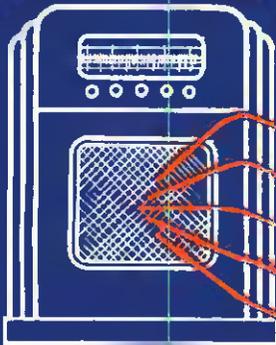


**RADIO
RETAILING**
COMBINED WITH **RADIO
TODAY**
1942

JULY



THE FLAG AND THE RADIO...
LONG MAY THEY WAVE
O'ER THE LAND OF THE FREE AND THE HOME OF THE BRAVE

To Keep in Step— **Look Ahead!**



There is small comfort in bewailing shortages or restrictions on supplies that you want today. All the howls under Heaven will not bring deliveries unless those deliveries are for essential purposes. And the Federal Government—rightly so—must be the judge of what is essential.

- What does that mean to a distributor?
- Well, as we see it, he has two alternatives. Either he can sit by and moan, wring his hands and eventually fold up. Or, he can keep in step—look ahead—and go after the business that *is* essential.
- War brings changes to the radio supply business—and more changes may be expected, just as in every other phase of our economy. Don't kid yourself that, once the war is over, business will resume on the good old basis. It won't. There will be changes—plenty of 'em!
- Keep in step—look ahead! Go after the tremendously expanding industrial electronics market. It offers literally thousands of opportunities for today—yes, and for tomorrow. Those parts and appliances that you have been accustomed to think of for servicing home radios, for use by "hams", have almost limitless applications in industry . . . war industry, peace industry . . . today and tomorrow. Today, they are high-priority products, all right, and you're the men who know most about applying them to the market.
- Leaders among distributors have been hustling for essential business since long before the war began. For four years, Mallory has been urging its customers to seek the industrial market. The war has thrown the spotlight on that market. If you've been worried, smother that worry in hard plugging for the business you deserve. Go after it—in the industries near you. You won't need to worry about keeping yourself in business!

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

P. R. MALLORY & CO. Inc.
MALLORY

We're sending that **\$500⁰⁰**
to the ☆ **U S O** ☆



A Report from Ross D. Siragusa, President, Continental Radio & Television Corp.

Several months ago . . . in April, to be exact . . . we offered "\$500.00 for an idea to help **you** stay in business!" Briefly, the story was this . . .

The War Production Board had just issued an order to all manufacturers calling a halt in the production of radios for civilian use on April 22nd. One of our plants, specially built by us for the purpose, was already busy with government orders. Our main plant would be converted to war production just as soon as the Admiral Radios then on the assembly lines had been completed.

There yet remained, however, a third plant making radio cabinets which could be converted to the production of essential civilian needs **provided we had something worth while to make.** Hence our offer of \$500.00 for an idea.

At the time, conversion of this third plant to war production did not seem practical. But the urgent need for more and still more radio equipment and accessories . . . for tanks, planes, ships, and other purposes . . . has made it imperative to draft these facilities for war work as well.

Naturally, we are keenly disappointed in being unable to proceed with our plans at the last minute. But winning the war is far more important . . . and we are happy to do all we can to hasten that final victory to which we all look forward so eagerly.

The response to our request for "ideas" was extremely gratifying. During the past several months suggestions have poured into Admiral headquarters in Chicago in a steady stream. Several were excellent, many exhibited a keen understanding of the problem confronting us, but all, unfortunately, will have to be tabled for the duration.

Needless to say, we are extremely grateful for this sincere and wholehearted cooperation and would like to express our appreciation at this time in some tangible manner. By way of saying thank you, we are sending a check for \$500.00 . . . the sum originally appropriated for an "idea" back in April . . . to the United Service Organizations. We are confident that Admiral's many friends will approve this contribution to such a worthy cause.

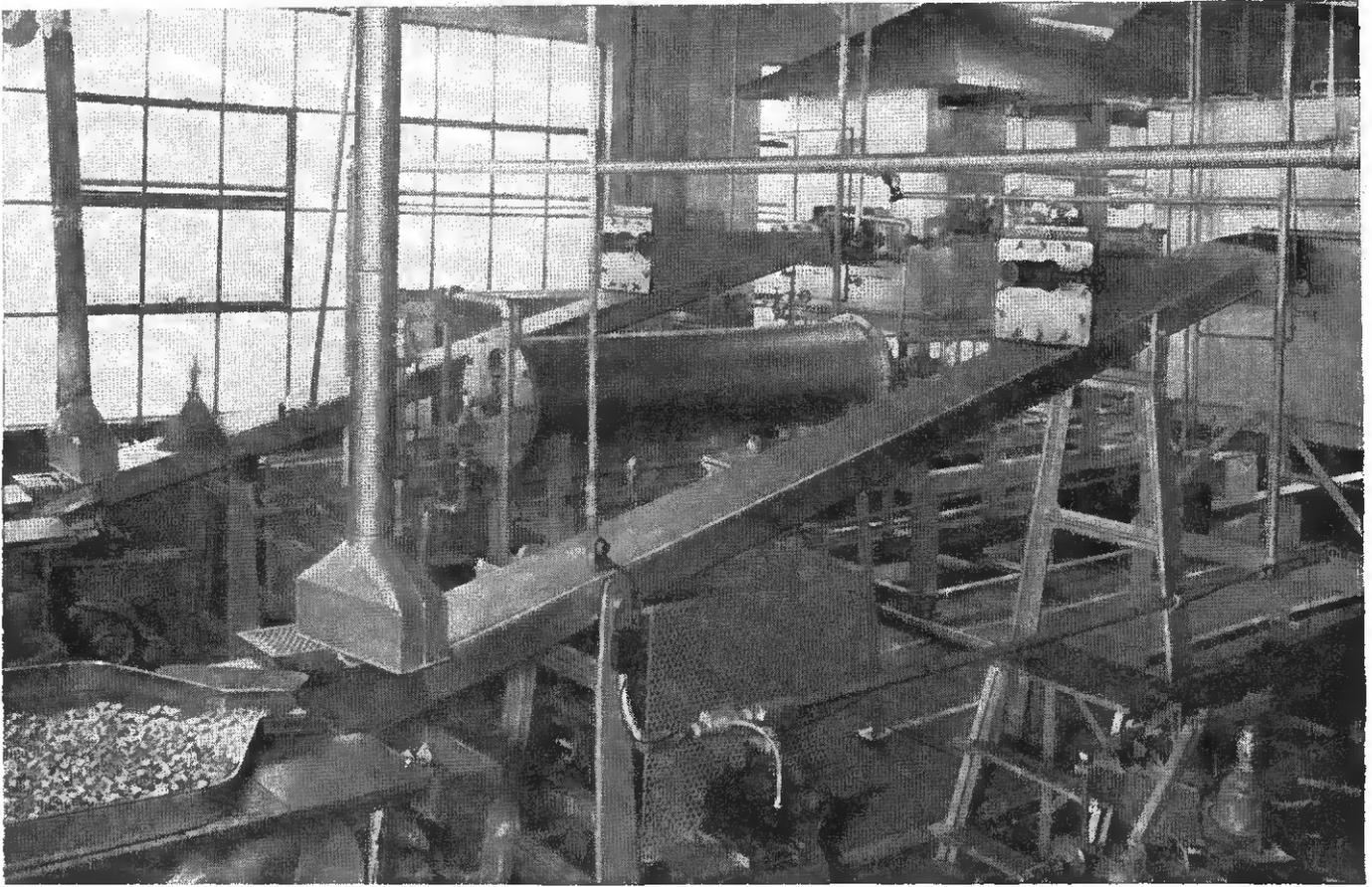
CONTINENTAL RADIO & TELEVISION CORP.
3800 WEST CORTLAND STREET CHICAGO, U. S. A.

Manufacturers of

Admiral

RADIOS AND RADIO PHONOGRAPHS

"AMERICA'S SMART SET"



We give 'em hell for 20 minutes!

HERE you see a tray of metal parts used in Sylvania radio tubes. To insure perfect tube performance, these parts must be spotless, purged of impurities—clean as the franchise under which the tubes are sold.

But no soap-scouring will do the job! We put the metals on a conveyor belt and run them right into the hydrogen furnace at the right of the picture.

Then—the heat is on! For twenty minutes we roast them in a hell of 1800 degrees—twenty times hotter than a scorching July day. Only after this trial by fire are these materials good enough to serve in Sylvania tubes.

It may seem like a torturing process, but it's amply justified by results. You see, it is typical of the Sylvania method of producing radio tubes as sound and dependable as long experience and intensive application can make them.

And because our one job in radio is tube-making, we can devote *all* our attention to this one inflexible purpose.

Small wonder then, that today, when radio tubes are the backbone of the industry, the Sylvania product is of unchallengeable quality!



HYGRADE SYLVANIA CORPORATION

New York City

EMPORIUM, PA.

Salem, Mass.

Also makers of HYGRADE Incandescent Lamps, Fluorescent Lamps and Fixtures



MR. HITLER, TAKE A LOOK AT THIS!

Take a good look.

Know any of the people around the table? No, you probably don't.

This little group of ten, Mr. Hitler, are symbolic of the larger group of 130,000,000 who are going to lick the stuffing out of you.

They represent labor *and* management at RCA Victor—they represent *American unity*. In action! They are RCA Victor's "WAR PRODUCTION DRIVE COMMITTEE TO BEAT THE PROMISE." They are stimulating RCA Victor men and women to even greater efforts in the battle of production. They're busy sponsoring the sale of War

Bonds to RCA Victor men and women.

Yes, Herr Hitler, these people are hard at work defeating you . . . in the good old American way.

For we're fighting for all the things we believe in—the things you have threatened. We're fighting for a return to our peaceful way of life . . . the day when we can again make, and our dealers can again sell, RCA Victor radios and phonograph-radios in a world at peace.

Too bad *you* won't be around then, Adolf. But we're afraid your ideas and ours don't mix.

So take a good look now—and see what you're up against!

BUY
U.S. WAR
BONDS

RCA VICTOR

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

EYES

RIGHT



AND EARS RIGHT WITH METAL TUBES

Alert performance is a prime characteristic of metal radio tubes. That's one of the reasons why there are over 80,000,000 metal tubes in use, and why the army and navy call for metal tubes. That's why, when the war is over, we will again make and recommend metal tubes for civilian use.

Our entire production of metal tubes is being used in the war effort. Please bear with us in supplying glass types for the duration.

Handle Ken-Rad Radio Tubes and Be Sure of Satisfied Customers.



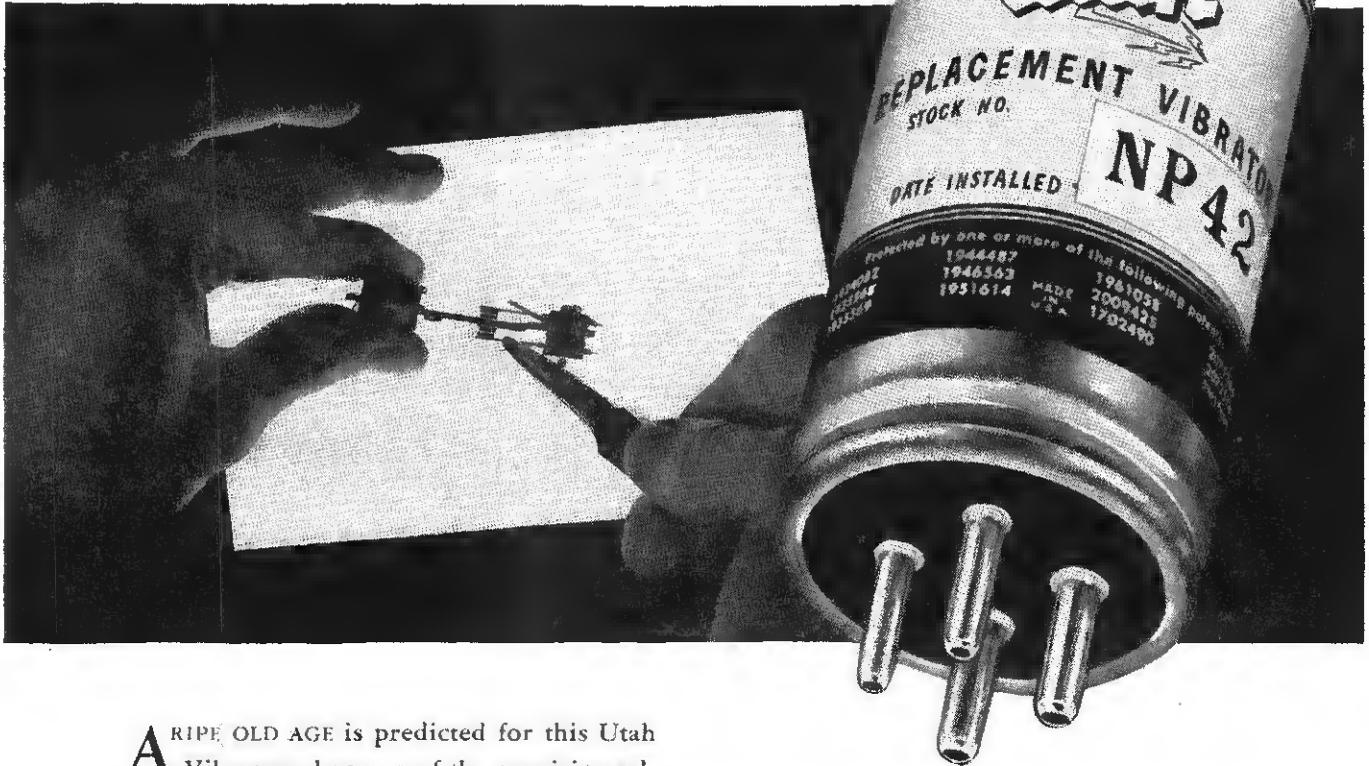
KEN-RAD

Metal Radio Tubes



KEN-RAD TUBE & LAMP CORPORATION, Owensboro, Kentucky

PRECAUTION AGAINST AN UNTIMELY END



A RIPE OLD AGE is predicted for this Utah Vibrator—because of the precision adjustment of the contact points. This delicate operation, performed by the hands of skilled and experienced technicians, is responsible not only for the long life of Utah Vibrators, but for their correct electrical balance, current output, and freedom from noise.

Utah contact points are adjusted to a specified clearance, with a variation of less than .0005 inches; the causes of failures so frequently found in ordinary vibrators are eliminated. This precaution avoids pitted or locked points, unsatisfactory performance and short life. Utah Vibrators are manufactured from only high quality materials, conforming to rigid standards. For example, the points are

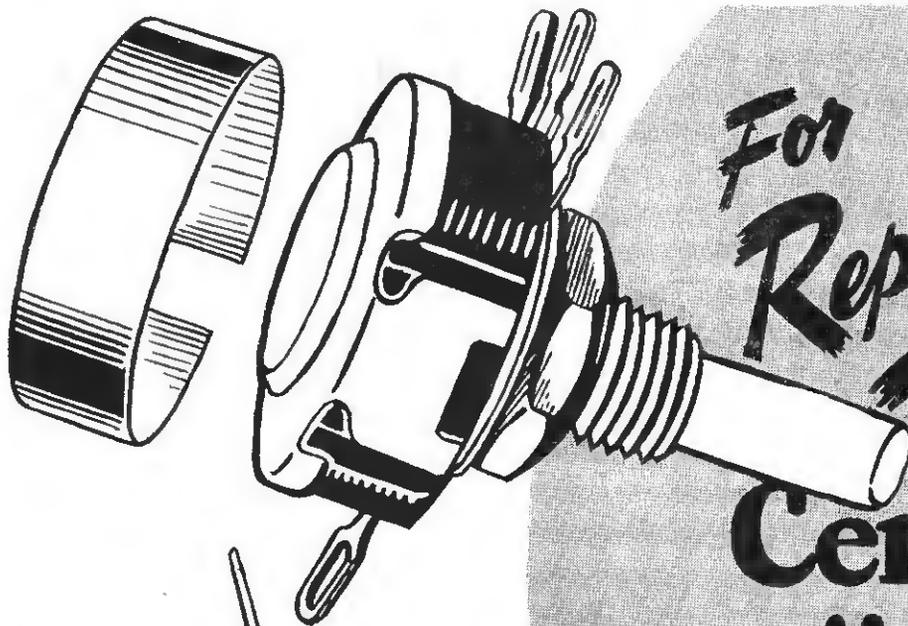
made of the best grade Tungsten, assuring the stamina to endure the most severe punishment.

It is now more important than ever that communication functions at maximum efficiency—this is your responsibility and your contribution to the defense of the nation. Now—as always—the Utah trademark is your assurance of satisfactory performance. Utah Radio Products Company, 810 Orleans Street, Chicago, Illinois. Cable Address: UTARADIO, Chicago. In the Argentine: UCOA Radio Products Company, S. R. L., Buenos Aires. In Canada: 560 King Street, W., Toronto.



V I B R A T O R S

SPEAKERS • TRANSFORMERS • UTAH-CARTER PARTS



*For
Replacements*

Centralab MIDGET RADIOHM

• These are the days when the service man is king . . . and when the SERVICE DEPARTMENT is fast becoming the most important part of your organization. Keep up your good name and reputation by using CENTRALAB parts wherever possible . . . The MIDGET Radiohm, small in size, fits well in crowded chassis as solder lugs do not project far beyond the control radius of $17/32$ ". Available single, dual or triple, plain or tapped, with or without switch.

CENTRALAB, A Division of Globe-Union Inc., Milwaukee, Wis.



"The large control efficiency is due to the long straight path of the famous wall type resistor. You get certain, smooth, flawless attenuation. ALWAYS SPECIFY CENTRALAB"

OLD MAN CENTRALAB

SONORA CLEAR AS A BELL *Presents*
A LINE OF NEW PRODUCTS AND A PLAN THAT
KEEPS YOU SELLING!

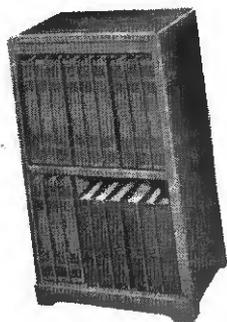
Presenting **Sonora RECORDS**
MAGNIFICENT ALBUMS OF
THE WORLD'S BEST-LOVED MUSIC

TO OUR JOBBERS: We offer you a new and logical plan that puts you into the Record business with a minimum of effort and investment on your part. We've created a beautiful and exclusive line of SONORA "Clear as a Bell" Records in Albums. These SONORA Record Albums are all Best Seller titles—selected from the world's best-loved music—flawlessly recorded and beautifully packaged for easy, over-the-counter selling. They'll help keep you in business today—they'll help build a bigger business for you tomorrow. And the new SONORA Recording Discs and Album Cabinets will prove to be profitable extra sources of business. Get the important facts of the SONORA Jobber Record Plan that helps you solve today's merchandising problem in a logical, profitable way!



WATCH FOR
SONORA'S
ALBUM-OF-THE-MONTH
RELEASES!

Presenting **SUPPLEMENTARY PRODUCTS YOU CAN SELL NOW!**



SONORA RECORD ALBUM CABINETS

There's a big demand for these superbly designed SONORA Record Album Cabinets. Popularly priced, styled in the SONORA quality tradition, and executed of choice woods in flawless mahogany or walnut finishes, these one-shelf and two-shelf cabinets are designed to appeal to a wide market. You'll find extra sales in this fine SONORA merchandise.

More SONORA products are coming . . . to help you sell now . . . to keep you selling. Write for full information covering the SONORA Record Deal and SONORA supplementary products . . .

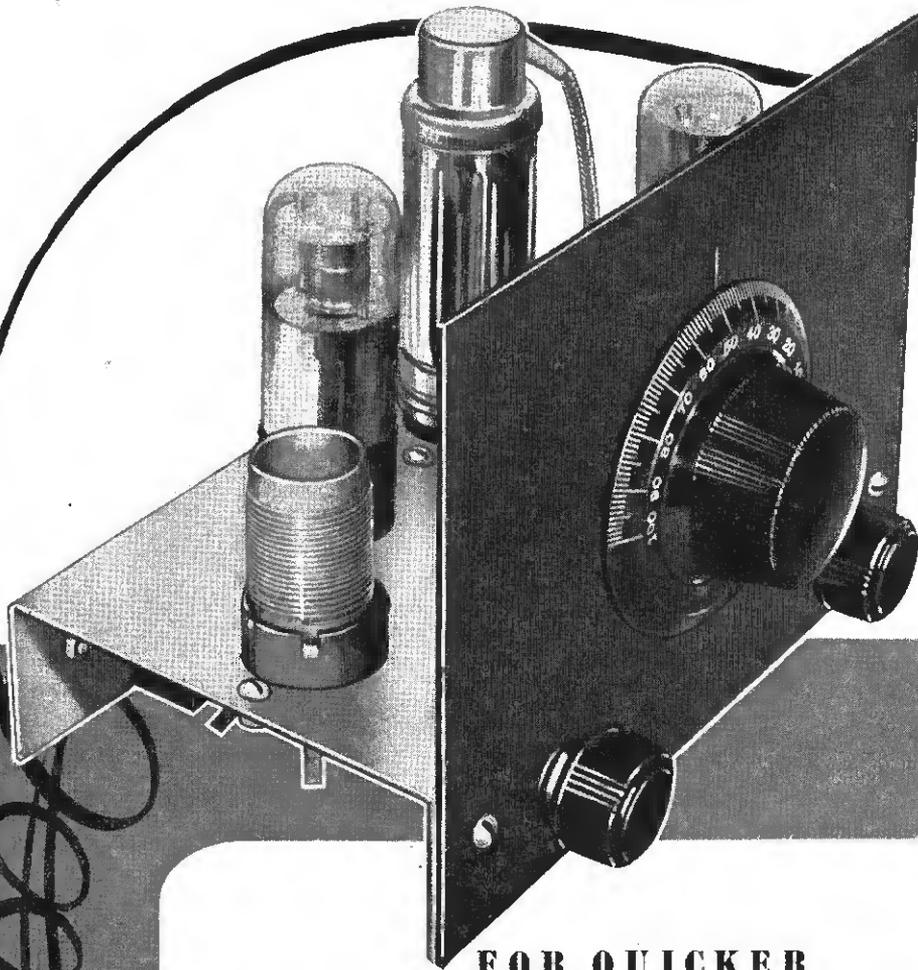


SONORA HOME RECORDING DISCS

Here's SONORA's own low-cost line of quality Home Recording Discs, famous for "Clear as a Bell" recording quality. For use with all types of recorders. Excellent frequency response; low surface noise; clear tone. Bond base type; with thick coating for clean cutting; non-inflammable; Underwriters' Approved. Coated both sides. Available in 6½", 8" and 10" sizes; packed six in attractive heavy envelope. SONORA Recording Discs offer you a real merchandising opportunity.

Sonora CLEAR AS A BELL

RADIO AND TELEVISION CORP.
325 NORTH HOYNE AVENUE
CHICAGO



FOR QUICKER
Radio Defense Training
USE MEISSNER KITS

One, two and three tube Student "Midget" kits will solve the problem of quicker radio training. They are especially designed for classroom use. The "add-on" feature permits the conversion of the one tube to a two tube and the two tube to a three tube receiver. Meissner Student "Midget" Kits are being widely used in schools for defense radio training.

EASY TO BUILD! . . . with the Meissner Pictorial Wiring Diagram furnished with each kit, construction is simplified so that even a beginner can quickly and easily assemble the kits.

The one, two and three tube kits are available for battery operation. The two and three tube can be obtained for AC-DC operation.

Write for complete catalog. Address Dept. RT-7.

Meissner

MT. CARMEL, ILLINOIS

"PRECISION BUILT PRODUCTS"

*-when the Marines
have landed...*

RAYTHEONS
are there!



The Marines have landed! . . . that means the situation is well in hand and RAYTHEONS are on the job . . . it's a hard job, too, tubes take terrific punishment in tanks . . . pounding over uneven ground and the vibration from firing make a real test of tube stability . . . yet RAYTHEONS are constantly on the job . . . and turning in a creditable performance record.

NOTICE! If you have not obtained RAYTHEON'S Interchangeable Tube Chart it is important to get one of those cards at once from your RAYTHEON jobber. Speeds up radio repair service and simplifies your tube stock by elimination of a large number of types.

These same RAYTHEON tubes have always turned in a record performance in home receivers . . . ask your RAYTHEON Distributor.

Raytheon Production Corporation, Newton, Mass.; Los Angeles, New York, Chicago, Atlanta.

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

When you've sold your last radio...then what?

- ★ One answer is adding new lines... games for these stay-at-home days... home furnishings... novelties.
- ★ But you're a radio man... you want to be in the radio business when the war is won... so your big job now is radio servicing.
- ★ First, there's a real drain on radio service men... with more and more being called into war production. Result: an increasing volume of service business to the fellows who are left!
- ★ Then again with no new radios being made, and with old sets getting older... there'll be an increasing need for servicing!
- ★ Radio owners are more aware of this need than ever... because they realize their radios will have to see them through the wartime period!
- ★ So it all adds up to an ever-increasing volume of sales for tubes, parts and service!
- ★ And that's where the Stromberg-Carlson wartime radio service plan steps in and really helps!
- ★ It gives Stromberg-Carlson service stations these important working tools at no charge whatever.
- ★ **IDENTIFICATION**... An attractive card and window decalcomania that will lend your service department the prestige of the Stromberg-Carlson name!
- ★ **A WORKING PLAN** for service operation today... contained in the new wartime service policy booklet!
- ★ **A MONTHLY SERVICE BULLETIN** mailed to all members of your service personnel... full of facts... up-to-the-minute service news... constructive suggestions and new ideas for promoting service on a profitable basis!
- ★ Take advantage of this new plan today! Remember... if you do a good service job now, you're banking customer confidence and friendship for the future. You're assuring yourself of greater sales when the war is won!

Tie-in with the **STROMBERG-CARLSON**
wartime service plan today



RADIO RETAILING

COMBINED WITH

RADIO TODAY

O. H. CALDWELL, EDITOR. M. CLEMENTS, PUBLISHER
480 LEXINGTON AVE., NEW YORK, N. Y.

The Expanding "Electronic Industries"

Radio men are noticing an unfamiliar word used more and more frequently in trade channels.

That word is "electronic" and it refers to the whole gamut and family of uses of radio tubes and radio parts, particularly outside of space radio.

For radio is only *one* of the *many* electronic arts and industries, based on the extraordinary powers of electron action in vacuum tubes. These same electronic phenomena are now employed for control and counting in industry, in therapeutics, in transportation, in the sciences, and in delicate research. Most of the modern wizardry of war and peace depends upon some electronic principle!

New Opportunities for Radio Men

It is logical that the radio man turn to electronic applications, other than radio receivers, as these new electronic uses make themselves in evidence, in his home-town factories, stores, traffic-signals, telephone exchange, doctors' offices, and workshops.

To serve this new expansion in the field of our readers, the publishers of RADIO RETAILING-TODAY plan to devote increasing space in our monthly issues, to electronic subjects, pointing out new uses of electron tubes and devices, and showing how these will become of wider importance in days ahead.

Over Four Million Sets in '42

This office gets a good many inquiries asking how many radios will be produced in 1942, with the WPB order shutting down manufacture as of April 22 or later. Of course it is difficult to estimate 1942 production in view of the different stages of conversion from civilian to war output, in which factories find themselves.

The best guess we are able to arrive at, figures a total of four and one-third million radios manufactured to date during 1942. These include 3,500,000 home radios, 350,000 auto radios, and 500,000 sets exported.

May Trim Down Broadcasting

At the IRE convention in Cleveland, the Canadian engineers present proposed that hours of broadcast operation be curtailed, and also that power of stations be reduced. Power output could be clipped without seriously affecting most listeners, and a good many broadcast transmitting tubes could be reclaimed and put back into service, utilizing tubes which had been previously retired. Cuts in both power and time-on-the-air are savings which U. S. broadcasters may soon face.

Broadcasting Magic

Neville Miller of NAB cites several remarkable results of broadcasts applied to the war effort.

One station offered a \$25 bond to the child collecting most metal scrap. Result, *enough steel collected to build 57 tanks!*

A fleet of Navy planes was caught in a night fog and had to use an emergency field; local radio station was contacted and requested citizens to rush their cars to field, outlining it with headlights. *In 30 minutes, all planes landed safely.*

Explosion in an ordnance plant, jammed telephone lines as families of employes called up. Station offered to make full report of injuries requesting listeners not to use phones. In a few minutes *phone service was normal*, with lines cleared for doctors and emergency crews.

Radar vs. Television Standards

During his excellent statement on "Radio in War" before the Cleveland IRE convention, abstracted on a following page, President Paul V. Galvin of RMA quoted this timely message from his predecessor in RMA, James S. Knowlson, now director of industry operations for the War Production Board:

"The radio industry has a tremendous job ahead—and probably a good deal of grief, because the art changes so rapidly it is hard to keep up with the requirements. Certainly, if necessity is the mother of invention, we are going to see a lot of new things in the radio and radar developments. And I imagine that when we go back to television, we are going to find that most of the standards that have been made, are obsolete. In the meantime, war production is the big thing, and it looks like quite a job."



"If you don't like your kids' jitterbug records, this model has a gadget that fixes that!"—Bill Holman in Chicago Tribune.

SELLING TO

"STAY-AT-HOMES"

THIS SUMMER

• People are going to be "around home" this summer—a lot more than ever before! Shortages in tires, gasoline, railroad transportation and even bus operation, are changing the vacation plans of thousands.

"There's no place BUT home, this summer" is the hot-weather maxim of one big broadcasting station. And radio dealers and servicemen should take a lesson from this timely theme, to apply to their own local businesses.

For radio, phonographs and records, will have to be depended on as chief sources of home entertainment during the current vacation season. Even the movie theaters are feeling the restrictions which car owners put on themselves as they clamp down on all unnecessary use of tires and gas.

Waiting to Buy!

Meanwhile in industrial communities, workers are earning more money than ever before. And surveys of buying desires have shown that *first*

"AT HOME"—All Summer

Radios, phonographs and records, become the chief sources of home entertainment this summer, as tire, gas and transportation shortages cut down vacation travel, trips to beaches and golf links, and even movie-going.

And in industrial communities, war-workers have more money than ever to spend on

Combinations
Portables
Auto-radios
Phonographs
Recorders
Dance records
Operatic records
Service and repairs

among the things these newly-prosperous workers want most, are radios, phonographs and records.

So it all adds up to immediate and enlarged merchandising opportunities for the radio dealer and serviceman. People want new sets. They want consoles. They want battery portables. They want phonograph units or attachments. They want records. And they want their existing sets put into first-class operating condition.

Finding Personnel

So many from the radio ranks—salesmen, service men, stock-men, delivery men—have joined our armed military services, or taken more lucrative jobs in the battle of production, that a major problem of the dealer planning summer sales now appears to be *personnel*.

This is not a problem peculiar to radio—but is rather common to *all* civilian business.

Trained personnel is scarce in any line today. But *training* is the answer.

Men and women, too, can be, and are being, trained for jobs which are important, vital, and which they knew little or nothing about, only a few months or weeks ago.

The Army, the Navy, manufacturers of all kinds, retailers, all are successfully training people to do new jobs, and do them well.

Must Train New People

Radio men must train new personnel and there's no better time than now, to start the good work.

For salespeople, young women and middle-aged women—part time—can be trained quickly to do a surprisingly good job.

Young women, recent high-school graduates, are excellent salespeople for phonograph records, sheet music, and related lines.

Even high-school students, full time during the summer, and part time during the school term, are excellent additions to a live store's sales staff.

Should Know Popular Music

These youngsters should be selected for their alertness and their fondness for music.

They must be clean cut and alive, and know the popular songs, favorite artists and band leaders.

They must be naturally courteous, happy enough to smile easily, and earnest.

Such people can easily be taught enough of the rudiments of salesmanship, to start producing almost immediately.

And most of them will bring a following of their youngster friends to your store, too.

Married women, on a part-time basis, make good salespeople for serious music, for the more expensive radios, and for radio service.

They should be chosen, too, for their personality, natural courtesy and general alertness.

"Service" Recruits

The Service Department presents a little harder problem than does the selling division.

Here the most likely candidates are the men—now past 45—who took up radio as a hobby when broadcasting

"BACKYARD VACATIONS" ARE IN STYLE.—WITH RADIOS

first began, some 20 years ago.

They are not expert servicemen—but they know enough to be easily taught—and soon become able to handle the majority of service calls.

Part Time Employes

True, the “intermittents” and “faders” will stick them for a long time—as they do plenty of those who have long called themselves “radio experts.”

Some of these men can be hired on a full-time basis—many more on a part time arrangement.

In selecting them, you must be reconciled to letting down your standards of “experience” and “technical knowledge” quite a way—substituting earnestness, adaptability, and judgment for the technical qualifications you formerly insisted upon.

Of course, you will have to train them—or refresh them—but when you’ve done that you will be repaid by having a more solid, and willing and dependable service crew.

Women at Service Bench

Some dealers have been successful in taking women into their Service Departments, too.

In most cities and large towns there are vocational training schools, operated under Federal auspices, where radio training is given men and women in both day and evening classes.

They can teach a lot of radio, theory and practice, in 160 hours.

Enough so your own training of

graduates of such courses need only the finishing touches and so that they are immediately productive.

Granted you’ve never looked very kindly on the idea of female servicemen—but women have made more coils, condensers, tubes, speakers and radio sets than men ever will. If women can *make* them, they can *service* them!

Business Better Than Ever

There is no scarcity of service work. Service sales are high and can be even higher.

If you can maintain your stock of material, there is no reason why Service alone will not support your business and pay a good profit, too.

Servicemen should also make check-up of schools, factories and business offices, examining radio sets and master public address units, to insure that workers or school children could receive imperative war-bulletins if necessary.

Public Institutions

Hospitals should be canvassed, also institutions for the poor and the aged. Theatres and recreation centers must be considered, as many have radio connections. Servicemen should offer their services in rigging up community air-raid alarms by radio and public-address equipment, and should cooperate in working on any radio apparatus intended to pick-up approaching air-fleets. Here’s a chance for servicemen to show their stripes.

When You call at Homes

Servicemen should remember in making each call, that courtesy and dignity are important. Have your equipment neatly arranged (and be neatly dressed yourself). “Don’t waste time in chatter—but don’t try to do a Glenn Cunningham, hurrying through radio inspection,” advises radio old-timer.

If set must be taken to shop, give a receipt—don’t attempt intricate repairs on the customer’s floor. And in that case promise set’s return in 48 hours—and mean it! Avoid commenting on individual sets—your job is to make them work.

Keep Down Expenses

Certainly there’s business, and money, still to be made in radio, if you will throw some of your old ideas and habits out the window—streamline your operations, and put yourself on a wartime basis.

If you keep expense in line—cut out all the fancy do-dads—such as free inspection, free tube tests, free this and free that—and just get down to good business.

In plenty of cases, alert dealers are even making more money than ever before—before taxes.

Perhaps it’s because they are so darned smart. But probably it’s because they are alert, and keep doing their best.



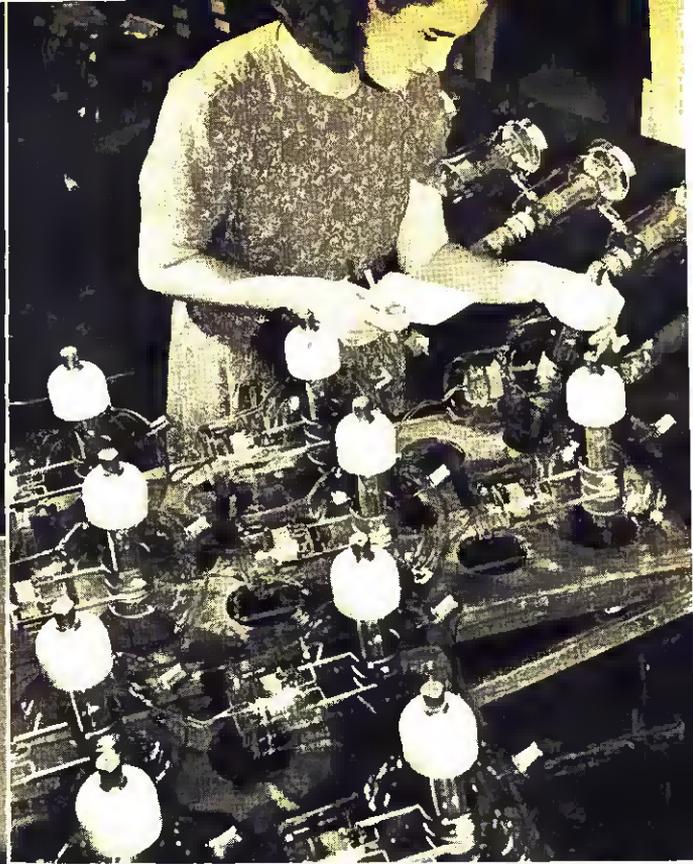
ELECTRONIC INDUSTRIES

Presenting Some of the Electronic Tube's Many Roles in America's War Program

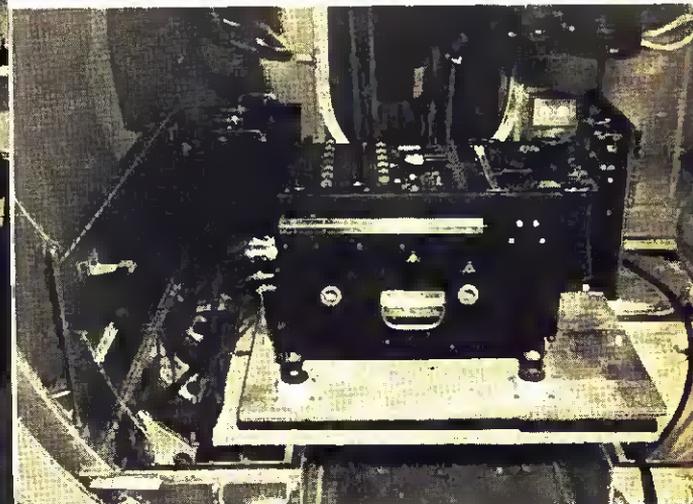


Radio direction-finder, which with electronic depth-indicator, aids navigator of tanker Charleston.

Enlisted men at Ft. Monmouth, study radio and electronic principles, in vast manpower training program.



High-power radio transmitting tubes for U. S. Navy, being checked by Westinghouse girl inspector.



Electronic equipment (G15) which measures strain in airplane wings while undergoing power dive.

Naulette Fabray and Mayor LaGuardia build civilian and enlisted morale with a NCCS mobile electronic recorder.



Electronic Field Opening

New Horizons

• Engineers too often are inclined to view their job narrowly. The engineer too often prefers to resolve his problem within well-defined limits and within a field whose structure is clearly defined. The engineer is too prone to want plenty of time to conclude a project with finality in the prescribed fashion. But that's out, positively, for the duration of this war. Your problems will never be finished.

You will be constantly called upon to explore new horizons in the radio and electronics fields. You will be called upon for better and quicker answers. Courageous enterprise on the part of the engineer will be a major contribution to our winning the war. I would go so far as to say that without courageous enterprise on the part of our engineers, we might lose the war. We must have new and better models of everything—planes, tanks, boats, guns and radio equipment. If we don't, our smart enemy will have better equipment and apparatus, and we will be outclassed.

Design for Production

Radio men are being called upon and will continue to be called upon, throughout this entire war, to strain to the breaking point for the delivery of energy, effort and brains, the like of which they have never done before. You may have thought you were very busy many times in the past, but this war effort calls for a personal and social readjustment and sacrifice of all engineers to a degree where they must give complete devotion tenaciously to their task. The engineers are being relied upon to come up with intelligent answers which the manufacturers can get into production in a hurry, and thus put into the hands of the Army and Navy large quantities of material for greater and more effective striking power.

In the war effort, radio engineers have to be ready and willing at all times to tackle the problem of sub-

stitution of materials when this problem comes up, regardless of how annoying it may be. It is part of the game. One way to keep clear of the "critical material" problem, as best you can, is to *design away from it*. And in your design activity I caution you to watch this critical-material problem very carefully. It will save you, your manufacturer, and the Army and Navy, many headaches. The mechanical engineer and the electrical engineer in this effort, more than ever before, must have a greater spirit of cooperation, one unto the other, in quickly working out design problems. The design engineer should be more conscious of the manufacturing and tooling problems. These can be serious bottle-necks in getting apparatus through the plant in quantities, and on time.

Radar and Electronic Inventions

Today the radio development and design engineer has to be more cognizant of the other fellow's problems than ever before. The effectiveness of our industry war effort depends upon the proper integration of all of our efforts—and these efforts can be

so much more fruitful all along the line, if broad thinking is applied to the development and design of the apparatus when it is still in the hands of the engineer.

Management Ready

Radio men are up against some clever engineers in the radio and electronics field in both Germany and Japan. An examination of the technical literature will show you that. And the Nazis have turned out apparatus which will command your attention and challenge your efforts. I wonder sometimes, if radio engineers thoroughly realize the importance radio is destined to play in the winning of this war. The whole pattern of war tactics and strategy has been altered by the use of radio communication and radio direction-finders. The coordination of land, air and sea forces is accomplished by radio. Protection from the enemy and firing accuracy is accomplished by Radar. It has been said that in the aerial battle for Britain in the Fall of 1940, radio direction-finding apparatus which we, in this country, call Radar, was a prime contributing factor in the R.A.F.'s maintaining superiority in the air over the Nazis, using a much smaller aggregation of flying equipment. Radio engineers are alive, I am sure, to your war-effort responsibilities, but I implore you to do more. *You must do more. We all must do more, if we are to win this war.*

The men of the management group in whose hands the war production effort of the radio industry has been entrusted, are fully conscious of their very serious responsibility in this program. They have stripped their plants for necessary action and are producing apparatus in huge quantities. They realize they will be continuously pressed to do more and better. They are just now feeling the acceleration from their early efforts. They are prepared and will meet the require-

(Continued on page 20)



This page reports the address of Paul V. Galvin, president RMA, before Institute of Radio Engineers, Cleveland, June 30.

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From Original

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An interior view of the big factory shows rows of speakers placed to reach all workmen.

A complete R.C.A. transcription unit has been installed and the transcription turn-table is used for the playing of records during the lunch period, smoking periods and before and after shifts. This is the unit used for the transcriptions of camp interviews.

A direct radio connection to the system allows broadcasting to the entire personnel any special radio addresses or news. Such history-making events as President Roosevelt's address to Congress asking for a declaration of war against Germany are brought directly to the employes. Officials believe that their fellow-workers should hear all the epic pronouncements first hand.

Over-All Contact

The p.a. system gives Dwane Wallace, president of the company, and his brother, Dwight, secretary-treasurer, direct contact with the people who work for them and for the nation. Talks or announcements of company progress and achievement are given by them to the employes who make these things possible.

The largest job handled by the p.a.

system and the one making it the most indispensable is that of paging workers and officials from one department to another or to the telephone. Statistics reveal that an average of more than 250 calls per shift are made with the majority of them paging the party from one department to another. Other paging calls request the employe to telephone some particular person or department.

Multiple Uses Given a Work-Out

The routine uses of a public address system are also popular at Cessna. Announcements of meetings, sports events concerning company teams, lost and found items of importance or value as well as personnel instructions are made by the operator daily.

Cessna regularly plays records from its constantly changing library of an average 150 records. Marches before and after work, popular music during smoke and lunch periods and any special requests of the employes are played direct from the switchboard room.

Many employes bring favorite record-

ings of their own and give them to the company library. Dedications are made for employes on their birthdays, engagements, and weddings. Announcements and dedications are made only during the smoke and lunch periods.

The happy frame of mind in which the employee returns to work following a five-minute or half-hour rest period set to music is sufficient cause for continuing such a system, according to company officials. If the paging of personnel were not as important a time-saver as it is, the way the recordings help the workers would alone be worth while.

Boredom Lifted

In mass production where an employee does one job during the entire working day some method of relaxing the mind of that employee and of producing a happier attitude must be evolved to increase the production speed. So far, music has done a quicker and more efficient job of this than any other suggested plan. Music has proved itself at Cessna to be an effective antidote to industrial boredom and slowdown.

Why We Renamed Ourselves

Electronic Distributors

• The national association of radio-parts distributors has just changed its name. The former NRPDA is now the National Electronic Distributors Association.

George D. Barbey, Reading, Pa., continues as president, and the association's vice-presidents are Randall Bargelt, Portland, Ore., Walter C. Braun, Chicago, Ill., William A. Shuler, New Orleans, La., John Stern, Philadelphia, Pa., with William O. Schoning, Chicago, Ill., as secretary-treasurer. Executive offices are at Reading, Pa., P.O. Box 2.

Convention Approval

Aaron Lippman, of Newark, N. J., well-known radio distributor and "exporter of electronic devices and parts" made the proposal that the NRPDA change its name to National Electronic Distributors Association. This suggestion met with enthusiastic approval at the Chicago convention, reports the association secretary. After a short discussion, the membership referred the question of the new corporate title to a committee, with the recommendation that the new name be adopted. This committee after due consideration approved the new name. The change will be made officially as soon as possible, in conformance with the laws of the state of New York, grantor of the association's original charter.

Trend to Electronic Uses

In a statement to RADIO RETAILING TODAY, Mr. Lippman explained his reasons for proposing the change of name.

"Everywhere we see the trend to the electronic idea," says Mr. Lippman. "Radio men have noticed in recent months that the equipment and parts which they sell are being used not only for space-radio applications, but also for the many other purposes encompassed in the larger field defined as electronics.



Aaron Lippman, the New Jersey distributor who proposed the electronic name for the national association of radio parts jobbers.

"Radio, of course, is only a part of the huge electronic field. So far, it is true, radio has been the largest branch of that field in dollar volume and quantity of goods moved. But as present technical development goes on, new expansions are taking place in the electronic industries of television, facsimile, sound amplification, and sound pictures. And there are the new industrial operations using tubes and photo cells, for production speed-up, process control, anti-sabotage protection, and safety-first applications. The medical and surgical profession employs dozens of new therapeutic devices built about tubes and amplifiers. And, of course, as radio men well know, there are thousands of scientific and laboratory devices permitting the most delicate and amazing measurements and controls,—all based on tubes.

Wider Use for Parts

"With these many, many new electronic devices all employing the same tubes, volume controls, condensers, in-

ductances, resistances, relays, connectors, and fittings, which we distributors have been handling for years, it seemed logical that we measure ourselves up to the future possibilities of these products and give ourselves a name consistent with the far larger field encompassed—not by radio alone—but *by all* the electronic industries.

"There are already probably many thousand applications of tubes and parts, in these diversified electronic arts. In fact so rapidly is the field being expanded by invention under the pressure of war and war production, that even experts in the electronic field, cannot keep apace with the ramifications of the new art.

Bigger Field for Distributors

"But if we distributors set ourselves up as suppliers to this vast new electronic field of the future, we shall have possibilities of sales and expansion far exceeding even the amazing art of radio, with all its past surprises. And in these newer fields of electronics, where the tube is accomplishing new miracles, price competition is less a factor for the time being, so that the distributor has a chance to be more fairly compensated for his merchandise.

"We see an unlimited future for the electronic industries," declares Mr. Lippman, "And we want to see our own businesses and our association grow in importance consistent with this new industrial magic built upon radio tubes and parts. We want to make ourselves the competent and valued suppliers to all the electronic industries,—those *now* here, and those *to come!*"

BUY

UNITED STATES

WAR BONDS and STAMPS!



● At Wilcox-Gay
all hands are busy
forging the weapons
for VICTORY

WHILE EYES ARE FOCUSED
ON THE PROBLEMS OF THE
PEACE THAT WILL FOLLOW

WILCOX-GAY CORPORATION

CHARLOTTE, MICHIGAN • "Producing for war . . . planning for peace"

War Developing New Electronic Ideas—Galvin

(Continued from page 15)

ments and beat schedules. I am fully confident the radio industry will come through for the Army and Navy on every score. It is a big order, I know, when we realize the magnitude of this vast radio and Radar program.

But the radio manufacturers are used to "licking" big problems—they know their problems in this war effort, and they will be solved. To you radio engineers who are "in the groove" and making your grand contribution to this great effort toward our winning the war, "Hat's off to you, and keep up the good work"—and that, I am glad to say, goes for most of you. To you few who are not yet "in the groove," giving your very best and your all in this war effort—I say, "break that old mental bottleneck—dust off the cobwebs and get in there with some good intelligent licks." Your brain-storm may be the "rabbit out of the hat" that will make a most valuable contribution to this effort!

Work hard during the war, fellow

radio men—your fun is coming after the war is over. With all the new materials—new tubes—and new ideas developed during the war you are going to have a picnic shaping them into devices for commercial and civilian application.

There will be no "status quo ante bellum" for the radio engineer!

The Coming "Electronic Age"

In his capacity as a colonel of the United States Signal Corps, David Sarnoff spoke Sunday afternoon, July 5, from Camp Murphy, Florida, as part of "The Army Hour" on NBC. Sarnoff said, in part:

"The present war is stimulating the development of television, ultra-high frequency communications and the whole field of electronics, which are bound to revolutionize the older systems and methods and create new opportunities after the war.

"We have entered a new age in scientific development which the future historians may describe as the electronic age. Just as our fathers and

their fathers lived to see many things electrified, so the young man of today may see many things electronized.

"Practical training in the Signal Corps during this war will equip men to take advantage of these opportunities in a better world that should compensate us for our present sacrifices."

Servicemen Cut Out Set Pickups at Carthage, N. Y.

No more "pick-ups" of radio sets, for the duration! That's the ruling of Carthage, N. Y., radio repairmen and others in the northern part of the Empire State.

All sets must now be left at the shop by customers. Or the serviceman will arrange to have a Western Union messenger pick up the set at the customer's house and bring it to the shop—at the customer's expense, of course!

Gas rationing and the tire shortage have made such a step necessary. In Carthage the local service shops got together and ran a co-operative announcement advising citizens of the "no pick-up" schedule, explaining that the motive was strictly patriotic—to save tires and gasoline. As a matter of fact, servicemen report that by having all sets in the shop and eliminating home diagnosis completely, the serviceman does not have to worry about customer reaction on minor repair jobs. Servicemen can charge a fair price for making simple adjustments without having to add a charge for truck expense and overhead.

Simplifies Collections

When repairs are completed, the serviceman notifies the customer by phone, messenger, or letter that set is repaired—and customer comes after his property. This also eliminates collection headaches, for servicemen work on a C.O.D. basis. "No credit for service work" is the motto for the duration. Sets cannot be taken from shop until service bill is paid; this cuts out bookkeeping headaches. People will somehow find the money to pay for their radio-repair needs—if they realize no credit is available.

Finally no free check-ups on tubes are permitted during wartime. A flat rate of 50c is charged to test a set of tubes. Servicemen in Carthage, Watertown, Messena and nearby New York towns report that these tactics are working out splendidly, and no question has been raised by the public.

Meanwhile volume of sets brought into the shop is on the increase.



H. L. M. CAPRON,
Merchandising Editor

CAP SAYS:—

THINKING AND PLANNING ARE VITAL

- "Unless we do a little thinking, and planning tonight, we're not going to be any better men tomorrow than we were today."
- Thinking, planning, have always been important. Today they're vital. New conditions are arising.
- Material scarce, men here today, gone tomorrow. New government orders day by day. Buying habits changing. Standards of living shifting. Use of automobiles slowly decreasing.
- And they all have a bearing on your business. Some help—some hurt.
- But more than ever before you must think—and plan—constantly, carefully and certainly.
- If you don't lick these changing conditions, the changing conditions will lick you.
- Only thinking, planning, can give you the answer and make you, each day, a little better than you were the day before.

Radio Service Engineers

Hazeltine Service Corporation, one of America's outstanding radio research institutions, needs additional field service engineers of high calibre.

This is an excellent opportunity for first class service engineers, regardless of age, to train for a very vital need in the national emergency, whether in a civilian capacity or as a commissioned officer in the Armed Forces. The positions will require technical knowledge of high frequency radio, and also tact, courage and discipline.

All applicants must be American citizens. Opportunities for work exist not only in the United States but in many locations outside of the boundaries of this country.

Applications will be held confidential but must be in writing, giving complete details concerning experience, qualifications, background of parentage, age, family, present draft board status and physical condition. Personal interviews will be by appointment only.

Address communications to

HAZELTINE SERVICE CORPORATION

**1775 Broadway
New York, N. Y.**

LABORATORIES

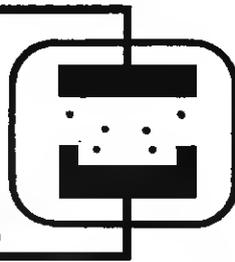
New York

Little Neck, L. I.

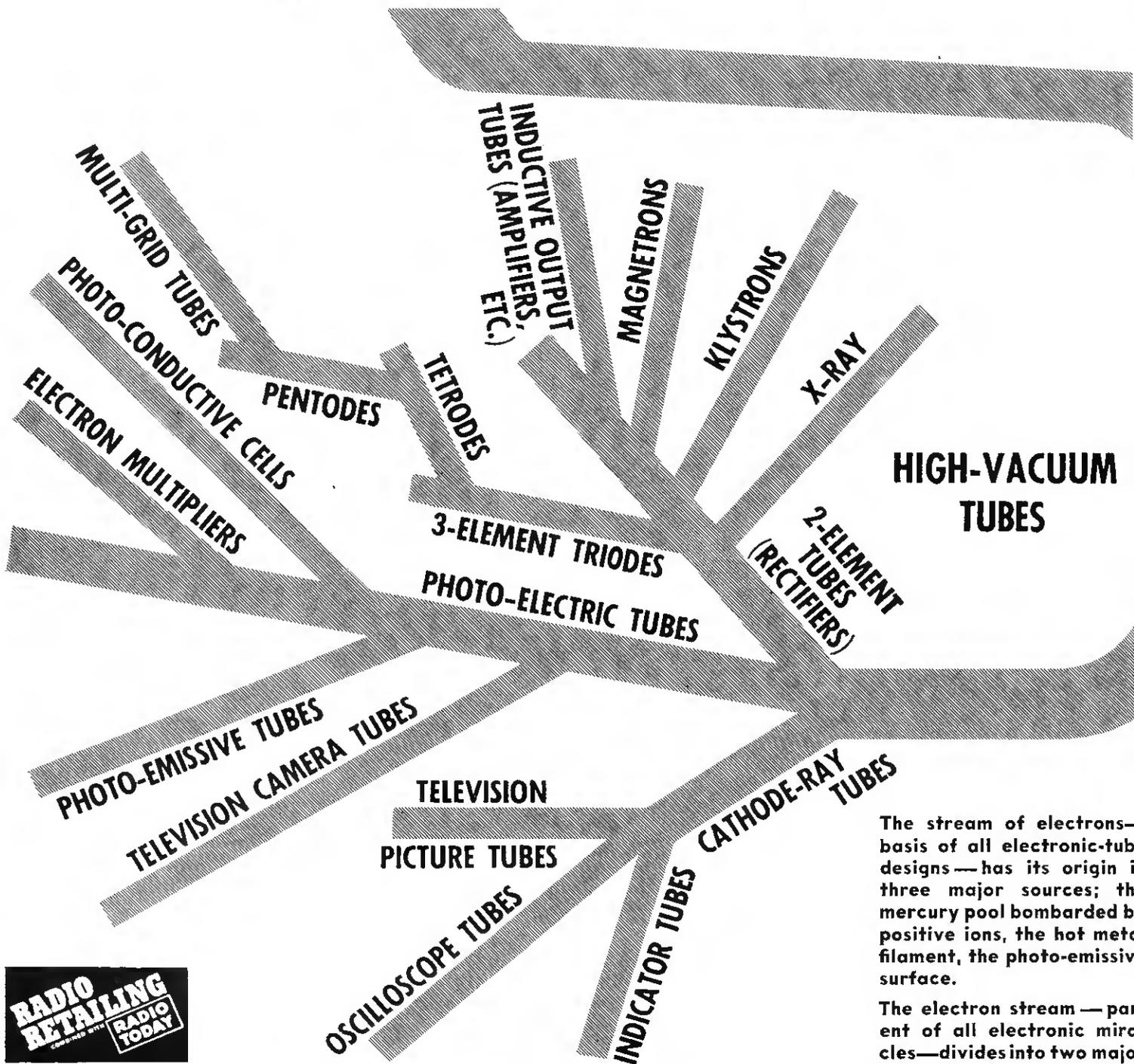
Chicago

RELATIONSHIPS IN THE

ION BOMBARDMENT EMISSION



THERMIONIC



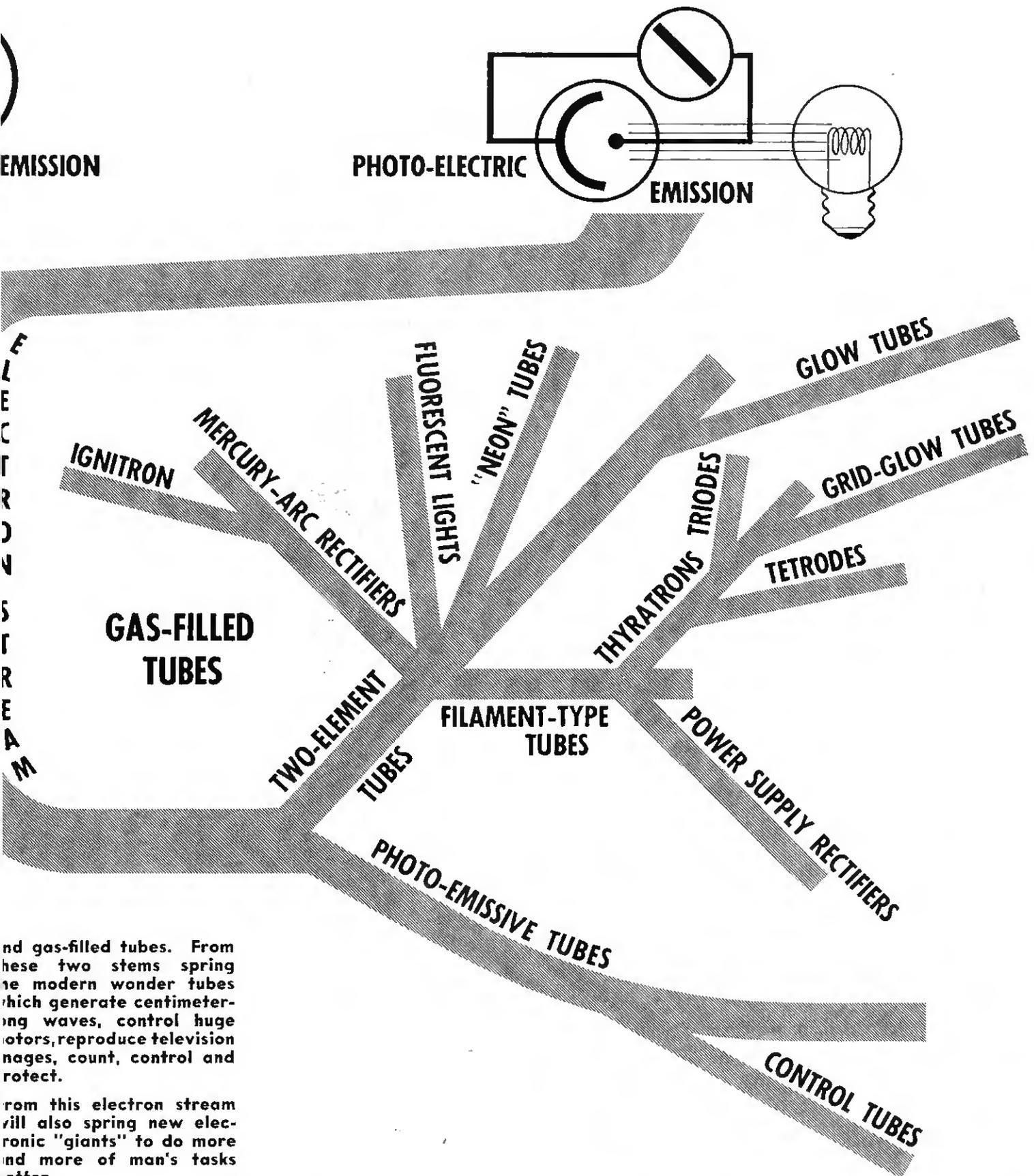
HIGH-VACUUM TUBES

The stream of electrons—basis of all electronic-tube designs—has its origin in three major sources; the mercury pool bombarded by positive ions, the hot metal filament, the photo-emissive surface.

The electron stream—parent of all electronic miracles—divides into two major classes; high vacuum tubes



ELECTRONIC-TUBE FAMILY



and gas-filled tubes. From these two stems spring the modern wonder tubes which generate centimetering waves, control huge motors, reproduce television images, count, control and protect.

From this electron stream will also spring new electronic "giants" to do more and more of man's tasks better.

ELECTRONICS HELPED TO BOMB TOKYO



"JIMMY" DOOLITTLE'S WIRE TO G-E RADIO EMPLOYEES TELLS YOU WHAT HAPPENED. READ IT — IT'S A HONEY!

"Now it can be told officially: Radios you helped to build aided us to bomb Tokyo and half a dozen other Japanese cities. Through those radios we issued commands between planes that sent our bombers on their marks; through those radios we cheered each other on, as our bombs crashed into vital Japanese naval and military installations. Perhaps best of all, through those radios we heard the hysterical Japanese broadcasters, too excited to lie, screaming about the damage we had done. We who made the flight deeply appreciate the assistance given by you who made the radios."

What kind of G-E Radio equipment was it? That's military secret now. But we can say this: it was made possible by G-E Electronic Research. And electronic tubes probably helped to build those very bombers themselves!

GENERAL  ELECTRIC



.....And now see
 what this bright new word
 of the future will do for
 the General Electric Radio
 of Tomorrow!

OUT OF the first world war—and G-E electronic research—came radio as we know it today! And now, in perfecting new radio and television instruments for America's fighting forces, G-E electronic engineers are discovering new secrets which promise to make radio and television receivers of the future as advanced over present-day sets, as modern radio is over the crystal sets of 1920.

Today—and increasingly in the future—electronic tubes, much like the tubes in a radio receiver, will perform hundreds of new jobs. They'll open doors, operate drinking fountains, control welding machines, level elevators, count automobiles—not some place else but right in your city—your neighborhood. The radio service man of today will become the Electronic equipment maintenance man of tomorrow.

THE FASTEST GROWING NEWS PROGRAM ON THE AIR!

"IT'S GENERAL ELECTRIC NEWS TIME"

—with Frazier Hunt

All the important news of the day plus one of his famous "one-minute stories about the science of electronics." Every Tuesday, Thursday and Saturday. Columbia and American FM Networks. See your newspaper for time and station.



FRAZIER HUNT



*There's a G-E Tube for Every Electronic Device.
 Over 550 Tube Types in the G-E Electronic Tube Line.*

**WORLD LEADER IN
 RADIO, TELEVISION AND ELECTRONIC RESEARCH**

Radio Shop Ceilings

• The price ceilings which went into effect on July 1st on "consumer services" including radio repair charges, have been transferred by Price Administrator Leon Henderson from the General Maximum Price Regulation to a separate ceiling "with special provisions to meet the distinct price control problems involved."

The OPA had recognized the special problems involved in setting ceilings for service charges by delaying the effective date to July 1st, while the general price regulation went into effect May 18th. From experiences with the latter regulation, OPA has decided that charges for consumer services need special attention and a new regulation. The new ruling holds closely, however, to the main purpose of OPA—to stabilize the cost of living under wartime conditions at levels reflected in the highest prices charged during March, 1942.

New Features

The chief features of the new regulation are these:

1. The automatic licensing, effective July 1, of all persons covered. This is the same type of licensing as was provided in the General Regulation; that is, no physical evidence of license is issued, but all sellers of the consumer services covered, are nonetheless licensed and subject to OPA action for revocation in the event of violations.

2. A provision permitting sellers of seasonal services—rental of beach equipment at a summer resort, for example—to determine their maximum prices by (a) taking the highest price charged in the corresponding season of 1941 and (b) adding an amount arrived at by multiplying that price by the percentage increase in the cost of living between last season and March 1942. A table showing these percentage increases is part of the regulation.

3. Provision for prompt adjustment upward of the March ceiling prices of any seller of consumer service who can prove he is suffering substantial hardship because his top prices do not reflect cost increases between February 1 and April 27, 1942, and that continuance of his service is threatened.

According to the regulation, the

maximum price that can be charged by each seller of a consumer service shall be the highest price charged by him during March 1942 for the same service or for a similar consumer service most nearly like it.

By "highest price charged," that regulation means two things:

1. The highest price charged for the same or a similar service actually supplied to a purchaser of the same class during that month, and

2. If the seller did not actually supply the same or similar consumer service during March, then his highest offering price for supply of the service during that month.

Discounts Go Along

The second meaning of "highest price charged," that is, the use of an offering price as a maximum, can only be applied if no same or similar service actually was supplied during March and, in addition, any discounts or allowances that applied to the March offering prices must be continued. The offering price, in any event, cannot be a fictitious one used merely to open bargaining or to turn away trade because of a rush of business.

All sellers of services are required

to keep existing records relating to actual prices charged during March 1942 both of completed transactions and offering prices), as well as the pricing methods used.

September Requirement

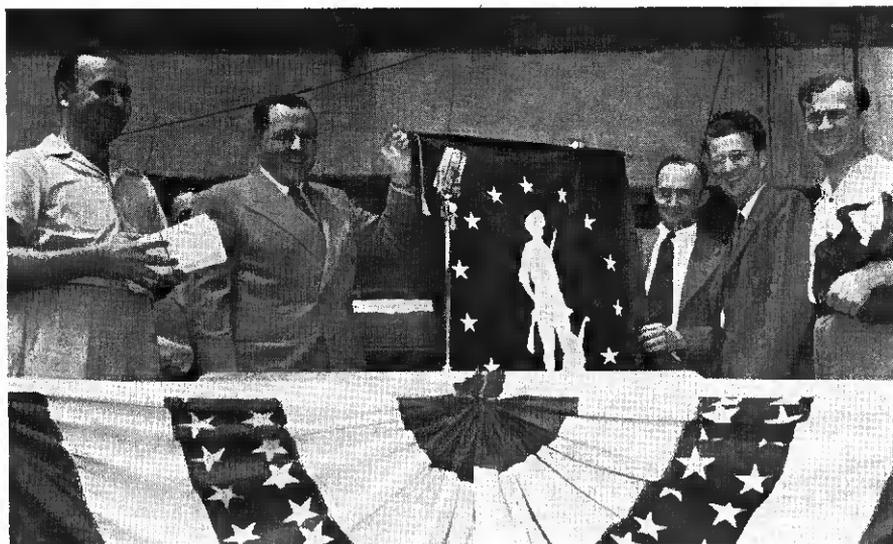
In addition, each seller must prepare on or before Sept. 1, 1942, and keep in his establishment for examination by any person during ordinary business hours, a statement showing the highest prices he charged for consumer services supplied during March 1942 for which prices were regularly used during March 1942 and all the customary allowances, discounts and other price differentials.

A duplicate of this statement must be filed on or before Sept. 10, 1942, with the War Price and Rationing Board having jurisdiction over his area.

The new regulation contains no price posting requirements.

Shortly after this new regulation was issued, its effective date was extended from July 1 to July 20, for sales of consumer services to war procurement agencies such as the War and Navy Departments, the Maritime Commission, the Lend-Lease section of the Treasury Dept., etc.

Radio Workers to Fly the Minute Man Flag



Radio tube makers get a "Minute Man Flag" from U. S. Treasury Dept.—the employees of Tung-Sol Lamp Works, Newark, N. J., were awarded the emblem for their cooperation in the 10 per cent Payroll Savings Plan for War Bonds. The drive at Tung-Sol was run as a contest, made up platoons of employees; winners got individual awards.

Simpson

INSTRUMENTS THAT *Stay* ACCURATE

This is the real
"measure" of Electrical Instruments

Of course accuracy is the basic requirement of any instrument. But for practical, on-the-job performance, accuracy alone means little unless the instrument is staunchly built to *stay* accurate.

How can you know that the instruments you select are the kind that are accurate and will *stay* accurate? The best way is to examine the instrument movement, for here is where both accuracy and stamina take their beginnings.

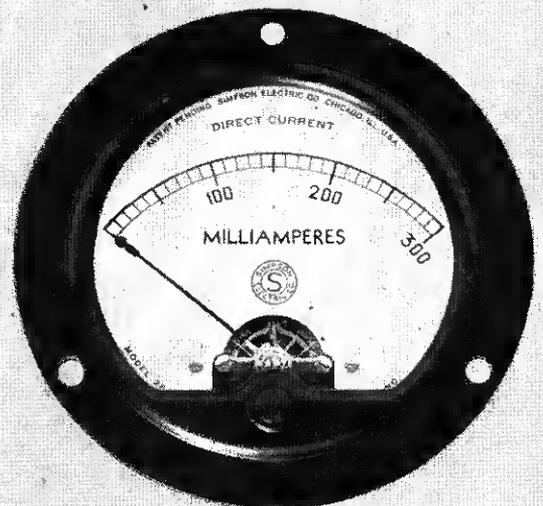
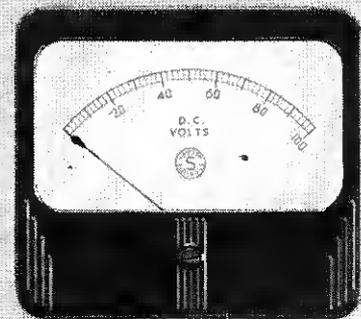
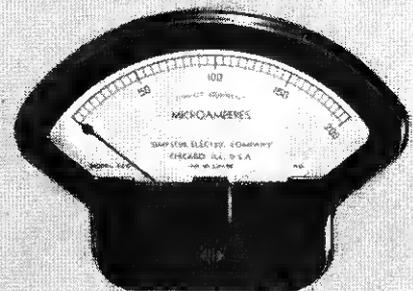
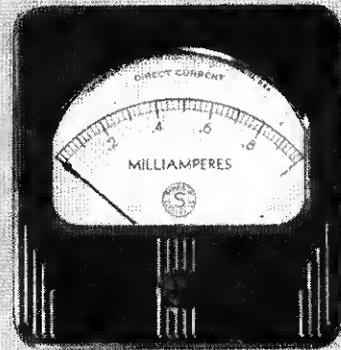
In every Simpson Instrument you will find a movement of the famed full bridge type, with soft iron pole pieces.

Those soft iron pole pieces redistribute magnetic flux more evenly—make the movement inherently more accurate to begin with. And the full bridge construction provides the stamina to maintain that accuracy—holds the moving assembly always in perfect alignment. Every smallest detail reflects this basically-better design; springs are carefully selected, tested, and tempered for permanent resiliency; magnets aged, heat-treated; pivots completely Simpson-made, specially processed for strength and hardness.

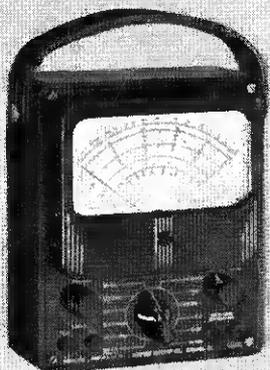
If your requirements are vital enough to give you the right to buy instruments, they are vital enough to rate the best. Measured in terms of lasting accuracy, best means . . . Simpson.

SIMPSON ELECTRIC COMPANY

5208-18 Kinzie St., Chicago, Ill.



Model 260 High Sensitivity Tester



Here is a typical example of Simpson leadership. At 20,000 ohms per volt this tester is far more sensitive than any other instrument in its price range—covers a wide range of unusual conditions which cannot be checked by ordinary servicing instruments. Six voltage ranges—0-2.5, 10, 50, 250, 1000 and 5000 V.—both AC and DC. Current readings from 1 microampere to 500 milliamperes. Resistance readings from 1/2 ohm to 10 megohms. Five decibel ranges, -10 to +52 DB.



Crowds of record fans flock to Kathleen Smith Music Shop, Holyoke, Mass., as Sammy Kaye hands out autographs. Many will be interested in the musical books displayed on shelf at upper right.

**A NEW AID
TO RECORD SELLING**

BOOK BUSINESS

• Prominent among the new lines favored by radio dealers and jobbers are *books*. Volumes on the subject of recorded music and general musical topics are very much in the swim.

For radio men in the record business, this merchandise has many advantages. Musical books fit nicely into the disc department, rounding out the dealer's command of the field, offering a good profit, and remaining on the "available" list while other lines are short.

New emphasis on classical records, which results from the raw-material shortages in record manufacture, will mean that many extra folks will want to "read up" on what the serious music is all about. Books which help people to get started in appreciation of good music will be in demand.

Current Interest

Fact is, if a dealer will stock these books and recommend them to his popular-record customers, he may create new customers for the more expensive discs. Anybody who reads a good discussion of musical values, written for the classical "beginner" is very apt to come back for a sample in wax.

Also, there are many books which help to create a more solid interest in popular music. So far, a record fan buys a new disc because it catches his fancy, but if he is led to understand the type of music represented and the background of it, he may become a collector.

The book business is also helped by

the stay-at-home state of the nation this summer. Minus the gas and the tires with which to chase about, the great American family will likely accept the more quiet activities of the arm-chair and the front porch. Reading will be a popular pastime.

It has been pointed out, too, that aside from the effect that the musical books may have on the customers, they should be very welcome reading to the dealers and the counter-men themselves. Many a record salesman needs more musical facts and background at his command.

Getting Started

Among the record retailers who have given the books a try, it has been found record collectors are good prospects because they often like to build up musical libraries. However, any music lover who is already deep into classical appreciation will welcome books on favorite composers, and any musical research.

There are many musical books for youngsters, too, to be bought by parents who are supplying them with musical training. And music teachers will of course be interested in knowing that the record dealer has a good assortment of musical books. Also, there are many sets of books which are ideal gifts for birthdays, holidays, etc.

Books and records in combination make good window displays. It can be seen that albums and all kinds of record accessories will work in, and make an interesting eye-catcher for

windows or counters. Retailers who are just taking on the volumes should make sure that the new line is properly represented in windows. A splash on a shelf or an island display is not enough for a brand new line.

Announcements on the books will also make appropriate envelope stuffers to go out with record lists. Particularly at a time when a book is for some reason getting special attention in the general press. Another idea is to fix up small shelves in the record booths, to catch the wandering eyes of record fans.

Following is a first list of books appropriate for radio-record stores. These volumes have been selected for their relation to the record business, their variety in subject matter and style, and for their appeal to an average group of customers. Remember, they are for *you* to read, too, and good luck.

THE RECORD BOOK by David Hall, "a music lovers' guide to the world of the phonograph." Complete listings on all types of records, also advice on collecting, technical dope, commentaries. 771 pages. Published by *Smith & Durrell, Inc.*, 25 W. 45th St., New York City. \$3.75. *New supplement*, \$1.

BIOGRAPHICAL DICTIONARY OF MUSICIANS compiled by Rupert Hughes, freshly edited by Deems Taylor. Some 8,500 short biographies of musicians plus help on musical pronunciations. 481 pages. Popularly sold in set of three with **STANDARD CONCERT GUIDE** by G. P. Upton and Felix Borowski, which explains nearly 450 symphonic

compositions, 551 pages, and **STANDARD OPERA GUIDE** by same authors which has full information of 151 operas, 474 pages. All published by *Blue Ribbon Books*, 14 W. 49th St., New York City. \$3 for set of 3.

MUSIC COMES TO AMERICA by David Ewen. Compact report of American musical development with emphasis on what modern figures and organizations have contributed, and what may be needed for future progress. 319 pages. Published by *Thomas Y. Crowell Co.*, 432 Fourth Ave., New York City. \$3.

MUSIC AS A HOBBY by Fred B. Barton, "how to have fun with music as a performer or listener." Such topics as how to organize a neighborhood orchestra, how to best enjoy listening, how to make the best use of radio, etc. 157 pages. Published by *Harper & Bros.*, 49 E. 33rd St., New York City. \$2.

MUSIC ON RECORDS by B. H. Haggin, "a new guide to the recording, the performances, the music of the day." New edition. Record lists with vigorous critical judgments and straightforward commentaries. 247 pages. Published by *Alfred A. Knopf*, 501 Madison Ave., New York City. \$2.

FATHER OF THE BLUES an autobiography of W. C. Handy edited by Arna Bontemps. The famous "blues" composer writes the events of his life in simple and engaging manner. 317 pages. Published by *The Macmillan Co.*, 60 Fifth Ave., New York City. \$3.

SONG WITHOUT WORDS — The Story of Felix Mendelssohn, by John Erskine. A well-paced account of the short and colorful career of the celebrated composer. Recordings of his works listed. 205 pages. Published by *Julian Messner, Inc.*, 8 W. 40th St., New York City. \$2.50.

MODERN COMPOSERS for Boys and Girls by Gladys Burch. Brief and simple biographies of 20 composers, with pictures. 207 pages. Published by *A. S. Barnes & Co.*, 67 W. 44th St., New York City. \$2.

OUR CONTEMPORARY COMPOSERS by John Tasker Howard. Comprehensive handling of the key people, works and trends in 20th century music, by an authority. Includes list of recorded works of contemporary composers. 445 pages. Published by *Thomas Y. Crowell Co.*, 432 Fourth Ave., New York City. \$3.50.

VICTOR BOOK OF THE SYMPHONY by Charles O'Connell. Best orchestral music of some 70 leading composers is listed and discussed with view of helping readers to fullest enjoyment. 530 pages. Published by *RCA Mfg. Co., Inc.*, Camden, N. J., distributed by *Simon & Schuster*, 1230 Sixth Ave., New York City. \$3.50.

JAZZ RECORD BOOK by Charles Edward Smith, with William Russell, Frederic Ramsey and Charles Payne Rogers. Starts with 125 pages of significant jazz history, then lists hot jazz records, beginning with "Chicago Breakdown," giving details on band personnel and leaders, soloists, etc. 515 pages. Published by *Smith & Durrell, Inc.*, 25 W. 45th St., New York City. \$3.50.

APPROACH TO MUSIC by Lawrence Abbott. Bird's-eye view of the whole field, starting with simplest forms and working toward capacity for real appreciation. 358 pages. Published by *Farrar & Rinehart*, 232 Madison Ave., New York City. \$2.50.

AMERICAN JAZZ MUSIC by Wilder Hobson. Reveals jazz origins, languages, types and trends, up to the "plenty hot" era. Winds up with list of 30 records which represent development of jazz, with notes on significance. 230 pages. Published by *W. W. Norton & Co., Inc.*, 70 Fifth Ave., New York City. \$2.75.

SONGS OF THE GEORGIA SEA ISLANDS by Lydia Parrish. Introduction by Olin Downes. Exhaustive work on negro songs, handsomely illustrated and full of music itself. Songs are handled in these groups: African Survivals; Afro-American Shout Songs; Ring-Play, Dance and

(Continued on page 40).

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Servicing Portables

Special problems found in repairing AC/DC battery sets. AVC and filament circuits.

• Portable sets require a special brand of servicing technique due to their unusual circuit arrangements. Series filament circuits, most commonly used in the so called three-way power sets, have special alignment difficulties not observed in parallel filament circuits and in the usual AC/DC set using a common negative or ground lead for all stages. Since the plate current of each tube must return to its own filament circuit in a portable set, some filaments are likely to be overloaded by this additional plate current flowing through them. These and other problems peculiar to the servicing of portables require methods of solution different from ordinary procedure.

Series and Parallel Filaments

The 1.5-volt 50 ma. filaments of conventional portable tubes are supplied in either a parallel or series combination. The parallel arrangement is found in the earlier models and those not designed for AC/DC operation in addition to battery power. The basic 4-tube superhet circuit will require filament power of 1.5 volts at 0.20 amperes. This current requirement is the reason of course why AC/DC sets must connect the tube filaments in series and reduce the current consumption to 0.050 amperes. None of the usual rectifier tubes employed as power units for portables are capable of handling more than about 100 ma. or 0.10 amperes. In addition to the filament current the

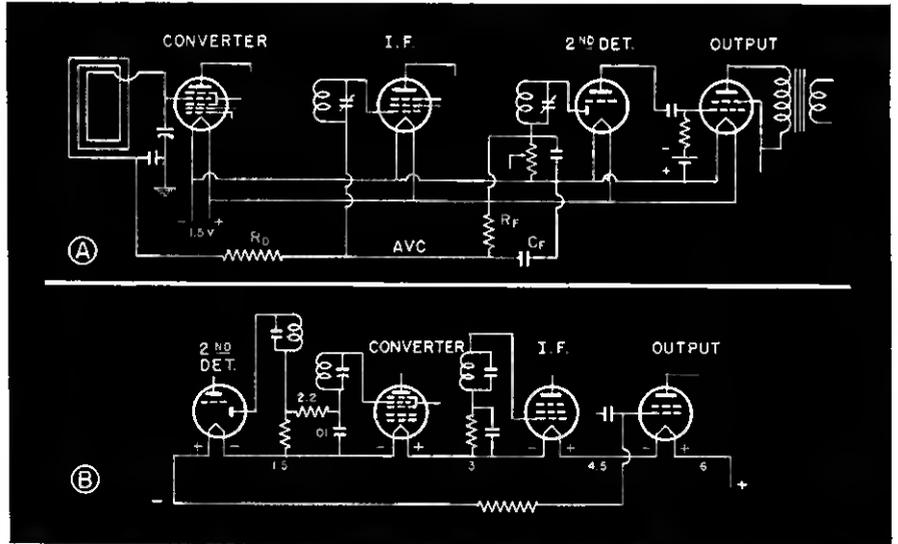


Fig. 1—Typical circuit of portable with parallel filament arrangement (A) showing common type of AVC distribution. Diagram (B) is the typical series filament connection with AVC network.

rectifier and filter system must supply about 15 ma. for the plate circuit of a basic 4-tube set.

In the parallel filament circuit the negative side of the filament of each tube is connected together and the grid returns for each tube are made to this common junction which is also the negative or common ground bus. In this way, the portable with parallel filament connections resembles the more common straight AC and AC/DC circuits with their common ground system.

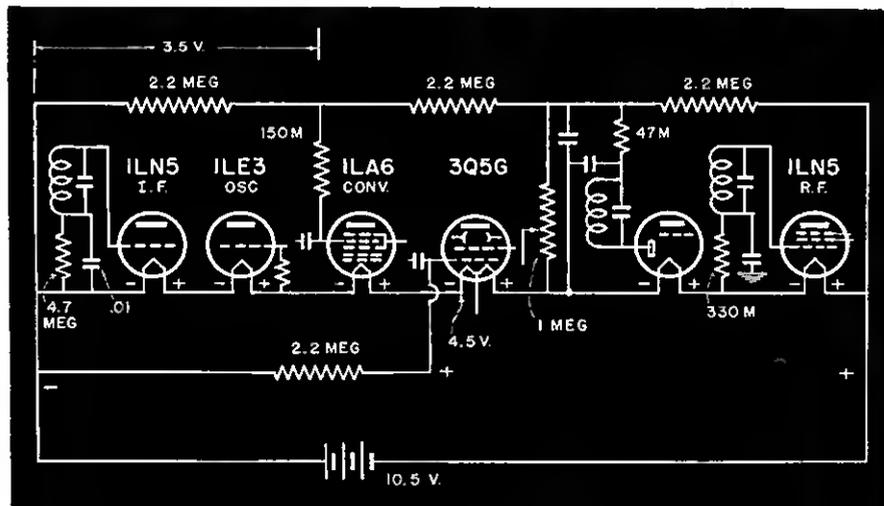
AVC Circuits

Note in Fig. 1A that the AVC voltage distribution system is simple and similar to conventional circuits. In the series filament arrangement shown in Fig. 1B, the second detector is usually put at the ground end of the string in order to reduce to a minimum the possibility of hum when used on AC. The output tube is placed at the positive end of the filament string in order to use the voltage drop from its filament to the negative end of the string as grid bias. The IF and converter tubes are placed between these two tubes with the converter usually being next to the second detector.

Notice that the second detector filament is connected in the string so that the diode plate end is 1.5 volts positive. This is accomplished by connecting the "positive" terminal of the tube (pin No. 2 in the case of 1H5GT) to the negative side of the battery. As the diode plate is nearest the "negative" side of the filament, the tube to receive the AVC control voltage is placed next in the filament string. The purpose of this is to keep the minimum bias conditions correct.

Because the filament of each tube is at a different potential with respect to the negative end of the string, the grid returns of each tube must be made to their respective filaments or to a more negative point if negative bias is desired.

Fig. 2—Filament and AVC circuit of Zenith 7G605 portable uses high resistance voltage dividers to keep correct minimum bias on tubes connected to AVC system.





This restriction means that several tubes cannot be supplied from a common AVC bus. For example, if in Fig. 1B it was desired to use AVC on the IF tube shown as third positive in the filament string, the first thought would be to connect the grid return from the lower end of the IF transformer back to the AVC supply point which is the junction of the 2.2 meg. filter resistor and 0.01 mfd. capacitor. However, if this were done, the IF grid would be connected to a point which is 1.5 volts positive with respect to "ground" while the filament of the IF tube is 3.75 volts (to center of filament) positive with respect to ground. This is the condition with no signal of course and a calculation shows that there would be an initial or no-signal bias of 3.75 - 1.5 or 2.25 volts negative on the grid of this IF tube. In addition to this bias due to the series filament circuit, there would be still more bias added due to the contact potential of the diode detector.

Zero Bias Network

Since most of the battery-type RF pentodes have relatively sharp cut-off characteristics, this minimum bias of at least 2.25 and with contact potential added, more nearly 3 volts negative, the gain of this tube and stage would be seriously reduced.

Thus it is seen that tubes having AVC applied must have grid returns which do not impose a negative (greater than about 1 volt) bias on the tube under no signal conditions unless gain is to be seriously reduced.

Because of the cut-off characteristic of battery-type pentodes, it is customary to apply the AVC only to the converter. The IF stage grid is usually returned to its own filament through a by-passed resistor of several megs to give some bias through contact potential, and to serve as an overload control when the grid is driven positive by large values of signal voltage.

Using Dividers

Certain portable circuits having an RF stage and more than one IF stage use AVC on those tubes and still maintain the correct minimum bias requirements. This is done by applying the AVC voltage to a series load network of high-value resistors which are connected across the entire filament string. The various tubes to be controlled have grid returns to points on the series network so that they maintain the correct voltage relations with their own filaments. The values of the resistors are such as to divide the total filament string voltage appropriately for each tube connected to the network. The AVC filter resistor is connected to this network at a point which does not place a positive or negative bias on the diode.

In Fig. 2, the filament string voltage divider system is used to apply AVC to the converter tube. This cir-

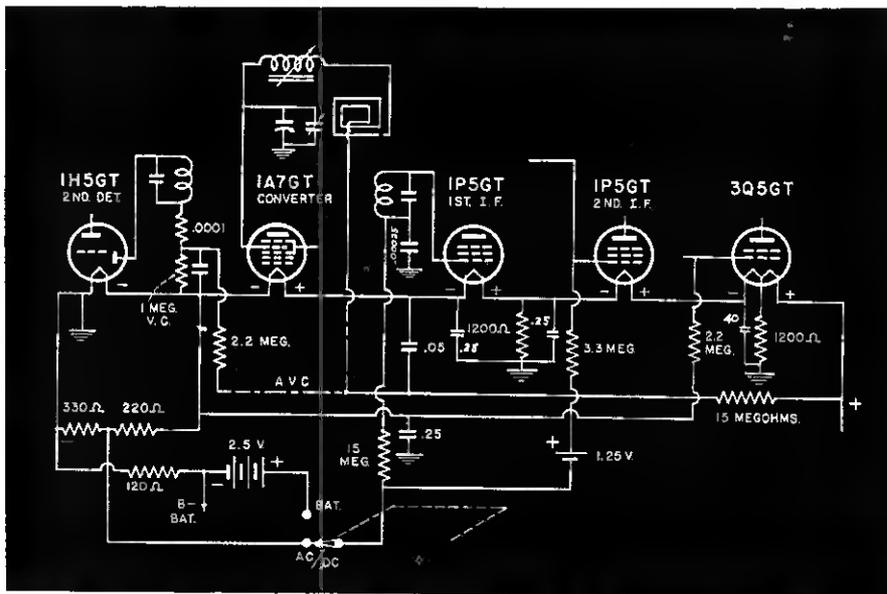


Fig. 3—Silvertone 7083 portable uses fixed bias on the two IF tubes and 1.25 volt bias cell to compensate for the difference in position of the tubes in the filament string.

cuit is used in the Zenith 70605 portable. (Full schematic in March, 1942, RADIO RETAILING-TODAY.) Since the three divider resistors are all of equal value, the 10.5 volts across the tube filaments is divided equally across them. Thus in the case of the converter tube, its grid is tied into the network at a point 3.5 volts positive. The filament of this tube is 3.75 volts positive (to the center) therefore, a -0.25 volt initial bias is established. The AVC voltage is also divided by the resistor network and the converter tube does not receive the full developed AVC voltage. This is not a particular disadvantage since most of the battery type tubes cannot ade-

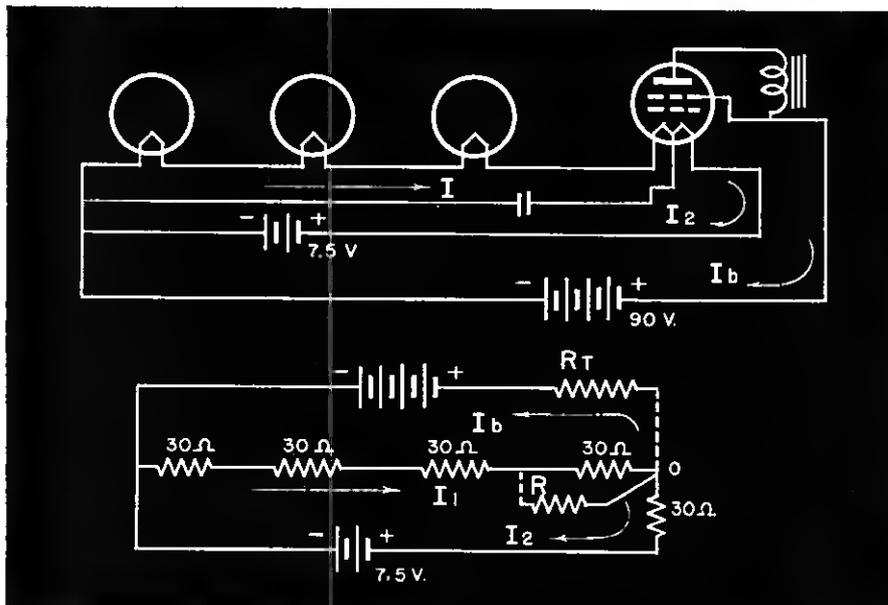
quately use full range of voltage developed.

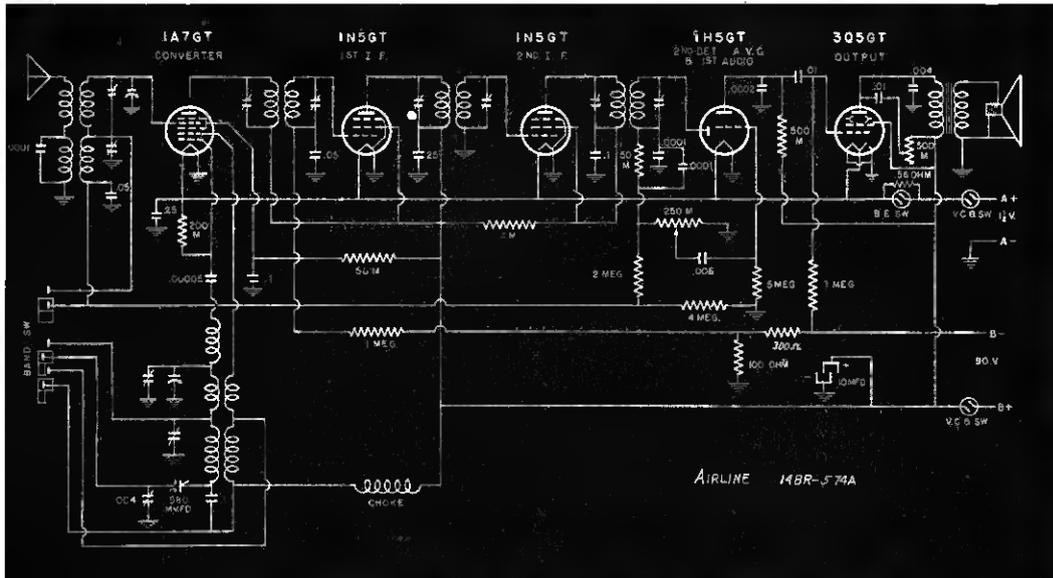
Typical Circuit

In Fig. 3, is the bias system of the Silvertone 7083, 7089, and 7087 (chassis 101,686). Notice that in this circuit, the AVC voltage is applied to the converter grid which is also biased through the voltage divider formed by the volume control, the 2.2 meg. AVC filter resistor and the 15-meg. resistor to the positive end of the filament string. This network of resistors across the filament voltage of the last four tubes (7.5 volts) furnishes about 1 volt positive, above the negative end of the 1A7GT converter filament, for the grid of that tube. This 1-volt will

(Continued on page 34)

Fig. 4—Typical and equivalent circuit for filament and plate current paths through tube filaments. Output tube plate current causes an unbalance in current through filaments of that tube. See text.





Circuit details of the battery receiver described below.

**Airline Battery Set
14BR-574A Circuit Data**

This five-tube set, designed for battery operation only, has two tuning ranges, 538 to 1720 kc., and 5.6 to 18.1 mc. The set has two IF stages and mechanical push-button tuning.

The circuit uses the parallel filament arrangement with the two sections of the 3Q5GT connected in parallel. The A battery drain is thus 300 ma. Note the battery economizer switch in the A+ circuit. This switch, when in the open position, puts 0.56 ohms in series with the tube filaments thus reducing the current consumption. The switch is located on the rear of the chassis. Fixed bias is used on the 1N5GT first IF tube. This bias is 1/4 of the drop in the B voltage across the two resistors in series with the B- circuit. The total drop, about -4.5 volts, is used to bias the 3Q5GT grid and 1/4 or 1.1 volts is used for the 1N5GT.

IF Alignment

The IF stages are aligned at 455 kc. The signal generator is connected to the grid of the second IF tube through a 0.1 mfd. dummy antenna. The chassis of the set is connected to the ground post of the signal generator. With the tuning condenser full open, the output IF transformer is tuned for peak output. The signal is then fed into the grid of the first IF tube and the interstage transformer is aligned. The first IF transformer is aligned with the signal introduced at the grid of the 1A7GT.

The short-wave end of the set is aligned with the signal generator connected to the antenna lead through a 400 ohm resistor. With the dial and generator set at 16 mc., the trimmer across the oscillator section of the tuning condenser is peaked. With the

same set-up, tune the short-wave antenna trimmer.

With the dial and generator set at 6 mc. adjust the series padder while rocking the tuning condenser. Tune for maximum output.

The broadcast band is aligned with a 200 mmfd. capacitor in series with the signal generator lead to the antenna. With the dial and generator set at 1720 kc. adjust the oscillator trimmer for peak output. With dial and generator set at 1500 kc., adjust BC antenna trimmer for peak. With dial and generator at 600 kc., adjust the series BC oscillator padder while rocking the tuning condenser.

**Are You Prepared for
Wartime Radio Service?**

This important question is the subject of the editorial in the first issue of the Stromberg-Carlson Wartime Radio Service Bulletin. The answer, in the form of a series of check-ups on yourself and your business is contained in the following quotation. See if you are applying these steps to success in the best manner.

To Service Department Mgrs.

1. Your Repair Shop should immediately take on the appearance of a modern business establishment.
2. Build up your stock of radio parts and tubes. Do not hoard these items but carry in your inventory at all times enough tubes and replacement parts to take care of the increased demand predicted in the near future.
3. Your library of technical data and service information should be complete at all times.
4. Investigate the procedures now being followed in your Service Department and attempt to improve

them by establishing a speed-up and streamlined system of operation.

5. Establish standard charges for inside and outside service on a labor plus material method.

6. Competition still exists in the service business. Therefore, the dealer who actively promotes his Repair Department attracts the attention of his own customers and many who may have purchased their radio from a competitor.

7. By outstanding service and fair business practices make each and every customer a booster for your company and your Repair Department.

To the Serviceman

1. First and foremost have a thorough knowledge of the merchandise which you are called upon to service.

2. Always remember that you represent your company which prides itself on a high rating in the community.

3. Do the job right the first time, thus saving expense, time, rubber, gas, and very often the customer's faith in you.

4. Tackle your work each day confident that you are playing an important part in the war effort. The American public is relying on you to "Keep 'em listening" and our government has endorsed your important job of "keeping all radios working at all times during this emergency period!"

**"Fundamentals of Radio"
Edited by Dr. Everitt**

Major-Gen. Dawson Olmstead, chief signal officer, U. S. Army, is stressing the importance of men who understand the mechanics of communications, in fulfilling the tremendous responsibility accepted by the Signal Corps. The Army communications branch is appealing for the services of such men, particularly those trained in basic radio maintenance and operation. Moreover, radio is a booming, essential war industry—as vital to civilian defense as it is to the Army and Navy.

Prentice-Hall has just published "Fundamentals of Radio," which follows the specifications on training given by the Signal Corps. The book also meets the requirements of the course outline prepared by the National Association of Broadcasters.

The editor of the book, Dr. William L. Everitt, is professor of electrical engineering at Ohio State University, general consulting radio engineer, fellow of both the AIEE and IRE, and a member of the board of the Institute of Radio Engineering. The background of the five authors of the book as well as that of its editor, assure its authenticity and its remarkable scope, which includes the whole field of basic radio, presented as simply and as non-mathematically as possible.



STORMY!



..but there's a silver lining

"War is hell", said General Sherman...and he didn't have to put up with today's shortages of essential materials. It's tough on manufacturers, tough on distributors, and tough on radio servicemen. Getting the right replacement for that balky set...Wow! What a job it can be!

Yes, sir, it's a tough situation. But it is all in today's work —and you can count on Mallory to help in every way possible. Here are three ways we're helping right now:

1. Standardized Parts: Many years ago, Mallory began developing standardized and interchangeable radio parts. Universal replacement condensers, for instance, make mighty useful...and practical...substitutes when the exact design used in an old receiver isn't to be had for love nor money. Nowadays, you can be glad that Mallory had the foresight to standardize the design of many components...because standardization saves you time and enables you to get along with a minimum inventory.

2. Practical Books and Booklets: Sure, you have to use ingenuity to make repairs on that stubborn old receiver. It helps when you have reference books right on the shelf above your workbench. The latest "MYE", the Mallory Radio Service Encyclopedia, belongs on that shelf because it's full of useful information...is just what you need to make the best of a tough servicing situation. Booklets on specific products available on request...see your Mallory Distributor.

3. Information Free: It's yours for the asking...the help of Mallory radio engineers on your specific problems. Just write a letter or post card to our Application Engineering Section, Wholesale Division.

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SERVICING PORTABLES

(Continued from page 31)

just about off-set the contact potential of the diode.

The two IF tubes are fixed biased. Notice that the second IF tube has a bias cell with the positive terminal toward the grid and the negative connected back to the grid return for the first IF tube. This bias cell is connected in this manner to subtract from the total bias established by connecting the two grid returns back to the resistors across the 1H5GT filament. If this bias cell were not so connected, the second IF tube would automatically have 1.5 volt more negative bias than the first IF tube because its filament is 1.5 volts further positive than the first tube.

Another problem with portable circuits with series filaments is the burn-out of tubes. The usual circuit has the power output tube located at the positive end of the string in order to take advantage of the drop across the filaments of the other tubes for bias on the grid. The plate current of this output tube, which is by far the largest part of the B current, therefore must flow from the plate through the output circuit, the B supply, and back through the filaments of the other tubes until it returns to the output tube filament. This extra current flowing through the filaments may in some cases of surge overload and burn-out a weak tube. In the usual type of circuit where the output tube is at the positive end of the string, a portion of the plate current is added to the regular filament current flowing in the other tubes and a portion of the plate current is subtracted from the filament current flowing out of the output tube. This addition and subtraction of the plate current is shown for a typical circuit in Fig. 4.

In Fig. 4 is an actual schematic and an equivalent circuit showing the currents which flow through the various branches. I_b is the electron current from the output tube plate and in the case of a 3Q5GT is about 8.5 ma. This current can be assumed to

leave from the center of the split filament and flow out of the tube through the B supply back to the negative terminal and then combine with the regular filament current flowing through the tubes.

The point labeled O in the circuit is the center of the 3Q5GT filament. Three currents are to be considered at this point; the current I_1 approaching and the two currents I_b and I_2 leaving. Kirchhoff's law states that $I_1 = I_b + I_2$. The amount of I_b added to the regular filament current to produce I_1 and subtracted to produce I_2 depends upon the ratio of the filament resistances up to O and from O back to the negative through the output tube filament. The reason for this is that the plate current has two paths back to the output tube filament; one through the string of filaments and the other through the filament battery and one half of the output tube filament.

Current Paths

The amount of the plate current in each path will be inversely proportional to the resistance of each path. In the case shown in Fig. 4, the resistance of the first path is 120 ohms (three 30-ohm 1.5 volt tubes and one 30-ohm section of the dual output tube filament). Resistance of the second path is 30 ohms (the remaining half of the output tube filament). The portion of the current (I_b) added to produce I_1 will be $\frac{30}{150}$ or $\frac{1}{5}$. The portion of I_b subtracted from the normal filament current through the second half of the dual filament is $\frac{120}{150}$ or $\frac{4}{5}$.

The portion of I_b flowing through the filament battery is subtracted since it is traveling in a direction opposite to the normal filament current. In the case shown, the current I_1 is about 51.7 ma. and I_2 is 43.2 ma. This unbalance in current through the two sections of the output tube filament cause the majority of burnouts in this tube. The unbalance in current can be easily corrected by connecting a resistor from the center tap of the filament to the negative side of the filament as R in Fig. 4. The value of this resistor is around 250 ohms. This

resistor can also be connected from the center tap back to the negative end of the string. In that case, the value of the resistor is from 800 to 1200 ohms depending on the number of tubes in the string.

Many early portables do not have this compensating resistor and tube burn-outs are more frequent. If the output tube is not of the split filament type, the resistor is connected in parallel with the series string of filaments of the other tubes.

Beside the increase in the average current through the string of tube filaments, there will be a pulsating component of current whenever a signal is present in the output circuit. This signal plate current, unless prevented from flowing through the filaments of the other tubes, would modulate the electron stream of these tubes and cause feedback especially at the low audio frequencies. A high capacity by-pass is placed across the string of tubes up to the output to remove the signal ripple from the filaments.

When the series string circuit is operated from the AC or DC line, the failure of one filament in the string will cause the entire supply voltage to appear across the open filament. Since the high capacity by-pass across the filaments is usually rated at only 25 volts, failure of one tube may cause this condenser to fail. Putting a good tube in place of burned-out one while the power is on will probably burn out the good tube due to the high voltage across its filament. New tube replacements should be made only while the power is off and the filter condensers are discharged. After tube failure, always check the high capacity low voltage filament by-pass capacitors for breakdown.

Radio Repair Policies Outlined by Crosley

The repair of a radio set is a highly technical piece of work, which requires accurate instruments and parts which have been carefully handled. Since it is not advisable to carry such delicate instruments around in a service car, it is recommended that all radio sets be taken to a central repair shop for repairs and testing. If this is done, an original factory guarantee can be given on each set repaired.

Any tubes or other parts that have been replaced should be returned to the customer with the set that is repaired, so that the replaced parts can be checked, if the customer so desires.

The Crosley Corporation recommends that radio sets be repaired on a flat-rate basis: that is, a fixed price for a console, the chassis of which would be picked up and delivered, the pick-up and delivery charge to be included in the cost. There also should be a flat rate for table-model sets brought in by customers, but such flat prices should not include the cost of tubes or other major parts.



Display showing the elements of a "central repair shop" recommended by Crosley.



"Portables" Speed-Up War Production Testing

Triplet Portables speed up electrical testing with the dependable accuracy that is a vital part of war production.

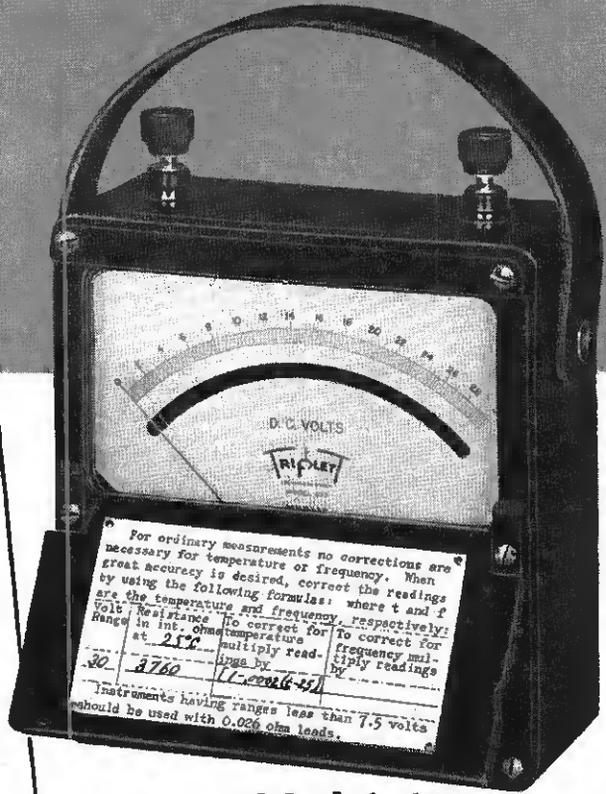
And whether your particular interest lies in laboratory service, production line testing, experimental work, field service, or plant maintenance, you will find your need provided for, with exacting and lasting accuracy in the expanded line of Triplet Portables.

In the drive of production-line testing, Triplet Portables supply the full-scale accuracy, the consistent performance, the hair-trigger answers that result from the Triplet method of safe-guarding quality, by making every essential part in the Triplet plant.

If you, like the writer of the letter quoted below, want to back up our armed forces with time-saving production practices, write for complete details on other Triplet Portables, panel electrical measuring and test equipment.

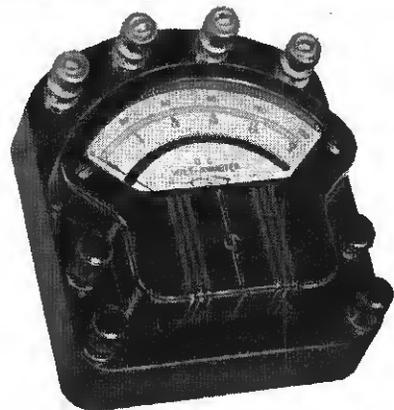
"With the Ohm Meter we have on order we can do in seconds, what now takes a couple of hours."

Excerpt from letter of a prominent manufacturer (original in our files):



Model 625

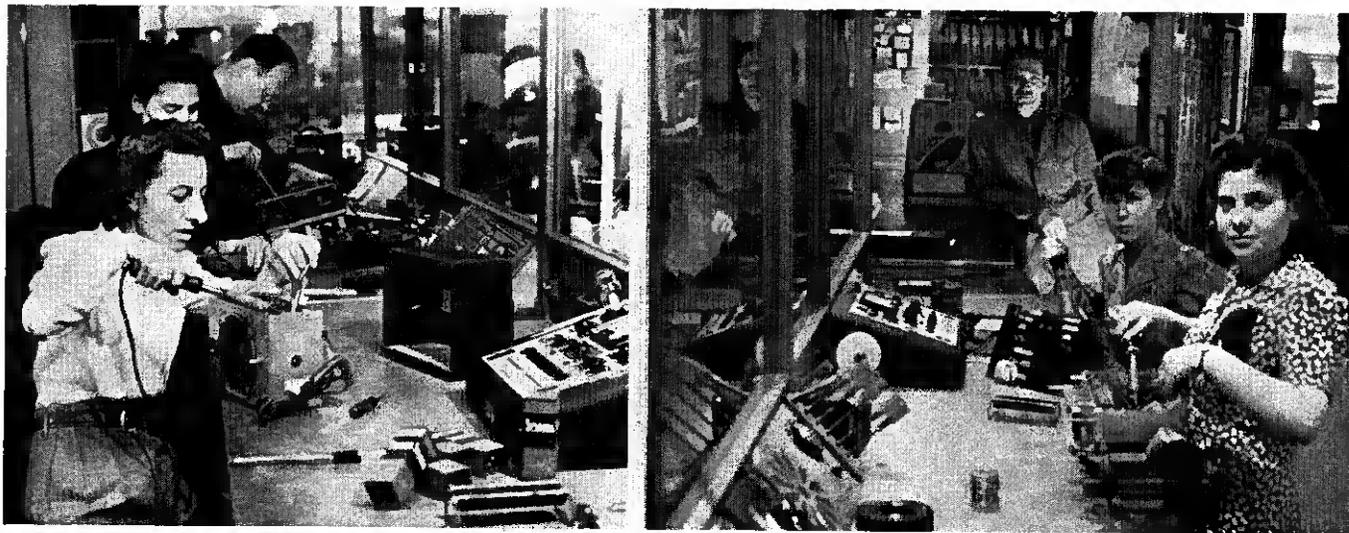
Models 625 D.C. and 635 A.C. Portables are unequalled for today's rush in production testing or the rigid requirements of laboratory checking. These highly attractive molded case instruments have long 4.58" hand calibrated mirror scales. The hinged cover closes when instrument is not in use, for added protection. Black molded case for D.C. instruments; A.C. is red. Size is 6" x 5 1/2" x 2 1/2". Has detachable leather strap handle.



Model 425

Another new Portable combining attractive symmetrical case proportions, a long readable scale, and requiring a minimum of bench space when in use. A real beauty in design for those preferring something different. Case and base are molded; base size 5" x 4 3/8". Model 425 D.C. (3.12" hand calibrated mirror scale); Model 435 A.C. (2.88" hand calibrated mirror scale.)

THE TRIPLETT ELECTRICAL INSTRUMENT CO.
BLUFFTON, OHIO



These girls are now doing the simpler repair tasks at two radio shops in New York City.

"Susie Can Solder"

• "The girls are good workers and they get along swell with the customers. The only thing is, we have to watch our language around the shop!"

Thus a New York radio service specialist, Leon Rubin of the Radio Clinic, reports that after having female "servicemen" on his payroll for eight months, he likes the idea and finds that it is efficient.

Ninety per cent of the business at this store is service work, and when Mr. Rubin lost half of his technicians to the armed forces, he was forced to think of something fast. So he asked a couple of jobbers what "radio girls" are paid, and found out that the figure was not prohibitive. He engaged three high school graduates for his two "Clinics" at 2290 Broadway, and at 2580 Broadway.

The girls had no radio training whatever. Their jobs are to do anything in the shop that will leave the technicians free to do the complicated repair work. Their technical work amounts to testing tubes and batteries, mainly, and replacing volume controls, condensers, etc., after the experienced men have told them where the part goes and which one to use. They can solder and get sets ready for the bench, and thus relieve the men of all the routine that does not require technical skill.

Many Duties

Otherwise the newcomers act as saleswomen for radios, tubes, records, etc., answer the phone and have learned to make estimates on repair jobs. They like the work and are eager to learn, according to both Mr. Rubin at the main store and Harry Baum, manager of the branch.

Mr. Rubin doubts whether the girls

are interested enough to become technical experts and make it their life work. They are young and do not regard manual work as a career, but their interest is more than perfunctory and they certainly give their employer value received.

No Squawks

When a customer comes in with a set to be fixed, and is confronted by a femme bench worker in slacks, what does he think? That his work is going to be done by fumblers, greenhorns, amateurs? The answer is emphatically no, according to observations at this shop. Most customers think first that it is just another conservation measure on manpower. Most of them can tell too that the girl is only a kind of apprentice clerk, and that she does not pretend to be capable of detailed technical work. Very few objections have arisen.

Great Talkers

The fact is, the young ladies' ability to handle customers is one of their strong points. "Women have the gift of gab, anyway," says Mr. Rubin, "and they get along nicely with our people. The cross ones will be amiable with our girls when they might give the men an argument. And the girls can stand and talk to the customers about repairs, when a good serviceman would only be wasting his time. They're great time-savers in that respect."

Mr. Rubin has been in business for 10 years in his area, and since he has consistently made a big point of keeping his customers happy, he is not taking any chances with an experi-

ment that is not sound. In any situation where a girl is questioned by a customer beyond the limit of her ability to answer to his complete satisfaction, one of the men takes over, with a word or two as to what the girl's position is.

No girl is used outside the shop for any kind of delivery work, even for records or small batteries. Inside work keeps them busy.

The conclusion is that the young ladies are valuable, all-round helpers for a service expert who is determined to stay in business and keep his customers happy for the duration.

Basic Radio

by J. BARTON HOAG

Published by D. Van Nostrand Co., Inc.
250 Fourth Avenue, New York, N. Y.

This new book covers a wide range in the field of radio principles and applications in a simplified, non-mathematical fashion. The introduction to radio is developed through chapters on the electron, metallic conduction, and similar material on electrical circuit fundamentals.

A total of thirty-eight chapters deal with radiation, rectifiers, amplifiers, oscillators, amplitude modulation, gas-filled tubes, photo-tubes, cathode ray tubes and oscilloscopes, frequency modulation, direction finders, transmission lines, UHF transmitters, and receivers, micro-waves, and other subjects including special circuits such as clippers, frequency dividers, etc.

The text is well illustrated with circuit diagrams and graphs aiding in the explanation of the text material.

The book is designed for students with a limited background in physics and mathematics and is recommended for that purpose. The price of Basic Radio is \$3.25.



TO KEEP 'EM LISTENING... HOME SETS MUST BE SERVICED

Second in importance only to direct war work is your job and ours of keeping the family radio sets of the country in good repair for the quick and widespread dissemination of information.

To furnish the resistors and controls so vitally needed for all the equipment required for speeding up the war effort is now our No. 1 job and will continue to be until Victory is won. Actually, our greatly increased manufacturing facilities are 100% utilized three shifts per day on this all-important war work.

However, we have devised means for furnishing a supply of the resistors and controls needed for servicing home sets and it will not be necessary for servicemen to use substitutes of unknown or doubtful quality for replacements.

TYPE BT METALLIZED RESISTORS—These famous resistors will be furnished from our stock from which we formerly supplied leading radio set manufacturers. These resistors will be of exactly the same quality, ranges, and tolerance used by the large manufacturers before they discontinued making home sets.

VOLUME AND TONE CONTROLS—Plans have been completed to simplify the IRC service replacement line, eliminate special units that can be replaced with universal types, and assemble new stocks from materials and parts on hand which can be done without interference with production for war needs. As in the past, you can count on the well-known IRC construction and noise-eliminating features to assure long, quiet performance on any service replacement job. IRC quality standards will be rigidly maintained.



INTERNATIONAL RESISTANCE COMPANY 401 N. BROAD STREET
PHILADELPHIA, PENNA.

Super-Sealed PAPER TUBULARS



• These super-sealed Aerovox paper tubulars are just as good as they look. Beneath that colorful yellow-black-red label jacket you'll find an extra-generously-waxed cartridge for maximum protection against moisture penetration. Likewise extra-generously-waxed ends, neatly milled, with pigtail leads that won't work loose. In all climes, from frigid Arctic to torrid tropics, these paper tubulars are establishing new performance records. Why take less?

**PAPER TUBULAR
CONDENSERS**

Type 484—400 v. D.C.W.
.01 to 1.0 mfd.

Type 684—600 v. D.C.W.
.001 to .5 mfd.

Type 1084—1000 v. D.C.W.
.001 to .1 mfd.

Type 1684—1600 v. D.C.W.
.004 to .05 mfd.

• **Ask Our Jobber . . .**
He'll gladly take care of your essential condenser requirements with these paper tubulars and other types. Ask for latest catalog—or write us direct.

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New Need for Inventories of Radio Parts Seen by Jobbers

Throughout the series of priority orders and price rulings which come from the War Production Board and the Office of Price Administration and affect the business of the radio parts distributor, the need for *accurate inventory records* continues to loom important.

"You will sometime thank the government for forcing you to keep such records," is the opinion of George Barbey, of Reading, Pa., who is the re-elected and much-honored president of the National Electronic Distributors Association (formerly the National Radio Parts Distributors Association). Mr. Barbey emphasizes that parts jobbers need the records anyway, to provide them with a complete picture of their business, and to direct their attention to loss factors.

The prominent jobber outlined an inventory method at the NEDA annual meeting, and has had many subsequent requests for details of the plan. Here is how it works.

1. You start with an actual physical inventory; if you don't have it, now is the time to take a full count.
2. Starting with an actual dollar value of inventory on hand you figure the inventory each day by the "Cost of Sales" method.

The Red Gauge

3. On each sales invoice you make out, each day you list the net prices in one column and beside it, in red, you list the costs for each item.
4. On the office copy of each of the invoices, mark the total costs of goods sold in red. A quick glance in comparing the total selling price with the total cost on each invoice will indicate whether the profit was normal and serve to check billing errors. The average cost clerk will save half her salary in correcting errors on invoices. After all invoices are "costed," run off a total which gives you the grand total on merchandise sold, or "Cost of Sales."
5. Now list the purchases made the same day, adding up the purchase invoices.

6. To find what your inventory will be to start with the next day, take the inventory you started with in (1) and add the cost of merchandise purchased in (5). Then subtract from this total the cost of merchandise sold ("Cost of sales" from No. 4) and you have the new daily inventory figure.

7. This process is carried out from day to day, giving you the book value of the inventory every day. The method may look cumbersome, but when once in operation it takes very little time and the results are well worth the effort.

8. Most concerns using this method figure their gross profit for the day, also. And the percentage. You simply subtract the "Cost of Sales" from the "Gross Sales," to get the Gross Profit in dollars. Then you determine what per cent of the gross sales is represented by the gross profit, and if this percentage does not come within 2 per cent of your average profit percentage, look for errors in billing or bookkeeping.

9. The final check, which is one of great value, is the comparison of your book inventory with your annual physical inventory. If you work out your day-to-day inventory, the latter should agree with your actual inventory on the date you take your next physical inventory. The difference will show you your leakage, a factor that has wrecked many a seemingly prosperous business.

Besides his work on inventories, Mr. Barbey is helping to circulate and to interpret all new priority rulings affecting distributors. Complete bulletins are being mailed to NEDA members.

Government Orders on Radio

The National Electronic Distributors Association has received the following telegram from Leon Henderson of OPA:

"Distributors of radios, phonographs, and household appliances in various localities are requiring customers to buy unwanted merchandise in order to obtain supplies of certain articles such as radios and radio phonograph combinations. This practice is a violation of the general maximum price regulation in all instances where the same requirement was not imposed in March. It is not unlawful to offer so-called package deals at a reduction below the aggregate price of individual items therein but any person to whom a package deal is offered is entitled to buy any of such items separately upon tender of the seller's maximum price in March to the same general class of customer for the item in question. Would appreciate your cooperation in disseminating this information by advising your distributors accordingly, directing them to pass on this interpretation to all dealers."

In using the PD-IX form, many jobbers have asked how to departmentalize their businesses in order to fill out the form properly and to comply with L-36 (Inventory limitation order on certain products). The War Production Board has issued the following statement on this:

"The types of supplies listed on Form L-63 are supplies that are considered critical due to shortages of raw materials. It is not necessary that a distributor departmentalize his business into departments exactly as listed on the form. Wherever possible, a distributor should departmentalize his business, but the overall inventory can be indicated on Report Form PD-336. Where the distributor is not departmentalized, he will have to consider all items stocked in his business as under the inventory of a department, or the over-all business. Example: A hardware distributor might possibly carry a few pipe fittings and he could consider those pipe fittings in his hardware department, although they would ordinarily be classed as plumbing and heating supplies. His next door neighbor, a plumbing and heating supply house might possibly carry a few screw drivers and they, in turn, could classify those screw drivers in a plumbing and heating department without the necessity of setting up a separate hardware department."

It should be remembered that Order L-63 does not apply to any supplier whose (1) total inventory at cost, including consigned stocks, of all supplies is less than \$20,000; or (2) whose total inventory at cost of each type of supplies set forth in paragraph (A) (1) of the order, is less than \$10,000.

A new ruling (Priorities Regulation No. 10) which went into effect July 1 established a new allocation classification symbol system, which distributors must use on all priority orders. The regulation does not apply to merchandise to be re-sold to dealers and servicemen, but when products go from the jobber direct to military, industrial or civilian "end uses" the new system must be used when ordering these products from the jobber's suppliers. The code, which is to be used in addition to other priority systems already familiar, is simply a series of numbers and letters indicating what type of user finally got the products. Details of the code are available from your nearest War Production Board office.

An amendment to Priorities Regulation No. 3, also effective July 1, had the effect of simplifying and standardizing preference ratings.

This amendment provides that any preference rating, no matter how it has been assigned, may be applied or extended by a single form of certification, which states merely that the purchaser certified to the seller and to WPB that he is entitled to use the preference ratings indicated on his purchase order, in accordance with the terms of Regulation No. 3.

This will save a great deal of clerical work involved in preference ratings. Various ratings can now be grouped on one purchase order extending either the lowest rating applicable to all items or by extending the rating applicable to each individual item.

YOU CAN'T WORK ANY HARDER BUT-YOU CAN WORK MORE EFFICIENTLY!



Today servicemen are over-loaded with work and worrying how they're going to keep up with the rush.

Now, there's a limit to the amount of night work you can do—But, there's no limit to the increased production you can get from greater efficiency.

Save precious hours—reach for your Rider Manuals on every job. Stop wasting time "guessing out" servicing information that your Rider Manuals can place right at your fingertips.

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Volumes XIII to VII.....\$11.00 each
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Automatic Record Changers and Recorders... 6.00

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A modern, streamlined engineering aid that greatly reduces the time heretofore required for alternating current engineering calculations. Two to five times as fast as a slide rule—and more fool-proof. 146 charts—all direct reading—printed in 2 colors—operative over a frequency range of from 10 cycles to 1000 megacycles. 160 pgs.—9½ x 12 in.—\$7.50

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

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The Cathode Ray Tube at Work.....\$3.00
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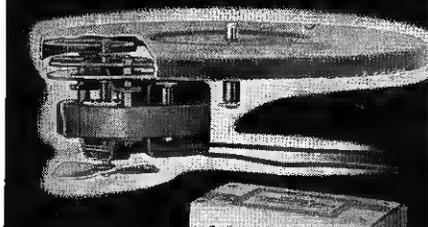
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ALLIANCE, OHIO

Record News

MUSICAL BOOKS AID RECORD SELLING

(Continued from page 29)

Fiddle Songs; Religious; and Work Songs. 256 pages. Published by *Creative Age Press*, 11 E. 44th St., New York City. \$3.50.

HE HEARD AMERICA SING by Claire Lee Purdy. The story of Stephen Foster and his music, ideally written in story form for youngsters. Illustrations and music to catch the eye and ear. 236 pages. Published by *Julian Messner, Inc.*, 8 W. 40th St., New York City. \$2.50.

MUSIC FOR FUN by Sigmund Spaeth. Lots of suggestions for folks of all ages to get started in music and to make it an interesting and valuable project. 259 pages. Published by *Whittlesey House*, 330 W. 42nd St., New York City. \$2.

MUSICAL QUESTIONS AND QUIZZES by Marion Bauer. Six sections of lively questions and answers on recordings, general musical topics, history, jazz, orchestras, musical elements, books, etc. 268 pages. Published by *G. P. Putnam's Sons*, 2 W. 45th St., New York City. \$2.

MUSIC WITH A FEATHER DUSTER by Elizabeth Mitchell. High-spirited account of experiences of a wealthy American woman in musical circles. Amusing, but also concerned with increasing musical enjoyment. 280 pages. Published by *Little Brown & Co.*, 60 E. 42nd St., New York City. \$2.75.

A SMATTERING OF IGNORANCE by Oscar Levant. Best-selling sparkler by the musical wit of radio's Information Please show. Entertaining treatment of notable musicians, particularly George Gershwin. 267 pages. Published by *Doubleday Doran & Co., Inc.*, 14 W. 49th St., New York City. \$2.

VICTOR BOOK OF THE OPERA revised and modernized by Charles O'Connell. Fully illustrated information on leading operas, with available records listed along with interesting dramatic detail. 528 pages. Published by *RCA Mfg. Co., Inc.*, Camden, N. J., distributed by *Simon & Schuster*, 1230 Sixth Ave., New York City. \$2.

STORY OF A HUNDRED SYMPHONIES by Paul Grabbe. All the favorites in pocket-size volume. 300 pages. Popularly sold with **STORY OF A HUNDRED OPERAS**, also in compact size. 332 pages. Published by *Grosset & Dunlap*, 1107 Broadway, New York City. Set of two, \$1.

CONCERT LIFE IN NEW YORK by Richard Aldrich, edited by Harold Johnson. Important collection of the tops in music criticisms—those written by Mr. Aldrich when he reviewed the opera and concert stage for *The New York Times* during the years when New York emerged as the musical center of the world. 796 pages. Published by *G. P. Putnam's Sons*, 2 W. 45th St., New York City. \$5.

THE OPERA and Its Future in America by Dr. Herbert Graf, stage director of the Metropolitan Opera Association. Illuminating data on the development, trend and reforms in the opera, plus ideas on future status. 305 pages. Published by *W. W. Norton & Co., Inc.*, 70 Fifth Ave., New York City. \$4.75.

THE WELL TEMPERED LISTENER by Deems Taylor. Musical discussion in Mr. Taylor's very readable style, divided in three sections. "The Makers," from the composer's point of view; "The Givers," dealing with performers and interpreters; and "The Hearers," for the listeners. 333 pages. Published by *Simon & Schuster*, 1230 Sixth Ave., New York City. \$2.50.

GUIDE TO RECORDED MUSIC by Irving Kolodin. Lists records of the favorite and representative works of 184 classical composers; real help for all fans and collectors. 495 pages. Published by *Doubleday Doran & Co.*, 14 W. 49th St., New York City. \$3.

JUNIOR MUSIC QUIZ by Gladys Burch and Helmut Ripperger. Here are 500 questions and answers, in 25 separate quizzes, making a lively game of musical appreciation. 134 pages. Published by *G. Schirmer, Inc.*, 3 E. 43rd St., New York City. \$1.

MACMILLAN ENCYCLOPEDIA OF MUSIC AND MUSICIANS in one volume compiled and edited by Albert E. Wier, "largest volume ever published" in this field. Over 2,000,000 words on all musical topics including late developments. 2,089 pages. Published by *The Macmillan Co.*, 60 Fifth Ave., New York City. \$10.

Knit One, Purl Two

A new war song of the gentler type, "Knit One Purl Two," which has been recorded for Victor by Glenn Miller, got a big play throughout the U. S. when it was printed in the *American Weekly* for June 21. Newspaper and radio plugs helped the song, and dealers may tie in via 4-color window streamers supplied free by Victor.

Supply of Phono Needles for Wartime

In a recent statement to the trade press, it was pointed out by Edward Bieber, sales manager for Recoton Corp., 21-40 49th Ave., Long Island City, N. Y., that "wartime problems in transportation may conceivably cause delivery delays, and my advice to our dealers is to keep a two-months supply of phonograph needles on hand at all times, so as not to disappoint customers, and to build a steady repeat business . . . there are ample stocks of Recoton Phoneneedles on hand, but dealers should order in sufficient quantities to cover possible delays due to temporary shortages on some one or more items."

The Recoton firm recognizes that record fans are today aware of the need for preserving their precious records, because of possible war shortages. How Phoneneedles are a defense against record wear is emphasized on new educational multi-colored window streamers which dealers can get from Recoton jobbers. The firm is also doing extensive consumer advertising on the subject.

Albums and Cabinets in Wartime Line

In an energetic effort to help its jobbers stay in business during the period of merchandise shortages, the Sonora Radio & Television Corp., Chicago, has announced a new selling plan built around a full line of Sonora records in album form. The records have been carefully selected for widest appeal, attractively packaged, new releases added monthly.

Two record album cabinets are also available as part of the program, in contemporary designs, both walnut and mahogany finishes. Sonora also offers a new line of home recording discs, as part of its long-range merchandising schedule not affected by war production and not interfering with war effort.

"Victory Record" at Farnsworth

A new publication called *Victory Record* for employees has been started at Farnsworth Television & Radio Corp., Ft. Wayne, Ind. The chief purpose is "to keep every employee posted on our vital 'Work for Victory' campaign. . . . Farnsworth's share in the national effort to hasten the day of Victory."

On the publishing staff are John S. Garceau, Guy C. Cyr, and William T. Davies. Mr. Garceau was recently named head of the new General Personnel and Public Relations Dept., and will continue as head of the Advertising Dept.

Farnsworth has been cited by Major General Dawson Olmstead, Chief Sig-

nal Officer, U. S. Army, for the "commendable performance of your radio equipment as reported by America's fighting men on the world's battle fronts."

Stromberg Forms New Sound Division

Announced by Stromberg-Carlson Tel. Mfg. Co. is a new sound system division, created "to handle the sound problems of government requirements and of war industries." The division occupies extensive space in one of the company's new plants.

A. G. Schifino will head up the new divisions, with A. R. Royle, formerly Middle Atlantic states radio sales representative as sales manager. Also in the division are L. A. Randall and N. F. Siebeneichen.

In the new division will be stock rooms, offices, job shop and production, and a new development laboratory. The latter will handle specific sound system problems, research, and will make continuous study of the equipment.

Stromberg engineers have recently installed big sound systems at various military and industrial sites.

An elaborate promotion plan for the new division is being readied, according to company officials.

A testing ground for the new division has been established within the Stromberg plant in the form of a model sound system.

"Retailers for Victory" Means You

Retailers of all sizes and types are now in the midst of the big "Retailers for Victory" drive staged during the month of July by the Treasury Dept. It's an all-out effort on the sale of War Bonds and Stamps with stores aiming at 4 per cent of total sales volume in July, 1941, and at the enrollment of all employees in the 10 per cent payroll allotment plan.

The special days remaining in the period are: July 17, "American Heroes Day; July 30-31, "Victory Days"; and Aug. 3, when there will be a retailers Report Day in Washington, D. C.

Every store man should dedicate his best efforts to help put over the billion dollar goal set for the Victory drive.

Law Heads Columbia Chain Sales

All sales of Columbia records to chain store accounts will now be handled by Don Law, according to news from Paul Southard, sales manager for Columbia Recording Corp. Mr. Law will also continue his post as director of recording and sales work for Columbia Educational and Children's Records.

QUALIFY at home—quickly

for your pick of 200,000 RADIO JOBS in the U. S. Armed Forces, Aviation, Industry, Broadcasting and Police Radio.
NOW! The exact training you need —simplified for rapid self-instruction

FUNDAMENTALS OF RADIO

The Complete A-B-C of Basic Radio in One, Easy-to-Master Handbook

BY SIX DISTINGUISHED RADIO EXPERTS

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WITH any sort of background in radio servicing, manufacturing or retailing, your chances of landing a big-pay, big-opportunity job in military radio, broadcasting or industry were never so good as they are today. The shortage is acute, the rewards exceptional. Now is the time to give yourself the basic training in radio communications which qualifies you quickly. FUNDAMENTALS OF RADIO spares exactly that training—at home—in your spare time—without wasting time on non-essentials—without omitting any essentials required in military radio, broadcasting or war radio manufacture and maintenance. In one handy, easy-to-grasp volume, written by six high-ranking instructors, FUNDAMENTALS OF RADIO covers everything you need to know about basic radio communications.

Your Instructors—"Tops" In Their Fields

Each author combines practical experience with teaching ability. Each not only knows what it takes to qualify you for radio opportunities, but how to pass his knowledge on to you. Your instructors are experts whose associations include the Signal Corps of the U. S. Army, NAB, IRE, Rutgers, Ohio State, etc. Moreover, FUNDAMENTALS OF RADIO follows the instruction outline recommended by the National Association of Broadcasters.

Complete Training For Today's Needs

(A Partial Glimpse of the Contents)
Concise Review of Radio Mathematics—A. C. and D. C. Circuits—Electronic Principles—Rectified Power Supplies—Sound and its Electrical Transmission—Audio Amplifiers—Vacuum-Tube Instruments—Electro-magnetic Waves—Transmission of Signals by Radio—Radio Frequency Amplifiers and Detectors—Amplitude Modulation Radio Transmitters and Receivers—Frequency Modulation—Radio Wave Propagation—Radio Antennas.

Don't Postpone Opportunity!

FUNDAMENTALS OF RADIO gives the usable information that qualifies you as a radio technician, as well as the foundation for more advanced study and promotion. Without obligation, read and study FUNDAMENTALS OF RADIO for five days. Mail coupon NOW! Price: \$5

WRITE FOR SPECIAL PRICE ON QUANTITIES for instruction purposes.

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Please rush copy of FUNDAMENTALS OF RADIO. I enclose \$5, plus 10c postage. If, within 5 days, I decide not to keep this book, I am free to return it for refund of the purchase price.

NAME

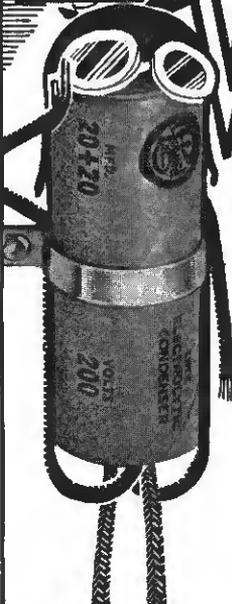
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SEND C. O. D., plus few cents postage charges. (Same refund guarantee.)

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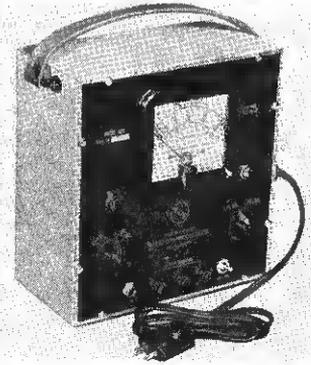
Victory is in the air WITH POLYMET

We are now supplying the Army and Navy contractors with POLYMET Condensers. Uncle Sam comes first with us. However, expansion of our facilities enables us to fill regular requirements with very little delay.

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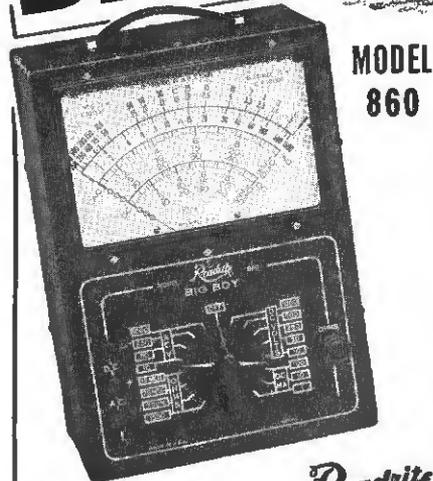



WESTINGHOUSE P-14 PORTABLE AC-DC INSTRUMENT for general field service, embodies both single and multi-ranges for measurement of ac volts, amperes and milliamperes, dc volts, amperes, milliamperes and micro-amperes. Insulated and magnetically shielded molded case. Available with or without covers. Scale length is 3.2 in. ac and 2.8 in. dc with accuracy of + or -1 per cent of full scale. Mirrored dial, knife-edge pointer. Westinghouse Elec. & Mfg. Co., E. Pittsburgh, Pa.—RRT.



RCP No. 666, VACUUM TUBE VOLT-METER gives accurate measurements throughout the entire audio frequency range, including the ultra-high audio frequencies. Constant input impedance resistance of 16 megohms. Designed for 105-130 v., 60 cycle operation, provision has also been made for external battery operation through appropriate terminal connections, and throw-over supply switch. Ranges are 0.3-6-30-150 v. Grey finish steel case with leather strap handle. \$35.50. Radio City Products Co., 127 W. 26 St., New York, N. Y.—RRT.

BIG BOY



Performance... Eye Appeal... Value... Sensationally Priced at \$19.65. Dealer Net Price.

Here is an AC-DC Volt-Ohm-Milliammeter with all the ranges you want... easily readable on the large 7" instrument with extra-long 8" scale, in a new up-to-the-minute three-tone case. DC Volts 0-10-50-250-500-1000 at 5000 Ohms per volt DC; 1000 ohms per volt AC. AC Volts 0-10-50-250-1000 at 400 ohms per volt; DC Ma. 0-1-10-100; Resistance ranges: 0-1500 Low Ohms; 0-150,000 Ohms and 0-7.5 and 0-15 Megohms. Maroon case with red and silver panel, attached handle.

Dealer Net Price, \$19.65

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SHURE "100 SERIES" MILITARY CARBON MICROPHONES, available in 3 models, 101A, 102A and 105A, specially designed for police equipment and other rugged uses. Clear, crisp voice response. High output. Fits snugly into palm of hand. Heavy duty switch for push-to-talk performance. Furnished with hook for suspension and bracket for wall mounting. Output level: 32 db below 1 v. for 10 bar speech signal. Weighs 14 ozs. \$25 list. Shure Bros., 225 W. Huron St., Chicago, Ill.—RRT.



SONORA'S NEW LINE OF RECORD MERCHANDISE includes albums of the world's greatest music (such as Unfinished Symphony, Nutcracker Suite, Strauss waltzes, and others), record album cabinets and recording discs for use with all types of home recorders in 6 1/2, 8, and 10 in. sizes. Some of the albums contain three 12 in. records, others, five 10 in. New titles added each month. The cabinets come in 2 styles—one with one shelf, the other with 2 shelves. Sonora Radio & Telev. Corp., 329 N. Hoyne Ave., Chicago, Ill.—RRT.



JFD RADIO BATTERY ADAPTER HARNESSSES and plugs designed to permit use of several separate "A" and "B" batteries in place of war-scarce combination packs. Offers owners of portables, household and farm sets economy in replacing batteries separately, rather than discarding whole pack if one section fails. One end of harness connects to battery cable in radio; other end has separate plugs for standard batteries. No cutting or soldering. Simplifies types of battery stocks needed. JFD Mfg. Co., 4111 Fort Hamilton Pkwy., Brooklyn, N. Y.—RRT.

Summer Market Events in Chicago

The "Summer Market" events in Chicago this month are being held July 6 to 18th. The Summer Housewares and Appliance Market in connection with the International Home Furnishings Market is in progress at the Merchandise Mart, Wells St. at the River, and the Summer National Home Furnishings Market is under way at the American Furniture Mart, 666 Lake Shore Drive.



RMA Hits Victory Stride

The organization of Radio Manufacturers Association now goes on a full wartime basis, with all the RMA services, activities and committee structure re-formed to a Victory program. The action follows the recent RMA convention in Chicago, where the Board of Directors authorized the re-organization of special and standing committees. RMA president Paul Galvin has nearly completed the new set-up.

A new War Production Committee, whose personnel will be announced later, will head up the RMA war program. This group succeeds the former Priorities Committee. Committees dealing with civilian radio affairs are being generally suspended for the duration. However, for the important function of providing replacement and repair parts for sets in use, a special committee on this is being continued with director J. J. Kahn as chairman.

The industry's war effort will be largely under the direction of the RMA Executive Committee, acting in the interim between meetings of the Board of Directors and the new War Production Committee. The Executive Committee, of which president Galvin is chairman, includes directors Abrams, Baker, Balcom, Bonfig, Buckley, Manson, Nance, Quam, Sparrow and treasurer Muter. It also constitutes the Association's Finance Committee.

RMA committee chairmen, which have been appointed by president Galvin for the ensuing year, follow:

Replacement & Repair Parts Committee—Director J. J. Kahn, Chicago.

Engineering Department — Director W. R. G. Baker of Bridgeport, Conn.;

Dealer Continues Success in War Production

Editor Radio Retailing Today:

We wish to thank you for the article given us on Page 12, June issue, regarding the transformation from radio to continue in business with war production, as a subsidiary known as the Aero Machine & Tool Corporation, owned and controlled by us.

At this writing, we have one-quarter million dollars in contracts direct from the government, both the Army and Navy, also we have about 58 different machines and employ 65 men, 24 hours a day.

We are still continuing to do automobile radio installations, service, home service and sales.

The reason for this letter is not only to thank you, but to enlighten you as to our position, so that others in the same business as us can do similar work in War Production.

*Very truly yours,
Krauss Bros. Auto. Radio Corp.
F. W. Crouch*

director Virgil M. Graham of Emporium, Pa., assistant director.

Export Committee—W. A. Coogan, New York City.

Membership Committee — Director Ernest Searing, Philadelphia.

Traffic Committee—O. J. Davies, Camden, N. J.

Service Committee—M. J. Schinke, Chicago.

Legislative Committee—Director A. H. Gardner, Buffalo.

Credit Committee—Director J. J. Kahn, Chicago.

By-Laws and Organization Committee—Treasurer Leslie F. Muter, Chicago.

Radio Leaders Launch Greater NY Fund Drive

The radio distributors and manufacturers section of the Greater New York Fund Campaign has been organized by Irving Sarnoff, president of Bruno-New York, Inc., and chairman of the group. The Fund's current drive is for \$5,000,000 to help support 400 welfare agencies.

Radio industry leaders held a meeting with Mr. Sarnoff presiding, and voted the sum of \$15,000 as the goal for the section (last year it was \$10,000). Ben Abrams, president of Emerson Radio & Phonograph Corp., started the drive off by pledging \$4,500 from his company. J. P. Kasper, executive vice-president of R. H. Macy & Co., was guest speaker.

Members of Mr. Sarnoff's committee are: Mr. Abrams, of Emerson; Benjamin Gross, of Gross Distributors, Inc.; Oscar Ray, of Times Appliance Co., Inc.; Harry Kruse, of Decca Distributing Co.; B. D. Colen, of Colen-Gruhn; Harold Shevers, of Espey Mfg. Co.; Arthur Freed, of Freed Radio Co.; R. H. McMann, of Westinghouse Elec. & Sup. Co.; T. A. O'Laughlin of Philco Distributors, Inc.; D. W. May, of General Electric Co. and Maurice Despres, of Dale Radio Co.; Charles Ollstein, of Sanford Samuel Corp.; H. L. Dalis, of H. S. Dalis, Inc.; Al Fisher, of Commercial Sound; Ben Kaye, of Liberty Music Shops; Henry Benjamin and Jules Smith, of the Davega stores; Izzy Goldberg, of Pilot Radio; Lee Conover, of Crosley Distributors; Max Kassover, of Vim stores; Max Weintraub, of Garod Radio; Myron Schloss, of Schloss Bros.; and G. Seedman, of the Times Square stores.

Now It's Capt. "Bill" Saunders

W. P. Saunders, who has been in radio since 1918, and has recently been Senior Business Specialist in the Office of Price Administration in Washington, has been granted leave of absence to take active duty as a captain in the Army Signal Corps. Mr. Saunders was for 16 years a radio buyer for Gimbel Bros., in New York and Philadelphia, and later was a district manager for General Electric.

Williams Now a V.P. at Stewart-Warner

Lynn A. Williams, Jr., secretary of Stewart-Warner Corp. and head of the company's legal department, has been named a vice-president of the corporation by the board of directors. He will continue all his former corporation duties.

During his 9 years with Stewart-Warner, Mr. Williams has been identified with much of its long-range expansion program. As a member of the "new devices committee," which looks into new production methods and products submitted by inventors, he has helped with many of Stewart-Warner's innovations in the fields of radio, refrigeration, lubrication and automotive accessories.

Organization of Installation Sellers

The Retail Credit Institute of America, with offices at 45 E. 17th St., New York City, has been organized "as a necessary agency to inform the American people about installment selling and to insure its continued existence in so far as war needs permit." The new agency, a national one, will include merchants in all fields in its membership.

First statement of Cecil B. Kaufmann, chairman of the Temporary Organizing Committee and executive of Kay Jewelers, Washington, D. C., was that "the first and foremost duty of all retailers is to help win the war, regardless of the effects on their business interests."

Washington Branch

The Jefferson-Travis Radio Mfg. Corp. has opened a branch in Washington, D. C., located at 1026 17th St., N.W., with F. Lee Hardesty in charge.

FOR DEFENSE

BUY UNITED STATES SAVINGS BONDS AND STAMPS



New Merchandisers Ready for Dealers



Another big promotional campaign for dealer use in wartime has been launched by Ken-Rad Tube & Lamp Corp., Owensboro, Ky. All sales-helping pieces are shown in a new portfolio carrying on the "Ken-Rad on Parade" theme.

Display materials include four new and larger display cards, four window streamers, a new series of window cut-outs, an authorized-dealer wall plaque, and a plastic animated tube display

War Time Service Aids

described as an innovation in radio attention-getters. All this is in addition to the full line of year 'round merchandising helps including clocks, counter displays, shop garments, newspaper mats, technical bulletins, etc.

Copies of the portfolio come from Ken-Rad direct, or from company jobbers.

For Your Wartime Servicing

In addition to the well-timed display which is shown in the accompanying illustration, the Hygrade Sylvania Corp., has issued other new wartime servicing aids for radio men.

A jumbo size window streamer in red, white and blue says "for the protection of your country, buy war bonds and stamps . . . for the protection of your radio, let us keep it in service with Sylvania tubes." These lively "keep Radios Working" streamers are available through jobbers.

Some more important "Do's and Don'ts" are named and illustrated in a new radio conservation folder for servicemen to give out to customers. They come direct from Sylvania at



YOU NEED YOUR RADIO NOW - LET US KEEP IT WORKING!
BY USE AND RECOMMENDATION
SYLVANIA RADIO TUBES

One of the colorful new posters that help servicemen to tie in with the Victory effort. "Buy War Bonds and Stamps" is included.

Emporium, Pa., or through jobbers, with individual imprint.

Another item for mailing or for distribution by hand is a new service letter, headed "What if it couldn't be fixed," which is a friendly suggestion that check-ups be scheduled by set owners.

A SPECIAL MESSAGE TO INDUSTRIES CONVERTING TO WAR WORK



... If you have any magnet wire or coil problems or need increased production on these items

Anaconda Can Help!...

WRITE US IMMEDIATELY FOR COMPLETE INFORMATION

ANACONDA WIRE & CABLE COMPANY. GENERAL OFFICES: 25 Broadway, New York. CHICAGO OFFICE: 20N Wacker Drive, Subsidiary of Anaconda Copper Mining Company. Sales Offices in Principal Cities. 42262R



Magnet wire and coils

ANACONDA WIRE & CABLE COMPANY

We're making only war materials now to hasten the day when we may serve you again with —

ARVIN Radios

NOBLITT-SPARKS INDUSTRIES, INC., COLUMBUS, INDIANA

Before and After the War Manufacturers of Arvin

HOME AND CAR RADIOS • HOT WATER CAR HEATERS
METAL FURNITURE • BATHROOM ELECTRIC HEATERS

Buy



War Savings



Bonds!



New Tube Pack Saves Time and Materials



Mr. Elliott shows how 100 tubes are safely packed in one carton.

A brand new way to pack radio tubes, aimed at saving shipping space, materials, handling costs, etc., has been introduced by the RCA Mfg. Co., Inc. The new system, which is saving this company alone some 120 tons of packing material a year, is described as a major contribution to the war effort and is available through a patent release to other tube manufacturers.

The streamlined method makes use of a tray-like container, with variations to handle all types of tubes. Where the packing of 1,000 tubes formerly required 210 different pieces, it now takes only 24. The system was worked out by Charles I. Elliot, RCA tube division packing engineer, and L. E. Mitchell, industrial engineering dept. manager.

GE Plaques to Identify Authorized Repairmen



Special insignia to be displayed by qualified radio servicemen, which will

identify them to the public as units of General Electric's authorized radio service program, have been announced by the GE radio, television and electronics department, Bridgeport, Conn. A plaque in pledge form, 29" by 19", and a smaller pledge in decalcomania form for door identification will be issued, and will give servicemen the benefit of a large-scale national advertising campaign in magazines and on the air. The ads will advise the public to "look for this sign when you need radio service." GE electronic tubes are featured both in the store plaques and in the ads.

Names of qualified radio servicemen will be listed in classified telephone

directories, in cities of 50,000 and over, under an identifying GE Electronic tube emblem. All GE set advertising will be switched to this service theme, and it will also be highlighted on the thrice-weekly broadcasts by GE-sponsored Frazier Hunt.

Kettering Named for WPB's Radio Branch

Appointment of Charles F. Kettering, president of General Motors Research Corp. and vice president of General Motors Corp., as consultant to the Radio and Radar Branch of the War Production Board, has been announced by Donald M. Nelson, WPB chairman.

Official Photographs U.S. Marine Corps.

Not so long ago American industry was putting up a heroic defense . . . a defense against time. Today that picture has changed. Production "ahead of schedule" of vital equipment is making it possible for our boys to take the offensive. Thordarson is proud of the part it is playing in producing transformers so vital to our armed forces in launching a "Terrific Offense."

THORDARSON
ELECTRIC MFG. CO.
300 WEST HURON STREET, CHICAGO, ILLINOIS

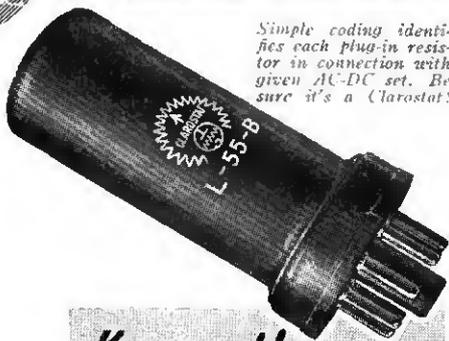
Transformer Specialists Since 1895

It's a good thing I rescued that

Fidelitytone
PHONOGRAPH NEEDLE
5000 Plays - \$1.00

The greatest improvement in 25 years. Up to 5,000 plays from one needle! Platinum metals tip prolongs record life. Unique Floating Point construction filters record scratch. Only one dollar...ask your record dealer for a demonstration. Permo Products Corp., Chicago, Ill.

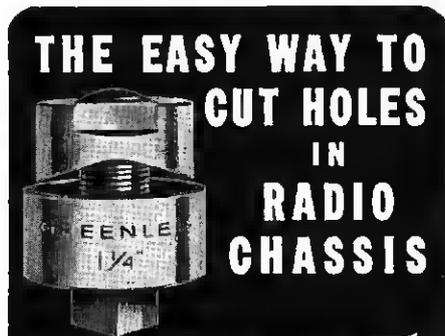
Permo Products
IN AIRPLANE INSTRUMENTS "Keep Them Flying"



Simple coding identifies each plug-in resistor in connection with given AC-DC set. Be sure it's a Clarostat!

Keep those
AC-DC Sets
perking...

★ Those burnt-out plug-in tube resistors in many AC-DC sets are readily and profitably replaced with Clarostat Universal Types, which take care of most replacement requirements. By using these Universal Types, you are cooperating with the war effort. ★ Ask your Clarostat jobber for those plug-in resistors you need for given sets.



THE EASY WAY TO
CUT HOLES
IN
RADIO
CHASSIS

Here's a handy tool to help the radio worker save many hours of work when cutting holes for sockets, plugs, connectors, and meter holes 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 cap screw with an ordinary wrench. Ten punches are available for cutting 3/4, 7/8, 1, 1 1/8, 1 1/2, 1 3/4, 1 3/8, 1 1/2 and 2 1/4-inch holes. Write for more information.

GREENLEE TOOL CO.
1907 Columbia Ave., Rockford, Ill.

GREENLEE TOOL CO.
1907 Columbia Ave., Rockford, Ill.
Please Send Information On Greenlee Radio Punches.

NAME.....
ADDRESS.....
CITY..... STATE.....

**Distributors Assn.
Stronger Than Ever**

The National Radio Parts Distributors Association came out of its annual meetings in Chicago last month with a new name, a new National Executive Office in Reading, Pa., with the re-elected president George D. Barbey, in charge; a new Washington committee; and a new set of dues.

NRPDA is now to be called the National Electronic Distributors Association, following a suggestion by Aaron Lippman, Newark, N. J. Officers for the next year, besides Mr. Barbey, are William O. Schoning, re-elected secretary-treasurer; and four vice-presidents appointed by the president to constitute the NEDA Executive Committee: Randall Bargelt, Portland, Ore.; Walter C. Braun, Chicago; Wm. A. Shuler, New Orleans; and John Stern, Philadelphia. Elections this year were made by the entire membership, instead of by the Board of Directors.

NEDA at War

The jobber meetings ran three days at the Stevens Hotel, beginning with a Directors' meeting at which Mr. Barbey summarized the past-year activity of NRPDA and outlined the need for a strong organization in a wartime period. Reports on their District chapters were heard from Charles Brown, Milwaukee; H. M. Carpenter, Tampa, Fla.; Charles Goebel, Kansas City, Mo.; Emmett Hughes, Los Angeles; David Goode, Minneapolis; Aaron Lippman, Newark, N. J.; Leslie Rucker, Washington, D. C.; William Shuler, New Orleans; Arthur Stallman, Ithaca, N. Y.; Emmet Tydings, Pittsburgh; Ralph Walker, Chicago; George Wedemeyer, Ann Arbor, Mich.; Elliott Wilkinson, Dallas, Tex.; and Randall Bargelt, Portland, Ore.

NEDA members were also prominent in the highly successful "Radio Victory Banquet" (reported in June issue of RADIO RETAILING TODAY) at which government officials were featured. OPA officials also appeared next day at an NEDA meeting to answer distributors' questions on pricing.

Moss Honored

At the final NEDA meeting, a resolution was passed honoring the former NRPDA executive secretary, Arthur Moss, for his work in bringing NRPDA through adverse conditions to its present standing. Mr. Moss was voted a bonus.

The new Washington committee, named by the Board, includes Messrs. Braun, Lippman, Rucker, Schoning, Stern, Tydings, Wedemeyer, and A. D. Davis, who will act with the president in ironing out problems on wartime radio parts.

New schedule of dues is based on gross sales, as follows: for sales ranging from \$25,000 to \$60,000, the annual

**Tribute to
Colin B. Kennedy**

Editor, Radio Retailing Today:

The death in Chicago on June 16 of Colin B. Kennedy, marks the passing of another of radio's original pioneering spirits. When, back in 1921, I became associated with Chicago Radio Laboratory, which two years later became Zenith Radio Corporation, to me the two great names in radio were Grebe and Kennedy, both of whom now have passed on.

Colin Kennedy, back in those days headed the radio company bearing his name, with St. Louis as its headquarters. He was an engineer radio pioneer—a quiet, modest man, who sought no glory but contributed much to the early days of radio. He was one of the first holders of a license to manufacture home radio under the Armstrong patents. I recommend you check back into Kennedy's life and you will find much that is important and interesting. Colin Kennedy, when he died, was doing his stint for his country as an OPM engineer assigned as civilian advisor to Army Signal Corps.

E. F. McDonald, Jr.
President, Zenith Radio Corp.

dues are \$50; for sales from \$60,001 to \$200,000 the dues are \$150; for sales from \$200,001 to \$500,000 the dues are \$300; and for sales over \$500,000 the dues are \$500.

President Barbey was voted a bonus for his time, effort and expenses spent on NRPDA during the past year, and also voted a retainer fee for future services to NEDA. Under the new set-up, Mr. Barbey was authorized to establish the National Executive Office of NEDA at P.O. Box 2, Reading, Pa., with allowances for proper clerical help and office expenses.

**Henry Johnson Promoted
by Sylvania**

It has been announced by Paul S. Ellison, director of advertising and sales promotion for Hygrade Sylvania Corp., that Henry C. L. Johnson has been appointed advertising manager of the firm's radio tube division. Mr. Johnson had previously been assistant ad manager of the division; until recently Mr. Ellison had been manager of both renewal tube sales and advertising.

Mr. Johnson has been with Sylvania almost 5 years, and was formerly ad manager for Thordarson, Chicago. He is a member of the Sales Executives Club, Advertising Club of New York, and is treasurer of the Northwestern University Club of New York.



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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.

"The Reps" Step Up Radio Activity

"The Representatives," which now boast a total of 183 members and 12 local district chapters throughout the U. S., have re-elected their incumbent officers at their annual meeting. These are S. K. MacDonald, president; Irvin Aaron, vice-president; and David Soukin, secretary-treasurer. The Board of Governors with Dan Biltan as chairman, was re-appointed by the president, and Ben Joseph was again named as director of publicity.

The Constitution Committee reported on the success of the recently revised constitution, and the formation of further district chapters was outlined. Another action taken was to suspend the dues for the duration of all members called to active service.

President MacDonald, in his address to the members, summarized the important job done by The Reps in helping jobbers to line up industrial clients and to clarify priorities regulations for them. Members of The Reps average over 10 years of experience in radio.

New members include Norman M. Sewell, 401 N. Broad St., Philadelphia; J. C. Lehner, 4301 Daisy Ave., Cleveland; and E. W. McGrade, 200 Porter Building, Kansas City, Mo. One member, Milton Shapp, has a new address: 427 Greenbrier Drive, Silver Springs, Md.

Crosley Praised for War Production Drive

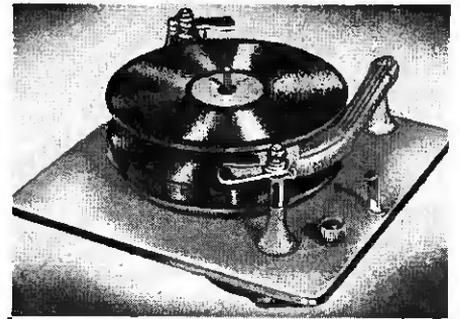
The joint labor-management committee which directs the war production program at Crosley Corp. has been given national recognition and special commendation by War Production Board, following a report made by Crosley to WPB on progress of the firm's war program.

Notably successful is the "Voice of Victory" recorded program used by Crosley to help worker morale. Also, a novel "Scrap Control" scoreboard originated by the company has received high praise, and the use of contest-winning slogans on panels throughout the plant has been very effective.

Fada Service Continues for Dealers

In a statement on the wartime status of Fada Radio & Electric Co., Inc., 30-20 Thomson Ave., Long Island City, N. Y., the firm's service manager, G. Stengel, says that "our service dept. will continue to operate intact . . . although our plant facilities are being rapidly converted to war work."

Mr. Stengel revealed also that Fada has available enough replacement materials for the immediate future, subject of course to government decisions on such matters. The service dept. will continue to cooperate fully with dealers and distributors in supplying technical help and information.



High Quality Automatic Record Changers at a SENSATIONAL PRICE!

IN ORIGINAL FACTORY-SEALED CONTAINERS—FOR A LIMITED TIME ONLY

In lots of 3 \$14.95 EA.
Single sample \$15.95

Latest type of 2-post changer; plays ten 12" or twelve 10" records in sequence without interruption. Constant-speed, self-starting motor; featherweight Crystal pickup; semi-permanent stylus; wide range reproduction. Mounting plate 14" x 14".

Ideal for adding or converting combinations; modernizing old changers; phono-PA work and many other applications.

Going fast—order NOW

LUXOR Radio Manufacturing Co.

509 W. 23rd Street, New York, N. Y.

Former Manufacturer of Radios for Export Exclusively





REFLEX SPEAKERS FOR UNCLE SAM

are being built to more exacting specifications every day.

Today University Reflex Speakers are called upon to withstand new and unusual conditions.

Sub zero temperatures combined with abnormally low atmospheric pressure — for stratosphere use.

Severe sand and dust storms for desert use.

Super strength to withstand the shock of being accidentally dropped in a few feet from the ground.

Extremely high efficiency to give high output with light weight.

These are but a few of the difficult conditions which University Reflex Speakers are successfully meeting for UNCLE SAM'S war needs.

Any war problem requiring special specifications will meet the prompt attention of our engineering department.

UNIVERSITY LABS., 225 VARICK ST., NYC

VELOCITY P.G. DYNAMIC



THE FINEST MICROPHONES

AMPERITE

FOR PUBLIC ADDRESS & RECORDING

MICROPHONES THAT SURPASS THE HIGHEST REQUIREMENTS OF BROADCASTING, PUBLIC ADDRESS, AND RECORDING

KONTAK MIKES

Write for Catalog

AMPERITE COMPANY
561 BROADWAY NEW YORK, N. Y.

Organization Shift in Sylvania Tube Division

It has been announced by M. F. Balcom, vice president and general manager of the radio tube division of Hygrade Sylvania Corp., that two top executive organization changes have been made, to streamline tube manufacturing and engineering activities.

H. Ward Zimmer, general manufacturing manager, is appointed general manager of operations of the receiving tube division, which includes three plants in Pennsylvania and one in New England.

R. M. Wise, chief radio tube engineer, becomes general manager of operations, special and large tube division, which includes three other Pennsylvania plants. Mr. Wise will direct radio tube research and development engineering, commercial engineering and production development.

Benwood-Linze Takes Over Fore

The Benwood Linze Co., St. Louis, Mo., designers, engineers and manufacturers of electrical rectifiers and rectifier-transformer assemblies, of which Harold J. Wrape is president, announces a further step in its overall program of expansion, the purchase of the Fore Electric Co., located at 4800 Delmar Blvd., St. Louis, Mo. The purchase includes all of the company's equipment, inventory, assets and trade name. All facilities have been moved to the plant of the Benwood Linze Co., at 1815 Locust Street.

The Fore company manufactured battery chargers of both vibrator and bulb type, magnetizers, transformers and

electrical meters. The Benwood Linze Co. will continue to manufacture and distribute these products, including replacement parts.

Crosley to Give Field Men Jobs

The Crosley Corp. is now contacting its nation-wide distributor organization to locate men who may come to Cincinnati to work in the firm's expanding war production.

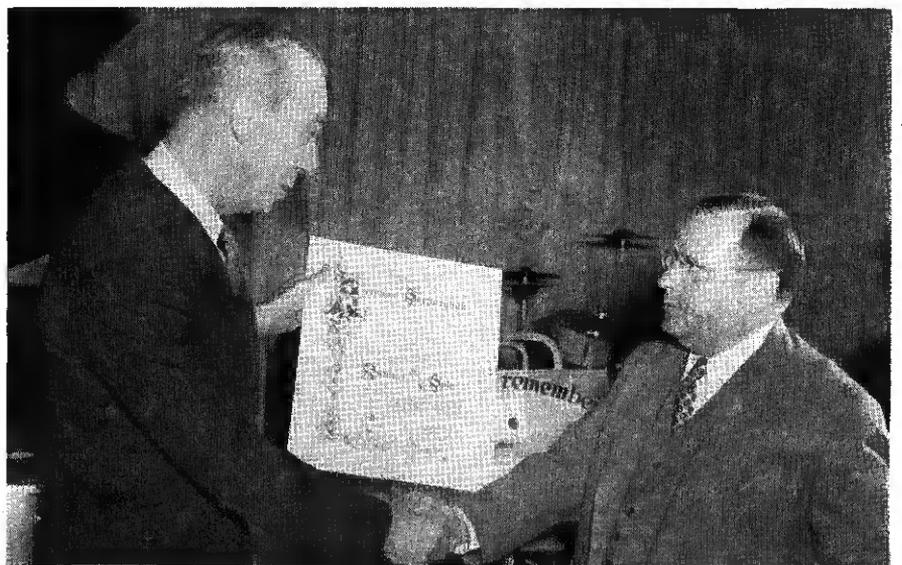
J. H. Rasmussen, appliance division manager, has made an appeal to all Crosley distributors "to have all technical men in their organizations, who can be spared temporarily, and who can qualify for jobs with Crosley as draftsmen, expeditors, production men, engineers and inspectors, to submit applications for such work . . . we want to keep in the Crosley organization all of the people we can."

Applicants are asked to state whether or not they are amateur radio operators, whether or not they have any experience in ultra-high frequency radio work, and to list experience in engineering, drafting, factory production, or service.

Bernard Brown to Air Corps

News from the D. R. Bittan Sales Co., manufacturers' representative of 53 Park Place, New York City, is that Bernard Brown of that organization is now in the Army Air Corps and stationed at Miami Beach, Fla. Mr. Brown has been associated with the firm for the past 6 years. Dan Bittan's announcement says that Irving Brander has been appointed to take Mr. Brown's place.

Aerovox President Honored by Employees



One of the events at the big 20th Anniversary dinner celebration at Aerovox Corp. when the firm's national sales staff gathered at New Bedford, Mass., headquarters. Enthusiastic employees took the affair over, and president S. I. Cole, right, was presented with testimonial by Bill Hitt, veteran San Francisco rep for Aerovox.

When You Buy Fuses DO YOU INSIST ON



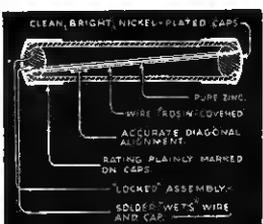
LITTELFUSE
POINT BY POINT FOR STRENGTH VIBRATION LIFE FATIGUE RESISTANCE

Or are you content with "EQUIVALENTS"?

YOU make sure of fuse efficiency and dependability when you choose LITTELFUSES, the standard of specifications wherever fuse quality is most important. And you save money. For Littelfuses are designed to give service until they blow—not disintegrate.

Get all the facts about Littelfuse Patented Locked Cap Assembly, which prevents caps from flying off—Littelfuse Gooseneck, which takes up contraction and expansion—Littelfuse twisted Element which braces against severe vibration. Littelfuses are not ordinary fuses—but efficient masterpieces of scientific, equipment-saving structure. Send for complete catalog of Littelfuses and mountings for every duty.

"Use more Littelfuses and prolong life of instruments, motors, and other valuable impossible-to-replace equipment."



LITTELFUSE, INC.
4791 Ravenswood Ave., Chicago, Ill.
261 Ong St., El Monte (Los Angeles Suburb), Calif.



They'll have to keep 'em going... "Over There!"

Designing military radio equipment—? Who isn't, these days! Then pause a moment, and give thought to a very practical problem—the problem of maintenance of your equipment in the field.

This is a global war. Your equipment will probably be used in far-flung outposts, thousands of miles away. In Australia. In Africa. In Russia.

Wherever military radio equipment is used, repair posts must be set up. Such posts must be stocked with every type of tube and part your equipment uses... for replacement purposes.

DON'T "OVER-DESIGN"
Be practical. Try to standardize on

readily-available tube types—a few types of transformers, condensers and other circuit components. Avoid "special" tubes and parts whenever possible. Remember that a good radio in working order is worth more than a "perfect" radio that's out of action!

RCA and other manufacturers are continuing to make available new and

special tube types—in keeping with our policy of offering every possible help to designers of military equipment. But remember that the more types used the more difficult becomes the problem of providing for replacements in the field.

Do not specify special types where a standard tube—or even two standard tubes—can be made to perform the same function. Remember that practical problems of supply, thousands of miles from home, may count for more than any slight theoretical improvements in performance.

BUY U. S. WAR BONDS REGULARLY



RADIO TUBES

RECEIVING TUBES • POWER TUBES • SPECIAL PURPOSE TUBES

Advice worth repeating... to YOUR customers, too!

The advertisement reproduced above is part of RCA's contribution to America's war effort. It is running in publications directed primarily to designers and engineers—advising them to keep their equipment *simple... to standardize on parts.*

That kind of advice is worth passing along. For American military radio equipment, in this global war, may have to be maintained thousands of miles from home—in remote outposts and repair depots far from normal supply-centers.

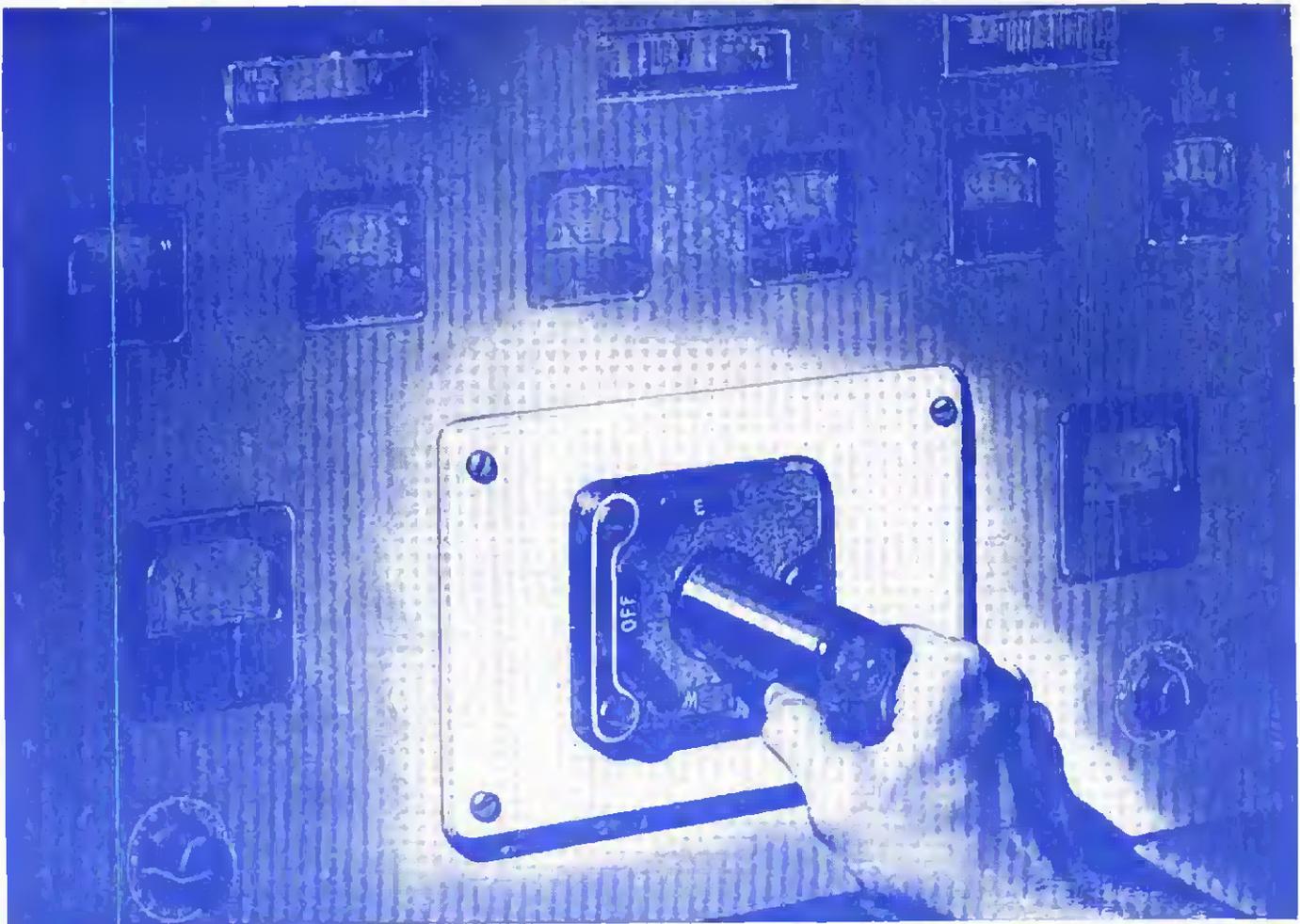
Many of *your* customers are probably at work on military radio equipment—tell *them* the story, too! Full-size reprints of this advertisement are available on request.

★ BUY U. S. WAR BONDS REGULARLY ★



RADIO TUBES

RECEIVING TUBES • POWER TUBES • CATHODE RAY TUBES • SPECIAL PURPOSE TUBES



This switch directs the steerable radio beam . . . flashes radio spearheads of truth into the darkness of occupied Europe.

THIS WEAPON IS *Anything* BUT SECRET!

Today America possesses a war weapon of great range—and it's no secret. That weapon is international radio . . . hurling projectiles of truth more than 3,000 miles across the Atlantic—and across the wide Pacific.

International broadcasts by NBC rely for their effectiveness on important developments from RCA Laboratories. The beam aerial, for instance—controlled by the switch you see above—"searchlights" broadcasts to distant points, with an enormous increase in effective power.

Through such directional aerials, WRCA and WNBI, operating with power of 50,000 watts, reach Europe with a signal strength that would require 1,200,000 watts if broadcast from a non-directional aerial.

Forty-one years ago, the first wireless signals were sent across the Atlantic. Yet today, thanks largely to RCA research, America is hurling messages into the war-torn areas of Europe with an impact that even small, compact receivers have no difficulty in picking up.



RADIO CORPORATION OF AMERICA

PIONEER IN RADIO, ELECTRONICS, TELEVISION

RCA Building, New York, N. Y.

The Services of RCA: RCA Manufacturing Co., Inc. • R.C.A. Communications, Inc. • Radio-Marine Corporation of America
RCA Laboratories • National Broadcasting Co., Inc. • Blue Network Co., Inc. • RCA Institutes, Inc.