from the "home" or "master" station located on the ground and relay it on to the next airplane, which could be more than 500 miles away. This method, if put into practice, would utilize the line-of-sight transmission procedure to best advantage. Averted is the attenuation of the signal energy by obstacles in the direct-ray path; and reflection, which causes the troublesome "double images" on the screens of television receivers, (because the reflected wave conflicts in phase with the direct wave) is reduced to practically nothing.

Figure 6 shows the relationship between the direct, reflected, and

sky wave waves emitted from an ultra-high frequency transmitter. The field strength at the receiver antenna is dependent upon the direct and the reflected rays—the way in which they combine. Now, at the point where the reflected component strikes the ground, a reversal in phase of 180 degrees occurs, which means that at the receiver antenna the reflected ray will act in opposition to the direct ray, thus reducing the signal strength. Fortunately,

shift, the amount of this additional shift being in proportion to that length; what is desired, of course, is that the path of the reflected ray be so long that the ray experiences an additional 180 degree shift and thus comes back to an aiding, rather than an opposing phase relationship with the direct ray.

Consideration of these factors shows why it is reasonable to expect that the received signal strength will increase with an increase in height of the transmitting and receiving antennas, and that an increase in the signal-to-noise ratio will occur, when this is done. Erection of FM and Television antennas (transmitting and



receiving) is always based upon these considerations. And, as has been mentioned, the properties of reflection and directivity are also commonly exploited, parasitic elements being used to further enhance the intensity of the signal.

#### Antenna Polarization

Regarding antenna polarization, recent findings published in the electronics literature show another value to be gained by increasing the height of the receiver antenna. When a receiver antenna is built close to the ground, the vertically polarized rays will yield a stronger signal, so that a vertical antenna is necessary. When the antenna is raised one wavelength above the earth, however, the necessity disappears, because then waves of either polarization sense yield equal results. Increase of antenna height up to several wavelengths brings about conditions under which the horizontally polarized waves produce the more satisfactory signal-to-noise ratio. Remembering these facts, the radio serviceman can see the merit of limiting his attention to the procedure for erecting horizontal antennas.

however, there exist two factors which tend to counteract this objectionable behavior. The first is the fact of ground losses attenuation suffered by the reflected component when it hits the earth. The second is the fact that the greater length of the reflected ray's path causes the ray to undergo an additional phase

Splendid opportunity to represent manufacturer of independent phonograph records. Territories now being assigned. Consolidated Record Distributors, Inc., 500 No. Western Ave., Los Angeles 4, Calif.

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

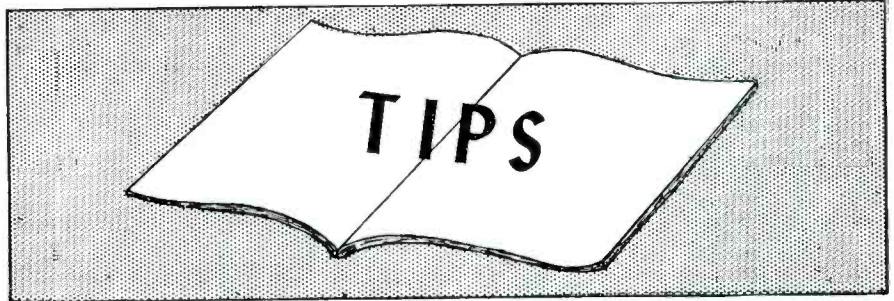


### **Knight 5 Tube Super**

This 5 tube a.c. set came to the test bench with the complaint of intermittent reception. When hooked-up for a test run the volume would abruptly lower, then after awhile pop back to normal. If the set was touched when the volume was low it would immediately rise. This made the trouble harder to find.

The chassis was turned upside down and various parts probed and moved around with an orange stick. However, this failed to reveal the trouble. The chassis was then turned back to the upright position. The tubes were wiggled one at a time, but still the intermittent condition could not be produced. One of the i.f. transformer shields was moved and the set cracked and the volume lowered. This indicated that the source of the trouble was near. Further shaking of the shield produced the condition at will.

The i.f. leads were unsoldered and the connection points tagged. The entire transformer and shield were removed from the set for inspection.



## ***From A Serviceman's Notebook***

A poorly soldered joint was found where the secondary winding of the transformer was fastened to the connecting lug. A hot soldering iron touched to the joint did the trick. After the i.f. transformer was replaced, the set worked perfectly.

### **United Motors Model 364441**

In many cases when this model of set is dead there will be excessive battery drain. Sometimes the drain is so great that the fuse will blow. A check usually reveals no plate voltage. This condition may be traced to a shorted buffer condenser across the

secondary of the power transformer. Replacing it with an oil-filled .015 mfd. 2000 volt unit makes a permanent repair which is not likely to fail.

### **Atwater Kent 206**

Motor boating in this receiver would grow into an intermittent whistle when the volume control was turned to the maximum position. All of the voltages checked slightly higher than normal. The trouble was found to be a bad section in the filter condenser. It had lost its capacity. The whole condenser unit was replaced with an 8-8-8 mfd. 450 volt capacitor. After the replacement all of the voltages came back to normal and the set operated as good as new.

### **Marvel**

Very unusual symptoms were experienced. When turned on it would oscillate in combination with a slow intermittent machine gun firing similar to that usually common to an open grid. However, all grids showed continuity. On further examination the trouble was found to be due to an open filter condenser. When the 8 mfd. 450 volt condenser was replaced the set returned to normal.

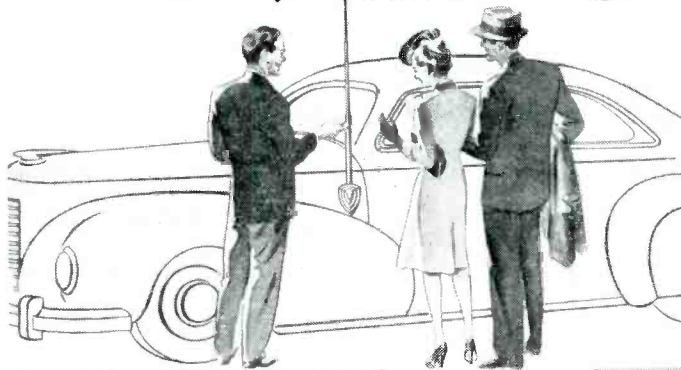
### **RCA Victor Model 13K**

In several of these sets the magic eye. 6E5 tube, was found to over heat. A check of the cathode current showed it to be excessive—more than 7 ma. The tube should be replaced and the condition of the 5Z4 rectifier tubes checked.

### **United Motors Model 601574**

Weak signals and poor selectivity was found to be the result of an i.f. stage being badly out of alignment. After readjusting the i.f. trimmers the screws were cemented to prevent vibration from jarring them loose.

## ***First Choice***



### **... OF AMERICA'S AUTO DEALERS**

The same precision workmanship and the same fine quality mark Ward Antennas now as before the war. But now there are added reasons of new design and newly-engineered efficiency which will give Ward Antennas an even greater margin of preference with America's auto dealers. For extra profits that satisfied customers always bring, order Ward—world's finest antennas for car and home.

 Buy Victory Bonds  
**THE WARD PRODUCTS CORPORATION**  
1523 E. 45th St., Cleveland 3

# **WARD**

## ***Antennas***



Radio servicemen, amateurs and electronic engineers have long demanded durable transformers with versatile adaptability. Stancor has consistently met these demands with manufacturing products with highest quality materials and workmanship in each separate production operation . . . engineering, coil-winding, laminating, assembling, finishing, testing and final packaging.

Today over 80% of all Universal Power Transformers now in use are replaceable with a Uni-dapt Stancor catalog item. For all transformer replacements, think first of Stancor.



**STANCOR**  
STANDARD TRANSFORMER CORPORATION  
1500 NORTH HALSTED STREET CHICAGO 22, ILLINOIS

#### 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.

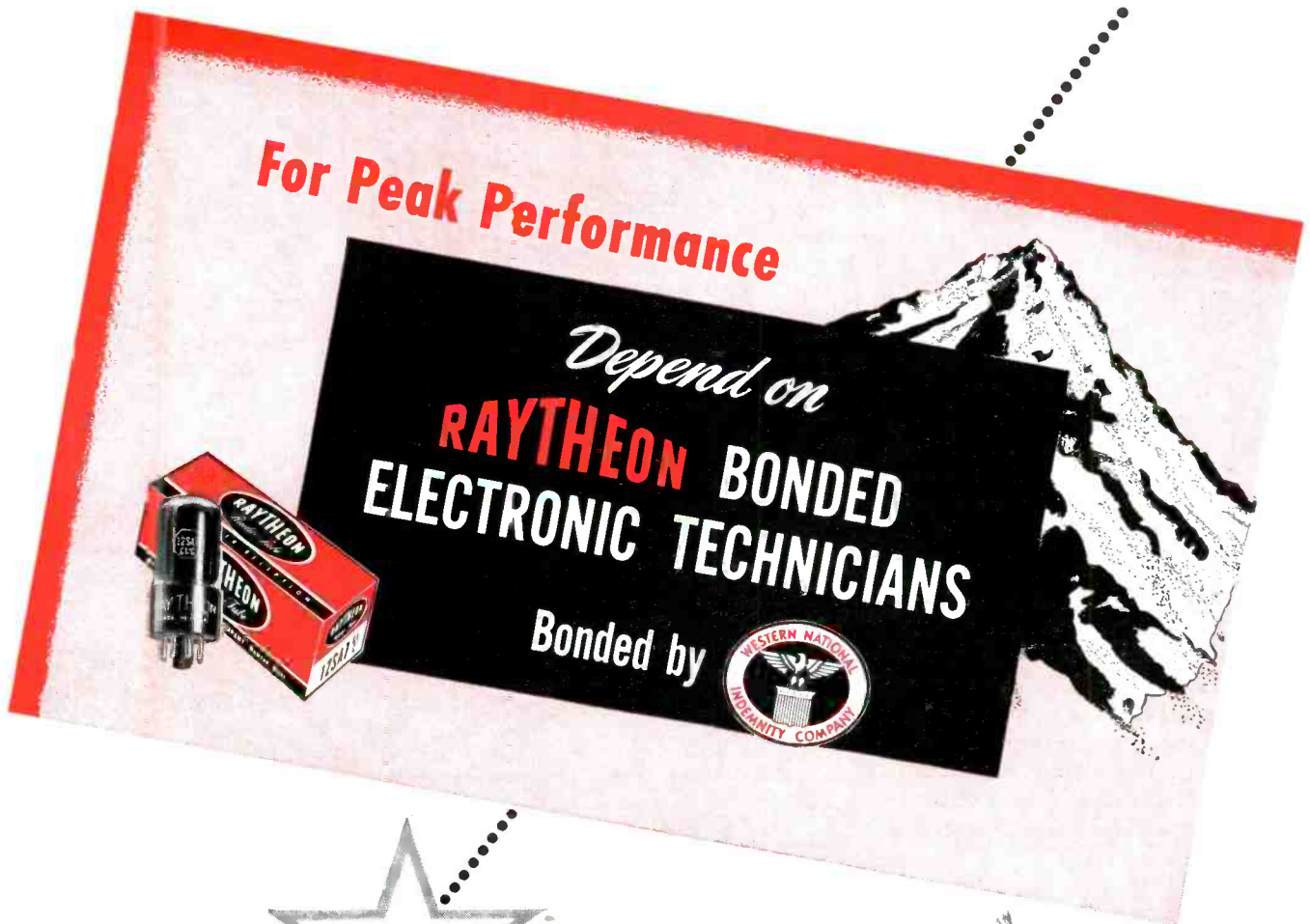
The set played perfectly this time and the condensers remained as cool as if there were no load on them.

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

(Continued on page 60)



## A "STAR SALESMAN" FOR YOU!

Every customer who comes to your counter will see this effective wall banner. It tells them you're a dependable, square-dealing Raytheon Bonded Electronic Technician — and brings them back to spend money with you.

This selling wall banner is only one of many carefully designed sales-aids — displays, decals, mailing pieces, job record cards — for you to use in building a lasting, money-making radio service business. Bonded service means better customer relations. See your Raytheon distributor today.

Another reason why it pays to qualify as a Raytheon Bonded Electronic Technician.



*Excellence in Electronics*

RADIO RECEIVING TUBE DIVISION

NEWTON, MASS. • NEW YORK • CHICAGO

(Continued from page 58)

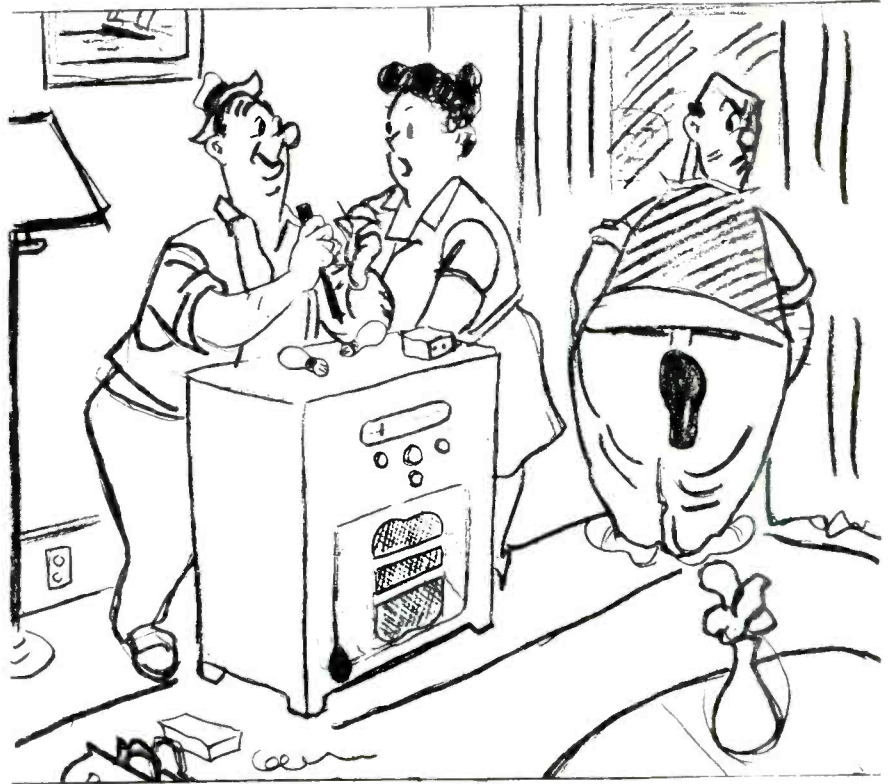
changed from the filament voltage reading of the tube to approximately full line voltage. This indicated that this tube was at fault.

#### Montgomery Ward Battery Set

This set, which is operated by a 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.

#### Atwater Kent 55-C

The reception of this set was intermittent at high volume levels but normal at low volume. The voltages checked as they should. The symptoms indicated that the trouble might be in the speaker, therefore, it was checked first. Sure enough, one of the flexible leads that connect to the voice coil was broken from vibra-



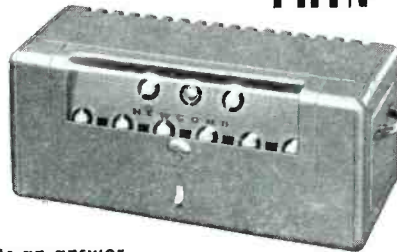
I CAN'T UNDERSTAND IT—MY HUSBAND USUALLY HELPS

## FROM ORIGINAL/TO REPRODUCED SOUND



**Newcomb** presents an answer  
to the growing demand for truly fine amplification equipment.

The line between  
is mighty **THIN**



Newcomb precision sound equipment is built in accordance with the most advanced engineering knowledge. Our engineers have specialized exclusively for more than seven years in producing the finest quality audio amplifiers. All Newcomb facilities are de-

voted solely to one cause—the improvement and perfection of trouble-free sound equipment. All Newcomb amplifiers are designed for simple installation, easy operation, long life and true reproduction.

Write for details of complete line.

T H E S O U N D O F Q U A L I T Y

*Newcomb*

**AUDIO PRODUCTS CO.**

MANUFACTURERS

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

tion. Excessive volume caused the break to part temporarily. The flexible lead was replaced with one taken from an old speaker in the junk box.

#### Arvin Model 58

This set refused to play, and the initial test showed no plate voltage on any of the tubes. A test of the 25Z6 tube showed no emission. A new one was taken from stock and inserted. When the switch was turned on there was a flash of light and the new 25Z6 tube was just as dead as the first one. I realized, that perhaps, something else must be wrong. Then by making a check with an ohmmeter between the cathode of the rectifier socket and the cathode common return of the other tubes it was found that the filter condenser was shorted. Replacement of the condenser and another new rectifier tube did the trick.

Reoccurrence of this difficulty can, ordinarily, be prevented by installing a 50 ohm resistor in series with each plate of the rectifier tube. This prevents the cathode tabs of the tube from melting from excessive load by limiting the current to a safe value.

Many manufacturers are including this protection in their a.c.-d.c. sets.

#### CA Model 4X4

Excessive hum or distortion is often caused by the pilot light socket shorting to the chassis. You will find that the pilot light is shunted across a 40 ohm resistor that is in series with the filament of the tubes. Therefore, the shorting of the lamp circuit would cause the same trouble as shorting a tube filament to the chassis. The socket is so close to the grounded side of the tuning condenser is the reason for this condition occurring so often in this receiver. The socket may be taped so that a short cannot reoccur.

#### New Sets

Here is a suggestion for putting new sets into service. Receivers that remain in service for several months often blow the rectifier tube when put into service. The electrolytic condenser may become deformed by not being used. This lets excessive current surge through the condenser which may exceed the safe rating of the rectified tube. The difficulty usually shows up as a burned-out filament. The best way to prevent a rectifier failure is to use a variable transformer, if available, to apply about 70 volts to the radio and gradually increase it to normal in a period of 10 minutes. This allows the con-

denser to properly form without danger to the rectifier tube. When a variable voltage source is not available the set may be cautiously turned on and the rectifier tube watched to see if there is any blue glow between the elements or if the plates get red hot.

#### Majestic Model 400-A

The complaint on this set was poor tone and little volume. On checking the voltage the cathode of the 25Z5, it was found low. All other voltages were correspondingly low. A current check of the 43 power output tube showed that it was drawing far too much current. The cathode voltage was too low and the ohmmeter showed the cathode resistor to be about 200 ohms. According to the circuit diagram its resistance should be 700 ohms. However, on further checking it was found that the cathode by-pass condenser was leaky thereby causing the resistance of the combination to be low. The low cathode voltage caused the 43 tube to draw more current than the rectifier could put out without a large voltage drop. By replacing the cathode by-pass condenser the voltage returned to normal and the set performance was perfect. This condenser is a 10 mfd. 25 volts dry electrolytic.



"GOT A HAMMER HANDY?"

## NEW QUALITIES

*for better Performance*

## NEW LOW PRICES

*for Wider Audiences*

## NEW IDEAS

*for Sales Stimulation*

# RECORDISC

HOME

## RECORDING BLANKS

"Snapshots-in-Sound" that can be used on any recorder and played back immediately on any phonograph.

Bond base. Steel base. Aluminum base. Perfected by the world's largest manufacturer of home recording blanks. Immediate delivery.

# FREE

Two-Color Merchandise Display

Two-Color Display Cards

Two-Color Consumer Folders

### THE RECORDISC CORP.

395 BROADWAY, NEW YORK 13, N. Y.  
Cable Address: Recordisc, New York, N. Y.  
Export Dept: Royal National Company, Inc.  
89 Broad Street, New York

# BOOKS

## INSIDE THE VACUUM TUBE,

by John F. Rider. 407 pp.

John F. Rider Publisher, Inc.,

New York 16, N. Y., \$4.50.

Already considered by most radio-men as a "standard reference source" because of such volumes as VACUUM TUBE VOLTMETERS, SERVICING BY SIGNAL TRACING, SERVICING SUPERHETERODYNES, and the PERPETUAL TROUBLE SHOOTER'S MANUAL, Mr. Rider, in his latest book INSIDE THE VACUUM TUBE has lent his genius for thorough explanation to the field of vacuum tube behavior and operation. Always crystal clear in the past, Mr. Rider has here gone his record for exposition one better. Like the true scientist, the technician and the craftsman constantly seeks to improve his tools and his method. The technical writer's tools and method are words, pictures and diagrams. Drawing from his recent vast and varied experience in the Signal Corps Training Division, Mr. Rider has vitalized all three.

The "anaglyph"—the stereoscopic picture of phenomena heretofore seen only in two dimensions—the personalization of the electron, the repetition of pertinent diagrams and graphs to make for continuity and greater ease of reading, and the constant harking back to first principles—these are among the features in this book that make it outstanding among similar radio texts.

Avowedly, the purpose of the volume is to "present a solid, elementary concept of the theory and operation of the basic types of vacuum tubes as a foundation upon which can be built a more advanced knowledge of tubes in general." Yet even the most experienced radioman might well read this book with profit.

The physical picturization of the events in the vacuum tube is not only highly intelligible, but, from the radioman's viewpoint, it might be

considered really new—because it is rooted in a comprehensive discussion of the all-important electrostatic fields, factors which are ever-present and determining the L.F., H.F. and U.H.F. propagation and reception. Nothing is more basic in the complete understanding of the tube, and here, as everywhere else in the text, the primary facts are admirably integrated.

An example of the studied lucidity described can be found in the chapter on "Dynamic Transfer Characteristics," where the basic interwoven phenomena of amplification and d-c into a-c conversion are clarified:

The "quiescent" state having been defined as that condition prevailing when the operating point has been chosen and no excitation voltage is being applied to the control grid, the text goes on: "The acceptance of the idea that an alternating current exists in the plate circuit of the vacuum tube comes about in a peculiar way. Of course, you are right when you think of the flow of plate current always in the same direction—the direction of the movement of the electrons. The introduction of the signal voltage to the grid does not change that condition. What it does, however, is to increase and decrease the value of the plate current *above and below the quiescent value.*

During all this time the current, no matter how small its value, just as long as it is greater than zero, is moving from the plate and back to the cathode through the *external* circuit which joins the plate and the cathode. Because the plate current is varying in value with respect to time, a voltage drop occurs across the load resistor; this drop also varies with respect to time. For a definite period of time controlled

by the character of the a-c voltage applied to the grid (the input signal) the periodically varying voltage across the load resistor is *greater* than the voltage during the quiescent period. For another period of time, again controlled by the character of the input signal voltage, the periodically varying drop across the load resistor is *less* than that during the quiescent moment.

"Such a periodically varying voltage, which rises and falls above some steady value, creates an effect which is similar to that of a flow voltage drop across the load resistor as being the equivalent of an alternating voltage. If the output plate-current wave varies in amplitude with respect to time exactly as the variation in amplitude of the input signal, then the *variations* in voltage drop across the load resistor are considered as being an enlarged version of the input signal voltage, and it is said that amplification has taken place; also that the input signal has been transferred in enlarged form to the load upon the tube."

With the essential mathematics restricted to a minimum, and held to simple form, the subjects of the structure of matter, types of electronic emission, derivation and significance of characteristic curves (static and dynamic), properties of the diode, triode, tetrode, pentode and beam-power tubes, voltage and power amplification, phase relationships, cathode, grid, and plate circuits, — these, and many more, are all treated with this fresh approach. The result is a "stick-in-your-mind" presentation hard to find in a book covering the fundamentals of this field.

FM and Television are here, and more and more the radio repairman's practical skill becomes inter-related with his knowledge of the physical workings of the complex circuits he is called upon to maintain. To aid materially in the getting of such knowledge, INSIDE THE VACUUM TUBE is highly recommended.

---

## Pricing Policy

---

(Continued from page 37)

employees, and to make other drastic curtailments. While only a few cases of this have been reported up until the present time there is every indication that others will be forced into the same boat in the very near future.

Of course, this leaves the dealer in the middle, with the squeeze being put on him from every side. On the one hand we have the OPA with its idea of granting a few increases all along the line and making the dealer absorb them, and on the other hand we have the current economic and production situation which makes it impossible for the set manufacturer to supply him with merchandise. In the meantime — overhead marches on!

---

## What About Music

---

(Continued from page 44)

No flat sum can be designated for installation. Costs vary with the engineering, wiring and amplifying systems involved.

Muzak's service today is the result of extensive laboratory research and experimentation and the result of the combined efforts of electronics engineers, tone experts, musicians, sound consultants and psychologists.

The system has been developed until it is completely devoid of all the objectionable aspects of the radio, phonograph, juke box and noisy bands. It requires little or no attention—as simple as turning a light switch. All you have to do is snap a button. That little button controls an amplifier which in turn is connected to the loud speakers, strategically placed throughout the establishment and that is all there is to it. The subscriber has no bothersome task such as changing records,

making selections or modulating the volume.

You are never conscious of any directional effect. Instead of the radio that used to blast out of the corner of the room, soft, discreet and timely music which is heard clearly and distinctly in every nook and corner of the room is supplied.

---

## How To Open A Radio Store

---

(Continued from page 21)

you to acquire in order to set his receiver to rights.

2. Be fair in your prices. John Meck, President of John Meck industries, advises you to overquote when in doubt about the actual time and parts required. As he says, "it will be an agreeable surprise to your customer when the job costs less than the estimate."

3. Don't install a new part unless it is absolutely necessary. If it is necessary, try to give your customer the reason for it in a way that can easily be grasped by the layman.

4. Don't try to make too much profit on new parts. A good application of the Golden Rule is to put yourself in the customer's position. How would your price sound that way?

5. You can't set prices without knowing your costs. It has always seemed a paradox that the man who deals in a precision service should be so unprecise in arriving at his prices. Look to your trade journals for detailed advice on pricing systems, see how efficient service shops conduct their cost accounting. Do thou likewise.

### When You Look for a Location

Is there enough potential business in the community to support your shop in the style to which you hope to become accustomed? Essentially, this is the basic question that your choice of a location should answer.

A practical way to get the answer is to do some educated footwork. Check the locality with enough household-inquiries to get a cross-section of its radio set make-up.

"What kind and make of set do you have?"

"Do you use your radio often?"

# DEPENDABLE PERFORMANCE



IT'S ENGINEERED  
WITH **HI-Q**  
COMPONENTS

Dependable performance in any electronic equipment is the sum of little things. And when those "little things" are Hi-Q components you can rest assured that performance will be thoroughly dependable. Hi-Q components are available in any desired quantities to your specifications. Send for samples and complete data.



### CERAMIC CAPACITORS

CI Type: axial leads

CN Type: parallel leads

Made of titanium dioxide (for temperature compensating types). Tested for physical dimensions, temperature coefficients, power factor and dielectric strength.



### WIRE WOUND RESISTORS

Fixed Type

Immediately available in standard ratings or precision built to any tolerance or value.



### CHOKE COILS

Sturdy construction. Insulated or uninsulated. Quantity production available at once.

**ELECTRICAL REACTANCE CORPORATION**  
FRANKLINVILLE, N. Y.

# IMMEDIATE DELIVERY

on the best in

# TEST EQUIPMENT

All types and makes of test equipment available on our easy payment plan. Place your orders now for preferred delivery. Write for prices and terms.

## Exclusive WRL MULTITESTER



- Sturdy Steel Case
- 30-60 Degree Angle
- Stand It Up or Lay It Down

Model MT-100  
Catalog No. 16-491

**\$18.75**

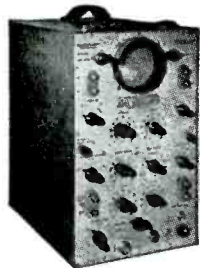
Less Leads

Handles AC DC Voltmeter, DC Milliammeter, high and low range Ohmmeter, 3" meter with sturdy D'Aronsva movement. Size 5½x8x3¼.

## 3" Expanded Range OSCILLOGRAPH

Cat. No. 16-1103 **\$245.00**

Permits study of signals of frequencies far beyond the range of usual standard oscillographs; terminal on panel couples into grid of cathode-ray tube for intensity modulation. This instrument is housed for severe service out in the field as well as in the laboratory or plant. 115 V. 40-60 cycles.



**Free!**

## NEW 52 PAGE FLYER

Jammed with values in radio, electronics, and general merchandise. It's Free for the asking. Write for your copy today.

Send for these exclusive items:

Tube and Circuit Book .....10c

Giant Radio Reference Map (size 3½'x4½') ..... 15c

Handy Tube-Base Calculator . . .25c

We invite industrial inquiries for electronic equipment and devices of all kinds.

- **ANTENNA LOOPS** . . . . for midgets and portables. Replaces antenna coils; good pickup and selectivity, each . . . . .39c
- **RESISTOR KITS** . . . . Top quality merchandise. Many uses. 100 to Kit, each . . . . . \$1.15
- **MICA CONDENSER KITS**—Handy kits of best quality that will find a multitude of uses around the shop. 100 to box, each . . . . .98c

Leo also carries a complete line of tools, replacement parts, intercom and P.A. systems . . . . everything for the progressive service dealer.

**QUICK SERVICE FROM LEO**  
"same day" delivery service from the heart of the nation . . . . on anything in radio.

**EASY TERMS** . . . . always the lowest in the country, to help you get that much needed merchandise NOW! Write Leo today.

Address Dept. TJ-2, Council Bluffs, Iowa.



**Wholesale RADIO LABORATORIES**

"When did you last have it serviced? Where?"

"Does it need any attention now?"

"Are you planning to get a new set? What kind?"

"Would you patronize a radio service shop located conveniently near your home, if the service and prices were satisfactory?"

What you can find out from a hundred calls of this kind ought to resolve your decision on a given location, yes or no. If *no*, don't fight your findings. Look for greener pastures. If *yes*, your survey will have been an act of missionary salesmanship, genuinely valuable when you open shop.

It is roughly estimated that your "sales potential" ought to include a minimum of a thousand radio-owning families. In addition, it will brighten your prospects if you are able to conclude pacts with one or more radio retailers who can use you for installations and repairs. Check on the possibilities.

If planning to locate in a rural section, you can learn from your local radio station the approximate number of sets in use throughout the area. Many "battery set" regions, incidentally, are scheduled for electrification, a fact which doubtless will increase the number and quality of new set installations.

## Do's and Don'ts That Will Help You Make Good

*Take pains to satisfy your customer.* "The public be damned" attitude, unfortunately practiced by certain irresponsible "service" men, has fostered a certain amount of injurious publicity, some of it quite justified. Go out of your way, therefore, to win your customers' confidence. Even if unreasonable demands are made on you, explain in detail why you have done what you have done. If an error has been made, be the first to say so.

*Keep your promise.* People naturally are impatient to have their radios back, most being heavily dependent on them. When you promise, delivery on a given date, be sure to have it ready, allowing yourself sufficient time to do an efficient job.

*Encourage customer deliveries to your shop.* Especially for the one-man shop, receiver pick-ups are costly intrusions on work time. Expect for invalids who cannot bring

you their sets, try to encourage deliveries to your shop.

*Use claim checks.* Most people are honest, but the few who are not can cause you a lot of trouble. To prevent returning repaired sets to other than the rightful owners, issue a claim check against every instrument received, noting the make and serial number. Your stub should also provide a means of establishing time, cost and parts used in repair, this information helping you to maintain your inventory.

*Know your troubles.* A revealing countrywide analysis, made by the N. A. B., indicates that radiomen generally attribute the need for service to the failure of seven specific components, in the following order of importance: tubes, condensers, power supplies, tuning systems, IF coils, RF coils, and filters. But while tubes are most frequently needed for radio servicing, they are not affected by humidity, which was cited as a major cause for radio servicing in an average 44% of the sets serviced throughout the nation. Humidity as a cause of trouble varies in importance in different parts of the country. Measured in terms of sets serviced, it has been reported as follows: Pacific States, 22%; East North Central States, 28%; South Atlantic States, 1%; Gulf States, 87%.

*Study the new circuits.* Your circuits file is one of your most vital assets. Keep it as complete as possible. Budget part of your day, however little, to the study of the circuits likeliest to come within your path of service vision, as well as those of the complex Television and FM sets as they are issued.

## A Plan That Gets the Business

1. *Call on your future customers.* While your store is being readied for the opening, trek around among the radio owners of your locality to notify them of your new service and to solicit their business. It doubtless will happen that some radio owners will seize the opportunity occasioned by your visit to complain of radio defects then and there. Before you know it, you will have lined up enough work to keep your first two or three weeks pleasantly occupied, with others to follow.

2. *Send them postcards!* Messages printed on Government postcards are



# ADVERTISERS' INDEX

FEBRUARY, 1946

inexpensive and put your story quickly before prospective customers. *Bu' make each message do a selling job!* "Speak your piece" in a way that registers. One shop, for example, did a land-office business by featuring a "radio and phonograph repair service with *complete protection*—protection against guesswork, against another breakdown, against delay in obtaining courteous, efficient service." Another offers a written guarantee. Whatever *you* say, make it something which would logically induce the set owner to try your service.

3. *Sell your technical ability.* Few radiomen do enough to "dramatize" their ability as technicians, which, when you get right down to it, is about all you really sell. To translate the intangibles of service into graphic terms, *Radio Retailing* suggests that you make your windows work for you. Clip out a number of photos showing tube-testers, analyzers, oscilloscopes, signal generators and other testing equipment and build them into a window display. Caption these photos with short, non-technical descriptions of their uses in radio repair. This idea will get people to stop, look at and remember your shop, while getting them to associate you with technical skill.

4. *Sell sets and appliances on commission.* Many service men arrange with retail radio dealers and appliance stores to represent them on a commission basis, adding substantial profits without any investment in stock. The opportunity enjoyed by the service man to enter the homes of customers, plus his own good salesmanship, will build up an income from sales of sets and electrical appliances. At the same time, the sales you make will lubricate the wheels of reciprocity.

5. *Rent public address systems.* "P. A." equipment is increasingly in demand for indoor and outdoor gatherings, such as sports events, political meetings, fairs, schools, churches and conventions. The service man who wants to develop an extra income can build his own equipment and rent it out. About all you need to do to start this rental business is get up an effective mailing-piece and send it to the right places.

|  |       |
|--|-------|
| ADMIRAL CORP. ....                             | 5     |
| Agency: Cruttenden & Eger Adv.                 |       |
| AEROVOX CORP. ....                             | 4     |
| Agency: Austin C. Lescarbourea & Staff         |       |
| ASTATIC CORP. ....                             | 21    |
| Agency: Wearstler Adv., Inc.                   |       |
| AUTOMATIC RADIO MFG. CO. ....                  | 14-15 |
| Agency: Henry A. Loudon Adv.                   |       |
| ELECTRICAL REACTANCE CORP. ....                | 63    |
| Agency: Scheel Advertising Agency              |       |
| ELECTRONIC LABS ....                           | 53    |
| Agency: Burton Browne Adv.                     |       |
| EMERSON RADIO & PHONOGRAPH CORP. ....          | 9     |
| Agency: Grady & Wagner Co.                     |       |
| FADA RADIO & ELECTRIC CO. ....                 | 2     |
| Agency: Sternfield-Godley, Inc.                |       |
| THE GENERAL INDUSTRIES CO. ....                | 17    |
| Agency: Fuller & Smith & Ross, Inc.            |       |
| HANLAN CO. ....                                | 49    |
| Direct   |       |
| JENSEN RADIO MFG. ....                         | 55    |
| Agency: Burton Browne Adv.                     |       |
| McELROY MFG. CO. ....                          | 55    |
| Agency: Shappe-Wilkes, Inc.                    |       |
| NATIONAL UNION RADIO CORP. ....                | 67    |
| Agency: Hutchins Adv. Co.                      |       |
| NEWCOMB AUDIO PRODUCTS CO. ....                | 60    |
| Agency: Gail Hall Adv.                         |       |
| PARAGON UTILITIES CORP. ....                   | 43    |
| Agency: Diener & Dorskind, Inc.                |       |
| PHILCO CORP. ....                              | 3     |
| Agency: Hutchins Adv. Co., Inc.                |       |
| RADIO CORP. OF AMERICA (Tube Div.) ....        | 31    |
| Agency: J. Walter Thompson Co.                 |       |
| RAYTHEON MFG. CO. ....                         | 59    |
| Agency: Burton Browne Adv.                     |       |
| RECORDISC CORP. ....                           | 61    |
| Agency: Shappe-Wilkes, Inc.                    |       |
| REXON, INC. ....                               | 38    |
| Agency: Anderson, Davis & Platte, Inc.         |       |
| SENTINEL RADIO CORP. ....                      | 13    |
| Agency: W. W. Garrison & Co.                   |       |
| MARK SIMPSON MFG. CO. ....                     | 51    |
| Agency: Edward Hamburger Adv. Co.              |       |
| SOLAR CAPACITATOR SALES CORP. ....             | 68    |
| Agency: O. S. Tyson & Co., Inc.                |       |
| SPARKS-WITHINGTON CO. ....                     | 11    |
| Agency: Brooke, Smith, French & Dorrance, Inc. |       |
| STANDARD TRANSFORMER CORP. ....                | 58    |
| Agency: Burnet-Kuhn Adv. Co.                   |       |
| STROMBERG-CARLSON CO. ....                     | 6     |
| Agency: McCann-Erikson, Inc.                   |       |
| SYLVANIA ELECTRIC PRODUCTS, INC. ....          | 22-23 |
| Agency: Newell-Emmett Co.                      |       |
| TRILMONT PRODUCTS CO. ....                     | 50    |
| Agency: Al Paul Lefton Co., Inc.               |       |
| TURNER CO. ....                                | 37    |
| Agency: W. D. Lyon Co.                         |       |
| WARD PRODUCTS CORP. ....                       | 57    |
| Agency: Burton Browne Adv.                     |       |
| WEBSTER PRODUCTS ....                          | 36    |
| Agency: Wm. Hoffman Assoc.                     |       |
| WESTINGHOUSE ELECTRIC MFG. CO. ....            | 34-35 |
| Agency: Fuller & Smith & Ross, Inc.            |       |
| WHOLESALE RADIO LABORATORIES ....              | 64    |
| Agency: Pfeiffer Adv. Agcy.                    |       |

# Journals' End

BY *Mal Parks*

Well hello again . . . sure seems nice to be back on the job after laying around with the flu for awhile . . . just got back from having some of that good stuffed lasagna and don't know whether I want to cork off for an hour or try to keep my eyes open long enough to finish off this last-minute job . . . guess I'd better buckle down because with all the fellows getting out of the Army this nice soft editor's berth might not be so secure . . .

. . . Grand letter from Lear's **Nate Hast** assuring me that the rumors about him are baseless . . . Nate says things are going along swell and he has just finished moving his entire staff over to Grand Rapids, Michigan to be near production facilities . . .

. . . Good visit with Westinghouse's **Bob Burrows** who told me that he's planning to leave his present post as home radio receiver sales manager and may take another one within the company . . . Bob's just recovered from a tough bout with pneumonia and his present decision is based on a need to take it a little easier for awhile . . .

. . . **Reau Kemp** and his charming wife were in town to see their boy for the first time in almost two years . . . he was in for a few days from the South Pacific and understand he likes the Navy pretty well at that . . . Alex took us all to the Century Room at the Commodore and we had a real swell time . . . I tell you, fellows, I never even dreamed there was anything like this high life I see every so often, it's going to spoil me for the farm if I ain't careful . . .

. . . Tracy-Wells' **Bob Hager** in from Cleveland and visited with Alex and myself . . . we all went over to the Gloucester House and

had some of their finnan haddie than which there just isn't any better, anywhere . . . had a grand talk with Bob and worked out some ideas which I know are going to help us improve your Radio & Television Journal even more . . . if only more dealers would listen to wholesalers like Bob, they'd find it a lot easier to meet many of their problems . . .



Shown above on the left is St. Petersburg, Fla. dealer Garvin Combs pictured in front of the new building which he is erecting on one of Central Avenue's busiest corners. The thin fellow on the right showing positive signs of malnutrition is . . . yep, you guessed it, Editor Mal Parks between meals.

. . . Good warning from Aero-vox' **Charley Golenpaul** about growing tendency for dealers to buy surplus parts or parts of unknown brands . . . Charley cited instance after instance where such parts failed to stand up in repair jobs which had to be done over for free by the service-dealer who used them . . . stuff is starting to flow from the factories now and your parts jobber will have a larger supply so there's no need to take chances with stuff that may have been kicked around . . .

. . . Nice to see old friend **Col. Gordon Wright** named to important post of field sales manager for R.C.A. Victor's Home Instruments Department . . . old times in the industry will remember the

Colonel from his former post at Aeolian American Corp. in East Rochester, N. Y. . . . his new headquarters will be in Camden, N. J., and I know he'd like to hear from all his old friends in the industry . . .

. . . Nice talk with E.C.A.'s **Jack Geartner** and was mighty sorry to hear that his fine wife is seriously ill . . . Jack's done a swell job with Sam Novick's company and friends will certainly hope for a speedy recovery for Mrs. Geartner . . .

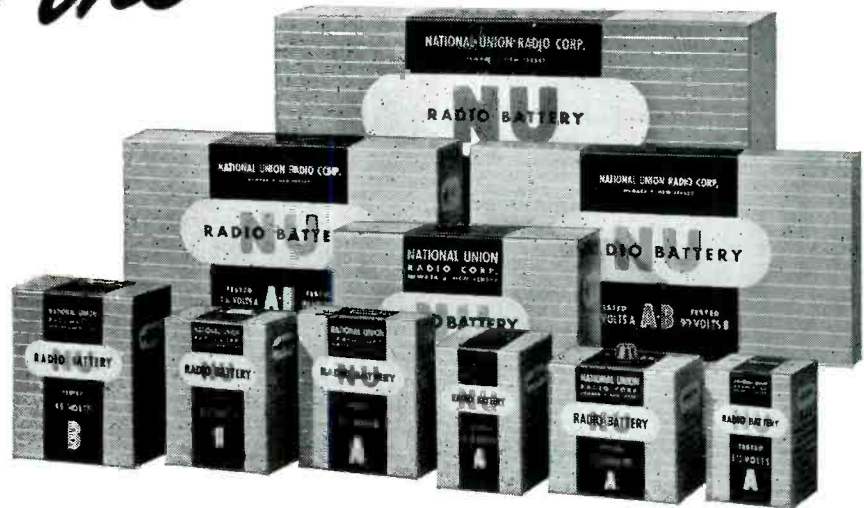
. . . See former Espey president **Harold Shevers** plans some sort of distributive set-up here in New York . . . understand Harold's reason for selling out Espey was to get away from onerous detail but once he starts in wholesaling, brother, that's when the detail really starts . . . at any rate, his host of friends in the industry will wish him lots of luck . . .

. . . Thought you fellows would like to know that the parts end of the industry plans a special trade show in Chicago on May 13th through 16th . . . we'll be on the spot to bring you all the news and we also plan a Parts Trade Show in Print issue which will bring you photos and factual data on the many new developments in the parts and components field . . . be sure to watch for our Special May issue because we feel you'll want to keep it for reference . . .

. . . Gosh, here's that old end of the column again . . . seems like it gets here quicker each month . . . suppose it's because I look forward to our monthly visits together so much that they never seem to last long enough . . . perhaps one of these days when they get the peace won we'll have new autos and tires and the time to drive around and visit with you all in person . . . until then, it's real swell of you to be here and I'm looking forward to seeing you again next month . . . until then, thanks for everything . . .

# N. U. BATTERIES

*by the Carload!*



## Get Immediate Deliveries of All Types for Standard Radio and Other Replacements

Now you can bring many thousands of good, serviceable battery-powered radio sets *back to life*. Portables—Farm Radios—"carry-about" sets! Here are the batteries you need to bring in this flood of profitable service and parts business. Order now and *tell* your customers to come on the run for the batteries they need.

In batteries as in other products, N. U. quality helps you build for the future. The patented construction of N. U. Batteries permits more active materials—more service hours per dollar. Every N. U. Battery is engineered to the highest initial equipment standards and is designed for universal replacement.

**PLACE YOUR BATTERY ORDER TODAY—with YOUR N. U. DISTRIBUTOR**

*Renew with N. U. . . .* the quality line that brings repeat sales at full profit to radio service men!

NATIONAL UNION RADIO CORPORATION, Newark 2, New Jersey

## NATIONAL UNION RADIO TUBES AND PARTS

Transmitting, Cathode Ray, Receiving, Special Purpose Tubes • Condensers • Volume Controls • Photo Electric Cells • Panel Lamps • Flashlight Bulbs



# You can't put the **squeeze** on "Sealdtite" Capacitors

**T**ake a genuine "Sealdtite" capacitor and try to squeeze it. No "soft spots."  
Why? Because this Solar capacitor has its high purity paper-and-foil-winding ingeniously molded into a cylinder of solid wax.

No atmospheric moisture can penetrate this protective housing to attack the capacitor element. In genuine wax-molded "Sealdtite" capacitors, there just is no possibility of those twin omens of trouble — soggy cardboard tubes and moisture-filled hollows.

For real reliability, specify Solar "Sealdtites" on your next order.

*P.S. If you haven't a copy of our Catalog SC-1, get one from your Solar distributor, or drop us a penny postcard today.*



**SOLAR CAPACITOR SALES CORP.**

285 Madison Avenue • New York 17, N. Y.

Ⓢ1000

