

RADIO *Retailing* TODAY

★
HOME
REPAIRS
FOR
WAR
WORKERS

★
SERVICE
FOR
WAR
PLANTS

★
P. A.
FOR
OUTDOOR
RALLIES

A Plan for a
RADIO MAN'S VICTORY GARDEN

★
SALES OF
MORALE-
BUILDING
RECORDS

★
REPAIRS
FOR
WAR NEWS
LISTENERS

Springtime War-Jobs for Dealers



Don't Buy Radio Parts If You Can Help It

Don't buy Mallory Approved Precision Products—or radio parts of any make—unless it is an absolute necessity! The materials used in their construction are needed urgently for war effort.

Before trying to make a purchase, ask yourself, "Do I really need it?—Can I do the job without a new part?—Can I improvise the answer from material on hand?" That is the patriotic thing to do. See if the part can be salvaged from your accumulation of unused apparatus. Dismantle discarded equipment and put the parts to work.

Primarily, your job is to "Keep 'Em Listening" on the home front. If new parts are actually needed to keep your radio servicing for home sets up to essential efficiency, then we do urge—specify Mallory. The Mallory name assures you of radio products built to the highest standards of reliability and quality. Your Mallory distributor will help you wherever he can.

And, bring your servicing problems to us. We want you to make use of our services established to provide technical information recommendations on substitutes for hard-to-get items, suggestions on replacements, solutions to circuit problems, your every day questions in wartime servicing. Write us—address the Technical Information Service—you will hear from us promptly.



P. R. MALLORY & CO., Inc., INDIANAPOLIS, INDIANA

P. R. MALLORY & CO. Inc.
MALLORY

Approved Precision Products

PHILCO Distributors Have Converted, too-



The Philco Display Rooms in the Furniture Mart, Chicago, are now devoted to a display of merchandise offered by Philco Distributors. View of Soil-Off exhibit above.



Verd-A-Ray Light exhibit in the Philco Furniture Mart Display Rooms in Chicago showing how Philco merchandising facilities have been placed at the disposal of its distributors.



Occasional furniture is among the products sold by many Philco Distributors. To assist them in demonstrating to prospective dealers, Philco has turned over its display space in the Chicago Furniture Mart.

YES, Philco Distributors have converted their activities to serve the nationwide family of Philco dealers for the duration. Your problem, as always, is their problem. And as they have sought to serve your interests in time of peace, so they seek now to help you carry on in time of war.

Throughout the country, Philco distributors have combed the market to find available merchandise of worthy quality that their Philco dealers can sell. Through their efforts in cooperation with the Philco merchandising facilities, they offer you today a variety of salable items which can be sold on a profitable basis.

Thus Philco distributors *continue* to serve their dealers, doing their utmost to help you carry through to the day when "Philco All Year 'Round" will bring you again the greatest sales opportunities in the appliance field.

A FEW OF THE PRODUCTS NOW AVAILABLE THROUGH PHILCO DISTRIBUTORS

This is a partial list of products available through various Philco distributors. Yours may not have them all, but he offers you a selection that you can sell profitably in your store. Get in touch with him today.

- Sherwin-Williams "Kemtone"
- O'Cedar Products
- Anchor-Hocking "Fireking" Glassware
- Verd-A-Ray Light
- Soil-Off Liquid Cleaner
- Cram World Globes and Maps
- Thermoid Tufted Rugs
- Occasional Chairs and Furniture Accessories.



HOW YOU CAN HELP SPEED TELEVISION'S COMING!

IT'S the question we're asked often—perhaps oftenest. When will Television be here? Oh, it's here already, everybody knows that,* but we mean “commercially,” as a regular commodity, a product that you and you and you can sell over-the-counter to your customers.

Well, the advance of Television to this status depends on just one thing—**WINNING THE WAR.**

At RCA, as in countless other war-producing plants, the job of smashing the Axis has first track. In our factories, in our offices, especially in our laboratories, it is the only thing that really counts. If we are picking up new ideas, learning how to do things faster and better along the way, it's due to a new spirit of team work in an organization determined to meet war's urgent demands.

So how do you help? By helping win the war. You're doing this already, of course. But perhaps you, like all of us,

can do more. You can help by buying more War Bonds, by conserving critical materials, by keeping America's radios shipshape, by promoting every Government drive that makes for greater unity and swifter progress in kicking the H--- out of Hitler. And *especially* by just being the kind of honest, straight-shooting, non-chiseling citizen that all of us *must* be to succeed.

Yes sir, you can help speed Television's “coming-out party.” Every little push for Victory helps. But if we may be permitted just one quick observation in passing—it is that the consequences of RCA's radio and electronic research after Hitler's goose is cooked, are going to make your eyes pop.

That's all. Now we're going back to work.

*RCA introduced successful Television before the war, after a ten-year research and testing program.



RCA VICTOR DIVISION

RADIO CORPORATION OF AMERICA

New

HICKOK

**EQUIPMENT
COMING -**

*Meters
and
Instruments*

**NOW BEING MADE FOR THE
USE OF THE ARMED SERVICES**

Hickok Engineers have been busy making improvements on present models or designing new meters and test instruments for the use of our Armed Services.

Production Facilities have been greatly expanded to turn out this equipment in large enough quantities to meet War Time Requirements.

All of us here at Hickok are working to win the war as soon as possible so that we can all enjoy the peace which will follow.

As soon as the present emergency is over all these new meters and instruments will be available for all peace time purposes.

Hickok

ELECTRICAL INSTRUMENT CO.

CLEVELAND, OHIO • U. S. A.



“Really, Herbert— aren’t we over-doing it?”

This makes the fourteenth record. One for Aunt Martha . . . Each of the children has his own . . . There’s the letter I sent to Bob’s fiancée . . . The crazy little ditty you asked me to sing . . . and goodness knows how many others. If you don’t stop soon, I’ll . . . Of course I’ve enjoyed making them, but let’s save a few for tomorrow. They’re such fun.”

We agree—they are fun! Fun to make! Fun to receive! Fun to save! Like home movies, these intimate ‘Snapshots-in-Sound’ are becoming more popular every day.

Dealers everywhere are feeling the impetus of increased buying for this amazingly versatile indoor sport. RecordDisc home recording blanks are available now, from your local supplier. Write for your copy of our latest catalog.

Only RecordDiscs are ‘Snapshots-in-Sound’

THE RECORDISC CORP.

395 BROADWAY
NEW YORK, N. Y.



Cable Address
RECORDISC
NEW YORK, N. Y.

RADIO *Retailing* TODAY

APRIL, 1943

featuring

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ORESTES H. CALDWELL
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M. CLEMENTS
Publisher

Darrell Barteo, Managing Editor
H. L. M. Capron, Merchandising Editor
William E. Moulic, Technical Editor
Frank E. Butler, Associate Editor
E. T. Bennett, Assistant Editor

BUSINESS STAFF

M. H. Newton	John A. Samborn
B. V. Spinetta	W. W. Swigert
J. E. Cochran	O. H. Sutter

R. Y. Fitzpatrick, 201 N. Wells St., Chicago
Telephone RANdolph 9225

Editorial and Executive Offices
Telephone PLaza 3-1340
480 Lexington Avenue
NEW YORK



**People Like
"Natural Color" Music!**

**THAT'S WHY GENERAL ELECTRIC FM
WILL INCREASE YOUR POST-WAR RADIO SALES**

Few realize how FM broadcasting has grown — or how enthusiastic the owners of FM receivers are about this new kind of radio.

Half of the 32,000,000 radio homes are already within listening distance of the regularly operating FM broadcasting stations. When the war stopped FM expansion, 129 individuals had applied to the FCC for FM station construction permits.

In 1938 there was one FM station. At the beginning of this year there were 49. And more than half a million FM receivers were bought in this short time!

How do owners like FM? A consumer survey in 14 cities, handled through independent investigators, reports:

**85% Say FM Is Better than Regular Broadcast
91% Would Recommend FM to Their Friends**

General Electric pioneered FM. More than a third of all FM broadcast transmitters are General Electric — as are many thousands of home receivers. Today, through advertisements like the one shown, in magazines reaching tens of millions of consumers, General Electric is pre-selling FM to your future customers. After the war most if not all General Electric console-type receivers will have FM.

The public wants FM because it's the nearest thing to perfect sound reproduction. Write today for our free booklet, "The FM Eye Opener." . . . *Electronics Department, General Electric, Bridgeport, Connecticut.*

• Listen to General Electric News Time every Tuesday, Thursday and Saturday evening over C. B. S. On Sunday night listen to the "Hour of Charm" over N. B. C. See newspapers for time and station.



This four-color advertisement is appearing in the following:

- The Saturday Evening Post* April 3, 1943
- Life* April 26, 1943
- Collier's* March 27, 1943
- National Geographic* May, 1943

GENERAL ELECTRIC

175-84-8914

**A NEW CROSLEY
HAS BEEN CREATED!**



Today Crosley is a manufacturing organization with a group of top-flight executives who have brought this company to a rate of precision-production several times the company's greatest peacetime peak.

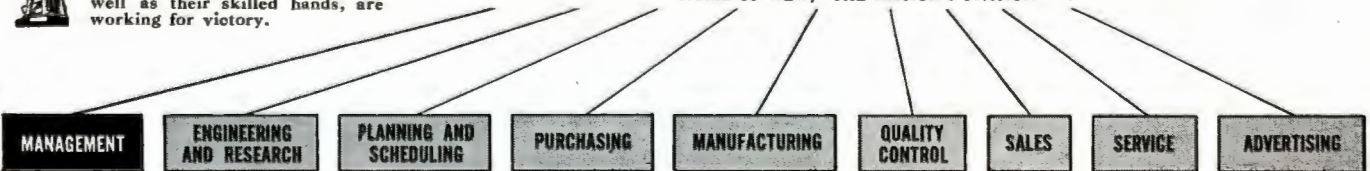
Completely converted to war, Crosley produces instruments, radio and electronic applications as well as complicated mechanical apparatus for the Armed Forces and our Allies. When Peace comes, our war plants will be prepared to re-convert to a position of post-war leadership greater and more efficient than at any time in the company's 23 years in business.

CROSLEY



More than 8,000 loyal men and women at Crosley have been awarded the 10% War Bond Flag as a symbol that their savings, as well as their skilled hands, are working for victory.

THE CROSLEY CORPORATION • CINCINNATI, OHIO AND RICHMOND, IND.
Peacetime Manufacturers of Radios, Refrigerators, Household Appliances, and the Crosley Car
HOME OF WLW, "THE NATION'S STATION"





GOODBYE, CANARY BIRDS

... hello, serviceman!

This might well be entitled: "What has a vacuum tube got that a canary bird hasn't?"

If so, it could be answered by saying that, among other things, a tube has far greater dependability and durability on the job of detecting poisonous gases in mines, vehicular traffic tunnels and the like.

For, in the old days B. E. (Before Electronics), canaries served as "gas alarms." At the first trace of poisonous fumes in a mine they'd keel over in their cages.

Today, this is just one of the countless tasks throughout industry that are being done better, more dependably The Electronic Way. It is one of many developments that are creating vast new potentialities for RCA Distributors and Servicemen.

Actually, Electronics is merely a new word describing the newer uses of the radio tube and its derivations. It is a symbol of the radio-electronic circuit at work in new ways, and in widely different fields.

All of which means simply this: Since the days when "wireless" itself was still a scientific novelty, RCA has led in what we now know as Electronic Tube development. By the same token, it means that, as long-time specialists in servicing radio-electronic circuits or supplying their components, RCA Tube and Equipment Distributors now stand on the threshold of a far greater market than ever before.

"Goodbye, Canary Birds—hello, Serviceman!" is not fantasy.

It is an actual glimpse into our future—and yours.



RCA RADIO-ELECTRONIC TUBES

RCA Victor Division

RADIO CORPORATION OF AMERICA, Camden, N. J.

BUY U. S. WAR BONDS AND STAMPS

AS QUICK AS SHE CAN SAY JACK ROBINSON...



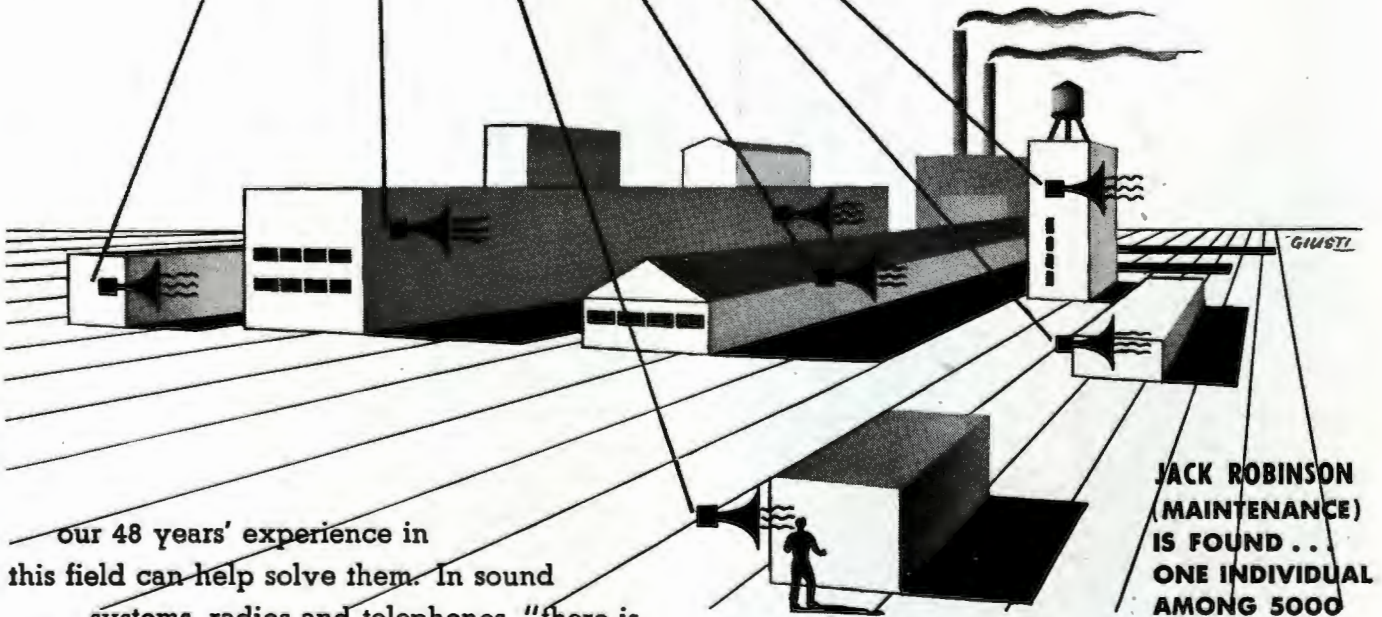
There's a break in the power line . . . and Jack Robinson is lost in the acres of machinery.

Yet he's found in a flash—thanks to Straight-Line Communication.

It's a shotgun that can't miss . . . it reaches individuals, groups, or the entire plant quickly, clearly.

But the amazing thing is that many modern plants still rely on time-wasting indirect methods of communication—despite the fact that paging by Straight-Line Communication does it better and quicker than by any other means. It more than pays for itself in a short period of time.

If your factory or plant has any communications problems whatever . . .



Our 48 years' experience in this field can help solve them. In sound systems, radios and telephones, "there is

nothing finer than a Stromberg-Carlson." Why not get in touch with the

Sound Systems Division of the Stromberg-Carlson Company, 100 Carlson Road, Rochester, New York.

STROMBERG-CARLSON



STRAIGHT-LINE COMMUNICATION SAVES MANPOWER • SPEEDS THE WORK TO VICTORY

480 LEXINGTON AVE.
NEW YORK, N. Y.

RADIO *Retailing* TODAY

Including Radio and Television Retailing

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

Manpower Again the Bottleneck

The bottlenecks of the tremendous radio war production program (which this year must turn out five billion dollars worth of radio equipment) are changing almost daily. As soon as one shortage is cured, it may turn into actual excess—and then another bottleneck appears!

A few months ago stearite was on the list of critical shortages; today there is a virtual oversupply of this material and manufacturers are being asked to find uses for it.

Today manpower appears to be the major problem even more than materials. And before the end of 1943 this shortage of manpower may be even more serious, as draft deferments of key and skilled personnel are terminated in face of the demands of the Army and Navy. As a result, we shall likely see a wider and wider use of women, in jobs for which they have not been considered before.

Versatile Signal Corps Training

Radio men have always learned resourcefulness, and how to adapt the means at hand to the job to be done. The repairmen who hasn't the tube or part called for, can usually quickly devise another way to accomplish the purpose, using what he has on the bench or on his shelves.

It was a Signal Corps radio man, as one might expect, whom Col. Carroll O. Bickenhaupt tells about, based on his reports from Major Ira P. Doctor, regarding the famous Casablanca landing in North Africa.

While the landing of American troops was being hotly contested, this Signal Corps private, John Smolkovich, who hails from Lackawanna, N. Y., yanked a .30-caliber machine gun off a landing boat, set it up on the beach, and brought down an attacking enemy plane with it.

He was just carrying out the Signal Corps maxim of getting the job done!

When the Sets Come Out Again

In the huge survey on post-war consumer buying, being conducted by the U. S. Chamber of Commerce, it is reported that "within 6 months after the war, 1,330,000 families intend to buy radios." The Chamber says that this is a conservative figure, and that it is probably a *minimum* index of the actual demand for radios if the war should end tomorrow.

"Minimum" is right! In its last peace-time year, 1941, the radio industry sold about an average of 1,000,000 radios every month.

Besides, it would be difficult for a gang of research men, working with general figures, to take account of the extraordinary improvements due for post-war radio.

More than most, this industry can develop merchandise that nudges people into buying. For the radio business, the greatest usefulness of this Chamber of Commerce estimate is to keep a young industry in a sober mood. It does strike a kind of keep-your-feet-on-the-ground note.

Radio "Garden" on the Cover

That down-to-earth project on the front cover of this issue shows what happens when the Victory garden idea is applied to radio matters. You can see the impact of war on each of the dealer activities indicated for Spring-time emphasis.

Many readers may, at the moment, lack the tools with which to develop the items named. Supplies are short, personnel is dwindling, etc., and wartime business problems are manifold. But as May rolls around, some solutions for these problems are being noted, and meanwhile the best idea is to approach the thing with a resourceful attitude and to dig as deeply as you can with what you have.



This pledge for dealers and servicemen, published last year in "Radio Retailing Today," is still being used by radio men to remind their customers of the extent of the retailers' Victory job. An example is Mr. Knirsch's use of the pledge as a display ad in his local newspaper, The Valley Times. This New Hampshire serviceman ran it jumbo size, and, as you can see, made no direct attempt to sell anything.



The Radioman's WARTIME PLEDGE

Recognizing that the broadcasters are furnishing a vital NEWS and warning service to the people of my community — together with the necessary morale-building entertainment.

And that it is essential to provide every home and individual in my territory with a radio set, to be kept in working condition 24 hours a day.

I PLEDGE MYSELF TO:

Cooperate in every way with the U. S. Government, the military authorities, and the home-defense workers of my community.

Survey all homes and radio sets within my territory, for the purpose of making a record of such radio sets (and their condition, tubes, antenna, etc.), whether working or not, homes without a radio, etc. — which record shall be available to the local home-defense authorities.

Repair and restore to operating condition for a reasonable charge, any sets not now working.

Rehabilitate for use and sale, old outmoded sets among my own and customers' discards.

Economize in the use of all radio materials in which a shortage exists, utilizing old material where possible.

Maintain my laboratory (test) equipment at the highest possible level of efficiency to guarantee rapid, accurate testing of civilian and emergency radio equipment.

Check up on short-wave sets used by enemy aliens and see that such sets are promptly altered or turned in to the police.

Aid local defense and munitions plants to install electronic alarms and safeguards (photo-cells, infra-red beams, etc.) to prevent trespassing and sabotage.

Work with the local defense authorities in any way I am able, to help set up radio alarm systems, public-address systems for meetings, etc.

Make myself and my facilities available for training and local civilian defense programs.

Buy Defense Savings Stamps and Bonds to the limit of my ability.

CARL F. KNIRSCH, Radiotrician

RADIO SERVICE LABORATORY of BARNSTEAD, N. H.

Phone Pittsfield 78-12

Special permission of Caldwell-Clements, Inc.

WAR

U P S E T S

• The second summer since we entered the war is fast approaching. And with it will come many very substantial changes from last summer.

The effects of "total war" on the civil economy have been widely discussed and now we are seeing, and really beginning to feel them.

On the radio business the effects are profound, with still more to come. This summer, in many ways, will be last summer's trends, amplified and multiplied.

Gas rationing last year cut down on pleasure some 25 per cent—but this year pleasure driving is practically extinct, in the East, and a definite war casualty in the entire country.

That means fewer and fewer vacations, and picnics, and greatly reduced use of auto sets.

Portable Batteries Discontinued

The battery situation almost eliminates the portable radio as a factor of entertainment, but does open up a possible source of business for the enterprising dealer, in converting to AC-DC operation.

The shortage of new sets to sell is now acute, and we can expect no improvement for the duration.

The shortage of parts and tubes has begun to get serious, but we have the assurance of the WPB that this condition will be soon corrected. In the next month or two WPB promises "victory" parts and tubes, to "keep the home sets going."

And so the "service picture" may not be as black as it looked only a short time ago.

European Invasion News

Certainly, if we open a European invasion front, the news will be of more direct interest to all Americans than in the past.

If OWI will let the facts filter through as they happen, and thus make us all feel closer to, and more personally a part of, the war, through



our loved ones on the fighting front, there will be a tremendous resurgence of public interest in radio newscasts.

This will quickly reflect itself in a sharp upswing in the demand for radio service. People want news that is not colored or false. This can have an important effect on the radio business in general, the service business in particular, and the listening habits of a people.

All in all, the immediate prospects of the home radio sales and service business do not seem too bright for early summer.

Consider New Lines

Thousands of other businesses are closing their doors, and thousands more are changing the entire complexion and character of their operation. The merchandising trends of the last 50 years, toward specialization, are fast being reversed.

Auto Accessory stores are taking on clothes, household supplies, tools, and garden supplies.

Many food Super-Markets are adding cosmetics, crockery and glassware, and other lines.

We are trending now, back to the



OWI Photo by Palmer

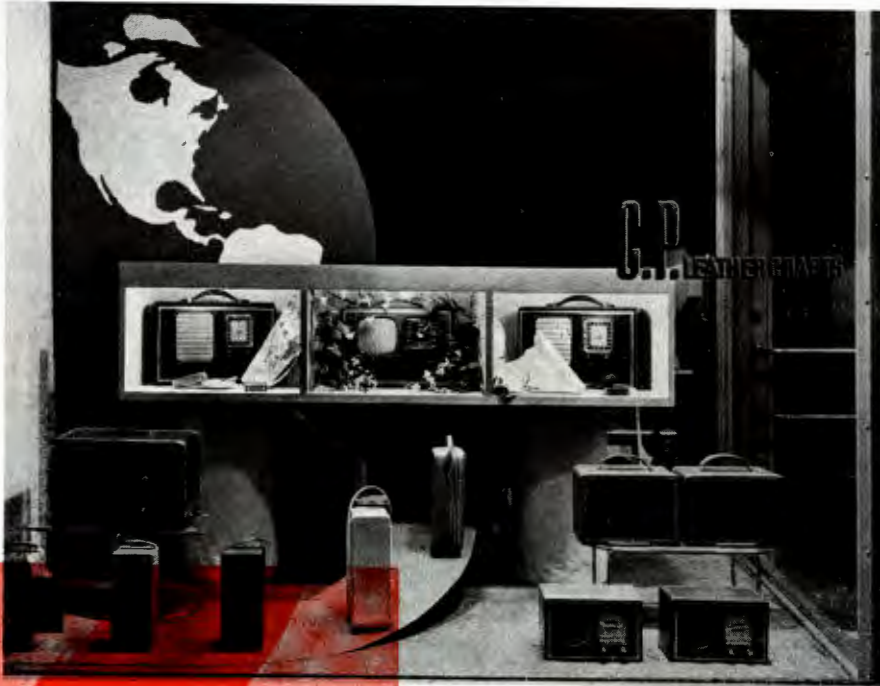
"General Store" of a generation ago.

Radio sales will no longer support a store. Other merchandise must take its place. And this "other" merchandise may take one of the two familiar forms:

(a) Merchandise which is related to radio, or entertainment, such as records, music, games, hobbies, etc.

(b) Merchandise of a general, necessary, nature, not related to radio or

SUMMER RADIO



The outdoor radio activities shown above were picked from picture reports of the summer season, published in "the good old days." Each has a ray of hope for wartime business; some battery portables can be "converted" and you can still sell records.

radio will run counter to the trend as stated above. There is every reason to believe that radio men must quickly take the step of diversification, even to the extent of combining with another, or soon pay the price for their lack of vision.

Gauge Your Business to New Pace

Any survey of radio men today will show that none are happy, very few are taking any positive corrective action, most are using temporary tricks and expedients to keep going on a day to day basis, just to delay the day of reckoning.

One thing is certain. Business as usual is out. This is war—total war—and it's only begun. While it is true that we, as individuals, can no longer precisely control our destinies, it is also true that we can influence them to a large degree, if we plan, and act.

Radio men have been notorious for their lack of planning, for their blind "drifting in the swift currents of new business riding the flood tide of popular acceptance.

Never was it more true than it is this summer, that you must "run your business, or your business will run you."

Planning Factors

Your plans must consider four vitally important factors.

1. The fast changing living, working and buying habits of a determined people.
2. The vast, and fast increasing number of our loved ones on the fighting fronts of the world.
3. The inevitable effects of the war, and of governmental wartime restrictions, on business, through control of industrial production and a wartime economy.
4. The reaction which will follow the cessation of war, in not less than 16 months, and probably not more than 40 months.

Buying Habits

Thousands of small businesses will close their doors. Tens of thousands will not. Whether yours is the former, or the latter, will depend upon your vision, your planning, your action.

In all your calculations, bear in mind:

1. More and more young men are going to war.
2. More and more women are going to work.
3. Fewer people can seek rest and pleasure in travel.
4. More must find entertainment near, or in, their homes.
5. Shopping will be less frequent, more concentrated.
6. Taxes, direct and indirect, will be an increasing factor in the buying habits and buying power, of most people.
7. A tremendous "luxury demand" is being built up, for future release, but current attention is focused on necessities, food, clothing, home.

This summer, if you have what the public wants, when and where they want it, at a price they can afford to pay, they will buy.

That's business—your business and every business.

entertainment such as "service goods," housewares, outdoor goods, garden supplies, and personal goods.

And for the service dealer, two avenues also, appear open:

(a) Expand into the sale and service of sound and electronic equipment in industry.

(b) Include non-related services, on appliances, bicycles, cars, lawnmowers, etc.

There is no reason to believe that



RADIO FOR 18 MILLION WAR WORKERS



● Servicemen have reported that in many cases they have been unable to repair the radios of war workers. It is a situation where the shortages of replacement parts, manpower and gasoline are particularly unfortunate.

The tone of these reports is this: the workers make up a big section of the radio man's customers in war industry areas, and because these people are doing some of the most important work in the world today, servicemen are anxious to keep them happy. Repair of these receivers is considered to be one of the Victory jobs of the radio industry, and it is easy to see why the job is a vital one, when the repair man is confronted by a war factory employee who wants, and needs, his receiver fixed.

For instance, one radio man stated the facts in this way: "Remember this . . . these war workers are not asking for new radios. Many of them are not even asking for repairs for their second or third sets. They want only to be provided with normal and reasonable radio listening equipment.

Repair Men Have a Job on Their Hands, Fixing Sets for the "Soldiers of Production" — to Whom Radio Is Very Much a Necessity

I hate like the dickens to turn them down, particularly when only a few tubes and a few little replacement parts would do the trick. These people need their radios and I think they should have them. I think it is the least we can do for the workers who are making the weapons for our Armed Forces."

Repair for Morale

There were some 17,500,000 war workers in the U.S. at the beginning of this year. The radio needs of such a group are enormous. And some of them have already registered some

pretty hard-boiled complaints with servicemen who were not able to repair their radios.

Anything that has been said about radio entertainment as a national morale builder goes double for this group. Their morale is extremely important to the Victory effort and every American knows that millions of well-spent dollars have already been used for building the workers' morale in other ways.

Radio men themselves have been involved in other serious and scientific efforts to bring music and news flashes to war workers. This refers to the public address systems installed in war production plants, to lessen the fatigue of the employees and to help keep them in the best working mood. The value of such systems is solidly established as a boon to production. Then what about the music, the news flashes, and the million-dollar entertainment that the workers could get at home, from their home receivers, if their sets could be kept in repair?

One program broadcast at a time when war workers can listen: Producers Ginger Johnson and Allan Kent (left to right) whipping up their recorded show "Say It With Music" which airs from 1 to 7 A.M. over WJZ, New York.

The amusement habits of many of these people have been violently changed by the demands of the night shifts and the emergency production time schedules. In some cases they have told their radio dealers that "radio is about all the entertainment we have," which apparently means that most of their "off" hours occur when the public entertainment spots are closed.

Shifts Change Entertainment Habits

In such cases the workers must depend more than ever on odd-hour entertainment from their radios, and in areas where their numbers are legion, local broadcasting stations have begun to adjust program schedules with the weapon-makers in mind. Everybody in the business, including the serviceman, is alert enough to radio's role in the picture. But the serviceman gets the blame if he cannot repair the workers' radios promptly.

The radio tastes of this group are not particularly difficult to satisfy because practically every type of person is involved. Thousands of women are to be numbered among them, as more and more of the ladies take their places as soldiers of production.



There are several things that servicemen can do to help, besides a general and sincere effort to give these war workers the radio they need. In crowded areas, where one receiver must serve a house full of people, the installation of speaker extensions will help. This has been done in England with some success.

Repair Record-Players Build Up Record Sales

Sometimes a radio man doesn't have the replacement parts needed to repair a radio, but can fix up a record-

player because the parts are not in such popular demand. And listening to records is one of the favorite ways for workers to relax. This reminds us also that the sale of records themselves is a good bet for the radio man who has many war workers in his area.

Any of these extras that a radio man can do for the factory folks can add up to substantial profit per job. These are hard-working people who need relaxation and entertainment and are in position to pay for any radio equipment that will supply it.

A recent government report states that unavailability of recreation to workers on the graveyard (midnight to morning) shift was found to be causing unnecessary job absences. In these instances arrangements were made locally to provide facilities for cashing pay-checks in the evening and lengthening the operating hours of movie theaters, bowling alleys, and other places of entertainment. Here is another place where adequate radio repair should provide its share of broadcast entertainment to these workers whose hours are irregular.

In conclusion, the American war worker has been honored in many ways; the radio man will want to honor him too, right up to the limit of available facilities and supplies.



New homes for workers "mushroom" in defense area. This is a radioless family in Bantam, Conn.

Radio Repair Men and the War News

• This spring, if the radio repairman can keep the home radio circuits bringing in the war news flashes, he's feeding the national appetite in a way that will be remembered.

The serviceman is responsible for bringing in many kinds of vital war-time broadcasts, but during the April-May period he has an extra special job in making the war news available to his customers. There are several reasons why the "hot news" factor now looms more important; the alert and Victory-minded repairman will know what these reasons are, and how to deal with them.

In the first place, and this is the most direct connection that the serviceman has with news broadcasts, the radio news fans are the ones who want "rush" repair jobs. Daily listening habits in this department are apt to be fixed and vigorously maintained. If a set dies on a real news fan, he wants the radio fixed in a few hours. The situation is different among the fans of other types of broadcast fea-

tures; if a fan of Jack Benny, for instance, has trouble bringing the show in, he has a full week to get the radio fixed.

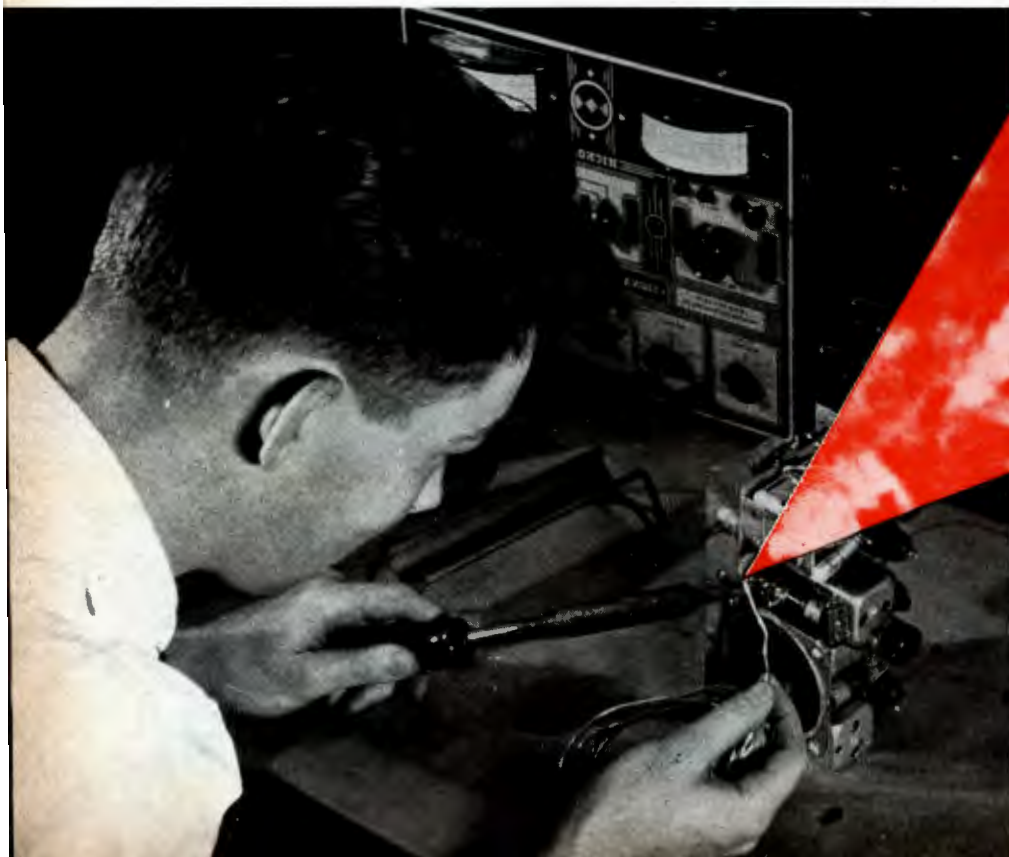
But news happens every hour, and it is broadcast hourly. The element of speed in radio repairing is vastly important to anyone who has developed a genuine interest in battlefront flashes.

Hourly Changes

This situation becomes a great deal more tense as summer arrives. The Armies in Europe are maneuvering for a showdown scrap, and nobody wants to miss anything. On the Russian front, the word "Spring" is dynamite as the *Wehrmacht* functions better when the snows melt. Things are popping, and the radio is the best way to keep abreast.

Also, as the warm weather period gets here, millions of people will expect to get their news via the portable radio, or via the auto receiver if they are getting any gas. This gives the

These Are the Days When a Touch of Solder on a Radio Set Brings in the World's Best News Coverage on the Most Crucial Battles in Modern History.



radio man an extra problem, since replacement supplies for portables and car radios are especially short.

But that isn't all. By the time summer rolls around, practically every customer of the radio shop will have a friend or relative in the Armed Forces. The interest in war news among these millions of people will



The serviceman has his own responsibility for the news of the hour. Above (left to right) network newscasters John MacVane and Charles Collingwood at Algiers and Ed Wallace at Sidney.

March of Time Photo

be enormous, and will exert a powerful new pressure on the man who keeps the radio playing.

It is likely too that early summer will see the absolute peak in expert news coverage of the world. It appears that the network technique of presenting news will have the best correspondents in the most strategic spots; the most significant bulletins on the air at the most satisfactory time. The volume of news broadcasting is already impressive.

Thus we see that the forthcoming news on the air will be hotter and more complete; it will directly affect the lives of more and more people and

it will be a "must" for millions. It will send scores of people to the radio shop.

What should the serviceman do about this situation? Certainly he should be prepared.

Plagued by shortages in replacement parts and manpower, the repair man will have a difficult task in keeping these impatient listeners happy. It's the same we-must-have-radio story which is heard by servicemen in target areas where listeners depend upon their receivers to give them the "all clear" signal.

Service Is the Key

The radio man's job resolves itself into three factors, then, as a three-way program to handle this situation. First, adopt the general policy of making the most radio available to the most people on the basis of avail-

able facilities. Second, develop all the servicing shortcuts and substitute circuits that will help to keep portables and auto sets in operation this season. Third, take the responsibility for becoming a pleasant and accurate interpreter of the shortages in the radio business, that is, you should be ready to give the customer a satisfactory and forward-looking explanation of the lack of replacement parts and servicing personnel, and explain the necessity for the "one set per home" trend in the future.

This kind of a program is designed to help deal with the hurry-up demands of the news fan. It will help to make the serviceman a key figure in the whole U.S. radio system, and will place him as an important factor in national morale. This position is infinitely preferable to that of a disgruntled merchant who turns down repair jobs without explaining why, in terms of Victory, and without trying to keep the customer happy and interested in emergency radio.



The electronic atom-sorting machine at the left illustrates the kind of research which keeps the new industry moving ahead. It's really a mass spectograph with magnetic field coils surrounding the atom-sifting tube in the center.

electrons are in a kind of regular motion about the nucleus. Bohr regarded these electrons as moving in special radiationless orbits. But while moving in these orbits, and thus in a sense free, the electrons remain always close to the nucleus. Thus, they still remain bound. Impressed electric and magnetic fields will alter the motion of electrons about the nucleus, as is shown by the Stark and Zeeman effects. But the orbits are only shifted slightly or perturbed by the fields. They continue to surround the nucleus closely. The change in energy of the electrons with the largest attainable impressed fields is only a fraction of a volt, while their normal energies are many volts.

Now let two nuclei with their accompanying swarms of electrons, approach each other. When about 10^{-8} cm apart, the orbits of the outermost electrons begin to overlap. A new set of orbits form, in which the outermost electrons now circulate around the

Understanding Electronic

An Industry Authority Keys Classification to Fundamental Operation

• What lies at the basis of all this electronic activity and how the hundreds of new electronic devices may be classified in a practical way, are matters which have seized the interest of many a forward-looking radio man. Clear understanding of the fundamentals is essential to the best handling of those spectacular sales and service jobs which are developing in this fastest-growing industry.

Just such an outline of basic "electronics and ionics" was given by Dr. Joseph Slepian, Assistant Director of Research for Westinghouse Electric & Mfg. Co., when he recently addressed the Science Talent Institute in Washington, D. C.

Dr. Slepian explained that at first thought, a beginner might assume that the science of electronics deals with any phenomena in which electrons play a part. But such an assumption, he de-

clared, needs drastic restriction according to the quality of "freedom" which electrons possess. Otherwise, the movement of electrons in a simple metal wire could be called electronic. Dr. Slepian's complete explanation follows.

Electron Orbits

The electrons in "electronic apparatus" are free in a different sense and in a different way than the electrons in the metal wire. And by examining the modern theory of the atom, and the modern theory of the electronic states of a metal, one begins to distinguish between the two kinds of freedom.

An isolated atom of an element in its normal state, according to Rutherford, Bohr, and their followers, has a positively charged nucleus surrounded by a swarm of electrons, and these

two nuclei. Thus the outermost electrons have become free. Such an outer electron is no longer bound to a single nucleus, but can and does move from the neighborhood of one nucleus to the neighborhood of the other.

Now, by building up a chain of these nuclei, with their overlapping electron swarms, we begin to see what happens in a metal, and why a metal wire may not be an "electronic apparatus." In the metal wire the electrons become free only by being able to follow orbits which go from nucleus to nucleus. They are thus still bound in their freedom. They remain always within about 10^{-8} cm from some nucleus.

The Dividing Line

Thus we arrive at a more refined definition of the "science of electronics." It deals with electrons which

are free in the sense of being substantially at much greater distances from the nuclei of atoms than the radii of the outermost stable orbits of the normal atom. That is, free electrons, in the sense developed here, are farther away from nuclei than many times 10^{-8} cm. In the usual radio tube, for example, the electrons in the vacuum space are generally more than 10^{-4} cm away from any atom. They are free. In the metal wire, however, the conduction electrons are never more than a few times 10^{-8} cm away from a nucleus. In spite of their mobility, they are not free in the sense used here.

Explaining a Science

The "science of electronics" is the science of these now sufficiently well defined free electrons. It deals with the means for setting electrons free; thermionic emission, photoelectric effect, secondary emission, etc. It deals with the properties of free electrons, their motion in electric and magnetic fields, as in the electron microscope, their space charge effects, etc. It deals with effects produced by free electrons acting on other matter, excitation, and ionisation of atoms by

free there in the sense defined above. This suggests a fully equivalent alternative definition of an "electronic apparatus." An "electronic apparatus" is a device in which electric conduction current is carried through a vacuum or gaseous space. This form of definition has the advantage of avoiding theory in its formulation, and referring only to objects which can be directly and immediately observed.

According to the two equivalent definitions, "electronic apparatus" obviously includes the various vacuum tube detectors, amplifiers, oscillators of radio, X-ray tubes, photo-tubes, ultra-violet germ-killing lamps, fluorescent lamps, neon signs, thyratrons, and ignitrons. But they also include devices which in the past we have not thought of as electronic devices. Electric switches which use the electric arc for safely interrupting power circuits, spark gaps in lightning arresters and similar devices for protecting electric circuits, spark plugs for igniting in proper sequence the explosive mixtures in internal combustion engines, electric arc welders, electric arc furnaces, the precipitron for electrically cleaning air of dust, these are

all electronic devices according to the definitions developed above.

It is impossible to modify the definition so as to exclude these devices. Rather we must accept these familiar things as truly electronic apparatus, and even more we must expect confidently that the "science of electronics" now and in the future will make clearer the manner of operation of the devices, and will teach us how to make better these devices. In fact, some of the "next" things in electrical engineering will be great developments and improvements in these devices through "electronic science."

Electro-ionic Devices

When we examine these electronic devices, we find that they fall into two rather definite classes. All employ free electrons, but some make important use also of positively charged atoms or molecules of the gas through which the electrons pass. These positively charged atoms or molecules are called ions, so perhaps the devices using them might be called ionic devices, or perhaps still better electro-ionic, indicating that

(Continued on page 42)

Devices

collision, generation of X-rays, excitation of fluorescence, activation of a photographic film. It deals with the ways free electrons lose their freedom, recombination with positive ions, attachment to neutral molecules to form negative ions, etc.

Full Definition

The "free electrons" of an electronic apparatus must of course have space in which to exercise their freedom, so every electronic apparatus has in it a vacuum or gaseous space in which electric current is carried by free electrons. This is clear because in any liquid or solid element of a circuit the atoms or nuclei are so close together electrons cannot be

Rectifier tubes used in X-Ray machines get a 150,000-volt test. Here the experimenter uses a grounding stick to get rid of residual charges after the 15-minute test is finished.



"Tailored" Sound in Ohio Schools

● One of the most up-to-the-minute and pace-setting sound systems to be found in the entire country is the one used in the public schools at Zanesville, Ohio. And it was outfitted mainly by a single local radio man.

The description of the system comes from Washington, D. C., because the Zanesville project has attracted national attention. This account of how the system was developed and how it works was written for *RADIO RETAILING TODAY* by R. R. Lowdermilk, Educational Radio Service, Federal Radio Education Committee, Washington.

The story is one of radio-equipment standardization and long-range planning embracing an entire city school system. What happened in the Zanesville schools from the early spring of 1939, through 1942 can be attributed largely to the vision and cooperation of one of the citizens of the local community, a local radio man, Chester Thompson of the Thompson Electric Co. Mr. Thompson didn't do the job entirely alone, of course. The wisdom of the Superintendent of Schools, Kenneth C. Ray (now Ohio State Director of Public Education), the fact that the Zanesville public school system became the principal field research center of the Evaluation of School Broadcasts Project of the Ohio State University, and the support of the Zanesville community, itself, all helped.

How It Started

Without the continuous cooperation of Mr. Thompson, however, neither the over-all technical consistency, nor the general specialization of equipment design to meet the requirements of planned instructional applications of radio would likely have been achieved.

Above, a view of a high school control room with students at the dials.

Below, the Zanesville youngsters stage a broadcast in their specially designed studio. They're hooked to local Station WHIZ.

In 1939, shortly before the experimental work of the Evaluation Project began in Zanesville, a standard Operadio announcing and intercommunication system had been installed in the Roosevelt Junior High School. This consisted of a wall-mounted PM-dynamic loudspeaker in each of the twenty classrooms, a central 30-watt amplifier located in a closet adjacent to the principal's office, and a master control unit and desk-type crystal microphone located on the principal's desk. The central amplifier provided electronic mixing for two high-gain inputs and one low-gain input, all high impedance. The master-control unit was of the push-button operated type, and incorpo-

rated a preamplifier for use with the principal's desk-microphone, and for boosting the return-speech pickup of classroom loudspeakers. A low-gain auxiliary input was also provided to accommodate accessory equipment.

New Units Added

When the experimental study of the school-wide use of radio was introduced in the School, certain inadequacies of this centralized announcing system at once became apparent. Accordingly, a Howard communications-type receiver was added to permit the reception and distribution of radio programs to classroom listening groups, and, later, a dual-





The radio-and-sound-equipped schools in Zanesville give the students a chance to use many different kinds of units, including recorders, P.A. systems, mixers, etc. They've gotten together in a Radio Engineers Club, shown above.

speed turntable unit was added to permit the use of transcriptions. Both of these were fed into the system through the auxiliary input on the master-control unit.

During the early stages of the experiment, the students taking part in the Friday morning in-school discussion-panel broadcasts attempted to use the microphone on the principal's desk. Since this microphone was designed for close talking, however, this plan proved unsatisfactory. When a more-sensitive microphone mounted on a floor stand was used, hum pick-up became a problem. Consequently, Mr. Thompson was called in to install low-impedance input transformers in the two high-gain channels of the central amplifier, running shielded microphone lines to convenient microphone receptacles in the office.

Mikes Improved

At Mr. Thompson's suggestion, these microphone lines were continued to the auditorium stage on the first

floor of the building, directly below the office, to provide microphone facilities for broadcasting by larger groups than the office could accommodate. Low-impedance microphones of the "cardoid" type, mounted on floor stands, were then purchased for use by the student panel groups, and proved entirely satisfactory.

School Broadcasts

The following year, a David Bogen 16-inch recorder was added so that student broadcasts could be recorded in advance, and studied for their general effectiveness before being broadcast to the entire student body. To widen the potential applications of this recorder, Mr. Thompson installed a power take-off from the driver stage of the central amplifier which could be fed directly into the amplifier of the recorder. Thus, the recorder could be used, either as a self-contained unit, or in conjunction with the central public-address system.

All this, of course, follows general

public-address system practices. What really is significant is that what was done in the Roosevelt School paralleled similar equipment improvements and modernizations in other schools of the Zanesville system. Existing program-distribution systems were rebuilt to provide standardization of matching impedances and of all receptacles and connectors, and this policy was extended to new installations made during the two following years. Thus, it became possible to substitute any basic component of any given program-distribution system for a corresponding component in any other school. While this involved considerable rebuilding of the factory-assembled public-address equipment installed in the schools, it materially reduced the quantity of replacement components required to insure uninterrupted service of the equipment.

Several of the central program-distribution installations in the Zanesville schools have been especially "tailored" to meet conditions imposed

(Continued on page 44)

New Supplies of Parts and Tubes

• The latest action on the Victory line, or "war model" replacement parts for civilian radios is the issue by the American Standards Association of the war standards for transformers and chokes.

This is the fourth of a series of standards for replacement parts being developed by the Association with the cooperation of all branches of the radio industry, the War Production Board and the Office of Price Administration.

Simplified List

The new standard, titled "Power and Audio Transformers and Reactors—Home Receiver Replacement Type," covers the performance and quality requirements for a simplified list of 14 such units which, it is estimated, will be sufficient to service about 90 per cent of the radio sets now in operation. Use of the new standard will also assure that such critical materials as copper and transformer steel, allocated to the production of radio replacement parts, will be stretched as far as possible with a minimum amount of material being used in each unit. The simplified list of units will also mean fewer production lines and smaller dealer inventories.

One of Series

Work on this standard was undertaken at the request of the Office of Price Administration after consultation with the Radio and Radar Division of the War Production Board. This new standard will, it is expected, be incorporated in a further order for radio parts to be issued by the WPB.

Meanwhile, a new trend in the designation of these parts was seen in the decision of the War Production Board to allow manufacturers of Victory tubes to market them through

their regular channels.

The plan applies only to tubes, so far, and means that some of the first shipments of tubes will be made in the regular factory cartons, and that there will be less emphasis on the unbranded, Victory-labelled product, at least to start with.

Plans for Tubes

Current schedules call for the production of 11,000,000 tubes for civilian sets by July. These are to be concentrated on the 114 essential types listed by WPB and produced by seven tube plants. The production for the year is aimed at a total of 45,000,000 tubes.

In a recent letter to the manufacturers, the WPB radio division told them that they can help solve shortages of these items by sharing their

Despres Heads Electronic Agency



In the military radio picture, supplies of radio and electronic components for war research labs are to be expedited by a new group, the Electronic Research Supply Agency. Maurice Despres, well known New York radio distributor, has been named managing director. See page 63.

Correct List of "Victory" Tube Makers

The full list of the seven radio tube manufacturers named in the War Production Board plan to produce the Victory Lines or "War Model" tubes is as follows: Hytron Corp., Salem, Mass.; Ken-Rad Tube & Lamp Corp., Owensboro, Ky.; National Union Radio Corp., Newark, N. J.; Raytheon Production Corp., Newton, Mass.; RCA Victor Division, Radio Corp. of America, Harrison, N. J.; Sylvania Electric Products, Inc., Emporium, Pa.; and Tung-Sol Lamp Works, Inc., Newark, N. J.

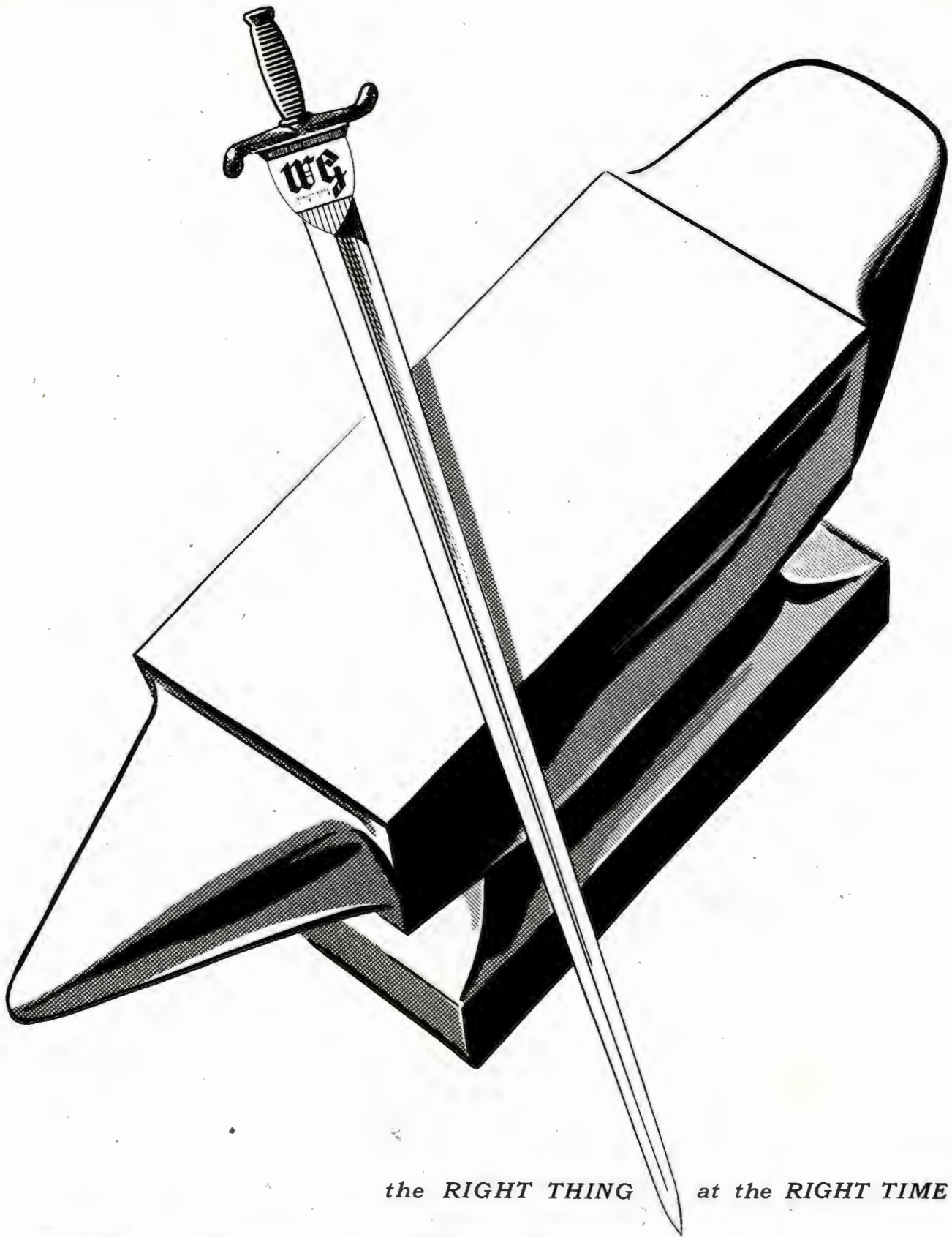
When the list was published in these columns in March, the Tung-Sol company was inadvertently omitted.

inventories and cooperating to supply all distributors with well-rounded stocks.

Frank H. McIntosh, chief of the division's foreign and domestic branch, wrote that WPB's surveys showed that production was almost as high as in peace times, and that local shortages resulted from maldistribution. He urged that this be solved through cooperation of manufacturers in freely exchanging tubes, and by concentrating production on critical types, even though some of them may be low profit items.

Civilian Responsibility

The McIntosh letter, it is believed, is intended to let manufacturers know that WPB expects them to accept responsibility for keeping civilian radio going. WPB has already said material and facilities are available; now it says with wise selection of tube types, and cooperation in serving distributors all needs can be met.



the RIGHT THING at the RIGHT TIME



WILCOX-GAY CORPORATION

CHARLOTTE, MICHIGAN

"Producing for war...planning for peace"



President Parnell S. Billings of Belmont Radio Corp., Chicago, heads the line of Red Cross blood donors at his plant where nearly 1,000 workers gave their blood.

The Radio Front

Below left, a report on what refrigerator manufacturers are doing—Nash-Kelvinator execs C. T. Lawson and Frank R. Pierce view one of their propellers on a mosquito bomber.



Above, a blonde on the beam. Radio work is one of the jobs tackled by the SPARS, the Women's Reserve of the U. S. Coast Guard.



Above, radio production men at Sparks-Withington, Jackson, Mich., hear front-line reports at Old Timer's Club meeting. Left to right, Lt. Ed Butler, USMC; Winthrop Withington; Col. G. E. Strong, USAAF; W. J. Corbett; Lt. Comm. L. H. Brendell, USN; and Harry G. Sparks. Below, more women learn radio. Some graduates of this American Women's Voluntary Service class are being used as radio repairmen trainees by the Army.

Photo Courtesy of Char





"Cruiser and transport ahead . . . **LET'S TAKE 'EM!**"

Messages like these "must go through," and to make certain they do, the communication systems in our Army and Navy aircraft are as sensitive, as rugged, and as trouble-defying as advanced design and precision manufacturing methods can make them.

Producing transformers, headsets and other communications equipment for the Army and Navy Air Forces is ROLA's present responsibility to the war program. To keep abreast . . . and ahead . . . of demands, new machines have been designed, new methods devised, new tests and inspections applied. Facilities have been

expanded, and production vastly increased.

All this is important to peacetime users of ROLA equipment, for it is only logical to believe that the research and the skill and the equipment inspired by wartime necessity will find important application in the Electronic World of Tomorrow.

The "know how," gained through twenty years of leadership in the radio field, has enabled ROLA to meet . . . and exceed . . . every war demand made upon it, both as prime and as sub-contractor. We have facilities available for additional contracts. If you are interested, we suggest you write us . . . or ask our representative to call. THE ROLA COMPANY, Inc., 2530 Superior Avenue, Cleveland, Ohio.

★ ROLA ★

MAKERS OF THE FINEST IN SOUND REPRODUCING AND ELECTRONIC EQUIPMENT



San Francisco's Emerson School students get current events at first hand on "school-cast" via a General Electric FM radio—one of the many possibilities for radio in connection with educational systems in these times of rapidly changing frontiers, economics and scientific developments.

vacuum appliances. This not only shows the radio owner how to keep his set from getting out of condition, but constitutes an actual demonstration of the vacuum cleaner, and often results in this allied sale. In any case, he points out, whether or not an additional sale is made at the time, the

Doing Business in Wartime

Be Careful About Cashing Checks

There is a big increase in the number of government checks being issued these days, because of dependency payments to families of men in the Armed Forces, Social Security benefit payments, and other wartime reasons. Accordingly, the United States Secret Service has undertaken an educational program to protect these checks and others, using the theme, "Know Your Endorser."

Advice to dealers, issued by the Secret Service experts, takes the form of five simple rules:

1. Demand proper identification. Remember that lodge cards, Social Security cards, auto licenses, letters and the like also can be forged or stolen. A forger's credentials are often forgeries themselves. Proper identification can best be determined by asking yourself this question: "If this check is returned, can I find the person who gave it to me?"
2. Always demand that the person cashing the check endorse it in your presence. Even though the check has been endorsed, insist that he endorse it again.
3. Do not cash checks that show any alteration of their face. Altered checks are usually forged checks.
4. If you are an employer and more than one employee of yours is empowered to cash checks, be sure that they each initial accepted check so that you can identify the person who cashed it.
5. You can safeguard your merchandise, your cash, and your profits from check forgers by following these simple rules every time you cash a check. Make these practices routine. Remember you lose if you cash a forged check.

Wartime Sales Through Service

Shortage of parts for radio repair resulted in a workable service idea developed by one Hoboken, N. J., dealer. "Doc" Izzo keeps a list of all radio set purchasers from year to year and makes semi-annual calls on his customers to check on how their sets are working. While originally a radio dealer exclusively, he now handles electrical appliances for the home as well, and takes along one of his tank-type vacuum cleaners, gives the set a thorough cleaning with the

good will promoted in this manner often results in further sales at a later date.

A similar tie-up is made by this dealer between refrigerators and a thermos container for ice-cubes. When checking on refrigerators he has sold he takes along a non-priority constructed item called "The Old Wooden Bucket," distributed by the Admiration Products Co., 23 West 23rd St., New York. This is a good quart-sized, lidded, wooden bucket lined with earthenware. Suggested for ice-cubes, it also keeps hot material at its original temperature. Selling for around \$5.00, this item has a good turnover, "Doc" reports, and goes well during the summer months and during the holiday-gift period.

Co-operate!

Remember the Banana.
Every Time It Leaves the Bunch,
It Gets Skinned!

Framed motto on wall of office of Bond Geddes, Executive Vice-president, Radio Manufacturers Assn., Washington, D. C.

FADA Radio

On Duty in the New Aircraft Communication Spectrum



Designed and built by FADA to most rigorous government specifications, the receiver illustrated is possibly the first public glimpse of the new equipment which had to be created to make possible the proposed shift of aircraft communication from "MF" to "VHF" — from the 3–6 megacycle "medium frequencies" to the 115–160 megacycle "very high frequencies."

Two tuned r.f. *amplifying* stages crystal controlled oscillator-quadruplers precision construction for 24-hour continuous operation in all kinds of weather amplified A.V.C. . . . carrier-operated noise suppressor automatic noise limiter built-in a.c. power supply sensitivity four microvolts image and spurious response reactivity running up to thousands of times all on a 5 $\frac{1}{4}$ " relay rack panel yet "wide open" for easy servicing

FADA is rather proud of the part its engineering skill is privileged to play in this and other aircraft radio equipments in the opening up of new communication frequency spectrums which were still but dreams only a few years ago.

This new FADA receiver is shown as one of numerous tangible examples of new products of FADA research and engineering today being built for many departments of our government examples which indicate concretely that FADA will be the source of startlingly changed simplified improved radio/electronics for *you* post war.

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

1920 SINCE BROADCASTING BEGAN 1943

• The urgent need for an industry program that will maintain an adequate radio servicing personnel, is being emphasized by George E. Barbey, Reading, Pa., distributor who heads up the National Electronic Distributors Association.

Mr. Barbey believes that government agencies should use all possible speed in supplying replacement parts for civilian radios, to help prevent any more radio servicemen from leaving the business because of lack of supplies. His conclusions are based on contacts with the members of NEDA,

to tide the business over for the duration.

NEDA has indicated that a "group servicing station" plan would solve the problem in many areas. Such a plan would be organized around the local parts distributor, with local servicemen operating out of a single headquarters address. The pooling of deliveries, the swapping of parts supplies, and the cooperative use of available personnel would be features of the plan.

With the local parts distributor at the center of such an organization,

"group servicing station" would, of course, depend in each case on the needs of the individual community, as well as the facilities and manpower that happen to be available locally.

Threat to Jobbers

The above idea is advanced as one constructive suggestion to be considered after the immediate problem of parts supplies is solved. The instant flow of replacements must come ahead of all else.

Otherwise, the threat of extinction

TO KEEP SETS PLAYING

Distributors' Answer to Shortages in Repair Personnel

who in turn deal with hundreds of repairmen throughout the United States.

Earlier this year NEDA had taken the position that the servicing personnel left in the business was adequate to handle the repair needs of the nation. But it is now pointed out that repairmen cannot afford to wait indefinitely for replacement supplies, while "dead" sets pile up and income dwindles. Even at this point, a corps of freshly trained helpers would be needed to help keep the 60,000,000 receivers in playing condition. And the situation grows progressively worse.

Main "Casualty" Cause

The view taken at NEDA headquarters is that the "casualties" among radio servicemen are now due mainly to the lack of supplies, rather than to Selective Service inroads or opportunities in other fields. The only way to hold servicemen in the industry is to give them the parts (mainly tubes just now) with which to repair sets.

That the industry should make every effort to help the present servicing group to stay in business, is strongly supported by the fact that the remaining repairmen are the cream of the crop. As a rule, they are the better established experts and the key maintenance centers of the industry.

If any type of shop can form the nucleus of a wartime training program for temporary help in the business, these fellows are the ones. They have the facilities and the experience



The "mass production" service methods at the Dixie Radio Supply Co., Columbia, S. C., make the best possible use of technical personnel. These men do only production work laid out for them in their individual booths; they can repair 70 to 100 sets a day.

the flow of his replacement stocks to the servicemen would be greatly simplified, it is pointed out by Mr. Barbey. Also, the uniform enforcement of any emergency policy, such as "one set per home" would be greatly facilitated with all local repairmen working as a cooperative group.

Further, it is believed that the future extent and nature of "war model" replacement supplies could be more accurately charted by government agencies, if the repair needs of each community were concentrated under a single supervisory head.

The detailed organization of a

applies not only to remaining servicemen but to the parts distributors themselves, who have depended on the home repair type of business, Mr. Barbey declares. A few of the jobbers have already given up the ghost.

No amount of civilian radio supplies, if they come too late, will provide for the efficient maintenance of civilian radios after the key outlets have begun to fade out of the picture. Thus the NEDA executive chooses this time to renew the hurry-up call for parts supplies, and to emphasize the relation between these supplies and the personnel problem.



Neither were planned for war

We're not raising new generations to die on battlefields; we're not designing implements for future wars. We Americans are a peace and freedom-loving lot, with an economy that is geared to the home . . . washing machines, automobiles, radio . . .

But we first must finish an unpleasant job of blasting the daylights out of those who deliberately attacked our way of life. For that purpose, we've given our men. And our men are getting the very best tools for that piece of grim business.

We thank heaven that change, progress and mass production are an integral part of a system that enabled us to redesign our products for military applications. True, our new designs were speeded by war necessity—but we like to think of these latest Electro-Voice microphones as no different from the others in our evolutionary scale.

For, as eagerly as any soldier on a fighting front, we retain a vision of returning again to our natural mode of living. We plan to build better microphones for civilian communication . . . for music . . . for laughter . . .



Electro-Voice MICROPHONES

ELECTRO-VOICE MANUFACTURING CO., INC.

1239 SOUTH BEND AVENUE, SOUTH BEND, INDIANA

Choosing Alternate Lines

"Substitute" Lines Listed by Philco

A listing of some 25 wartime products which have been obtained by Philco Corp. for its distributors to sell to dealers, has been released in catalog form by the company. The catalog form was described by Philco's vice president in charge of sales, Thomas A. Kennally, as a device "to conserve gas and tires and still make it possible for our distributors to maintain contact with their dealers."

The merchandise runs from phono needles to upholstered chairs, and prices range from 15c for a kitchen trim to \$115.00 for a complete Philco portable amplifier. The products include "Fire-King" ensembles of table ware and oven ware; "Soil-Off" household cleaning fluid; "Hostess" chairs; "Cram" globes and maps (from \$1 to \$84.50 retail); a wooden collapsible

shopping wagon; "Kem-Tone wall finishes; "Pladak" airplane model picture kits, Seiberlings "Sealleak" to seal tire punctures; and a group of Philco products, including industrial batteries, intercommunicators, amplifiers, auto and home radio aeriels, tubes, phono needles, blank recording discs, furniture polish and refrigerator polish.

Radio Jobber Offers Alternate Lines

Example of what a leading radio jobber is offering his dealers these days is shown by the Simon Distributing Corp., 25th and H Sts., N.W., Washington, D. C. in the Simon periodic bulletin, The Sidico Expediter.

Items listed in a current issue: Porta Nook, Sr., table and benches, Moonstone glassware, Ornaewood tie racks, book ends and ash trays, glass-



There is stepped-up activity at the plant of the Crystal-Vox Hearing Instruments Co., 1249 Washington Blvd., Detroit; the company finds that many radio dealers are stocking hearing aid instruments as one of their wartime lines.

topped smoking stands and tables, Cory coffee brewers, Book games, Wilson's dart games, Rand McNally map puzzles, SaniTray plastic ice cube trays, Kindle-Lite blocks for starting camp-fires, Commando all-wood utility wagons and U. S. Traveller Chief toy wagons.

Distributor Sells Stirrup Pumps

The sale of stirrup pumps by a radio and appliance distributor is getting a vigorous trial in the New Jersey and New England areas. Colen-Gruhn Co., prominent New York jobber, started selling the Ilco unit, which has been officially approved by Civilian Defense authorities, several weeks ago and now reports that the volume is highly satisfactory.

The pump is now being handled mostly by hardware dealers, but Colen-Gruhn says that there is no reason why radio dealers should not stock the unit. Springtime angle on this merchandise is that the pump has been found to be very useful in watering Victory gardens. The Ilco job can easily be used by women gardeners, as lightness is one of its design features. It has fittings of plastics and metal, a wooden handle and a 10 ft. hose.

The OPA ceiling price for this unit is \$3.80, and the contract for its manufacture and sale in the New England states has been awarded to the Independent Lock Co., Fitchburg, Mass.



Records and record-playing equipment are being considered this Spring by many war production outfits; local radio men can get the business. Equipment shown here is at the Newport News, Va., Shipbuilding Yard, where a big sound system provides daily music for workers.

Better SPEECH REPRODUCTION FROM THE SKYWAYS!

No matter what the operating conditions . . .
JENSEN speech reproducers bring in those
important orders. *PAN AMERICAN AIRWAYS SYSTEM*
installed *JENSEN* speech reproducers at their
bases for ship to ground communications
because they know quality is an essential
and reliability a must.

Jensen RADIO MANUFACTURING COMPANY

1401 SOUTH LARAMIE AVENUE
CHICAGO, U. S. A.





Important in current record sales are those lively patriotic tunes of the popular type. Here are the Decca singers, the Merry Maes, of Praise-the-Lord-and-Pass-the-Ammunition fame.

The Music War Council of America, 20 East Jackson Blvd., Chicago, will furnish free a very comprehensive folder on request, telling many ways in which to participate in Music Week.

Publicity value of stories in newspapers and time on the air are more indirect, but the media of the radio-music dealer's own window display during this week should not be overlooked. Books on music, pictures of soldiers playing musical instruments and singing, collections of instruments used during past wars are suggestions, and display materials supplied by the National Music Week Committee, 315 Fourth Ave., New York, may be used. The National Committee will send free on request "The 1943 Letter" which lists display material available through them at a small fee, such as 5c for a window strip, etc.

Another suggestion is that the radio-music dealer make his store a collection depot during the week for the contribution of sheet music and small instruments that could be donated to the USO or the nearest Army camp. This activity on the part of the dealer might further be used for window display by allowing the collection to accumulate throughout the week in his window, labelling it as such, against a patriotically appropriate background, such as posters of singing soldiers, flags, colored bunting or any of the displays offered by the National Committee.

RECORD NEWS

RCA Scrap Contest Reveals Dealer Ingenuity

A recent RCA Victor scrap collecting stunt contest brought forth many novel ideas suggested by record dealers in salvaging scrap records.

Declaring that scrap records constitute the life blood of the record industry today and that any ideas that can increase the stockpile of scrap records will benefit the industry as a whole, J. M. Williams, RCA Victor's manager of record advertising said the contest had double value in that it offered both money and a clearing house for ideas.

Among the interesting stunts suggested was that of Chicago dealers who conceived the idea of enlisting the aid of the Janitor's Union. Members sorted through trash heaps for possible scrap records. San Francisco dealers organized a Sherlock Holmes Club among school children and paid them per record turned in. One St. Louis dealer ran a contest between record clerks and general employees with three cash awards as prizes. The top record clerk turned in 2,500 scrap records, with other contestants not far behind.

Other dealers arranged mutual benefit stunts with theatres, dance halls, and night clubs. In Hartford, Conn., Victor recording artists Tommy Dorsey, Alvino Rey, and Dick Todd made guest appearances at a local theatre and the scrap pile was 18,000 records higher in one day.

One enterprising dealer purchased a supply of tickets for a local theatre at a bargain rate. A specified number of scrap records won the customer a free ticket to the movie.

Display and Tie-in Suggestions for Music Week —May 2-9

Unity through music is the keynote to be fostered by the National Inter-American Music Week Committee this year. The 1943 observance will emphasize the wartime service of music and the strengthening of friendly ties among the peoples of the United Nations.

Community get-togethers have an opportunity for real success during this week and the radio-music dealer has a definite place in the picture.

Pocketbooks Tie in with Records

Over 350,000 of Columbia Recording Corporation's pocket-size books on the lives and music of the great composers have been sold by dealers to record-buyers.

The strikingly designed covers of these little books add color to the dealer's record display, and selling for 25c, they are not only a mine of information for the record-buyer but help to increase his enjoyment of the music he has selected.

Each book, containing approximately a hundred pages, consists of four chapters—one is a biography and character sketch of the composer, another discusses the significance and importance of his work, a chapter on authoritative analysis and commentary on his recorded music follows, and a final chapter gives a list of his records.

The authors are famous music critics, such as George Marek of Good Housekeeping Magazine, Robert C. Bagar of the New York World-Telegram, and Irving Kolodin of the New York Sun. Forewords have been written by outstanding conductors and a famous singer.



Casting the die of Precision

● Sylvania Radio Tube precision begins with the tool- and diemaker. A graduate from our own apprentice school, he magnifies the pattern of precision on his drill press 10 times by means of high-power spectacles.

All dies and machine tool heads for the production of Sylvania Radio Tube parts are made by specialist-toolmakers in our own tool shop.

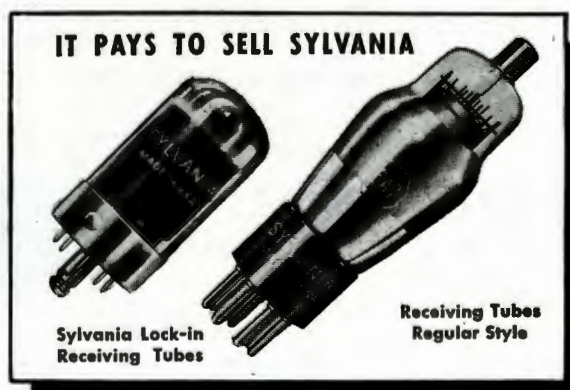
The training of experts for this private shop—to service exclusive machines and tools designed by our engineers—is our best guarantee of the

continuity of Sylvania precision quality.

From the toolmaker who patterns precision to the inspector who okehs a radio tube for shipment—the same painstaking care of the specialist goes into every step of production.

This step-by-step specialization produces radio tubes of the highest quality. It is the reason why you can sell Sylvania Radio Tubes with confidence.

And anyone who holds a Sylvania franchise knows, from experience, that specialization also means good business.



SYLVANIA

ELECTRIC PRODUCTS INC.

Emporium, Pa.

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

What Washington Says—

OPA Acts on Radio and Phonograph Assemblies

After meeting with representative radio retailers and distributors in New York and Chicago, OPA is now working on a regulation to control the price ceilings for radios and phonographs which are assembled by dealers and jobbers. The status of these units has been doubtful ever since they assumed special importance because new sets were no longer being produced.

Coming under the new regulation will be a scattered number of radio distributors, retailers and brokers who, since the summer of 1942, have become assemblers of household phonograph and receiving sets. By comparison with full fledged manufacturing procedures, their operations are relatively simple, consisting of the mounting of a fully-assembled chassis with a speaker, and frequently with a phonograph pick-up mechanism, into a finished cabinet.

Except Manufacturers

Specifically excluded from the new regulation will be regular manufacturers of radios. They will continue under Revised Price Schedule No. 83 (Radio Receivers and Phonographs). Manufacturers are practically removed from production of such sets, by Limitation Orders L-44A and L-183 issued by the War Production Board. However, these WPB orders do not prevent placing a chassis manufactured in accordance with the terms of the orders, into a cabinet.

At the present time wholesale and retail prices of radios and phonographs are controlled by the General Maximum Price Regulation. OPA points out that it is a violation of this price regulation for assemblers of radios to make sales unless a maximum price has been specifically authorized by the Office of Price Administration under Section 3 (b) of the General Maximum Price Regulation in all cases except where the assembled radio is actually similar to a model sold during March 1942.

Warning on Sales of Tubes

The OPA has issued a special warning on the practice of making newly-formulated repair charges in connection with the sale of tubes these days.

Any store or repair shop which refuses to sell tubes except to a customer who brings in his radio and pays a service charge is violating the General Maximum Price Regulation unless that practice was customary with the store or shop in March 1942.

Instances have been brought to the attention of OPA where prospective buyers of radio tubes have been compelled to go to the expense and incon-

venience of transporting radios to stores selling tubes, and of paying a service charge in addition to the cost of the tube, because the stores would not sell the tubes otherwise.

Where stores or repair shops did not require this in March 1942, the base period of the General Maximum Price Regulation which governs retail prices of radio tubes, the subsequent introduction of this service charge, and of the requirement that the customer bring the radio to the shop, is a violation of the regulation, OPA said.

In regard to this ruling, the National Electronic Distributors Association issued prompt advice to servicemen on how to handle the situation and to keep their customers from hoarding tubes.

Remarking that "this ruling does not apply to those who were smart enough to charge for testing tubes in 'the good old days'," NEDA went on to say:

"OPA is a price regulating body. It is not interested in the fact that the consumer has no tube tester, that he has no way of knowing whether a tube is defective (except perhaps a small percentage of burn-outs), and that he is therefore in most cases interested only in buying and hoarding a spare tube.

"There is no law, order, regulation, or interpretation thereof that forces you to sell a tube to a customer if you do not wish to, unless said customer has a priority. You must fill a priority order . . . even an A-10, if you have the merchandise.



"There's no hurry about my automobile radio. Any time before the next gasoline ration stamp is good will do."

"If a customer asks for a tube it is possible that you do not have any. Don't make any explanations. Don't mention priorities or repairs . . . not even the 'shortage due to the war.' Let the customer do the talking. If he wants the set repaired he will bring up the subject and you can follow through on your regular repair procedure. But as for the OPA ruling, the answer to your whole problem could be stated in five words: 'We do not have any.'"

More Batteries for Farm Radios

It has been announced by the Consumers Durable Goods Division of the WPB that dealers and consumers in farm areas can now expect a few more batteries for radios. This has been one of the most pressing problems in the whole radio shortage picture. WPB has done some re-scheduling in battery production, to make more farm radio batteries possible.

Lack of radio batteries has been most acute in those farm areas where radio reception depends solely on battery sets. In some sections of these areas, reports have indicated that as many as one-third of the farm battery radios have been inoperative due to a lack of batteries. Even the extension of rural electrification on a large scale has not diminished the use of farm battery radios. Replacements of battery-operated sets by electric sets in areas supplied with electric power have not matched the increased use of battery types in non-electrified regions.

200,000 Monthly

Diversion of materials to war-essential uses has largely accounted for decreased production of radio batteries. Shortages of materials and facilities for civilian production have held radio battery production down to a monthly rate of less than 200,000 during the last several months.

It is estimated that battery-operated radios on farms have increased in number from a pre-war 2,200,000 to a present total of 3,200,000. Pre-war production of radio batteries approximated 4,500,000 sets of batteries, sufficient to supply about two sets of batteries per year per radio.

Even return to production on a pre-war scale—utterly impossible at present—would not meet this year's battery demand on the basis of two-battery-sets-per-radio annually. As one step to improve the situation Order L71 has prohibited the production of batteries for portable radios, thus conserving materials for farm radio batteries.

EXTRA FEATURE ATTRACTION **RADIO IN THE WAR**

***Another Step in the Program of
Help to Zenith Dealers***



**FOR THE FIRST TIME—A Graphic Interpretation of
Radio's Brilliant Role in Battle**

The theme pursued by Zenith's extensive national advertising campaign "Radio in the War"—a portrayal of the part played by Radio—Radionics—Radar in the strategy of modern battle, has become of such widespread importance in the public mind . . . that millions are now vitally interested in anything having to do with new Radionic developments.

Now as the next step in Zenith's dealer-help program, Zenith has graphically interpreted this entire theme by means of a new, informative, human, powerful window presentation . . . at your disposal . . . which will stop, and intrigue every individual who passes by your window.

It's graphic . . . crystallized . . . dramatized . . . summarized. Compelling color treatment by an official military artist. Advertising copy kept to a minimum . . . plus an important message of good will to your friends and neighbors.

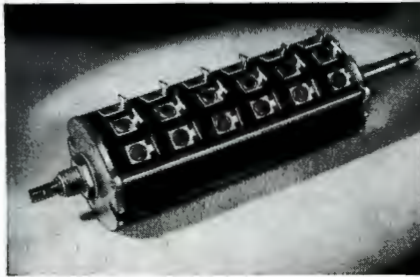
If you want this dramatic display to maintain your public's interest in the new things in Radio . . . drop your Zenith distributor a line. Ask him to put you on the list for "Radio in the War."

ZENITH RADIO CORPORATION, CHICAGO, ILLINOIS

**BETTER THAN CASH
U. S. WAR SAVINGS
STAMPS AND BONDS**



New Products



CLAROSTAT "42" SERIES CONTROL was developed to meet the need for a single control of several circuits in radio and electronics, and it produces maximum rigidity in such tandem assemblies, as well as positive rotation of all units without backlash. The new case design for each unit locks all units into a compact stack. A single shaft passes through and locks with each rotor. All units of the control pass through the same degree of rotation as the single shaft is rotated. Individual units can be of any standard resistance, taper, taps and hop-offs to meet circuit requirements, are made on special order only, and are available with as many as 20 sections. Clarostat Mfg. Co., 285 N. Sixth St., Brooklyn, N. Y.—RRT.

HEWLETT - PACKARD FREQUENCY METERS models 100-A low frequency standard and 500-A electronic frequency meter. Model 100-A is a source of standard frequencies from 100 cps to 100 kc, consisting of a crystal controlled oscillator and a series of frequency dividers of the regenerative modulator type. 500-A measures the frequency of an alternating voltage from 0 to 50 kc; has a wide band amplifier with a limiting circuit and electronic switch, constant current supply and frequency discriminating circuit, plus an output meter and rectifier. Hewlett-Packard Co., 395 Page Mill Rd., Palo Alto, Calif.—RRT.



SUPERIOR VOLTAGE TESTER, which reads like a thermometer, has no meter, no switching and no tip jacks. Connect the needle pointed test prods across any line and this instrument will instantly indicate the voltage, frequency, type of current, whether the appliance connected in the line is open, which leg is grounded, if the fuse is blown, excessive leakage between a motor and a line, etc. Four GE type NE-7 neon bulbs used in conjunction with a network of resistors provide most of the services necessary for industrial electrical maintenance. The multicolored etched steel panel is designed for easy reading, and the unit is completely housed in a wooden box. Sub-assembly housing prevents jarring of the



neon bulbs. Overall size: $1\frac{3}{4}'' \times 5'' \times 1\frac{5}{8}''$. Draws less than 1 milliamperes of current. Superior Instruments Co., Dept. T, 227 Fulton St., New York, N. Y.—RRT.

BIDDLE INSULATION TESTER for trouble-shooting in all types of electrical equipment—radio, power, communication—to detect and prevent breakdown; has plastic case molded of high impact phenolic material by the Chicago Molded Products Co., Chicago, and is of the hand-generator and direct-reading ohmmeter type. James G. Biddle Co., 1211-13 Arch St., Philadelphia, Pa.—RRT.

LITTELFUSE "SIGNALETTE," a signal indicator operated by reflected light and radio activity, houses a solenoid with armature connected with the butterfly indication vanes by lever hookup. The butterfly opens to show signals, reflecting indicator light. Butterflies are furnished in red, amber and green. Signalette is black when not indicating. Overall length is $2\frac{5}{32}''$ in. and can be mounted in panels up to $\frac{3}{8}''$ in. thickness. Littelfuse, Inc., 4757 Ravenswood Ave., Chicago.—RRT.



SPRAGUE "PLUG IN" CONDENSERS of the dry electrolytic type recommended for the elimination of low frequency ripple (2—100 cycles). Can be sealed as well as any condenser and is easily mounted or removed. Small size; light weight. Designed to operate under adverse temperature and climatic conditions. Sprague Specialties Co., North Adams, Mass.—RRT.

BELL VOICE PAGING SYSTEMS recommended for speeding up production in large factories. Features include mike and controls placed for instant service of switchboard operator; locked, tamper-proof, high-fidelity amplifiers remotely located; powerful loud speakers strategically placed in any or all departments. An on-off switch, a microphone with either a hand or foot talk-switch and a phonograph unit (if recordings are to be used) are all located at a control station, suggested for placement at the receptionist's desk or at the telephone operator's switchboard. Control circuits are of low voltage, thereby saving on conduit and permitting buzzer-type wiring from switches to the remotely located control amplifier. Speakers of either reflex trumpet or wall installation types may be used. Standard units are designed not only for initial installations of any size but also to permit future expansion. Bell Sound Systems, Inc., 1183 Essex Ave., Columbus, Ohio.—RRT.



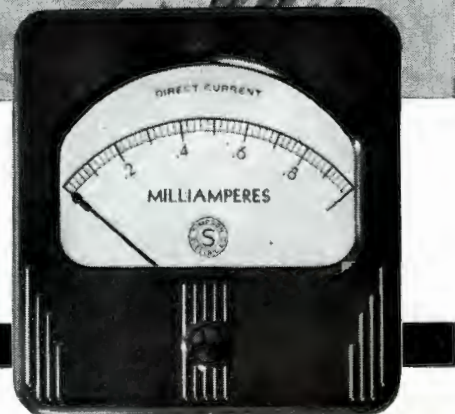
A BIG STEP FORWARD

EVERY TIME our fighting men win a new beach head . . . every time an enemy plane falls from the sky . . . every time the sun sets on a war-torn world . . . America is that much closer to Victory.

No man can know how many days there are between us and peace. We can only do our best to make those days as few as possible.

Hard work is what it takes — good old-fashioned hard work, and sweat, to save us blood and tears. Here at Simpson we hold this as a sacred trust — to send ever more and better Simpson Instruments into battle, and to make each working hour a big step forward toward America's inevitable Victory.

SIMPSON ELECTRIC CO.
5200-5218 Kinzie Street, Chicago, Illinois



Simpson

INSTRUMENTS THAT STAY ACCURATE

Buy War Bonds and Stamps for Victory

Changeover Circuits for

Many readers were interested in the article in *Radio Retailing Today* for March, which gave detailed instructions on how to change tube circuits so that available tubes could be used in place of "short" numbers. This information was furnished by M. G. Goldberg, of Beacon Radio Service, 142 E. 4th St., St. Paul, Minn., who had found the changes to be valuable and practical during these days of tube shortages.

Mr. Goldberg now contributes more of these changeovers, all of which have emerged from actual experience in his repair work in St. Paul. Schematics for the changes are shown herewith.

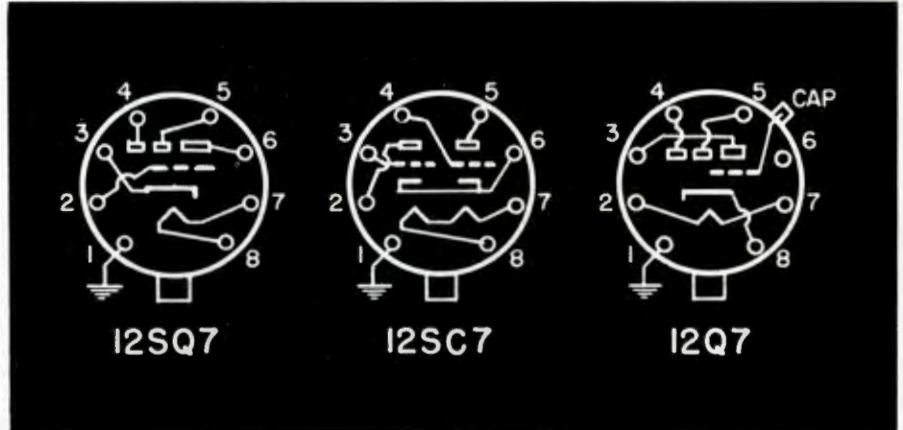
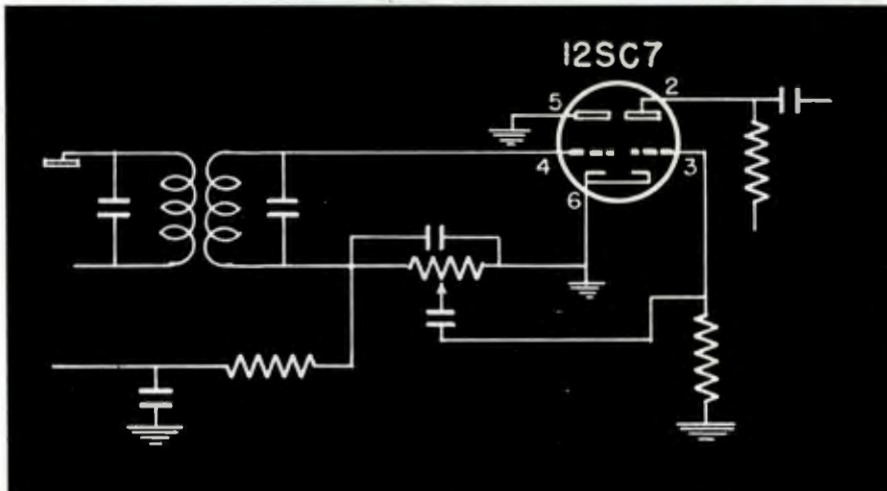
Few servicemen would ever dream of using a double high-mu-triode for replacement of a 12SQ7 diode-triode, but it works beautifully and the supply of 12SC7 tubes seems plentiful—as yet.

Tricks with 12SK7

As to the 12SK7, some of the receivers (many of them in fact), use two of these tubes, one as an r.f. untuned stage and the other in the tuned i.f. stage. This problem of burnout in a set of this type where the 12SK7 tube is the dead one, can be solved by using the remaining 12SK7 tube in the i.f. stage and using a 12SJ7 (of which many seem to be still available) in the untuned r.f. stage with almost no apparent change in operation.

In cases of hard-to-get 12A8GT tubes, three out of four cases can be solved by the use of 12K8GT tubes. In some sets this can not be done because of unstable operation, and in others it will pep up a poor performer,

Conventional second detector circuit using a 12SC7 as diode-triode tube. Numbers indicate socket pin terminals.



Base diagrams for tubes that can be interchanged using methods presented in text below.

so it is worth trying.

In using the 12SC7 tube to replace the 12SQ7 tube, notice that the heater leads need not be changed, being connected to No. 7 and No. 8 prongs in both cases. The grid on the 12SQ7 is lifted from No. 2 and soldered to No. 3, and the cathode from No. 3 shifted to No. 6, and the plate from No. 6 shifted to No. 2 from which we lifted the grid. This leaves only the diodes to consider.

Here we do something a bit out of the ordinary, using the grid of the second triode for a diode. The really coincidental feature at this point is that most sets use the input from the i.f. to diode connected to No. 4 prong, and the No. 5 is either tied to the No. 4, using both diodes as one, or the No. 5 is connected so as to minimize the effect of contact potential. If this is the case the No. 4 and No. 5 prongs are left undisturbed and the complete changeover is made. However, if the

situation is reversed and the No. 5 terminal is connected to the i.f. transformer "hot" side, this must be corrected, as otherwise the potential on the No. 4 or grid prong will vary the resistance between cathode and No. 5 plate and seriously affect the operation. In such cases, just reverse No. 4 and No. 5 leads on the socket, and the job is done.

Shifting Leads

In using the 12Q7 tube in place of the 12SQ7, it is necessary to run a short shielded wire up from under the chassis through a socket mounting hole, or a hole made for just this purpose, so as to reach the grid cap of the 12Q7, plenty of which seem to be available. (One jobber here has more than 50 of these alone at this writing). Now follow this simplified procedure.

Leave wires on No. 1, No. 4, No. 5 and No. 7 alone just as they are, as no changes are required at these points.

Lift grid lead or leads from No. 2 contact. Do not connect to anything else as yet.

Now take heater lead from No. 8 and move to No. 2.

Move the cathode lead of the 12SQ7 from No. 3 and move to No. 8.

Move the plate lead of the 12SQ7 from No. 6 to No. 3.

Now use the dead No. 6 socket contact for anchoring the grid lead and coupling condenser, grid leak, etc. The only other work necessary consists in soldering a small grid cap connector to the free end of the wire on the top of the chassis, and the job is done. In extreme cases it may be necessary to slip a shield over the tube, but this is seldom necessary.

Several points should be remembered in doing these changeovers to

Substitute Tubes

prevent future trouble with the customer. Tell him what you are doing (in a general way) and mark the radio in some way with a tag or slip of paper pasted inside to show the changeover tube required for replacement, and in which socket it is to go.

Also be sure you lift *all* wires, condensers, or resistors from a socket contact at once when transferring to another point on the socket, so that the circuit is correct after you complete the rewiring job.

And one more thing: remember the customer can't be given an exact estimate on the repairs required since you can't just replace a tube and try the radio to see if the everything else is o.k. You won't know until AFTER you have made the changeover whether or not there are any "bugs" to get out, so explain this to the customer when taking the job.

Repair Data for Belmont Model 11A25

This receiver is a two band radio-combination using 11 tubes in the circuit shown in the accompanying diagram.

The second detector uses the diode section of a 6SQ7, the triode amplifier of which is grounded out. A separate 6SQ7 is used as the first AF amplifier. In the case of shortage of 6SQ7 tubes, the grid and plate leads from the first AF socket can be transferred to the second detector and one tube will do the job of two. A divided plate load type phase inverter is used.

IF Alignment Procedure

To align the IF transformers, connect a 455 kc signal through 0.1 mfd. to grid of first 6SK7 IF tube. Adjust the output IF transformer for peak output. The set dial should be set at the high frequency end of the broadcast band. Reconnect signal to 6SA7 grid and adjust the shortwave oscillator trimmer located on the front of the chassis between the tuning and band switch shafts. This is the upper trimmer.

With the same set-up, adjust also, the RF and antenna trimmers for peak output. The antenna trimmer is located to the right of the bandswitch shaft.

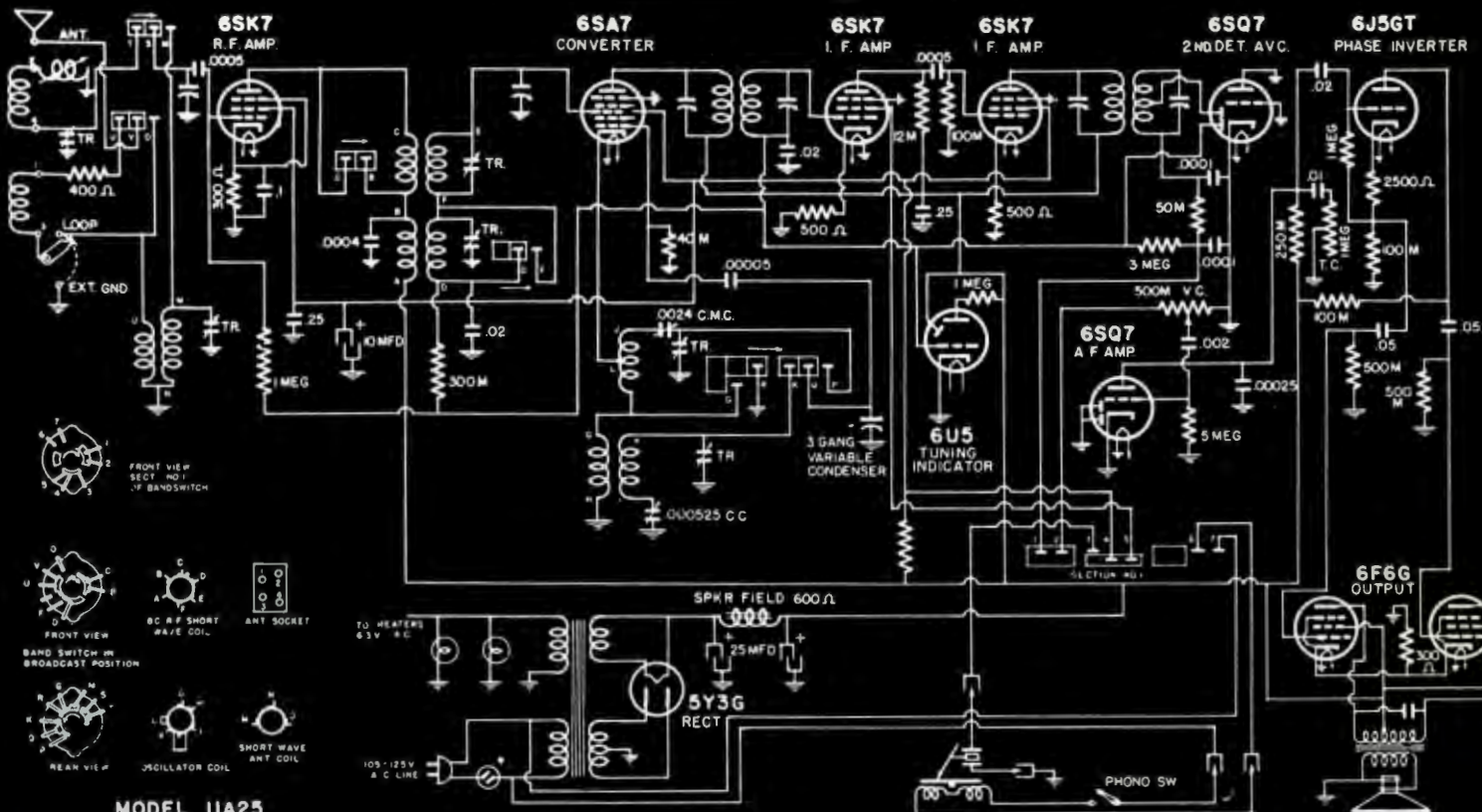
With signal generator and dial set at 6 mc. adjust oscillator series padder, located in front of the 6SA7 tube, for peak output while rocking the tuning gang.

Adjustments for Broadcast Band

To align the broadcast band, connect a 1500 kc signal through a 200 mmfd. capacitor to the 6SK7 RF grid and tune set dial to full open rotor. Adjust the oscillator trimmer located below the short wave oscillator trimmer.

Tune generator and set to 540 kc, and adjust the oscillator padder located in front of the 6SA7 tube. Tune set and generator to 1400 kc and adjust the RF trimmer locator to right of input IF transformer.

The loop antenna requires separate alignment. Connect a 1400 kc signal through 200 mmfd. capacitor to external antenna and ground leads. Tune set to 1400 kc and adjust antenna trimmer located at far left on rear of chassis for peak output. Tune generator and set to 600 kc and adjust iron core, located next to phono jack on rear of chassis for peak output.



CIRCUIT NOTES



One of the youngsters who take radios along with the dry-cleaner driver.

Service Instructions for Airline Model 24BR-521 B

This AC-DC superhet shown in the accompanying diagram, employs permeability tuning in the converter and oscillator circuits.

The IF circuits are tuned to 455 kc. The signal generator should be connected through a 0.1 mfd. capacitor to the metal antenna backplate and tuned to 455 kc. Adjust the output IF transformer trimmers for peak output. Use low level signal from generator. Also adjust trimmers on input transformer for peak output with the same generator connections. The output IF transformer is the one next to the audio output transformer. The set dial should be tuned to high frequency end during these adjustments.

Tuning Details

To align the broadcast band, set the generator to 1720 kc and connect to antenna plate through 0.1 mfd. capacitor. With the set tuning dial at highest frequency position, tune the oscillator trimmer for maximum output. This trimmer is one of two mounted underneath the chassis next to the 12SA7. It is the one nearest the front of the chassis.

Re-connect the signal generator through a 200 mmfd. capacitor to the

antenna clip with same frequency and set-dial position, adjust antenna trimmer for maximum output. This trimmer is mounted next to oscillator trimmer.

With generator and set tuned to 1400 kc, adjust position of antenna coil by sliding it to right or left for peak output.

Retune generator and set to 1720 kc and readjust antenna trimmer.

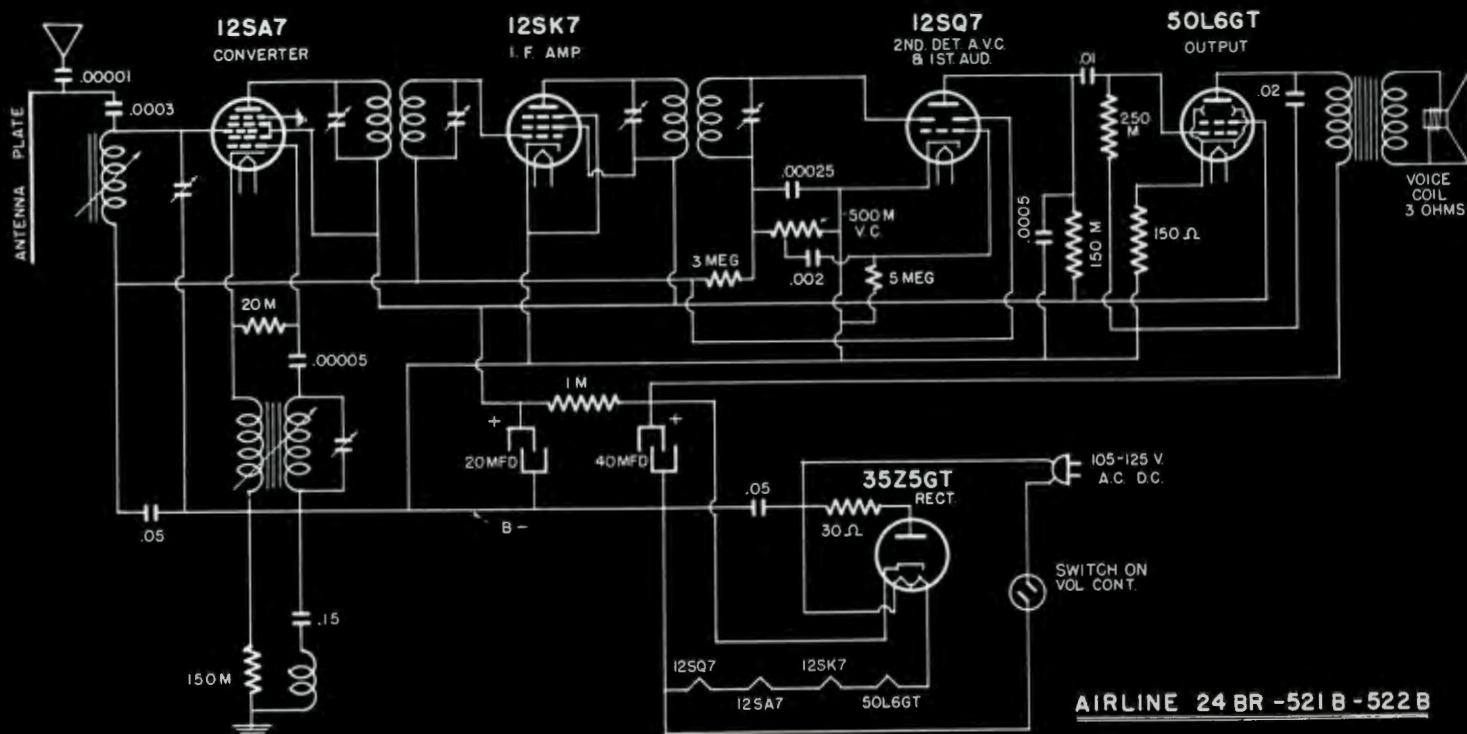
Radio Deliveries Pooled with Dry Cleaners

In these days when the time of the radio technician is precious, and while gas and tires are scarce, radio servicemen must think of new ways to handle their pickups and "returns". Here is the way the problem is being solved in northern New York state.

Youngsters between twelve and fifteen are hired to work after school from 4 to 6 P.M. and on Saturdays. These youngsters in turn are tied up with a local dry cleaning outfit who sends its trucks out daily in mid-afternoon. Radios are loaded in the trucks along with dry cleaning and a youngster rides along. Whenever the driver stops to leave or pick up dry cleaning, youngster makes any radio pickups or returns at homes in the immediate vicinity. Driver helps youngster on heavy sets, but on port-

ables the delivery boy takes care of everything including collection of service charges. Youngsters are paid so much weekly depending upon actual hours put in. Dry cleaning outfit is paid according to number of sets carried, at varying rates depending upon weekly service output.

Scheme works out well as dry cleaners have to make calls and pickups regardless of war. And there is always space for radios somewhere in the truck. Youngsters can also help out round the service shop on answering phones, making minor repairs and keeping place swept, dusted and clean.

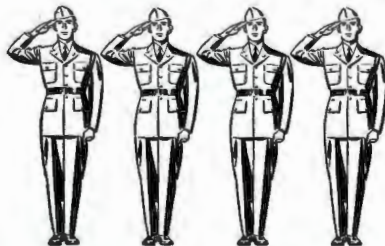


AIRLINE 24 BR -521 B -522 B

Exclusive Quality Features Still

"All Present"

IN I. R. C. VOLUME CONTROLS



Despite wartime restrictions there has been no altering of construction . . . no lessening of quality in IRC's "All Purpose" volume controls. Precision-engineered, they continue to offer you these four exclusive features:



FIVE FINGER CONTACT

Five separate, smooth-tracking "fingers" maintain independent contact with element at all times. Precision-rounded surfaces reduce abrasion and wear to minimum.



METALLIZED ELEMENT

Element is permanently bonded to moisture-proof base, and provides smooth, durable surface for noise-free contact.



SPIRAL SPRING CONNECTOR

Assures positive, continuous connection between contactor and its terminal element. Noise of ordinary sliding metal-to-metal is "out."



COIL SPRING WASHER

Specially tempered coil spring thrush washer eliminates end play and shaft wobble.

IRC Volume Controls and Switches are still available for civilian replacement use. Make sure that your stock contains the blue and yellow boxes which identify the quality controls "Preferred for Performance" by the vast majority of service men.

Preferred for Performance



Fixed & Variable Resistors

INTERNATIONAL RESISTANCE COMPANY

401 N. BROAD STREET • PHILADELPHIA

SERVICE NOTES

Minnesota Serviceman Designs Time-Saving Service Bench

At the Range Electric & Radio Co., Virginia, Minn., proprietor Q. Jenia has just finished building a new service bench. The idea of the design was to get the test equipment centrally located so that two men could work conveniently without getting in each other's way, and to save time generally throughout the process of repair.

The new set-up is shown in the accompanying photo, and here are the details supplied by Mr. Jenia.

Our equipment is on a sloping panel, with a fluorescent fixture in the canopy under the clock. The equipment consists of a one-inch oscillograph, below it, a universal speaker; top center, oscillator and wobblulator; below that, a point-to-point tester; and immediately under the tester, there is a little drawer which houses a signal tracer and unit with the amplifier speaker just below it.

On each side of this unit is a meter type output indicator on the right, and on the left a neon type output indicator; a capacity analyzer on the upper right hand side with an up-to-the-minute tube tester just below it. The two chrome bars on each side of the panel we use as a decoration, also as an aerial and ground connection.

In the upper cabinets is housed a

complete set of Rider manuals. The upper side cabinets contain complete stocks of radio repair parts; the lower side cabinets house our heavier equipment such as electric drill, etc. On the front bench apron there are two round openings with drain tile directly in back, a convenient place for soldering irons when they are hot.

Service Manpower Bottleneck & a Refrigerator Company's Suggestions

Servicemen have been hard to find and to keep in their jobs, and it has been difficult for the dealer to find adequate help on repair work. And now that more and more mechanics will be called to other positions, replacement becomes more of a problem daily. In this connection it has been suggested that dealers contact their local U. S. Employment Service.

Nash-Kelvinator in their booklet, "Refrigeration Service Manpower Problems," points out that the advent of the War Manpower Commission, resulting in centralization of various agencies, offers a simpler method for an employer to check on available help. They allude particularly to the fact that the WMC now covers both the Selective Service and the U. S. Employment Service, as well as various other manpower units.

The U. S. Employment Service has been designated as an official recruit-

ment agency for certain manpower needs and, citing radio, refrigerator, and electric appliance servicemen and repairmen as essential, is obligated to assist dealers in recruiting the necessary employees for this work.

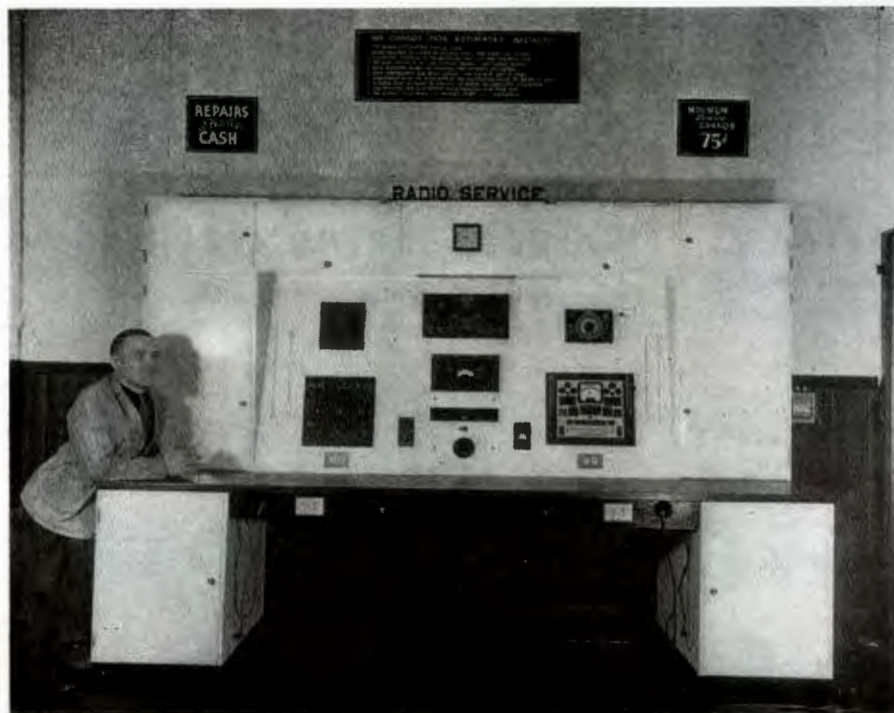
Once this Service is familiar with the dealer's individual problem they can advise him regarding length of time allowable on certain replacements, what vocational training is available, and in many ways assist him in planning for the distribution of work in his shop, so that available help is adequate.

Should special problems or difficulties arise which cannot be solved locally, it has been suggested that a letter stating the problem be addressed to the Regional or District Director of the WMC for the dealer's particular state.

"Simplified Radio Servicing" Manual

The publication of a new "Manual of Simplified Radio Servicing" has been announced by Allied Radio Corp., 833 W. Jackson Blvd., Chicago. It was written by Major J. G. Tustison, U. S. Army Signal Corps, formerly electronic engineer with ERPI and Altec Service Corp.

Priced at 10c, the booklet describes practical, field-tested short-cut methods for servicing electronic and radio devices with only the simplest equipment. It also includes color code information on resistors, condensers, power and audio transformers, IF transformers and speaker lead and plug connections. Added feature is a conversion table of fractional inches to decimal and millimeter equivalents.



Mr. Jenia features a sloping instrument panel with fluorescent canopy light.

BOOK REVIEW

Essential Mathematics for Skilled Workers

by H. M. KEAL and C. J. LEONARD
Published by John Wiley & Sons, Inc.,
440 Fourth Ave., New York City

What this amounts to is a quick review of the practical aspects of arithmetic, algebra, geometry, trigonometry, and the slide rule used in technical problems. It has 293 pages presented in text-book style, with plenty of exercises given and the answers listed in the appendix.

There are many spots where radio formulae are used to illustrate a mathematical point, and the reader is often asked to deal with practical radio problems. However, the majority of the material is arranged to cover mechanical fields, rather than just radio and electricity. A number of useful mathematical short-cuts are given.

All this for \$1.50.

The SPRAGUE TRADING POST

EXCHANGE — BUY — SELL

Your Own Ad Run FREE

"My Trading Post Ad certainly produced results!" "Thanks for starting a good thing!" . . . "Congratulations on your Trading Post Idea!"

Such are the enthusiastic comments pouring in from servicemen on all sides about the Sprague Trading Post. Send in your ad today. We'll run it **absolutely free of charge** in at least one of the five Radio magazines in which this Sprague feature appears regularly. All we ask is that it fit in with our plan of helping servicemen buy, trade, or sell needed equipment during these days of wartime shortages. "Emergency" ads will receive first attention. Keep your copy short. **Write clearly.** Please mention the magazine in which you saw the Trading Post. Address your ad to:

SPRAGUE PRODUCTS CO., Dept. RRT 34
North Adams, Mass.

FREQUENCY STANDARD FOR SALE—Hallcraft model HT7. What is your best offer? W. Kuss, 261 Main St., Hackensack, N. J.

FOR SALE—Sterling 2 meter tube tester, includes octals, \$6; Engineers Manual by Hudson, 2nd edition, \$1.50; Official Radio Service Handbook, 1008 pages, \$2.50; Radiomans Guide, new, \$3.00; Signal Generator, Superior model T-37 in good condition, \$10. W. F. Onder, Rt. 1, Box 389, Kimmswick, Mo.

FOR SALE OR TRADE—10 tube chrome-plated Scott F-M Tuner in walnut table model, like new, cost \$119, will sell for \$80 or best offer; new Scott 15" high fidelity speaker, cost \$39, sell for \$25; Jensen 10" dynamic speaker, \$2; Jensen 8" P.M. speaker, \$2; 100 DB Hi-Gain Universal input pre-amplifier, uses 1½ volt dry cell filament supply, diagram included, \$5; Shure crystal mike and cable, \$3; 10 years complete Radio News, Radio Craft, Service, etc. Want Clough Brengle, Hickok, or RCA signalist oscillator. Henry Bal, 20 South 13th St., Newark, N. J.

TEN 50L6GT TUBES TO SWAP for ten 35Z5GT tubes. Western Auto Associate Store, Louisiana, Missouri.

WANTED FOR CASH—Good used Vibroplex; 300 watt universal modulation transformer; Thordarson 6878 transformer or equal. J. F. Walker, 414 Black Ave., Springfield, Ill.

INSTRUMENTS WANTED—Want late model tube checker; volt-ohm-mill meter; also signal generator. Will pay cash. R. C. Willette, 114 E. 4th St., Blue Earth, Minn.

RECORDER—Federal Symphonic, 16" professional portable, two channel, TRF tuner, excellent condition. Will sell for best offer over \$225. Lt. H. J. Shirley, 720 N.E. 6th St., Ft. Lauderdale, Florida.

AMPLIFIERS WANTED—Want small a-c/d-c amplifiers for record players, also pickups and cutters. State condition and price. S. W. Radio Labs, 30 Ridge St., New York, N. Y.

PARTS FOR SALE OR TRADE—Misc. radio parts incl. coils, condensers, resistors, tubes, transformers and speakers and several sets. Write for details. Want phono oscillator, test instruments, or what have you. Have Motorola auto radio to trade. M. L. Radio Service, Palmyra, Pa.

SLIDE RULE WANTED—Will pay cash for Cooke slide rule. State price. Ernest J. Mosseau, 44 Sargent St., Cohoes, N. Y.

PRE-SELECTOR WANTED—To increase volume for short-wave reception. Must be in good condition. M. Galitello, Litchfield Road, Torrington, Conn.

SIGNAL GENERATOR FOR SALE—Precision model E-200, range 90 k.c. to 88 m.c. 400 cycle, 100 volt peak audio. Can be used either portable or panel. Price \$45. Will buy tubes and parts. Send list and lowest price. Bob Goetz, 137-23 71st Ave., Kew Gardens, Long Island, New York.

INSTRUMENTS WANTED FOR CASH—Want one Hickok Traceometer; one Hickok Signal Generator Model 188X; and one Solar Analyzer Model CE. All correspondence will be answered immediately. Cash waiting. Augustine C. S. Leandro, 737 E. 187th St., Bronx, New York.

WANTED—Rider's Manuals Vols. 11-12-13 with index; also 6 and 32 volt "B" eliminators, or any used power unit of a discarded radio of 6 and 32 volt type. Prefer vibrator type. State make and models and best cash prices. John W. Reigel, Annville, R D No. 2, Penna.

WANTED—Rider's Manuals from Vols. 6 to 12. State price and condition. Chas. I. Amplo, 2228 Newbold Ave., Bronx, New York.

URGENTLY NEEDED—HIGH PRIORITY—Two No. 806 transmitting tubes or equivalent, new or used. High priority supplied. Industrial Electric Supply Co., 1839 Peck St., Muskegon, Mich.

AMPLIFIERS FOR SALE—Used 100-watt Montgomery Ward amplifier and 60-watt Bell amplifier for sale at \$50 each, or will trade for test equipment, or new or used table model radios or steel cabinets. Carl Wolf, 2024 Penn St., Evansville, Ind.

WILL EXCHANGE—6 x 9 print press complete (almost new) to trade for 8 x 10 plate camera or larger complete with one holder, lens, and shutter. Give name and length of bellows. H. L. Feltes & Son, 1083 East Main St., Arcadia, Wisconsin.

RECORD PLAYER FOR SALE—RCA Model VA-20 wireless type, slightly used as demonstrator. In original packing case. Guaranteed OK. First \$12 takes it. Truitt Radio Service, Novinger, Mo.

CLOSING MY STORE—Have tubes, parts and equipment to sell. Send post card for details. Austin Electric & Radio Shop, 406 S. Laramie Ave., Chicago, Ill.

TUBE TESTER WANTED—Also a multitester. Will swap 11" jig saw; 410 shot gun; Schick electric razor; bicycle with brand new tires, or will pay cash. K. J. Graham, 1567 Thacker St., Des Plaines, Ill.

FOR SALE OR TRADE—National S.W.3 Short-wave receiver with 4 sets of coils; one antenna change-over relay; one 6-16 volt relay; 838 and 35T transmitting tubes; "B" supply and amplifier using 210 tube; battery charger from one to 12 batteries at a time; condenser microphone built-in pre-amplifier; bound volumes of QST from 1922 to 1939; 9002 u-h-f tube; 500 watt variable transmitter condensers. Will sell or trade any of above. Want portable 5- to 10-meter receiver, or converter for car use or cash. Also need code machine. V. C. Howerdel, 102 Hancock Ave., Jersey City, N. J.

AMMETER WANTED—Also voltmeter, ohmmeter, and other service equipment. Will pay cash for good instruments. Describe fully and name price. Carl Schradieck, 65 Hazard Ave., Providence, R. I.

A-C VOLTMETER FOR SALE—Weston model 528 like new in bakelite case, 3 scales, 0-4, 0-8, and 0-150. Also have three type 250 power tubes, and one 210 power tube, and one 374 ballast tube. Make offer. Herman C. Brown, 2940 N. 26th St., Philadelphia, Pa.

EQUIPMENT TO TRADE—Will swap a Triplett vibrator tester No. 1672, brand new; C-B 79-B audio oscillator; and Rider's Manuals 4, 5, and 6. Need a good condenser tester; frequency standard and V.T.V.O.M. Will pay any cash difference. The Radio Hospital, 420 N. Hudson St., Oklahoma City, Okla.

FOR SALE—Key and buzzer practice set; Walker multi-unit; two complete late model desk stand dial-type telephone sets with ringers in boxes. Make offer or write for details. Also have a few new and partially used tubes and misc. radio parts. Will send list. H. W. Schendel, 518 W. Main St., Sparta, Wisc.

WANTED—Need v.o.m. and roll chart unit for the model 308 series D Radio City tube checker. Will trade an FB7 receiver; one Philco dynamotor; and one vibracup with built-in A-F stage. Charlie's Radio Service, 87 Warren St., Roxbury, Mass.

FOR SALE OR TRADE—Meters, transmitting and receiving power supply parts; vibrator supply parts; A and B eliminators; dynamic speakers and headphones; H.V. dynamotor; receiving and transmitting tubes; quartz crystals; home-made VTVM; hand key; speech amplifier parts and other misc. equipment. Write for list. A. K. Zambianik Jr., 1259 Gaylord St., Denver, Colorado.

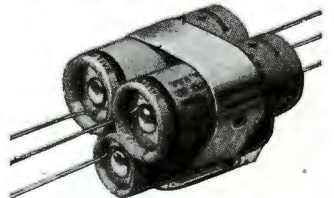
TUBES & MANUALS TO SELL OR TRADE—Have Rider's Manuals Nos. 9, 10, and 11 for sale or trade, also a few 35Z5 tubes. Want 6 volt speaker fields, or speaker complete. William Lofstrom, 1302 West Hill Ave., Valdosta, Georgia.

TUBES WANTED—Will pay list less 40% and shipping charges on any of the following tubes: 50 each, 35L6G (or GT); 35Z5GT/G; 50L6GT/G; 12SA7, or GT; 12SK7 or GT; 12SQ7 or GT; 35Z5G/GT; 35Z4G or GT; 80; 75; 5Y3G; 12K7G or GT; 1A7G or GT; 1H5G or GT; 70L7GT; 117Z6GT. Any good brand. Munroe Radio Service, 111 Shelby St., Kingsport, Tenn.

"You can always get at 'em with ATOMS"

It pays doubly to use Sprague Atom Midget Dry Electrolytics on EVERY job these days! Atoms are still obtainable from Sprague distributors. Atoms always fit—even in the most crowded chassis.

Atoms come in a variety of single sections as well as in multi-capacity units. Several Atoms can be strapped or taped together (as illustrated) to give you a quick, inexpensive answer to any hard-to-get condenser replacement problem. Above all, Atoms are fully dependable for ANY replacement up to the full limits of their ratings. Ask for them by name!



SPRAGUE
PRODUCTS CO.

North Adams, Mass.

SPRAGUE CONDENSERS AND KOOLOHM RESISTORS

Obviously, Sprague cannot assume any responsibility for, or guarantee goods, etc., which might be sold or exchanged through above classified advertisements

UNDERSTANDING ELECTRONIC DEVICES

(Continued from page 17)

they use both free electrons and ions.

The ions in an ionic or electro-ionic device are generally produced by the free electrons themselves. If the circumstances are such that free electrons acquire ten to twenty volts of kinetic energy and then strike neutral molecules, the neutral molecules are broken up into positively charged ions, and other free electrons. Conversely, as we shall point out presently, the ions may produce free electrons, so that a new possibility arises, namely, the self-maintaining gas discharge, as in the glow in the neon sign, the quick acting spark in the lightning arrester, the energetic arc in the electric circuit breaker, and the silent cleansing discharge in the precipitron.

The ions in an electro-ionic device generally exercise a very useful function in neutralizing the space charge of the free electrons. When large numbers of free electrons are introduced into a space, the electrical effects of their charges are additive, and large electrical fields are produced. These fields react on the motion of the electrons, and the net effect is that large currents can be

Retires After 30 Years



Recently retired from naval service, Admiral S. C. Hooper, known as the "Father of U. S. Navy Radio," plans to act as counsellor to radio manufacturers in preparing for post-war development.

Mucher to WPB



Appointed a consultant to the Radio and Radar Division of WPB on the dollar-a-year basis, Clarostat's Vic Mucher is subject to call at any time, and has regular duties in Washington.

carried by free electrons above, only by using excessively large impressed voltages. If, however, a corresponding number of positive ions are interspersed among the electrons, the additive effect of the charge on the electrons is neutralized, and large currents may be carried by quite low impressed voltages. For example, in the ignitron tubes supplying the direct current for making aluminum and magnesium, thousands of amperes are carried with a voltage of less than twenty volts. Without the space charge neutralizing effect of the positive ions, the use of free electrons for rectifying large alternating currents would be practically impossible.

Ionic Action

Another useful function of ions in electro-ionic devices, is their action in setting free electrons at the cathode, so that a hot filament is not a necessary element in an electro-ionic tube. The cathode ray tubes which J. J. Thomson used in discovering the electron, and the tube which blackened Roetgen's photographic plate, had in them no thermionic filament. But ions in the gas striking the cathode set free the electrons which started the electronic age.

When the current density at the cathode is sufficiently large, a new

phenomenon appears, the so-called cathode spot, which sets free enormous numbers of electrons from the otherwise unheated cathode. Thousands of amperes of free electrons per square inch emerge from the cathode spot with a voltage drop of less than twenty volts. The detailed mechanism of the cathode spot is still not known, but there is little doubt that the positive ions are an absolutely necessary part of this mechanism.

But while these electro-ionic devices are very simple in their physical structure, enough has been said to indicate that their theory is complex, and that they present problems upon which "electronic science" has shed light, but still has not solved. We may confidently expect, however, that these problems will be more and more resolved by the electronic scientists and engineers of the future. And with the resolution of these problems, far-reaching improvements of the older electro-ionic devices will result, as well as the invention and development of entirely new devices.

Improved Rectifiers

The ignitron tube is an example of how modern electronic science revolutionized an older electro-ionic device. The mercury arc rectifier was invented by Peter Cooper-Hewitt in 1903, shortly after the discovery of the electron. Cooper-Hewitt did not talk of free electrons, and their emission from the cathode, but spoke of a vague "cathode reluctance" to explain the rectifying effect he had found.

Under the guidance of electronic science, the mercury arc rectifier in the 1920's was developed up to large sizes, and particularly in Europe displaced dynamo-electric converters for railway electrification and in the electro-chemical industry.

About 1930, the use of stainless steel and light metals was rapidly expanding, particularly in transportation equipment, and methods for rapid electrical welding were devised. For welding of such metals it is necessary to use a rapid sequence of accurately measured pulses of electric current accurately timed. Mechanical switches, because of their inertia, were not practical for controlling these current pulses. It was very natural by this time to turn to electronic science for the answer, and because of the large currents involved,



"WAACS" OF THE PRODUCTION LINE

SLACKS and sweaters are their uniforms. But their work is vital to the marines on an island outpost... to the sailors in a convoy... to the soldiers on desert sands.

Together with the men on the production front at Utah, these soldierettes are building parts for wartime communication. At the Utah factory, this production army is making many electrical devices used not only in military communications but also employed extensively in war production plants . . . turning out essential parts in quantity and *on time*.

In the Utah laboratories, continual research is going

on—discovering new things—making improvements in established products.

As war is benefited by the progress of peace, so will wartime research contribute to the advancement of peace. Tomorrow—when the big guns cease—there will be greater convenience and enjoyment in American homes . . . greater efficiency in the nation's factories . . . because of the things that are going on now at Utah. Utah Radio Products Company, 810 Orleans Street, Chicago, Illinois. Canadian Office: 560 King St. West, Toronto. In Argentine: UCOA Radio Products Co., SRL, Buenos Aires. Cable Address: UTAH RADIO, Chicago.

PARTS FOR RADIO, ELECTRICAL AND ELECTRONIC DEVICES, INCLUDING SPEAKERS, TRANSFORMERS, VIBRATORS, UTAH-CARTER PARTS, ELECTRIC MOTORS





★ Yes sir, you see them everywhere—those green-colored special-inorganic-cement-coated power resistors. But more particularly in severe-service radio and electronic assemblies, fine instruments, transmitters, power supplies.

Greenohms can take an awful beating. Even when seriously overloaded—red hot—they won't burn out, flake, peel, crack. Standard units: 10 and 20 watts fixed; adjustable, up to 200 watts.

Remember, only Clarostat makes Greenohms.

★ Ask Our Jobber . . .



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

an electro-ionic type of tube was indicated and particularly the mercury arc tube, with its indestructible mercury pool cathode made electron emissive by means of a cathode spot.

However, the only reliable means for starting a cathode spot known at that time was that of mechanically breaking a circuit comprising the mercury pool and an auxiliary electrode, and again mechanical inertia introduced insuperable difficulties. What was wanted was a purely static means for initiating the cathode spot at great frequency and under perfect control.

Ignitron for Welding

Electronic science gave a beautiful solution to this problem. A rod of high resistance material was stuck down into the mercury, and current passed down through the rod into the mercury. Analysis of electrical conditions at the junction of the rod with the mercury indicated that there would be there a large concentration of current, and an intense field, just the conditions for starting a cathode spot. Experiment bore out this expectation. Sure enough, when a few amperes passed down the resistance rod, a cathode spot appeared on the adjacent mercury. This could be done as quickly and repeatedly as desired. The small current for thus initiating the cathode spot could be readily handled by a more usual thermionic, grid-controlled, electro-ionic tube. After the cathode spot was formed, thousands of amperes needed by the weld would pass through the mercury arc tube. Thus the ignitron was born. It immediately found wide application in thus electronically controlling the welding of these new materials.

It was then found that the use of this gift of electronic science, the mercury-arc ignitor, permitted a radically new design of the high-power mercury-arc rectifier with a better efficiency and greater reliability than had been attained before. Hence we find that in the great expansion of production of aluminum and magnesium occasioned by the war, the tremendous direct currents needed for electrolysis are being supplied by the new ignitron mercury-arc rectifiers.

These examples are only a few of the instances where electronic science is modifying and improving industrial apparatus.

TAILORED SOUND

(Continued from page 19)

either by specially desired services, or by unusual operating requirements. The most interesting of these is the installation in the Lash High School, where "functional grouping," rather than "centralization" has been employed.

There, the central public-address system cabinet is located in the principal's office, where it serves the functions of administrative announcing, intercommunication, and classroom program-routing. The auditorium sound system constitutes another functional unit which can be operated independently of the central system. The speech-input equipment and line amplifiers in the workshop studio and control room represents still another functional unit. This workshop control room also provides recording and transcription playing facilities, together with interlocked switching arrangements through which all three functional units can be integrated into a single system.

Special Jobs

Mr. Thompson was especially helpful in designing and building simplified speech-input consoles for use in schools in Zanesville where program-production workshops were developed. Commercially built consoles were both too complicated for use by students and teachers, and too high in price for the local schools to afford. Yet the production of simple dramatizations usually requires the simultaneous use of two or three microphones.

Hence, Mr. Thompson assisted the research staff of the Evaluation Project in identifying the optimum operational characteristics of speech-input units, together with the precise range of uses which such equipment would be expected to serve. Then, with this information to guide him, he built up the required equipment from standard parts.

No doubt what has been accomplished here through long-range planning of equipment design and purchases in terms of intended equipment functions not only provides general lessons for radio men, but also should serve to point out to other local radio servicemen and parts dealers an opportunity to provide a similar service in their respective home communities.

Meissner 6 Tube Kit, assembled —front view



FOR *Better* RADIO TRAINING ...USE MEISSNER KITS!

Meissner Student Training Kits are precision engineered for more complete basic radio training. The six tube kit chassis contains two bands, covering a tuning range of from 540 kc. to 1620 kc. (53 to 16 meters). Operates on 110-120 volts. 50-60 cycle AC, or 110-120 volts DC.

Chassis is equipped with automatic volume control, slide-rule dial, beam power out-

put, six inch oval electro dynamic speaker ... four panel controls: volume and on-off switch, station selector, tone control, band selector switch.

Meissner six tube student training kits are shipped complete, including all parts and tubes...each kit supplied with a schematic diagram. Meissner 6 tube kit (Model No. 10-1197) special school net price of \$19.10.

Meissner 6 Tube Kit, assembled —rear view



The name Meissner on radio training kits is your guarantee that each part represents the finest radio craftsmanship. All Meissner radio kits are precision engineered to give a definite objective value in teaching.

See your Meissner distributor, or write for complete catalog


Meissner
 MT. CARMEL, ILLINOIS

“PRECISION-BUILT PRODUCTS”

Letters to the Editor

Servicemen and the Draft

Editor, Radio Retailing Today:

Perhaps I am writing to the wrong place to find out about my question but nevertheless it has to do with radio so here it is. Just how do they consider a radio serviceman when it comes to drafting? Is it considered an essential job to repair civilian radios or how are they classifying it?

In my case it may be a little different. I happen to be running a hardware store with my father but during the days of radio and refrigeration I took care of that department in addition to the service work. Now I am doing nothing but service work. We had several other service men in this small town of 5,500 but only two that were regular store owners and advertisers. One of those fellows is now teaching radio at a government school in Chicago and the other is an inspector for the Navy in installing radio equipment. That leaves me all alone and working eighteen and twenty hours a day, it seems. I am married and have two children (before Pearl Harbor) and am thirty years old.

Essential to War?

Perhaps you think it strange for me to write to you people about this draft business but I am wondering, and I'm sure you have had the question asked before, about the drafting of servicemen, and how essential it is to the war.

I will appreciate an immediate reply, and many thanks for the same. Also I might say that your RADIO RETAILING is a marvelous magazine, and helping us out in many ways. Keep it up!

An Illinois Reader

Postwar Radio

Editor, Radio Retailing Today:

I like to envision what will happen in radio, after the last gun is silenced, and the rosy glow of peace and reconstruction settles down on these United States.

Some of the larger companies are ballyhooing television again, as was done 20 years ago; then 10 years; then 5 years ago—giving the public a desire for things not ready—either from a

practical or an electronic standpoint. Let's not fill them with expectations that cannot be fulfilled.

Next, from an engineering standpoint, what is more obsolete than phonograph records. Let us have our new phonographs with "sound on film." At least 4 sound tracks could be recorded on a 16 mm film and a mechanism for shifting and rewinding would give us a complete opera—or musical comedy—or a selected concert—without interruption or distortion or needle changing. Why should we be tied to records; because some company paid 40 million for patent rights 25 years ago. Let's ditch the records—except for instantaneous transcriptions of news and talks and "fireside chats."

Recalls Early Radio

This won't hurt the theatre or other entertainment sources. I recall when radio was in its infancy all the newspapers were against it, but it didn't hurt their business; in fact, it helped it. So now a large number of the best stations are owned by newspapers. People would rather see a ball game!

Television, when ready, say in 10 years, will not hurt the motion picture industry or the theatre—and will require a new and more expensive type of actor, a new technique in presenting

Pledge Greater Efforts



War production experts at Thordarson Elec. Mfg. Co. found another way to inspire war workers—to let them see and hear the finished product. Thordarson transformers currently go into special Scott radios used by U. S. merchant ships, and here E. H. Scott himself demonstrates the unit.

advertising, in order to satisfy critical listeners and lookers. Let's have perfected "sound on film" in our new radios—with F.M. for high fidelity—and let's hold television until it is right.

Very sincerely,

W. W. Brackenridge

Harrison, Ohio

Radioman's Gasoline Query

Editor, Radio Retailing Today:

I am particularly interested in your articles dealing with the radio serviceman and his gasoline problems. It is the purpose of this letter to report to you my personal experience with the local rationing board and to obtain such help as you see fit to render.

A letter just received from my local board informs me that my application for renewal of my "B" coupons has been rejected since I am steadily employed at a defense plant and that they cannot allow gas for a side-line. Application blanks for the purpose of appeal were also sent to me along with the letter.

Radio as Sideline

It is true that I have been conducting a radio service business as a sideline for many years. I have been a licensed radio operator for the past 20 years and my service work dates back to 1933. During this period I have built up a business of considerable proportion in this community and I wish to keep it. It not only brings me added income but it is good training and experience. I feel I am rendering a public service of which I am proud.

I fail to see the logic to the argument that because I am already employed at a war plant I should be denied gasoline to conduct a radio service work. The necessity of conducting my side line business goes beyond the mere fact that it earns me added income. It is this fact that the local board has failed to grasp.

One of the questions asked on the application blanks for appeal reads, "What rationing regulation supports your claim and state the section upon which you base your claim." Since I have not read a copy of the rationing regulations I am not in a position to answer this question. Perhaps you can inform me how I should answer this question.

I cannot help but feel that a mistake was made in denying me gas to conduct my radio work and it is my intention to appeal. However, I would like to hear from you before I submit such an appeal. Incidentally I asked for only about half the limit on the "B" per month. It is impossible to continue my work with an "A" book since I use my car in my regular occupation.

A New York Reader

Corrections for Radio Trade Directory

Readers of the Seventh Annual Radio Trade Directory published in RADIO RETAILING TODAY last month, will want to mark their copies with these corrections. These are given in alphabetical order.

Lafayette Radio Corp. of 901 W. Jackson Blvd., Chicago, and 265 Peachtree St., Atlanta, Ga., should be included under "Electronic Suppliers and Expediter-Jobbers" on page 103 of the Directory and also wishes to be listed under the individual product groupings.

The company listed in various product classifications as Lafayette Radio Corp., 100 Sixth Ave., New York City, should be changed to Radio Wire Television, Inc., same address. This firm is a national supplier of radio and electronic parts and equipment using the trade names "Lafayette" and "Trutest."

There is no connection between the above firms; the Lafayette Radio Corp. of Chicago and Atlanta, and Radio Wire Television, Inc. of New York City, are separate organizations.

To be included in the list of manufacturers of radio and radio-phonograph cabinets, is the firm of M. Teicher & Sons, 55-01 37th Ave., Woodside, Long Island, N. Y. Teicher specializes in custom built cabinets in period designs.

Terminal Radio Co., 85 Cortlandt St., New York, N. Y., was listed in the "Expediter-Jobber" group but has indicated that the name should also be under the various product classifications.

Walker-Jimieson, Inc., 311 Western Ave., Chicago, appears under the "Electronic Supplier and Expediter-Jobber" head on page 103, but also wishes to be listed under product classifications throughout the Directory.

N.A.M.M. Names War Committee

National Association of Music Merchants' control board recently held its mid-year session at the Palmer House in Chicago to discuss matters of importance to the entire membership and the music industry. Representing all parts of the country, members traveled at their own expense to attend.

At the meeting it was decided that president Harry D. Griffith appoint a war activities committee from the control board to work for music's recognition and consideration in wartime economy, and after the war.

E. R. McDuff, president of Grinnell Bros., Detroit, was named chairman. Included in the committee are: Jerome F. Murphy, president of M. Steinhart & Sons, Boston, and director of Steinhart & Sons; William Howard Beasley, presi-

dent of Whittle Music Co., Dallas. Its objectives: (1) work for music's recognition in the war effort; (2) establish active Washington contact; (3) support legislation beneficial to music; (4) promote music generally beneficial to all branches of the music field; and (5) act as the music industry's spokesman in all government relations, including regulations, limitations, etc.

Funds will be raised within the industry for the support of the committee, to be kept separate from the N.A. M.M. funds. It is reported that the committee is receiving wide and active support from all branches of the music business, from manufacturers to educators.

News of The Representatives

At the annual election of The Representatives' Mid-Atlantic Chapter, the following officers were named: L. D. Lowery, president; N. M. Sewell, vice president; J. A. Maguire, secretary-treasurer. Messrs. Trinkle, Lowery and MacDonald are delegates to the national convention.

The following members are now with the Armed Forces: Henry W. Burwell, Atlanta, Ga.; Leroy G. Moss, Greeley, Colo.; Marvin Roye, New York, N. Y.; Arnold M. Sinai, San Francisco, Calif.; Robert Ford Taylor, Chicago, Ill.

A past national president of the Representatives, Earl S. Dietrich, who left that organization to become sales manager for Raytheon, has returned to the roster of the Reps.

N. I. Allen of the New England Chapter is now located at 163 Summer St., Somerville, Mass.; and Leo Freed of the New York Chapter is newly installed at 420 Lexington Ave., New York.

Dead Stock May Be Returned to Mueller

In an effort to get all finished products into wartime channels, the Mueller Electric Co. has announced a plan whereby dealers and jobbers may return "dead" stocks to the factory. The manufacturer asks radio men to check Mueller material on their shelves carefully, then write them about the merchandise they would like to return. A special appeal is made for the new and unused products of latest design, particularly solid copper clips. Stock which needs refinishing or reboxing is also acceptable, but the goods must be salable merchandise—not obsolete, used or damaged.

When writing, the manufacturer requests that full particulars be given regarding quantities, code numbers, condition of merchandise and, if possible, the approximate date of purchase. Mueller reserves the right to accept or reject any offers and to set the terms and prices at which they will take the return goods.



● Yes, by all means keep a supply of these "Victory" type Aerovox Dandeeds within ready reach in your servicing activities. These midget electrolytics in war dress have extra-generous wax coating and sealing. Bare tinned-copper leads. Truly excellent general-utility replacement electrolytics, in an adequate choice of voltages, capacities, combinations.

DANDEES:

PRS Single Section: 25 to 450 v. D.C.W.

PRS-A Duals: Concentric-wound. Three leads. Center mounting strap. 25 to 450 v. D.C.W.

PRS-B Duals: Separate sections. Four leads. 150, 250 and 450 v. D.C.W.


See Our Jobber . . .

Order your supply of these general-utility electrolytics from him. Ask for latest "Victory" catalog. Consult him regarding parts to service those civilian radio sets and win the war on the home front.

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



Cinaudagraph Speakers Help Step-up Production

 Production today depends a great deal on the attitude of your personnel. Keep them happy with a constant flow of information, music and rhythm over your P. A. system. Cinaudagraph Speakers are playing a dramatic part on the home front helping to boost morale — production in hundreds of War Plants throughout our land every day.

Cinaudagraph Speakers, Inc.

3911 S. Michigan Ave., Chicago

"No Finer Speaker Made in all the World"



WANTED

**Radio testing equipment
of all types**

Submit description and price

**UNIVERSAL ELECTRONIC
LABORATORIES, Inc.**

44 W. 18th STREET — NEW YORK, N. Y.

Million-Dollar Volume Predicted for Post-War Television

"Human beings place far greater value on their sight than on their hearing . . . and certainly that (television) is a far more vital contribution to radio than the addition of sound . . . to the motion pictures . . ." said Harry Boyd Brown of Philco Corporation in his address before the Pennsylvania State College of Optometry in Philadelphia last month.

Mr. Brown contended that television would be one of the greatest of the post-war electronic industries and that it should easily reach a volume of \$1,000,000 a year. The beginning of television chain broadcasting is already well started, he pointed out. Soon after the end of the war; we will have an Atlantic seaboard television broadcasting chain made possible by means of radio relay stations located 40 to 50 miles apart.

Other branches of electronics, also now at war, will return to provide amazing devices for automatic lighting, furnace and boiler control, smoke conversion, air cleansing and the automatic control of automobile traffic.

For continuing excellence of its war production, the storage battery division of Philco Corp. has been awarded a white star to add to its Army-Navy E flag, according to the announcement made by the division's general manager M. W. Heinritz. Brief ceremonies will be held middle of this month to mark the receipt of the star. The division is producing batteries for the Army, Navy and Maritime Commission, and for other plants engaged in war production.

Ken-Rad's War Plants Expand

Defense Plant Corp. of Washington has authorized \$1,300,000 for plant facilities in Indiana and Kentucky for the Ken-Rad Tube & Lamp Corp., Owensboro, Ky., their president, Roy Burlew, announced last month. A new branch plant will be constructed in Tell City, Ind., and additional equipment will be installed at Owensboro. The unit at Tell City is expected to employ 1,500 persons.

Recent government appropriation to Ken-Rad of \$915,000 for a branch plant at Bowling Green, Ky., has already been put into work and production is expected to begin within 90 days. Covering 80,000 square feet, the Bowling Green plant will employ 2,300 workers and will produce radio and secret ordnance equipment for the U. S. armed forces.

William Moody Dead

The phonograph needle industry lost one of its leaders when William S. Moody, president of the Phonograph Needle Mfg. Co., Inc., died on Feb. 18th in Providence, Rhode Island.

Army and Navy Visit Snyder Employees

Troops of the 76th Mechanized Cavalry and 304th Infantry, fully equipped, presented a stirring picture as they paraded into the Snyder Mfg. Co.'s plant in Philadelphia, recently, to pay the workers a call. They found the entire plant personnel especially assembled to receive their guests.

At a prearranged program the soldiers produced a young veteran of the North African invasion who recounted his experiences in battle and the long perilous return home after he had been wounded. The representatives of the Navy introduced Gunner's Mate Harlan Whipple, who though only 20 years old, had been in 8 major naval battles. He told of his experiences on the Cruiser Northampton.

After lunch served the visitors at the company's cafeteria, the soldiers displayed and explained their field equipment, which to the interest of the workers, included the new Handy-Talkie with Snyder built antenna.

Before leaving, a voluntary pledge to banish absenteeism and unnecessary lateness was proposed. It was signed by the entire personnel . . . to a man!

RCA Appoints Four Advertising Agencies

Radio Corp. of America recently assigned four sections of advertising to the following agencies: Ruthrauff & Ryan, Inc., will handle advertising of RCA Victor radio, phonograph and television instruments; J. Walter Thompson Co. has been assigned for Victor and Bluebird phonograph records and for RCA Victor's International division; Kenyon & Eckhardt, Inc., will conduct the advertising of radio tubes, special radio instruments and industrial electronic and radio apparatus; and Albert Frank-Guenther Law, Inc., has been appointed to the financial advertising of the corporation.

Clune to Contact Army for National Union

J. J. Clune, assistant sales manager for National Union Radio Corp., Newark, N. J., radio tube manufacturers, becomes director of war service for the company, as announced by their president, S. W. Muldowny.

Battery Execs Promoted

C. O. Kleinsmith has been appointed general sales manager of the Eveready division of National Carbon Co., after an association with the company since 1919. Floyd W. Berdan, formerly assistant manager of the eastern division, has been made division manager to succeed Mr. Kleinsmith.

OPEN SESAME



FOR A POST-WAR GARAGE

You push the button in your car as you pull up to your drive and presto the garage door opens. In you go. Press another button and the door closes . . . To put this time and trouble saving device on millions of post-war cars is one of the exciting jobs awaiting the electronic industry when the war is won. No doubt you've thought of others. And when you are thinking ahead, we'd like you

to keep in mind that Jackson electronic test instruments will have a part in this bright future. They'll be used in laboratories where post-war products are designed. They'll be used in service shops where they are repaired and maintained.

Remember: a Jackson instrument—multimeter, tube tester, oscillograph, or whatever—means what it says, within limits established for the job.

*All Jackson employees—
a full 100%—are buying
War Bonds on a payroll
deduction plan. Let's ALL
go all-out for Victory.*

JACKSON

Fine Electrical Testing Instruments

THE JACKSON ELECTRICAL INSTRUMENT COMPANY, DAYTON, OHIO

The stature of
LEADERSHIP
is measured by
ACCOMPLISHMENT

Not fulsome promises...but performance! THAT
has been the keynote of Thordarson's progress
through the years. Whenever, and wherever
transformers are discussed, the reputation for
quality leadership enjoyed by Thordarson is in-
variably an important part of the conversation.

THORDARSON

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

Transformer Specialists Since 1895

J.F.D. Divides Supplies Among Distributors

A system of self rationing has been adopted by the J.F.D. Mfg. Co., 4111 Ft. Hamilton Parkway, Brooklyn, N. Y., in a special effort to get the best allocation of available supplies among the 650 radio jobbers served by the firm.

Current orders on the company's line cords, ballast tubes, dial belts and other radio accessories are being handled according to this plan, which involves careful apportionment of supplies according to available materials and according to what the normal needs of the various distributors have been in the past. J.F.D. believes that resulting good will among jobbers will be a valuable asset to the firm when peace comes.

The system has made it necessary for J.F.D. to expand its office staff, because it often involves the shipment of many small orders to all parts of the country. But by helping each jobber to get his share of supplies, however small, J.F.D. executives say that they are able to maintain a highly satisfactory wartime relationship with their distributors.

Stromberg-Carlson Shortens Name

Dr. Ray H. Manson, vice president and general manager of Stromberg-Carlson Telephone Mfg. Co. of Rochester, N. Y., has announced a change in the firm's name. The company will now be known as simply the Stromberg-Carlson Co. Approaching its fiftieth year of operation, the company has been continuously engaged in the manufacture of communications equipment, but does not believe telephone manufacturing wholly descriptive of their activities.

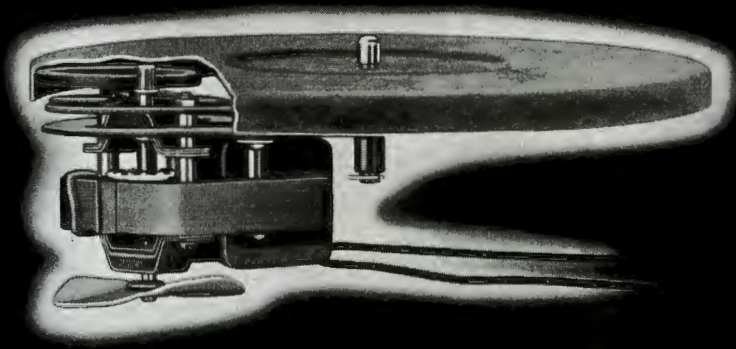
The Stromberg-Carlson Co. recently received a letter of commendation from War Production Board chief Donald Nelson in which he congratulated every member of the organization on their notable contribution to the war production program.

Ujlaki Appointed to OPA

George S. Ujlaki, formerly with the Board of Economic Warfare, has been appointed to the Consumer Durable Goods branch of the OPA. Radio is one of the products he will supervise. Others are housewares, hardware, mill supplies, musical instruments, sporting goods, bicycles, batteries and related miscellaneous items.

Prior to going to Washington, Mr. Ujlaki had an extensive career in retail merchandising, including executive positions with R. H. Macy & Co., Gimbel Bros., and Sears, Roebuck & Co.

remember **ALLIANCE** Phono-motors?



FOR THE DURATION all our facilities are being used to help defeat our nation's enemies. Alliance dependability is being built into Dynamotors and Band-switch motors for our flying fighters. It is serving on all fighting fronts.

When Victory is won, Alliance dependability and service will reappear on the home front in a motor line which we feel will serve you well.

REMEMBER ALLIANCE!

ALLIANCE MANUFACTURING COMPANY
ALLIANCE, OHIO

\$200,000,000 Credit to Westinghouse

President George H. Bucher announces that Westinghouse Electric & Mfg. Co. has arranged for a \$200,000,000 credit, the largest in the company's history, to finance its war production contracts.

The company's board approved the arrangement which contemplates that approximately 140 banks will make this amount of new working capital available to Westinghouse for the next three years. The Chase National Bank of the City of New York will act as clearing agent for the entire bank group.

During 1942, the company's plants in 25 cities produced approximately \$500,000,000 worth of equipment, practically all of it earmarked for the war. In the same period the firm received orders amounting to more than one billion dollars. Westinghouse war equipment includes propulsion units for ships, fire control devices for guns, instruments and parts for planes, communication equipment, in addition to its regular lines of turbines, generators, motors and other apparatus for war industries.

Cunningham Named by Sylvania

Terry P. Cunningham is the new advertising manager of the radio division of Sylvania Electric Products, Inc., according to a recent announcement by Paul S. Ellison, director of advertising-sales promotion for Sylvania. The post taken over by Mr. Cunningham is that of Henry C. L. Johnson, who is now on leave of absence and is a Lieutenant (j.g.) in the Navy.

Mr. Cunningham has an extensive knowledge of radio tube merchandising, and 23 years experience in the advertising field. Much of his work has been with advertising agencies in Chicago and Milwaukee; prior to coming with Sylvania he had been with the Kramer-Crasselt Co., Milwaukee. Also, Mr. Cunningham had previously operated his own advertising agency in Chicago.

Electronic Distributor Appointments

The Dixie Radio Supply Co., Columbia, S. C., and the Brighton Sporting Goods Corp., Akron, Ohio, have been appointed distributors of G-E radio transmitter, industrial, power and special purpose tubes. Dixie will also distribute G-E radio receiver tubes.

Also named GE distributor of radio transmitters, industrial, power and special-purpose electronic tubes is The Universal Electric Co., 230 S. Washington St., Peoria, Ill.



Do You--

- Handle your mike with respect?
- Fasten it securely to the stand?
- Put cable where it won't be tripped?
- Clip cable to bottom of floor stands?
- Remember a cable's weight can pull a hand mike off a slick table?
- Send your microphone to the factory or its dealer if it gives trouble?
- Pack it carefully when traveling rough roads, or when subjecting it to vibrations in any way?
- Read the instructions very carefully?
- Make sure the circuit is correct for the type of mike you are using?
- Keep your crystal microphone away from radiators, sunny windows and closed cars sitting in the sun?
- Protect your microphone cable from contact with heat, light and oil, and keep it in a cool, dark place?
- Avoid pinching, twisting, pulling and kinking the cable?

IF YOU CAN ANSWER YES

to all the above questions, you can logically expect long, useful service from your microphone. Remember, always, that microphones are sensitive instruments and will give you better service under all conditions when they are treated with respect. If your unit does not operate at peak performance, send it to the factory or to its dealer — don't try home repair jobs!

THIS FREE BOOK TELLS YOU
HOW TO CARE FOR YOUR MIKE



Send NOW for your Free Copy of Turner's new 8-page, fully illustrated, colorful Microphone Catalog. Each unit is engineered for specific jobs and trouble-free performance. Select the one best suited to your needs at the price you want to pay.

Free

THIS NEW TURNER
MICROPHONE CATALOG

The
Turner
Company

Cedar Rapids, Iowa

GE Workers Receive Army-Navy "E"

Over ten thousand men and women employed at the Bridgeport Works of General Electric Co. pledged themselves to all-out production at an outdoor mass meeting end of last month. Ensuing ceremony included the award to workers for production suggestions and perfect attendance; presentation to the firm of the Army-Navy E flag and of pins to employees; and later a reception dinner attended by heads of various employee committees, plant officials and guests of honor, among whom were His Excellency the Chinese Ambassador to the U. S., Dr. Wei Tao-ming, and visiting officers of the Army and Navy.

GE workers pledge: "I will never let you down. My life is in your hands. Your life is in my hands. I will work to make the best and the most of the things you must have to win—that we both may live—that our country may live—that Freedom for all may live."

Turner Appoints New General Manager

Renald P. Evans has been named a partner and general manager of the Turner Company, Cedar Rapids, Iowa, manufacturers of microphones and electronic equipment. Mr. Evans had for



Renald P. Evans

8 years been associated in other business with two Turner executives, David Turner, and John B. Turner, II. He was previously engaged in sales and service of electronic equipment.

Mr. Evans will manage the war production at the plant, and head up sales plans for the post-war period. Turner is mostly "converted" to war work, but a microphone service and engineering research department is being maintained; some mikes are being made on high priority orders.

Distributor Develops Electronic Supplies

The name of the well known Wedemeyer Radio Co., Ann Arbor, Mich., has now been changed to Wedemeyer Electronic Supply Co., according to an announcement from George Wedemeyer. The prominent jobber says that "we are not forgetting that through the past years the bulk of our business came from the retail and service trade and we are doing everything possible to help it through the trying conditions today."

However, Mr. Wedemeyer points out, the company has been developing industrial accounts for the past several years, and expects to stay in this electronic field indefinitely. Thus the change in name, to better describe the current activities of the firm.

Universal Shift

James R. Fouch, founder and president of the Universal Microphone Co., Inglewood, Calif., became chairman of the board end of last month. The office of the president will be filled by James L. Fouch, former vice president. Cecil L. Sly, previously secretary-treasurer becomes vice president and treasurer. The new secretary will be Durwood Allen, with the firm for the past three years.

All-out for Victory...
to Speed the Day of
"Unconditional Surrender"

NOBLITT-SPARKS INDUSTRIES, INC.
Columbus, Indiana

ARVIN

Peacetime Products
HOT WATER CAR HEATERS
HOME AND CAR RADIOS
BATHROOM ELECTRIC HEATERS
METAL FURNITURE

Any difficulty obtaining PARTS?

Write for our latest catalog listing Condensers, Speakers, Volume Controls, Vibrators, Resistors, Transformers and hundreds of hard-to-get replacement parts at unbelievably low prices!

★ NO PRIORITY REQUIRED
★ IMMEDIATE DELIVERY

RADIO WAREHOUSE MARKET

362-A WOOSTER AVENUE • AKRON OHIO

RADIO ENGINEER

Experienced in the manufacture and testing of ultra-high frequency apparatus; must be capable of taking complete charge of war projects.

Splendid Opportunity

War workers at highest skill need not apply. Inquiries will be kept confidential. Please state age, experience and salary expected.

BOX 324 EQUITY, 113 WEST 42nd ST., NEW YORK

RCA Victor Reviews "Good Neighbor" Policy

RCA Victor and South America are old "Good Neighbors." For 40 years the company has distributed music and records in English, Spanish and Portuguese throughout Latin America.

Latest developments in this field have been sponsorship of the inaugural program on South America's newest and largest short-wave broadcasting station, a series of nightly news broadcasts in 6 of its major cities in the languages of the originating countries and a Pan American series of albums.

RCA also has cooperated with the NBC series "Pan American Holiday" by recording the tunes featured on the programs. This program deals with a young North American touring "South of the Border" to learn about the people, their music and customs. After Victor recorded and released its "Pan American" series albums, "Down Mexico Way," others soon followed—"Spanish Through Music," "Fiesta in Cuba," "Fiesta in Chile, Bolivia and Peru," "Fiesta in Argentina," "South American Fiesta" and "Carnival in Rio." Each album is equipped with leaflets giving the Spanish lyrics, phonetic pronunciation and free English translation.

Musical Instrument Industry Advisory Committees Formed by WPB

Early this month the following music industry advisory committees were named by the War Production Board: (1) *Musical Instrument Wholesalers, Dealers and Repairers committee:* Louis Gottlieb, Coast Wholesale Music Co., Los Angeles; Harry D. Griffith, Griffith Piano Co., Newark, N. J.; John Jenkins, Jenkins Music Co., Kansas City, Mo.; Harry A. Reddehase, Detroit; Max Targ, Targ & Dinner, Inc., Chicago.

(2) *Musical Instrument Accessory and Supply Manufacturers committee:* George Chapin, Music Strings, Inc., New York; Jack Schwartz, Micro Musical Products Corp., New York; Louis Schmidt, American Piano Supply Corp., New York; C. T. Urban, American Plating & Mfg. Co., Chicago.

Double Honors for Stromberg Exec

Lee McCanne, secretary and assistant general manager of Stromberg-Carlson Telephone Mfg. Co., Rochester, N. Y., was elected chairman of the Sales Managers' Club of the Rochester Chamber of Commerce on one day, and the following day was elected Vice President of the Rochester Electrical Association.



The ad below—which you'll find in current issues of leading business and industrial publications—is pointing the way to immediate, profitable sound business . . . BELfone business YOU can get. Increased facilities, plus Bell's policy of "everything we can do to help our dealers," makes early delivery possible on most priority orders. Act now—write for full details on the popular BELfone today!

"PUT THE FINGER ON WASTE" in time, steps, and manpower!



INSTANT INTER-EXECUTIVE CONTACT

With a BELfone at your elbow, you touch a key and START TALKING INSTANTLY with any executive you want to contact. No time, steps or energy lost waiting for parties to reach your desk or office—or going to theirs. No numbers to dial . . . no switchboard delays . . . no waiting for answers to signals. You get prompt replies to your questions; fast action

on your orders and ideas. By saving valuable minutes that quickly add up to hours, you streamline management, aid production, and SPEED VICTORY. Inter-call requirements of any type or extent can be met with standard BELfone units . . . and priority gets early delivery! Write today for complete information.



BELfone

BELL SOUND SYSTEMS, Inc.
1186 ESSEX AVENUE, COLUMBUS, OHIO
EXPORT OFFICE:
5716 EUCLID AVE., CLEVELAND, OHIO, U.S.A.

IMMEDIATE DELIVERY of Favorite

SINCE 1913 we have manufactured and distributed high grade merchandise to retailers interested in building volume and good will. Our line is one of the largest and most complete. Our service, always exceptionally fine, is still maintained despite emergency conditions . . . you can always depend upon FAVORITE to deliver the goods!

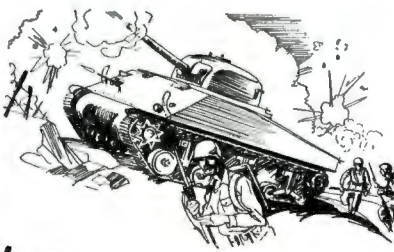
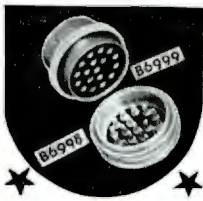
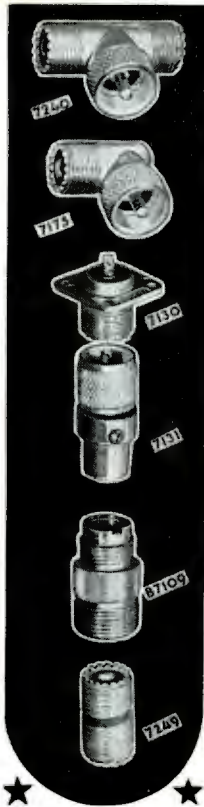
RECORD ALBUMS. A very complete line, to retail at 29c up, featuring many new and practical points. Also made to your special order . . . submit your ideas.

RECORD ALBUMS AND ACCESSORIES

ALBUM DISTRIBUTORS—A FEW CHOICE TERRITORIES.

Write or wire

The FAVORITE MFG. CO. 105-107 E. 12th St. NEW YORK



When
Every SECOND Counts

★ *Astatic Multi-contact Plugs and Sockets and Co-axial Cable Connectors not only speed up the operation of connecting and disconnecting electrical circuits for military radio equipment but what is more important, they guarantee positive circuit contacts for uninterrupted radio communications. Government approved, Astatic Plugs, Sockets and Connectors are highly praised by radio manufacturers for uniform quality and expert workmanship.*

ASTATIC

IN CANADA:
CANADIAN ASTATIC, LTD
TORONTO, ONTARIO

THE ASTATIC CORPORATION
YOUNGSTOWN, OHIO

950% INCREASE



with **AMPLICALL**

A 950% sales increase over a 12 month period is *something!* That is the job turned in by Copp Radio Laboratories, Dayton, Ohio, one of the many wide awake jobbers of **AMPLICALL** Paging and PA systems. The increasing needs of our nation's war plants for the best in sound systems is enabling Rauland jobbers all over the country to set new sales records and at the same time develop many additional customers for future business. The Rauland-FB Distributing plan offers a really fine opportunity to jobbers *now*. Write today for details.

Electroneering is our business

Rauland

RADIO... SOUND... COMMUNICATIONS
THE RAULAND CORPORATION

(Rauland-Webster Sound Division) • 4245 North Knox Avenue, Chicago, Illinois



Rauland Industrial Sound Unit
The heart of the **AMPLICALL** Industrial Sound System, combining all the latest electronic engineering features that provide *instantaneous* communication and safety control for war plants.

Admiral Girl Wins War Work Contest

Interest in war production activities rose to a new peak at the Continental Radio & Television Corp., Chicago, when the Admiral girl, Miss Ethyle Huntley, was chosen as one of the nine winners in a contest honoring women war workers.

Entrants included thousands of factory and office girls from all major plants in the Chicago area. Contest theme was "How and Why I Entered War Work" and winners announced by the sponsor, the *Chicago Herald-American*.

Miss Huntley won a 11-day trip to Hollywood. She traveled on streamlined trains, and was an honored guest at parties given by top movie stars. April 17th she returned to her work at Continental Radio, where she is associate editor of the "Admiral Broadcaster," company publication.

Army-Navy "E" Banner for Solar

The Solar Mfg. Corp., Bayonne, N. J., has been awarded the Army-Navy "E" for excellence in the production of war equipment.

The presentation of the award was held early this month, when prominent Army, Navy, state and civic officials joined the management and several thousand employees in appropriate ceremonies.

Solar has been manufacturing capacitors (mica, paper and electrolytic) "Elim-O-Stats" (radio noise suppressors) and capacitor analyzers since 1932, for industrial, radio, television and service applications.

Fred E. Garner Co. Opens New Plant

Fred E. Garner Co., Chicago, engineers and manufacturers of radionic and optical equipment, will open a new plant—No. 2—at 1100 W. Washington St. The new plant will produce frequency meters, test equipment, radio telephones, direction finders, silent and sound picture projectors, and other radionic devices.

The engineering staff will be located at the new plant; general offices will remain at 43 E. Ohio St.

Capt. Krich of the Army Air Force

Paul R. Krich, executive vice president, Krich-Radisco, Inc., exclusive New Jersey distributors for RCA Victor, Kelvinator, Bendix, and allied lines, has been promoted in rank from First Lieutenant to Captain in the Army Air Forces. Captain Krich is a graduate of the Officers' Training School, Army Air Forces Technical Training Command, Miami Beach, Florida.

400,000 Refrigerators to Be Released

It has been announced by the Consumers Durable Goods Division of the War Production Board that some 400,000 household refrigerators will be released for sale this Spring. Most of them will be the 6, 7 and 8 ft. sizes; half of them will be electric or gas operated, and half of them the "mechanical" type.

Only those who cannot be served by other types of refrigeration are eligible to buy gas or electric refrigerators, and each purchaser must attest, on a Government form supplied by his retailer, that "the domestic mechanical refrigerator being transferred is required by me. . . . I have no other domestic mechanical refrigerator, nor do I have available any other refrigeration equipment which I can use. . . ." This form is available to the purchaser, as a part of the sales transaction, from his dealer. It will not be supplied at WPB offices.

Final Quota

The Division pointed out that further release of mechanical refrigerators for general consumption appears impossible at this time, and that no renewal of their production for general consumption is contemplated.

On February 14, 1942, sale of all mechanical refrigerators in manufacturers' and distributors' hands was prohibited except to specified war agencies (Army, Navy, Maritime Commission, Board of Economic Warfare, Lend-Lease Administration, National Housing Administration, and Civilian Supply) and the stock pile resulting from this freeze totaled about 700,000. On April 30 all production of mechanical refrigerators was stopped, and none has been produced since then. An estimated annual saving of a quarter of a million tons of critical metals and materials was effected in this cut-off.

Second Quarter

Another order issued last week by the WPB set the number of nonmechanical ice boxes that can be produced during the second quarter of 1943 (April, May, and June). The number is 250,000, and 210,000 of these are for general consumption.

This is more than the total annual production of an average pre-war year and about 35 per cent more ice boxes than were allowed during the first quarter of the year. But ever since the Board stopped production and sale of mechanical refrigerators the demand for ice boxes has gone up. There have been no restrictions on retail sales. The public can buy ice boxes through their usual trade sources, but even with increased production the demand is still ahead of the supply.

Some Things are REALLY Scarce Right Now*



* (Especially Radio Servicemen)

MILLIONS of civilian radios wait to be repaired by the comparatively few servicemen available. This situation is serious.

You just can't let those receivers lie quiet. It is your job, your responsibility, to get 'em playing—in spite of labor shortage.

And you can, if you ration your time—get the most out of each unit of bench labor consumed. Stretch each hour.

Use your testing instruments—employ the latest servicing techniques—and reach for one of your thirteen RIDER MANUALS before you begin each job. These volumes lead you quickly to the cause of failure; provide the facts that speed repairs.

It isn't practical or patriotic to waste time playing around, guessing-out defects. Today you must work with system and certainty. RIDER MANUALS provide you with both.

RIDER MANUALS

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

OTHER RIDER BOOKS YOU NEED

The Cathode Ray Tube at Work
 Accepted authority on subject \$3.00
 Frequency Modulation
 Gives principles of FM radio 1.50
 Servicing by Signal Tracing
 Basic method of radio servicing 3.00
 The Meter at Work
 An elementary text on meters 1.50
 The Oscillator at Work
 How to use, test and repair 2.00
 Vacuum Tube Voltmeters
 Both theory and practice 2.00
 Automatic Frequency Control Systems
 —also automatic tuning systems 1.25
 A-C Calculation Charts
 Two to five times as fast as slide rule.
 More fool-proof. 160 pp. 2 colors 7.50
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 On "Alternating Currents in Radio Receivers"—
 On "Resonance & Alignment"—On "Automatic Volume Control"—On "D-C Voltage Distribution" 90c each

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STANCOR

TRANSFORMERS

First Choice of Servicemen!



STANDARD TRANSFORMER

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1500 NORTH HALSTED STREET . . . CHICAGO

**WE HAVE THE GOODS
FOR
IMMEDIATE DELIVERY**

Condensers, Speakers, Volume Controls, Resistors, Transformers, Replacement Cabinets and hundreds of other items needed by you today.

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When in New York visit our extensive stock rooms. Wholesale exclusively since 1920.

**WOLFE RADIO
DISTRIBUTING CO.**

CHelsea 2-9249
WATkins 9-8160

**34 WEST 17TH STREET
NEW YORK CITY**

IN THE Service!



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

**ANTENNAE
& ASSOCIATED PRODUCTS**

**Motors and Generators
Listed by WPB**

New and vigorous efforts are being made by the War Production Board to locate every idle electric motor and generator in the country, and to get it into war industry where it will conserve the use of new materials and work to best advantage in the Victory program. The need for immediate action in this regard was pointed out by John Gammell, chief of WPB's Electrical Equipment Branch.

Restrictions on purchase orders for new motors and generators imposed by General Conservation Order L-221 as amended January 15, Mr. Gammell pointed out, are designed to insure full use of second hand equipment. A purchase order for new motors or generators must have a preference rating of AA-5 or higher.

"To assist industry in locating idle motors and generators," he stated, "the General Industrial Equipment Division has set up a Used Motor Unit in its Electrical Equipment Branch. The Unit has a file of about 30,000 used motors and generators including those listed by dealers with the OPA and those available in industrial plants. This file, which covers the entire country, is compiled from data received from the WPB field offices and directly from dealers and industrial plants and is kept currently up to date."

The Unit's chief function is to serve as a clearing house for owners and prospective buyers of idle motors and generators. Whenever possible, manufacturers looking for used equipment are referred to nearby sources of sup-

ply. However, the Unit's listing of equipment available in all parts of the country makes it possible to fill special needs even when the units are not available locally.

**Operadio's New Sales
Head to Report on
Music-Manpower Gains**

Recently appointed sales manager of the Commercial Sound Division at Operadio Mfg. Co., Fred D. Wilson is directing his researchers in the field of application of music and voice-paging to manpower conservation in war work.

Investigation into industrial music, as well as the most modern construction and production methods, will be put into written reports for distribution to industries concerned. Mr. Wilson's research will be directed toward bringing the cost of plant-broadcasting within the means of the average factory.

**"Soldiers of Production" at
American Radio Hardware**

The 325 workers at the American Radio Hardware Co., Inc., 476 Broadway, New York City, have signed a "Victory Pledge" in a new effort to speed war production at the plant. Among other things, they promise in the pledge that "as soldiers of production" they will be prompt, alert, careful, and "will remember that foremen and supervisors take the place of sergeants and officers and as such I will follow their orders and advice."

There's a pledge for each worker, signed by the individual and by D. T. Mitchell, president of the company.

Emerson Awarded Treasury Banner



Mr. Jonas Touchstone (left) "father of Pay Roll Savings Plan," presenting Treasury Flag to Mr. B. Abrams, president of Emerson Radio & Phonograph Corporation. Flag was presented in behalf of Emerson employees, 93 per cent of whom are investing more than 10 per cent of pay.

Tube Engineer



The new director of engineering for National Union Radio Corp., Newark, N. J., and Lansdale, Pa., is Dr. L. Grant Hector. He has had wide experience and training in radio and electronic research and at the time he joined National Union was doing development work for the Office of Scientific Research and Development of the U. S. Government. He is the author of several books, including "Modern Radio Receiving."

Wisconsin Exchange Service Makes a Hit

Continued success of the "swapping" service organized for its members by the Wisconsin Radio, Refrigeration and Appliance Association is reported by H. L. Ashworth, secretary-manager of the group. Dealers and distributors in the group are exchanging merchandise to good advantage, according to Mr. Ashworth, whose latest account is as follows:

"Our newly organized exchange service has proved extremely popular and helpful to many of our local dealers and it has attracted national attention. We have had several inquiries about it from other states, including several attempts by outside dealers to acquire merchandise listed. We have discouraged such inquiries on the ground that this service was set up to serve our members in the Milwaukee trade area. One request to purchase merchandise came from as far away as West Virginia.

"We are now releasing the second exchange service bulletin listing a lot of additional merchandise. On the basis of our experience with bulletin No. 1 we are quite certain that this will prove very beneficial."

New Plant for Clarostat

Clarostat Mfg. Co., Inc., Brooklyn, N. Y., announces the opening of its second plant in the same city. The new plant started production operations on March 15th, and is entirely financed by Clarostat.



Instant communication — fighter planes with bombers — cruisers with their convoy — tanks with infantry — And in the midst of it all — Radio Tubes — the heart of communication — Yes Ken-Rads are helping to decide the destiny of democracy in a big way — Your dealer may not have a plentiful supply of Ken-Rad tubes now — But our fighting forces have — and after victory every one will



KEN-RAD

RADIO TUBES • INCANDESCENT LAMPS • TRANSMITTING TUBES
OWENSBORO • KENTUCKY

Only 3 types needed!... FOR 99%
OF THE USUAL REPLACEMENTS!

Keep your ballast stock at a minimum

JFD Adjustable Ballasts are needed now more than ever, since production of exact duplicates by most manufacturers is discontinued for the duration.

Over 750,000 JFD adjustable A, B and C ballasts have been sold since 1937.

Only 3 types—A, B and C—replace more than 2,500 different numbers of exact duplicates.

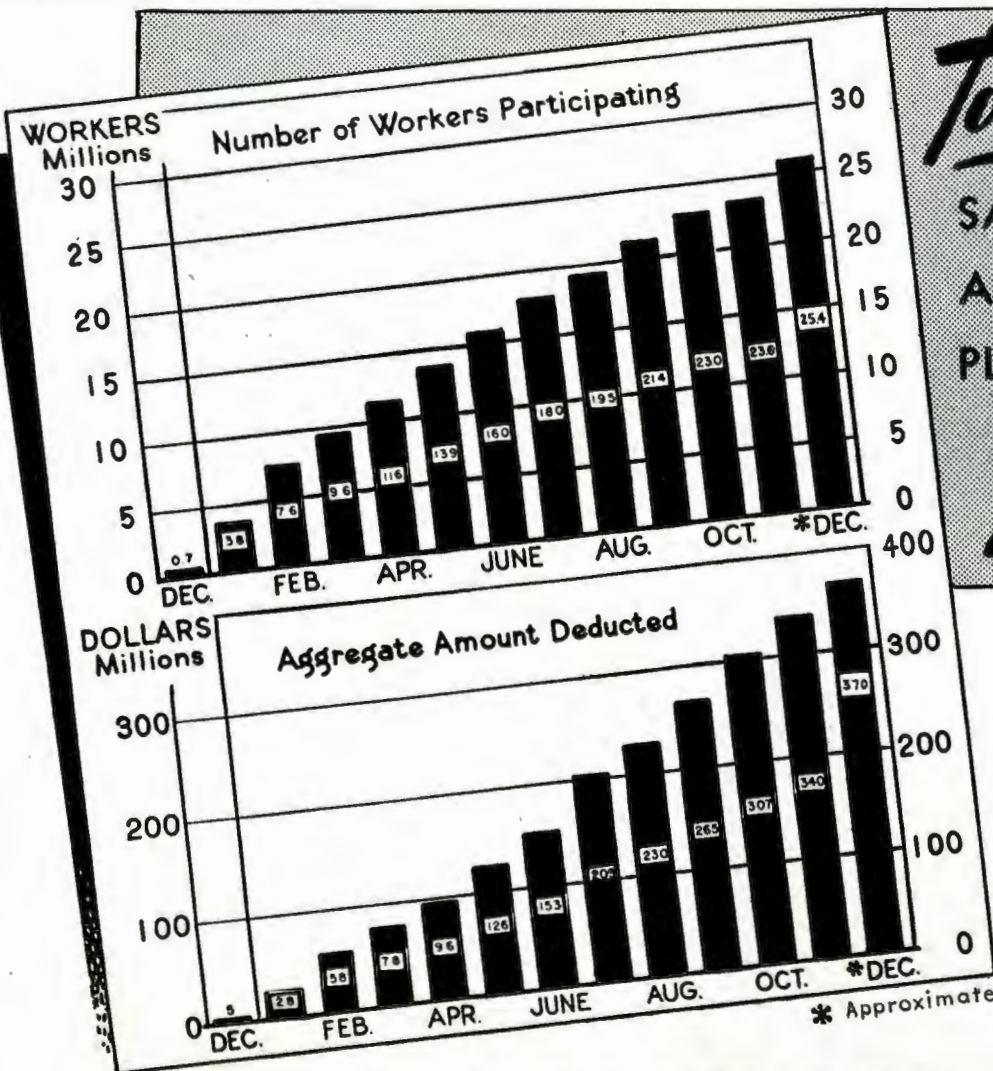


JFD

ADJUSTABLE BALLASTS

J. F. D. MANUFACTURING CO.

4111 FT. HAMILTON PARKWAY, BROOKLYN, N. Y.



Tomorrow's
 SALES CURVES
 ARE BEING
 PLOTTED . . .
Today

THESE CHARTS SHOW ESTIMATED PARTICIPATION IN PAYROLL SAVINGS PLANS FOR WAR SAVINGS BONDS (Members of Armed Forces Included Starting August 1942)

STUDY THEM WITH AN EYE TO THE FUTURE!

There is more to these charts than meets the eye. Not seen, but clearly projected into the future, is the sales curve of tomorrow. Here is the thrilling story of over 25,000,000 American workers who are today voluntarily saving close to FOUR AND A HALF BILLION DOLLARS per year in War Bonds through the Payroll Savings Plan.

Think what this money will buy in the way of guns and tanks and planes for Victory today—and mountains of brand new consumer goods tomorrow. Remember, too, that War Bond money grows in value every year it is saved, until at maturity it returns \$4 for every \$3 invested!

Here indeed is a solid foundation for the peace-time business that will follow victory. At the same time, it is a real tribute to the voluntary American way of meeting emergencies that has seen us through every crisis in our history.

But there is still more to be done. As our armed forces continue to press the attack in all quarters of the globe, as war costs mount, so must the record of our savings keep pace.

Clearly, on charts like these, tomorrow's Victory—and tomorrow's sales curves—are being plotted today by 50,000,000 Americans who now hold WAR BONDS.



Save with
War Savings Bonds

This space is a contribution to America's all-out war effort by

RADIO Retailing TODAY

BIRCH

PHONOGRAPHS

have gone to war!

They are going to the boys in far off places, on board ships, in the jungles, on the desert, easing tension between battles.

To the folks on the Home Front we offer a complete repair service so that their machines can function. Prices reasonable — workmanship traditionally "Birch" throughout.

BIRCH
PHONOGRAPHS

BOETSCH BROS.

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Cooperative Advertising for FIDELITONE DEALERS



**De Luxe Record
Carrying Bags
as Low as**

\$4.50
PER THOUSAND



Permo Products Corporation is offering Fidelitone dealers these high-quality imprinted record carrying bags for as little as \$4.50 a thousand... one-third the actual cost. Because of the nature of the promotion, Permo is paying the balance. These good-looking, easy-to-use bags are walking ads for your store. Take advantage of this special offer now. Write for complete details and costs.

PERMO PRODUCTS CORPORATION
6415 RAVENSWOOD AVENUE CHICAGO, ILL.

**"Now, Here's a Tough Job
we'd like you to figure out!"**

We've heard that often, and we like to hear it, for figuring out "toughies" is our business. Our own specially designed calibration system for calibrating standards for the Army is a notable example.

What About YOUR Problems?

If you anticipate one, in getting properly wound coils, special transmitter coils, almost any small machine part for radio or electronic use, why not discuss it with us?



MONARCH MFG. CO.

2014 N. Major Ave. Chicago, Ill.

GENERAL INDUSTRIES

*Smooth-
Power*
MOTORS



**RELIABLE POWER
FOR WARTIME APPLICATIONS**

• Manufacturers producing for Victory will do well to look to General Industries for precision-made devices, and especially small-power motors. For thirty years G. I. motors have been recognized as setting the standard for quality construction, quiet running and reliable performance. They are available on Government order and measure up fully to Government requirements. Do not hesitate to let G. I. engineers advise with you.

THE GENERAL INDUSTRIES CO.

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FOR VICTORY Buy
United States War
Bonds and Stamps



POLYMET
CONDENSER CO.

699 EAST 135TH ST.,
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DISTRIBUTORS**



**CONTINUOUS
DEPENDABLE
SERVICE**

**WRITE FOR
LATEST CATALOG**

READRITE



ILLUSTRATION

9/10 FULL SIZE

A.C. METER

Scale—80°—1½" on enameled metal plate.

Construction—Full bridge moving iron type with hard steel pivots.

Accuracy—± 5% Full Scale or ± 2% any one point to order.

Mounting—2⅜" diameter hole. ⅞" depth behind flange.

*Write for
Special
Bulletin
and Prices*

★



READRITE METER WORKS, Bluffton, Ohio

Distributor Appointed to U. S. Navy Bureau



Snapped on a recent visit to the Hallcrafters' plant, distributor Bob Henry is shown with W. J. "Bill" Halligan (left), president of Hallcrafters, Inc. Mr. Henry, short wave radio communications receiver jobber, has been appointed to the Radio Procurement division of Bureau of Ships, U. S. Navy.

Sickles Gets Army-Navy Production Award

The production force of the F. W. Sickles Co., radio parts manufacturer, was honored by the presentation of the Army-Navy Production Award at ceremonies held April 13. Lieut. Col. Kenneth D. Johnson of the Signal Corps made the presentation of the "E" burgee, and Lt. Jesse M. LaFollette, DV(S), U.S.N.R., distributed token "E" pins to five representative employees.

Those on the presentation program included Roy F. Sickles, company president; William Meserve, president of the employees' Mutual Benefit Association; Commander Ralph Evans, naval aide to Massachusetts Governor Leverett Saltonstall; Leo P. Senecal, mayor of Chicopee, and Monte Cohen, Sickles' general manager. Congressman Charles R. Clason was master of ceremonies. The five employees selected for the special honor of receiving token "E" pins are Mr. Meserve, Bernadette Ouellette and Phoebe La Broke, senior Sickles employees in point of service, and Genevieve Jesuit and Jean Verallis, who won Individual Production Merit Awards for suggestions which increased production, under the War Production Board system. The program was broadcast over local stations.

Pittsburgh Distributor Features New Lines

As this issue goes to press, an "open house" show for new wartime lines of merchandise is being held at Anchor Distributing Co., Pittsburgh, Pa. The report came in too late to be included in the feature headed "Choosing Alternate Lines" on page 28 of this issue.

Harold W. Goldstein, president of Anchor, said that "we have searched for many months over thousands of miles to find new lines of merchandise, priced right, to help our dealers stay in business." Anchor showrooms were then remodelled to handle the new lines, and the firm now boasts "one of the finest and most complete displays of glassware, china and giftware in the country."

Also shown were full lines of toys, games, dolls and framed pictures. Other merchandise included houseware items, cooking utensils (made of glass) Kimsul insulation, Coolerator ice refrigerators, Victory Model Gas Ranges, Coal Heaters and Master Combustor Fuel Saving Devices.

Many of these items have not been previously carried by Anchor dealers, according to Mr. Goldstein, but Anchor is making a permanent place for these lines and expects to continue with the sale of this merchandise during the post-war period.

Zenith Executive Sees Tubes on the Way

"Latest indications are that the proposed WPB tube production program will proceed as planned," reports R. F. Miller, manager of Parts Tubes and Batteries at Zenith Radio Corp. Mr. Miller just finished a special trip among tube manufacturing execs throughout the industry.

Mr. Miller's view of the situation is that the 11,000,000-tubes-per-quarter program will turn out to be nearer 6,000,000, however, and he warns Zenith distributors and dealers not to expect too much too soon. He reminds radio men that some time will be required to get men and materials together for the tube job.

“Cost-Plus” Ruling on Record Player Prices

The Office of Price Administration has issued an official interpretation of the “prices-subject-to-revision” type of contract used between the manufacturer and the buyer in the phonograph business. The bulletin from OPA runs as follows:

A manufacturer had a contract with a buyer of record players to sell a certain model player. The question arose whether the contract was a cost-plus contract within the meaning of price schedules No. 83 and No. 84 (Radio-Receiver and Phonograph Parts). The contract continued in the following language:

“We reserve the right to increase the above quoted price at the time of shipment due to any increase in manufacturing costs beyond our control, or due to factory or labor conditions, increases in cost of materials or delays due to Government priorities, preference ratings or priority requests. In the event that any such increase exceeds ten per cent of the above quoted price, you may have the option of cancelling your order.”

Cost Plus Limits

A cost-plus contract is defined in Schedule Nos. 83 and 84 as:

“An agreement providing for (i) a price equal to the manufacturer's cost plus a stated percentage or fixed fee, or (ii) a specified price which is subject to adjustments covering variance from manufacturer's cost estimates.”

A contract can be a cost-plus contract within the meaning of clause (ii) of the above definition, even if the specified price is not subject to downward revision. However, in order to come within clause (ii) of the definition, the contract must establish a definite relationship between the upward adjustments to be made in the specified price and variance from the manufacturer's cost estimates. The language of the contract in question is ambiguous with respect to the relationship between the price adjustment and cost variance.

Price Question

One possible interpretation of the language used is that the manufacturer will be entitled to add to the specified price only an amount equal to the increase in the cost of manufacturing each unit (due to certain specified circumstances) over the estimated cost at the time the contract was entered into, as shown by the manufacturer's cost accounts. However, a second and equally plausible interpretation of the contract is that if, by reason of increases in manufacturing costs due to

certain specified circumstances, the manufacturer should deem it advisable to raise the market price of the record player, it could also raise the price for future deliveries to the buyer under the contract (up to the 10 per cent limit beyond which the buyer could cancel) in an amount which has no relationship to the amount of the increase in the manufacturing costs.

OPA Will Accept Clarifying Agreement

There has been no customary course of dealing between the manufacturer and the buyer by reference to which

the ambiguity in the contract could be resolved.

Under these circumstances if the parties to the contract are able to agree upon the proper interpretation of the contract, OPA will accept that agreement as resolving the ambiguity. If the parties agree that the first interpretation (manufacturer to add to the specified price only the amount of cost increases) is the one which was intended by them, OPA will regard the contract as a cost-plus contract within the meaning of these two Schedules. In the absence of an agreement to that effect, the contract will not be treated as a cost-plus contract.

WANTED RADIO SPECIALISTS MEN and WOMEN

The Colonial Radio Corporation needs immediately, for War Radio Work, the following technically trained personnel:

**RADIO ENGINEERS
MECHANICAL ENGINEERS
ELECTRO-MECHANICAL ENGINEERS
MECHANICAL DRAFTSMEN
ENGINEERING SPECIFICATION WRITERS
FIELD ENGINEERS—RADIO
FIELD INSPECTORS—RADIO
MODEL MAKERS
TECHNICAL ASSISTANTS—RADIO**

These are NOT temporary positions. Satisfactory employees may expect PERMANENT employment. Qualified applicants, NOT now in war work, should write, giving full history of education, experience and salary desired.

COLONIAL RADIO CORPORATION

**254 RANO STREET
BUFFALO, N. Y.**

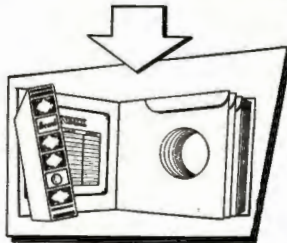


**PEERLESS
ALBUM**

WHEN A RECORD NEEDS A FRIEND

Protecto-Flap the CRASH-PROOF RECORD ALBUM

10"
1.00
12"
1.25



made exclusively by
PEERLESS

Satisfied album customers are future record and album buyers. Customers can't be pleased with albums that allow records to slip out and crash. Protecto-Flap Albums envelope flaps keep records crash-proof and dust-proof at low cost.

PEERLESS

Album Co., Inc.

38-44 W. 21st St., New York, N.Y.

FAST, EASY WAY TO CUT HOLES IN RADIO CHASSIS

**NO FILING,
REAMING, OR
TEDIOUS
DRILLING**



Here's a handy tool to help the radio worker save many hours of work when cutting holes for sockets, plugs, connectors, and other receptacles in radio chassis. 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. Smooth holes, requiring no filing or reaming, can be cut in metal up to 1/8-inch thick in 1 1/2 minutes or less. Ten punches are available for cutting 3/4, 1, 1 1/4, 1-5/32, 1-3/16, 1 1/4, 1 3/4, 1 1/2 and 2 1/4-inch holes. A Greenlee Knockout Cutter is also available for cutting holes up to 3 1/2-inch size for meters. Send for new circular S-114 on Radio Chassis Punches.

SEND FOR
FREE COPY
GREENLEE
CATALOG 33E

GREENLEE TOOL CO.

1904 Columbia Ave
Rockford, Illinois

RCA Launches New Production Drive

While the two-star Army-Navy "E" flag was being awarded to RCA Victor, the joint labor-management War Production Drive Committee in the Camden, N. J., plant, launched its 4th Beat the Promise drive.

The rallying slogan "Let's Get It Over—Beat YOUR Promise" is emblazoned throughout the plant on posters, handbills and the house publications.

Chief aim of the current campaign is to make the employees feel the real importance of their individual efforts. Such activities as a progress chart in each department and personalized posters with a photo of a man in a particular department, who has been called into the service, together with pertinent paragraphs from his letters, spur on his co-workers to give him the fighting tools he needs. Other posters, frequently changed, dramatize the aims of the drive, reduce absenteeism and tardiness, blood donations, increased war bond purchases, safety, health, etc.—and are designed to bring forth greater effort to "get it over."

S-C Distributor "Home" for Duration

Joseph Hornberger, who before December 7 handled Stromberg-Carlson radios and sound equipment in Reading, Pa., is now on the war production front, still pushing Stromberg products.

He's helping expedite the production of communications equipment under Cliff Hunt, manager of the radio division at Stromberg's plant in Rochester, N. Y.

Sales Manager Honored



Ohmite Mfg. Co., Chicago, has honored its sales manager, Roy S. Laird, by naming him vice-president of the firm. He will continue in charge of sales, and the announcement says that he will maintain as close contact as possible with Ohmite customers. The company now makes rheostats, resistors, chokes, tap switches and attenuators for war equipment and industry.

Bittan Sales Co. Expands Staff

A new addition to the staff of the D. R. Bittan Sales Co., manufacturers' representative, of 53 Park Place, New York City, is Bernard Herman. Mr. Herman was formerly with the Federal Telephone & Radio Corp. In his new post he will be in charge of expediting, and will work with Irving Brander of the Bittan staff in handling all detail work pertaining to orders.

Buy U. S. War Bonds and Stamps



"This model is equipped with FM and also plays request numbers."

Reprinted from *Collier's*

Electronic Supply Agency Formed

A new organization called the Electronic Research Supply Agency has been formed by the Defense Supplies Corp., to supply critical electronic components to research laboratories working on radio problems for the Army and Navy. It was formed at the request of the Armed Services, Office of Scientific Research and Development, and the War Production Board, to expedite vital war research projects.

The new Agency will be run, without profit, by a committee of men representing the Army, Navy and other government agencies. The managing director is Maurice S. Despres, prominent New York distributor who has previously held other key positions in wartime radio in Washington.

Jobbers in the Picture

Approved laboratory orders which may be filled by the agency can be placed directly with the agency or can be channeled to the agency through commercial distributors. In that manner, distributors can place with the agency, for the account of laboratories, those portions of orders which they themselves are not in a position to fill.

The WPB statement was that "laboratories will not, of course, be compelled to place their purchase orders with ERSA. In cases where they have not purchased directly from the manufacturer, normal distribution sources have rendered excellent service in filling requirements in this field. Laboratories should continue to use available sources to the fullest extent, reserving the agency for the last resort." Offices and stockrooms for ERSA will be located in New York City.

Needed in Small Lots

It was pointed out that the laboratories of the universities, industrial companies, the government, and others are developing countless radio devices and perfecting old ones which, in time, will become new weapons of the Armed Services. This central source for electronic parts will expedite their work.

Laboratory orders, it was said, are for small amounts which can be fitted only with difficulty into the schedules of manufacturers. The laboratories frequently must canvass great numbers of manufacturers and dealers to obtain swift delivery of small amounts of equipment essential to their research.

The Electronic Research Supply Agency will make it unnecessary for the laboratories to build up their own complete stockpiles of components. WPB officials pointed out that laboratory stockpiles often are made up of components which do not meet standards preferred by the Army and Navy. The agency will be able to direct laboratory purchases to the preferred types.



Parts
by

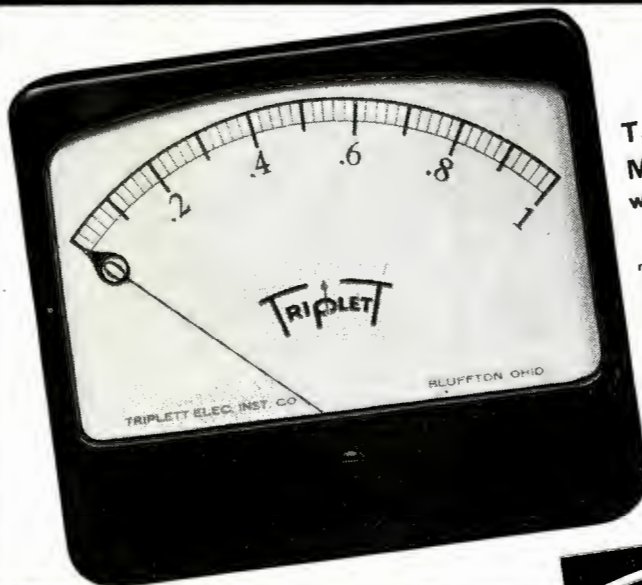
Centralab

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

- Steatite Insulators
- Ceramic Trimmers
- High Frequency Circuit Switches
- Volume Controls
- Ceramic Capacitors
- Wire Wound Controls
- Sound Projection Controls

TRIPLLETT

Combat Line INSTRUMENTS



TRIPLLETT
MODEL 626
with long 5.60" scale

★
This illustration is
1/2 actual size. Note
long scale and mini-
mum panel space
required.

A WORD ABOUT DELIVERIES

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

TRIPLLETT ELECTRICAL INSTRUMENT CO. BLUFFTON, OHIO



Protection against fuse failure by crystallizing and cracking is efficiently provided by the NEW Littelfuse "Gooseneck" of **ANTI-VIBRATION LITTELFUSES**



Spring forming at end of element instantly taken up expansion and contraction of sudden temperature changes. (See illustration). One of many NEW exclusive Littelfuse features for long life, dependable service, under severest conditions.

LITTELFUSE INC.
4791 Ravenswood Avenue, Chicago, Ill.
261 Ong St., El Monte (Los Angeles suburb) Cal.

University

REFLEX SPEAKERS
now the accepted **STANDARD** for all **WAR USE**

EVERY UNIVERSITY REFLEX the result of years of pioneering research and development

EVERY HIGH EFFICIENCY SPEAKER
In University's extensive line of power speech reproducers has a vital part to play in the WAR program.

REMEMBER
University is now producing many special speakers for the Army, Navy & Signal Corps. Submit your special problem direct to the engineering dept.

UNIVERSITY LABS., 225 VARICK ST., NYC

NEW BOOKLETS

A 4-page folder has been released by the Karadio Corp., 1400 Harmon Pl., Minneapolis, Minn., on their Reception Set R-103 and their Karadio model 1179-SC.

A new printing of Sylvania's 5th edition of the Technical Manual is now ready for distribution to radio technicians. A section has been devoted to listing all new tubes released since previous issue and a panel lamp section has been added. At 35c per copy, it may be secured from Sylvania Distributors or from Sylvania Elec. Prods., Inc., Emporium, Pa.

A Victory Music Folder from the Music War Council of America, 20 East Jackson Blvd., Chicago, made of durable manila with two pockets for filing sheet music, tells in pictures and captions how school music organizations can participate in the war activity. Lists at 15c with the usual trade discount to jobbers and dealers.

A catalog called "The Transformer Encyclopedia of the Radio and Electronic Industry," put out by Stancor, lists detailed specifications covering their complete line of transformers and chokes for replacement and general use. It also contains a classified and numerical index and price list which give location and cost estimate of the individual items. Space is also devoted to transformers designed for special shop, laboratory and industrial applications. Illustrations show mounting types available. When ordering, designate Catalog No. 140. Standard Transformer Corp., 1500 N. Halsted St., Chicago, Ill.

"Timely Wartime Tips on Fluorescent Maintenance" is the title of a new booklet published by the Lighting Division of Sylvania Electric Products, Inc., Salem, Mass. It outlines how to properly care for fluorescent installations and get maximum lighting service from them.

An informative leaflet from Burgess Battery Co., Dept. 304, Freeport, Ill. warns consumers of the impending shortage of both radio and flashlight batteries and outlines several easy-to-follow rules on dry battery conservation.

A new catalog of radio parts and replacement cabinets is now being prepared by Wolfe Radio Distributing Co., 34 W. 17th St., New York City. The booklet will carry a full list of the items on which the firm can make immediate delivery.

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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.

Botany Worsted Mills

BUILD PLANT MORALE WITH RAYTHEONS!



In the huge burling room of the Botany Worsted Mills at Passaic, New Jersey the workers mending threads are surrounded by great masses of cloth which, absorbing sound, impress a pall of silence. With the new plant broadcasting system and Raytheons on the job the silence is broken by cheerful music resulting in

more effective work and better plant morale.

Replacing with Raytheon Tubes in plant broadcasting systems is typical of Raytheon's good service to all types of users. Servicemen, engineers and maintenance men know Raytheon's unfailing performance qualities . . . that is why they recommend Raytheon Tubes for the unusual task.



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