

RADIO *Retailing* TODAY

1945



**30 MILLION RADIO HOMES READY
FOR 1943 "WAR ORDERS"**

DECEMBER

What People Say..



Unsolicited compliments make interesting reading, particularly when they are as sincere and enthusiastic as these we've received.

HERE ARE A FEW EXAMPLES:

"Received the Technical Manual and want to express my appreciation of the biggest two dollars worth of technical information I ever received."
E. S., CINCINNATI, OHIO

"The best buy of the year!" R. E. P., GREAT FALLS, MONTANA

"Must be within reach on the bench." L. C. DAVIS, BEREA, KY.

"Can't get by one day without referring to it."
S. E. & R. S., DELUTH, MINN.

"This Manual is the best yet—something all servicemen can use."
H. J. M., ALBANY, N.Y.

"Exceptionally complete in both information and data."
L. E. R., PITTSBURGH, PA.

"Certainly great stuff. Keep up the good work."
H. E. C., SUNDANCE, WYOMING

"Must say that it has exceeded my expectations . . . just what I was looking for."
R. V. O., STAMFORD, CONN.

The new MYE TECHNICAL MANUAL—2000 copies of it—has found a patriotic service, too . . . in radio training centers of the Army, Navy, and Marine Corps. This 408-page book, handsomely bound in hard cloth covers, beautifully printed, is full of practical information—as useful as a voltmeter, and just as indispensable! Since the supply of Manuals for civilian use is limited, we suggest that you order your copy *today* from your Mallory Distributor.

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

An advertisement for P.R. Mallory & Co. Inc. The background is orange. At the top, it says 'P. R. MALLORY & CO. Inc.' in a small box. Below that, the word 'MALLORY' is written in large, bold, black letters. Underneath, it says 'Approved Precision Products' in a smaller, italicized font. The bottom half of the advertisement features several illustrations of electronic components: a cylindrical capacitor, a rectangular capacitor, a resistor, a battery, and a small electronic component. The word 'MALLORY' is also written on the side of the battery.

OUR HAT'S OFF TO YOU . . .

ED SMITH



Ed Smith could be any one of a thousand or more men . . . he might be you . . .

For about a dozen years he has been selling radios . . . through sheer hard work has built a successful, modestly prosperous retail business. From where Ed Smith was sitting the future looked pretty rosy . . .

Then came December 7th . . . a stunning shock that proved to be as stimulating as an icy shower. America woke up to reality. One of Ed's sons joined the marines, the other quit school and headed for the navy.

America tightened its belt to go all out for victory. No more cars, no more tires, no more refrigerators . . . then came the verdict, no more civilian radios for the duration. Uncle Sam needed all available production facilities for the making of vital communication equipment.

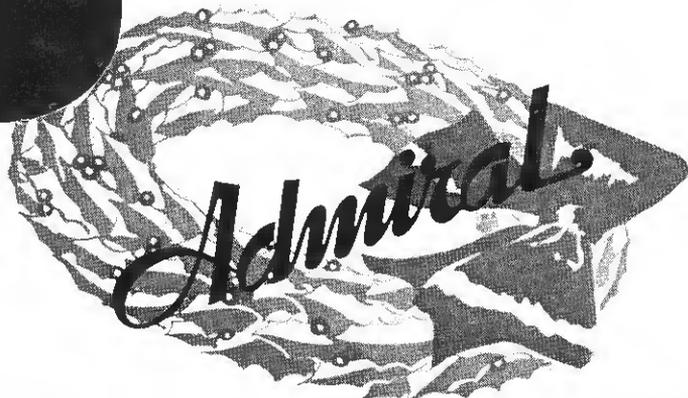
Ed Smith shrugged his shoulders . . . his usual smile became a tight-lipped frown of determination. There were still plenty of radios to sell and he probably could keep going by building up the service end of his business.

But then came an urgent appeal for experienced radio technicians. That was right up Ed Smith's alley. He'd show those sons of his there still was plenty of fight in the old man. At first his wife protested tearfully . . . hadn't he done his turn in the last war? Hadn't he already given two sons to this one? Hadn't he practically given up his bread and butter for the duration? But Uncle Sam desperately needed trained men for the Signal Corps. Ed Smith joined up.

We, at Admiral, are proud to be associated with an industry where there are not merely one but thousands of men like Ed Smith. Today, both Admiral plants are busy turning out vital communication equipment for our armed forces . . . but what we are doing is little when compared with the sacrifices made by men like Ed Smith.

★

Yes, our hat's off to you, Ed Smith . . . may we, at this time of Christmas cheer, wish you well and lots of luck!



**CONTINENTAL RADIO
AND TELEVISION CORPORATION
CHICAGO, ILLINOIS**

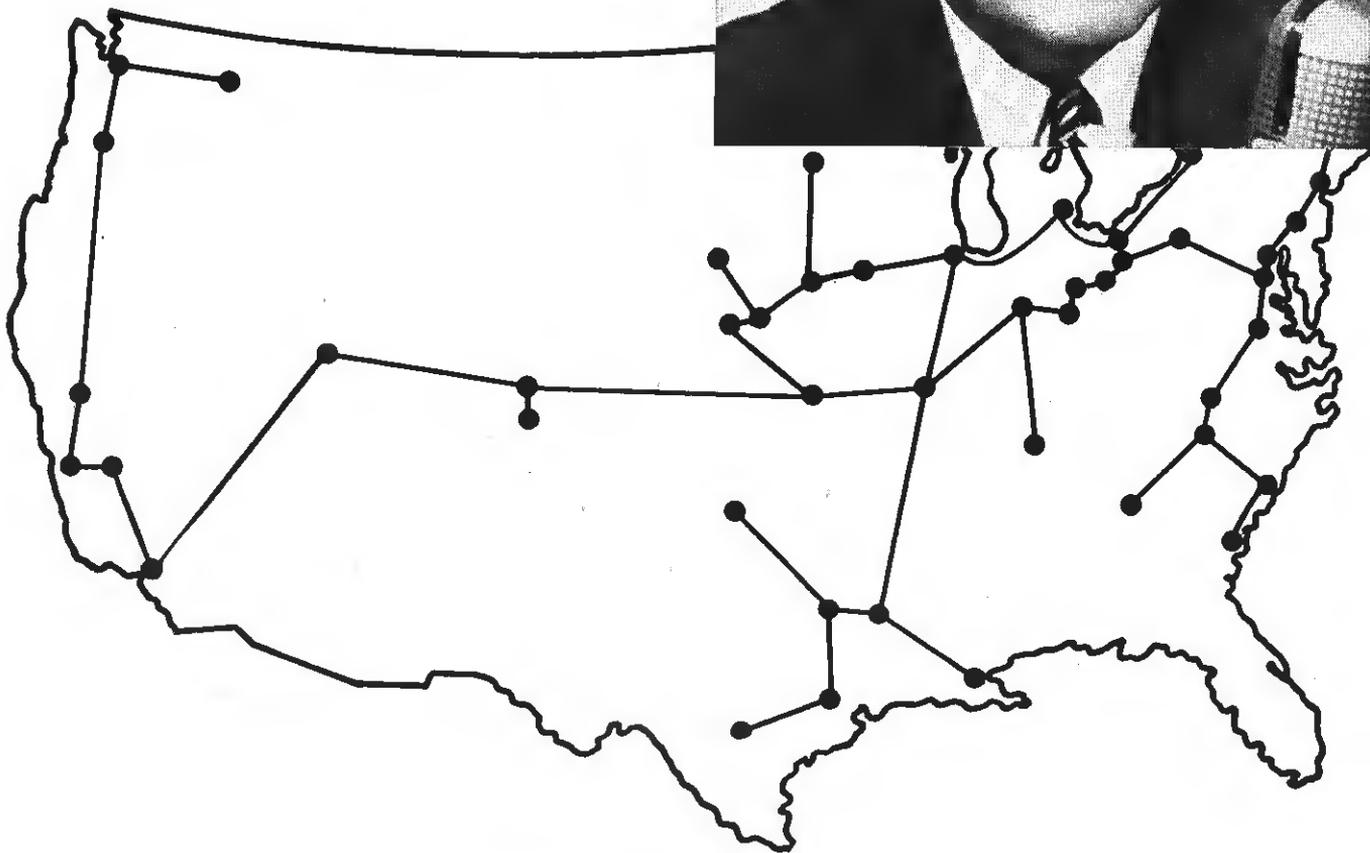
PEACETIME MAKERS OF ADMIRAL . . . AMERICA'S SMART SET

RADIO Retailing TODAY, December, 1942

G. E. is telling your customers

Service over 51 C. B. S.

The General Electric radio news program, with Frazier Hunt, is explaining to your customers your difficult wartime radio service problems.



GENERAL  **ELECTRIC**

Leader in Radio,

about Wartime Radio and 8 FM radio stations

ON DECEMBER 1, the General Electric radio news program, featuring Frazier Hunt, started telling your customers of your wartime radio service problems.

G.E. fully appreciates the difficulties under which radio service men are operating, and is anxious to prevent any public misunderstanding that would reflect on your service business.

Therefore, the G-E radio news program is pointing out over and over that, with so many radio service men now in the armed forces, the task of those still on the job is tremendous and is being met in many cases by day-and-night work. G.E. is explaining that although fewer service men are available to keep the nation's 50,000,000 radio sets working, the hard job

can be done if the public will be just a little patient.

The public is also being reminded that some radio parts are now difficult to get in a hurry. Furthermore, it is being asked to remember that rubber and gasoline rationing are as hard on the service man as on themselves. So radio owners are asked to carry tubes and small sets to you, rather than ask you to go to them.

Above all, G.E. asks the public to understand that you are doing a great job under trying conditions, and that wherever possible G-E electronic tubes and other replacement parts on hand are being rushed to help keep your wartime radio service going. . . . Radio, Television, and Electronics Department, General Electric Company, Schenectady, New York.

G.E. IS TELLING YOUR SERVICE CUSTOMERS THAT:

Thousands of former radio service men are now in the armed forces. Those left in service shops are doing an important job — well! Everything possible is being done to keep America's 50,000,000 radios working. A little customer patience over delays is asked for — and appreciated. Gasoline and rubber are scarce, so please bring tubes and small sets to the service men whenever possible.



Television, and Electronic Research



Sell A
Presto Recorder
with your
War Plant
Sound Systems

ALL WAR PLANTS wired for
A sound want to broadcast
radio programs, company an-
nouncements, news items,
messages to workers from
company officials.

Often these messages must be repeated to three
shifts of workers and to various plant divisions.

A Presto recording will enable one good an-
nouncer to record all announcements *once* for
these broadcasts. A familiar voice assures clear
understanding of all messages.

Include a Presto recorder in your next indus-
trial sound installation. It's extra business for
you. It will save operating time and double the
usefulness of the system.

You can get prompt deliveries on the Presto
Model H 16" recorder and record player. Write
for literature.

PRESTO
RECORDING CORP.
242 WEST 55th ST. N.Y.

In Other Cities, Phone . . . ATLANTA, Jack. 4372 • BOSTON, Bel. 4510
CHICAGO, Mar. 4240 • CLEVELAND, Me. 1565 • DALLAS, 37093 • DENVER,
Ch. 4277 • DETROIT, Univ. 1-0180 • HOLLYWOOD, Hi. 9133 • KANSAS
CITY, Vic. 4631 • MINNEAPOLIS, Atlantic 4216 • MONTREAL, Mar. 6368
TORONTO, Hud. 0333 • PHILADELPHIA, Penny, 0542 • ROCHESTER,
Cul. 5548 • SAN FRANCISCO, Su. 8854 • SEATTLE, Sen. 2560
WASHINGTON, D. C., Shep. 4002

World's Largest Manufacturers of Instantaneous Sound Recording Equipment and Discs

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1942

featuring

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PHILCO speaks each week
to your future customers
over 115 Stations of the
Columbia Broadcasting System,
from coast to coast!

EVERY Friday evening, over the full Columbia Network of 115 stations from coast to coast, Philco sponsors the program, "Our Secret Weapon." It is a gripping expose of Axis lies and propaganda as heard over Columbia's Short Wave Listening Posts, conducted by Rex Stout, celebrated author and Chairman of the Writers' War Board.

This program is a fitting companion to the now famous Philco Cartoon Campaign in the national magazines, both of which are performing an important and constructive service for the nation's war morale.

In this and other ways, Philco is keeping before your customers of the future a report of its war production activities. And, in addition, a vision of the electronic miracles which will bring a new world of opportunity to every Philco dealer.



**Listen to Rex Stout
Expose Axis Lies and
Propaganda**

**Every Friday over Columbia
Stations from Coast to Coast!**

7:15 P.M. E.W.T. • 8:15 P.M. C.W.T.
9:15 P.M. M.W.T. • 8:15 P.M. P.W.T.

PHILCO CORPORATION

Our War Production Pledge! MORE • BETTER • SOONER!

New items for your shelves TOMORROW!



THESE television and radio tubes will give you some inkling of the new items today's radio dealers will work with tomorrow — the symbols of undreamed-of possibilities in the television and radio fields.

A HUGE MARKET — TELEVISION

Tremendous advances are being made in the science of television. Informed people believe that television will be the country's next great industry, helping to carry American business through the difficult post-war years, just as the automobile stimulated business after World War I.

Television dealers will come from the ranks of today's radio dealers. That is why Farnsworth, a leading manufacturer in both fields, recognizes a double responsibility to you. Because our entire production now is precision equipment for the armed forces, we cannot make sets for you. But we are laying the foundations for your future, by creating a market and a demand for television that will be ready when you have sets to sell.

ADVERTISING FOR YOUR FUTURE

Farnsworth advertising is devoted to arousing interest in and enthusiasm for the wonders of tomorrow's television

and radio . . . building a huge demand that must be supplied by the trade when sets are available.

This is the job advertising does so well: telling about new things, laying the groundwork for a new industry, and preparing a demand that will call for new employment, new ideas, new business.

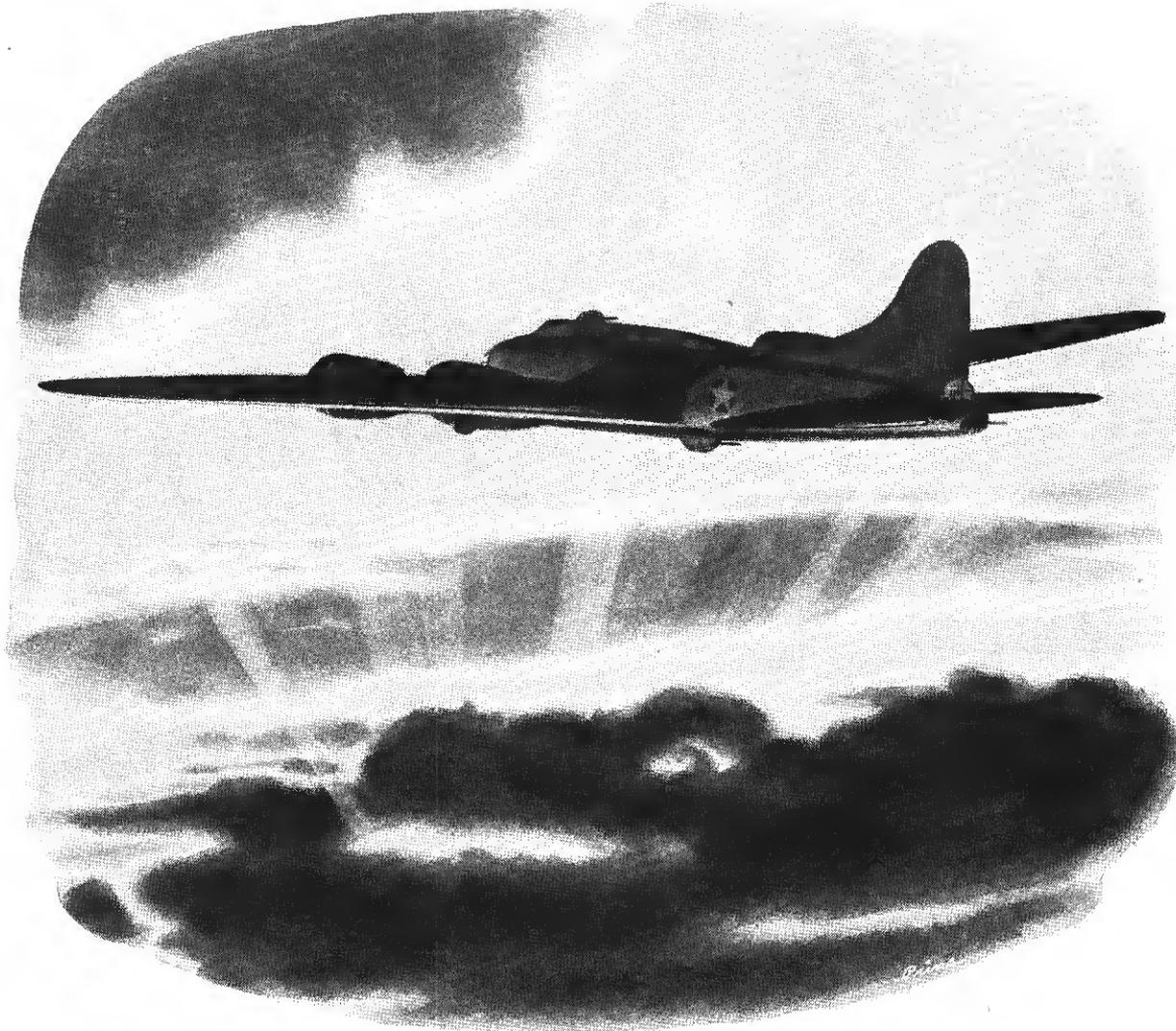
Thanks to advertising, television is becoming a household word . . . *and that means business.*

. . . .

PEOPLE are learning from Farnsworth ads. Look for the latest in November 30 *Time*, November 27 *U. S. News*, December *Fortune*, December 5 *New Yorker* and *Business Week*, December 14 *Life* and *Newsweek*.

FARNSWORTH TELEVISION

● Farnsworth Television & Radio Corporation, Fort Wayne, Ind. Manufacturers of Radio and Television Transmitters and Receivers; Aircraft Radio Equipment; the Farnsworth Dissector Tube; the Capehart, the Capehart-Panamuse, and the Farnsworth Phonograph-Radios.



Toward Tomorrow's "Peace on Earth"

● Today a single purpose motivates the people of Sylvania. That is to help win the war.

At this season we must pause to express appreciation for your patriotic understanding and sacrifice. The experience of serving you in the past prepared us for war. Our war service will help you win the peace.

For war serves to sharpen scientific vision and speed engineering prog-

ress. Tremendous strides are being made in secret naval navigation and military communications projects in our laboratories and plants. Radio and electronic tubes, perfected for war production, will open a new era of radio and tele-

vision in the peace to come.

So while our minds and hands work only toward victory, our hearts and eyes look ahead to brighter days—toward Tomorrow's "Peace on Earth."

SYLVANIA ELECTRIC PRODUCTS INC.

Formerly Hygrade Sylvania Corporation

EMPORIUM, PA.

*Incandescent Lamps, Fluorescent Lamps and Fixtures, Radio Tubes,
Electronic Devices*

Meissner
IS HONORED
BY AN AWARD

ARMY **E** NAVY

for **HIGH ACHIEVEMENT
IN WAR PRODUCTION**

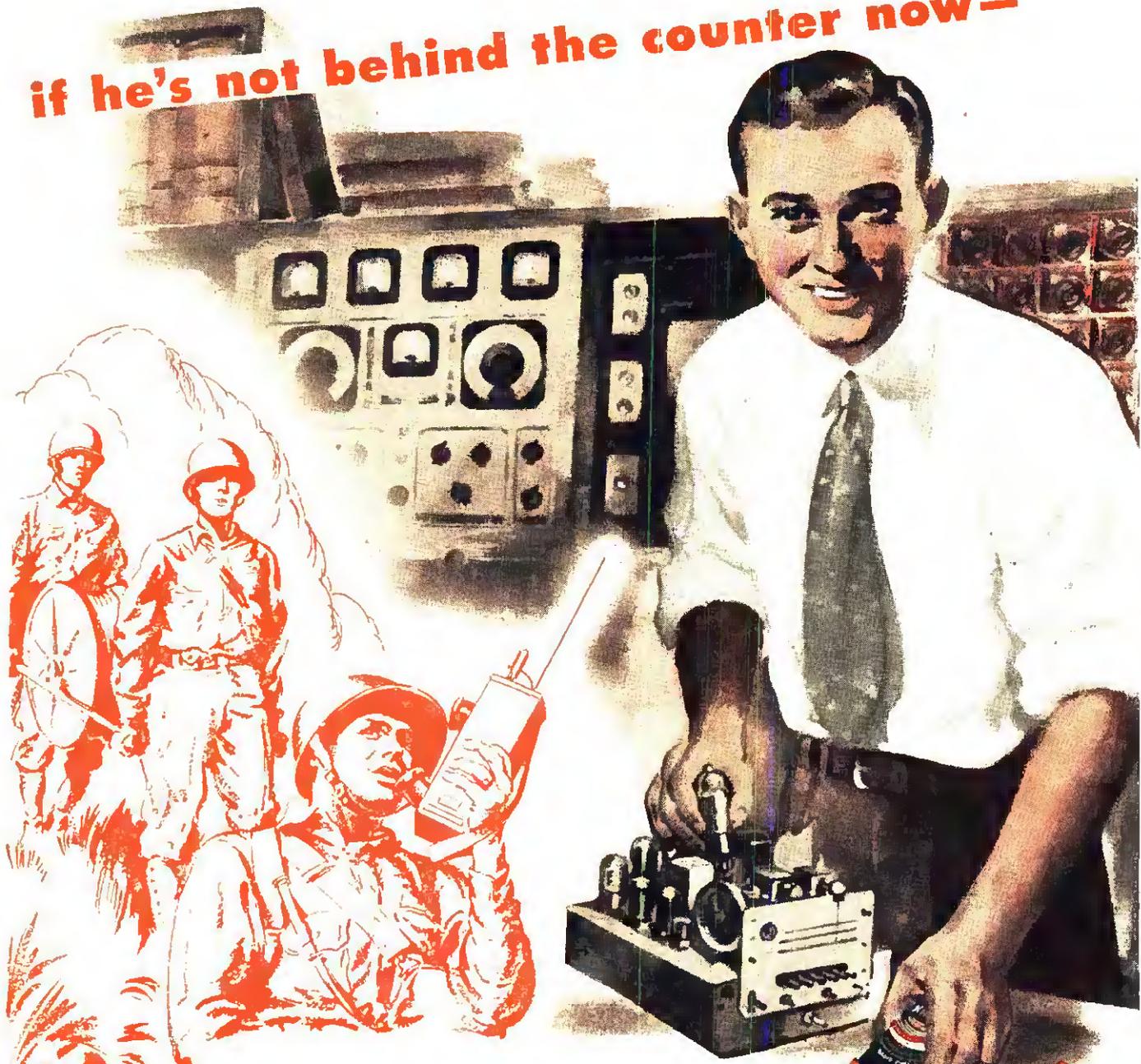
Meissner is deeply grateful for this honor bestowed upon our employees, made possible by their sincere cooperation and unswerving loyalty to duty.

This Army-Navy "E" award will be an inspiration to the entire Meissner organization to put forth increased efforts to win the battle of production.

Meissner
MT. CARMEL, ILLINOIS
"PRECISION-BUILT PRODUCTS"

Meissner employees are justifiably proud of their "E" emblems . . . the symbol of a job well done.

if he's not behind the counter now —



...he is occupied with a more important job...the job of keeping communications open for our fighting forces! Radio Servicemen answered their country's call to serve with the same willing spirit they have always shown in their civilian work.

America is proud of the job the Radio Servicemen are doing in communications...their technical skill is a vital asset toward keeping the communications of our fighting forces at peak efficiency!

America is also proud of the way Radio Tube Distributors have cooperated with the Servicemen in keeping present receivers in operation so the public can keep in touch with fast-moving world events.



RAYTHEON PRODUCTION CORPORATION

NEWTON, MASS. LOS ANGELES CHICAGO NEW YORK ATLANTA

DEVOTED TO RESEARCH AND THE MANUFACTURE OF TUBES FOR THE NEW ERA OF ELECTRONICS

Reporting the War to America . . .

America is hungry for news about her fighters abroad. That is why we are using our advertising to picture a more intimate side of army life than is carried in the news dispatches. The latest advertisement in this series, which appears in SATURDAY EVENING POST and LIFE, is shown below. To 30 million people it gives an opportunity to live, for a few moments, with their loved ones in service. We believe that the people at home deserve at least this much of a break while we are giving our entire production to the war.

STROMBERG-CARLSON, ROCHESTER, NEW YORK

"Mom . . . Mom . . . This 'is me, Ricky . . . I'm talkin' from Australia . . . How's it sound? . . ."

It sounds like this . . . Like the little boy who got homesick at Summer camp . . .

Like the kid who used to go dancing at the Dreamland pavilion.

It sounds like Ricky . . . The most important sound on earth!

*He's big now and brave and tough enough to walk through
the side of a ship. But he's got an awful weakness for "Back Home"*

. . . and letters from you, when letters that don't say anything, help . . . so do telephone calls.



Our big job at Stromberg-Carlson is making some of the equipment they use for these talks . . . Making communications equipment for battle . . . And making it just as reliable and just as durable as 48 years' experience has taught us!

There's another important job for each and every one of us . . . And that is to buy War Bonds and Stamps . . . as many and as often as we possibly can. It's the least we can do.

In radios, telephones, sound systems . . . there is nothing finer than a



STROMBERG-CARLSON

© 1942 STROMBERG-CARLSON TELEPHONE MANUFACTURING COMPANY, ROCHESTER, N. Y.

480 LEXINGTON AVE.
NEW YORK, N. Y.

RADIO *Retailing* TODAY

O. H. CALDWELL, EDITOR
M. CLEMENTS, PUBLISHER

Including Radio and Television Retailing

"The Priceless Ingredient"

Government officialdom may order manufacturing limitations; industry committees may struggle with simplified lists of radio parts and components; and radio distributors may tear their hair over inventory shortages.

But in all this thinking and talking about radio-replacement restrictions there is one factor about which little has been said so far. And yet it is one of the most important aspects of the situation into which we are now plunging.

This is the *individual ingenuity and resourcefulness* of the local radio repairer. For it is here we have a factor of enormous resilience and elasticity. The self-reliant radio serviceman can usually "find a way." By exercise of inherent modern Yankee genius, he can somehow "get her going again". A few snips of the cutters, followed by a few loving touches of the soldering iron—and, presto,—the set plays on!

It is such ultimate local magic that will save U. S. radio listening—from materiel shortages, bureaucratic mistakes, and committee bungling.

"War Report Number" for Dealers

The radio retailer has a big stake in what's going on at radio war production centers. His future is all linked up with the trends and developments which are certain to emerge from the Martian uproar.

Sometimes it may seem that since the radio factories are now making nothing to sell the retailer, intertrade relationships may cool off until after the war. This might be true in some industries. But not in a business which moves as swiftly as radio. The pace of radio development is so fabulous as to require constant contact among the various branches of the trade. And this pace is only accelerated in times like these, when Victory is the stake.

The Radio Industry at War

Under these circumstances radio dealers and servicemen have a genuine interest in radio factory affairs. They will want to know which outfits are doing a big job for Uncle Sam, where they excel, how they're meeting Uncle Sam's standards, and something about post-war plans.

No dealer-reader of this magazine is going to feel badly because his old friends at the radio plants have war-developed, war-designed, and war-produced their way tem-

porarily out of the retailer's sphere. Not while there are some earnest reporters on the job to tell the story of the Radio Industry at War.

This is what is meant by the "War Report Number" of this magazine coming soon.

And besides being interested, readers are sure to be proud of what the radio factories are doing.

Radio's Ration of Gasoline

The editors have lately received dozens of letters from servicemen who are having special difficulty in getting enough gas to make their rounds on home radio repair calls. Some of these letters are strident and vigorous and are apt to say "if home radio listening is not important to civilian morale, I'd like to know what is!"

The advice given these fellows is mainly to be careful and accurate and comprehensive in making their applications for more gas. A great deal of the difficulty has been due to the lack of formal bookkeeping in the service business. Also in many cases occupational mileage has been mixed with personal use. And the rationing boards are sometimes slow to realize what a large share of the radios are non-portable.

Anyway it is encouraging to know that in many towns and cities the shortage of replacement parts is not so serious but that servicemen need extra gas to handle the repair work. And the situation should improve as the public learns to *bring* its radios to the repairman.



"I'm sorry, Mr. Sweeney, there is a limit!"

SERVICING AND SELLING

• The retailing of radio may be sick—but the radio *business* is a long way from dead.

There are today about 60 million radio sets in American homes.

Statistics of the past several years indicate that the average home radio is serviced once each three years.

That means some 20,000,000 annual service jobs on home radios.

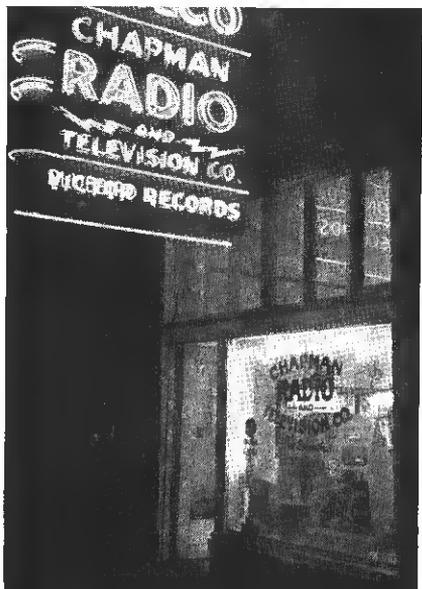
The average home radio service job amounts to about \$4.50, which brings the value of the home radio service business to \$90,000,000 per year. This is the overall picture without considering the wartime trend to *one* "active" set per home.

This business is now on the increase. The number of servicemen is decreasing.

These facts must intrigue every radio man who wants to stay in business now, and keep his sights set on the fabulous future of "electronics."

Many parts, potentiometers, mica capacitors, coils, tubes are hard to

Typical service business "sticking to its guns" is the Chapman Radio & Television Co., Birmingham, Ala. Chapman looks to the future with "television" in its firm name, meanwhile does the wartime service job and sells records.



Victory Job of Radio Maintenance Gets Spotlight as New Year Arrives and Servicemen Look to Future

get and getting harder. And so, indeed, the service business must also challenge the serviceman's ingenuity and ability.

Time to Test Your Talents

Smart servicemen are already salvaging parts from sets no longer in service, using parts from several sets, to keep many more sets in operation.

Priority assistance is available through WPB for maintenance of radio, though not sufficient to provide servicemen with all the parts or tubes they want.

From the priority assistance, the salvage of parts and existing stocks of parts in the hands of distributors and dealers, servicemen will be able to carry on for a long time to come so far as material is concerned, and this situation may begin to ease up in another six months.

But Selective Service is claiming your service employees? Of course you have lost men, because this is a radio-controlled war, and competent radio men are urgently needed by the Signal Corps, the Navy, the Air Corps.

Solutions If You Look for Them

But there are women being trained by several emergency agencies, and the women are willing, eager, and able to absorb radio service training. Many will soon take their places in the service shops of the country, giving a fine account of themselves. This is already taking place.

Women are moving into the radio industry, as they are in most others, in constantly increasing numbers. If they are not helping you in your business, it is only because you have

not given them the opportunity.

Gas and tire rationing is stopping your "pick-up" and delivery?

But there are answers to this, too.

Already the Radio Manufacturers Association and the National Association of Broadcasters are helping to educate consumers to take their radio to the serviceman. You can help that campaign along with your own advertising and direct mail campaign.

Work with Stations

Try to enlist your local broadcast stations' aid, in the form of occasional announcements, because inoperative radios cannot tune in any broadcast station.

And, of course, there have been many alert servicemen who are specializing in service done "on the spot" in homes.

It is more difficult to diagnose and correct the troubles of a radio in the home than in your shop, of course. But it is being successfully done by others, and can be done by you, too, if you want to.

Cleaner Business

Certainly the servicing of home radios will continue. It is a profitable business in which you can and should have your full share.

It will be a harder business in the future than it has in the past, will challenge your ingenuity and test your ability constantly.

The "screw-driver" mechanics are falling out of the ranks of servicemen in droves, and "cut-throat" competition will soon be a thing of the past. As the service business becomes a "tougher" one, as it will, it will also become a *better* business to be in.

FOR 1943



The maintenance of industrial PA systems, interior communications systems, electronic control and guard systems, is a vital war necessity. This is a fast expanding field which beckons to all the servicemen in the country.

Not only as a business, but also as a patriotic "call to duty"—these are "high priority" jobs.

Job with a Future

Radio men, those with radio in their hearts, must turn their attention to service. It is their salvation for the duration.

Service will keep the real radiomen in the best possible position to capitalize on the future of electronics, which, after the war, is destined to carry on to new and greater heights than we have yet dreamed of.

It's the byway of the present, to

A new "servicer in slacks" is shown here with Arthur Selleck, Watertown, N. Y., repairman who hired the girl after she graduated from his radio training course. She can fix sets, and also saves a lot of Mr. Selleck's time by handling the customers who come in or call up.

Accenting Service

You can help Uncle Sam by doing his military repair jobs.

You will be a factor in keeping civilian listeners alert to war duties.

You can prepare yourself for the big peacetime growth of radio.

the highway of the future. Concentration on service, now, not only does not preclude, will in fact facilitate, a return to sales and service after the war.

And every day proves the correctness of this fact.

All-Industry Drive Gets Going

Results from the "spot announcements" which suggest that radio owners bring their repair jobs in to servicemen, rather than asking the repairmen to call are beginning to be seen at many points throughout the country.

The announcements were suggested by the National Association of Broadcasters to member stations, as part of the RMA-NAB all-industry campaign to conserve manpower in servicing of home sets. The NAB recommended that "every radio station in the country should carry a spot a day on a revolving schedule."

Dozens of stations in nearly all of the 48 states began to broadcast the announcements to their radio listeners. The coverage was prompt and complete.

Benefits Servicemen

Reporting from Long Beach, Calif., Harry E. Ward of the Radio Technicians Association there said that "the announcements are grand and are doing a great job for us . . . the NAB has been very helpful." Mr. Ward is himself an aggressive radio service expert, in addition to his work with RTA.

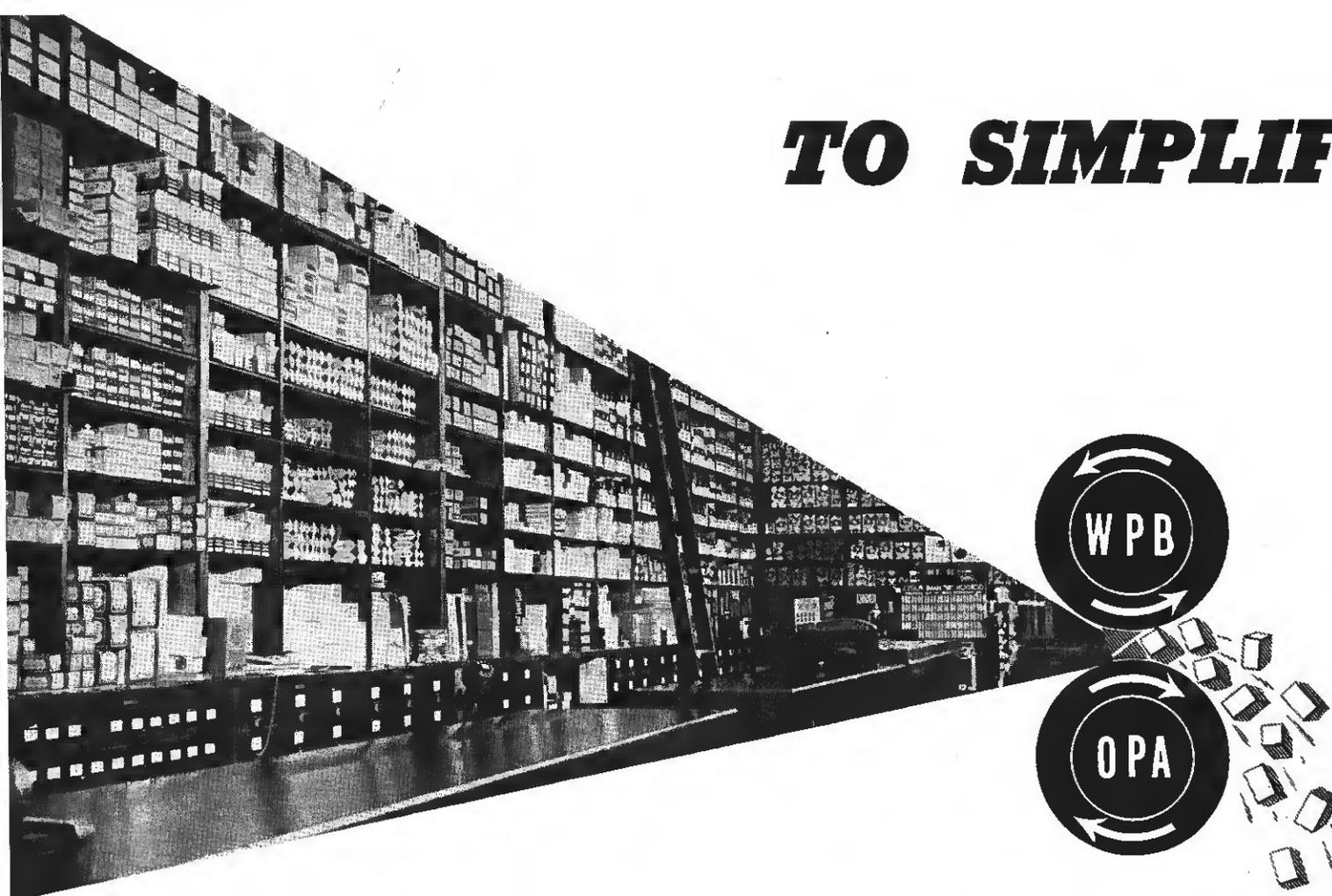
In the case of the Philadelphia Radio Servicemen's Association, the group has its own time on local Station WFIL, explaining to the public the repairman's wartime problems.

Joseph W. Bishop of the Philadelphia organization describes this activity as follows:

"We are on the air on Sunday eve-

(Continued on page 30)

TO SIMPLIFY



The "Squeezing-Down" Process Is Now Applied to Home-Radio Repair Parts. Standardization Initiated by WPB-OPA, Working Through Industry Specialists.

• A broad plan to reduce the large number of replacement radio parts now required to service civilian home radios, is under way at the behest of the War Production Board and the Office of Price Administration.

Through this program to simplify and standardize radio parts, it is expected that for the duration enough replacement parts will be made available to insure radio repairs for every American home that would otherwise be without a radio set.

To Protect Industry's Interests

The new standardization project is being conducted in accordance with the American Standards Association's War Standards procedure, by the ASA War Committee on Replacement Parts for Civilian Radio, of which O. H. Caldwell, editor of *RADIO RETAILING TODAY*, is chairman.

This Civilian Radio Committee's work was undertaken at the request of the OPA (Leon Henderson's office) following consultation with Ray Ellis,

director of the Radio and Radar Branch of the War Production Board. The committee's responsibility is to represent the radio industry's point of view in seeing that enough types of units and the most suitable units are made available, despite the cutting-down process, so that the widest variety of home receivers can be repaired with the limited replacement parts that will be manufactured.

The committee's work is entirely distinct from that of the standardization of military radio components now in progress by the War Committee on Radio—under the chairmanship of S. K. Wolf, of the Radio and Radar Branch, WPB.

Radio Trade Will Comment

The War Production Board at Washington is, of course, in close contact with the project through its liaison representatives and through its WPB Radio Parts Industry Advisory Committee which is furnishing the initial draft specifications and sim-

plified parts lists to the ASA Committee for review.

Following action by the ASA Committee, the proposals of simplified parts lists will be circulated to set manufacturers, design laboratories, parts distributors, service organizations and others concerned, for comment. After review of the comments, desirable revisions in the specifications will be made after consultation with the appropriate sub-committee of the WPB Radio Parts Manufacturer's Advisory Committee. After final review by the ASA Committee, the standards will be officially promulgated.

It is expected that these standards will serve as basis for a Limitation Order by WPB and for allotment of materials for manufacture by the War Production Board. At the same time the standards will give the Office of Price Administration a definite foundation for an order fixing the prices of these standard parts of standard quality.

REPLACEMENT PARTS

The final radio standards are expected to contain performance, dimensional and construction requirements for a limited but fully adequate line of replacement parts designed to service practically all of the modern home receivers in use today. Radio tubes are not included in the project.

In the design of these standard parts, every effort will be made to provide units that will be mechanically interchangeable with present parts, with a minimum of difficulty. In addition, non-critical or less critical materials, and less of these materials, will be used wherever possible in these wartime parts as compared to their peacetime prototypes.

Reduce Items and Materials

Through simplification of the number of varied ranges now in use and the use of multi-purpose units when practicable, the actual number of parts will be held to an absolute minimum.

Steps in Replacement-Parts Simplification Program

1. WPB Industry Committee recommends simplified types.
2. ASA Civilian Radio Committee considers and revises above lists.
3. Copies of lists sent to radio set and parts manufacturers, distributors, and servicing organizations, for comment.
4. ASA Civilian Radio Committee receives and digests industry comment and recommendations.
5. Revised recommended list is certified to WPB and OPA.
6. WPB issues Limitation Order based on revised simplification list.
7. OPA issues price-fixing order on above standard types and units.

imum. This will further serve to reduce the amount of strategic materials kept in inventory, by minimizing the stock of parts on hand on shelves of jobbers and service men.

The simplified standard line of parts will also make more efficient use of manufacturing facilities, since there will be quantity production on the standard units instead of limited production on a large number of different types of each part as in the past. Facilities thus freed can then be devoted to direct production for the Armed Forces.

All Industry Branches Represented

The complete personnel of the ASA War Committee on Replacement Parts for Civilian Radio consists of:

O. H. Caldwell, Chairman, Editor RADIO RETAILING TODAY, New York City.

John Borst, John F. Rider Publisher, Inc., New York.

M. M. Brandon, Underwriters' Laboratories, New York.

J. D. Filgate, Hazeltine Service Corp., Little Neck, N. Y.

Earl A. Graham, OPA, Washington, D. C.

Frank A. McIntosh, Radio Branch, WPB, Washington, D. C.

Alternate — Samuel Weisbroth, WPB, Washington, D. C.

G. Mountjoy, RCA License Laboratories, New York.

M. J. Schinke, RMA. Stewart-Warner Corp., Chicago.

Alternate—P. R. Butler, General Electric Co., Bridgeport, Conn.

George F. Duval, Radio Servicemen. Alternate— Arthur E. Rhine, Radio Servicemen.

Liaison

K. S. Geiges, Simplification Branch, WPB.

Dr. P. G. Agnew and H. P. Westman of ASA consult with the committee and S. L. Chertog of the ASA staff acts as secretary, with headquarters in Room 801, Engineering Societies Building, 29 West 39th Street, New York City.

Tentative List of "VICTORY"

REPLACEMENT PARTS

PROPOSED BY THE WAR PRODUCTION BOARD

Dry Electrolytic Condensers

CAP. MFD.	RATED VOLTAGE
10-10	50 volts
8	150 "
20	150 "
30-30	150 "
40	150 "
8-8	450 "
8	450 "
20	450 "
30	450 "

Paper Tubular Condensers

CAP. MFD.	RATED VOLTAGE
.0001	600 volts
.00025	600 "
.0005	600 "
.001	600 "
.002	600 "
.005	600 "
.01	600 "
.02	600 "
.05	600 "
.1	600 "
.25	600 "

Transformers and Chokes

POWER:

1. 350V at 70 Ma. for 2.5V. Tubes—to Service 6-9 Tube Radios.
2. 350V at 120 Ma. for 2.5V. Tubes—to Service 10-13 Tube Radios.
3. 325V at 40 Ma. for 6.3V. Tubes—to Service 4-5 Tube Radios.
4. 350V at 70 Ma. 6.3V. Tubes—to Service 5-7 Tube Radios.
5. 350V at 120 Ma. for 6.3V. Tubes—to Service 8-11 Tube Radios.
6. 375V at 200 Ma. for 6.3V. Tubes—to Service 12-15 Tube Radios.

OUTPUT:

1. 4 Watt Universal with Various Impedances.
2. 8 Watt Universal with Various Impedances.

INPUT:

1. V9 Small 3:1 for AC-DC and many AC Radios.
2. V10 Large Universal with Split Secondary.

DRIVER:

1. VII Tapped Universal Driver with 3 Popular Ratios.

CHOKES:

1. V12 50 Ma. 300 Ohm Choke for most AC-DC Radios.
2. V13 85 Ma. 200 Ohm Choke for 7-9 Tube AC Radios.
3. V14 -110 Ma. 200 Ohm Choke for 10-13 Tube AC Radios.

Volume Controls

1. SHAFT

- a. All shafts to be made of steel, either round or knurled as indicated for type listed below.
 - b. Round shafts to be milled with .218" flat.
 - c. Length of round or knurled shafts 2 1/4" beyond 3/4" bushing (2 1/2" overall length).
 - d. All shafts to be of the built-in or fixed type.
2. All universal controls are to be of the midget or junior type, approximately 1 1/4" in diameter and are to be of the type that receive an adaptable switch.
 3. All accessories such as nuts, washers, ground terminals, and bias resistors packed with controls in the past are to be eliminated.
 4. Standardized line of untapped universal controls with fixed round shaft with flat, totaling 19 controls.

(Continued on page 40)



OWI Photo by Palmer

Here Are the Standards of Retail Practice and Management Policies as Officially Recommended by Washington in the Retailers' Economy for Victory Plan.

WAR SLASHES at

• The Office of Price Administration was dead serious when it announced the Retailers' Economy for Victory Plan.

The Plan is designed to streamline retail practices according to war needs, and to cut out those fancy and costly frills which free-competing retailers had cooked up in peacetime. It is carefully worked out with a view of conserving necessary materials and facilities for the war effort, of making more manpower available for direct war production, and for allowing retailers to operate under what Price Administrator Leon

Henderson has said will be "tough" conditions in 1943.

To support its original announcement of these general objectives of the Plan, OPA has now issued a supplementary order (No. 29) which gives definite authorization for the curtailment of many peacetime retail services without reduction in ceiling prices. In connection with this order, OPA released its recommended standards of retail practice, and recommended wartime management policies.

Since the recommendations were made for all types of businesses, it

will be seen that in some cases they will not apply to radio matters because of the nature of the trade. However, the topics of deliveries, consolidation of services, occupancy expenses, local promotion efforts, salvage, etc. are of immediate interest to radio men.

Full Operation

Highlights of the order were that (a) it cuts across all previous regulations at the retail level, except where otherwise specifically provided, (b) it will be carried to retailers through the field staffs of OPA and the Department of Commerce, who

will hold a series of meetings for retailers throughout the country, and (c) first results of the Plan are expected immediately after the conclusion of the holiday season.

One of the most interesting recommendations being made, and one that suggests the mood of the whole Plan, is that dealers "reduce by at least 50 per cent of similar expenditures during 1941, all special promotional costs such as store shows, exhibitions, and holiday decorations."

The complete list of "Recommended Standards of Retail Practice" follows:

I. Sales on Approval

Require that all goods leaving the store be paid for in cash or charge them to the customer's account. Do not deliver merchandise to a customer in excess of known or declared wants.

II. Returned Goods and Exchanges

A. Except for merchandise which has been damaged, is imperfect or has been delivered in error, do not accept for cash, credit or exchange any merchandise which has been—

1. Made to order or specifically ordered for the customer;
2. Specifically ordered for a customer from a retail supplier;
3. Altered to the customer's order;
4. Altered by the customer, or, at his order, by a person other than the retailer;
5. Changed from the condition in which it was received by the retailer;
6. Advertised, offered for sale or

except where

1. Appliances, supplies, fixtures or materials have been over-ordered or ordered by a customer due to reasonable error in his estimates or measurements and are returned in sufficient quantity and fit condition for resale.

2. Articles are not as represented by the retailer or as ordered by the customer or are otherwise returnable under the laws of controlling jurisdiction.

3. Circumstances are beyond the control of the customer—such as physical disability, unavoidable absence, failure of transportation or other causes resulting from the war.

III. Gift Wrapping

Cease supplying gift or fancy wrappings or boxes, except that wrappings already on hand for the 1942 Christmas season may be used up. After January 1, 1943, discontinue all special or extra wrappings or boxes except where the cost is no higher than regular wrappings.

IV. "Lay Aways" and "Will Calls"

Require a minimum down payment of 1 or 10 per cent (whichever is larger) of the purchase price on articles "laid away" for customers. Impose such other limitations as may be needed to prevent abuse of the "lay-away" privilege for consumer hoarding.

V. Telephone Service

Cease the practice of absorbing charges on incoming telephone tolls.



Free trials, and super service on radio deliveries, are taboo for the duration.

check-list of 6 possible economies to be used in stores:

I. Adapt your pattern of operation to changed conditions

A. Use self-service if feasible.

B. Standardize and urge manufacturers to standardize. Reduced inventory, fewer returns, and facilitated use of untrained employees result from this practice.

C. Extend the use of informative labeling which gives full information of quality, care, and use of goods. With informative labels, self-service is more feasible, returns are fewer

Merchandising "Frills"

sold on an "as is" or "all sales final" basis.

7. Purchased by the customer for some other retailer; or which

8. Shows sign of wear, soiling or use, or otherwise is not in the same condition as when purchased.

B. Accept gifts for exchange only when the request for return is received within 6 business days after the occasion for the gift.

C. Accept no other merchandise for cash, credit or exchange unless the customer makes a request for the return within 6 business days after the customer has received his purchase,

VI. Special Promotional Expenditures

Reduce by at least 50 per cent of similar expenditures during 1941, the cost of purely promotional devices, examples being holiday decorations, style shows, exhibitions, etc.

This recommendation does not apply to advertising or to promotional or educational programs directly connected with the war effort, such as sales of bonds, price control education, or education of consumers concerning necessity of wartime economies.

Under the head of "Recommended Wartime Management Policies" is a

and inventories smaller.

D. Simplify your line. Unnecessary sizes and varieties should be dropped.

II. Develop consolidated services.

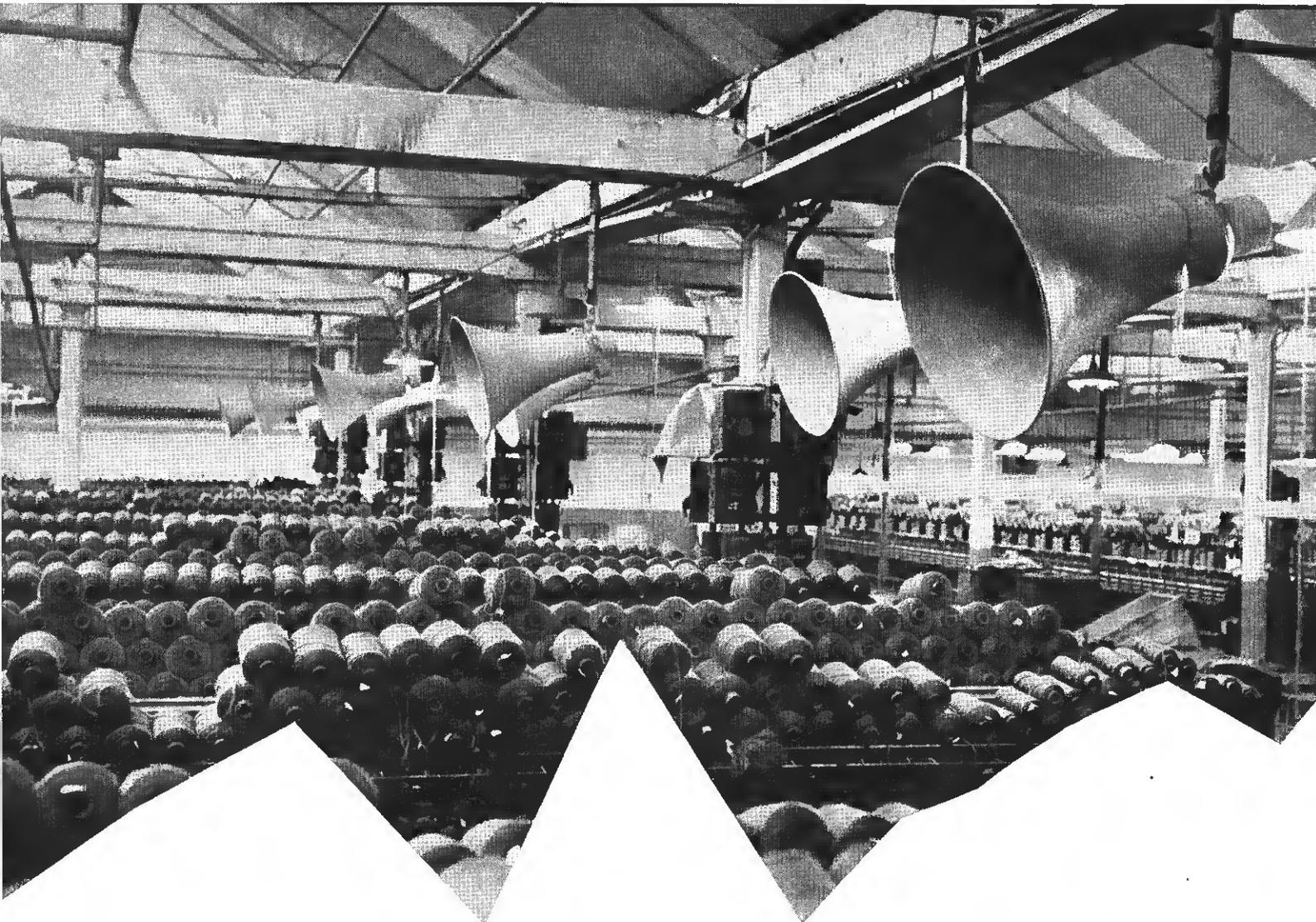
A. Pool deliveries. Where no suitable consolidated system is available, take aggressive steps to organize a pool.

B. Consolidate buying facilities and adopt greater use of group buying.

III. Seek adjustments in operating conditions affecting costs.

A. Promote staggered payrolls for local factories as a means of leveling out weekly sales.

(Continued on page 56)



PRODUCTION PEAKS VIA

EDITOR'S NOTE: *Following are excerpts from a unique report on "Music in Industry" made by Dr. Harold Burris-Meyer of Stevens Institute of Technology, Hoboken, N. J. His collection of scientifically-charted facts on the subject came at a time when the attention of war production experts was focussed on factory music as a means of stimulating industrial output.*

• Industrial music electronically distributed is pretty new. In our investigation we hoped that, by a study of existing factory records for periods prior to and after the employment of music, we could find out what the music did. However, the kind of data from which it can be determined what music actually does have proved to be sadly lacking. Instead of facts we have hearsay, hunch and theory, all readily available in almost any quan-

tity. Managements which use music and employees who listen to it seem to agree that music is a fine thing. Organizations which install electronic distribution systems and furnish programs have files full of letters from satisfied customers. There is a growing popular belief in this country that music in a factory can do just about everything except rearrange the stockroom or interpret the latest set of government regulations.

"Experts" Are Glib

Evidence to show how good industrial music is, based on casual or superficial observations, is freely adduced. Everybody who gets his hands on a plant music distribution system at once becomes an expert and can tell you everything about programming, speaker placement, intensity levels, what the boss thinks about it, what the employee thinks about it, how little either of them knows about it,

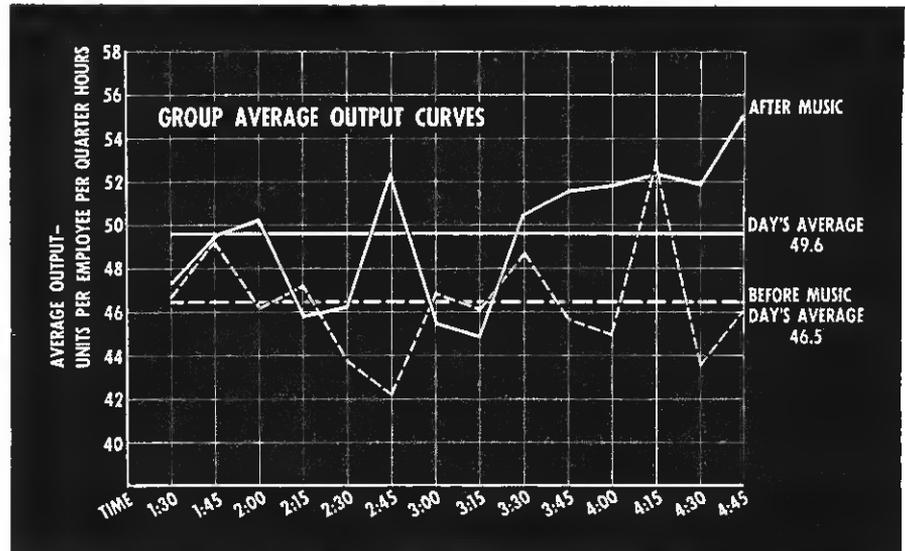
and what a good thing it would be if somebody had consulted him first. Employers sometimes ascribe to their employees their own reactions and opinions. One company gave up playing music because it interfered with the factory intercommunication system. Another would not install a system because, said he, "if I get it in and I don't like it, the employees will never let me take it out."

All this added up to precisely nothing we could use. Even a report published by the Medical Research Council of the British Industrial Health Research Board is of limited use because, though the studies it treats are thorough, they apply only to a group of girls working in a chocolate factory.

Accordingly we proceeded to study existing musical programs in factories, and then to assemble programs for specific purposes. It has been our good fortune to have the cooperation

of numerous industries and of two organizations dealing in factory music distribution systems and music libraries—Muzak, Inc., and Radio Corporation of America. Lacking the kind of factory records susceptible of statistical analysis for our purpose, we had to get them ourselves.

We have been able only to employ a sampling technique. We have not been able to study accident rates. We have not yet been able to establish or evaluate satisfactory indices of employee morale. We have a lot of ideas about such indices but no figures at the moment. But the data we have are indicative. They are not sufficient to form the basis of unassailable conclusions, but we believe they show which way the wind blows. We set about to measure the most obvious thing—does music in the factory influence the production rates? All the charts we made were drawn from data taken under controlled conditions. No figures are used where there were significant changes in weather (temperature, humidity, light), or ventilation, or noise, from day to day; or where



The solid-line curve marked "after music" shows how the playing of music helps workers, particularly after 3:30 p.m.

duction, to be greater when music is used than when it was not used.

Another chart gave the total production per 100 man hours during two typical weeks, one before and one after a music installation was made, and represented the average for a group of approximately 100 employees of all

degrees of experience. The difference amounted to 11.4 per cent.

We also charted what happens to production when musical installation is made. It was noted that in only one week was the average production lower after music was used than during the

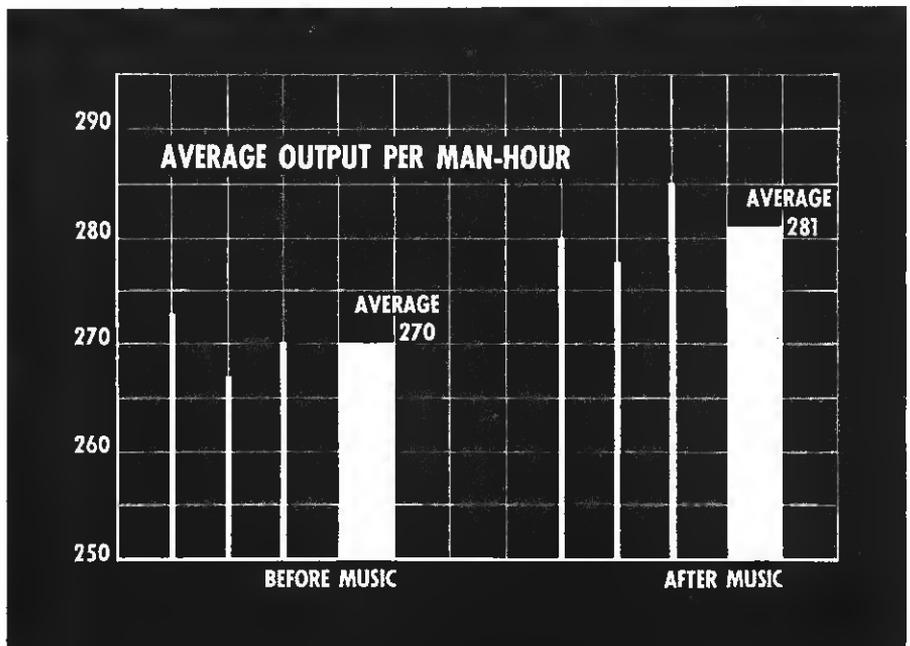
(Continued on page 48)

INDUSTRIAL MUSIC

there was other than normal labor turnover, or any labor-management quarrel; or where there was any plant change in terms of machine arrangement or color, or any variation in the process or the product.

One of our graphs showed the unit output per employee, plotted against time. One curve represented a day without music, another curve a day during which music was used. The conditions prevailing on the two sample days were identical in temperature, humidity, ambient noise level, ventilation. The group consisted of sixteen experienced employees. The curves were in both cases erratic, but the total production is considerably higher where music was used than where it was not. The difference amounts to 6.25 per cent based on the average before music. In more than 75 per cent of the measurements of this sort in all the factories studied, we have found the area under the curve, or total pro-

The chart below shows how weekly averages of factory production climb when music is played. Heavy lines each represent one week of piece work requiring a high degree of manual dexterity; the blocks are averages for the three weeks. Both charts are by R. L. Cardinell of Stevens Institute of Technology.





Wide World
 Hundreds of fighting men prefer the personally-recorded method of writing to the folks back home. Here are Australian and New Zealand fliers making these records in New York City, with the help of recording fan Nola Luxford.

RECORDING CLICKS

• Another example of how a dealer successfully operates a recording service in wartime, comes from Curtis Shearn, Watertown, N. Y., a radio outlet with plenty of ideas for staying in business.

Shearn has added an extra wrinkle to the instantaneous-recording business. This dealer believes that family groups should be encouraged to make a regular habit of sending personal news and greetings to their men in the Armed Forces. The store emphasizes the value of sending the recordings on a weekly or a monthly schedule, and thus helps to keep up the spirits of the fighting men, and at the same time builds up a nice repeat business.

Soldiers Write Letters in Wax

One thing that helps Shearn is the fact that Pine Camp is nearby, where the number of trainees ranges up to 14,000 men. To the hundreds of soldiers who visit Watertown, Shearn publicizes his recording service and

helps them to keep contact with their home folks via the discs. The wives and sweethearts of the soldiers are popular addresses in these cases, with many kinds of novelty greetings and sentimental messages dreamed up by the Yanks.

But regardless of the business done among the soldiers themselves, Shearn points out that there is plenty of traffic among civilians, and the recording

stunt is heartily recommended to all those U. S. retailers who may not be located near a training camp.

Getting Started

This merchandiser finds that it is a good idea to offer a special price, as an introductory device, to get people acquainted with the recording idea. Every effort is made to help the new customers to enjoy themselves while making the records, although the turning out of an acceptable recording is, of course, equally important. Otherwise, the store uses classified ads, and has bought spot announcement time on the local station. Shearn believes that in using air advertising on this subject, the best time to select is between six and seven p.m.

The best idea seems to be to build up lots of business at popular prices, rather than trying to realize greater profit on each customer. The wartime appeal of these recordings is something that applies to all classes of people, because military men are certainly drawn from all walks of life.

This Retailer Puts Recording Profits on Steady Basis by Getting Soldiers and Civilians Into the Disc Habit



KEEP YOUR EYE ON THIS TRADE-MARK



AFTER THE WAR IT'S GOING PLACES

WILCOX-GAY CORPORATION
CHARLOTTE,
MICHIGAN
PRODUCING FOR WAR * PLANNING FOR PEACE



Sales Maneuvers

Local Clinics Attack War Problems

Now making their appearance in a number of cities and towns, are local groups called "Wartime Business Clinics", sponsored by the Department of Commerce and the United States Office of Education. The purpose is to provide a local and practical exchange of wartime ideas as to how individual dealers can best meet emergency conditions. The Clinics often get the support of local clubs and civic organizations, such as the Lions Club.

These groups are very active in Philadelphia and surrounding area, and may be said to have set the pace for effort of this kind. The Clinics have taken up such matters as combining retail delivery services in order to save tires and gas; the development of the repair and maintenance business while merchandise itself is short; the education of the public in assuming its own delivery responsi-

bility; and the best use of the remaining local manpower in conducting sales and service.



The gentleman in this group wears a hearing aid—one of the extra things radio men can sell. This one is made by Crystal-Vox Hearing Instrument Co., 1249 Washington Blvd., Detroit.

An added advantage of the Clinics is that they can invite government officials to give them interpretations of new business regulations, because they represent sizeable groups of business men meeting together for common good.

Radio men have a great deal to gain from this method of cooperating with fellow merchants and with government officials. The idea has many good features which may well survive into times of peace.

January Clearance for Bonds and Stamps

Many radio dealers are finding room in their displays for placards or posters which suggest that people "Buy War Bonds and Stamps!" These placards are available from many radio manufacturers, besides the posters that come directly from the Treasury Department. And whether a radio man be among the 8,000 U. S. retailers who have become issuing agents for the Bonds and Stamps or not, the use of the Bond and Stamp displays will be appreciated by Uncle Sam.

Starter for 1943

In helping the sale of the Bonds during the after-Christmas period, the Treasury Department suggests that retailers use a "January Clearance" theme. It is pointed out that some 100 million partly filled Stamp Albums will be awaiting this promotion, and the slogan will be "A Half-Filled Album Is Like a Half-Equipped Soldier!" January is officially designated as "Stamp Album Clearance Month", to fit in with the general clearance promotions which the public has learned to expect at the first of a new year.

Besides the use of displays and posters, this drive can be supported by using appropriate "spots" in ads, by enlisting the interest of employees, and by the store staff itself filling up extra stamp books and converting them to Bonds.



How radio men may adapt familiar equipment to wartime use is illustrated here in the home of F. Dickie, Los Angeles air raid warden. A Zenith Electric Sentry with the transmitting end at the phone, is installed with the receiving end in Mr. Dickie's workshop. He hears all air raid calls, just like having another phone.

Cinaudagraph Speakers ..

Where the Going's Tough!



Cinaudagraph Speakers, Inc.

3911 S. Michigan Ave., Chicago

"No Finer Speaker Made in all the World"





An appropriate promotion pace is carried on at E. W. Edwards & Son, an aggressive record retailer of Rochester, N. Y. Note the emphasis on music from the movie, "Orchestra Wives"—a lively promotion outlined by the local RCA Victor jobbers, Bickford Bros. Bickford's work on movie tie-ins is effective enough to be called a national "model."

Can You Stay in Business?

Record Lines and Others Recommended in Survey

• The average retail radio operation consists of several departments. Today it is apparent immediately that the only department remaining comparatively unaffected by the war is the record department. Despite the shortage of shellac, records continue to come through—at least in sufficient quantity to enable the retailer to make partial delivery.

Difficult Job

But with the balance of the staple items "out" for the duration, dealers and distributors in radio and records and record accessories are confronted by a serious situation. Data on what they are doing about it has been collected by Jack Bergman, of the Duotone Co., who recently took a cross country trip and talked with dealers and jobbers in 70 cities in 29 states. Highlights of what he learned from the survey are presented herewith.

Staying in business will not be easy. Problems are facing you now—new ones will be born with new con-

ditions, but all these problems must be solved by the fellow who has determined to "stick it out" come what may. Here are some suggestions for helping you to stick it out.

You must go out of your established field. If you can sell a line, take it on. While it is advisable to keep the new lines as closely related to the field you are in, as possible, remember the type of customer with whom you deal, and if a line entirely foreign to your regular merchandise is made available, and you feel you can profitably sell it—don't hesitate—take it on—remember you can't go broke taking profits—even if the profits come from strange merchandise.

Here's a Chance

An amazing expansion of the record business has brought with it a tremendous opportunity for dealers and jobbers. Too many in the field think of the record accessory business as a nickel and dime operation. This is a *Million Dollar business*. The year 1942 will see 100,000,000 records go

across dealer's counters at prices ranging from 35 cents to \$1 per record.

The needle business, yes, phonograph needles alone, will bring over two million dollars into dealers pockets. Add the volume which can be derived from carrying cases, record cabinets, albums, etc., and it all adds up to a \$100,000,000 annual business take—\$100,000,000 to be split up among the dealers and jobbers who stay in business.

If you can't get the top record lines, take the secondary ones. Remember this, you can sell anything you can get in records today. Some customers want records by leading bands and vocalists, but if they are not available, they will take other artists. If you want records, and can't get the top lines, by all means investigate the secondary ones, and get your share of the business created by the record boom.

Another Line

Small Furniture: Don't forget small furniture—record cabinets, end tables, occasional tables, coffee tables and other small furniture items. Several manufacturers of furniture are manufacturing a special line of small items particularly designed for sale by radio dealers.

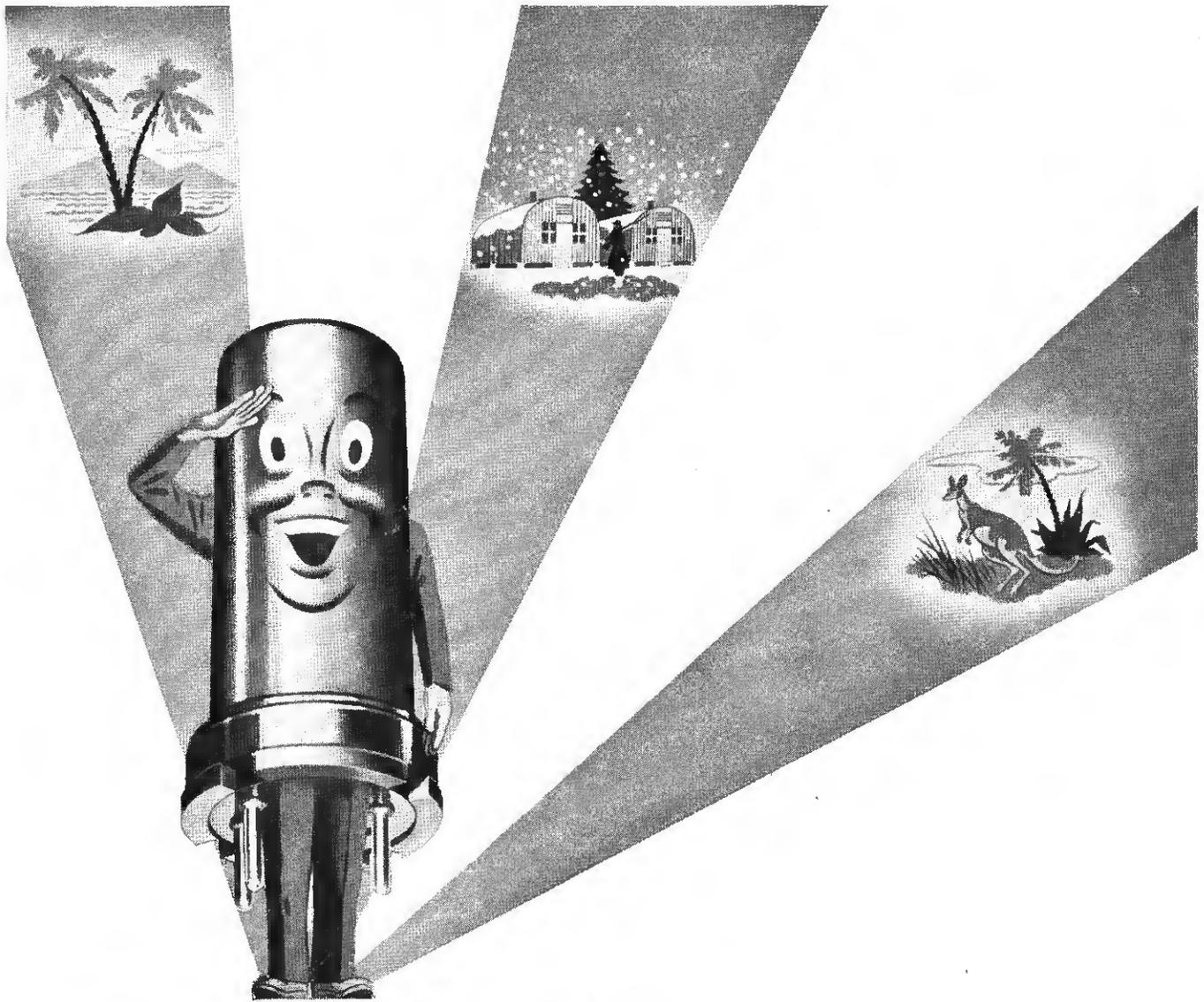
Statuettes, musical figures, ash trays, lamps, wall plaques, book ends, etc. The items mentioned above come with musical designs or emblems. They have been standard items in music stores for many years. Retailing from 50 cents to \$15, they offer the dealer one more opportunity to add to the volume which can be done in this field.

Musical Trend

Sheet Music—Music Books: Here is a standard line of merchandise which has had a phenomenal upward swing in the past two years. A small investment is often sufficient to provide the dealer with a good stock of the most popular sellers and can be attractively displayed in racks which do not require much room. And remember, *there's no chance of loss on popular sheet music because this item is fully returnable.*

Greeting cards: Every war brings with it a wealth of sentiment. The greeting card business is booming. Investigate this popular line.

Other lines of available merchandise
(Continued on page 52)



OUR SHADOW WILL NEVER GROW LESS

We are working 'round the clock to provide ample supplies of Ken-Rad Tubes for our armed forces—in planes, tanks, naval vessels and signaling equipment. But beside the comforting knowledge that we are doing our best to help win, we are developing new technological improvements which will be of great value in the peace to come.

There are some Ken-Rad Tubes available for civilian use, and there may be more. If you can't find Ken-Rad Tubes remember that most of our production is in use on the fighting fronts.

KEN-RAD TUBE & LAMP CORPORATION, Owensboro, Kentucky

KEN-RAD RADIO TUBES

TO "EVEREADY"

Here's how the recent WPB restrictions on radio batteries for civilian use affect you:



NO MORE PORTABLE TYPE BATTERIES

The fighting forces, particularly the U. S. Signal Corps, have found so many important uses for our radio batteries they are taking every one we can make. This includes, of course, the popular "Eveready" "Mini-Max" battery as well as the other portable types.



A LIMITED QUANTITY OF FARM TYPES

Production of this entire line has been severely cut. From now on we will concentrate on the more popular types.



DRY CELLS FOR ESSENTIAL CIVILIAN NEEDS

While the production of "Eveready" No. 6 Dry Cells is restricted, we hope to supply enough of these batteries to fill essential civilian needs.

RADIO BATTERY DEALERS

NEEDLESS to say, we regret the necessity for this drastic curtailment of "Eveready" Radio Battery line. Particularly as we know it was your support that helped create the manufacturing skill and productive capacity which have become so vital to our War Program.

By the same token, you certainly can share our pride in the job we are able to do for the Army, the Navy and the Lend-Lease Account.

Meanwhile we will do our best to provide an equitable allocation of the "Eveready" Radio Batteries we are permitted to produce for civilian use.

NATIONAL CARBON COMPANY, INC.

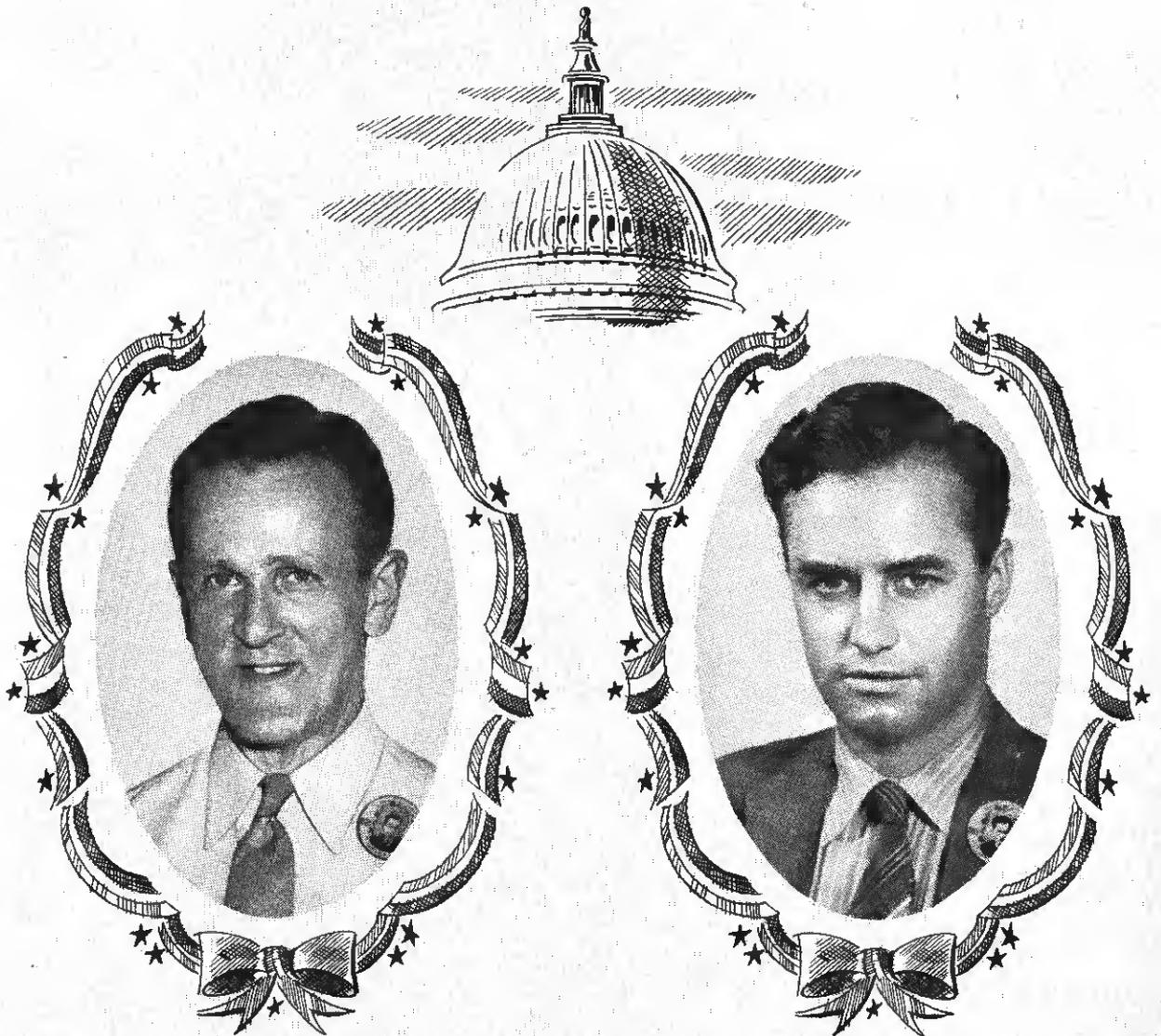
Unit of Union Carbide and Carbon Corporation



The words "Eveready," "Mini-Max," "Ignitor" and "Layer-Bilt" are registered trade-marks of National Carbon Company, Inc.



America honors its top ...and Two are memb



Stanley Crawford, Woodlynne, N. J., honored by the President for suggesting a new type of caliper used at RCA Victor. This caliper salvages 13 out of 16 castings previously rejected, thus saving valuable semi-finished material and many skilled man-hours. It has been adopted by war plants throughout the country.

Edwin C. Tracy, Rockville Center, N. Y., received a WPB award from the President for suggesting an oscillator to test radio equipment designed for fighting planes. Testing time was thus cut down from 8 hours to 3 minutes. Mr. Tracy's oscillators are now installed, or on their way to every American flying field.

10 Production Heroes of the RCA Family

The President of the United States has personally honored ten American workers for contributing outstanding suggestions to further the war effort.

Two of these ten heroes of the home front—chosen from the nation's millions of war workers—are skilled craftsmen at RCA. As a war plant, we are proud to have two winners.

In addition, the War Production Board has selected a total of 142 workers from the entire country as meriting special honor for their suggestions to increase and improve America's war output.

20 of that grand total were men and women who were doing their share at RCA!

To radio dealers, servicemen, amateurs, and radio engineers everywhere, this comes as no surprise. They have seen in a hundred ways over dozens of years, what RCA initiative, imagination, and skill can mean to radio. They have learned that from top to bottom—from engineering to production, from designing to packaging, from construction to pioneering—RCA leads the way in all branches of radio and electronics.

When peace returns, they can be certain that RCA will once again prove its leadership—in the development of new and better radio tubes, radio-phonographs, broadcast equipment, and electronic devices, in the perfecting of new production techniques, in the creation of new radio products to serve America's industries and America's homes.



Other RCA Workers Honored by the War Production Board

C. F. Bartlam	Miss Victoria Kocher
L. J. Cronin	Mrs. Bonny Lee Smith Lewis
Joseph F. Eckert, Jr.	James G. McKelvie
Charles I. Elliott	Leon Morrell
A. S. Fish	Andrew Rau
Thomas Flynn	Fred F. Rimmler
Frank E. Giessen	Albert P. Ruggieri
Charles W. Hear	Thomas H. Shelling
Edward S. Hoffman	Benjamin Willett



RCA LEADS THE WAY

IN RADIO • IN TELEVISION • IN ELECTRONICS

Radio Corporation of America



MR. BUTLER

FRANK BUTLER,
RADIO PIONEER,
NOW WITH
RADIO Retailing TODAY

• Frank E. Butler who has become associate editor of RADIO RETAILING TODAY, has been active in radio from its very beginnings.

Back in 1904, with Dr. Lee deForest, he operated a wireless station at the World's Fair in St. Louis, the first high-power transmitter to communicate with Chicago. In 1906 he built the trans-Atlantic station at Manhattan Beach, N. Y., and sent messages to Alexander Graham Bell in Ireland.

As chief engineer he continued with deForest during the historic experiments culminating in the invention of the audion or three-element tube,—the invention which laid the foundations for modern radio and electronics. Later Mr. Butler helped develop the wireless telephone, equipping 34 Navy ships under Admiral "Fighting Bob" Evans. He also assisted deForest in developing the sound-on-film technique, now known as talking motion-pictures.

Mr. Butler's other inventions apply to sound amplification, and in recent years he has occupied himself in writing a history of the growth of radio.

P. A. Units Among Blast Furnaces

Just how the use of public address equipment is helping out in the big wartime rush in the production of steel, is revealed in a statement made by Bethlehem Steel Co. The firm calls attention to a new sound system developed for its system of blast furnace control, and reports as follows:

"Something new has been added to the desk of our blast-furnace superintendent at Bethlehem—a microphone.

"Now, in less than two minutes, the 'super' can talk not only to any man in his department, but to every one of his 175 helpers on a given shift. There's a powerful loudspeaker and a microphone in every key location in the string of furnaces, engine houses,

power stations and hot stoves which make up the blast furnace division of the plant.

"Control of every phase of operation is tightened up by the new P. A. system. Precious minutes are saved—and when you're running a string of blast-furnaces, minutes . . . even seconds . . . count big."

ALL INDUSTRY DRIVE GETS GOING

(Continued from page 13)

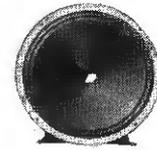
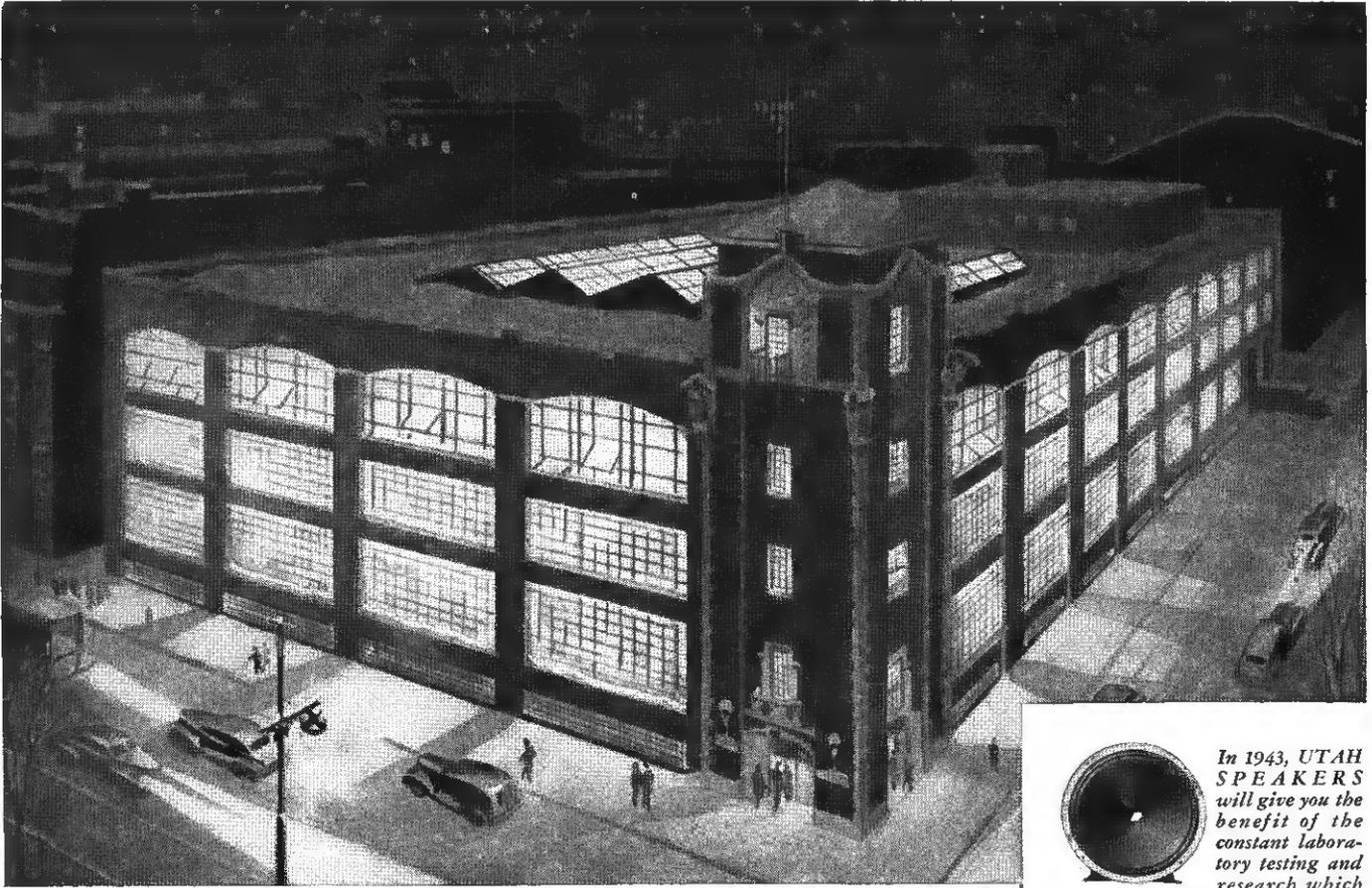
ning from 6:15 to 6:30 and also we have spot announcements during the day. We are now averaging over 100 calls per month as a result. On these announcements we mention that owing to an order from the government,

all small sets that can be carried to the servicemen's shop by trolley or other means should be done that way, to help servicemen save gas and rubber. The public has responded wonderfully to this method.

"We are now going to start the ball rolling in this area on 'repairs for one set per family.' Or if there are two radios in one family and they both go dead we are going to repair only one in order to save parts and tubes. The servicemen here are getting set for more time in their shops and less time spent on the highway as a result of the Association's effort."

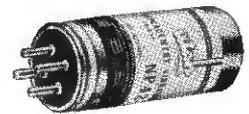
The first stations to report their participation in this coast-to-coast plan to educate the public to bring their ailing sets in to servicemen are listed by Arthur Stringer of NAB as follows:

- KABR—Aberdeen, S. C.
- WBAB—Atlantic City, N. J.
- WBZ-WBZA—Boston & Springfield, Mass.
- WLBB—Brooklyn, N. Y.
- WGR—Buffalo, N. Y.
- WCAX—Burlington, Vt.
- WCHS—Charleston, W. Va.
- WIS—Columbia, S. C.
- WDNC—Durham, N. C.
- WTBC—Elkhart, Ind.
- WGBB—Freeport, N. Y.
- WJEJ—Hagerstown, Md.
- WJOB—Hammond, Ind.
- WLAK—Lakeland, Fla.
- KGHI—Little Rock, Ark.
- WMAN—Mansfield, Ohio.
- WLBC—Muncie, Ind.
- WSM—Nashville, Tenn.
- WJZ—New York City.
- KLX—Oakland, Calif.
- WPID—Petersburg, Va.
- WCAU—Philadelphia, Pa.
- WRJN—Racine, Wis.
- WDBJ—Racine, Wis.
- WDRJ—Roanoke, Va.
- WWSR—St. Albans, Vt.
- WSAV—Savannah, Ga.
- WARM—Scranton, Pa.
- WRLC—Toccoa, Ga.
- WOL—Washington, D. C.
- WOCB—West Yarmouth, Mass.
- WBAX—Wilkes-Barre, Pa.
- WCOS—Columbia, S. C.
- WCPO—Cincinnati, Ohio
- WCOL—Columbus, Ohio
- WTAW—College Station, Texas
- KDTH—Dubuque, Iowa
- KIUL—Garden City, Texas
- KBIX—Muskogee, Okla.
- KGNF—North Platte, Neb.
- WDLP—Panama City, Fla.
- WEEU—Reading, Pa.
- WRNL—Richmond, Va.
- KWKH—Shreveport, La.
- KOCY—Oklahoma City, Okla.
- WBBL—Columbus, Ga.
- WJAC—Johnstown, Pa.
- WHLN—Harlan, Ky.
- WAVE—Louisville, Ky.
- WDSU—New Orleans, La.
- WTMV—East St. Louis, Ill.
- WHEB—Portsmouth, N. H.
- KOCA—Kilgore, Texas
- WOW—Omaha, Neb.
- WKZO—Kalamazoo, Mich.
- WCIS—Joliet, Ill.
- WSPR—Springfield, Mass.
- WSNY—Schenectady, N. Y.
- WHIO—Dayton, Ohio
- WAPO—Chattanooga, Tenn.
- WNOX—Knoxville, Tenn.
- KHBG—Okmulgee, Okla.
- WMRS—Memphis, Tenn.
- KWOC—Poplar Bluff, Mo.
- WTHT—Hartford, Conn.
- WADC—Akron, Ohio
- KFAM—St. Cloud, Minn.
- WOSU—Columbus, Ohio
- WBT—Charlotte, N. C.
- WLAC—Nashville, Tenn.
- WCOU—Lewiston, Me.
- WQAM—Miami, Fla.
- WFLA—Tampa, Fla.



In 1943, UTAH SPEAKERS will give you the benefit of the constant laboratory testing and research which result in sound improvement.

In 1943, UTAH TRANSFORMERS will continue to assure superlative performance. They avoid failure due to moisture because of the complete impregnation of interlayer insulating paper by Utah's vacuum-pressure method.



In 1943, UTAH VIBRATORS will continue to assure long life, correct electrical balance, current output and freedom from noise.

In 1943, UTAH-CARTER PARTS—resistors, plugs, jacks, wirewound controls, etc.—will continue to assure dependable operation. Satisfactory performance will be assured in every UTAH point in the circuit.

“’Twas the night before..”

In the midst of this war activity, we pause for a moment to wish our circle of friends a Merry Christmas and a Happy New Year. It is our fervent hope that our efforts will aid in making “peace on earth, good will toward men” once more an actuality.

They’re giving production everything they have at Utah, 24 hours a day. It’s been that way all year . . .

building equipment for the Army and Navy...making products to help keep the home communications front open.

As we help build for Victory during the year to come, we will strive to maintain our trade policy in any and every way that will not hamper the war effort now—and we will endeavor to strengthen it for the postwar period ahead.

Utah Radio Products Company, 810 Orleans Street, Chicago, Illinois • Canadian Office: 560 King Street West, Toronto • In Argentine: UCOA Radio Products Co., SRL, Buenos Aires • Cable Address: UTARADIO, Chicago



S P E A K E R S

VIBRATORS • TRANSFORMERS • UTAH-CARTER PARTS

Orders From Washington

Certificates of War Necessity

In the issuing of the "Certificates of War Necessity" to operators of commercial motor vehicles, the Office of Defense Transportation director Joseph B. Eastman has stated that "a local merchant's delivery operations are being given the same consideration as those of a carrier hauling vital war materials." Mr. Eastman said that at some future time it may become necessary to eliminate some of the less essential motor vehicle operations, depending on what cooperation is offered to ODT, and how well supplies hold up.

Other points made by Mr. Eastman were as follows:

"A great deal of misunderstanding has arisen concerning the Certificate of War Necessity plan for commercial motor vehicles.

"These Certificates are not being issued for the purpose of hampering or eliminating the efficient operation of any truck, bus, or taxicab of any kind at this time.

"In other words, we are not attempting, through these Certificates, to limit commercial motor vehicle operations to transportation directly connected with the war program as such.

Economy's the Thing

"What we are attempting to do and what must be accomplished is to eliminate all waste from every form of rubber borne commercial transportation, regardless of the type of traffic handled. No operator of a bus or truck should discontinue any part of his business because he was not allowed enough mileage in his Certificate of War Necessity to carry on the transportation end of such business efficiently.

"If an operator is not allowed enough gasoline for efficient operation of his commercial motor vehicle, he should go or write to his ODT district office.

"The Local War Price and Rationing Boards will issue to such operators sufficient gasoline rations to continue in operation pending disposal of their appeals for revised Certificates.

"The greatest difficulty in issuing Certificates of War Necessity has been the failure of many operators to fill out properly the application blanks which were sent to them. I realize that some

of the question asked were hard to answer. This is because the job which has to be done is a new and hard one.

"However, we cannot determine how much mileage an operator requires, if he does not give us the necessary information concerning his operations. Where necessary information was lacking, arbitrary amounts of gasoline were allowed."

Operators who are required to have obtained a Certificate of War Necessity from the Office of Defense Transportation as a first step in qualifying for tires under the Office of Price Administration's rationing regulations, have been excused from this requirement until Jan. 1, if they have applied for the certificate and have had no final word from ODT as to the status of their application.

NEDA Gets Action on Parts Supplies

The recommendation from the National Electronic Distributors Association is that distributors should keep

on sending in their PD-IX forms. NEDA advises that these application forms "are still the only way you can get merchandise" and that the "kinks" are being ironed out of the system.

Through the work of the NEDA head, George Barbey, in Washington, efforts are being made to get the 60-day inventory provision of the PD-IX extended, and Mr. Barbey is also trying to make it possible to place orders in advance, based on past sales. These sets are being taken to help parts distributors get more supplies more promptly.

Committee Gets U.S. Tube Count

The Tube Committee of NEDA recently finished its "national tube inventory" and filed a 17-page report with the proper authorities in Washington. The tabulated information showed that the reporting distributors were "out of an average of 52 of the 110 types listed, and that a real tube shortage therefore exists. The tube committee includes the distributors Walter C. Braun, (chairman) Aaron Lippman, Mr. Barbey, William Schoning, and John Stern.

In spite of the tube shortage revealed by the report, no volume shipments can be made at this time because no executive tube stocks exist. But as the committee finished its job, members were assured that a production program will be started immediately to relieve the situation.

Wheels Start Rolling at New Radio Tube Plant



Ribbon-cutting ceremony at Lansdale, Pa., dedicates a new radio plant to war production. S. W. Muldowny, president of National Union Radio Corp., does the honors for the big NU factory while, left to right, are Lt. William A. Gray of WPB; Lt. P. M. Kerridge, USNR; Mr. Muldowny; Floyd B. Kulp, Lansdale borough council president; and Capt. James T. Rhudy of the Signal Corps.



*"Still Doing Business
at the Same Old Stands"*



SERVICEMEN

... your Distributor can
STILL Supply you with

Centralab

MIDGET RADIOHM REPLACEMENTS

Fortunately ... your distributor
can still supply you with Midget
Radiohms for replacements.

The smooth wall-type resistor for
which Centralab Radiohms are
famous will keep that now-precious
radio in good working condition.

Stick to OLD MAN CENTRALAB
for Replacements ... and always
specify "CENTRALAB".

- RADIOHMS • FIXED RESISTORS
- FIXED AND VARIABLE
CERAMIC CAPACITORS
- SELECTOR SWITCHES

CENTRALAB: Div. of Globe-Union Inc., Milwaukee, Wis.



Servicing Methods

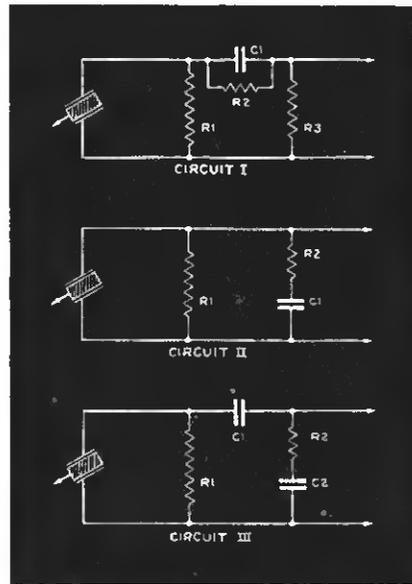
Compensating Tone in Crystal Pickups

Crystal phono pickups have a wide range of frequency response characteristics that are not always matched to the amplifier with which they are used. Certain compensation in the overall response can improve the performance.

In the accompanying diagrams three simple resistance-capacity compensating networks are shown. In circuit 1 the part values can be adjusted to change the response at both high and low frequencies. The shunt resistance R_1 controls the response at low frequencies and reducing its value will reduce the response. Since the crystal pickup is equivalent to a generator with an internal capacity reactance that increases as frequency increases, the voltage appearing across R_1 will be largest at low frequencies if the resistance is high. Usual values in this position are 250M to 1 meg or more. The capacitor C_1 paralleled by resistor R_2 and the resistor R_3 form a voltage divider for the output. The ratio of R_3 to $R_2 + R_3$ determines the output. The capacity of C_1 will determine the high frequency response. Making C_1 larger will improve the gain at high frequencies. R_2 can be about 100M to 500M, C_1 250 mmfd. to 1000 mmfd., R_3 1 to 5 megs. R_3 could conveniently be a potentiometer for volume control. Connect the arm and lower terminal to input of amplifier.

In circuit 2, increasing R_1 will increase the low frequency response, while increasing R_2 will increase high frequency response. The size of the capacity C_1 regulates the output as well as the high frequency response if R_2 is low.

In circuit 3 R_1 controls the low frequency response as in the other two circuits. Increasing R_2 increases the



R-C networks described at left.

high frequency response, and increasing C_1 with respect to the sum of $C_1 + C_2$ will increase the output.

Any of the resistors may be made variable or several values of capacitors can be selected with a switch as a form of tone control. A control of the high frequencies is desirable in phono reproduction since it allows effective control of the scratch noise which is objectionable in some records.

Automatic Level Control for Recording

Home recordings are usually "uneven" in volume range due to variations in distance from mike, and sudden peaks of sound which are not carefully monitored. A contractor circuit in RCA VHR 207 and 407 combination radio, recorder, auto-

matic record players functions as an overload control in the microphone pre-amplifier tube to prevent "over cutting."

A partial schematic of the circuit shows the variable bias voltage which is developed to control the gain of the 12SK7-GT microphone amplifier tube. A 6H6 is used as a rectifier of the output voltage to develop the bias which operates the 6H5 recording level indicator, and controls the mike gain.

Bias Control

Part of the output voltage across the secondary of the output transformer is connected back to the cathode of the left-hand cathode of the 6H6. The plate of the 6H6 is biased slightly positive by the power supply. One half of the audio cycle, the cathode will be considerably more negative than the plate and the tube will pass more current. This current flowing through the 270M resistor will build-up the bias needed to operate the 6H5 level indicator. Since the cathode of the 12SK7 is connected back to the plate of the 6H6, the bias on this tube is also controlled by the amplitude of the output signal. If the output should exceed a proper level for recording, the rectified output will add more bias to the 12SK7 and reduce the gain of that stage.

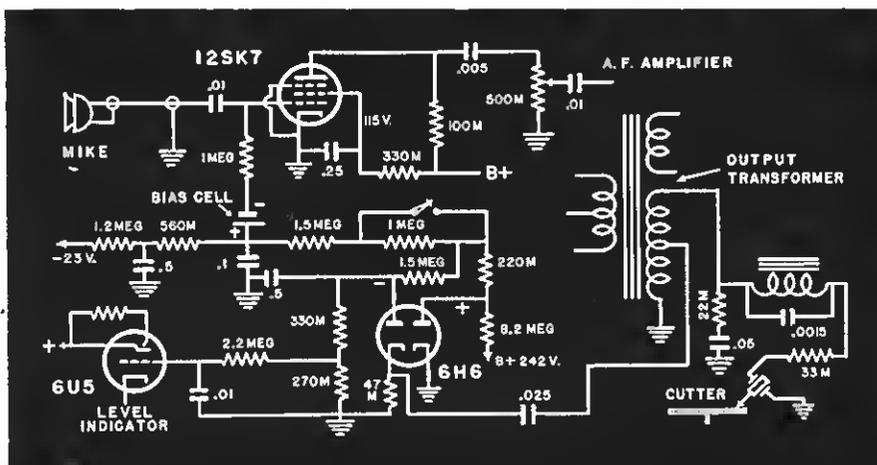
Mallory Technical Manual for Servicemen

Servicemen now have available a complete manual, including the technical supplements which were issued with a previous P. R. Mallory & Co. NYE edition, that will help to solve many of the problems in present-day servicing.

This 405-page book includes new material on loud speaker and acoustic applications, a section on super-heterodyne first detectors and oscillators, half-wave and voltage doubler power supplies, vibrators and power systems, and phono-radio service data including service notes on popular record changer mechanisms. A large section on automatic tuning systems with references to the section of notes, diagrams, and photos that cover the particular system.

Frequency modulation, television fundamentals, dry electrolytic capacitors, a new section on radio noise suppression, vacuum tube voltmeters, and useful servicing information including tube characteristics, calculators, color codes, etc., round out this useful and practical book. The price is \$2 net to servicemen.

Partial schematic for the RCA recording level control discussed above.





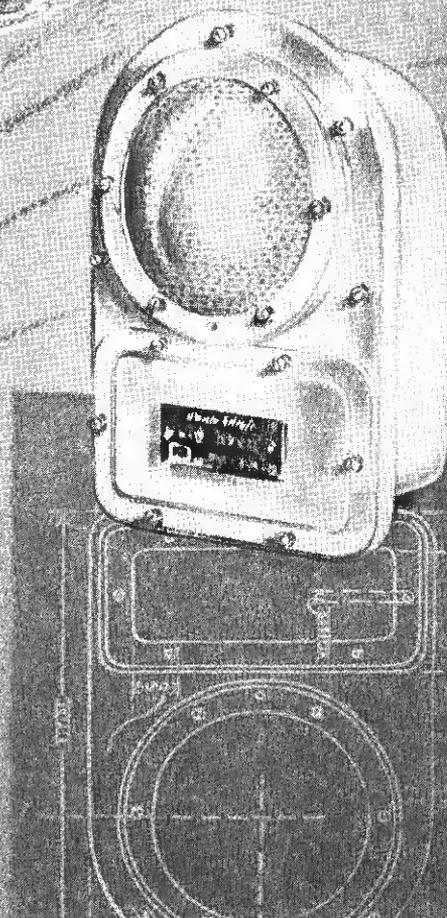
Jensen

SPEECH REPRODUCERS HAVE GONE TO SEA!



... and they are real seagoing reproducers! ... because each one has been specially constructed and meticulously engineered for perfect performance under the most severe operating conditions.

Jensen
RADIO MANUFACTURING CO.
6601 SO. LARAMIE AVENUE, CHICAGO



Service Data on Farnsworth BC, BK Models

The circuit and test data for the Farnsworth BC103, BC105, BK106, BK107, BK108 are included in the accompanying diagram. This phono-combination circuit covers three bands, has separate bass and treble controls. The RF amplifier is coupled to the mixer through an un-tuned circuit and a wave trap is used to reduce interference on the intermediate frequency.

The treble control is of the shunt type in the plate circuit of the 6EQ7 first audio tube. The bass adjustment controls the compensation between the volume control tap and ground.

Separate rectification of the carrier provides the AVC voltage in tube 6. One of diode plates of the 6SQ7 AVC tube is biased negatively by the drop

across 22-ohm resistor 11. This delay voltage is applied to the rectifier diode plate.

IF Alignment

The signal generator is connected to the antenna terminal through a 250 mmfd. capacitor and adjusted to 455 kc. With the tuning gang set at minimum, adjust the IF trimmers for maximum output. Adjust the wave trap trimmer (rear of chassis) for minimum output.

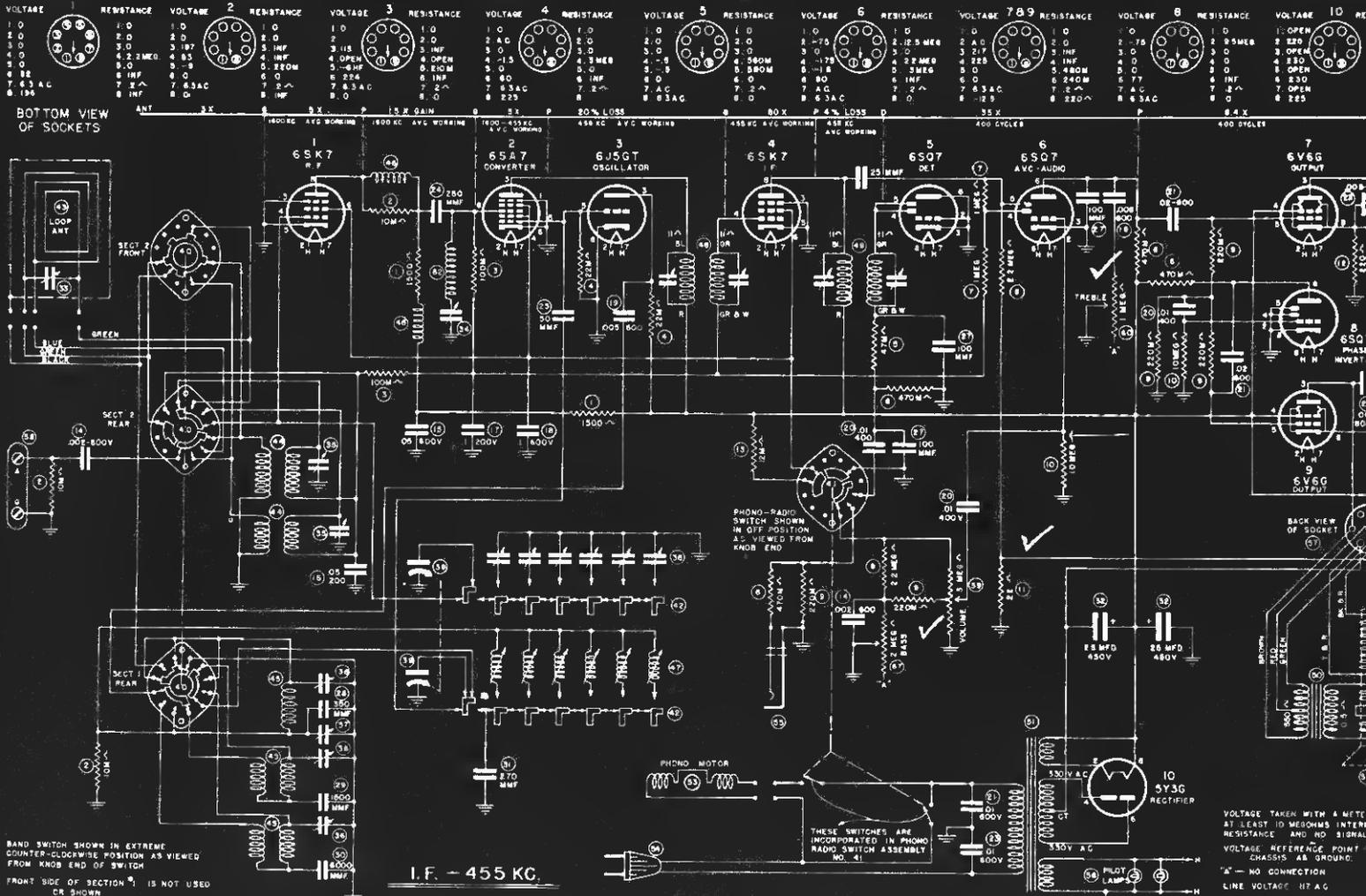
With the generator set at 1600 kc. and the gang at minimum adjust the broadcast trimmer on the oscillator for maximum output. Tune the dial to resonance with a 1500 kc. signal and tune the RF trimmer (located on loop) for peak output while rocking the gang.

To adjust the tracking on the BC

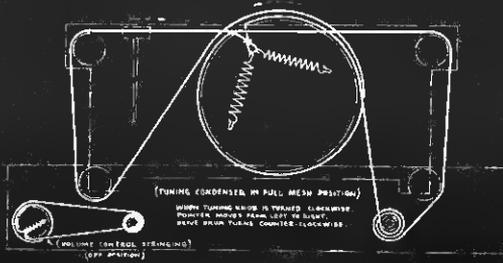
band set the generator at 600 kc. and tune the gang to resonance. Adjust the oscillator padder for peak output while rocking the gang. A recheck should be made at 1500 kc.

Using a 400-ohm resistor as a series dummy antenna, connect the generator at the antenna terminal and set the frequency at 5.4 mc. Set gang at minimum and adjust oscillator trimmer for peak output. Start with trimmer tight and adjust for second peak. Set dial and generator at 5 mc. and adjust RF trimmer for peak output. Tighten trimmer and loosen to first peak.

The high frequency band is aligned at 18.1 mc. with dial set at minimum capacity. Adjust oscillator trimmer for maximum output at the second peak. Set dial and generator at 16 mc. and adjust RF trimmer for maximum output at first peak.

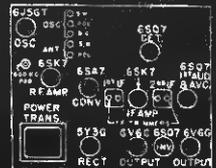


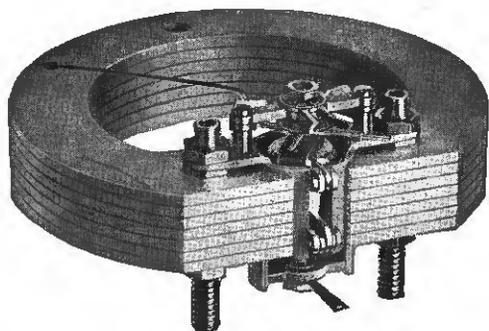
STRINGING DIAGRAM



CHASSIS LAYOUT

BUTTON LAYOUT





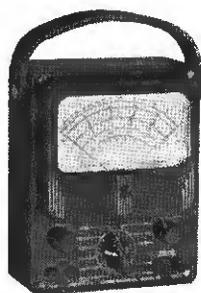
It's the movement that counts

If you want to find out how accurately, and for how long, an instrument will *do* its work, you've got to examine the part that *makes* it work.

In every Simpson Instrument this basic operating mechanism is a movement which incorporates both full bridge construction and soft iron pole pieces. There is nothing new about this type of design. It has been recognized for many years that such a movement is more accurate, more rugged, and more expensive, . . . *but*—

—there is something entirely new in the patented Simpson expression of this design. For out of the long experience in instrument-making on which the Simpson organization is founded, there has been developed a movement which offers this better design in its best form, and which permits substantial economies through standardization and straight line production.

If your need for instruments is vital enough to give you the right to buy, it is vital enough to rate the best. To those who have searched out the facts, best means . . . Simpson.



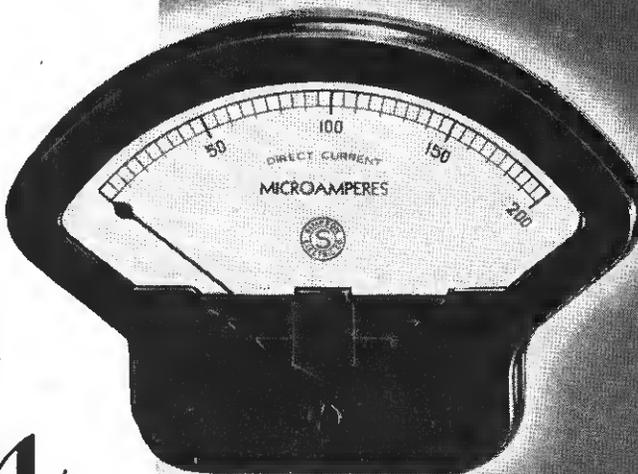
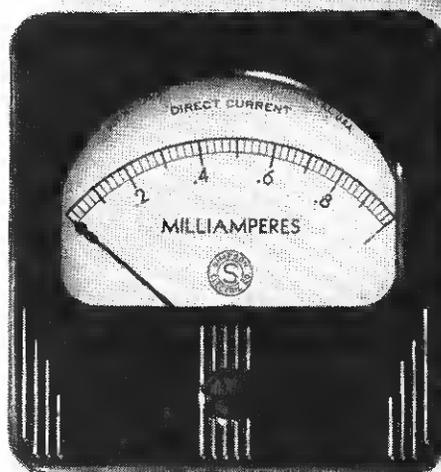
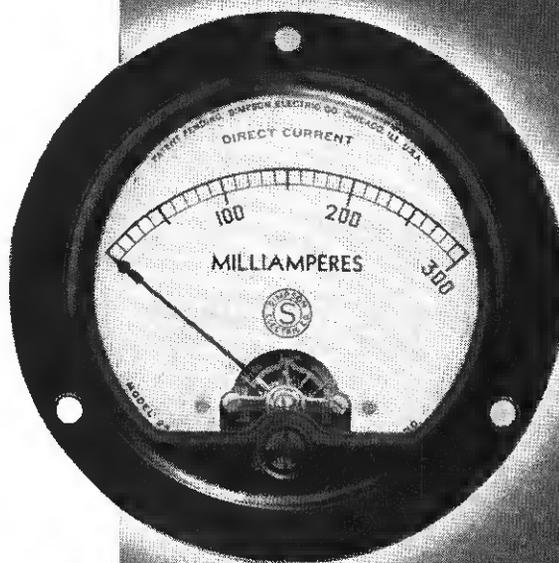
MODEL 260 High Sensitivity Tester

A typical example of Simpson leadership. Ranges to 5,000 volts, both AC and DC, at 20,000 ohms per volt DC, and 1,000 ohms per volt AC. Current readings from 1 microampere to 500 milliamperes. Resistance readings from 1/2 ohm to 10 meg-ohms. Five decibel ranges, —10 to +52 DB.

SIMPSON ELECTRIC CO.
5200-5220 Kinzie St., Chicago, Ill.

Simpson

INSTRUMENTS THAT STAY ACCURATE



OPA Service Prices

• The Retail Trade and Services division of the Office of Price Administration has issued a new review of how repairmen should determine their service charges under the Maximum Price Regulation for Services—No. 165 as amended.

In general, the top price you may now charge for service jobs is the highest you charged in March, 1942. The regulation applies to repairing all radios and phonographs except those primarily designed for commercial, military or police use, as well as electrical equipment and appliances used in homes, hospitals, hotels, offices, retail establishments, schools or other institutions. Gas appliances are also included.

Also covered are the prices of all commodities, such as parts and accessories, when sold in connection with the sale of a service.

Finding the Ceiling Price

It is pointed out that your ceiling prices may be different from your competitor's because your highest March 1942 prices may differ from his.

If you charged a flat or dollars-and-cents price for a specific service in March 1942, that is the most you may now charge for that same service. On all service work which you priced in March according to a regular rate or pricing method (such as time records or labor manual used in connection with an hourly customer rate) you may use that rate or pricing method in determining your maximum prices, but your charges for each item in the service, such as labor, material, etc., must be no higher than those in effect in March 1942.

It is suggested that three pricing rules be used, in determining the proper charges, in the order listed. That is, use No. 2 only if No. 1 does not apply. Use No. 3 only when No. 1 and No. 2 do not apply.

Rule 1 is that you may charge no more now than you would have charged in March 1942. You may not charge more for labor, materials, overhead, or profits than you charged then, even though some of your costs may have increased.

Rule No. 2 is that your ceiling price is the highest price you charged for this service to the same sort of customer in March 1942.

If you did not regularly use a rate or pricing method in March 1942 and did not supply the same service at that time, but you did offer to supply it in that month, use Rule 3.

Rule No. 3 is that your ceiling price

is the highest price at which you offered to supply that service to the same sort of customer in March 1942.

You may use an offering price as your maximum *only* if you did not supply the same or similar service.

In most cases you will be able to price your services according to the above three rules. There are other situations, however, in which these rules will not apply, and the Regulation provides pricing rules for meeting such exceptional situations. For complete information on all the pricing rules you must use, write or visit your nearest District, State, or Regional OPA Office and ask for a copy of Maximum Price Regulation P. O. 165, as amended.

Discounts and Allowances

If you gave discounts, allowances, or special low prices to any class or kind of customers in March 1942, you must continue to give at least the same discounts, allowances, or special low prices to the same kinds and classes of customers. For example, if you repaired electric refrigerators for apartment house owners in March 1942 at a 10 per cent discount because of the volume of work provided, you must continue to give a 10 per cent discount to such customers even

though your rate for the same service to others may be higher.

If you formerly gave duplicates of the work order or any other kind of sales slip as a receipt for money received, you must continue such practices.

Upon request you must now give any customer a sales receipt showing your name and address, the date, the service supplied, and the price you charged.

Records You Must Keep

Keep all records which have any bearing on prices you charged in March, such as duplicates of customers' sales slips, invoices, work orders, posters, display cards, advertisements, letters, post cards, etc., in which service prices were quoted.

You are required to prepare a statement showing the highest prices you charged for all services and repairs supplied during March 1942, for which prices were regularly quoted during that month.

This statement must be kept in your place of business for examination by any person during ordinary business hours. *The Regulation requires you to file a copy with your local War*

(Continued on page 40)

Banner of Excellence for Radio Tube Manufacturer



A group of "Minute Girls"—deluxe sellers of War Bonds who are employees at Sylvania Electric Products, Inc., exhibit the "E" flag recently awarded to the company. The award was presented to Sylvania president B. G. Erskine at factory ceremonies in which Rear Admiral C. W. Fisher, U. S. Navy, presented the banner. Guests also heard congratulations from Lieut. General Joseph T. McNarney, and Quentin Reynolds as Master of Ceremonies. Employees' "E" pins were presented by Colonel W. S. Diener.



Christmas 1942



That our Christmas of tomorrow may be spent in Peace and Happiness—It is the duty of today to continue to devote our Time, Effort and Resources to the major task which faces us—

WINNING THE WAR

That is the Christmas Present we should give ourselves.

ZENITH RADIO CORPORATION
CHICAGO, ILLINOIS



BETTER THAN CASH

U. S. WAR SAVINGS STAMPS
AND BONDS

Wartime Servicing

OPA SERVICE PRICES

(Continued from page 38)

Price and Rationing Board. If you have not yet filed your statement, be sure to do so *at once*.

You must keep this information up-to-date by listing any new types of services or repairs, within 10 days of the first sale, and a statement of these prices must be filed with your local War Price and Rationing Board within 20 days of the first sale of any such new service.

Preparing Your Statement

Your ceiling price statement may be prepared on your own stationery or on plain white paper and should contain the following:

1. A complete description and identification of the services you supplied during March 1942 for which you regularly quoted prices in that month.
2. The highest prices you charged for these services during March 1942.
3. The rate or pricing method you regularly used during March 1942, including your charges for labor, parts, and materials for services on which you did not have a flat or set price.
4. All customary allowances, discounts, and other price differentials which you customarily allowed or offered in March 1942.



"The electric eye doesn't work. Should I have taken it to an oculist?"

'VICTORY' REPLACEMENT PARTS LIST

(Continued from page 15)

Volume Controls

RESISTANCE	TAPER
5 M ohms	Linear
10 M "	Audio
10 M "	Reverse
10 M "	Linear
20 M "	Audio
25 M "	Linear
50 M "	Audio
50 M "	Reverse
50 M "	Linear
100 M "	Audio
100 M "	Linear
250 M "	Audio
250 M "	Linear
500 M "	Audio
500 M "	Linear
1 Meg.	Audio
1 "	Linear
2 "	Audio
3 "	Audio

5. Standardized line of tapped universal controls with fixed round shaft with flat, totaling 9 controls.

OVERALL RESISTANCE	TAPPED RESISTANCE
250 M ohms	100 M
350 M "	70 M
500 M "	100 M
1 Meg.	300 M
2 Meg.	5 M
2 Meg.	15 M
2 Meg.	600 M
2 Meg.	900 M
2.25 Meg.	250 M and 500 M

The tapped resistances given above are approximate. Any slight variance is acceptable.

Special Volume Controls

RCA Victor	4 Models	74524
RCA Victor	9 "	74526
Philco	15 "	74579
RCA Victor	4 "	74600
Zenith	22 "	75614
RCA	46 "	1210912
RCA	21 "	1210913
G. E.	4 "	F 163
Crosley	11 "	F 166
RCA	18 "	G 126
Zenith	20 "	K 180
Philco	28 "	R 103
Philco	8 "	R 105
Philco	22 "	R 115
Zenith	15 "	R 131
RCA	14 "	R 132
Mont. Ward	14 "	S 107
Zenith	1 "	S 116
Zenith	5 "	S 115
Zenith	7 "	S 118
Zenith	7 "	S 128
Zenith	15 "	S 129
Zenith	10 "	S 130
RCA	8 "	S 131
Zenith	7 "	S 135
Zenith	12 "	S 137
RCA	2 "	U 101
RCA	9 "	U 102
RCA	1 "	U 106
RCA	9 "	U 108
RCA	4 "	U 109
Zenith	4 "	U 104
RCA	25 "	1210900

Replacement Coils

The following list of coils was suggested for universal replacement by the Carron Manufacturing Company, Meissner Manufacturing Company, and Edwin I. Guthman & Company.

Although there are some slight differences in the coil construction of the above mentioned companies, it is certain that the Victory Line specifications will be readily adaptable by all.

Some of the coil manufacturers have suggested that replacement coils should be sold without shield cans. While this may be a worthwhile conservative measure, it must not be overlooked that the "MU" of the complete coil is governed by the size of the shield can. The need for adjustment would be very considerable, if the coil was used in an outsized shield can. The shields themselves are made of zinc and would be reclaimable and the purchase of the unit would be possible only on the surrender of the defective unit.

1. I. F. COILS

A single coil with trimmer condensers, suitable for either input or output stages for the ranges. 175 KC. 262 KC. and 455 KC.

2. I. F. COILS—WINDINGS ONLY

The more experienced servicemen have made use of this type of replacement unit, making possible a saving of both the trimmer condensers and the shield can. These should be available in the above-mentioned frequencies.

3. ANTENNA AND R. F. COILS

Compact type for universal replacement in auto radio and smaller type home sets, as well as for larger sets, to be made without or with shield cans and mounting brackets.

4. CARTWHEEL TYPE I. F. COILS

Compact type unshielded unit used in many mid-get sets with trimmer condensers. Because of size limitations, the standard I. F. cannot be used in the bulk of A.C.-D.C. sets. This type of a coil will also have uses in larger sets.

5. SLIP-OVER PRIMARIES

In many instances, it will be possible to eliminate the use of a complete replacement unit, thereby saving up to 50 per cent of the material. These coils should be of the following dimensions, all O. D. $\frac{1}{2}$ " $\frac{3}{4}$ " $\frac{1}{2}$ " 1" $1\frac{1}{4}$ "

6. OSCILLATOR COILS

Fixed and variable units should be available. The fixed for the smaller sets and the variable types for the larger and hard to replace exact duplicate coils.

These coils would service the bulk of radio sets, if an instruction sheet were provided showing the mutual settings for operation as input or output transformers; also, adjustments to be made for unshielded units, if they are to be used in various size cans. The adjustable coils are very desirable, as it permits "matching" over a wide range. As to the forms and trimmers used, they should be of wood and bakelite, rather than the ceramics that have been used in the past.

Line Cord Orders Can Be Filled

It has been announced by J. F. D. Mfg. Co., 4111 Ft. Hamilton, Pkwy., Brooklyn, N. Y., that deliveries on AC-DC radio resistance line cords can be made now. JFD instruction to jobbers for ordering are as follows:

"For the present jobbers' unrated orders will be filed, but rated orders come first. So make out your PDIX application for your supply of line cords, and mail it to War Production Board, Washington, D. C. immediately. Specify that an A-I-J rating is required. When your approved application is returned to you extend it to us in a note, to apply against your old order, or on a new order, and by that time we'll be able to make immediate shipment."

Pair of Bulletins

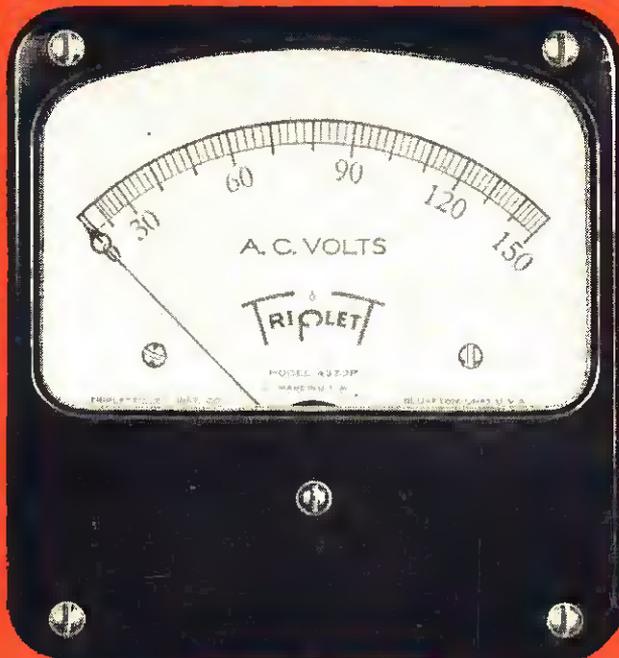
Ward Leonard has released two new bulletins Nos. 23 and 104. No. 23 gives the features, specifications and diagrams of the vitrohmm strip resistors and No. 104 gives data on the new midget metal base relays. Available without charge from Ward Leonard Electric Co., Mt. Vernon, N. Y.



TRIPLETT

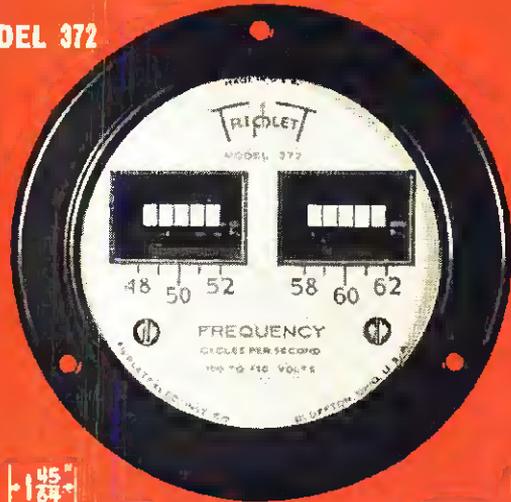
NEW *Combat Line* INSTRUMENTS

THESE PHOTOGRAPHIC REPRODUCTIONS ARE THREE-QUARTER SIZE



MODEL 437-JP

MODEL 372

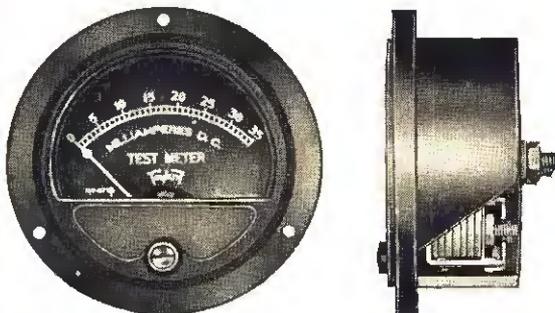


Model 437-JP

Model 372

Maximum Service in Minimum Space

TRIPLETT *Thin Line* INSTRUMENTS



Precision performance by new *thin* instrument with standard Triplet movement housed in either metal or molded case. No projecting base; wider shroud to strengthen face; simplified zero adjustment; balanced bridge support; metal bridges at both ends; doubly supported core. For "Precision in limited space" write for Triplet Thin Line Bulletin.

The Triplet Combat Line

New Answers to specialized needs of War; Production Speed-up and Standardization; Performance under the Stress and Vibrations of Combat Service.

Model 437 J P—A rectangular line of meters to meet dimensions shown (see diagram). Wide-open scale for maximum readability. Complete coverage AC-DC Voltmeters, Ammeters and Wattmeters. Magnetic or static shielding provided on order. Molded Plastic Case for maximum protection in high voltage circuits. Pivots, Jewels and other component parts designed to meet severe vibration requirements.

Model 372—Frequency Meter—"All-American make" Vibrating Reed Frequency Meter. Maximum readability by grouping of Reeds. Range-Frequency-Voltage to meet specific requirements. Protected against excessive panel vibration. In standard 3 inch mounting or on special order in any cataloged Triplet Case.

A WORD ABOUT DELIVERIES

Naturally deliveries are subject to necessary priority regulations. We urge prompt filing of orders for delivery as may be consistent with America's War effort.

TRIPLETT ELECTRICAL INSTRUMENT CO.
BLUFFTON, OHIO



Tentative Home-Receiver Tubes for 1943

The War Production Board is expected to authorize soon the home-radio receiver tubes listed below. This list is being further revised and studied, and

OZ4	6B8GT	7A8	35L6GT/G
1A5GT/G	6C5GT/G	7B5	35Z3
1A7GT/G	6C8G	7B7	35Z5GT/G
1C5GT/G	6E5	7C5	86
1H5GT/G	6F5GT/G	7C6	37
1LA4	6F6GT/G	7C7	38
1LB4	6F8G	7E7	39
1LC6	6H6GT/G	7H7	41
1LD5	6J5GT/G	7J7	42
1LE3	6J7GT/G	7N7	43
1LH4	6K5GT	7Y7	45
1LN5	6K6GT/G	7Y4	47
1N5GT/G	6K7GT/G	12A8GT	50L6GT/G
1P5GT/G	12B5GT/G	12B5GT/G	50Y6GT/G
1Q5GT/G	6L6G	12K7GT/G	56
1T5GT/G	6L7GT	12Q7GT/G	57
1V	6N7GT/G	12SA7GT/G	58
2A3	6Q7GT/G	12SJ7GT/G	70L7GT
2A5	6R7GT/G	12SK7GT/G	71A
3Q5GT/G	6SA7GT/G	12SQ7GT/G	75
5U4G	6SC7GT	14A7/1237	76
5V4G	6SD7GT	24A	77
5X4G	6SJ7GT/G	25L6GT/G	78
5Y3GT/G	6SK7GT/G	25Z5	80
5Y4GT/G	6SQ7GT/G	25Z6GT/G	83
5Z3	6U5/6G5	26	84/6Z4
6A7	6V6GT/G	27	117L7/M7GT
6A8GT/G	6X6GT/G	30	117Z6GT/G
6B7	7A4	35	XXL
	7A5	35A5	

copies are being sent out to the radio trade and industry for comment, after which the WPB is expected to issue a limitation order authorizing these tube types for manufacture during the first quarter of 1943.

RAF Hits German-Held Tube Plant

The German-held radio plants of the N. V. Philips Co. at Eindhoven, Holland, recently became a target for R. A. F. raids, and the \$60,000,000 plants were seriously damaged. P. F. S. Otten, president of the North American Philips Co. commented on the bombing by saying that "I was glad to see from the news dispatches that the R. A. F. planned the bombing for noon on Sunday and flew low so as to injure as few of the Dutch people as possible."

It was pointed out that just what the Germans have been producing in the Philips factories is not known, nor is it known to what extent the enemy has looted the factories of machinery and materials.

Before the war, Philips was one of the largest industrial concerns in Europe, employing some 50,000 persons throughout the world, making radio sets, tubes, lamps, transmitters, television sets, X-Ray apparatus, sound equipment, etc. Mr. Otten and other Philips executives and engineers came to the United States in 1940 and are now operating the American Philips factories on war production for the U. S.

Serviceman Calls for Tube Test Data

Victor G. Purcell, radio serviceman of High Falls, N. Y., has written to *Radio Retailing Today* stating that he is badly in need of the test data for octal tubes for the Triumph tube tester

Model 400. It was thought that other servicemen who have the data might loan it to Mr. Purcell or forward a photostat copy. It is not available from the manufacturer at present.

Stromberg Man Gets Award from President

Among those who received the "Citation of Individual Production Merit" from President Roosevelt on Dec. 10th, was Madison Butler, assistant chief inspector of the Stromberg-Carlson Telephone Mfg. The award, which is the highest honor to come from the War Production Board, was given to Mr. Butler for his suggestion and design of a testing device for communications instruments.

The device cuts the testing time for one instrument from an average of 80 man hours to one man hour, and it does not require engineers to operate it. Its exact nature is a military secret.

Mr. Butler's suggestion was submitted to Washington experts by Stromberg's joint labor-management committee, where it was selected from thousands of suggestions sent in by similar committees in war plants throughout the U. S. The award came shortly after Stromberg had celebrated the 25th anniversary of a suggestion plan in operation at its plant.

Profit Booster Display for Ghirardi Books

The first of a new series of eye-catching cardboard counter and window

Needle Deal



Now available to record dealers is this "Lucky 7" kit of phono needles, offered by Duotone Co., 799 Broadway, New York City. The firm's announcement is that dealers thus get a \$17.25 assortment for \$7.77.

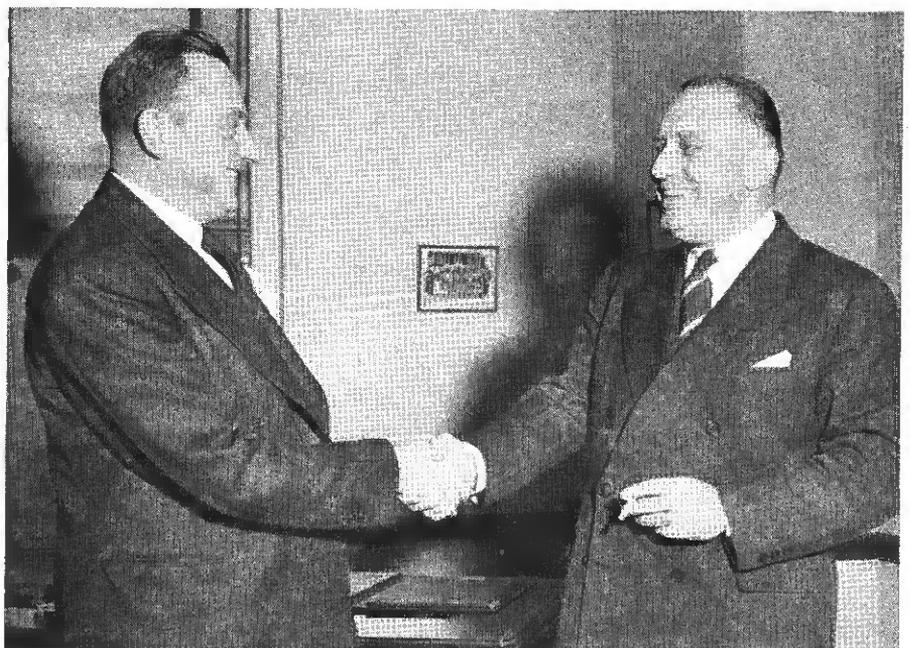
cards is being offered free to radio jobbers by the Radio and Technical Publishing Co., 45 Astor Place, New York City.

This 5-color unit consists of a front card carrying the main message and a second card mounted behind it to give 3-dimension effect, bearing life-size reproductions of the backs of the three most popular Ghirardi radio books.

Now It's Major Rider

John F. Rider, the well known radio figure who entered the Signal Corps with the rank of Captain, has now been advanced to the rank of Major. Major Rider is stationed at Camp Murphy, Hobe Sound, Florida, in the Department of Training Literature.

A New Regional Manager in Eastern Radio



One of GE's popular New York radio men, D. W. May, left, gets promoted to the post of eastern regional manager of the receiver division of the GE Radio, Television and Electronics Dept. He's being congratulated by Arthur A. Brandt, sales manager of the division. Mr. May's headquarters will be in the GE building in New York City.



The high regard in which IRC Resistors are held by Engineers and Executives of America's leading electronic industries is clearly attested by the voluntary remarks quoted at the right. These are taken from among returns to a nation-wide marketing study recently made by a wholly independent research organization. This survey was completely unbiased, with no company name or product disclosed.

PREFERRED
for
PERFORMANCE



FIXED AND VARIABLE

RESISTORS

**INTERNATIONAL
RESISTANCE COMPANY**

401 NORTH BROAD STREET
PHILADELPHIA, PA.

WE QUOTE

"We require quality, uniformity, service—and IRC have proven without a doubt *definitely reliable*."

"IRC seems to be choice of engineers in the government radio research job I'm in."

"Most complete engineering data."

"Most stable as determined by laboratory tests over two-year period."

"... In my business, Aircraft Electrical Engineering, I always specify IRC."

"Fine people to do business with."

"We handle only one line of resistors and of course that must be the best—namely IRC."

"To us, in the Company, the IRC mark on a resistance is the equivalent to a hallmark on sterling."



IRC flies the flag of the Army-Navy Production Award for "high achievement."

Today POLYMET is a WAR INDUSTRY

FOR VICTORY BUY
UNITED STATES SAVINGS BONDS
AND STAMPS

Much of our production goes to contractors directly engaged in communication installations for the army and navy. At the same time, we are making every effort to serve the growing civilian demand for POLYMET.



Condenser replacements account for about 40% of all radio repair jobs. Dependable condensers are, therefore, essential for gaining and maintaining Maximum customer satisfaction.

PROTECT **40%**
that

NOW, more than ever, the jobber and service man must recognize the growing demand for POLYMET.

CONTINUOUS DEPENDABLE SERVICE

For 21 years POLYMET ELECTROLYTIC and BY-PASS CONDENSERS have improved quality and service. New researches under the necessity of war requirements are placing POLYMET even further ahead in its field. We're conserving vital materials by limiting sizes to those most universally used. These serve practically every need.

Complete listing of available types and prices will be forwarded upon request.



**POLYMET
CONDENSER CO.**

699 EAST 135th ST.,
NEW YORK, N. Y.

Crosley Starts Series of Jobbers' War Meetings

The Crosley Corp. recently held a management-distributor conference in Washington, one of a series of meetings to be held around the country to inform its distributors of its post-war plans. Eastern Crosley distributors directly affected by the problems under discussion, attended.

R. C. Cosgrove, vice-president and general manager, headed a group of company officials at the all-day meeting. Speakers included the Crosley executives J. H. Rasmussen, Ben T. Roe, J. F. Crossin and Harold A. Newell. Frank McIntosh, Macon Mitchell and Glenn C. Harvey of the WPB were also on the program.

Vice president Cosgrove told the assembled distributors of the rapid and extensive expansion of the company's plant facilities, its engineering and other technical personnel, and its forces of skilled workers to meet the requirements of its all-out war production program.

"Distributors of Crosley products will benefit greatly from these greatly increased facilities and our expanded technical personnel, when peace comes, and our post-war plans can be put into effect," Mr. Cosgrove said.

Radio Consultant Observes 20th Anniversary

Dr. Ralph L. Power, Los Angeles radio counsellor observed his 20th year in various branches of radio and coincidentally was notified by the

Council of the Australian Institution of Radio Engineers of his election to the grade of Companion, for his interest in commercial radio.

Dr. Power first entered radio as studio manager of KWH and later became assistant manager for KHJ. He also was radio editor in succession of the Los Angeles Examiner, Times, Record, Post-Record & Long Beach Sun.

He opened his own office in 1932 and while engaging chiefly in exporting of technical radio apparatus to Australia, also conducted campaigns for stations, advertising and promotion for radio firms. His oldest client is Universal Microphone Co., Inglewood.

Market Report on Concerto Needle

After a recent check-up on phonograph needle tastes among record fans, Recoton Corp. reports that its newest point, the "Concerto", has met with wide approval.

The company has ample stocks of these high fidelity needles and together with their other "phoneedles" expects to be able to supply every dealer with a Recoton product. "Concerto" is recommended for automatic record changers, low and medium output electric phonographs, portable machines and phonographs with mechanical sound reproducers.

The "Automatic" and the "Concerto" designs are sufficiently similar so that they can be interchanged. To help sales, dealers can get attractive new window displays with every order of 5 cartons of one type or assorted.

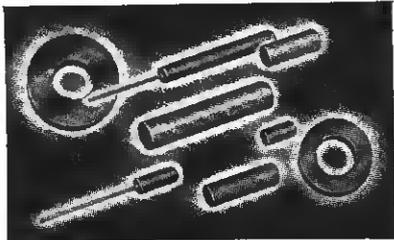
Farnsworth Commander in Washington



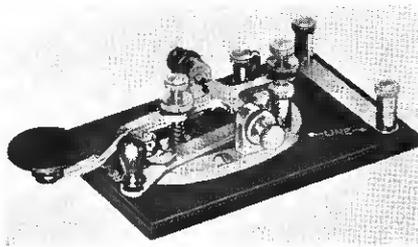
Commander Pierre Boucheron, USNR, widely known as assistant vice president of Farnsworth Television & Radio Corp. is shown here on furlough at the Washington, D. C., office of the company. He's greeted by resident manager Ted Ostman of Farnsworth who was formerly service manager for RCA.



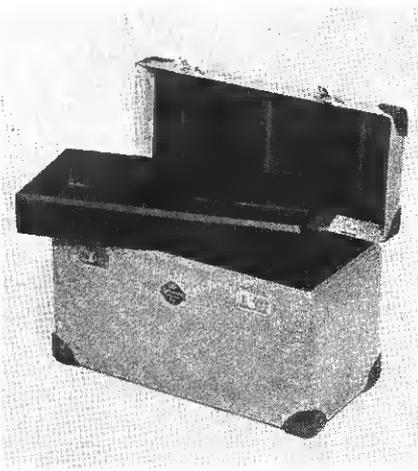
New Products



STACKPOLE MOLDED IRON CORES for use up to 150-175 megacycles combine a permeability of approximately 5 with high Q. They are noted for their uniformity since all engineering samples are made on the same equipment as is used in actual quantity production. Stackpole Carbon Co., St. Mary's, Pa.—RRT.



AMERICAN RADIO HARDWARE TELEGRAPH KEY unit J-38, is a sturdy sending instrument equipped with a nickel-plated brass shorting lever for receiving. The mounting base is black bakelite, the frame is a solid casting and all bearing parts are finely machined brass, contacts are pure coin silver. Designed for facility of wrist operation and touch control. Other models are J-44, J-45 and J-37. American Radio Hardware Co., 476 Broadway, New York, N. Y. RRT.



A new radio service kit in gray tweed mixture airplane cloth is now offered by Sylvania. This is Kit 1A, a sturdily constructed job with removable tool tray, metal fittings, plenty of room for tubes, parts and small tools. It comes from Sylvania jobbers, or directly from Sylvania Technical Helps, Sylvania Electric Products Co., Emporium, Pa.



Backed by PRACTICAL DATA...

● Good condensers are always the prime essential in profitable radio work. Equally important, however, particularly in these days of rapidly expanding and diversified scope, is *practical data*.

That is precisely why Aerovox has persisted in providing *practical data* as well as *good condensers*. For the past decade and a half Aerovox has been issuing its monthly **AEROVOX RESEARCH WORKER**.

Here is an engineering bulletin with up-to-the-minute, concise, always practical and dependable data. In radio, electronics, industry generally, this publication reports timely and practical condenser usage for many thousands of engineers, designers, manufacturers, servicemen, communication men, experimenters and other readers. You need this *practical data*. Therefore . . .

● Ask Our Jobber . . .

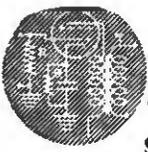
If you are not already receiving the Aerovox Research Worker, ask the Aerovox jobber to endorse your subscription. It's absolutely **FREE**—no strings whatsoever, if you are engaged in radio or allied work. Or write us direct.

NEW BEDFORD, MASS.,
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In Canada
AEROVOX CANADA LTD.
Hamilton, Ont.
EXPORT: 100 Varick St., N. Y.
Cable 'ARLAB'



Stancor Launches Honor Awards for Workers

Late last month, the Standard Transformer Corp., Chicago, honored 105 of its employees who have served the company for 5 years or more, at an elaborate celebration at the Standard Club. The event started a system of honor awards for Stancor men and women: silver emblems for those who had served 5 to 9 years, and gold emblems for those with the firm for 10 years or more. Stancor feels the plan to be in keeping with the government's desire to reward workers for good work and to help build morale.

In addressing the gathering, the Stancor president J. J. Kahn said that in honoring this group of employees, "we honor every member of the Stancor organization regardless of his or her length of service . . . may we all join hands to give our country every ounce of productive energy to supply the vital needs of our fighting men everywhere."

Besides Mr. Kahn, guest speakers included Lt. Col. Boruszak, Lt. Com. George C. Norwood, Major H. E. Billington, Major Eldon A. Koerner, Major Leo E. Steiner, and Levi Anderson. Kenneth C. Prince served as toastmaster.

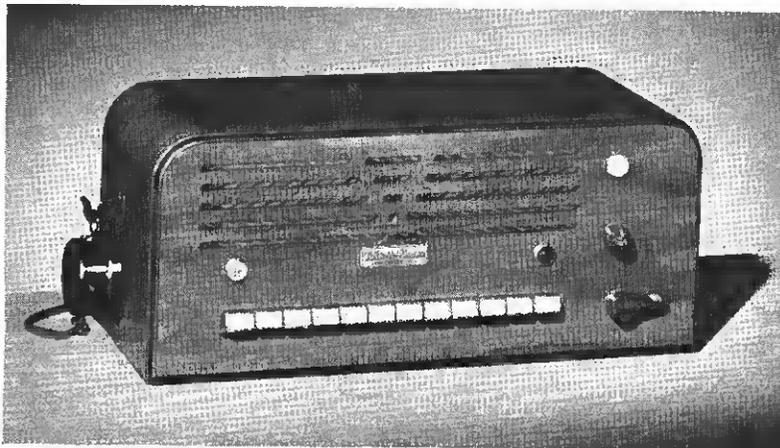
Thirty Years at Philco



The Philco Corp. president, James T. Buckley, is now celebrating his 30th year with the company. He started with the firm at 16 years of age, became president in 1939, and has seen company sales grow from \$488,000 in 1912 to \$77,000,000.



Leader of the Talk-A-Phone complete line of Intercommunications — The Super Chief is the system that will get you that Army, Navy, and War Industry business you want.



WRITE TODAY — Get your advance copy of our beautiful new catalog. Learn about the Super Chief's many exclusive features.
** Trade Name Registered*

Talk-A-Phone Mfg. Co.
1211-B W. Van Buren St.
Chicago

"Volume plus Velocity equals Victory"—Emerson

"Volume plus Velocity equals Victory" was the stirring prize-winning slogan of the Emerson Radio & Phonograph Company employees, disclosed at their war production rally and jubilee at New York, Friday evening, Dec. 4, when representatives of the Army and Navy met with them to celebrate Emerson's production record.

President Ben Abrams spoke recalling the achievements of the Emerson organization since it completed its civilian production quota last June, and converted 100 per cent to war. Government orders on hand indicate maximum production ahead. "If each of us does his work well, in whatever part of the program he finds himself, it will insure an early victory and maintenance of the American way of life," said Mr. Abrams.

Max Abrams, secretary and treasurer, presented a war bond and letter of commendation from WPB head Donald Nelson, to Frederick Salters, the Emerson employee who coined the phrase which has become the Emerson war-production slogan.

Soldering Tools

Two new folders from Ideal Commutator Dresser Co., Sycamore, Ill., describe and illustrate their new electric brazer and soldering tools and the Ideal electric marker and line of etchers.



Sales Managers Discuss Jobbers' War Footing

The November meeting of the Sales Managers Club, held in New York City, proved to be an exceptional round-table discussion involving the sales manager members, spokesmen for NEDA, "The Representatives," merchandising consultants, advertising experts, leading jobbers, and the trade press. The get-together was organized by Charley Golenpaul of Aerovox, who is serving a new term as chairman of the Eastern Division of the Club. Mr. Golenpaul, who had previously served two terms as chairman after he organized the group in 1935, presided at the meeting.

The subject was "keeping the parts jobber going in wartime" and the majority opinion was that although the going will be "tough," there is a definite wartime place for the distributor. What the jobber should do, besides supplying replacements for civilian radio, was outlined as follows: (1) Serve as expediting specialist for local war agencies, (2) Provide sales engineering service to local war efforts, (3) Make inventories available to war agencies at all times, at right prices, (4) To supply manufacturers with vital information regarding local requirements, (5) Insist on priority ratings on all goods sold, to insure proper consideration of restocking orders, (6) Change the physical set-up if necessary reducing overhead, to get on a strictly war footing for selling and engineering service.

It was pointed out that manufacturers can help the jobber by clarifying the priority situation, by crediting him with local orders whenever feasible, by helping to keep the government agencies "hep" to jobber inventories, and by generally recognizing the jobber as the key supply outlet.

Ellis Travers Heads Crosley Advertising

The new director of advertising and public relations for the manufacturing division of the Crosley Corp., Cincinnati, is Ellis Travers according to an announcement from R. C. Cosgrove, vice president.

Mr. Travers has for the past 9 years been vice president of the advertising agency, Ruthrauff & Ryan, in New York and Detroit.

Pyle of Sylvania, NEWA Managing Director

Charles G. Pyle, general sales manager of Sylvania Electric Products Inc., has been appointed managing director of the National Electrical Wholesalers Assn., it was announced by the organization's president, D. L. Fife of Detroit.

Need Intelligible Communications?

Use a

TURNER

Microphone

A. Turner Cardioid 101
Here's the unit that stymies all background noises. The 2-element generator produces true cardioid characteristics and offers the best features of both the dynamic and velocity. Where the going is tough and acoustic conditions practically impossible, a Turner Cardioid can handle the job. Available in Standard, De Luxe and Broadcast Models.

B. Turner U9-S Multiflex
This ONE Turner unit offers your choice of 4 impedances-50, 200 or 500 ohms or hi-impedance, simply by twisting the switch. A dynamic microphone that's free from peaks and holes from 40 to 9000 cycles. Be sure you can handle ANY job with Turner U9-S.

C. Turner 211 Dynamic
Utilization of a new type magnet structure and acoustic network permits outstanding performance characteristics with the 211. High frequency range has been extended and extreme lows raised, to compensate for over-all deficiencies in loud speaker systems.

D. Turner Han-D
Hold it, hang it, or mount it on standard desk or floor stand, this Turner is HAN-D. Positive contact slide switch permits off-on operation. Will not blast from close speaking. Crystal or Dynamic.

If You Have a Priority Rating
WRITE, explaining your communications problems and we can help you select the Turner Microphone best suited to your needs. Also, information on how to make your present Turner Microphones and Equipment give longer, better service.

FREE Turner Microphone Catalog, with complete information and prices on Turner Microphones and Equipment. Write:

Crystals Licensed Under Patents of The Brush Development Co.

THE TURNER CO.
CEDAR RAPIDS, IOWA

**PRODUCTION PEAKS
THRU PUBLIC ADDRESS**

(Continued from page 19)

control week before musical installation.

Another graph gave a similar result in another factory. In the case of the latter, the operation studied was one requiring a very high degree of manual dexterity and a sense of timing. Employees were on piece work as in the case of the other chart. The average difference is 4.07 per cent.

These results would seem to indi-

cate then that music makes work go faster and, since all these data were collected where piecework prevailed, the employees profited by the changes introduced by the music.

A concomitant of the production rate is the problem of Monday absences and early departures with which some industries have to contend. Our data revealed that where the employees were on piecework and where they got tired and went home early, before the musical installation was made, they did not do so much of that when there was music to listen to. The results

Jensen Promotes Hansen



"Charlie" Hansen, left, for the past 9 years an executive with Jensen Mfg. Co., Chicago, has been put in charge of the special management division in the Chicago office. He's shown here with Thomas A. White, Jensen sales manager.



"Of Course, I'd Rather Use My Car



... but if the boys in the service need the gas, I'm satisfied to do with less."



People have willingly given war needs a priority over civilian desires.



If you explain to your customers why radio parts are scarce—and how you licked an "impossible" situation to get their sets operating at all—they will accept those repair jobs that may be "a little less than perfect."



Naturally, you don't like to work on the antiquated sets you're getting today—especially with the shortage of men and materials. But, it's your patriotic duty to keep 'em playing—even if you have to improvise repairs. Of course, to do this efficiently you must know exactly what's inside the set.



That's where Rider Manuals save you time. They lead you right to the cause of failure and furnish you with the facts that speed repairs.



So don't waste time "guessing out" defects and "experimenting" with possible methods of improvising repairs. Reach for one of your thirteen Rider Manuals when you begin every job. It's good sense and good citizenship to work efficiently today. It conserves parts and saves labor—both critically scarce right now.



**YOU NEED ALL THIRTEEN
RIDER MANUALS TO "CARRY ON"**



RIDER MANUALS
 Volumes XIII to VII.....\$11.00 each
 Volumes VI to III..... 8.25 each
 Volumes I to V, Abridged.....\$12.50
 Automatic Record Changers and Recorders... 6.00

OTHER RIDER BOOKS YOU NEED
 The Cathode Ray Tube at Work.....\$3.00
 Frequency Modulation..... 1.50
 Servicing by Signal Tracing..... 3.00
 Meter at Work..... 1.50
 Oscillator at Work..... 2.00
 Vacuum Tube Voltmeters..... 2.00
 AFC Systems..... 1.25

HOOR-A-DAY-WITH-RIDER SERIES—on "Alternating Currents in Radio Receiver"—on "Resonance & Alignment"—on "Automatic Volume Control"—on "D-C Voltage Distribution." 90c each

JUST OUT!
A-C CALCULATION CHARTS—Two to five times as fast as a slide rule—and more fool-proof. All direct reading—operative over a frequency range of from 10 cycles to 1000 megacycles. 160 Pages—2 colors—9½x12 inches—\$7.50.

FOR EARLY PUBLICATION
 Inside the Vacuum Tube—complete elementary explanation of fundamentals of vacuum tubes.

John F. Rider Publisher, Inc.
 404 Fourth Avenue - New York City
 Export Division: Rocke-International Electric Corp.
 100 Varick St., New York City Cable: ARLAB

also showed a desirable effect on Monday morning absences.

In the case of all our charts, of course, averages have been computed from a base of a similar total number of employees. No data are here included which are not based on identical plant, meteorological, noise and light conditions.

Having answered definitely, though for not too many factories, the question of what music does to the production rate, we set about examining the *kind* of music and *when* it was played. Programming is, as may be deduced from the laboratory data on auditory stimuli, of great importance. It is now practiced in conformity with theatrical principles plus observation and experience. These serve well as a starting point, but are not susceptible of being weighed, measured or analyzed by statistical means, and there is a considerable divergence of opinion among those who arrange programs on the question of the number and length of playing periods; the relative values of associative and non-associative music; the value of popular jitterbug, versus classical music; the relative value of vocals and instrumental music. It is generally accepted practice however, to limit playing time to not more than 2½ hours per day, in periods of 12-20 minutes. Marches for opening, and marches and popular foxtrots for change of shift or



closing time, are most generally preferred. Music during the last 20 minutes of work period is generally not employed since it might be taken as a signal to get ready to go home. Special radio programs, especially those planned for music in industry, are occasionally used. "Deep in the Heart of Texas" is out. It stops all work in the United States and in England because, naturally enough, the employees feel obliged to drop all work to join in the hand-clapping in the chorus. The "Strip Polka" is shunned for obvious reasons. Hymns are said to be in considerable demand on Sunday in some factories, though it has been observed elsewhere that hymns can stop work about as fast as a fire gong.

Blue Plate Specials

Luncheon periods are considered the most flexible in programming and often carry recorded messages to the folks back home from the men in service, bond sales talks, news reports, hot numbers for the jitterbugs, salon music alleged to aid digestion, request numbers, etc. Some factories ban vocals during work periods, others like them. Employee demand for music rises at night, and music is a source of comfort during blackouts. One factory played "Take Me Out to the Ball Game" as the World Series started, and announced the score every third inning.

It is obviously impossible to make the value of many of these program elements the subject of statistical analysis. But the mere diversity of the opinion and material seems to indicate that one kind of a program ought to be better than another, especially in the case of a specific set of conditions or type of operation.

To Be Handled with Care

So far as I can discover no one has gone down to bed rock on the subject. The empirical development of a system of programming would be all right if records of results were kept. The development of a program from psychological and physiological data at hand is another approach to the problem of programming.

We have been able to undertake only one experiment in this field designed to demonstrate that a musical program planned for a specific pur-

NATIONAL UNION SHAKES A Powerful Electronic Fist RIGHT IN DER FUEHRER'S FACE!!!

WE'VE FLEXED OUR PRODUCTION MUSCLES
WE'VE CLENCHED OUR ENGINEERING FIST AND RIGHT AT THIS MINUTE
WE'RE AIMING OUR UPPER-CUT RIGHT TO THE UGLY AXIS FACES.

ON THE HOME FRONT

RADIO TUBES, TRANSMITTING TUBES, CATHODE RAY TUBES—THEY'RE ALL POURING OUT FROM OUR DOORS TO POUR DEVIATION ON OUR ENEMIES. YOU WOULD BE PROUD TO KNOW THAT YOU ARE A NATIONAL UNION ASSOCIATE IF WE COULD TELL YOU HOW VITALLY OUR PRODUCTS ARE COUNTING IN THE WAR EFFORT.

NATIONAL UNION Distributors, service men, dealers—all are fighting along with us to keep the domestic market open to keep home receivers in operation. N. U. tubes, condensers, volume controls—yes, even panel lamps, and other N. U. products, are counting now more than ever before. Every single unit which goes into a set today keeps the ears of the nation opened. We're proud of the distributors and service dealers who are helping in the war effort, and assure them to the last man that National Union appreciates your problem. National Union is doing everything humanly possible to help you solve it.

NATIONAL UNION RADIO Corp.
57 STATE STREET, NEWARK, NEW JERSEY.

Philadelphia, Pa.

Jobber Sales Record
FIRM: **Algene Sound & Radio Co.**
MANAGER: **A. M. Slott**
SALES LAST 12 MONTHS:
600% increase
WITH
AMPLICALL
INTERCOMMUNICATION AND PAGING SYSTEMS

A. M. Slott

A 600% business increase in these times — is news! That's the 12 month case history of Algene Sound & Radio Co., of Philadelphia, another of the RAULAND group of successful distributors of AMPLICALL Inter-Communication, Paging and PA Systems. Jobbers all over the country are discovering that AMPLICALL Sound, Electroneered to meet all of the pressing needs of war plants, is actually enabling them to make sales history right now! The RAULAND FB Distributing Plan offers the alert jobber a perfect opportunity to cash in now. Write for full details at once.

• **Electroneering is our business** •

THE RAULAND CORPORATION
(Rauland-Webster Sound Division)
4245 NORTH KNOX AVENUE
CHICAGO

Rauland

RADIO — SOUND — COMMUNICATIONS



FREE
New
RADIO PUNCH
Folder

Tells How To Cut Holes In Radio Chassis

Get the facts about the handy Greenlee Radio Punch in this new folder. Tells how to save hours when cutting holes for sockets, plugs, connectors, etc., in radio chassis. No tedious drilling, reaming or filing is necessary. A cap screw is inserted in a small drilled hole, and the punch is easily forced into the die by a few turns of the screw with an ordinary wrench. Ten punches are available for cutting $\frac{3}{16}$, $\frac{7}{8}$, 1, $1\frac{1}{8}$, $1\frac{1}{2}$, $1\frac{3}{4}$, $1\frac{5}{8}$, $1\frac{3}{4}$, $1\frac{1}{2}$, and $2\frac{1}{4}$ -inch holes. Write today for your copy of the new Greenlee S-119 Radio Punch Folder.



GREENLEE TOOL CO.
1911 Columbia Ave., ROCKFORD, ILL.



A Merry Christmas
and
A Victorious New Year
FROM

RADIART

We are plenty busy for Uncle Sam building Signal Corps and Ordinance Materials

"But"

We are never too busy to wish our many friends, the Radio Servicemen, Seasons Greetings

★
**USE
RADIART
VIBRATORS
VIPOWERS
AERIALS**

Still Available at Radiart Jobbers

pose can accomplish that purpose. The factory had tried music for six months. Programming was provided by the organization which installed the distribution system and was, so far as we were able to evaluate it, a better than average program. It consisted of numbers especially arranged and recorded for industrial use, was arranged on the basis of experience and observation, and reproduced with high fidelity equipment.

Representative Figures

We were unable to obtain any production figures of our own for the period before music. However, we went back to some records which the company had kept approximately one year before this experiment took place, and, although we cannot vouch absolutely for the conditions obtaining at that time, we believe that we got a fairly representative picture of what their production curve looked like at that time. The average was 72 per cent. We found that there was an increase of 8 per cent with the installation of music, and 14.8 per cent with a planned test music program.

Our studies of the effects of standard programs compared with test programs would seem to bear out a theory to which I have long subscribed, which is that, while music is better than no music, programming will not be satisfactory until it is undertaken on the basis of a careful analysis of the results it gets. More statistical analysis of factory performance should teach us much.

Individual Values

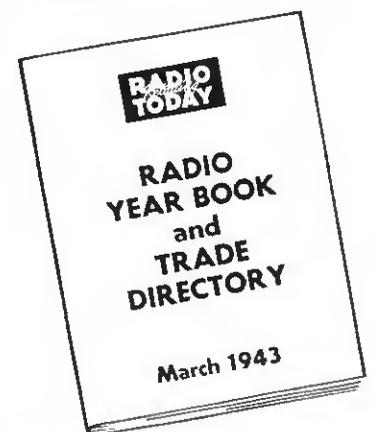
I believe that programming must ultimately be undertaken for the factory, if not for the specific operation. Fatigue curves vary in shape and amplitude, and it is difficult to find one remedy for dips occurring at different times in different operations. We have, at least, established the fact that the remedy exists and the technique for employing it is in hand.

Whether we like it or not, music in industry appears to be here to stay and bids fair to be of increasing importance as time goes on. It has been endorsed by responsible officers of both the A. F. of L. and the C. I. O. Factory sound installations are now mandatory in England. This is primarily to avoid loss of time in the

**WHEN YOU MAKE UP
NEXT YEAR'S SCHEDULE
remember
THESE TWO
DIRECTORIES**



REACHING the responsible electronic engineers, executives and production heads in all radio-electronic manufacturing plants; all communications services and all known users of industrial electronic equipment.



BLANKETING the parts and radio jobbers, home and auto radio servicemen, representatives, sound specialists, radio buyers of department stores, radio-music merchants and other key dealers.

**COMPLETE COVERAGE
WITHOUT DUPLICATION**

CALDWELL-CLEMENTS, Inc.
480 Lexington Avenue, New York
Telephone Plaza 3-1340

201 N. WELLS STREET CHICAGO
Telephone Randolph 9225



case of air raids by not calling the employees out until the last moment, but so far as I can discover, more factories appear to use the systems for music than do not. Numerous radio stations here and in England carry musical programs planned for broadcast to factories. Once the sound system is in music comes in with it. The number of factories employing music in this country grows so rapidly that statistics of this week are no good next. Installations progress and programming improves. Music works but we still have a long distance to go before we can make the work sing.

Radio Leaders Celebrate Charity Success

More than 400 key men of the radio industry were present at the "Victory Dinner" of the Radio, Refrigeration and Allied Industries Division of the New York and Brooklyn Federations of Jewish Charities. The dinner celebrated a successful 1942 drive by these two Federations, made throughout the industry, on behalf of 116 health and welfare institutions.

Honored at the event were three outstanding workers and contributors for this charity. They were Henry Benjamin of Davega-City Radio; Max Kassover of Vim Radio; and Jules Smith of Davega.

Worker Group

Chairman of the radio division is Benjamin Gross, of Gross Distributors, Inc., New York City. H. M. Stein of Davega and Mr. Kassover are honorary chairmen. Ben Abrams, of Emerson Radio Phonograph Co., heads the campaign committee. Other members of the committee serving with Mr. Gross and Mr. Abrams includes:

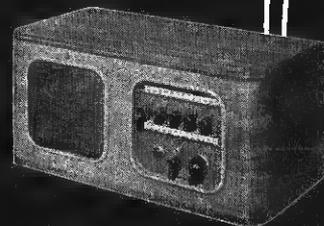
Ed Berger, Eby Specialty Co.; Abe Bloom, General Instrument Co.; William Brand, William Brand & Co.; Michael Cohen, Davega-City Radio; Samuel Cohen, General Instrument Co.; Bernard D. Cohen, Colen-Gruhn Co.; Maurice Despres, Dale Radio Co.; Lewis E. Dorfman, Dale Radio Co.; Isidor Goldberg, Pilot Radio Corp.; Sol Gross, Emerson Radio & Phonograph Co.; Murray Gruhn, Colen-Gruhn Co.; H. Halperin, Air King Products Co., Inc.; Alexander P. Hirsch, Micamold Radio Corp.; Benjamin Kay, Liberty Music Shops; Maurice Landay; Samuel W. Lerer, Lerer & Lerer; R. H. McMann, Westinghouse Electric Supply Co.; Jack M. Marks, Fada Radio; Philip Masters, Masters Mart; D. W. May, General Electric Radio; Thomas O'Loughlin, Philco Radio & Telev. Corp.; O. W. Ray, Times Appliance Corp.; Perry Sattler; Irving Sarnoff, Bruno, N. Y., Inc.; George J. Seedman, Times Square Stores Corp.; Harold Shevers, Espey Mfg. Co.; Lou Silvers, Garod Radio Corp.; Louis Tiftesky, European Radio Co.; David Wald, De Wald Radio Co.; M. W. Weintraub, Garod Radio Corp.; and E. A. Wildermuth.

WAR PRODUCTION NEEDS THIS PROVED EXPEDITER!

BELfone INTERCOMMUNICATION

There's a BELfone system for every inter-office or inter-plant communicating need! Hundreds of busy war plants have already found BELfone an invaluable aid in cutting through the waste and delay of interdepartmental contacts! Hundreds more urgently need BELfone's time-saving, step-saving efficiency. Here at Bell Sound Systems, Inc., we are pushing all facilities — new and old — in an effort to meet every priority order for BELfone equipment as quickly as possible. And we're clearing the way to easier sales by advertising BELfone nationally.

Effective ads like the one below — placed in leading, current business and industrial publications — read by executives and plant men — are bringing BELfone's advantages to the attention of important prospects!



Make it your business to help speed war production. Write today for details on BELfone!



BELL SOUND SYSTEMS, INC.
1186 Essex Ave., Columbus, Ohio
EXPORT OFFICE: 5617 EUCLID AVE., CLEVELAND, OHIO



**PROUD
TO SERVE**

SNYDER
MANUFACTURING CO.
PHILADELPHIA, U.S.A.

**RADIO
ANTENNAE**
AND
ASSOCIATED PRODUCTS



"Well Done"

★ The Army-Navy "E" Pennant now flies over the Clarostat plant. It is visible evidence that Uncle Sam is well pleased with the all-out war production efforts of Clarostat workers, engineers, management. It is his way of saying "Well Done."

And to you it means not only maximum support of the war effort, but a pledge of continuing Clarostat service, production and reputation in the peace to come.



CLAROSTAT
Controls
and
Resistors

CLAROSTAT MFG. CO., Inc. • 285-7 N. 6th St., Brooklyn, N. Y.

HOLDING ON TO RECORD BUSINESS

(Continued from page 24)

include sporting goods, ice refrigerators, lamps, coffee makers, model supplies, bridge sets, luggage, and games.

To you who have the guts to stay in business, the writer has this to say. IT CAN BE DONE! But make no mistake—remember, pre-war profits and pre-war thinking are out. You and your salesmen must work harder, think harder—but merchandise can be had and can be sold!

Worth the Struggle

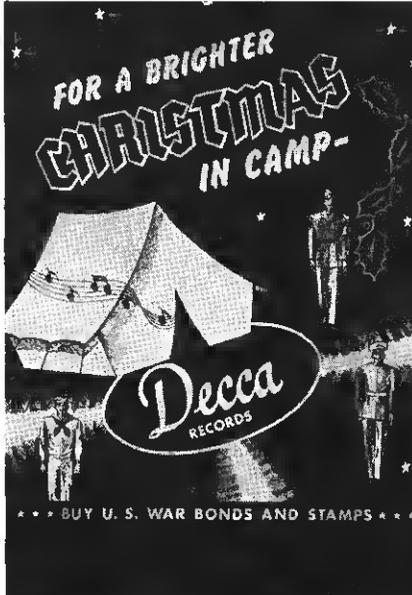
The banana years of big unit sales running into the thousands are gone for the duration, but small sales and more of them are a definite possibility. Remember, if you stay in business, you will reap the harvest of a terrific post war boom, but the fellow who goes out of business thinking that he will come back—will find the "coming back" road a tough one—maybe too tough.

What will be the ultimate reward? Just this. The jobbers and dealers who are in business after the war will literally be in the driver's seat. For when those who decide to give up try to come back after the war, they will have to start from scratch . . . in new locations, with new lines, with new help, with the problem of developing new accounts before him all over again. And his competition will be YOU, the dealer who has stuck to his guns, put his shoulder to the wheel and helped as many of his salesmen as did stick with him. Nor will you who stay in business ever have to go shopping for lines again. The lines will come to you automatically because you will never have lost them. Consumers will prefer to do business with dealers who stuck it out and helped them get stuff when it was scarce. Jobbers will see that those of his accounts who stuck with him during this period get the first crack at new and better lines.

Action Indicated

The time element has suddenly become of utmost importance. There has lately been a lot of talk about freezing lines. This means that you will be prohibited from taking on any new lines. This freezing act may never materialize, but, don't take any chances, get your new lines in while the getting is good.

Wartime Records



FOR A BRIGHTER
CHRISTMAS
IN CAMP—

Decca
RECORDS

BUY U. S. WAR BONDS AND STAMPS

Above and below are two of the posters released by Decca Records in its holiday promotion kit. In Christmas colors they do a special job in both military and civilian sales.



CHRISTMAS GIFTS
Everyone ENJOYS—

THIS YEAR GIVE

Decca
RECORDS

ALBUM SETS

WIDEST AVAILABLE CHOICE OF 350 POPULAR SETS IN ATTRACTIVE BOUND COVERS...

BUY U. S. WAR BONDS AND STAMPS

Capt. O'Loughlin of the Marines

Thomas A. O'Loughlin, vice-president and general manager of Philco Distributors, Inc., New York Division, has been granted a leave of absence to serve with the armed forces. He has been commissioned a captain in the United States Marine Corps.

Captain O'Loughlin has been a Philco executive for the past 14 years and served in the Marine Corps in World War I. A son, Thomas J., is a lieutenant in the Army.



AC & DC Katolight Generators

Manufacturers of a complete line revolving armature generators in sizes 350 through 15,000 watts at 60 cycles. Self-excited and separately excited models, 1800 and 1200 r.p.m. Available single or 2 bearing design for coupling drive or direct mounting.

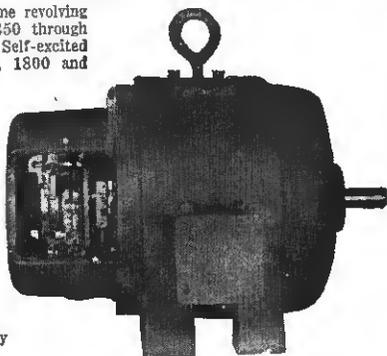
Good deliveries on 5 and 10 K.W. sizes in quantities.

Available for all standard voltages such as 110, 220 single phase, 2 or 3 wire, three phase or three phase 4 wire. Frequencies of 25, 30 and 50 cycles also available.

Voltage regulation about 3% between no load and full load with 3% speed change.

Also D.C. generators, frequency changers, rotary converters.

KATO ENGINEERING CO.
Mankato, Minnesota, U.S.A.



5 KW Generator, self-excited

IMMEDIATE OPPORTUNITY

WANTED, RADIO DEALERS to handle the new 1943 Victory Model Crystal-Vox Hearing Aid. A "natural" for you to bolster your business. This vacuum tube instrument is so nearly like a radio that you can quickly profit from the previous experience and training of your sales and service departments. A first class instrument that retails for less,

yet carries a liberal discount to dealers. Exclusive territory distributorship open to those qualified.

Write or wire for full particulars.

CRYSTAL-VOX
Hearing Instruments Co.
1249 Washington Blvd.
Detroit, Mich.

Beware of Imitations



PATENT NO. 2276562
MARCH 17, 1942

Duotone STAR SAPPHIRE PHONOGRAPH NEEDLE

The Duotone Star Sapphire has a unique patented construction — *is the only needle of its kind.* This amazing needle has been so successful that imitators are vainly trying to duplicate its sensational five patented features which are responsible for its unequalled performance and gem-like reproduction.

Protect yourself and your customers by stocking the only genuine Star Sapphire phonograph needle. *A fast moving item at \$5!* Sold with an unconditional money back guarantee. 25,000 Star Sapphires have been bought by satisfied customers in less than a year.

The Star Sapphire needle (Patent No. 2276562) was patented on March 17, 1942, and will be protected against all infringements.

IN CANADA — SNI-DOR, Ltd. — MONTREAL

FOR TRUER TONE **Duotone**
THE WORLD'S FINEST NEEDLES

FADA

SERVICE DEPT.

has replacement parts for all FADA models manufactured during the last 10 years. Call, write, phone or send 10c for our latest Replacement Parts Catalog.

FADA OF NEW YORK

30-20 Thompson Ave., L. I. City, N. Y.
Ronsides 6-5400

ATTENTION TUBE DISTRIBUTORS

We offer list less 50% for the following tube types, of standard manufacture, individually cartoned. We cannot supply priority rating. Would consider buying your complete stocks at slightly better discount. **WIRE** us collect if you can furnish over 100 tubes. **WRITE** us if you have less than 100 for sale. Deposit wired or mailed with each of our orders, balance COD.

1B5/255	6B5	6SQ7 G or GT
2A3	6C6	30
2A4G	6H6 G or GT	45
5U4G	6J5 G or GT	70L7GT
5Y4G	6K7 G or GT	76
5Y3G or GT	6L6 G or GT	80
5Z3	6SC7 or GT	2051

W. R. BURTT

308 Orpheum Bldg. Wichita, Kansas

PEERLESS ALBUM

in gratitude

*May the year 1943
be Healthy
Prosperous
and Victorious*

PEERLESS PROTECTO-FLAP

RECORD ALBUMS *will do their part in giving you a prosperous 1943.*

★ ★ **Buy Bonds for Victory** ★ ★

PEERLESS ALBUM CO., Inc.

38-44 West 21st Street New York, N. Y.

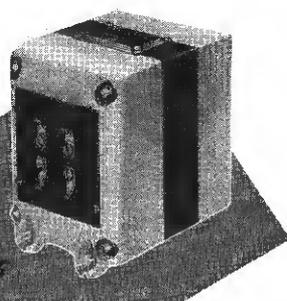


Our Third War!

We are proud that THORDARSON helped win the first two, and now our 47 years of experience has gone "all out" to help win this war! THORDARSON research engineers are working 'round the clock . . . constantly seeking new methods for greater transformer efficiency.

When we have won this war and returned to our normal industrial life . . . THORDARSON engineers will be in possession of priceless knowledge which will be incorporated in THORDARSON products.

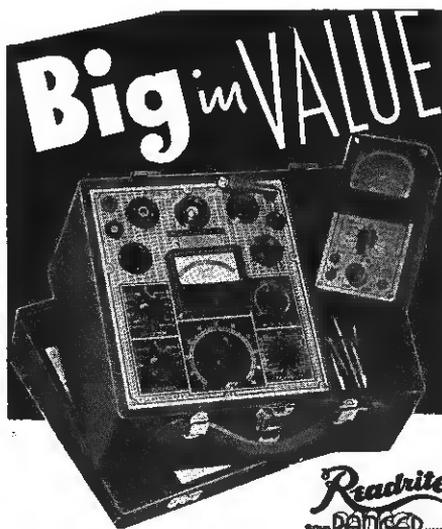
Your transformer problems will be welcomed by THORDARSON engineers . . . let them help you!



THORDARSON

ELECTRIC MFG. COMPANY
500 WEST HURON STREET, CHICAGO, ILLINOIS

Transformer Specialists Since 1895



Readrite
RANGER

MODEL 432-A

The Outstanding Tube Tester Value
Checks all type tubes including Loctal Bantam, Jr., 1.4 volt Miniatures, Gaseous Rectifier, Ballast, High Voltage Series, etc. Filament Voltages from 1.1 to 110 volts. Direct Reading GOOD-BAD Meter Scale. Professional-appearing case with accessory compartment large enough for carrying Model 739 AC-DC Pocket Volt-Ohm-Milliammeter, thereby giving the serviceman complete testing facilities for calls in the field. . . . Model 432-A with compartment. Dealer Net Price . . . \$20.73. Model 432-A in case less compartment . . . \$19.65. Model 739, Dealer Net Price . . . \$18.89

Write for Catalog—Section 1116 College Dr.

READRITE METER WORKS, Bluffton, Ohio

★

Buy U. S. War Savings Bonds and Stamps

★

RCA Victor Climaxes Xmas "101 Campaign"

A four-page, four-color center spread in *Life* Dec. 7th was the highlight of RCA Victor's national advertising campaign in behalf of its Christmas record gift drive. The entire section can be withdrawn for reader use as a Victor catalog.

Extra interest was built up by a letter-writing contest on the subject "Why Victor Records Make Ideal War-time Christmas Gifts" heard over 51 local radio stations. Local newspaper ad coverage was also geared up for the occasion.

This promotion was labelled "The 101 Campaign" for its concentration on that number of hit records and albums, divided into different categories of musical interest.

Full color reprints of the *Life* ad are being distributed to dealers, in addition to mat sheets of other ads and a kit of promotional material including a window display centerpiece, 2 side cards permitting the display of single Victor records and a third to accommodate an album, and also booth and correspondence stickers.

Pennsylvania RSA Names Officers

The Radio Servicemen's Association of Luzerne County Pa., at its regular meeting elected the following officers for the coming year:

President—E. L. Maneval, of R. B. Wall Co., Wilkes Barre, Pa.; Vice Pres.—Edmond Nowicki of Voss Sales Co., Nanticoke, Pa.; Treasurer—John Kennedy of City Radio Service; Wilkes-Barre; Secretary—C. F. Bogdan of C. F. Bogdan Radio Service, Wilkes-Barre.

Three new directors elected were Roy Stroh, West Pittston, Pa., Edward Buckman, Wilkes-Barre, and A. B. Dungan of Kingston, Pa.

Three directors still remaining in office are Max Friedrich, and Joseph Sincavage, both of Wilkes-Barre and Dave Thomas of Shavertown, Pa.

Jobber Gets War Contract

Bickford Bros. Co., aggressive distributors of Rochester, N. Y., have "converted" to war production. The company has just received a large war contract from the U. S. and is using three floors of its building for manufacture of the war item. C. E. Corcoran, a Bickford executive reports that "this will enable us to keep our organization intact for the duration and we will be all set to take on the distributorship of major appliances immediately thereafter."

Bickford is regularly a distributor for RCA Victor radios, tubes, and records, and now handles floor coverings, kitchen furniture, gas ranges and felt pads also.

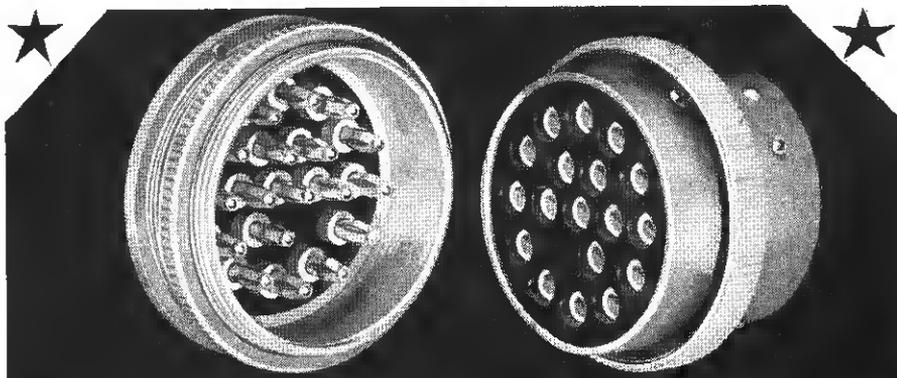


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While every precaution is taken to insure accuracy, we cannot guarantee against the possibility of an occasional change or omission in the preparation of this index.



“Right Down Our Alley”

★ Contributing to the war effort, Astatic Corporation facilities are being utilized today mainly in the manufacture of essential products requiring special engineering skill and precision. Among these are Aircraft Radio Plugs and Sockets, as

illustrated, along with complete Co-axial Cable (concentric) connectors, and similar equipment for the U. S. Army Air Corps and the Navy. The tooling and assembly of delicate, precision products of this type comes naturally to Astatic workers, long experienced in the manufacture of Microphones and Pickups for radio, public address and phonograph equipment. Wartime production of this kind is “right down our alley.”

ASTATIC

THE ASTATIC CORPORATION

YOUNGSTOWN, OHIO

Licensed Under Brush Development Co. Patents

In Canada Canadian Astatic Ltd. Toronto, Ontario

Cover All Needs of Signal Corps Trainees

That's why these three approved "Vaco" Drivers are being used every day, by Signal Corps trainees everywhere.

Shock-proof, break-proof, chip-proof Amberyl handles and narrow straight bits. Other "Vacos" for radio work include: G2 Grip-point Screw-holding and Spin-hex nut drivers.

Jobbers should stock 3 Signal Corps numbers illustrated, immediately. Priority rating preference.

VACO Products Co. 1123 W. WASHINGTON BLVD. CHICAGO, ILL.

STANCOR

TRANSFORMERS

First Choice of Servicemen!

STANDARD TRANSFORMER

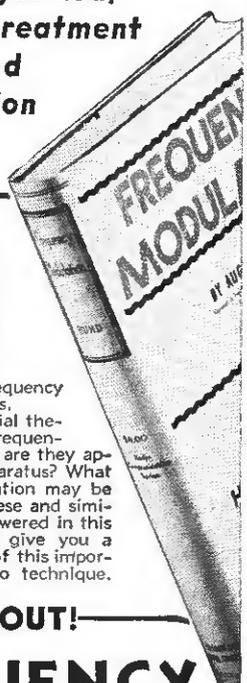
CORPORATION

1500 NORTH HALSTED STREET . . . CHICAGO

Bringing you . . .

FM FUNDAMENTALS AND PRACTICES

in a well-organized, up-to-date treatment for radio and communication engineers



Now August Hund, writer of widely-used radio engineering books, has prepared this thorough, dependable text to aid you in handling the specialized problems of designing and working with frequency modulation apparatus. What are the special theoretical aspects of frequency modulation? How are they applied in existing apparatus? What short cuts in calculation may be safely employed? These and similar questions are answered in this book, in a way to give you a working knowledge of this important branch of radio technique.

JUST OUT!

FREQUENCY MODULATION

By AUGUST HUND, Consulting Engineer
375 pages, 6 x 9, 113 illustrations, \$4.00

Radio Communication Series

Here is an engineering treatment of frequency modulation, covering both basic principles and the design of commercial apparatus. The phenomena and features of frequency and phase modulation are described in a thorough approach that included comparison with customary amplitude modulation, following which applications in FM transmitters, receivers, auxiliary apparatus, and antennas are fully discussed. The use of tables and curves to simplify design is emphasized.

THIS NEW BOOK

- demonstrates in numerical and gradual steps how mathematical formulas may be applied readily to engineering solutions by the use of tables or curves.
- gives many explanations directly in the illustrations, so that figures can often be used without consulting the text.
- gives information to help in employing special design formulas in connection with band width characteristics of networks.
- gives methods of testing, useful both in designing and maintaining FM receivers.

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WAR SLASHES AT MERCHANDISING 'FRILLS'

(Continued from page 17)

- B. Adjust store hours to war labor conditions.
- IV. Cooperate with supplier so he may reduce expenses
- A. Do not ask for unnecessary return privileges.
- B. Group your purchases so that you buy in quantities that are economical to deliver.
- C. Adjust your buying so that a minimum of transportation is required.
- D. Avoid spreading your purchases over an unnecessarily large number of suppliers.
- V. Review and reduce these operating expenses
- A. Store personnel. Minimize full-time replacement of war-lost employees by consolidating and rescheduling work wherever possible. Reduce the need for part time employees by adopting a promotional policy that will reduce weekend sales peaks. Encourage cost-saving suggestions from employees.
- B. Occupancy expense. Do no unnecessary remodeling, repairing, or elaborate maintenance work. Avoid overuse of lighting and unnecessarily long store hours.
- C. Wrapping expense. Train employees in proper use of bags, boxes, paper, and string. Wrap goods only when necessary.
- D. Returned goods and delivery. Adopt an internal policy to facilitate the program of reducing returned goods and delivery expense. Use counter signs, advertising, and personnel training to reduce returns and delivery expense.
- E. Display. Use fewer and less elaborate properties, reuse display materials, and change window and interior displays less frequently.
- F. Salvage. Set up a definite plan for saving all materials than can be reused or sold. Give special attention to the wrappings on incoming goods.
- G. Frequent buying trips. If purchasing is through market trips, reduce frequency to the minimum necessary to assure proper supply of merchandise.
- VI. Analyze your operating procedures in light of suggestions your trade association, trade publication and Department of Commerce studies.



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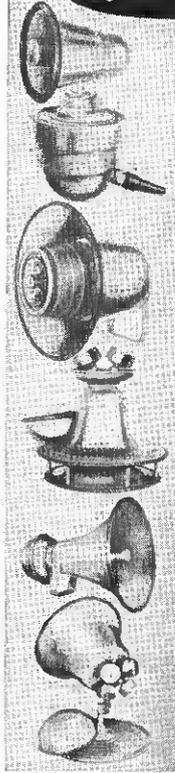
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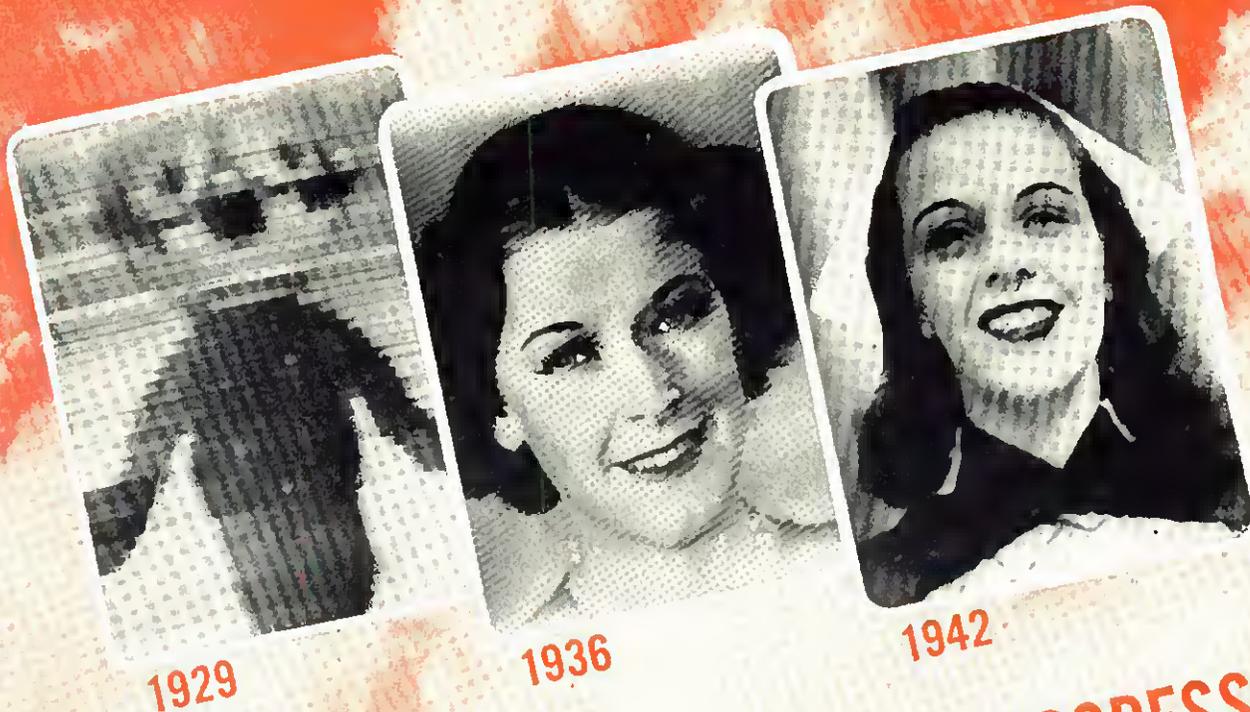
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1929

1936

1942

Unretouched pictures
photographed directly
from RCA television
receiver screens.

FROM TELEVISION'S ALBUM OF PROGRESS

Felix the Cat had a bewildered look on his face in 1929 when he swung around for hours on a phonograph turntable in front of television's early scanning disks. Felix's image was slashed into 60 horizontal lines—60 streaks of light and shade. Engineers of RCA watched the antics of Felix as he was tossed through space to receiving screens. They realized that all streaks and flicker must be removed.

Scientists of RCA Laboratories abandoned mechanical scanners and developed an all-electronic system of television, featuring the Iconoscope and Kinescope, electronic "eyes" of the radio camera and the receiving set. Motors and high-speed disks were eliminated both at transmitter and receiver. Electronic television became as quiet and fool-proof in operation as a home radio set.

By 1936, the number of lines per picture had been increased to 343, with marked improvement in quality. But the research men still were not satisfied. They

continued to experiment, and to develop new equipment, for finer pictures of 441 lines. Before Pearl Harbor, 525-line television pictures were on the air from the NBC station atop the Empire State Building.

The streaks had vanished. Television at last had the texture of rotogravure. Now, faces and scenes are photographed directly from television screens without betraying the presence of scanning lines.

Brought to life by electronic tubes, and given wing by radio, television emerged from RCA Laboratories to reveal its practical usefulness. Today, knowledge gained from years of television research is contributing vitally to the war effort.

Recognizing the importance of television as a post-war industry and useful public service,

RCA is continually pioneering in the science of radio sight. Television's album of progress has only begun.



RCA LABORATORIES

A Service of Radio Corporation of America, RCA Building, New York

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Because WESTON made this tiny element tubular . . . with a paper thin wall . . .



. . . you now get a high order of accuracy in UHF measurements

This tiny heater element in the conventional Thermo-couple Ammeter consists of a small piece of solid wire or a thin strip of noble alloy. It was made in this form when WESTON introduced the first practical Thermo Ammeter in 1915 — back in the days when radio frequency currents were derived from spark gaps and arcs — and was designed to be independent of “skin effects” for frequencies in use until quite recently.

But with the further development of vacuum tube oscillators and the discovery of increased efficiency of ultra high frequency currents, it became evident that the heater element in the conventional Thermo Ammeter would show “skin effect” at frequencies not then in commercial use, but values which WESTON could foresee in the near future.

In line with WESTON’S policy, therefore, research was immediately begun to determine the magnitude of these errors and their possible elimination. For this

time-honored policy dictates that even before a broad commercial measurement need arises, a practical and dependable instrument for that need must be ready.

And the instrument for UHF measurements was ready . . . thanks to this progressive, *continuing* policy. The cause of the errors at ultra high frequencies had been proved to be the skin effect in the strip form of heater. The solution was provided by making this heater tubular, and of correct dimensions. The result was a WESTON Thermo-Ammeter which maintains its accuracy at frequencies up to 60 megacycles, and with only slight deviations above.

Thus we have the same repetition which so constantly appears throughout the history of instrument progress . . . a new and improved measurement standard is created, and it bears the same name as the old. Weston Electrical Instrument Corporation, 581 Frelinghuysen Avenue, Newark, New Jersey.



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