

MAY

RADIO
Retailing
TODAY



AT YOUR OWN BATTLE STATION IN RADIO

CONTINUE FIRING!

Stumped for an Answer?



Consult Your MYE Technical Manual

This book brings theory down to earth for practical application to every-day problems—

- Designed for the radio serviceman, engineer, amateur or experimenter.
- Presents the latest technical information in simple terms.
- Contains much never before published.
- A big aid for wartime set servicing.
- Helps you make the most of available parts.

As one enthusiastic serviceman puts it, the MYE Technical Manual "must be within reach on the bench." 408 pages, with hard cloth binding. Profusely and accurately illustrated. Your nearest Mallory distributor will supply you—\$2.00 net to radio servicemen.

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

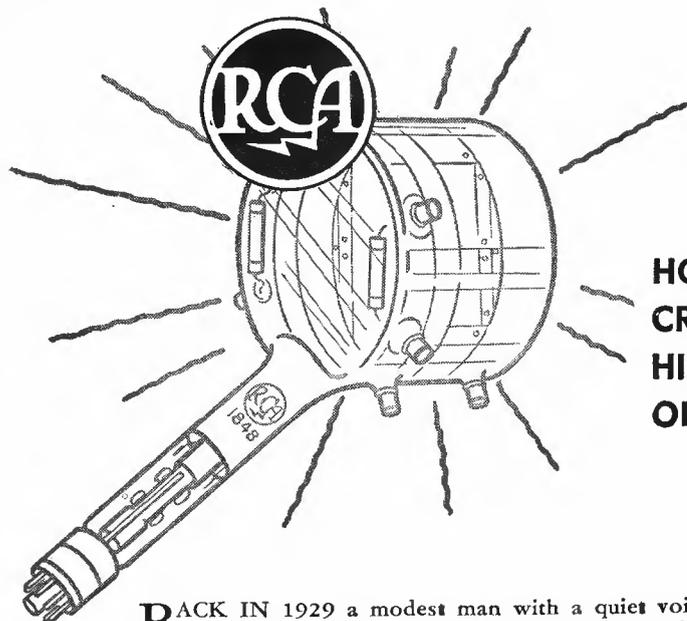


Does This Table of Chapter Headings Interest You?

- | | | |
|---|------------------------|--------------------------------------|
| 1 Loud Speakers and Their Use | 6 Automatic Tuning | 10 Practical Radio Noise Suppression |
| 2 Superheterodyne First Detectors and Oscillators | 7 Frequency Modulation | 11 Vacuum Tube Volt Meters |
| 3 Half-Wave and Voltage Doubler Power Supplies | 8 Television | 12 Useful Servicing Information |
| 4 Vibrators and Vibrator Power Supplies | 9 Capacitors | 13 Receiving Tube Characteristics |
| 5 Phono-Radio Service Data | | |

P. R. MALLORY & CO. Inc.
MALLORY

Approved Precision Products



BLAZING THE

HOW ELECTRONIC TELEVISION WAS CREATED BY RCA LABORATORIES . . . HISTORIC STEPS IN THE EVOLUTION OF THIS NEW SCIENCE

BACK IN 1929 a modest man with a quiet voice calmly announced two inventions . . . two amazing almost magic devices that made it possible for radio to "see" as well as to "hear."

This man was Dr. V. K. Zworykin of RCA Laboratories. And his research in electronics gave radio its electronic "eyes" known as the Iconoscope and the Kinescope. The former is the radio "eye" behind the camera lens; the latter is the receiver's screen.

Since that red-letter day in television history, ceaseless research in the science of radio and electron optics has established RCA Laboratories as the guiding light of television.

The decade of the thirties saw television's coming-of-age. It brought new scientific instruments and discoveries; it developed new techniques of showmanship; it even created new words—televise, telecast, televue, and telegenic.

In the evolution of television there have been "high spots"; historic milestones of progress; definite "firsts"—made possible by the services of RCA.

1928—1932—FROM THE FIRST EXPERIMENTAL STATION TO ALL-ELECTRONIC TELEVISION



Station W2XBS, New York, was licensed to RCA in 1928 to conduct television experiments. Transmitter located at laboratory in Van Courtlandt Park, was later moved to Photophone Building, 411 Fifth Avenue; then to New Amsterdam Theatre until 1931, when operations were transferred to Empire State Building.

On Jan. 16, 1930, Television pictures were transmitted by RCA from W2XBS at 411 Fifth Avenue and shown on 6-foot screen at RKO-Proctor's 59th Street Theatre, New York.

Television station W2XBS, operated by National Broadcasting Company, atop New Amsterdam Theatre, New York, opened for tests July 7, 1930, with the images whirled into space by a mechanical scanner.

Empire State Building, the world's loftiest skyscraper, was selected by RCA as the transmitter and aerial site for ultra-short-wave television experiments using both mechanical and electrical scanners. Operation began October 30, 1931.

Field tests of 240-line, all-electronic television were made by RCA at Camden, N. J., with television signals relayed

by radio from New York through Mt. Arney, N. J., for the first time, May 25, 1932.

1936—OUTDOOR TELEVISION



Television outdoors was demonstrated by RCA at Camden, N. J., on April 24, 1936, with local firemen participating in the program broadcast on the 6-meter wave.

All-electronic television field tests of RCA began June 29, 1936, from ultra-short-wave transmitter in Empire State Building and aerial on the pinnacle releasing 343-line pictures.

Radio manufacturers saw television demonstrated by RCA on July 7, 1936, with radio artists and films used to entertain.

1937—ELECTRON "GUN"

Electron projection "gun" of RCA was demonstrated on May 12, 1937, to Institute of Radio Engineers, with pictures projected on 8 x 10-foot screen.

Television on 3 x 4-foot screen was demonstrated by RCA to Society of Motion Picture Engineers on October 14, 1937; pictures were transmitted from Empire State Building to Radio City.

Mobile television vans operated by RCA-NBC appeared on the streets of New York for first time, December 12, 1937.

1938—BROADWAY PLAY TELEVISED



Scenes from a current Broadway play, "Susan and God," starring Gertrude Lawrence, were telecast on June 7, 1938, from NBC studios at Radio City.

RCA announced on October 20, 1938, that public television program service would be inaugurated and commercial receiving sets offered to the public in April, 1939:

1939—BASEBALL—KING GEORGE VI—FOOTBALL

Opening ceremonies of the New York World's Fair televised by NBC on April 30, 1939, included President Roosevelt as first Chief Executive to be seen by television.

"A first from the diamond." Columbia vs. Princeton, May 17, 1939, televised by NBC.

TELEVISION TRAIL



Improved television "eye" named the "Orthicon," introduced by RCA on June 8, 1939, added greater clarity and depth to the picture.

Television spectators in New York area on June 10, 1939, saw King George VI and Queen Elizabeth at the World's Fair, telecast by NBC.

Brooklyn Dodgers-Cincinnati game telecast by NBC on August 26, 1939, was the first major-league baseball game seen on the air.

First college football game—Fordham-Waynesburg—televised by NBC, September 30, 1939.

Television from NBC station in New York was picked up by RCA receiver in plane 20,000 feet over Washington, D. C., 200 miles away, October 17, 1939.

Television cameras of NBC scanned the scene in front of Capitol Theatre and in lobby at premiere of motion picture "Gone With The Wind," December 19, 1939.

1940—HOCKEY—COLOR—TRACK BIRD'S-EYE TELEVISION



Color television was demonstrated on February 6, 1940, to Federal Communications Commission by RCA at Camden, N. J.

First hockey game was televised by NBC camera in Madison Square Garden, February 25, 1940.

Basketball: Pittsburgh-Fordham, also NYU-Georgetown at Madison Square

Garden were televised by NBC, February 28, 1940, as first basketball games seen on the air.

First Intercollegiate track meet at Madison Square Garden telecast on March 2, 1940.

Using RCA's new, compact and portable television transmitter, a panoramic view of New York was televised for the first time from an airplane on March 6, 1940. Television sightseers as far away as Schenectady saw the bird's-eye view of the metropolis.

Premiere of television opera on March 10, 1940, featured Metropolitan Opera stars in tabloid version of "Pagliacci."

First telecast of religious services on March 24, 1940, from NBC Radio City studios, were seen as far away as Lake Placid.

Ringling Brothers-Barnum and Bailey circus viewed on the air, April 25, 1940, through NBC electric camera in Madison Square Garden.

Television pictures on 4½ x 6-foot screen were demonstrated at RCA annual stockholders meeting May 7, 1940, at Radio City.

Republican National Convention was televised on June 24, 1940, through NBC's New York station via coaxial cable from Philadelphia.

Democratic National Convention films rushed by plane from Chicago for NBC were telecast in New York, July 15, 1940.

President Roosevelt was seen by television throughout the Metropolitan areas as he addressed Democratic rally, October 28, 1940, at Madison Square Garden.

Election returns on November 5, 1940, televised for first time by NBC, showed teletypes of press associations reporting the news.

1941—COMMERCIAL TELEVISION



Television progress demonstrated to FCC on January 24, 1941, included: home-television receiver with 13½ x 18-inch translucent screen; television pictures 15 x 20 feet on New Yorker Theatre screen; pictures relayed by radio from Camp Upton, Long Island, to New York; also facsimile multiplexed with frequency modulation sound broadcast.

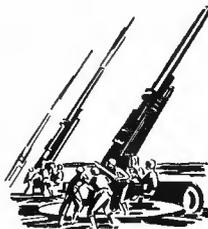
Television pictures in color were first put on the air by NBC from Empire State Building Transmitter on February 20, 1941.

Large-screen television featuring Overlin-Soose prize fight on May 9, 1941, at Madison Square Garden was demonstrated by RCA at New Yorker Theatre; also, on following days, baseball games from Ebbets Field, Brooklyn.

Commercial operation of television began July 1, 1941, on a minimum schedule of 15 hours a week. NBC's station WNBT, New York, the first commercially licensed transmitter to go on the air, issued the first television rate card for advertisers, and instituted commercial service with four commercial sponsors.

Entry of the United States in World War II, enlisted NBC television in New York to aid in illustrating civilian defense in air-raid instructions in the New York area.

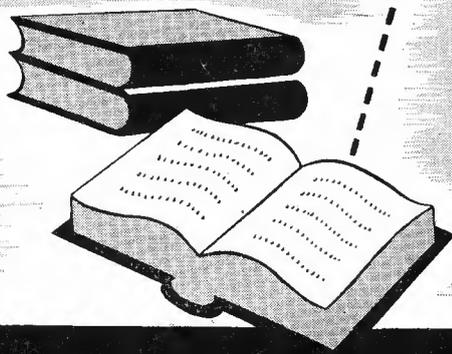
1943—AMERICA AT WAR!



Today RCA Laboratories, pioneer in the science of electronics, is devoting all its efforts to the war.

Yet, from the discoveries, developments and inventions made under the urgency of war, will come greater wonders for the Better Tomorrow of a peacetime world.

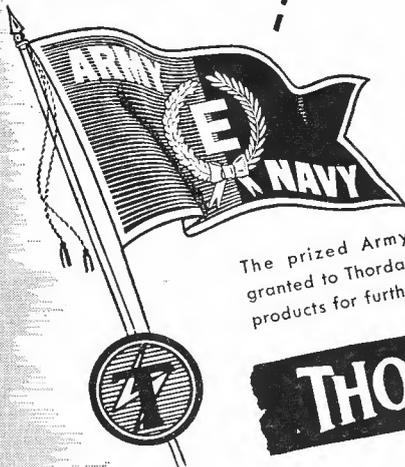
RADIO CORPORATION OF AMERICA
RCA BUILDING, NEW YORK
CREATOR OF ELECTRONIC TELEVISION



LEADERSHIP
is just a word!

but
THORDARSON'S LEADERSHIP
IS AN ACCEPTED *fact!*

Today, in any language, the word Thordarson means the finest transformers that human skill can create. And, in almost every country, the leadership which Thordarson enjoys is reflected in the important services rendered by Thordarson transformers... services which have brought new comforts and enjoyments to peace-time, and which are helping more efficiently to consummate the jobs of war-time.



The prized Army-Navy "E" award has been granted to Thordarson for excellence in producing products for furthering the war effort.

THORDARSON

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

Transformer Specialists Since 1895

RADIO *Retailing* TODAY

MAY, 1943

featuring

Page

9	SUMMER TRENDS
12	DEALER AT BATTLE POSTS
14	RADIO AIDS 2ND WAR LOAN
16	OUTDOOR SOUND JOBS
18	RADIO ON THE MARCH
20	RADAR AS RADIO FEAT
22	SUMMER RECORD TRENDS
24	RECORDING IS POPULAR
26	RADIO SCRAP NEEDED
28	BUSINESS IN WAR TIMES
30	NEW PARTS FOR OLD
34	ADDING NEW SALES ITEMS
36	THE MARKETS TO COME
38	LETTERS TO THE EDITOR
43	NEW PRODUCTS
44	WHAT WASHINGTON SAYS
46	RADIO REPAIR GIRLS
48	SUBSTITUTE TUBE CIRCUITS
50	SERVICE NOTES

RADIO Retailing TODAY, May, 1943, Vol. 28, No. 5, 25c a copy. Published monthly by Caldwell-Clements, Inc., 480 Lexington Ave., New York, N. Y. M. Clements, president; Orestes H. Caldwell, treasurer. Subscription rates United States and Latin American countries, \$1.00 for one year, \$1.50 for two years, \$2.00 for three years. Canada \$1.50 for one year, \$2.00 for two years, \$3.00 for three years. All other countries \$2.00 for one year, \$3.00 for two years, \$4.00 for three years. Printed in U.S.A. Re-entered as second class matter August 28, 1942, at the Post Office at New York, N. Y., under the act of March 3, 1879. Member of Audit Bureau of Circulations. Copyright by Caldwell-Clements, Inc., 1943.

ORESTES H. CALDWELL

Editor

M. CLEMENTS

Publisher

Darrell Barte, Managing Editor
H. L. M. Capron, Merchandising Editor
William E. Moulic, Technical Editor
Frank E. Butler, Associate Editor
Helen Thurman, Assistant Editor

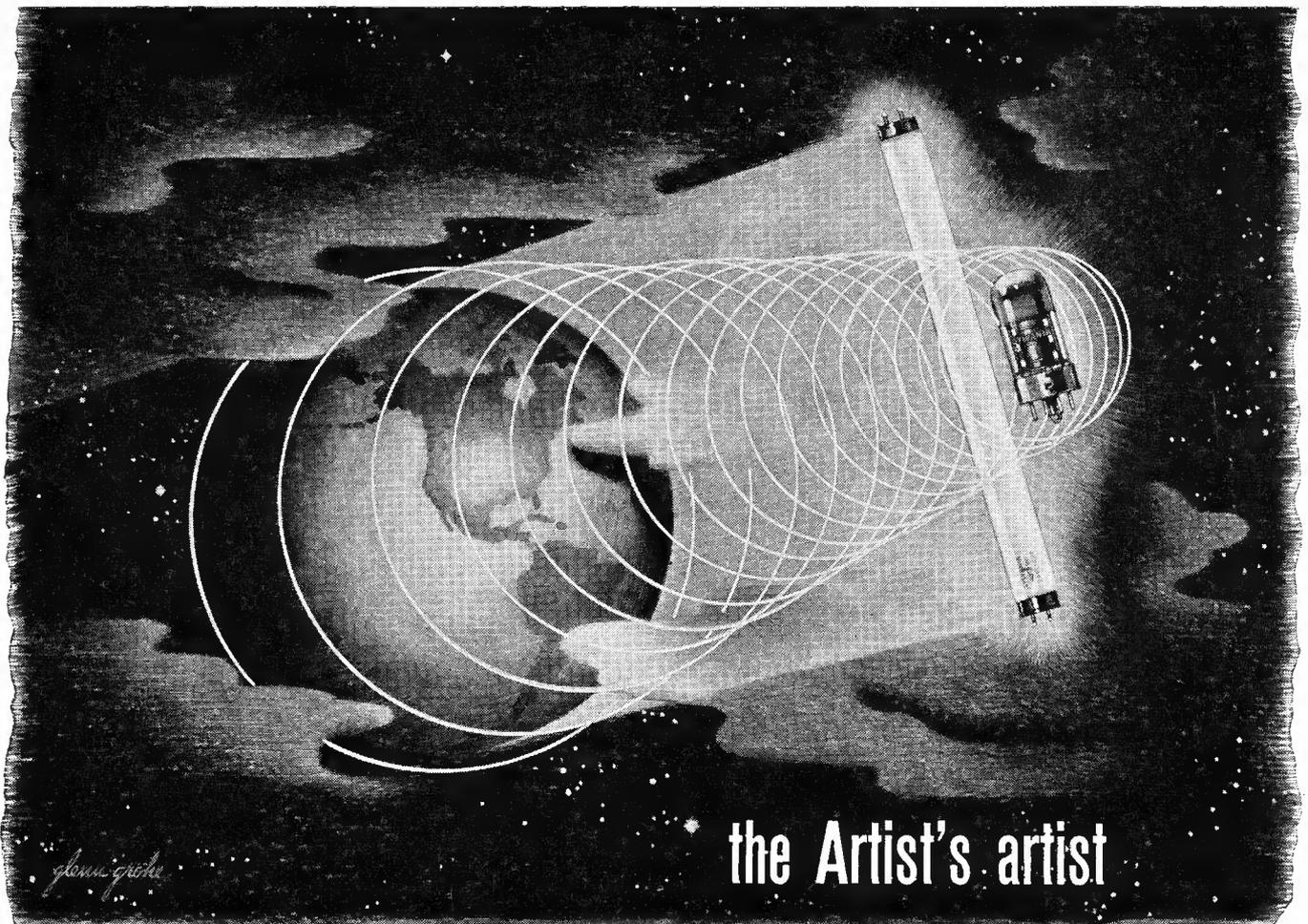
BUSINESS STAFF

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



the Artist's artist



We are not zealous here at Sylvania to be the largest in our field. We had rather be known for excellence than for size. You have heard of the man so painstaking that to his talented fellows of larger fame he is known as the writer's writer, or the painter's painter, or the singer's singer. We understand that, and it seems to us there could be no higher praise. So in all the things we build — incandes-

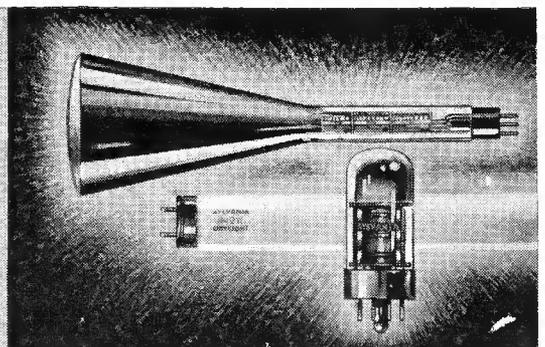
cent lamps, fluorescent lighting equipment, radio and electronic tubes — we aim uncompromisingly high, high as we possibly can. The function of these things, conceived as they are to amplify the indispensable miracles of human sight and hearing, seems to us to deserve the very best that can be given. So believing, it is only natural we should seek in all our work to attain the highest standards anywhere known.

SYLVANIA ELECTRIC PRODUCTS INC.

EMPORIUM, PA.

MAKERS OF INCANDESCENT LAMPS, FLUORESCENT LAMPS, FIXTURES AND ACCESSORIES, RADIO TUBES, CATHODE RAY TUBES AND ELECTRONIC DEVICES

INDUSTRIAL ELECTRONICS is doing much to help win the war on the production front, but can do a great deal more by more widespread application. Sylvania Electronic Tubes for devices that can automatically gauge, count, control, actuate, test, detect, protect, guide, sort, magnify, heat, transform, "see," "feel" and even "decide" are tested and available. The more electronic "know how" is put to work to make precision war production speedier and more precise, the sooner the Victory.





Tomorrow, you'll be selling magic

You've seen what can be done with the wonders of radio. Imagine selling the magic of *television*, that lets people *see* through walls, around corners, across distances!

Where will you fit into television? *From the ranks of today's radio dealers will come the television dealers of tomorrow.* You have the background. You are familiar with the market — very much like radio's. You have the organization to do the job — well. Television will be the great new after-war industry . . . and it will be yours.

A natural leader in television and radio research and manufacturing, Farnsworth is doing something for *your* future business *today* . . . building the demand for sets that you will sell when the war is won.

Today, Farnsworth is working 100% on precision equipment for the armed forces. When peace comes, we will be able to supply you with finer radios and phonograph-

radios than you have ever known. Then will come television equipment for scores of institutional, commercial and industrial jobs. And eventually, when telecasting studios dot the land, your market will be television for the home.

ADVERTISING PREPARES FOR SALES. The whole force of Farnsworth advertising* is now directed to making a post-war market for these new products you will sell. Farnsworth advertisements disclose the better things to come, the magic of television's possibilities . . . tell people about the sets you'll sell . . . *make people want them.*

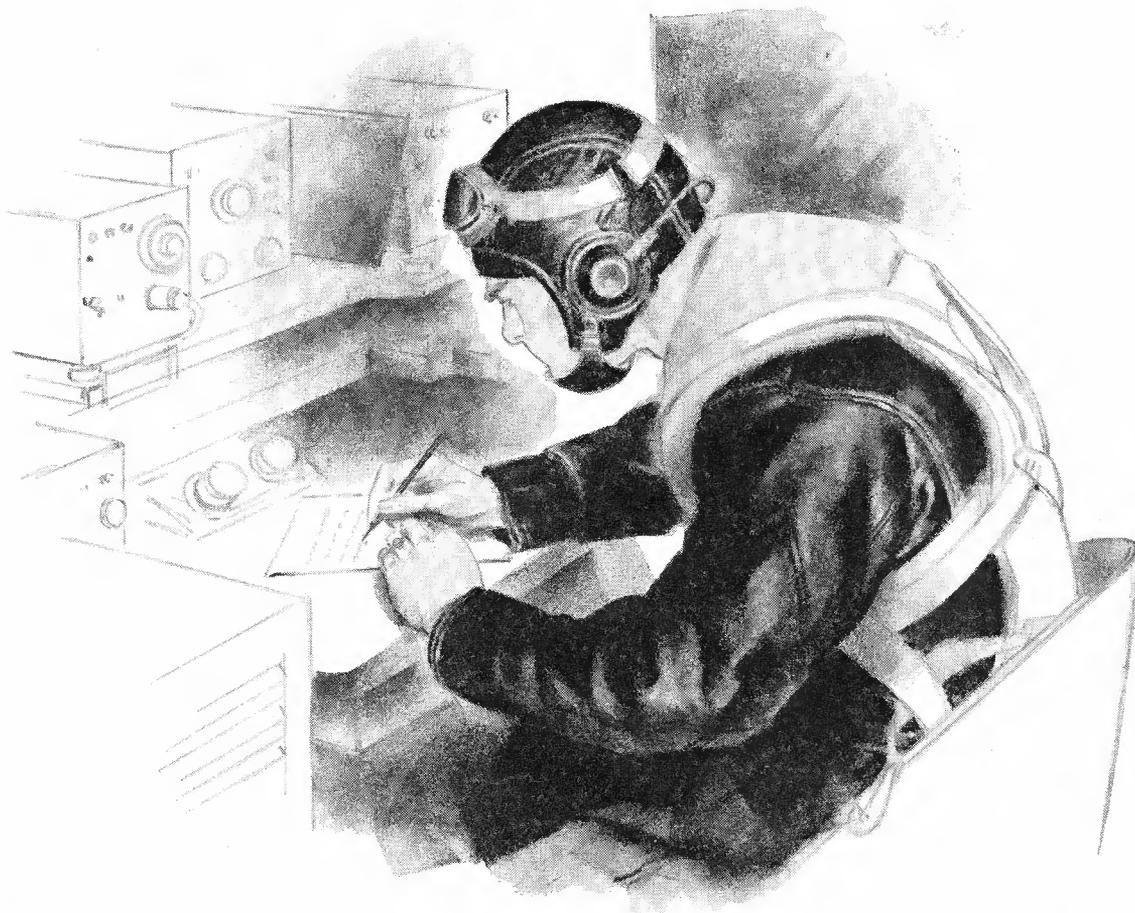
Selling the new radios, phonograph-radios and television will be a huge job — *and it's your future!*

*READ the latest Farnsworth national magazine advertisement, appearing in May 17 *Time*, May 29 *New Yorker*, May 31 *Newsweek*, May 31 *Life*, June 5 *Collier's*, and June *Atlantic*

FARNSWORTH TELEVISION



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



“Survivors sighted . . . proceed to rescue”

Through the blue comes the message that tells men in the air what to do . . . where to go. These messages must not, *cannot*, fail, for the whole operation of our Army and Navy Air Forces depends upon the vital artery, Communications.

Streamlined for this most exacting job, ROLA is devoting all of its facilities and its energies to the production of wartime electronic equipment — transformers, headsets, choke coils, and related devices. And, thanks to its long experience in this field, ROLA has been able to develop machines and methods to speed

production, prevent spoilage and improve performance . . . all to the end of better communications for our fighters in the air.

Today, all these developments belong to the War Effort. Later, we are confident, they will be of great significance in the field of peacetime Electronics.

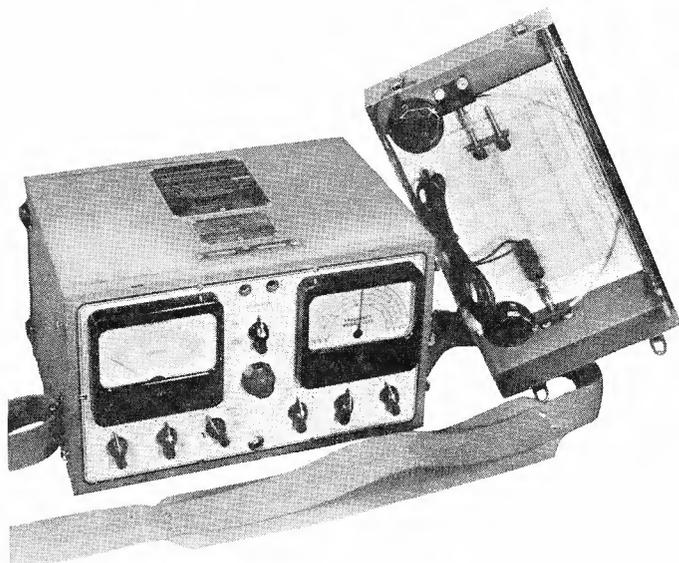
Rola has done an outstanding job, both as prime contractor, and as subcontractor for other manufacturers and it can further utilize its expanded plant equipment, its increased knowledge and skill, in the War Effort. If you have a subcontracting problem, we suggest you write us, or ask our representative to call. THE ROLA COMPANY, INC., 2530 Superior Avenue, Cleveland, Ohio.

★ ROLA ★

MAKERS OF THE FINEST IN SOUND REPRODUCING AND ELECTRONIC EQUIPMENT

FADA Radio

Electronic Field Intensity and Radio Noise Meter



"Breathes there a man with ears so deaf" is probably most amateurish paraphrasing of Edward Everett Hale's immortal "Man Without A Country." But translate it into a query about noise interference in radio reception and there is no question at all but that every adult is only too familiar with its devastating effects in home radio reception. Multiply home interference problems to the "nth" degree they attain in military and naval aircraft, tanks, jeeps, ships and it is obvious that radio noise is a vitally serious matter.

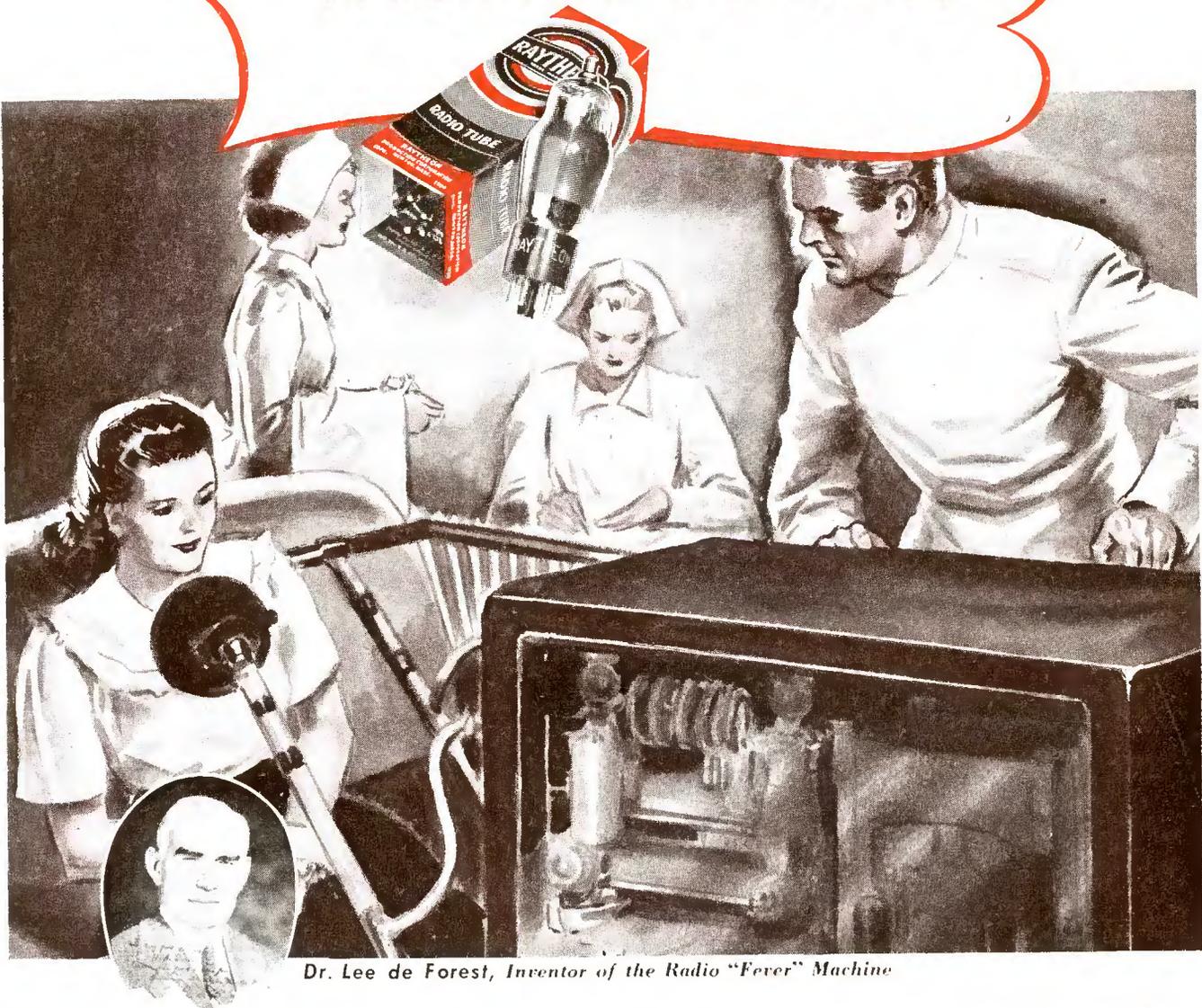
FADA is justifiably proud that our government has had recourse to its engineering and production skill to produce an instrument capable of directly measuring the intensity radio noise and the field intensity of transmitting stations. Less than one half cubic foot in size, complete with self-contained 50-hour-life dry batteries, it may be carried about by one man by means of its shoulder/chest strap in such position that, with its 2-meter whip antenna extended, the absolute intensity of noise ranging from 10 to 100,000 microvolts may be measured and its sources individually localized. All this — and much more — may be done anywhere between 150 and 18,000 kcs. with this versatile FADA instrument.

It is illustrated and described not as a vague generalization, but as a real, tangible example of the new equipment you will get from FADA when the war is over — one of a multitude of instruments FADA is today building 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

RAYTHEON TUBES AID MEDICAL SCIENCE!



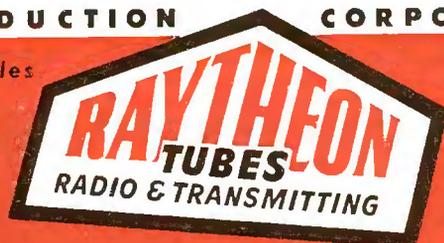
Dr. Lee de Forest, Inventor of the Radio "Fever" Machine

As the annals of modern medical science part company with the past, new ideas supplant pre-war practices... the radio "fever" machine is a modern example... developed by Dr. Lee de Forest for treatment of colds and respiratory organs... another advance

in the new electronic era... made possible by the use of tubes. Raytheons are daily doing their duty in new electronic developments... a part that Raytheons have so successfully played in civilian life. There is a qualified dependence in Raytheon tubes.

RAYTHEON PRODUCTION CORPORATION

Newton, Mass. • Los Angeles
New York • Chicago • Atlanta



Devoted to Research and the Manufacture of Tubes for the New Era of Electronics

"Promise that a few good headlines won't make you complacent. Promise you'll work like hell to make up for lost equipment rusting away in the cold, black depths of the Atlantic!

"Think of the fellows fighting fever, filth and the enemy... Their only quitting signal will come with death or victory.

"Read the casualty lists... read 'em aloud to yourself... then work, Brother, work and pray.

"But that's not all... not by a long sight!

"Promise to have a good America waiting when I return. This time I'll want a job instead of your dimes... this time I'll want peace which is lasting... a world that's designed for living together. I'll want freedom and bread... justice and plumbing... equality and a stout pair of shoes!

"It's up to you thinking people back home to see that I get 'em. Out here, we're too busy fighting to do anything about it!"

They're beginning to ask these things... fighting Americans all over the world. They are reasonable and just. They must be answered.

One small way that every one of us can help is by buying more War Bonds... bonds to put weapons on the production lines... bonds to provide jobs for the men who come back! War Bonds to help win the Victory... War Bonds to help win the Peace!

"PROMISE ME THIS, AMERICA..."



For 49 years Stromberg-Carlson has been developing communications equipment that is reliable... that is durable. Today we've turned this skill entirely to war production. We're proud to be numbered among the concerns who have won the Army-Navy "E" Award. We're doing our utmost for Victory... But we're also thinking of tomorrow, when we'll make radios and communications equipment for you... and the entire world. We hope our products will play a part in breaking down the barriers of language and distance that have cost the world so much grief in the past. We know the world will be smaller for it... we believe the world will be better for it.

In Radios, Telephones, Sound Systems... There Is Nothing Finer Than a

STROMBERG-CARLSON

© 1943, STROMBERG-CARLSON COMPANY, ROCHESTER, N. Y.



NOTHING TO SELL?



Today the Stromberg-Carlson radios are almost gone... why advertise... what have we to sell? Nothing except the need for sacrifice. Nothing except War Bonds and Stamps. Nothing except the future. Nothing except America!... That's all. STROMBERG-CARLSON, Rochester, New York.



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

Radio's First Peacetime Products to Make a Quiet Debut

"Nothing spectacular for a while," is the upshot of the report made by the National Association of Manufacturers on what industrial management expects to produce immediately after the war. NAM surveyed the postwar plans of manufacturers and concluded that "evolutionary rather than revolutionary" changes could be expected.

This provides some indication as to what kind of merchandise may first hit the shelves of distributors and dealers when Victory comes. It is important not to oversell the public on the flashy nature of postwar goods. Radio developments will be spectacular, but they will take time.

The survey revealed that "almost every manufacturer is dreaming of new products and new improvements . . . hundreds of companies have launched peacetime planning programs . . . but this planning must to a large extent await congressional action on national policies which will determine such factors as taxes, disposition of government-owned production facilities, termination of government contracts, rate of demobilization of the Armed Forces, and tariff, securities and labor legislation."

There's a New Victory Accent on Saving Radio Materials

From an examination of the early summer radio trends, it is easy to see that there is brand new emphasis on the conservation of radio materials. The subject keeps coming up.

This new theme can be seen in the War Production Board order requiring "old parts for new ones." The regulation is fundamentally a supply control rather than a salvage collection device, but it does place an emphasis on the value of every single bit of radio equipment, old and new.

Likewise affecting radio dealer operation is the renewed effort of the Industrial Scrap Committee to get all shop scrap cleaned up. Also there are the re-styled scrap-collecting programs in the phonograph record business. The latter item is not strictly radio, but it's a very definite part of the average dealer's Victory effort on salvage.

All of these topics are discussed more fully elsewhere in this issue; you can't help but notice that they add up to a new and important drive to make every bit of radio material do its part.

"Live" Civilian Sets Are Part of War-Winning Equipment

The radio repairman can figure that he did a fine job for Uncle Sam, by helping to keep radios going throughout the Second War Loan Drive. With his radio working, a civilian heard plenty of effective appeals come from his loudspeaker, and he bought plenty of bonds and stamps as a direct result.

No sooner had radio finished this feat, than the nation was seized by the coal-strike crisis. Dramatic developments were reported daily, until as so often happens, the words "civilian radio" emerged as the key phrase and President Roosevelt went on the air.

According to the figures from the C. E. Hooper research men, 43,761,000 people heard the chief executive speak May 2nd. Thus it can be seen that the routine wartime value of "live" radios is genuinely important, but becomes even more important when an emergency comes along.



Ewing Galloway

The right attitude will give your customer a new viewpoint.

• You are now facing the most crucial customer-relations problem in the history of your business. Radio dealers and servicemen never before faced such a test on "what to say to the buyer."

Unless you understand thoroughly how "your" products have gone to war, and unless you feel that you are helping to win, you are apt to think that many of the wartime business regulations are unnecessary. And such an attitude will be reflected in your contacts with customers.

The radio serviceman has always been an independent fellow, feeling he was pioneering, resentful of restrictions of his ways.

But this is War. Total—and world-wide war.

Home radio is important, even vital, you feel, and sometimes you may resent the governmental regulations which have dried up your parts sources, imposed priority restrictions, and made it next to impossible to serve your customers as you want to serve them.

It is easy to understand just how you feel. Home radio is important. But war radio is more important.

This is a war of motion, of maneuver, of fast action, of radio. And radio is playing the dominant role. Stop and think about this a moment.

Your Battle Station

Is it really more important that Mrs. Jones, down the street, listen to "Just Plain Bill," or that Corporal Smith, in Tank No. 3, keep contact with his commanding officer? No comparison? Of course not. When a military radio fails, lives,

The Dealer at His

Importance of Customer

ships, battles may hang in the balance. Perhaps even victory itself may be at stake.

Sure you want to keep the home radio going, and the government wants to, too. That's your battle station. But your job is far bigger than just servicing radio. You must service home morale. When your customers are irritated because they cannot get a new radio, or a new tube, just when they want it—shoot the wartime story of radio to them, and proudly.

Radio at War —to Win

Point out that more than an hour before the Japs hit Pearl Harbor, a radio-locator said they were coming.

An officer of the day half as alert as the private who manned the locator, could easily have avoided the catastrophe which was Pearl Harbor. And we want no more such occurrences.

Remember the terse radio message of the young patrol pilot, "Sighted sub—sank same." That same radio would have given the sub's location, and brought destroyers and planes racing to the scene, had the attack been unsuccessful.

Radio maintains communications between the "combat teams," between tanks, between planes and tanks, planes and ground, and between bombers of a flight. Radio "spots" for

the big guns of the fleet, and for the artillery of the army.

Radio "locates" planes, trains the guns, carries the orders, sends the fruits of long range reconnaissance back to "command."

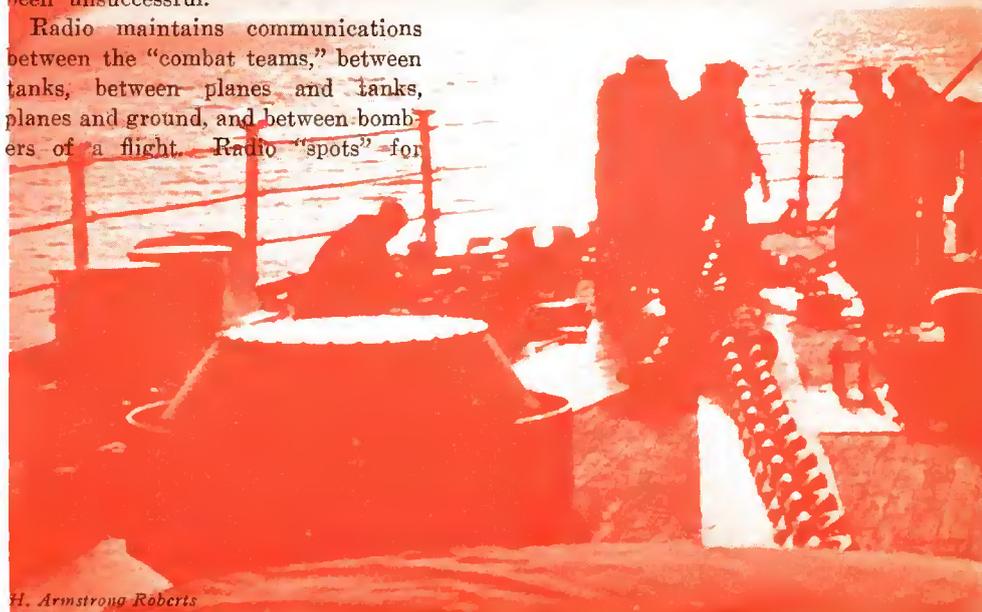
And radio is playing a vital part in aerial navigation—in taking our bombers to their targets, and bringing them home.

How radio does all these things cannot now be told. But radio will win this war.

Thus the simple facts are:—

The needs of the army, navy, marine, and air corps for radio, radio tubes and radio parts are so great and so vital that our factories cannot make enough for them, and also for our home radio needs. The war comes first.

Tell your customers this when they



H. Armstrong Roberts

Battle Station

Contact in Wartime

complain, and not one in a hundred will keep on complaining.

Think of it yourself when you feel low—and you'll "pick up" pronto.

Enlist Cooperation

WPB, OPA and all the rest of the alphabet agencies on your neck? Sure, but they are on *our* and *everyone's*, too. This is a total kind of war. Every man, woman and child is affected, and has a definite part to play to help win it. We're *all* fighting the war on the home front just as certainly and as surely as are the boys at sea, in Africa, and the Southwest Pacific.

Since when has a "radio man" admitted he was licked? You've got to keep the home radio sets going, *in spite of the difficulties*. Use your ingenuity. Break up old sets for their

parts, swap parts, and tubes with others.

Get together, if need be, with all the other radio servicemen in your neighborhood, or town, or county. Pool your parts in a common stock and share what you have.

Stage a campaign to get in all the old sets, from cellars and attics, for their parts.

Tell *your* story, the part radio is playing in the war, and tell it enthusiastically. The part you are playing at home, and the difficulty under which you work. Put radio service—"keeping the home radio going"—on a civic basis.

Call for help—donation or sale of old sets, to help keep the newer ones going. Get the home folks in the radio battle.

There are countless things you can do if you will see the right viewpoint, use your ingenuity, and *be determined to do the job*.

Manufacturers' Problems

It would help if you could only be told the problems that our radio manufacturers have faced, and solved.

The changeover from production of ordinary broadcast receivers to building for army and navy specifications, with materials short, and speed of the utmost urgency, has presented problems which would make yours seem slight.

Radio serviceman Woody (left) and associate O. Saporta of 131 E. 34 St., New York, where in spite of wartime worries a lively business is done in radio repair and allied lines, records and greeting cards. (See page 34).

But the manufacturers have licked their problems, because they absolutely refused to let the problems lick them. And you can, too.

Put your business on a war basis. Solicit the aid of your community in general, and *your* customers in particular, to help you keep the home radio going!

Get into the spirit of the thing, and you will find your customers absorbing some of your own enthusiasm.

Get the feeling, preach and practice it, that "you are helping win the war by keeping home radio working"—not that WPB, OPA, et al, are preventing or hindering you.

Government agencies have a job to do. Sometimes we disagree with what they do, and how they do it—but its more than likely we couldn't do any better ourselves.

So forget the "bellyache" and do *your* best to do *your* job, to help win *this* war as quickly as we can.

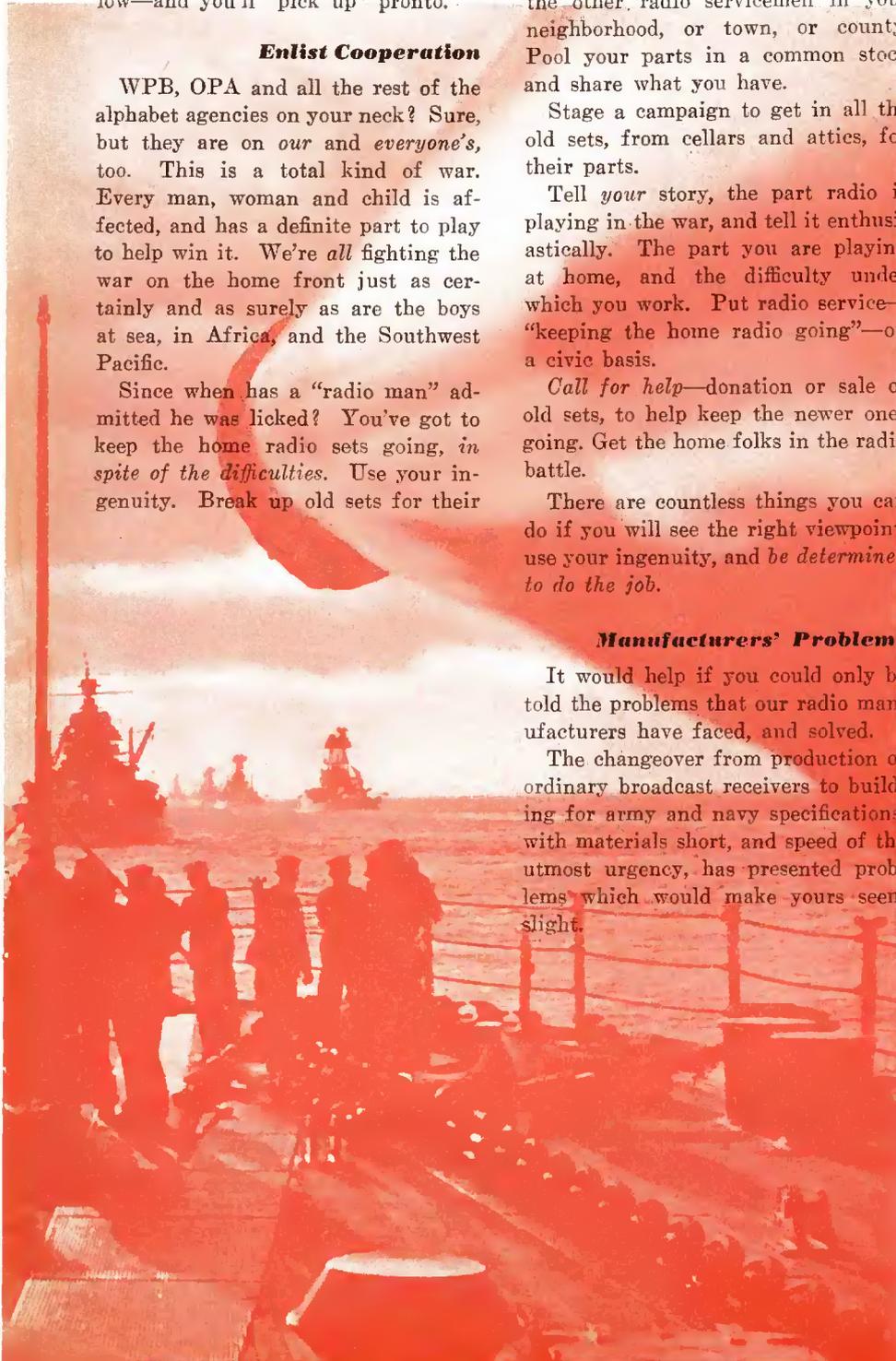
Future's Promise

And remember that what we have seen in the radio industry in the last 20 years is literally *nothing* to what we will see in the *next* twenty. If you'll keep your customers, it will be tremendously worth while.

The post war period will see a radio industry, and radio equipment, which will make anything that has gone before seem puny by comparison.

So do your best for the war, for radio, for your community, for yourself, and "keep the home radio going."

That's your *job* and it's up to you to do it "in spite of hell and high water."





Helen Hayes receiving bond pledges at NBC.



Em Cee Tom Slater appeals over MBS.



Lucy Monroe in bond appeal.

Nationwide Radio to 2nd War Loan

Networks Chalk Up Another Successful Score in Vital Wartime Service—Victory Value of Civilian Radio Proved Again

• The importance of radio listening was never more evident than during the three weeks of April 12th to May 3rd, when all the force of radio's ability to reach the people of this United States was turned to the effort of putting across the U. S. Treasury's 2nd War Loan Drive.

In the interest of keeping dead receivers alive, the radio man has, in this example of urgent wartime need for 100 per cent listening, another argument for the proper supply of servicing parts for civilian radios.

General Meeting

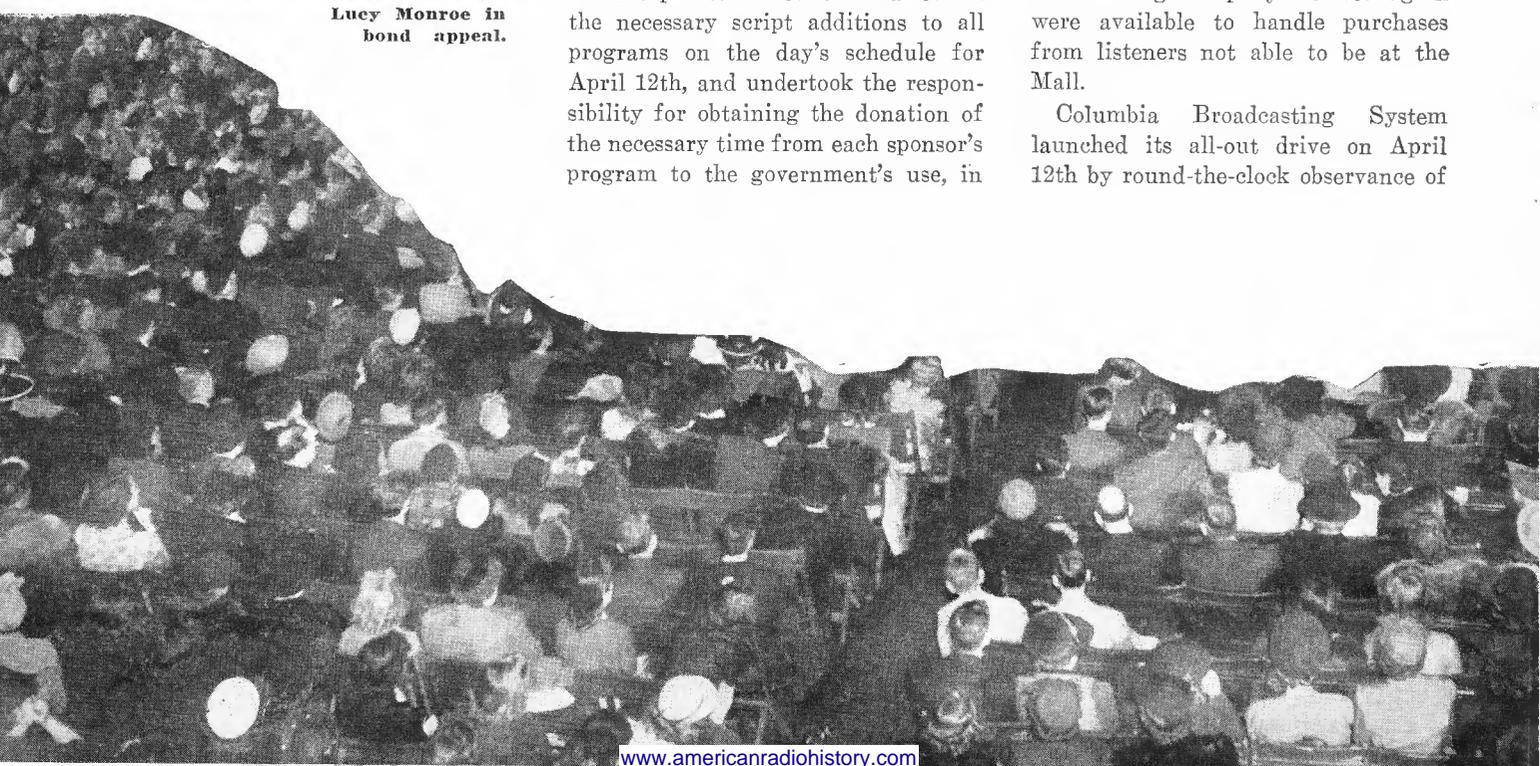
Directly in cooperation with the U. S. Treasury and the Office of War Information, the nation's country-wide networks met previous to the start of the drive to offer every possible coordination at their command to their government. At the request of the Treasury, the networks agreed to incorporate under OWI direction the necessary script additions to all programs on the day's schedule for April 12th, and undertook the responsibility for obtaining the donation of the necessary time from each sponsor's program to the government's use, in

order to make the opening day of the drive unanimous in its appeal on all radio networks.

Individual Angles

Followed through successfully by all the nets, each added its own particular angle to the presentation of this day of appeal. Over NBC's dawn-to-midnight drive, stars of opera, stage and radio made their appeals during regular broadcasts, and after their appearance took up posts in specially erected phone booths to take down pledges from listeners. This all-out effort was followed by a special drive on WEAf on Saturday, May 1, from 2 to 5 p.m. at a bond rally in New York's Central Park Mall, where 10 top orchestras gave their services to the drive. Bands and speakers both from the park and Radio City's studios alternated musical and vocal appeals, and special telephones at the broadcasting company's offices again were available to handle purchases from listeners not able to be at the Mall.

Columbia Broadcasting System launched its all-out drive on April 12th by round-the-clock observance of



Rallies Drive

appeals directed from a portion of the time of each of its programs on that date. In addition it organized a special time for the network itself from 6:15 to 6:30 p.m., styled to show Army and Navy use of equipment purchased through war bonds, opening at the Navy Yard in Washington, D. C., and moving from there to Aberdeen Proving Ground in Maryland. The final program of the day, from 11:15 to midnight, was also assembled by CBS, when stars of the air interviewed war heroes and heroines recently returned from the varied fighting fronts. Further time was given by CBS on April 15th for the speeches of Grant Taggart, president of Natl. Assn. of Life Underwriters; and William Robbins, assistant to Secretary of Treasury Morgenthau.

Dramatic Programs

Five-minute pickups from Army and Navy hospitals from which returned war casualties described their experiences and hardships, were arranged by the Blue Network, from Great Lakes Naval Hospital, Chicago; General Halloran Hospital, Staten Island, N. Y.; Brooklyn Navy Yard Hospital; and Walter Reed General Hospital, Washington, D. C. After each pick-up the radio personality featured on the commercial or sustaining program made the direct appeal for bond sales. In addition, each program carried a special bond sale request planned especially for each program's listening audience.

Notable for prefacing the initial day of the drive was Mutual Broadcasting System. MBS got off to an early start on its This Is Fort Dix show on Sunday, April 11th, over which Em Cee Tom Slater introduced



Wheeling Steel Corp.'s Musical Steelmakers ring up some new records in bond sales at their personal appearance rallies, broadcast over the Blue.

the guest of the day, Renee Carroll, hat check girl at Sardi's New York Restaurant. Known as the Lady of the Hats, Miss Carroll had a bond selling record to date of \$250,000. Later in the day, 7:30 to 8:00 p.m., British Broadcasting Corporation's rebroadcast on Mutual of The Stars & Stripes in Britain was slanted to particular bond appeal when Ben Lyon gave a vivid description of soldiers buying bonds in London. MBS's opening day of the drive also geared all its 40 programs to the drive's all-out effort.

The actual bond selling successes in figures are more easily totaled from actual individual programs—such as the huge success of the Information Please broadcast from Hartford over NBC and the large sums rolled up by Wheeling Steel Corporation's Musical Steelmakers at the bond rallies during their show's broadcast over the Blue.

Millions Reached

The tremendous amount of work involved in coordinating the endeavors of the entire networks' programs is appreciated; and, while superbly effective in its organization, was of course intangible from a dollar for dollar standpoint, but which makes their donation none the less powerful.

Once again radio has proven its vital importance in civilian life, and by its place in the war scene, reiterates the very positive need for complete and continued civilian listening.

Conrad Nagel interviews war heroes on CBS.



Superman's listeners among many others hear appeal over MBS.



Dave Elman of bond auction fame on CBS.





OUTDOOR SOUND JOBS

● Now that the new outdoor season is at hand, dealers and servicemen in the public address business are beginning to see new possibilities in sales, rentals, and maintenance of sound units.

This time, sound men will chiefly be doing work which is either connected with the war effort, or associated with regular outdoor events that continue in wartime. Installations are needed for War Bond sales rallies, award ceremonies at war production plants, airports, dedicatory ceremonies, and patriotic meetings of all kinds. Besides the regular round of units needed for sports events, swimming pools, parks, boats, etc.

Public address men will of course be working with the equipment they already have, unless they are far enough into the war effort to get priorities for new units. But it is even more important, then, to make the best use of available equipment.

Yankee Stadium Set-Up

One of the most interesting and successful outdoor public address applications in the Eastern area is the Western Electric system leased to New York's famous Yankee Stadium by Vocalaire, a company headed by its

Aerial shot of New York's Yankee Stadium showing comparative size of area served by one PA installation.

founder, Watkin W. Sharp, whose offices and shops are at Inwood, New York.

The speakers, all perched atop the scoreboard at the Stadium, operate at 30 to 35 per cent efficiency, using therefore less power to push them, and representing lower investment in the amplifiers. The three large speakers, worth about \$500 each, are Langevin

wide range type, with 18-inch Jensen speaker, low frequency, and are used exclusively for the playing of the National Anthem, from Yankee Hill and Dale transcriptions, vertical pickup. With about 150 watts available, this entire set-up uses only between 40 and 50 watts.

The "cobras" are associated with No. 555 Western Electric receivers.



Wide World



War Jobs and Other Applications of Summer Sound

These trumpets with 120 cycles, actually cut off to about 300 cycles.

Due to absorption, with a full house, the trumpets can be operated wide open through, as the fidelity can be cut in and out. The "cobras" are used for speech only.

Favors Leased Equipment

Mr. Sharp has had the Yankee Stadium since 1936, and has "covered" fights, football games and other activities, in addition to baseball, and unusually enough has received "fan" mail from Stadium customers. He believes that this installation is a potent argument in favor of lease of PA, as against customer purchase.

"On a ten-year basis," says Mr. Sharp, "a customer owning and operating the finest PA system available, will find his costs about the same as upon a lease basis, but there the comparison would end. The purchaser would discover that if he owned the equipment he would *have* to like it, whereas if it was leased the responsibility for satisfactory operation and replacement of parts, would rest upon the shoulders of the dealer, relieving the customer of all service, operation and the full-time hiring of technicians for a short-season play."

In order to carry on PA sales and service, pointed out Mr. Sharp, a large investment is necessary. At one time, Vocalaire's PA systems were in oper-

Speaker equipment on a summer cruise, aboard Hudson River Day Line.

ation for New York University at Ohio Field, the Army-Notre Dame game at the Yankee Stadium and for Fordham at the Polo Grounds. "And we could have handled a few more accounts," said Mr. Sharp.

Competition Cut

From the foregoing it will be seen that much money can be tied up in equipment, and during this period, according to Mr. Sharp, the small competitor has been forced out, and the larger prospective competitor cannot enter the PA field because he is unable to get equipment.

With critical shortages, the PA man, however, finds that his equipment, which has become obsolete from a weight standpoint, may be used successfully right now for permanent in-

Recently engaged in PA work for bond drives, shipyards and defense factories at ceremonies where various government awards are being made, he can, however, recall other and earlier times, when Vocalaire amplified the voice of Candidate Franklin D. Roosevelt in 1932, Wendell Willkie at New York's Empire State race park, and a huge noontime rally in front of the New York Sub Treasury, where Candidate LaGuardia helped pioneer PA work by speaking over a Vocalaire system, following a suggestion made to the committee by Mr. Sharp.

A tough assignment covered by Sharp's organization, was midget auto racing. To combat the noise level of the cars, and to overcome complaints on noise from people living as far as seven miles from the track, the speakers were removed from the front of the grandstands, and were placed over the



Current use of sound system at rally of 12,000 shipyard workers of Tampa Ship Building Co., Florida, attending an RCA song meeting.

stallation work, providing at least one bright spot in the picture.

Mr. Sharp, a pioneer in public address work, which he entered in 1930, following a career in amateur and professional radio work, dating from 1912, does work for a number of subcontractors, but has had many interesting and unusual experiences in applications, where his rare combination of technician, promoter and salesman stood him in good stead.

spectators' heads, and the sound pumped down.

Through contacts made with caterers and others, Mr. Sharp was able to introduce PA to society people living on Long Island's swanky North Shore. At a debutante dance, PA was rented by Vocalaire for car-calling service, with a footman acting as announcer.

At Lattingtown, also on Long Island, a society miss was married in an

(Continued on page 56)

Radio on the March



General Electric band marching to "E" presentation.



U. S. soldier (above) sets up loud speaker for commanding officer's ultimatum (see left) to the Japs in the jungles of Guadalcanal: "Surrender or be killed".

(Below) Stromberg-Carlson's employee band, The Musical Modulators, swings out at noontime twice weekly for workers' morale.





(Top) President Onstad (center) of Thordarson Electric Mfg. Co. receives Army-Navy "E" flag in the midst of Army and Navy officials.

(Directly above) S. N. Shure (left) of Shure Bros. gets the cake and congratulations on his firm's "E" award from Jerome J. Kahn, chairman of the Assn. of Electronic Parts and Equipment Mfrs. (formerly the Western Sales Managers Club).
 (Below) A radio link with home. Somewhere in Alaska U. S. soldiers listen in.



(Above) Tank commander using a Signal Corps radio at Ft. Monmouth, N. J.

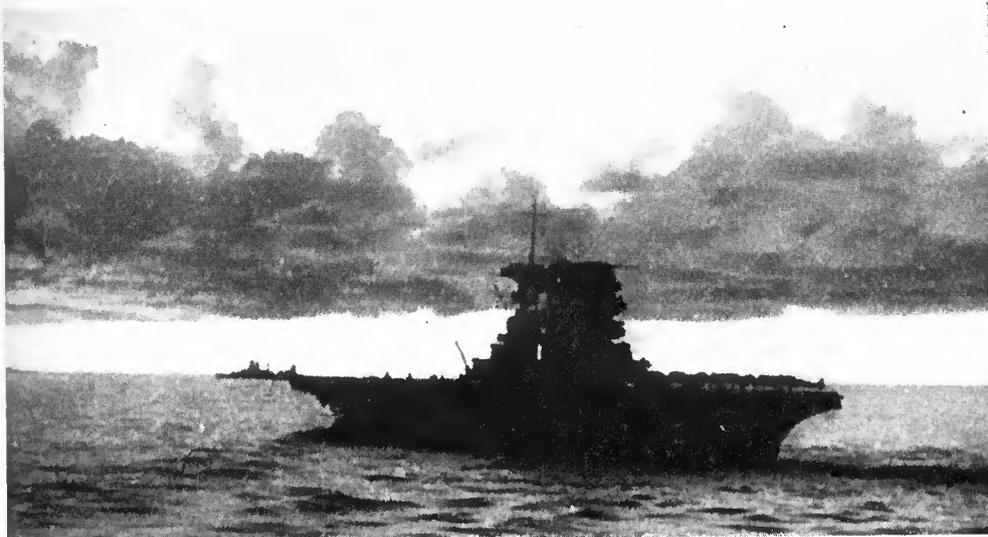
U. S. Army Signal Corps photo.

Ginny Simms of Columbia record, radio and moving picture fame sends many a cheerful note swinging down the air lanes to fighting men on all fronts.



**Officials Explain Basic Operation
of Secret Detecting
Device**

RADAR DESCRIBED AS RADIO FEAT



OWI Photo

Radar helps to protect several branches of our Armed Forces.

• Ever since the radio man learned about the unusual military emphasis being placed on "radar" in this war, he has been eager to know more about it. Even the "smallest" dealer or serviceman has been anxious to know what branch of radio it was, being developed to such a high degree, and whether the development would have some peacetime application.

Until now, all discussion of the device has been officially banned. But on April 25, a joint Army-Navy statement came from Washington giving a basic description of radar as a detecting-and-ranging device. The

statement was made "in line with the policy to give the American people as much information as possible without endangering our own forces or aiding the enemy."

Headquarters Explain

Here is the full text of the joint Army-Navy announcement:

"The term 'Radar' means radio-detecting-and-ranging. Radars then, are devices which the Allies use to detect the approach of enemy aircraft and ships, and to determine the distance (range) to the enemies' forces. Radar is used by static ground de-

fenses to provide data for anti-aircraft guns for use in smashing Axis planes through cloud cover, and by airplanes and warships.

The Tube's the Thing in Detecting

"It is one of the marvels made possible by the electron tube. Ultra high-frequency waves traveling with the speed of light can be focussed, scan the air and sea. When they strike an enemy ship or airplane, they bounce back. Radio waves travel at a constant speed of 186,000 miles per second.

"Thus a small space of time is required for such signals to travel to a reflecting surface and return to a receiver, so that, with means provided for measuring this time interval, it is possible to determine the distance to a given target. Radars operate through fog, storms, and darkness, as well as through cloudless skies. They are, therefore, superior to both telescopes and acoustic listening devices.

English Credit Radar

"Radar is used for both defense and offense. In fact, the British, who



U. S. Navy Photo

Through the magic of the radio tube and Radar warnings, U. S. planes can be ready for any crisis.

call their similar apparatus the 'radio locator,' say it was instrumental in saving England during the aerial blitz of 1940 and 1941. At that time the locators spotted German raiders long before they reached a target area, and thus gave the RAF and ground defenses time for preparation. Since then Radar has stood guard at many danger points along United Nations frontiers and at sea, warning of the coming of aerial and sea-borne enemy forces, and contributing towards victory in combat. The new science has played a vital part in helping first to stem and then to turn the tide of Axis conquest.

Long-time Research Got Results

"It was first discovered in the United States in 1922, when scientists observed that reception from a radio station was interfered with by an object moving in the path of the signals. Accordingly, a radio receiver was set up on the banks of a river and the effects of signal reception caused by boats passing up and down the river were studied. The experiment of installing the receiver in a truck was also tried, and it was observed that similar disturbances were pro-

duced in the receiver when the truck moved past large buildings. Development work was immediately undertaken so that new discovery might be used for detecting vessels passing between harbor entrances, or between ships at sea.

Radar After the War

That the commercial use of Radar after the war will apply to vehicles, ships and planes, was predicted by Frank McIntosh, radio and radar official of the War Production Board, when he addressed the National Association of Broadcasters. He said that the new detecting and ranging equipment would be particularly useful in helping to eliminate plane crashes in mountain areas.

"So far, it had been necessary to have the moving object pass *between* the radio transmitter and the receiver. This obviously limited the possible fields of application.

"Echo" Principle

"In 1925 it was found that the surface of an object, or target, would act as a reflector of high frequency radio waves. In other words, the radio signals sent out by a transmitter could be made to strike a target, and then 'bounce' back to a receiver. This made it possible to have both the transmitter and the receiver at the same location.

Peacetime Applications

"By 1930, research engineers were able to pick up reflected signals from planes passing overhead. By 1934, they had developed a satisfactory means of measuring the distance between the radar transmitter and the target. Since then other advances in the field have been made, some of which, after the war is over, will undoubtedly contribute to the security and comfort of a world at peace."

Summer Record



Ina Ray Hutton, who recently appeared with her band in Paramount movie shorts, makes records for Columbia's Okeh label.

• What happens in the record business this summer will depend mainly on how recorded music fits in with a warm-weather season in a nation at war.

When you count all the records needed for the men in the Armed Forces, discs for the 18,000,000 war workers of the United States, recordings for use in war plants, the "escape" music bought by civilians in general, and the great amount of wax needed for outdoor patriotic rallies, you have an exceptional kind of summer selling season.

Summer Scrap

"Vacation records" will be a factor in some areas, since the war production experts at Washington have decided that some "time off" for workers will serve a useful purpose in industrial operations this summer. The recordings will be especially appropriate for the vacationing workers who are not able to take their radios along this year because of lack of batteries.

From the standpoint of how all these trends influence the actual pro-

cedure of the retailer, record men see at least five different factors to check on as the season gets under way.

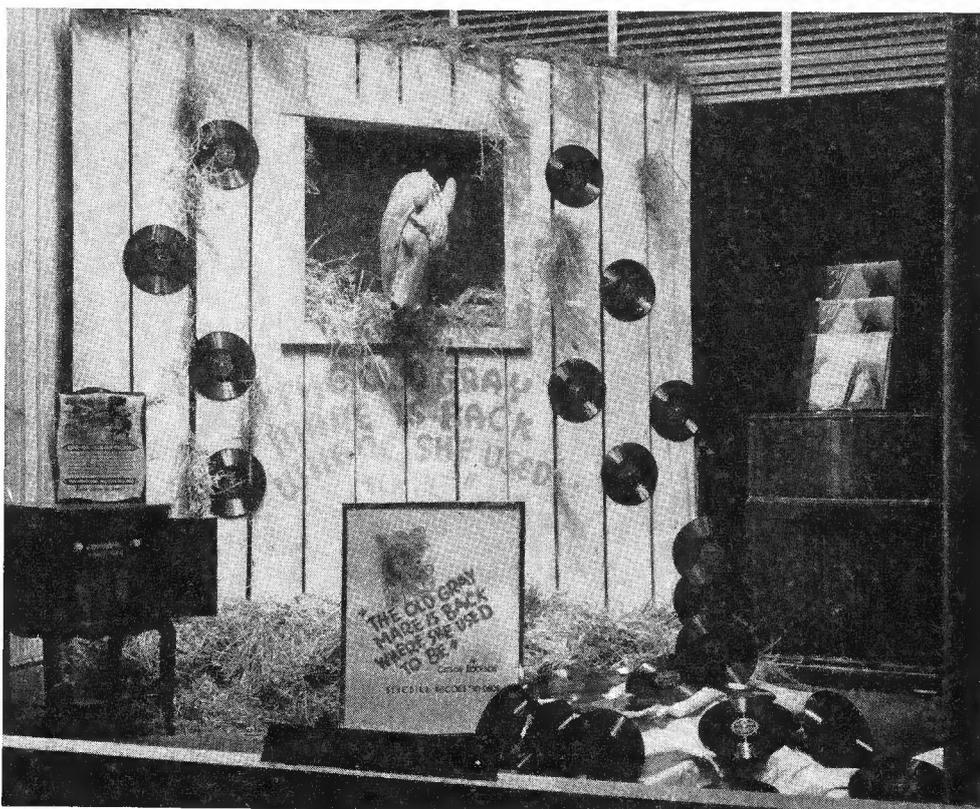
Business Plan

The need for an organized and we-mean-business plan to collect scrap records increases with early summer. It has come to the point where the dealer may as well consider the salvage business as the whole basis of his

Trends and Best Bets for the of Record-Saving Accessories

drives for salvage, these out-of-school kids can be a big help in summer.

Efforts by the manufacturers and jobbers to help collect the scrap have also reached a new stage of development. Half-hearted, casual campaigns have been replaced by hard-hitting,



Window display created by Ray Yerdon, sales manager of the Forbes-Meagher Music Co., Madison, Wis., was most successful in sales and interest-getting attention for the store and featured Carson Robinson's recording of "The Old Gray Mare" on Blue-bird records.

future volume in records. He needs the old records to get new ones. And the larger aspect of the situation is that if retailers do not make a go of it, the industry will be in a spot.

There will be more youngsters available in summertime to help dealers in getting in the old discs. If they're handled properly in the local dealer's

million-dollar drives geared to show results.

War Releases

The first months of summer will see new interest in the red-white-and-blue type of recording. The best bets will have emerged from the lists; the finest of the military records will have earned their place; patriotic songs

Business in Wartime

Summer Season—Importance to Preserve Current Stocks

will be settling down to what the nation really wants.

There is little doubt but that this period will be the time for a number of history-making speeches connected with the more crucial phases of the war. These discs will have a sales appeal as timely as the war news itself.

Discs for Fighters

Several organizations and welfare groups are making more vigorous plans to help get more records to the men in the Armed Forces. If they haven't already, dealers should determine immediately what their best hook-up is, locally, with these efforts. Besides doing their best to supply the soldiers and sailors who walk into their stores.

Reports from camps and training centers are beginning to show that recorded music is more of a military morale factor than was first supposed. No retailer will want to miss a chance to help fill this need, whether his method of supply is direct or indirect.

Album Display

The coming of the warm-weather months will find the store stocks of merchandise more depleted than ever, in other lines. Variety and color in window and store display will be more and more difficult as the stocks dwindle.

Here the retailer can turn to record albums and get results. It is a happy coincidence that the unit sale of these albums is high enough to be of genuine interest these days; yet they are timely as well as bright and attractive in display. They also blend well with displays of record-playing accessories.

Outdoor Music

The number of meetings this summer which open or close with a record of "The Star Spangled Banner" will

be enormous. To be considered in this connection are award ceremonies at war plants, Bond and Stamp sales rallies, block parties, dedication ceremonies, etc. Appropriate records will be needed in piles.

These sales of discs are to be made in addition to the personal sets which will be played outdoors on portable record players. In the case of the individual, of course, the outdoor records are more varied and not necessarily formal or dedicatory in nature.

New Attention to Accessories

Any discussion of "records this summer" should include the fact that

discs this summer should be specially well taken care of, by the customers. They will need the needles, the pick-ups and all the accessories which will extend the lives of records. It is simply good sense to handle the discs with special care while supplies are limited. Yet the point still needs more emphasis by retailers because many record buyers have not realized it fully.

If there was ever a time when the quality type record-saving accessories deserve a try-out, this is it. Besides its emergency value, the idea will help to teach the record fan once and for all how to get the best out of recordings.

Deanna Durbin shown here in her grown-up role of "The Amazing Mrs. Holliday" has made many albums for Decca.





Army private records for the home folks.

sweethearts and the folks back home. Quite understandably, it is one of the most popular activities at USO clubs.

Men and women in service enjoy making them, but their chief pleasure is in anticipating that of the recipient in hearing the voice of the absent man or woman in uniform. A written letter is nice to get, certainly, but there is nothing quite so heartwarming for a mother, wife or sweetheart as actually to hear the voice of the loved one away from home.

It is not always a "voice" that the folks at home hear. Some men are a little shy before the machine. They can find nothing to say. To get around this, many men have resorted to other means. One soldier "whistled" his voice letter, and another, who played the piano sent his mother several piano records of her favorite

voice letters from home. There is the story of a sailor who had sent a voice letter to his wife. A few weeks later he received a "reply." With several other sailors he took the disc into the recording room to have it played back. The men stood frozen around the machine as they heard the voice of a small child. It was the sailor's little daughter. She said hello to her daddy and then in her childish voice recited the prayer that he had often heard her say before she went to bed at night.

Great care is exercised in the making of voice letters by service men at USO clubs. A member of the club staff is always present when a voice letter is made, and it is played back before being mailed. Voice letters can be made only in English. No military information can be mentioned. The service man himself does not mail the record. He gives his name to the club

Letters Via Recording

• Wartime developments of the "instantaneous recording" business has many points of interest for the radio dealer. Not only are the country's training camps filled with men and women of the armed forces, who are separated from their homes and friends, but many war production areas employ persons from other parts of the country, who are also glad to use this modern-day message method.

What the men in the Armed Forces think about the "recording" practice, is seen in a report from United Service Organizations.

In most USO clubs, which now number more than 1,200 and are located in every one of the 48 states, a small room has been set aside for service men who want to send a special kind of message to those they love.

It is the voice recording room. Here soldiers, sailors, marines and coast guardsmen — and now the WAACs, WAVEs, SPARs, and WAAF's—make voice "letters" for

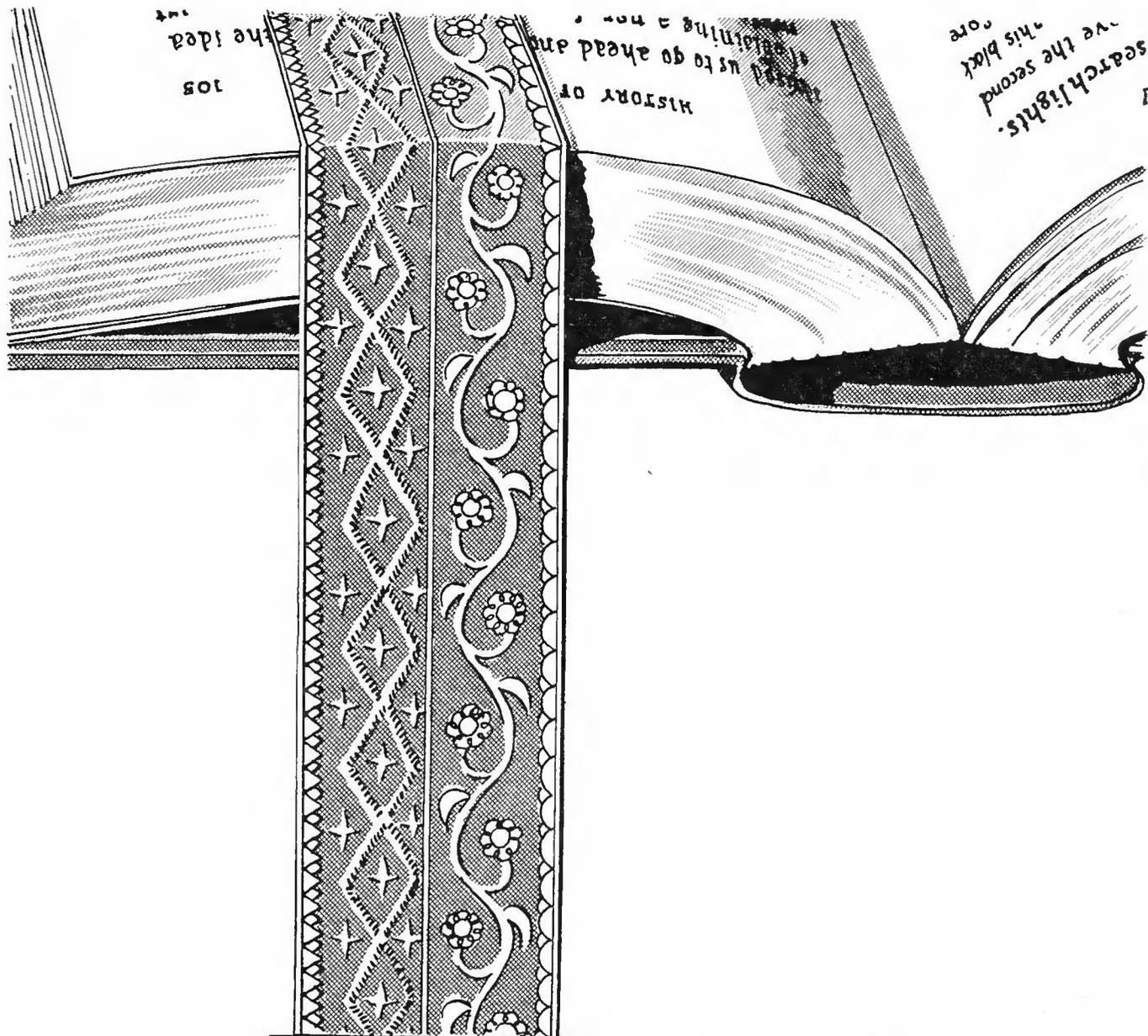
hymns. Another man whipped a harmonica from his pocket and played airs that he had often played at home. Each man has his own way of saying, "Hello, folks. Here I am. I'm feeling fine."

Sometimes service men receive

director and the name and address of the person to whom it is being sent, and the director attends to the mailing. The voice letters are six inches in diameter and run about two and a half minutes on each side. They are unbreakable.



Navy men at USO club send talking letters.



WILCOX-GAY CORPORATION

The Mark of Quality



WILCOX-GAY CORPORATION
CHARLOTTE, MICHIGAN
"Producing for war...planning for peace"

Call for Radio Scrap

• During the last two years, radio retailers and servicemen have learned the value of constant and painstaking scrap campaigns within their own organizations, says W. P. Pettit, secretary of the Industrial Scrap Committee, with headquarters in New York, who gave assurances to RADIO RETAILING TODAY that the Committee earnestly desires the co-operation of small business participation in the new drive for scrap.

Old Radios Heavyweights

Salvage by radio retailers and repairmen represent smaller contributions from a weight standpoint, to the nation's scrap-pile, than is the case with many other businesses. He is, however, obviously able to contribute

materials virtually "worth their weight in gold" in these critical times.

It is pointed out that radio shops are potential sources of much sought after metal, and this is particularly true of the accumulation of older radio models, which are now obsolete, and from which few usable parts may be stripped for badly needed parts for emergency repairs. The feature of most of these old-time radio sets is that, broadly speaking, they weigh far more than the modern set. With the great strides made in the recent manufacture of sets, unnecessary weight, from a cost-of-manufacture standpoint alone, was an objectionable and unnecessary thing, and so we see that the "veteran" set is just what the Salvage Doctor ordered.

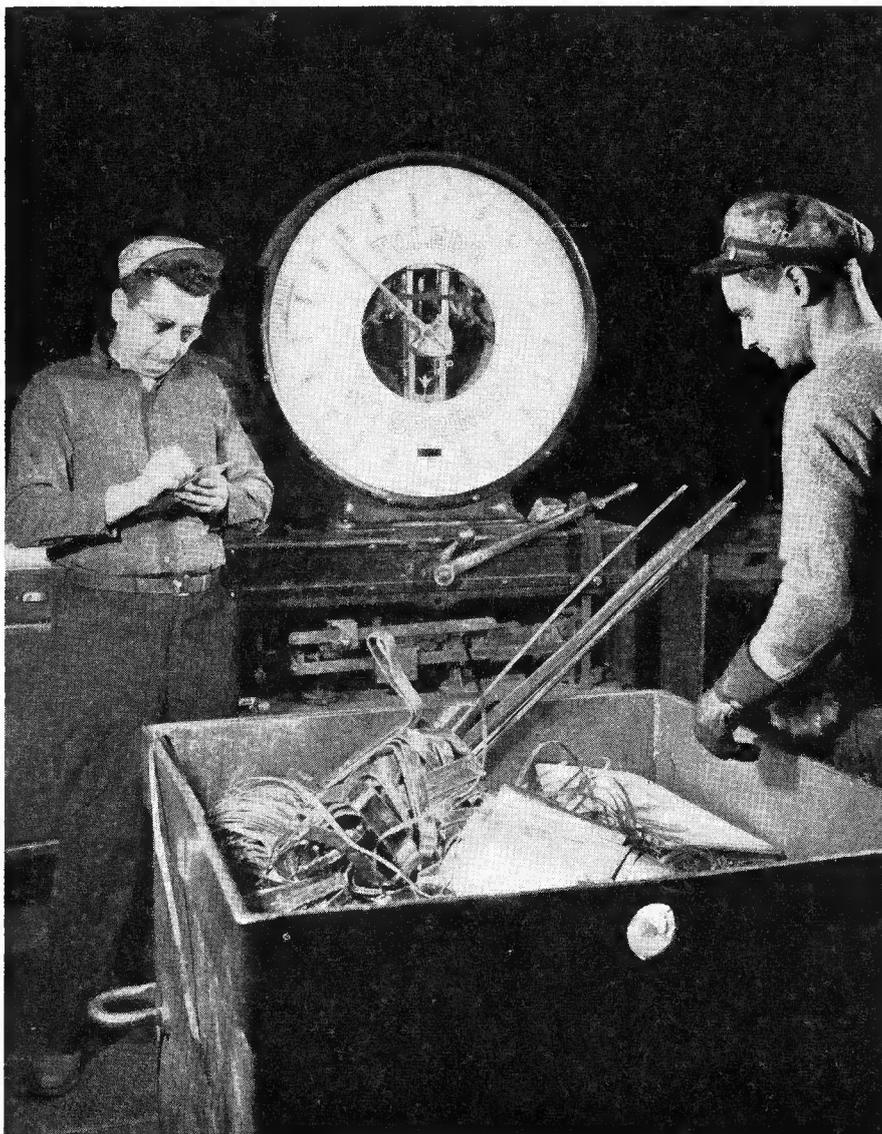
The radio man, with his accumulation of impossible-to-use scrap, can take a big part in the scrap drive, Mr. Pettit says, by having a thorough housecleaning. Purely from the viewpoint of the radio man himself he will probably feel a lot better if he does a thorough clean-up job in his shop.

Housecleaning Urged

One of the leading radio manufacturers, who during the last two years has established a well-staffed and permanent salvage department, has testified to the salvage value of "small" items.

In defective tubes alone, which are salvaged for the nickel, gold, silver, tungsten and brass, more than 125 pounds per month are saved and passed along to the junkman. Used electric light lamps are saved for the same purpose, with more than 250 pounds of copper wire being salvaged.

Weighing brass trimmings for scrap.

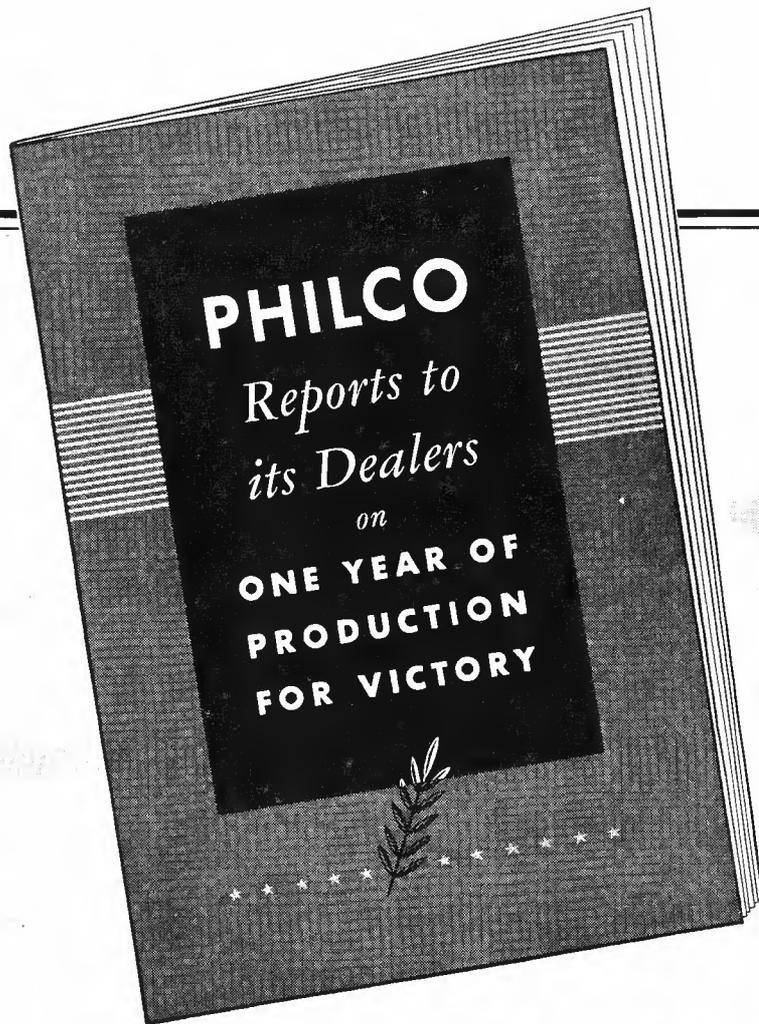


Two Sources Stressed

There are, according to the Committee, two scrap sources for the small radio man to draw from. His own potential radio scrap and the scrap owned by customers. An important thing to remember in connection with old sets cluttering up the homes of customers, is that, in many instances, they do not appreciate the value of these discarded instruments because they think they do not "weigh enough." The radio man, taking an active part in the scrap drive, can easily point out the mistake—and, the customer will have faith in what the radio man tells him.

Many of the old sets will yield a number of parts which are in good condition and which can be put to good use in current repair jobs. Such parts are *not* scrap; they have a job to do in keeping wartime radios going.

It is also important for the radio man to remember that once the scrap is cleaned out of his shop, the situation should take care of itself in the future. The "old parts for new" requirement just issued by WPB (see page 30) provides that on sets now being repaired "dealers must take used parts to scrap heaps or salvage stations within 60 days after receiving them."



Have You Received Your Copy ?

This memorable book, "Philco Reports to its Dealers on One Year of Production for Victory," was recently mailed to all Philco dealers of America. If you haven't received your copy, get in touch with your Philco Distributor today and ask for it. Or write to Philco Corporation, Philadelphia, Pa. It's a book you will not want to miss!

★ ★ ★

It is just about one year ago that Philco converted its complete research, manufacturing and promotional facilities 100% to the service of our fighting forces. During that year, the war achievements of the Philco laboratories and production lines form the brightest chapter in the long history of Philco industrial accom-

plishment. Its advertising activities have received nationwide recognition for their service in the interest of public war morale.

The story of this year of intense activity and achievement has real significance for every member of the Philco family. This report was written so that you and every other Philco dealer may know how the inventive research and manufacturing skill that gave you the most valuable franchise in the appliance field is now doing its part for Victory.

Be sure to read this fascinating review of Philco's war activities. For every Philco dealer, it's an annual report . . . *and a promise for the future!*

PHILCO CORPORATION



OUR WAR PRODUCTION PLEDGE:

MORE • BETTER • SOONER

Customers Must Accept Service Curtailment

T. Nadra, proprietor of Ocean Radio, established 6 years ago at Palisades Park, N. J., is another radio service man working under pressure. Confronted with transportation and help problems, to say nothing of the shortage of parts, he urges that a more determined effort be made to tell customers that there is "a war going on."

Jammed with work in his now one-man shop, Mr. Nadra states that he is unable to make any calls. He finds it impossible to get out the work brought in and go out to bring in more with the limited time he has. "A call at a customer's home often meets with

ment, stresses the necessity of greater retailer effort in the sales of war bonds and stamps.

The conferences produced a number of significant comments on bond sales by retail men.

Every retail group is, at this time, made up of two types of people. The "in-and-outers," who are classed as "temporary" and the "key" people, said to be growing restless because of the publicity given others who have gone into war plants, and, because they, the "key" people feel that the work they are doing is not an important part of the war effort. The retailer's job is to "sell" his employees a different viewpoint.

The sales clerk who sells stamps and bonds is on the production line of

America just as much as the person in a defense factory, and the retailer and clerk should be reminded over and over again that the financial security of their community and business after the war depends upon the sale of stamps and bonds in the locality.

A point emphasized is that right now, after meeting all obligations, life insurance, all living expenses, necessary savings, and after deducting 10% of income for War Bonds, America has two billion dollars left in change from last month's pay check. The local merchant can help to determine whether this money goes to war as tax dollars or bond dollars. The latter dollars would have a highly favorable effect on the post-war economic condition of the dealer's community.

Emergency Business

a request that the set be serviced in the home, then and there," says Mr. Nadra. "The unreasonableness of this sort of practice is too obvious to need comment."

Believing that the customer must realize that he cannot expect the same kind of service today he received in peace times, Mr. Nadra says that it is up to the serviceman to "sell" the radio owner this fact.

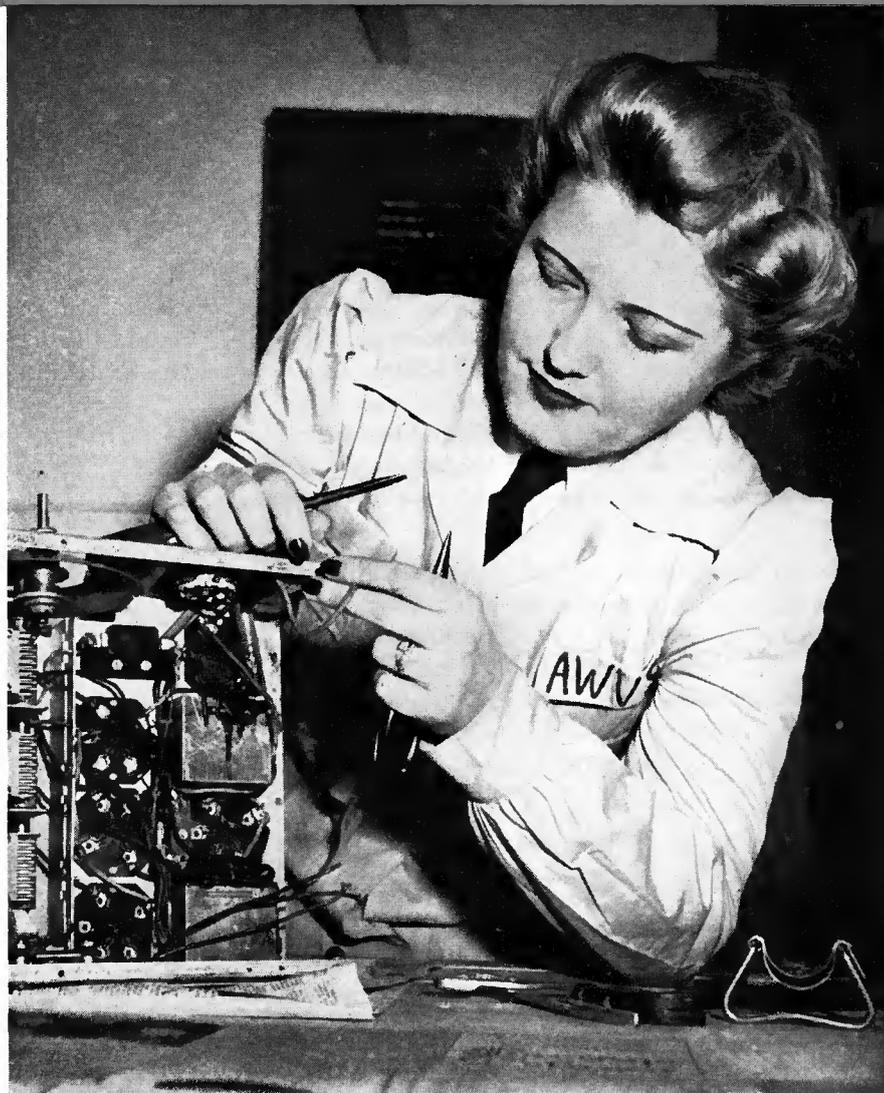
One of the major problems of the small repairman, according to Mr. Nadra, is the service of car radios. With these receivers, it is often necessary to remove car pockets and other parts to get at the set, and then it must be taken apart to test even a tube. The time spent in this procedure cannot be justified by the charge. Therefore, he discourages the servicing of car radio as much as he can.

Ocean Radio participates in various patriotic activities, and devotes a good portion of its windows to war effort.

Dealers Urged to Push Bond, Stamp Sales

After extensive conferences with leaders in the retail field, S. D. Mahan, Associate Field Director of the War Savings Staff of the Treasury Depart-

Women trainees at the American Women's Voluntary Services learn radio repair, release men for the battlefronts.



NEW WORLDS TO CONQUER!

**FOR SERVICE MEN...
THE "ELECTRONICIANS"
OF THE FUTURE!**



PRECISION

Under the guidance of highly skilled operators, the finest precision machines are employed to insure uniform high quality in all National Union tubes. In this photograph a bending machine in the Stem Department is shown doing its war job of helping to provide this year the largest number of the finest electronic tubes National Union has ever built.

Sure, winning the War is our big job right now. To that end we here at National Union are exerting our every thought and energy—both on our production lines and in our research laboratories. But after the war—what then? For you as a service man the post war outlook is especially promising. Countless new peacetime products will emerge from today's ever increasing use of electronic tubes to help win the war. New applications of electronics in the home will add new and profitable service activities to your already established business. From radio technician you will expand to become your community's "electronician." And National Union will have ready for you the tubes, the test equipment and a plan of action to help you make the most of this great new opportunity.

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

NATIONAL UNION RADIO CORPORATION
NEWARK, NEW JERSEY LANSDALE, PENNSYLVANIA

NATIONAL UNION ELECTRONIC TUBES

New Parts for Old



War Production Board Issues New "Tube for Tube" Regulation

• New rules governing the repair of radio sets, in Limitation Order L-265, recently issued by the War Production Board, call for "tube for tube" and "radio part for part," requiring that the owner of a radio set turn in an old part when he buys a new one, or when a new one is installed by a repair man. Exception is made, however, for cases in which it is impractical to return the part.

Officials pointed out that owners of radio sets do not need to secure priority ratings to replace old parts, and said that in some localities repairmen demand such obtainable ratings in order to sell more expensive servicing.

Bookkeeping Simple

The radio repair man or dealer is required to collect a part or certificate when he sells to a customer, but does not have to pass that part to his supplier. He must, however, certify that he has collected either components of the kind being ordered or certificates for them. WPB officials said that the dealer may employ his own system of bookkeeping, in balancing the receipts of parts and certificates against purchases. Records of sales and purchases must be kept. Dealers must take used parts to scrap heaps or salvage stations within 60 days of receiving them.

The order applies generally to radios, phonographs and electronic equipment. However, exceptions are

made permitting the sale of entire radio sets, phonographs and sound motion picture projectors completed before the issuance of the order. Electric batteries, hearing aid devices, and power and light equipment do not come under the order.

Allowances Made

Allowances are made for rural set owners, who can buy only by mail and for those who have lost the part which is to be replaced. It is necessary that a buyer coming under any of the foregoing categories, "certify that the part (s) specified on this order are essential for presently needed repairs of electronic equipment which I own or operate."

Comment on Supply

WPB officials said that dealers should be able to supply tubes and other radio parts to their customers as old ones are turned in. It was stated that radio tube production, available for civilian maintenance is "close to peace-time levels," and that existing shortages will be remedied as manufacturers "concentrate production on types most in demand, and by exchanging tubes among themselves, round out their own stocks and those of their dealers."

The order also supersedes L-183, which required a minimum rating of A-3 for transfers by manufacturers of electronic equipment, and raises this rating to A-1-a. It was stated, how-

ever, that purchases against parts or certificates do not require ratings. L-265 prohibits the manufacture of electronic equipment, except to fill orders of the Services, orders rated AA-4 or higher, or to the extent that the manufacturer has received materials under the Controlled Materials Plan.

Inadequate Inventories

An additional statement was subsequently issued by the Wholesale and Retail Trade Division of WPB to give dealers and distributors further explanation of how L-265 affects them. This statement was as follows:

"It is quite possible that this order might find certain distributors, or dealers, with inadequate inventories. The only procedure available to cover this situation would seem to be the filing of a PD-1X application with a letter of appeal giving all facts possible in support of the materials requested. The PD-1X application should give the entire inventory position on the type of equipment requested.

"Only appeals that are completely supported by facts will be given consideration. Should an appeal be granted on a specific type part, or equipment, the distributor, or dealer, can only obtain future inventory replacements of that type part, or equipment, by the use of the certification procedure."



Out of the Clouds

Up in the clouds with our bomber crews, and in the sands of the desert with U. S. tanks, Belmont radio equipment is helping to write the history of this war. When this history has been completed by victory, many bright new chapters will have been added to what the world now knows about radio. With the winning of the war, many

great discoveries, now military secrets, will be applied to the development of products that will be far in advance of anything now known. And on some of the finest of these products you will find the Belmont name. *Keep your eyes on Belmont for great new things to come!* Belmont Radio Corporation, 5921 W. Dickens Avenue, Chicago, Illinois.



Belmont Radio

TELEVISION ★ ELECTRONICS

1942 Radio Receiver Sales by Manufacturers

(Unit figures from RCA License Report)

	Units	%	Retail Value
Table sets	1,736,608	40.32	\$40,000,000
Console sets	271,740	6.31	22,000,000
Portable sets (battery and/or AC-DC)...	573,025	13.30	19,000,000
Automobile sets	341,424	7.93	12,000,000
Farm battery sets (table or console).....	269,510	6.26	8,000,000
Frequency-modulation adapters	7,678	.18	400,000
Electric phonographs (including wireless record players)	120,649	2.80	3,600,000
Table combination sets	379,514	8.81	20,000,000
Console combination sets	388,183	8.55	60,000,000
Radio, phonograph and recorder.....	40,805	.95	8,000,000
Television (with sound or phonograph)...	778	.02	160,000
Television (without sound).....	175	20,000
Apparatus without cabinets.....	195,996	4.55	7,000,000
Separate remote or time-controlled devices	899	.02	25,000
TOTAL	4,306,984	100.00	\$200,205,000
1941 TOTAL	13,668,515		\$520,000,000

RADIO LEADERS MEET IN CHICAGO IN JUNE

A conference on war production will be held in connection with the 19th annual meeting of the Radio Manufacturers Association, set for June 10th at the Palmer House in Chicago. The war program and its new radio problems will be stressed in discussions in which prominent government officials have been asked to take part.

President Paul V. Galvin will preside at an industry luncheon, at which meetings of the Association's various divisions will be held. RMA will also elect new officers and directors. No social features will be included in the convention this year.

Washington Guests

James L. Fly, chairman of the Federal Communications Commission, and Director Ray C. Ellis, of the Radio and Radar Division of WPB, head the government officials who will attend; others who will participate in the various RMA sessions include: Chief Frank H. McIntosh of the Domestic and Foreign Radio Branch, WPB Radio and Radar Division; Kenneth Campbell, Trade Relations Advisor of the Board of Economic Warfare, and Ralph D. Camp, who is in charge of exports under the WPB Radio and Radar Division.

The newly named Association of Electronic Parts and Equipment Manufacturers (formerly the Sales Managers Club, Western group) will also meet in Chicago on June 10th.

Members of the Sales Managers Club, Eastern Group, will also meet at the Palmer House June 10th. Charles Golenpaul of Aerovox Corp. is chairman of the Eastern Group; J. J. Kahn of Stancor is chairman of the Western Group.

Electronic Distributors Directors Meeting

Scheduled for June 8th to 10th at the Palmer House are the annual Board of Directors sessions of the National Electronic Distributors Association.

S. K. MacDonald of Philadelphia, president of "The Representatives" of Radio Parts Manufacturers, has called an annual meeting of the Board of Governors of "The Reps" for June 10th. Preliminary plans for this get-together are being made by David Sonkin, 220 E. 23rd St., New York City.

The New York chapter of "The Reps" has announced its delegates to the annual meeting, elected at the May meeting. They are, besides Mr. Sonkin, Dan Bittan, Perry Saftler, John Kopple, Matthew Camber and Ben Joseph.

ANOTHER "WAR MODEL" PARTS LINE IS READY

War standards for volume controls have been tentatively agreed on, in the newest of the steps taken by the American Standards Association in establishing specifications for "war model" or Victory replacement parts for civilian radios. The simplified lines are being developed by ASA in cooperation with all branches of the radio industry, the War Production Board and the Office of Price Administration.

This is the fifth of the sets of specifications to be issued. Last month the "specs" for transformers and chokes were decided on; next to be considered are coils.

It is understood that WPB is now framing a new order, to cover the distribution of these war-standardized parts. The general effect of this regulation would be that, on all parts for which war standards have been fixed, WPB would allow only those parts on the standardized list to be supplied to the trade without priority.

Purpose of the simplified parts lines is to save critical materials, and to simplify manufacturing processes so that the greatest number of civilian sets can be kept in operation with the least amount of supplies and facilities.

Two Per Cent of Radios are Dead

More evidence that the number of "dead" receivers is not yet a serious factor in radio, is supplied by a prominent Pennsylvania radio distributor. This jobber was anxious to investigate reports that thousands of receivers were "dying" daily because of shortages in tubes, parts, and batteries. Accordingly he called a representative number of his repairman customers together and asked them to make a careful estimate of the number of out-of-repair radios in their areas.

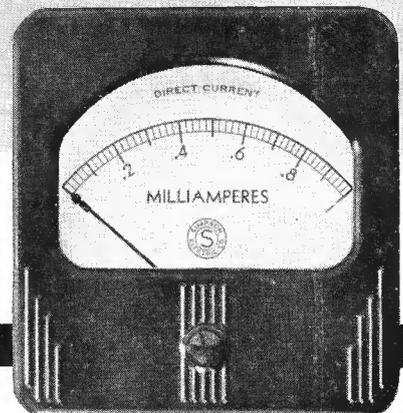
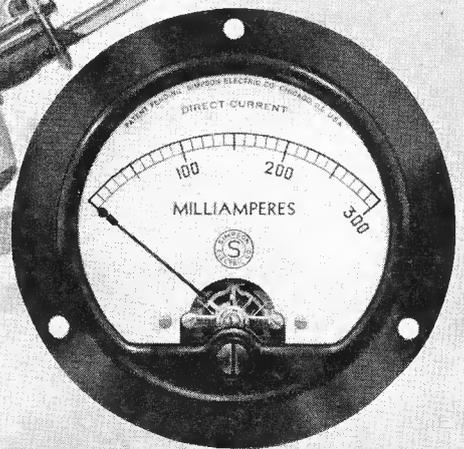
When the figures were totalled, it was found that less than 2 per cent of the sets in the whole area were inoperative. These receivers could not be fixed because the servicemen did not have the proper replacement parts, mostly the "hot" tube numbers.

The distributor points out also that these results do not mean that 2 per cent of the homes in the area are without radios; it must be assumed that a number of the inoperative radios were second and third sets.

**—ALL we can
—the BEST we can
—as FAST as we can**

This is America's simple formula for victory. Nothing less is good enough in the urgency of battle. And nothing less, on the home front, is worthy of our valiant fighting men. To them, we at Simpson make this report. We are manufacturing many times more Simpson Instruments than ever before . . . making them the best that skill and experience, and resolution, can produce . . . and turning them out at a pace we would have thought impossible just a short while ago.

SIMPSON ELECTRIC COMPANY
5200 - 5218 Kinzie Street, Chicago, Illinois



Simpson

INSTRUMENTS THAT STAY ACCURATE

Buy War Bonds and Stamps for Victory

Alternate Lines

Dealer Tie-Up with Hotels and Special Services

Woody's Radio Service, and the greeting card, music and record business of O. Saporta, at 131 East 34th Street, New York City, are not only making special wartime efforts to please their customers now, but are building up good will for the future.

Woody has a unique business. He specializes in servicing hotels and apartment hotels in the high class sections of New York, and has been able to maintain this sort of service because he answers a call promptly, and always before the time promised.

From the contacts he has developed in this specialized field, he has built up a clientele consisting of many of the best-known people in New York, writers, movie actors, singers and famous industrialists being included. He also does work for the Merchant Marine, and of course, has considerable "drop in" business as well.

Woody feels that he has to give something special in these times. For example, when he gets a call from one of the hotels or apartment houses, he drops everything else, and appears on the job in a surprisingly short time.

He gets leads from contacts made with superintendents, renting agents and receptionists, and makes it a point to cultivate a personal acquaintance with them.

Feeling that many servicemen overlook the little things in pleasing the public, Woody has had great success employing common-sense psychology in his business. For example, he not only does a good repair job, but polishes the cabinet or case of every set he returns to a customer, and uses a special polish for this purpose, which he has made up for him by a chemist. He also phones each repair customer about a month after the work was done to check up on the operation, and, importantly to build up precious good will. He follows up calls on prospective apartment hotel heads with a personal letter.

Woody also services "Muzak" piped music set-ups in hotels. Another unusual service he sold was to Victor Keppler, well-known New York photographer, for whom he installed a sound system, providing phonograph music for the purpose of insuring proper "moods" of persons being photographed.

Mr. Saporta, who shares the store

with Woody, is well known in music circles, and formerly had a shop on Broadway. The greeting card business is a new addition to his stock.

Here are typical business men who feel that their places at the Battle Station are important, and operate more efficiently by giving the customer a little more than he expects—even in these upset times.

Music in Boxes

Some dealers have added music boxes to their lines. These items of decoration and amusement also hold cigarettes or face powder. National Sales Co., 101 Hopkins Pl., Baltimore, Md. offers a variety of six different styles in each. Made of porcelain and wood, there are no priority materials involved.

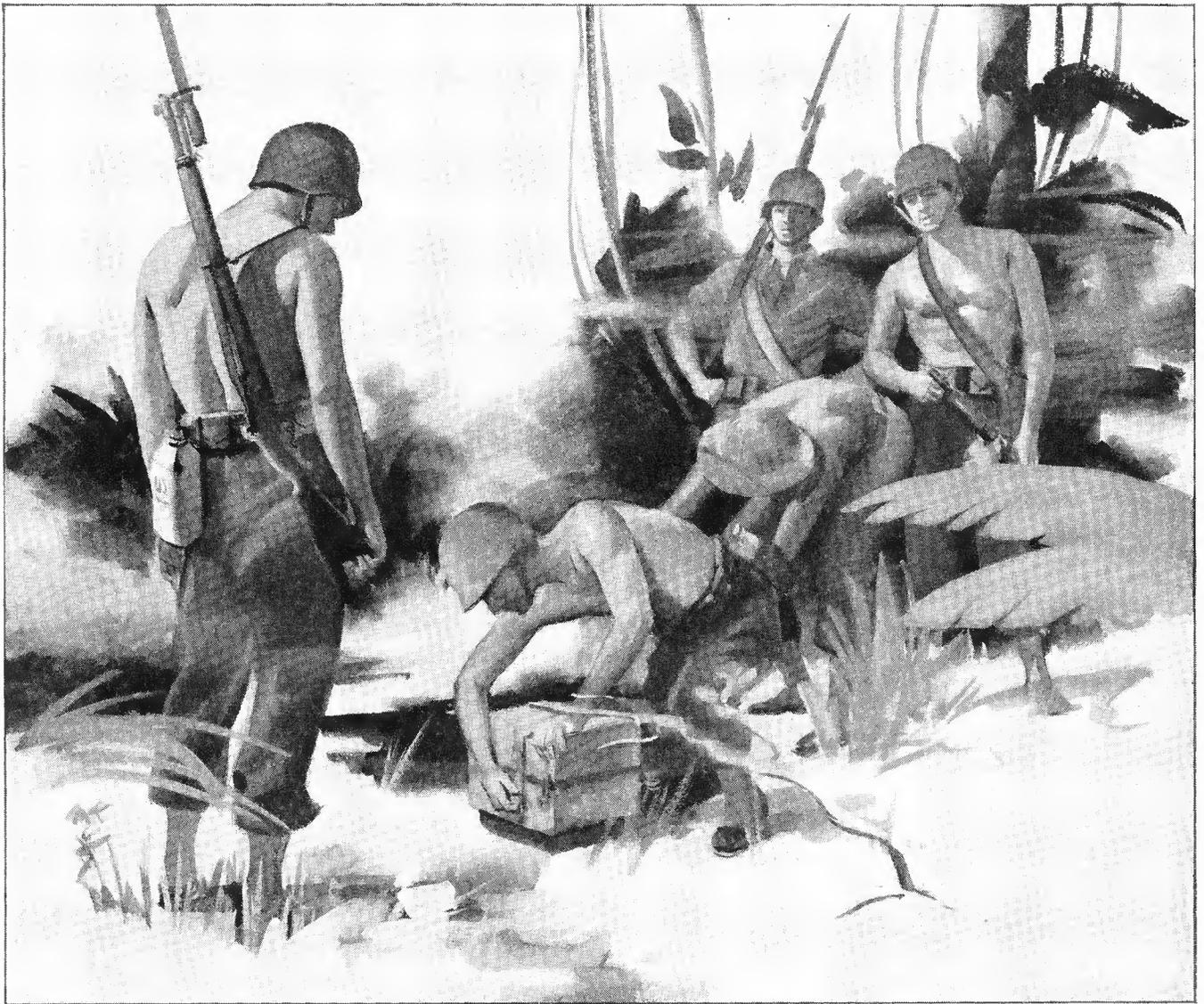


Glenn L. Earl (above), formerly a distributor for Zenith in Salt Lake City, has opened a retail store (left) in that city, featuring Nu-Enamel paints and reports exceptional success with this item.

Victory Model Music Stand Supplements Sheet Music Stocks

Record dealers who also carry sheet music and record albums are showing interest in the "Foldesk" which is put out by John Luellen & Co., 1640 W. Walnut St., Chicago. It is available to music dealers as a substitute for metal music stands. Known as the Victory Model, it is constructed of fibre board which has a wood-grain finish, folds flat for shipment, and can be used as a home music stand as well as a reading rest for large books or maps.





WHERE WORDS ARE WEAPONS

ON a hot, steaming jungle isle . . . where at any moment they may hear the whine of a Japanese sniper's bullet . . . men of the U. S. Signal Corps toil incessantly to maintain communication lines. On these slender strands may depend the loss or retention of a vital Pacific outpost . . . success or defeat in a hard war . . . the future of free peoples all over the earth.

This is a war of communication and on the front lines are products manufactured by Utah Radio Products Company . . . with the Navy in Pacific waters . . . with the Air Corps over enemy-occupied territory . . . with the Army on desert sands.

When bullets begin to fly—dependability and non-failing action are indispensable. These qualities have

been built into Utah products at the factory where soldiers of production are working 100% for Victory. In the laboratory, Utah engineers and technicians are working around the clock, developing new ways to meet communication problems—making improvements on devices now in action.

Out of the solution of war communication problems . . . out of the exhaustive research now going on . . . will come sound improvements and new Utah products for the homes and factories of America. Utah Radio Products Company, 810 Orleans Street, Chicago, Ill. Canadian Office: 560 King Street West, Toronto. In Argentine: UCOA Radio Products Co., SRL, Buenos Aires. Cable Address: UTARADIO, Chicago.

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



Post-War Radio Market

Government Survey Indicates Size and Nature of Peacetime Business

• The Dept. of Commerce has just completed an extensive study of "Markets After the War" and one of the radio conclusions is that 25 million radio sets may be sold annually in the post-war period.

From the general study made by the government experts, the radio market appraisal was made by E. J. Detgen and Lawrence D. Batson of the Division of Industrial Economy, Bureau of Foreign and Domestic Commerce. Highlights of this appraisal are given herewith.

The market study in its hypothetical break-down, by commodity groups, of the distribution of an assumed total expenditure for all goods and services of 165 billion dollars in a post-war year, indicated that approximately a billion dollars—an increase of 165% over the 1940 volume—might be spent for radio apparatus and phonographs. This includes receiving sets of all kinds, phonographs, radio-phonograph combinations, electric record players, tubes and replacement parts, needles, storage batteries, records and blanks. In this discussion we analyze some of the factors that were not considered because of the purely mechanical nature of the projection.

To facilitate discussion, we consider only the home radio field which constituted 80% of the combined radio and phonograph industry total in 1940.

Primary and Secondary Markets

If the hypothetical statistical projection of the general study is a true indication of the post-war market, we could expect an annual expenditure for household radios in the post-war era of approximately 880 million dollars, 165% of the 1940 estimated volume of 345 million. Assuming further that the average retail price of a radio set remains at \$35 (the 1938-41 average), 25 million radio sets may be sold annually in the United States in the post-war period. How may these figures be tested?

First, how would this volume compare with previous experience in the industry? Of 36 million families in



the United States in 1942, approximately 30 million owned about 60 million radio sets. Industry estimates indicate that 50% of these families owned one set each, or a total of 15 million sets, and that the remaining 15 million families owned 45 million sets, and of these, probably 15 million are first or primary sets and 30 million, second or additional sets. In other words, there were approximately 30 million first or primary sets and an equal number of second or additional sets in use in 1942.

With reference to the market for the primary or first set, assuming an average life span of approximately 7 years, a very high percentage of the pre-war sets in this class may be considered by their owners as obsolete by 1946. Can we estimate, therefore, that there will be an immediate market in 1946 for 30 million primary sets, which will mean a new set for each radio family in the United States?

Will High Volume Continue?

In seeking the answer to this question, we must consider, among other factors, the market for the second or additional set, which represented 30 million units in 1942. To what extent and how soon will second or additional sets be replaced? What effect would the sale of 30 million sets in one year have on the number of second or additional sets in use? How many families will retain the first or primary set used during the war period to serve as a second or additional set after purchase of this new post-war set? All these statistical factors must

be applied to our original figure of 30 million sets to determine its validity as a starting point for discussion of the radio market in the post-war period.

Unit Price a Factor

The foregoing is based on the continuation of the assumed average retail price of \$35 per set. But since "Markets After the War" discusses the dollar volume of business that may be obtained by an industry, with its resulting effect on employment and pay rolls, rather than the number of units any particular industry produces, careful study should be made of the changes in prices paid for radios.

Will the average price per set be higher or lower? What knowledge have we now, concerning the technological changes taking place in the industry, that will permit us a glimpse of this phase of the industry in the future? Will radio production be changed so radically that prices will be cut in half resulting in an average retail price of around \$15 or \$20 and necessitating a volume of 60 million sets per year, or will there be emphasis on larger, higher-quality sets which will increase the unit price and thereby reduce this hypothetical annual quota of 30 million units which we are using for the purpose of this discussion? For example, can we assume that in the post-war period frequency-modulation will be a "must" among radio users?

Frequency-Modulation Enters Picture

To some radio manufacturers questions of this type will be considered elementary since they are convinced that the benefits of frequency-modulation are so great it will "have to be." And they reason that since the production of this type of set involves more man-hours and materials the cost will be higher. They point out that the lowest retail price of a complete frequency-modulation set in 1942 was approximately \$60, or almost dou-

(Continued on page 56)



Cut Yourself a Slice of Cake

COOKED BY RADIOTHERMICS . . . SERVICED BY RADIO MEN

Maybe you've never tried a slice of delicious cake, home-baked to perfection by Radiothermics. *But you may!*

Maybe you've yet to see bread baked inside out (with the crust on the inside, if that's where you want it) by this same amazing method. *But you may!*

Or, perhaps, you haven't been around busy industrial plants where heating, drying, case-hardening, and similar jobs which formerly took hours by conventional methods are now being done better and, frequently, *in minutes* the Radiothermic Way.

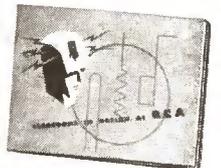
Distributing, installing, and maintaining equipment for such purposes may well be a part of the job of the busy "Radio" man of the future. Classify these new developments

under whatever general heading you will, they all add up to expanding opportunities for you.

All of these developments use Electron Tubes as their "Magic Brain." Just as RCA Tubes helped to make Radio what it is today, so will they contribute to this vast related industry of tomorrow.

"Electrons in Action at RCA"—BOOKLET FREE!

Did you know that modern RCA Tubes could not be precision-made in quantity without employing equally modern tubes in the operations used in their manufacture? This profusely illustrated 32-page book tells the story of electrons in action at RCA, and contains many valuable pointers on possible electron tube applications in other fields. Copy gladly sent on request. Ask for Booklet No. 1F8159.



RCA RADIO-ELECTRON TUBES

RCA Victor Division, RADIO CORPORATION OF AMERICA, Camden, N. J.

Letters to the Editor

Suggests Tube Rationing

Editor, *Radio Retailing Today*:

The radio tube situation is rather hectic, as you know, but there is one phase of the picture upon which I would like to express an opinion.

Tube salesmen tell us that there will probably be no more 12 volt tubes made, also no more 35Z5 and 50L6. Washington seems to overlook the fact that there are thousands of shut-ins, blind people and others, who depend on AC-DC radio. I have more than a hundred such customers right in this city. These people certainly need their radios a lot more than some of us do. A limited number of these tubes should be released, and it should be left up to the dealer to see that they are used only in essential sets.

Am of the opinion that the only fair solution of this problem would be a form of rationing. A registration of receivers could eliminate all but one to a family, or individual, then the other sets would have to be put on the shelf when they need repairs. Compared with some of the rationing procedures, this could be made very simple.

Knowing that your editorial opinion is based on that of the trade in general, I thought these few lines might be of interest.

R. C. Overacker

Poughkeepsie, N. Y.

Outside Radio Calls

Editor, *Radio Retailing Today*:

Just read "Dead Receivers Are Piling Up" in a recent issue of RADIO RETAILING TODAY.

Our company started with radio in 1922, building 300 sets in the early days, and changing to service later. We take care of 2000 sets a year, half of them battery operated farm radios, as this is a town of 5000 in an agricultural territory.

Now I am operating service alone, six sets or more a day. With practically no more batteries available for farm sets, and with tube deliveries almost at a stand-still.

It has been years since anyone could get us out of the shop to do service work. Do you call your garage man down to fix your car? Do you have any other electrical appliances re-

paired in the home? The public has been damn well spoiled in most places, with unnecessary attention and service.

In our place we give the public efficient work at moderate prices, and they bring the sets in and take them away themselves. My advice to other service men—Go thou and do likewise.

A. B. Clark

Albia, Iowa

Tips on How to Get Gasoline

Editor, *Radio Retailing Today*:

There seems to be quite a bit of difficulty among a certain group of radio service men who are not able to get enough gasoline to carry on their business.

Since I have been through the mill on this problem, would like to make several suggestions and recommendations in reference to this problem.

First, it seems to me that any radio man who is doing any amount of service work, either on a full or part time basis, should adopt a business trade name.

Second, after a suitable trade name has been chosen, the service man should trade in his passenger car for

a light panel truck, purchased in the company's name. This will automatically give him the right to a "T" gasoline ration book and a certificate of war necessity from ODT.

I also think it advisable for a service man who is making an appeal for more gasoline, and who is also working part time in a defense plant, to state that he is doing such work, rather than to state that he is working part time fixing radios. Many service men today are working a full shift in a defense factory and then doing another "shift" repairing radios.

If you think you are being of more use to the war effort by working at a defense job . . . fine, but remember, you can work in a defense plant and still be proprietor of a radio service business, and such a business must have a service car and such a car must have a certain amount of gasoline to run on. As a matter of fact, many Washington officials have cited the men who operate a radio service and repair business, as essential to the war effort on the home front.

Burton V. Selle

Elyria, Ohio

Says "Black Market" In Operation

Editor, *Radio Retailing Today*:

Can you tell me anything definite about the tube and battery situation? Jobbers I buy from also have retail outlets, therefore I get no tubes and batteries unless they get a surplus, which seldom occurs. One jobber, who used to get the bulk of my business, hasn't shipped me a battery since Nov. 16th, and very few tubes.

Batteries and tubes are being bootlegged, and I saw one shipment of 100 batteries, with no manufacturer's name on them. The dealer who purchased them claims he paid \$7 each.

A South Carolina Reader

Philco Report to 20,000 Dealers

In a report to its 20,000 dealers, entitled "One Year of Production for Victory," Philco's summary tells in detail how its complete facilities were turned over to war production, and also illustrates its ability to maintain diversified manufactures, with the statement that "Today, Philco is building for the Army and Navy . . . air-borne electronic and communications equipment, radios for planes, tanks and ships, frequency meters, quartz crystals, artillery fuzes, shot and shell and power storage batteries."

It was also pointed out that the Philco Research Laboratories are at work on vital and secret electronic development projects to aid the war effort, and that Philco engineers are busy on urgent and vital affairs within the realm of pure research and development.



"I have a crystal and a cat's whisker here. Think you can substitute them for the parts you can't get now to fix my radio?"

Sonora

Clear as a Bell

**gives you the
most dramatic
wartime jobbers'
booklet published
to date!**

free!

**RADIOS
TO SELL**
when? how?

Would you like to know...

- When the Merchandise Armistice might occur?
- What products are likely to be available first?
- What trends may open the gate to you for the greatest sellers' market in history?
- What forces are at work that may put you in the appliance business before the war ends?
- What the SONORA jobber and merchandising policy will be from here on in?

These are but a few of the subjects you will read about in this timely booklet—AND IT'S FREE TO JOBBERS FOR THE ASKING! To get your free copy, use the coupon on the next page. Mail it TODAY! Edition limited.

THE QUESTION OF THE HOUR...

Will there be a
**MERCHANDISE
ARMISTICE**
before the war is over?

This is no time to make loose predictions. Certainly it is no time for wishful thinking.

On the other hand, neither is it a time to ignore plainly visible trends. We make no pretense of predicting exactly when our factory will again be delivering merchandise to you instead of to Uncle Sam. But—straws in the wind are now pointing

SONORA IS READY

Everything is in readiness here at SONORA headquarters—all plans are made to re-convert to peacetime manufacture and to start deliveries within a matter of weeks after we get the go-ahead from the Government. This preparedness is insurance that SONORA jobbers will be among the first—if not

to a *Merchandise Armistice* before the war ends.

Should these trends be borne out, then you can expect delivery, in some degree, of other package appliances as well as SONORA radios during this period of gradual re-conversion, while millions of people still will be engaged in war production at peak war wages.

the first—to cash in on a rich profit opportunity.

In such a market, common sense tells us that the demand for radios will exceed anything in history; that jobbers operating under the proven SONORA plan will be ready to take full advantage of this coming sales surge.

NATIONAL ADVERTISING SCHEDULE

The best proof of our faith that this is true is our commitment to maintain the home front for our jobbers and their dealers with a great 1943 national advertising campaign that will reach millions of magazine readers from coast to coast.

This campaign has been carefully planned with special regard for the intensive cultivation of territories to be covered by SONORA jobbers.

Its prime purpose is to pave the way for a wider distribution and easier, more profitable sales for SONORA jobbers and retailers when our merchandise is again available. It is our way of expressing a sincere desire to keep on deserving your friendship and cooperation.

SONORA RADIO & TELEVISION CORP.
325 North Hoyne Avenue, Chicago, Illinois

Sonora 
Clear as a Bell

THE *Sonora* ^{*} *Clear as a Bell* MISSION

1. To help win the war by continuing full speed ahead with all the manufacturing, designing and engineering force at our command. *Then—*
2. To dedicate our full energies to the progress and prosperity of the legitimate jobber and his dealers. *And at all times—*
3. To devote our entire skill, abilities and resources in the cause of the jobber—the backbone of the home front—as a vital channel of distribution under the American system of free enterprise.

J. M. Hull
President,
SONORA RADIO & TELEVISION CORP.

Sonora ^{*} *Clear as a Bell*

THIS EDITION IS LIMITED! DON'T FORGET TO SEND FOR YOUR FREE SONORA BOOKLET!



SONORA RADIO & TELEVISION CORP.

325 North Hoyne Avenue, Chicago, Ill.

Send along our free copy of "Radios to Sell—When? How?"

My Name and Title _____

Firm Name _____

Address _____

City _____ State _____

Sonora

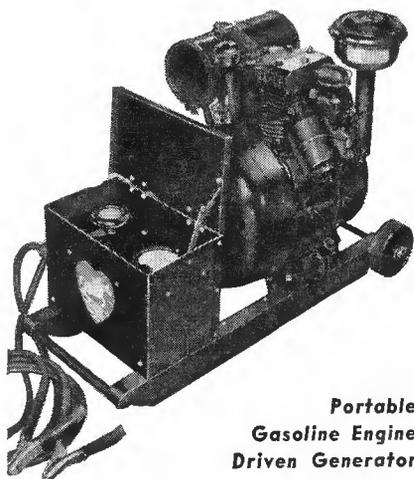
Clear as a Bell

RECORDS *Today*
RADIO "Tomorrow"



*Registered Trademark U. S. Patent Office

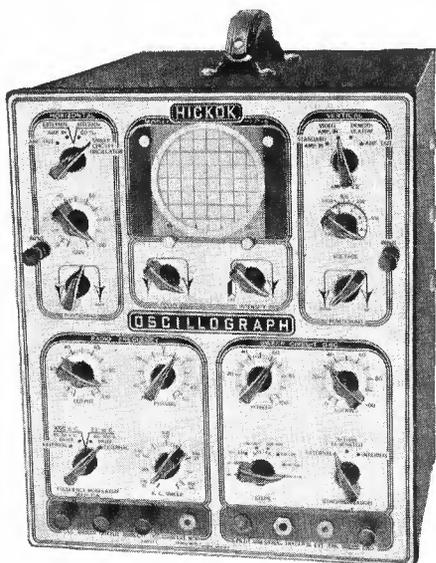
New Products



**Portable
Gasoline Engine
Driven Generator**

PORTABLE GASOLINE DRIVEN GENERATOR, for rapid battery charging. Designed to charge 6-12-24 volt batteries at 10 to 300 amps. Specially designed generator driven by 5 HP single cyl., air-cooled gasoline engine with air-cleaner, gasoline filter, magneto, self-starter, rope starter, gas tank and remote stop control. Can be used as direct current lighting plant, with output range from 1000 to 3000 watts. Entire unit mounted on skid-type base, equipped with 5-inch wheels, which are raised while in use to prevent creeping. Hunter-Hartman Corp., St. Louis, Mo.—RRT.

HICKOK MODEL RFO—5 OSCILLOGRAPH testing instrument for radio and industrial use. It is used in both R.F. and I.F. for single or consecutive stage-by-stage troubleshooting from antenna post to speaker, in frequency modulation, amplitude modulation and television re-

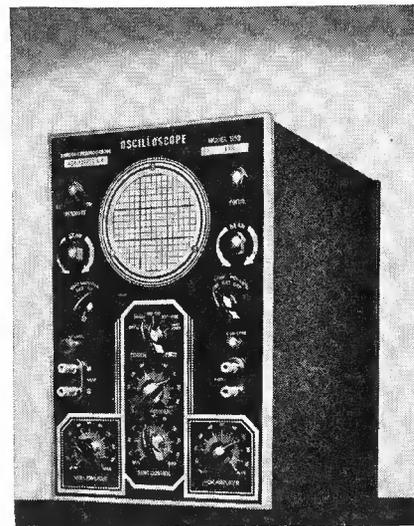


ceivers. It has self-contained wide band (100 to 900 KC sweep) frequency modulated oscillator (basic frequency 2.3 M.C.) for frequency modulation and television servicing. Wide band frequency modulated oscillator can be modulated from external frequency sources as phonograph pickup, microphone or audio frequency oscillator. Narrow band (10 to 30 KC) and frequency modulated oscillator (basic frequency 1000 KC) for visual alignment on amplitude modulated receivers, demodulators, etc. Self-contained mixer circuit—demodulator—video amplifiers—signal tracer—visual a-c vacuum tube voltmeter, 0.2 to 1000 volts—calibrated screen—fuse protection and phasing control. Instrument measures 11" x 13" x 15 1/4"; weighs nearly 50 lbs. Hickok Electrical Instrument Co., 10514 Dupont Ave., Cleveland, Ohio.—RRT.



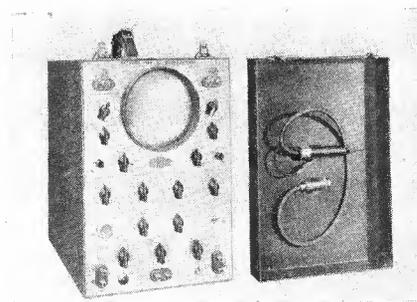
TELRAD FREQUENCY METERS in four new models. All crystal-controlled. By means of class "C" harmonic amplifier circuit, embodied in units, accurate frequency carrier signals are provided every 10 KC and every 100 KC from 100 cycles to 45 megacycles. Panel-mounted "on-off" switch allows use of 1000 cycle modulated note. Special models for use under adverse conditions, equipped with 2 precision crystals, ground to produce exact frequencies of 100 and 1000 KC, tested for use at temperatures from 35 to 50 degrees centigrade, having temperature co-efficients of maximum drift of only 2 and 3 cycles per megacycle per degree centigrade, respectively. Fred E. Gardner Co., 43 E. Ohio St., Chicago.—RRT.

IDEAL RECHARGEABLE STORAGE FLASHLIGHT BATTERY. New uses and battery shortage renew interest in these units. Fit all popular 2-cell, size D cases. Each can replace 400 or more dry cells by recharging at convenient periods. Chargers available for single and gang use—AC or DC current. Spill-proof; easy to add liquid. 1.90 volt lamp used. Size 1 1/4" x 4 3/4" high; weighs 7 oz. Case, transparent plastic. Capacity, 2 ampere hours—discharge rate, 450 mils; 600 mils, maximum. Ideal Commutator Dresser Co., Sycamore, Ill.—RRT.



RADIO CITY PRODUCTS announce design of the Model 553, 3" Cathode Ray Oscilloscope. Power supply 110-120 volts; 50-60 cy.—Power consumption 50 watts—fuse protection, 1.0 amps. Input impedance through either amplifier, .5 megohm 20 mmfd.—without amplifier, 2.2 megohm 40 mmfd. Deflection sensitivity: through either amplifier (max. gain) .6 r.m.s. per inch, without amplifier, 35 r.m.s. per inch. Amplifier frequency response, 3db., 20—100,000 cycles. Linear time-base: Frequency range, 22,000 cycles; synchronizing signal sources—internal, 60 cycles. Compact—light weight. Radio City Products Co., 127 W. 26th St., New York.—RRT.

DuMONT OSCILLOGRAPH 241. Larger screen size, with inclusion of a Z-axis amplifier to modulate beam with any signal applied to its input terminals or with a return trace blanking impulse produced by the linear-time-base generator, distinguishes the type 241 5 in. cathode-ray oscillograph from others by same maker. Uniform Y-axis or vertical deflection response from 20 cps to 2 megacycles. Allen B. Du Mont Labs, Inc., Passaic, N. J.—RRT



What Washington Says —

OPA Clarifies Dealer- Manufacturer Prices

Further explanation of the manufacturer-dealer advertised price situation, as affected by advertising, comes from the Office of Price Administration, with the statement that "when a national producer advertises the retail price of his commodity in a newspaper or magazine, he is under no obligation to state that a retailer whose individual ceiling price is lower than this advertised price may not sell at the advertised price." The producer, therefore, is not liable for a violation by a retailer under these circumstances, unless, in his advertising he lists a specific retailer, whose ceiling price is lower than that stated in the advertisement.

In order to relieve himself of liability for a violation, the manufacturer, supplying advertising copy to a dealer, wherein prices are mentioned, must notify the dealer that the copy may be used only if the prices mentioned do not exceed the ceiling prices of the dealer.

Washington May Set Up Small Business Head

The Conference of American Small Business Organizations, with headquarters at 407 S. Dearborn St., Chicago, has announced that it has been given a definite promise that a new official, who will devote his time and effort to the problems of small businesses, will be named to serve as Assistant Secretary of Commerce for Small Business.

The Conference is also lending active support to the bill calling for the creation of an Office of Civilian Sup-

ply, the purpose of which would be to take care of the requirements of smaller industry and business in connection with merchandising, labor, and the problems of raw material supplies.

WMC Revises List of Essential Jobs

Last month the War Manpower Commission issued a revised list of essential industries and activities, as of April 17th. Repair Services heads a large and varied group which includes repairs for radios, refrigerators, and electric appliances. The specification is made, however, that consideration be given only to individuals qualified to render all-around repair services on the type of equipment listed, as required for the minimum essential needs of the community.

Drastic Cut in Use of Osmium Alloys

Osmium alloys, used in the manufacture of long-life phonograph needles come under a curtailment order issued recently by the War Production Board. It is the purpose of the order, M-302, as amended, to conserve the total supply of osmium for military purposes, with the exception of certain existing stocks which are not suited to the military needs. Differing from the original order, which allowed unrestricted use of types of the alloy, termed non-military," and which were produced prior to the issuance of the order the amended regulation will compel a 50 per cent curtailment for non-military purposes.

The osmium alloys, used also in the manufacture of fountain pen points, are not used in the manufacture of the ordinary phonograph needle.

Private Refrigerator Sale Under New Ruling

New regulations covered by Rev. MPR-139, Office of Price Administration, affects the sale of used refrigerators by private owners as well as by dealers. This bulletin outlines all changes in detail, and lists schedules of ceilings on well-known brands.

Other important features of the new order are that the guarantee period has been shortened to 90 days, and ceilings on rentals of used refrigerators have been established.

OPA Explains Tax On Records

On sales of new phonograph records that result in a fraction of a cent, the amount should be reduced to the nearest lower cent if less than one-half cent, and may be increased to the nearest higher cent if the fraction is one-half cent or more, according to a statement recently issued by OPA.

According to OPA, for a sale by a retailer, the calculation should be based on one record as the unit of sale, regardless of the quantity included in such sale. For sale by a manufacturer or wholesaler, figuring should be based upon the quantity included in the sale.

Provisions were covered in Amendment 3 to Regulation No. 263, and became effective early this month.



"I suppose the war precludes the possibility of my getting a double electrode phanatron gaseous discharge rectifier tube, having an ambient temperature range of between 15 and 50?"



HICKOK

Serves-



IN THE AIR



ON LAND

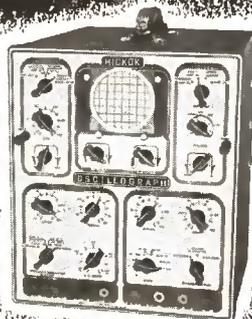


ON THE SEA



CRYSTAL
CONTROL
MICROVOLT
GENERATOR
MODEL 19X

OSCILLOGRAPH
MODEL RFO-5



Yes, Hickok Indicating Meters are serving all branches of our Armed Forces. Some of these are standard instruments but many are special instruments developed for specific purposes.

And Hickok Radio Testing Equipment including many new instruments serves the communications branches of our Armed Forces in helping to keep Radio and other Communications Equipment in tip-top condition.

For the duration output will be largely required to meet needs of these War Services.

But these improved and newly developed meters and radio service instruments will be available after the emergency is over. High Quality is being maintained and will always feature all Hickok Products.

Hickok

ELECTRICAL INSTRUMENT CO.

CLEVELAND, OHIO • U.S.A.

Serviceman Okays

• "I have used girls for radio repair work since 1935, and have found them very satisfactory," reports Ben De Young, veteran radio man, Ithaca, N.Y. The De Young Radio & Television Shop is located at 126 S. Aurora St.

This repair expert commented that "I have noticed at various times articles in your magazine about using girls for radio repair work. These articles seemed to stress the point that it was something new, which interested me, as I have used girls for this work for the last 8 years, and have found the idea to be very practical."

Best Bet Today

Mr. De Young continues as follows:

"The fact is, at the present time, with one efficient girl, I am turning out more radio repair work than I used to turn out with two men, because you cannot hire honest-to-goodness service men. What good service men were available were hired by manufacturers and jobbers, as they, of course, can pay much better salaries than independent service men.

"The small dealer has to take a chance on hiring an inexperienced man. My experience has been that if he turns out good, some jobber takes him away; if he does not turn out good, I can't use him, either.

"So the solution I found was to have the finest most scientific test-equipment available. With that equipment, I do a fast job of diagnosing, letting the girl do the actual replacing of coil, condensers—whatever parts are needed—while at the same time, I am diagnosing another set. A service man's time is too valuable to be wasted taking radios out of cabinets, putting them back in cabinets, soldering in volume controls, condensers, resistors, coils, etc.

Fleet-Fingered Femmes

"A girl has more agile fingers, and does a neater job, in general, than a man. My present girl has worked for me for over four years. She can read schematics, saves me time by looking up technical data such as: values of volume controls, speakers, coils, resistors, condensers, etc. I know that, at present, there is no man available who could replace her.

"Some girls are more adaptable, of course, to this type of work than others. Lately we have had more work, and I have hired some part-time help; but I have found that if you show the girl that you have confidence in her ability to do the job, she won't let you down."



Above, Miss Gould meets a customer and takes the data on the set to be repaired. Below, Mr. De Young checks the set and finds that the trouble is noisy L.F. coils. At right, Miss Gould solders in the new coil and finishes the job by putting the chassis back into the cabinet.



"Repair Girls"

The work bench at the De Young shop is not arranged according to the "panel" system. There is a bench 17 ft. long, 32 in. wide, for the work, and one foot above this is a 12 in. shelf for test equipment, which runs the full length of the bench.

Ready for Rush Jobs

"With this method, we can do a number of operations at once. For instance if you are working on one job and something comes in that's more urgent, you do not have to disconnect speakers and remove this job from the bench. Just move your equipment to some other part of the bench and do the rush job. This saves a lot of time."

Philco School Aids War Effort

One of the outstanding contributions to the war effort is the Philco Training School, at Philadelphia, founded February, 1942, by arrangement between the Training and Installation Division, Philco Corp., and the Signal Corps of the Army, for the instruction of civilian Signal Corps employees in the principles and maintenance of advanced air-borne electronic equipment.

The need for men with this specialized training, however, became so urgent that the number of students enrolled in the school commenced to exceed the original limits almost immediately, and at request of the Signal Corps, Philco enlarged the size and scope of the school, in August, 1942,

and in view of the continued growing demand for trained technicians, has had to add courses and capacities, until today the school is giving instruction to about two thousand students, including enlisted reservists, civilians and enlisted personnel. It is not only the first but the largest commercially operated training school in the country devoted exclusively to instruction in air-borne radio communications equipment for the Army and Navy.

The school is divided into three separate divisions. The General Air-borne Division, the Advanced Training Division and the Navy Division.

To welcome and instruct students entering its school, Philco issues each trainee a descriptive book, profusely illustrated and prefaced with a welcome from Henry I. Paiste, Jr., manager of the training and installation division, and with a message from Colonel John H. Gardner, of the Signal Corps, who is director of Signal Corps Signal Service at Wright Field, Dayton, Ohio.



More Changeover Circuits

• Tube shortages are still the greatest problem for the serviceman. The immediate answer to this problem is substitute types. In some cases this method of solution is not profitable. You cannot compete with a service shop having access to the types of tubes you intend to replace by circuit changes. The shortages must be about equal among all shops in your district.

In the March and April issues of *RADIO RETAILING TODAY* two articles gave the methods of handling some of the more pressing shortages. Some more replacement suggestions from serviceman M. G. Goldberg, 142 E. 4th St., St. Paul, Minn., follow.

Changing 7C6 to 14B6

Notice that the 14B6 tube has the same filament current requirement of 150 ma. as does the 7C6. These two tubes are directly interchangeable with no appreciable change in performance. The 14B6 duo-diode triode is generally more available than the 7C6. It will be noticed that the 7B6 is the tube given as equivalent to the 14B6, but they are not interchangeable, however, as the 7B6 requires 320 ma. of filament current. Use of the higher filament voltage tube will result in only a loss of about 7 volts over the remainder of the string of tubes.

Notes on the 12A8

The 12A8 pentagrid converter can, in almost every case, be replaced with the triode-hexode converter, 12K8. Although the 12K8 has a different internal construction, the lead connections are such that a direct replacement is possible. In some few cases it may be necessary to put a 300 ohm (approximately) resistor in series with the oscillator plate lead (pin No. 6) right at the socket. It may be required if the oscillator signal is too strong.

Another substitution for the 12A8 is the 14B8 in the loctal series. Here, it will be necessary to change the socket, of course. The tubes have identical characteristics otherwise. Be sure to ground the locking lug on the socket of the 14B8. The bottom view socket diagrams for these tubes are given in Fig. 1.

The 12A8 has a grid cap while the 14B8 is single ended. The new grid lead should be as short and free from other wiring as possible. Be sure to realign the set and check for tracking.

If the 6SG7 and 12SG7 tubes are available, they can be used to replace the 6SK7 and 12SK7 respectively. The SG tubes have a transconductance about double that of the SK tubes,

so greater gain may be expected, with also the possibility of oscillation. Since the tube capacities differ, realignment will be necessary. It will also be noticed that the SG tubes have two leads to the cathode, one terminating at pin No. 5 and the other at No. 3. This design is for the purpose of reducing the effects of cathode lead inductance. The suppressor of the SG tube is connected to pin No. 1 with the metal shell.

In the SK tubes, the suppressor is brought out to pin No. 3 and generally connected to pin No. 5 at the socket. Pin No. 1, the shell is generally grounded. When using the SG as a replacement, no leads should be connected to pin No. 3 except a jumper to pin No. 5. In most sets the replacement is direct and no changes are required. In some cases it may be necessary to remove the ground lead from pin No. 1 and connect pin No. 1 to No. 3.

Another substitute for the 6SK7 is the 6SD7 which has the same base connections but a higher value of transconductance.

Complete Conversions

Here is a plan that kills three to five birds with one throw. Suppose a customer comes into the shop with several of the hard-to-get 12, 35 and 50 volt tubes defective or burned out. Making substitutions for each of the bad tubes will run into considerable cost. Why not suggest a changeover to 6.3 volt tubes which in most parts of the country are more plentiful than the higher voltage types. In most sets this will mean only installing the new tubes and putting in an additional

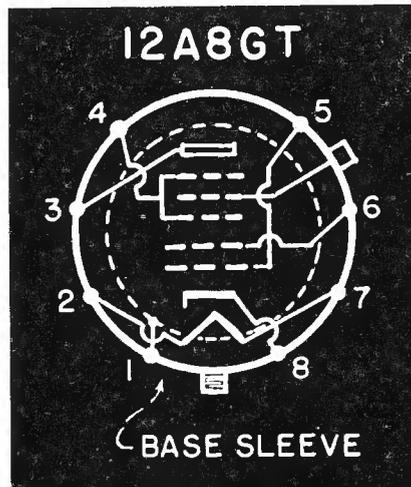


Fig. 1—Base diagrams for interchangeable converter tubes. Loctal socket must be installed and center lug grounded. See text for details.

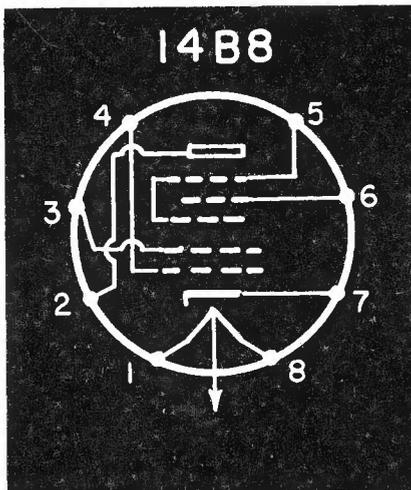
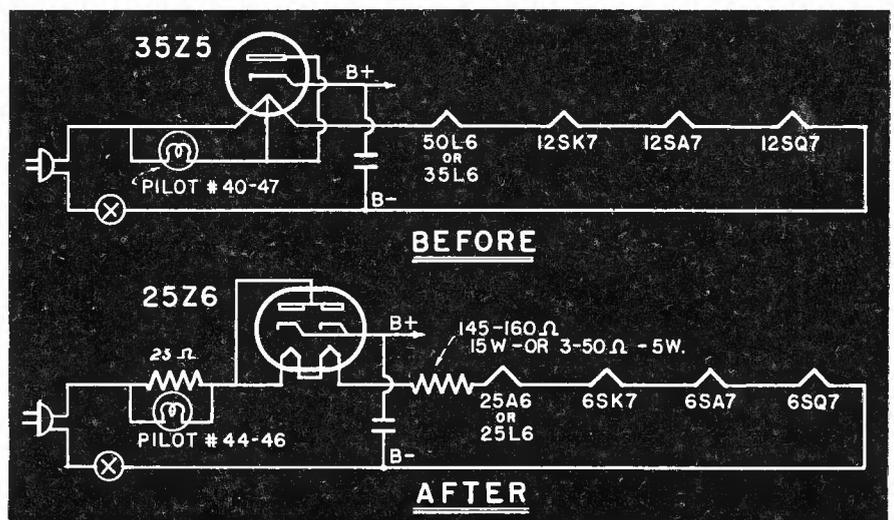


Fig. 2—Circuit changes required to use 6-volt tubes in former 12-volt circuit. Note that the plate of the 25Z6 is connected to the line through a 25-ohm pilot light resistor and the extra 145-ohm dropping resistor follows the 25Z6 in the string.



for Missing Tubes

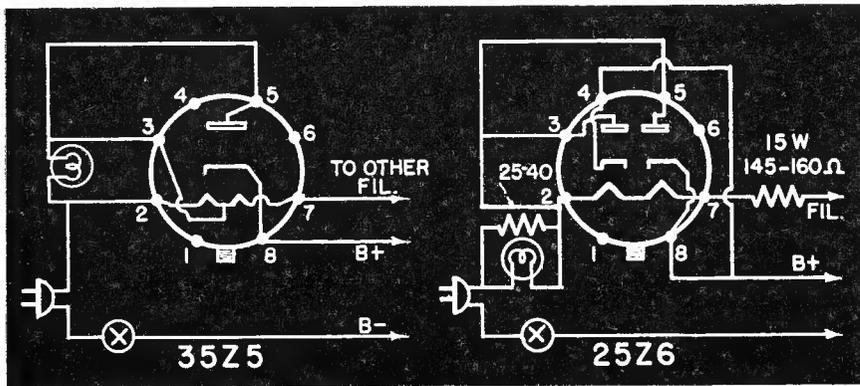


Fig. 3—Base wiring for 25Z6 shows only few changes are necessary for old 35Z5 circuit. See text for full details.

series dropping resistor to make up the full line voltage.

For example, if the set used one 12SA7, one 12SK7, one 12SQ7, one 35Z5 and one 50L6, the replacements might be 6SA7, 6SK7 (or 6SG7), 6SQ7, 25Z6 and 25L6 or 25A6. The total drop represented by these replacing types is 69 volts and the series filament current is 300 ma. The correct dropping resistor is (115-69)/0.3A or 153 ohms. The power to be dissipated is 15 watts. The new dropping resistor can be a line cord, a 15-watt resistor of 150 ohms or 3 five watt resistors of 50 ohms each.

The good tubes left over in the replacing process become available for sale as used tubes. Servicer Goldberg reports that his shop can't get enough second-hand tubes. They do not guarantee the length of life or service from the tubes and tell the customer frankly what the tubes are and the shape they are in.

When installing the series dropping resistors, place them away from filter and other condensers and give them as much ventilation as possible. The only rewiring necessary is the change from 35Z5 to 25Z6 and this is minor. The "before and after" circuits are shown in Fig. 2.

If the pilot light was originally across the section of the 35Z5, it will be necessary to insert a 25 to 40 ohm resistor in the filament string and connect a No. 44 or No. 46 pilot bulb across it. Be sure to connect the 150 ohm dropping resistor after the 25Z6. The wiring for the 25Z6 in comparison to the old 35Z5 is shown in Fig. 3.

Replacing the 3Q5

While this tube is used in portables, many of these sets are being used regularly on AC-DC. If not available, the 3B5 can be used in practically every case with little noticeable

change in performance. The 1T5 can also be used as a replacement in an emergency. In the 3Q5 circuit, the filament center tap No. 8 pin, is often bypassed back to the negative end of the string. Since in the 1T5 there is no connection to pin No. 8, a jumper should be connected between No. 8 and No. 2 or No. 7, whichever gives the lowest hum level.

Be sure to tell the customer what you are doing or have done to the set. Leave a card inside the set showing the tube replaced and the substitute used so the next serviceman will know what changes have been made.

Converting Receivers for 32-Volt DC Operation

In many rural communities, radios are battery operated. Scarcity of dry batteries has left many sets "stranded." Many of these battery receivers and some straight AC sets can be rewired for 32-volt DC operation from farm electric light plants.

Some of these conversion jobs have

been done by Robert Schlosser of Schlosser Radio Service, Pontiac, Illinois.

A typical change-over for an AC set is shown in accompanying diagram. Since only 32 volts are available for plates of tubes, plate dropping resistors in RF, IF and oscillator stages should be removed. Grid bias resistors will have to be reduced or removed entirely from the RF, IF and first audio tubes.

Rewire Filaments

The filaments are rewired to total 32 volts, using series dropping resistors where necessary. In the circuit shown, the bias for the output tube is obtained across a 7-ohm resistor in the filament string.

Blocking condensers should be used between antenna and ground leads to set. A small paper by-pass should be connected between B+ and chassis. Electrolytics are not recommended, since a reversal of the power cord might damage the condenser.

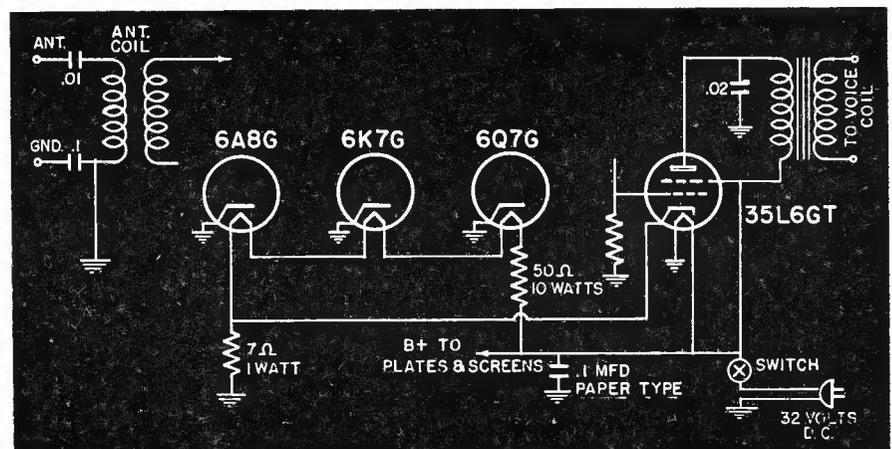
Battery sets and AC-DC receivers usually make the best subjects for conversion.

J.F.D. Releases Bronze Cable

According to an announcement made by the J.F.D. Mfg. Co. of Brooklyn, N. Y., the WPB has authorized them to sell a limited quantity of bronze radio dial cable, without preference rating. The cable is to be sold in 25, 50 and 100 ft. lengths only.

In offering this cable to its jobbers, the company points out that due to restricted sale of this cable during the past year, there now exists a shortage, and urges immediate action on the part of jobbers who desire to get their share.

Typical changeover for an AC set.



Service Notes

Southern Repairman Gives Consistent Wartime Service

After building up one of the outstanding radio service businesses in the South, E. L. Griffin, whose shop is in Meridian, Miss., finds that the only thing to do now under present conditions, is to keep going—carry on—despite the fact that he cannot get help, and that he, in common with others, finds the parts situation a constant headache.

Since 1936, he had been employing 5 men and a girl, and using 3 sound trucks and 2 service cars, and has been doing repair work exclusively, under the slogan, "Radio Service is our Profession—Not a Side-line." Griffin always felt that this specialized type of work put him in a strong position to gain confidence of the public to whom he had nothing to sell but service, and that therefore, customers were never concerned over the possibilities of a "sales talk" developing about trading in an old radio.

When the government officials looked over the radio service shops with a view of classifying them as to the service charges they could make, Griffin's Radio Service was put in the \$3 an hour class, the highest rating allowed. It is interesting to note that this \$3 per hour service charge is exactly the rate that the shop has been charging since it was started.

Successful Teacher

Griffin points with pride to the fact over sixty men and a couple of women he trained in radio are now serving in the armed forces in the same field. A further indication of his patriotism and interest in the successful progress



Repairman Griffin . . . eliminated sales talk.

of the war, is seen through his efforts to help keep down subversive activities. Not long ago he went to the office of the FBI and demanded that they investigate every radio service man in the Meridian territory, putting up such a strong argument that they did just what he demanded. Consequently, every radio man, Griffin included, was carefully investigated by Hoover's men. Due to the observance of secrecy, results achieved were not disclosed, but the credit for the idea goes to Griffin. More than one tip this Mississippi man has given to the FBI has resulted in the seizure of

some contraband short wave receiver, due to the vigilance of Griffin in his dealings with strangers and their repair jobs.

Started with \$3.10

The fact that he has been able to build up such a business is all the more remarkable when it is disclosed that he started in for himself with a capital of \$3.10, shortly after graduating from high school. At this time he rented space in a garage, giving the garage owner 25 per cent on all business as rental. Prior to this undertaking, he had worked as an "extra repair man" after school hours. He was 12 years old when he first took the job as an "extra," and through a policy of honesty, fair dealing and a zealous guarding of his credit, he has been able to achieve great success.

Griffin, whose business plans and routine have been upset almost overnight, is just another service man determined to carry on during these critical times.

Allied Has New Circuit Handbook

"Radio Circuit Handbook" is the title of a new publication published by Allied Radio Corp., 833 West Jackson Blvd., Chicago, and selling for 10c.

Containing radio and electronic circuit information, with analyses, comparisons and discussions, the method of presentation was planned to make this book a useful source of material for classroom and home study as well as a reliable guide for experimenters and builders. The fundamental principles of radio are explained and illustrated in sixteen basic circuits. In addition to a schematic pictorial diagram for each unit, ranging from simple one-tube sets to superheterodynes, the application of principles to various parts of receivers, transmitters and other electronic units is shown in twenty-five additional circuits of conventional radio and electronic units.

The booklet is 8½ x 11", and has 40 pages.

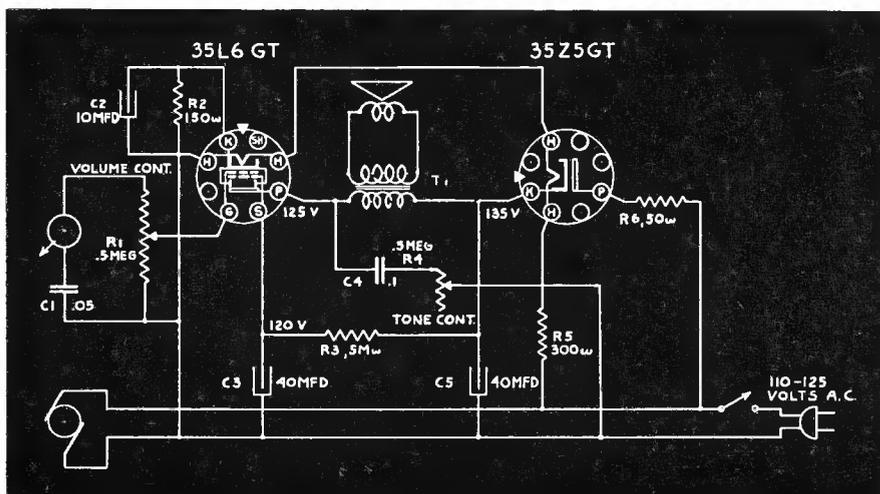
Record Player Model 581 Data

This Silvertone electric phono circuit employs a five-inch PM speaker, tone control in plate 35L6 tube. The motor and amplifier are controlled by the switch on the tone control.

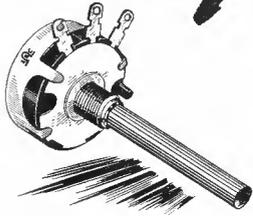
This player is for use on AC only. The correct power consumption is 40 watts.

The rectifier and amplifier tubes used are scarce in some localities and substitutes may have to be used. See March, April, and May issues of RADIO RETAILING TODAY for necessary changes.

Electric phono circuit (see story at right).



Congratulations...



IRC CONTEST WINNERS!

In accordance with the considered opinion of the Judges, five gentlemen have been named winners in IRC's "Here's How" Volume Control Contest and each has been sent a \$100 U. S. WAR BOND—in all, \$500 in Bonds. Four winners are pictured . . . no photo available of the fifth, Mr. W. Pelham, New Harmony, Indiana.



E. PAT SHULTZ
10412 McCormick St.
North Hollywood, Calif.



JAMES G. RAPP
83 Raynor Street
Freeport, N. Y.



RAY PENTECOST
4314 Elston Avenue
Chicago, Illinois



CARL W. CONCELMAN
Riverview Drive
Brielle, New Jersey

and Thanks...Everybody!

Yes, "thanks a million" to you Radio Service Men of America for your response to IRC's "Here's How" Volume Control Contest! You really gave the judges a tough problem in trying to pick the five best ideas from among the hundreds received.

Fine Spirit Shown

While everyone can't be a winner, all of us can be proud of the enthusiastic way in which you cooperated for the good of the Industry. You not only came through in a manner that far exceeded even the most optimistic expectations but many of you wrote stating that whether you won or not, you hoped your experience would be helpful to someone else.

Many Original and Valuable Ideas

We asked for ideas and we got them! We asked you to tell how you were able to replace a volume control and get the radio set working satisfactorily—when you couldn't obtain the unit you would ordinarily have used.

From every section of the country suggestions poured in . . . emergency repair methods relating both to mechani-

cal changes in the controls and to electrical changes in the circuits, which would do the trick when exact duplicates were not obtainable.

We plan to make the most practical ideas available to Radio Service Men throughout the Industry. Watch for further announcements.



INTERNATIONAL RESISTANCE COMPANY

Dept. P • 401 N. BROAD STREET • PHILADELPHIA, PA.

Service Notes

Repairman Ready for Double Duty

A New Jersey radio dealer and serviceman, C. V. Huber, whose shop has served the town of Edgewater since 1925, realizes the importance of keeping civilian sets in repair, and is doing all he can to that end. Yet he feels that he should have a more direct connection with military effort, and has announced his intention of taking on a radio defense job, too.

"It is necessary for the sets in the home to be kept playing so that people may receive important government news," says Mr. Huber, "but I know that the War comes first." It is Mr. Huber's idea that he can do both. "I would like to get into an important defense job, and I would then find the time to service a reasonable number of civilian sets in the evening."

When he was two years old, Mr. Huber was stricken with infantile paralysis. As a result of this he has to go about on crutches, but does not allow this to prevent him from maintaining an active career in radio. With help and transportation shortages, Mr. Huber walks to the homes of many of his customers, and where distance prevents this, he uses buses or taxicabs. His calls embrace a wide territory in New Jersey, and he estimates that he has repaired over 20,000 sets.

Despite what many people would consider a handicap, his service experience has been varied, and includes taking care of work on steamships tied up at New York piers. This work involved supervising of ship radios and communications systems.

"In radio repair work, I like tough problems. I like to study complex circuits." Possessing an analytical mind, and with experience both practical and theoretical, this thirty-six year old service man, accepts the trials of war-time work with fortitude—and with an offer to help. His shop is at 5 State Highway, Edgewater.

Electric Phonograph Circuit Data

This Silvertone model 5828 record player features an automatic motor switch to stop the operation when the pickup reaches the center of the record.

The circuit, shown in accompanying diagram, is a standard AC-DC amplifier. A shunt-type control is used across the crystal pickup.

The 35L6 and 35Z5 tubes used in this circuit are scarce in many localities. Many substitutes can be used, however. See articles in March, April and May issues of **RETAIL RETAILING TODAY**.

Regulations to End Regulations

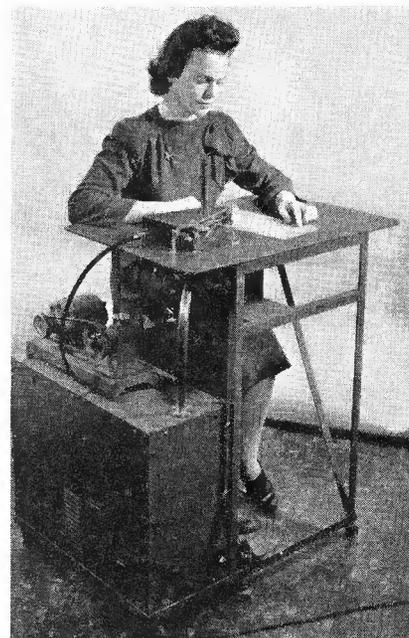
Plenty of work has been done by the experts on the framing of new rules and regulations for radio repair charges. However, the radio men at Radio Margo shop, Oakland, Calif., believe that a few points may have been overlooked. Accordingly, Margo has good-naturedly cooked up its own set of rules for service charges:

1. ENTERING RADIO STORE
 - Front Door 50c
 - Back Door 25c
2. SPITTING ON FLOOR
 - Plain 5c
 - Tobacco 10c
3. ASKING FOR SPECIAL FAVORS
 - Free Tube Check-up... \$1.00
 - Discount on Tubes... 5.00
 - Free Estimate 1.00
 - Using Telephone 50c
4. ARGUING ABOUT REPAIR CHARGE
 - If Quarrelsome \$1.00
 - In Civil Manner 50c
 - Second Time \$2.50
 - Third Time 5.00
5. SPEAKING OUT OF TURN
 - To Servicemen \$5.00
 - To Cashier 50c
 - To the Boss..... No charge
6. LEANING ON SERVICE BENCH
 - One Elbow 50c
 - Both Elbows \$1.00
7. REQUESTING REDUCTION OF LABOR CHARGE
 - In Hopeless Manner ... 50c
 - In Persistent Manner.. \$5.00
8. TELLING JOKES TO AN EMPLOYEE
 - An Original 50c
 - Second Hand \$3.00
9. DELAYING THE BOSS
 - Keeping Him from
His Lunch \$ 10.00
 - From His Golf Game.. 100.00

Radio Operated Sewing Machine

Developed experimentally in the RCA Laboratories at Princeton, N. J., a radio sewing machine promises to become one of the new radio-electronic devices of the post-war period.

The machine uses radio-frequency instead of needle and thread, and instead of woven cloth, it utilizes thermoplastics, the new synthetic ma-

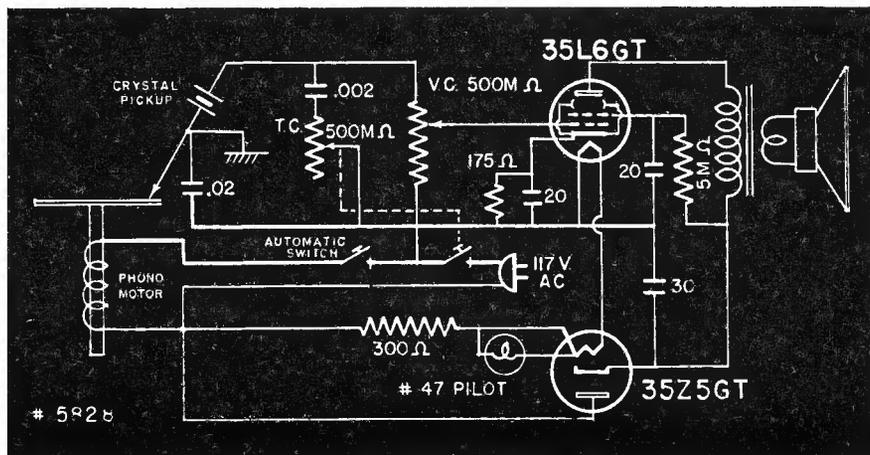


Radio sewing machine stitches a seam air and water tight.

terials, used widely in the making of raincoats and caps, weather balloons, and in the packaging of many types of oils and foods.

The machine which is said to stitch a solid seam that is air and water tight, and is stronger than the material itself, is another advance in the new field, termed "Radiothermics" by RCA scientists.

Record player features automatic motor switch (see story at left).



The SPRAGUE TRADING POST

EXCHANGE — BUY — SELL

Your Own Ad Run FREE

The "Trading Post" is Sprague's way of helping radio servicemen obtain the parts and equipment they need, or dispose of the things they do not need during this period of wartime shortages. Send in your own ad today—to appear free of charge in this or one of the various leading radio magazines in which this feature appears. Keep it short—WRITE CLEARLY—and confine it to radio items. "Emergency" ads will receive first attention. Address it to:

SPRAGUE PRODUCTS CO., Dept. RRT 35
North Adams, Mass.

TUBES WANTED—Will pay cash for any quantities of 1C6, 24, 35, 47, 12K7GT, 12SA7, 35L6GT, 25L6 tubes in original cartons. Write Kepler's Radio Service, Calgary, Alberta, Canada.

WANTED FOR CASH—Signal generator, tube tester, and Rider's Manuals from No. 10 to 13. All must be in perfect condition. Eugene Gilbert, 1296 Sheridan Ave., Bronx, New York.

P.A. SYSTEM FOR SALE—7-tube, 30-watt, 6L6 output; 2 mike, 1 phono input. Two 12" PM speakers, Shure crystal mike with stand. Only slightly used. In A-1 condition. A bargain at \$75. Blackorby Movie Circuit, Noring, Mo.

SERVICE STOCK FOR SALE

Have joined Signal Corps as radio instructor and offer varied stock of parts and eqpt. for immediate sale. Must sell quickly. Stock includes brand new C-D capacitor bridge with tube. .00001 to 50 mfd; Triplett ohmmeter 0 to 10 meg.; a B eliminator, gives 185 volts; a 6-8 volt DC motor generator; dial lites; metal tubes; resistors; condensers, volume controls—in fact, almost anything you might want. Write for details. Name what you need. E. O. Cole, R.E.; 4714 W. Erie St., Chicago, Ill.

WANTED—A set analyzer with plug-in unit. Any make considered. State full details and price. C. W. Cassel, 1119 Walnut St., McKeesport, Pa.

WANTED—Signal tracer such as Rider chanalyst, Hickok or Webber. Write, giving particulars. John Cloyd, 507 So. 3rd St., Hamilton, Ohio.

TUBES WANTED—Want twelve 50L6 and twelve 35Z5 tubes. Will pay 20% off list. Advise and we will send deposit with balance COD. Charles Rudberg, 310 W. Cherry St., Shenandoah, Pa.

METERS TO SELL OR TRADE—1 Weston meter 506 type, 110—0-5 DC volts. 1 Weston 506 type S38J, 0-3 DC volts and 1-10M ohms. 1 Weston type 425 thermo-milliamper 0-120, resistance 5.2 ohms. Also 1 Weston model 506 type F01—0-5 DC milliammeter, this one in need of repair. Make offer for one or all. C. G. Armstrong, Jr., 504 N. Collins St., Plant City, Fla.

TUBES FOR SALE—We have an over-supply of the following new tubes which are offered for cash, 20% in advance, balance COD; 2A7; 85; 31; 32; 1A6; 22; 57. Std. price less 40%. Warners, 125 S. Main St., Wilkes Barre, Pa.

WANTED—Filament meters D.C. 0-5 or 0-7, similar to those on Stromberg Carlson 601, RCA 25, 28, etc. Also dry disc rectifiers, or chargers. Can use old types used with field supplies on speakers if they have transformers with them. Also want 2" 0-10, 0-50, 0-100 d-c ma. meters; and 20 to 30 ohm wire wound resistors (old filament center type will do). Send full data and name price in first letter. R. N. Eubank, 1227 Windsor Ave., Richmond, Va.

MOTOR GENERATOR WANTED—Will buy for cash, 110 A.C.V. 60 cycle input, 32 D.C.V. 100-watts (or more) motor generator. Must be in working order. State price, or what do you want in trade? Midway Electric Co., Adrian, Minn. (Route 1).

URGENTLY NEEDED—Need test equipment to replace that destroyed by fire: good signal generator; tube tester; and condenser tester. Send details and price. Al. B. Werhan, 103 Westley St., Manlius, N. Y.

SWAP OR SELL—Will sell or trade for communication receiver, Vibroplex bug, Bud oscillator, RCA signalgraph with five tapes, Mac straight key, headphones. Vernon Robertson, 2018 College St., Columbus, Miss.

WANTED—Urgently need field supply delivering 30 watts, and small p.m. tweeter speakers. Will purchase Scott Philharmonic or Philharmonic Electra set, FM and AM tuner or combined unit, high fidelity amplifier. J. E. Cooper, 445 E. Gd. Blvd., Detroit, Mich.

FOR SALE—Mac bug (list \$11.85) and Howard 435 communications receiver. Both in good condition. Highest offer for either or both. Modern Radio Service, 532 Brady St., Davenport, Iowa.

WANTED FOR CASH—RME-99 receivers in good condition, complete with speakers preferred. Adequate priority supplied. C. L. Janik, 9 Rockefeller Plaza, New York, N. Y.

CHANALYST WANTED—Will buy good, modern unit of this type of any reliable make. J. T. Matthews, 1106 Decker St., Monongahela, Pa.

WANTED—Want multimeter in good condition; also ICA band-switching units; transformers; 1500 I.F., etc. Will sell or trade rugged power supply; variable condensers; misc. parts; projector; 8" magnetic speaker, etc. Joseph Lazerri, 300 N. 8th St., Brooklyn, N. Y.

WANTED—A set tester or volt-ohm-milliammeter of reliable make; also a good condenser tester. Give price and details. John Love, 396A Decatur St., Brooklyn, N. Y.

EQUIPMENT FOR SALE

GTC power transformers; Meissner push-button remote controls model 9-1000; dynamic and p.m. speakers; 6-volt farm radios; ham tubes; chokes; Supreme model 529 frequency modulator; Supreme analyzer Model 333 de luxe with Supreme model 593 push button type adaptors for analyzer; also a stock of tubes and several used radios. Write for details. Goodwin Radio Shop, Rankin, Illinois.

CASH OR TRADE—Will pay cash or trade test equipment, new auto radios, or small portable amplifier for four good new (or used) reflex horns and P.M. units. Radio Service Co., Box 109, Fayetteville, North Carolina.

TUBE CHECKER OFFERED—Will sell a portable tube checker, or trade for a late type counter model tube checker that checks peanut tubes. T.X.T. Radio Service, 701 Hogan St., Houston, Texas.

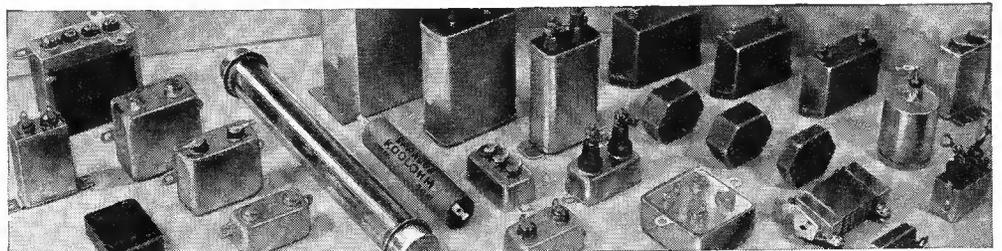
WILL EXCHANGE OR SELL—Two RCA No. 43205 phono motors; 1 Eicor dynamotor 6V d-c to 750 d-c; 1 Freed 7186 Majestic audio transformer; 1 Underwood typewriter No. 5; 8 Clarostats (20W. 200 ma.); 6 Clarostats (0 to 5 meg. 20 ma.); 1 power Clarostat (200 to 100,000 ohms 80W); Weston 0-25 ma. 301 with laboratory stand. Want Solar examerter; Hickok Traceometer; Dumont or Hickok 3" cathode ray scope; Rider's manuals; Craftsman or Delta saw (band or circular). R. G. Devaney, 216 So. 60th St., Philadelphia, Pa.

WANTED—Will pay cash for good volt ohmmeter; DB meter, and thermammeter. William A. Conklin, 70 Community Drive, Cranston, R. I.

COM. RECEIVER FOR SALE—Will sell 16-tube Patterson communications receiver, Model PR16 for \$99.50 complete with speaker. Would like to buy condenser checker. Perelman's, 129 E. Washington St., New Castle, Pa.

SIGN WANTED—Want neon "RADIO" or "RADIO SERVICE" sign. Describe fully and name your lowest price. Thomas Radio Service, 205 E. Main, Urbana, Ill.

THESE ARE THE LATEST SPRAGUE STYLES



Here are some of the Sprague Condenser and Koolohm Resistor types being supplied in tremendous quantities for war requirements. Many of these represent outstanding engineering achievements which will be reflected in Sprague radio service and industrial components for post war needs. Meanwhile—as always—you can count on Sprague Con-

densers for utmost dependability for today's radio service needs. Busy as we are with war work, we're also doing our level best to keep you supplied with Atom Midget Dry Electrolytics, TC Tubular By-Pass Condensers and other types needed to keep radios working on the home front. 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

Service Notes

Judges (left to right) of IRC's contest, Jesse Marsten, IRC's chief engineer; Joseph Kaufman of the National Radio Institute; William Moulic, Radio Retailing Today's service editor. E. E. Johnson, IRC's volume control specifications engineer, is at the extreme right.

Servicemen Winners Named in IRC Volume Control Contest

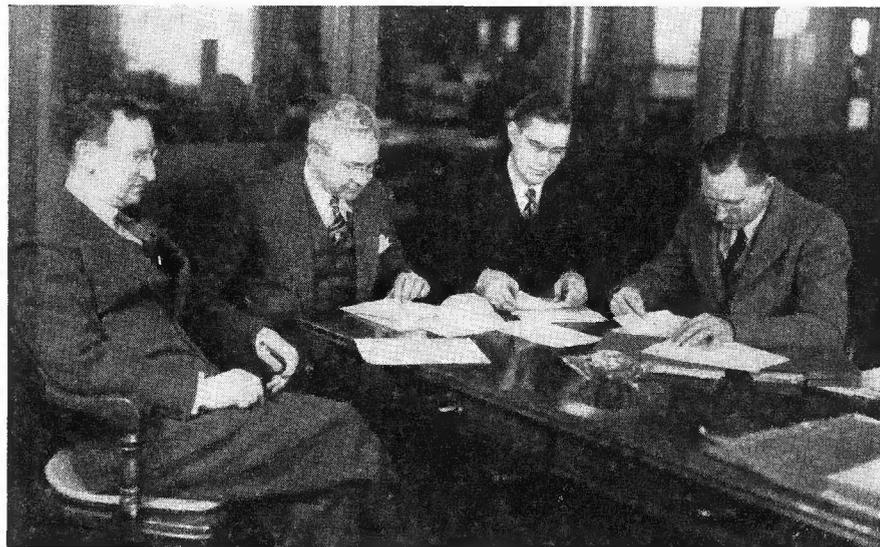
Again the ingenuity of U. S. radio servicemen was proved when in response to International Resistance Company's "Here's How" Volume Control Contest, hundreds of original-idea entries were received. The judges were Joseph Kaufman of the National Radio Institute; William Moulic, Service Editor of *Radio Retailing Today*; and IRC's chief engineer, Jesse Marsten.

Awards were made to James G. Rapp, Freeport, N. Y.; Wilbur Pelham, New Harmony, Ind.; E. Pat Shultz, North Hollywood, Cal.; Carl W. Concelman, Brielle, N. J.; and Ray Pentecost, Chicago, Ill. Each was notified that he had won a \$100 U. S. War Bond.

Mechanical and Circuit Changes Eligible

IRC's "Here's How" Contest asked servicemen to suggest ways and means of keeping home radio sets functioning satisfactorily when volume control trouble developed and the replacement unit which would normally have been used to correct the situation was not obtainable. Both mechanical and circuit changes were eligible and replies were fairly evenly divided between these two classifications.

Mechanical repairs suggested fell mainly in the category of using the old shaft and adapting it through the use of specially devised couplings. Another group in this classification appeared to make out well by making



use of parts from old controls in their stocks.

Electrical repairs were effected chiefly through changing the original circuits. The outstanding case of this type of repair was the substitution of a single control for a dual type by means of a simple circuit change. A dual control, one section of which had been used to control screen voltage and the other to control antenna input, was replaced by a single control in the cathode and antenna circuit. In another instance a dual control was used to obtain tone compensation and the dual unit was replaced by a single control with tap for tone compensation, using proper electrical constants in the compensation circuit.

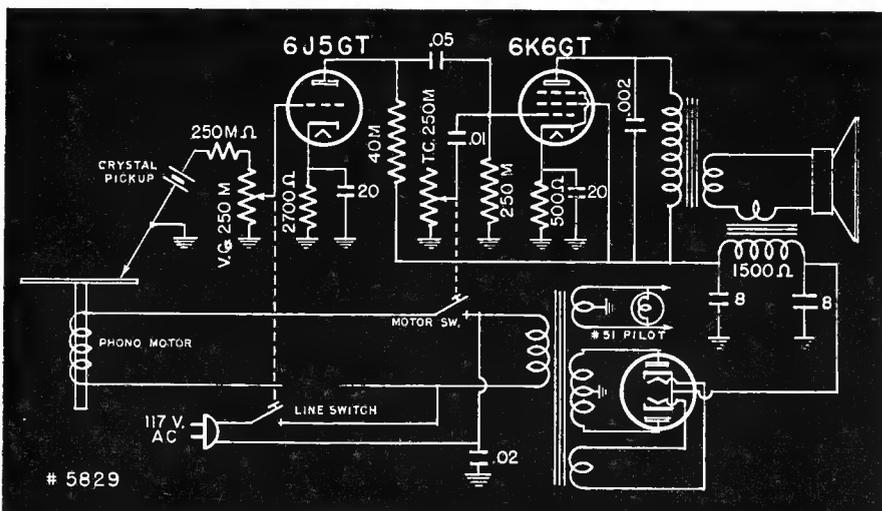
IRC is planning to make the best of the solutions available at an early date to all radio servicemen.

Dealer Paper Work Cut by the OPA

Warning that there still remains an "irreducible minimum" of reports that must be kept, the Office of Price Administration, states that it has eliminated 70 of the 460 price reports and questionnaires business men have been required to fill out and file with its organization.

Price Administrator Prentiss M. Brown states: "Since the beginning of the war program, American business men have been burdened with hundreds of government forms and questionnaires. Filling out these reports and returning them to the government agencies has required time, patience and expense. Many of them were necessary, but wherever possible in the future we are going to try to give the question marks in the government printing office a well-earned rest."

Phono player all-AC circuit (see story at right).



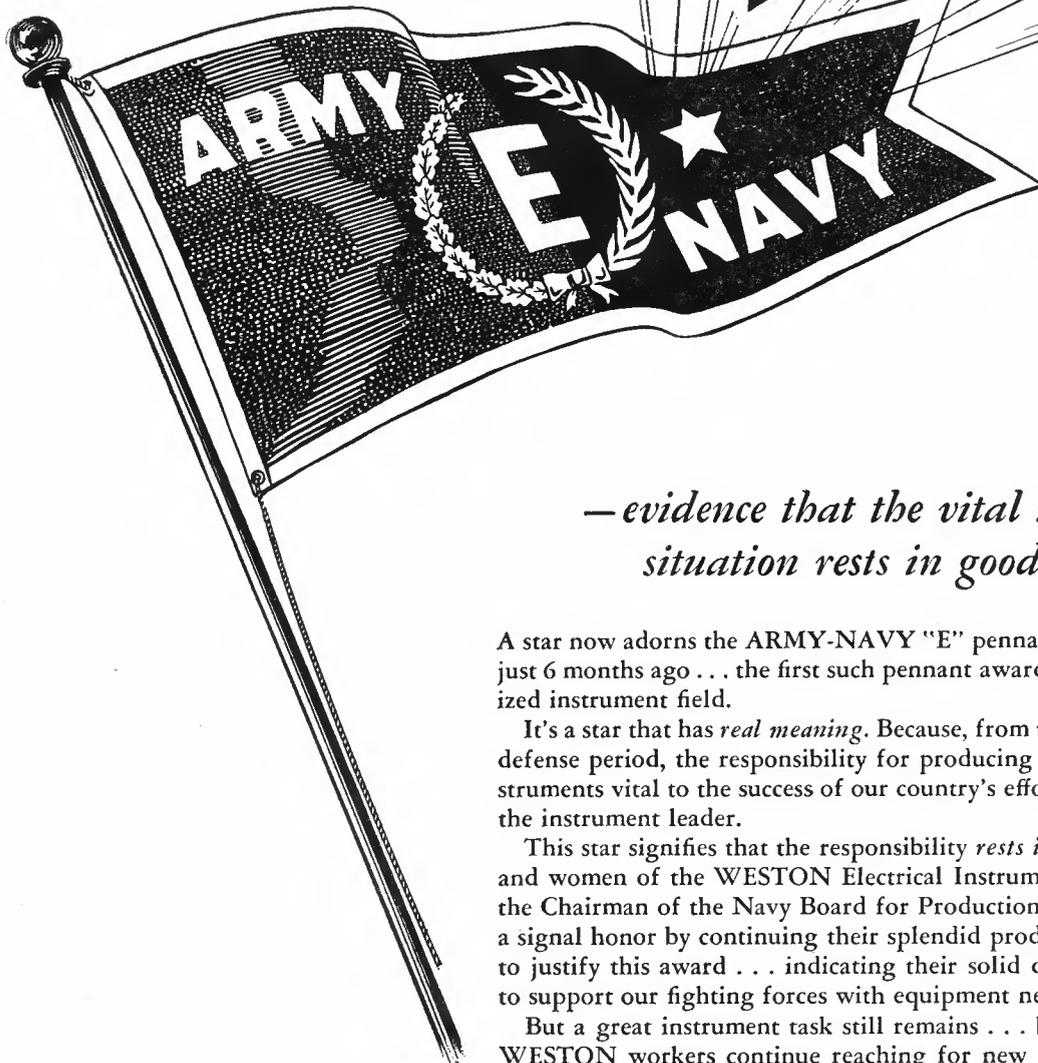
AC Phono Player Model 5829

This three tube Silvertone player circuit is shown in the accompanying diagram. The all-AC circuit uses a grid potentiometer volume control in the 6J5 circuit and a shunt tone control in the grid circuit of the 6K6. Notice that the motor switch is operated by the tone control while the entire player is controlled by the switch on the volume control.

The speaker field contains a secondary winding that is connected in series with the voice coil. This hum-bucking coil must be properly connected to reduce the hum. Inter-change the leads until power hum is a minimum.

*For Continuing
Achievement*

**A
STAR
FOR
WESTON**



*—evidence that the vital instrument
situation rests in good hands!*

A star now adorns the ARMY-NAVY "E" pennant awarded to WESTON just 6 months ago . . . the first such pennant awarded in this highly specialized instrument field.

It's a star that has *real meaning*. Because, from the very beginning of our defense period, the responsibility for producing the vast quantities of instruments vital to the success of our country's efforts, has rested largely on the instrument leader.

This star signifies that the responsibility *rests in good hands*. "The men and women of the WESTON Electrical Instrument Corporation," writes the Chairman of the Navy Board for Production Awards, "have achieved a signal honor by continuing their splendid production in such volume as to justify this award . . . indicating their solid determination and ability to support our fighting forces with equipment necessary for victory."

But a great instrument task still remains . . . before victory is ours. So WESTON workers continue reaching for new goals . . . with the same determination, the same painstaking devotion to the quality ideal, responsible for WESTON'S *continuing leadership* in the instrument field.

WESTON ELECTRICAL INSTRUMENT CORPORATION, NEWARK, NEW JERSEY

OUTDOOR SOUND

(Continued from page 17)

apple orchard, planted in her honor the year she was born. Using a 14-foot roll type speaker, Sharp provided the reception of wedding music, played by the organist of the late J. P. Morgan's church. The sound was piped about 1,500 feet, and the organist was "cued" by telephone.

Two other unusual uses were experienced by Vocalaire, covering funeral ceremonies in the residences of prominent people, also on Long Island. Those finding it impossible to crowd into the homes, were able to hear the services on the porch, or on the sidewalk or street, through the use of speakers on the outside of the house.

Selling an idea to one of the world's largest door-to-door selling organizations, now engaged in war work, wasn't such a tough job for Mr. Sharp to do, when he had the right kind of PA to do it with. A Hudson River Day Liner was adorned with speakers and mikes, and a sales meeting, usually dreaded by salesmen, became a lark—and a boon to the selling company.

Among the many enterprises Vocalaire served were community sales, air pageants and events at Roosevelt, Curtiss and Floyd Bennett fields and activities of aviation country clubs at numerous places. Hudson River boat races, various dedicatory services, rodeos and political meetings, in Mr. Sharp's opinion, are all potential selling fields after the war.

Ten years ago, Mr. Sharp secured an advertising sponsor, I. J. Fox, the New York furrier, and installed eighteen huge PA speakers in a row at the Nassau County Air Pageant, at Roosevelt Field. That was ten years ago. PA pioneering indeed.

PA Has Air-Raid and Crowd Control Possibilities

Differing from many on the question of using outdoor PA for air-raid work, Mr. Sharp believes that this phase is definitely a possibility, and bases his belief on the results of Vocalaire's recent handling of the Treasury Department's dedicatory services connected with the defense mural in Grand Central Station.

Here the entire Grand Central area was successfully served, as well as the Times Square area, where the sound was piped, via telephone, to speakers placed above the New York Times' moving sign.

Lafayette Expands



To expedite increased war orders Lafayette Radio Corp., Chicago, has opened a new division headed by David Muir, shown here with vice president S. W. Berk.

Outdoor PA has stepped out of the novelty class into the realms of big business, is Mr. Sharp's opinion, and it is going to take real money and real technical knowledge to stay in the business after the war.

POST-WAR MARKET

(Continued from page 36)

ble the average price paid for radio sets. If a market of this type is developed, annual sales of 15 million sets would achieve the hypothetical goal of 880 million dollars in retail sales of home radios.

The possibilities of frequency-modulation raise other interesting questions, including the future of the market for the lowest-price set (\$10 and under) and the possibility that many owners of high-quality sets may purchase FM converters for use in conjunction with these sets. There is also the problem of setting up and staffing a large number of radio stations to provide frequency-modulation broadcasts, because of the limited range of such stations, compared with present amplitude modulation stations.

The implications of television and its accompanying developments have not even been mentioned here because of limitations on space; certainly that development alone requires intensive and elaborate investigation by anyone attempting to appraise the future of radio.

Generally, war demands on the parts industry have required no major changes in methods or design and

peacetime products are still being made in identical form or modified only to the extent necessary to circumvent materials shortages. However, this industry has expanded greatly during the past two years, frequently by the comparatively simple process of taking over personnel and factory space temporarily idle owing to scarcity of materials or the unessential nature of the goods formerly produced.

A major factor in reconversion will be the continued availability of these plants and workers. Will radio manufacturers be able to retain them or must they develop new facilities and train new workers? In the assembly industry reconversion may be largely a matter of providing a short training period for radio assembly operations, for workers now producing items of military equipment.

Availability of materials necessary for the manufacture of radios presents another important post-war problem. In what quantity will these necessary materials immediately be available? The answer provides a basis for determining whether or not the radio industry will be in a less difficult position at the end of the war than most other industries having the same general markets.

What About Foreign Competition?

Many other important considerations must receive careful study as we look into the post-war radio situation. Not the least are questions regarding foreign industries and markets. In such a study attention must be directed not only to past export experience and the potentials of the future, but also to the possibilities of competition from abroad. Much of this will be intimately tied up with the expansion of radio industries in countries that have been producers in the past as well as with the establishment of radio factories in countries which formerly imported all their requirements. What effect will these developments have on our domestic production and sales?

These puzzling questions complicate an analysis of the post-war situation. But one of the most interesting results of thinking about them is the feeling that an apparently too optimistic domestic annual sales goal of 880 million dollars may be not only reached but exceeded in a period of sustained high levels of employment.

THE Ability TO GO TO WAR!

In 1929, fourteen years ago, the first JENSEN Auditorium speaker was introduced. The first of its kind, it has during all the succeeding years faithfully served the public and professional need for a heavy duty, high quality loud speaker. We think it is undeniably the world's best known and respected loud speaker. Now, this fourteen year old JENSEN product goes to war. Naturally it incorporates the refinements and improvements which have been steadily added, but the basic design and function remains the same. Many other JENSEN products are thus endowed with the ability to go straight to war.



Jensen
RADIO MFG. CO.
6601 SOUTH LARAMIE AVENUE
CHICAGO, U. S. A.

Book Reviews

Elements of Radio

by ABRAHAM and WILLIAM MARCUS,
with RALPH E. HORTON

Published by Prentice-Hall, Inc.,
70 Fifth Ave., New York City.

Called by the publishers "A streamlined home-study course," this two-volume work devotes the first volume to the beginner, taking up principles of reception step by step in the order of historical development. It is designed as a preinduction course text, and no formulae are included in its first 300 pages. Basic radio principles are made clear through drawings, simple circuits and frequent analogies of the intangibles of radio on the premise that the reader has had no previous experience.

The second volume is devoted to electrical and radio theory and to transmitters, and is more advanced in its treatment of radio communication.

An unusual feature of the work is that each chapter is preceded by several questions or "problems" designed to call attention of the reader to points in that particular chapter he is expected to learn.

The complete book, two volumes, is \$4. \$2.45 each volume.

Revised Ghirardi Radio Troubleshooter's Handbook

Published by

Radio & Technical Publishing Co.,
45 Astor Place, New York City.

The Ghirardi Radio Troubleshooter's Handbook has been brought out in a revised and enlarged 744-page version, the third edition of this informative and practical volume. It is full of information helpful in all phases of radio service work and designed to enable both new and experienced technicians to troubleshoot and repair all types of radio receivers faster under "wartime" emergency servicing conditions.

Included in its 744 manual-sized (8½ x 11") pages are 404 pages of "case histories," giving all common troubles and their remedies for over 4,820 receiver and automatic record changer models; a complete tabulation of IF peaks and alignment data for practically every known superhet receiver. Also has 17 pages on tubes, giving information on characteristics, operating voltages, classification, interchangeability and socket connections of 1042 receiving tube types.

There are also 133 additional pages having 52 more specially prepared reference graphs, charts, tables and other compilations presenting information on a wide variety of important subjects, such as receiving tube types rec-

ommended for substitution, special purpose tubes, tube testing, receiver modernization, i. f. transformer troubles, servicing and replacement, ballast resistors, dial lamps, coil winding, grid bias resistors, condenser replacement, transformers, all RMA and manufacturer's color codes, parallel and series network calculations, logarithmic computations, decibels, volume and tone controls; filters, conversion factors, "time constants," reactance, electrical and radio servicing formulae and drills, screws and taps.

Another feature is that each chart and data table is preceded by a clear, detailed explanation.

The new Revised Edition is bound in wear-resisting blue cloth, with a stiff cover designed to stand constant handling in the shop. The price is \$5 in the U.S.A., and copies may be obtained from jobbers or from the publisher.

What You Should Know About the Signal Corps

by HARRY M. DAVIS and
F. G. FASSETT, JR.

Published by W. W. Norton & Co., Inc.,
70 Fifth Ave., New York City.

Many radio men will be interested in knowing what goes on at the center of the communications system of our Army. Here is a 200-page report of it all, including of course the wire communication parts as well as the radio branches and also handling the weather-forecasting and photography services.

While some of the book is concerned with a rather slow account of the history of the Signal Corps, other chapters like "Signals and the Future Citizen" look toward the things to come. It says here that "television, to use the trite expression, is 'just around

the corner', but it happens to be a corner around which the American radio industry whizzed on two wheels some time ago in its pell-mell progress on behalf of wartime signals... spokesmen for the industry tell us that not long after its return to peacetime production we are likely to have two-way television—in color."

Another point of interest is the discussion of the Signal Corps schools, which are very much in the radio news these days. In fact this whole chapter on "Men of the Signal Corps" will be of special interest.

The book uses non-technical language and is illustrated with drawings, rather than photos. It is priced at \$2.50.

Electrical Fundamentals of Communication

by ARTHUR LEMUEL ALBERT

Published by McGraw-Hill Book Company, Inc., 330 W. 42nd St.,
New York City.

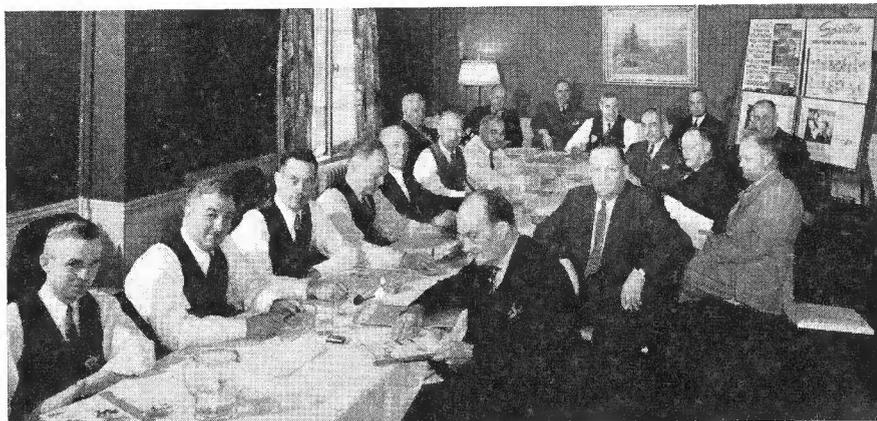
This book, written by an experienced teacher, starts out from the elementary concepts of matter and electricity, and explains in clearly defined terms the laws and phenomena of alternating current circuits, measuring instruments, simple filters and bridge circuits, as well as the operation of the most widely used types of electron tubes and their various circuits.

Each chapter is concluded with a short summary, review questions and problems concerned with the most important matter treated.

Very little mathematics is used in the text, and the examples employed are taken largely from communication industry.

That the book is valuable for self-study is evidenced by the fact that the reader finds he must carefully review the summaries and questions to check on understanding and correctness of the subjects he reads of; a feature thoughtfully included by the author. The price is \$4.

Sparton Shapes Post War Plans



With E. T. H. Hutchinson presiding, Sparks-Withington reps from Canada and 12 States met at Jackson, Mich., to plan for post war business.

when Johnny comes marching home again



As a radio technician, Johnny is a vital part of our armed forces. He sees an amazing electronic future in the new devices developed by the urgency of war. No, he can't talk about them now, but as he uses them he dreams of electronic wonders to come.

Someday soon, Johnny and thousands like him will come marching home to take their places in their chosen field. Their vision . . . their plans . . .

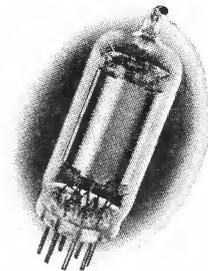
their energy will give us those wonders in electronics of which they dreamed.

Wherever Johnny's ambition leads him in electronics, he will find TUNG-SOL ready for the peacetime developments. TUNG-SOL tubes for transmitting, receiving and amplifying, TUNG-SOL research engineering service will be important parts of his future and the future of electronics.

TUNG-SOL

vibration-tested

RADIO TUBES



TUNG-SOL LAMP WORKS INC., NEWARK, N. J., Sales Offices: ATLANTA, CHICAGO, DALLAS, DENVER, DETROIT, LOS ANGELES, NEW YORK
ALSO MANUFACTURERS OF MINIATURE INCANDESCENT LAMPS, ALL-GLASS SEALED BEAM HEADLIGHT LAMPS AND THERMAL SWITCHES

Former Duotone Man Goes to Melody Record Group

Jack Bergman, formerly associated with Duotone, manufacturers of phonograph needles, has been made vice-



Hackneyed selling methods are out as far as Jack Bergman, new Melody official, is concerned.

president of sales at Melody Record Supply Company, Morty Kline's new record accessories distributing group, with headquarters in New York.

Mr. Bergman, well-known for his original approach to the selling of needles and kindred lines, announces that the new company will also act as headquarters for out of town distributors.

Music Trade Collects Record Libraries for Armed Forces

Through the personal solicitation of various outstanding artists and music critics, among them Arturo Toscanini, Deems Taylor, Lily Pons and Lawrence Tibbett, 150 libraries of recorded music have been assembled and sent out to our armed forces during the past year.

This is the start reported by Armed Forces Master Records, 9 Rockefeller Plaza, New York, a non-profit organization engaged in rounding up recordings for our fighting men. Chairman Frederick Kugel, of the company of the same name, 1233 Sixth Avenue, New York, believes the music industry can do much to further this cause. He reports counter displays are available to record dealers which list the music most in demand, and alongside each selection is a space for the donor's name. Each poster is for a full library and will have space for the name of camp or ship to which the library is to be sent. Labels will be supplied so that the donor's name may be affixed to each album.

With "Music Builds Morale" for their slogan, chairman Kugel believes much can be done through the contributions of dealers and their customers, and hopes to reach a goal of 100 libraries a month.

"Me Sentimental?"

"If you think I'm a softie because I make records, you're crazy. I get a big kick out of hearing myself talk! And you bet my kids do, too! Just the other day I got a letter from Joe in the army camp. 'Pop,' he says, 'they're even better than letters; it's just like you was here.'"

"And another thing, when Joe sends us his records, we can keep them to play for him when he comes home for good. They'll be pictures of him as sure as if he'd been in the movies . . . only they'll be 'Snapshots-in-Sound.'"

"A lot of the boys are coming around just to make home recordings, to send to their pals in different parts of the country. Some of them like to save programs that come over the radio. One guy uses them as greeting cards."

No doubt about it, they're getting more popular by the day. Dealers, too, are finding that RecordDisc Blanks in stock mean profitable sales. Local distributors can give you the entire story and supply your immediate needs. If more convenient, write for a copy of our latest catalog. We will be glad to furnish the names of our nearest distributors.

Only RecordDiscs are "Snapshots-in-Sound"

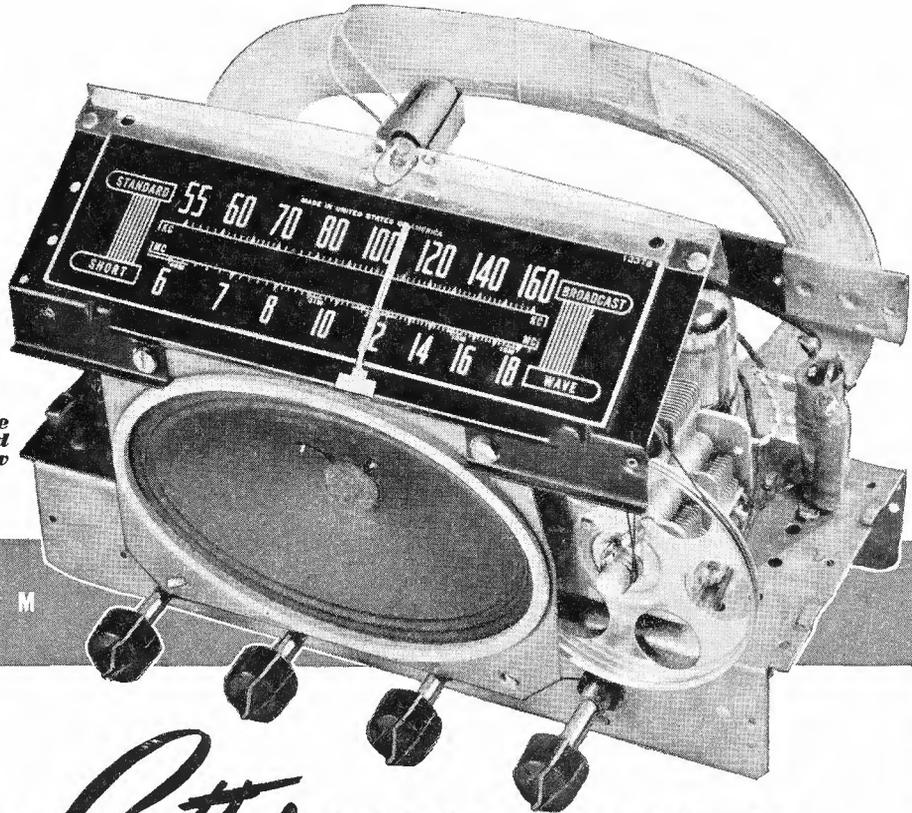
THE RECORDISC CORP.

395 BROADWAY
NEW YORK, N. Y.



Cable Address
RECORDISC
NEW YORK, N. Y.

Meissner 6 Tube Kit, assembled —front view



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

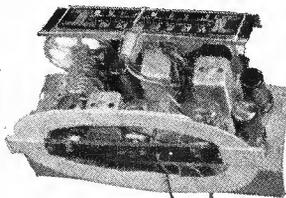
Meissner Student Training Kits are precision engineered for more complete basic radio training. The six tube kit chassis contains two bands, covering a tuning range of from 540 kc. to 1620 kc. (53 to 16 meters). Operates on 110-120 volts. 50-60 cycle AC, or 110-120 volts DC.

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 ELECTRONIC PRODUCTS”

Philco Output Up for 1st Quarter

The end of 1943's first quarter finds Philco Corp.'s war goods output eight times greater than for the corresponding period last year, and present indications are reported to show a mounting increase for coming months.

Philco, through subcontracting much of its part in war work, has made possible the broadest application of its own engineering and production facilities for the Army and Navy.

The Chicago Division of Philco Radio Corp. has been awarded the Army Navy "E" with a white star, according

to word received from Robert P. Patterson, Under Secretary of War, by John Ballantyne, president.

This is in recognition of Philco's continued production record in its fully converted war plant, turning out electric and radio communications equipment for ships, planes, tanks and ground forces. The plant is also turning out shells, fuzes and industrial storage batteries for the Army and Navy.

Battery Group Gets "E" Flag With Star

Storage Battery Division of Philco Corp., Trenton, N. J., six months ago awarded the "E" Production Award,

was recently presented with the Army-Navy "E" flag with a white star.

The presentation was made by Commander D. L. Trautman, USN (ret.), and accepted on behalf of the company by M. W. Heinritz, vice president in charge of the Storage Battery Division.

Platoon Sgt. F. W. Marascuillo, a Marine, and Machinist's Mate Carl Carlson, U. S. Coast Guard, who played heroic roles in the invasion of the Solomon Islands last year, also thanked the Philco workers for their war production efforts.

National Union Uses "Poetic" Meter

It may be that their familiarity with meters used in the manufacture of tubes, inspired National Union Corp., Newark, N. J., to employ a new sort of "meter" in the attempt—poetic meter. Part of an advertisement, clipped from a New York newspaper by RADIO RETAILING TODAY, shows their effort to secure the services of embryo "Sadie the Solderers":

Mary was a manicurist.
Sally waited table.
Joan pranced around a store,
Showing mink and sable.
Gertrude simply sat at home
Bertha lolled at clerking,
"Til they met Maureen one day,
Asked where she was working.
Proudly Maureen told them
War work was her job,
The Battle of Production,
Backing fier, soldier, gob.
Then Mary, Sally, Gertrude,
Joan and little Bertha too
Decided they would join Maureen.
We need more, why not you?

Dealers Active During Music Week

Widespread reports on the celebration of Music Week, which ended early this month, indicate spirited participation by members of the National Assn. of Music Merchants, as well as the co-operation of universities, schools and grand opera stars.

In Newark, N. J., the Griffith Piano Company, headed by Harry D. Griffith, president of the Association, sponsored a Grand Opera Festival, featuring stars of the Metropolitan Opera Company, including Kersten Thorborg, Kurt Baum, Alexander Sved, Thelma Votipka, Robert Weede, Lucielle Browning, Nicola Moscona, Wilfred Engleman and others.

Parker Harris, of Philip Werlein, Ltd., stressed to New Orleans residents the importance of a music week program presented under the auspices of The Spring Fiesta by Louisiana State University, by religious services in various churches, and a parade, as well as special programs devoted to colored people. There were also community sings, patriotic evenings for the armed forces, and scenes from operas by the New Orleans Grand Opera House Association.

AUDIOGRAPH
THE FIRST NAME IN SOUND

Natural
PROJECTION
OF SOUND

In homes, in factories, offices, stores and wherever else there are ears to hear, Audiograph will play an increasingly important part when we can turn wartime lessons into the channels of peacetime living. Audiograph Sound Equipment is a senior member of our Family of Activities in the Field of Electronics. It will serve you well.

JOHN MECK INDUSTRIES
PLYMOUTH, INDIANA

EXCELLENCE
IN MUSIC AND VOICE
RECREATING INSTRUMENTS



In peacetime, Waters Conley is America's oldest and largest manufacturer of portable phonographs, maker of the famous Phonola line. Today, our engineers and craftsmen are building equipment that links our armed forces—communications devices, code signal converters, and telephonic systems for tanks.

Waters Conley COMPANY

Tomorrow, when a whole new world of electronic wonders stands revealed . . .

Waters Conley will be ready to serve home and industry with many new

devices—convert-

ing knowledge

and experience

gained in the stress of war to the

enrichment of life in peace.

Phonola

WATERS CONLEY COMPANY

ROCHESTER, MINNESOTA

17 E. 42nd St., New York • 224 S. Michigan Ave., Chicago



President R. C. Sprague of the Sprague Specialties Co. explains manufacture for Capt. J. S. Evans, USN, and other officers during their visit at the plant. Capt. Evans presented the employee emblems at the Army-Navy award ceremony later in the day.

Two "E" Flags Go to Sprague Company

North Adams, Mass., was the recent scene of a double ceremony under one roof, when two plants of the Sprague Specialties Co., manufacturers of condensers, resistors and other electronic equipment for the war effort, received

Army-Navy "E" Awards, one going to the Beaver St. plant, the other to the Brown St. plant.

Prominent people including Gov. Saltonstall, high ranking Army and Navy officials, manufacturers and suppliers, attended the ceremony which was aptly termed "Sprague Day," as the company employs over half the

industrial population of North Adams. Presentation was made by Brig. Gen. A. A. Farmer, U. S. Signal Corps, and was accepted by president R. C. Sprague and two of the employees.

Retailers Learned Wartime Lessons in Handling Salesmen

• Due to the fact that extravagant wartime buying has been curtailed, and that war workers have been encouraged to save their money, many retailers see a period of special business prosperity coming after the war is over. And one of the dealers' problems will be to get the right kind of salesmen to handle this business.

A good many of the radio and appliance merchants are already thinking about their salesman-hiring policies, in terms of their pre-war and in-war experiences. Some of the points being made are as follows:

Seven-Point Program

"We must have satisfied, well paid salesmen. We plan to pay carefully selected men a living wage, plus commissions.

"We pledge that we will maintain attractive showrooms.

"We will attempt to re-emphasize ethics in business so that not only our customers will have faith in us, but our salesmen as well.

"We will not require salesmen to bear the brunt of service difficulties, but will shunt all of this service to the proper department.

"We will never (again) require salesmen to collect past due accounts from customers *they have sold*. This is a morale breaker of the first water.

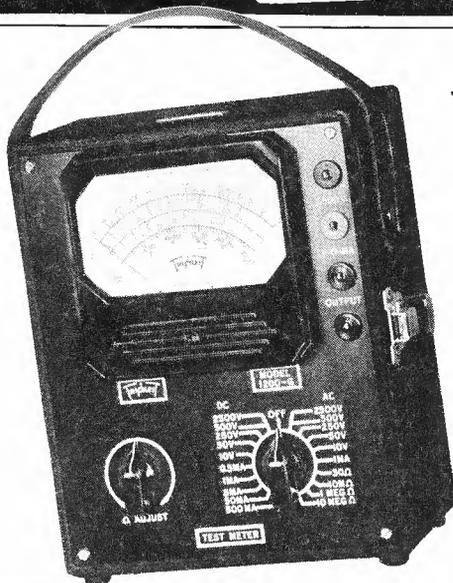
"We will insist that salesmen know thoroughly all radio and television broadcast programs.

"And we will never (again) try mass-production selling talks and formulas on salesmen."

Sales Freedom

In regard to the last point, one retailer reported that "We will want salesmen to sell in their own fashion, as long as they are able to sell. One of the best salesmen we had in our organization was so embarrassed by 'simulated selling' acts upon our floor

TRIPLITT *Combat Line* TESTERS



TRIPLITT MODEL 1200 G TEST METER

Portable multi-range metal case test meter provided with removable cover and carrying pocket.

RANGES—D.C. or A.C. VOLTS
0-10-50-250-500-2,500 at
1000 ohms per volt.

DIRECT CURRENT 0-500
microamps 0-1-5-50-500 Ma.
0-1 amp.

ALTERNATING CURRENT
0-1 Ma.

RESISTANCE 0-30-10,000 ohms.
0-1-10 megohms

OUTPUT—Jacks and condenser
in series with A.C. voltage ranges.

TRIPLITT

Although some older designs are no longer obtainable several alternate models are available to you under Government requirements.

TRIPLITT ELECTRICAL INSTRUMENT CO. • BLUFFTON, OHIO

that we nearly let him go, and if we had we would have lost thousands of dollars worth of business. He has been gone from us now for three years, and it is an amazing fact that we still get lots of repeat business in his name. He had an intangible personality as a 'natural' salesman . . . none as a synthetic one."

A better arrangement for salesmen will attract a better class of men, it was pointed out. A dealer needs a man with sparkle, animation and personality. He can sell lots of radios in the good days to come.

Radio Jobber Offers Additional Lines

The current issue of The Sidico Expediter, put out by the Simon Distributing Corp., 25th and H Sts., N.W., Washington, D. C. suggests still further alternate lines.

One item stressed for promotion by retailers to victory gardeners is the mason jar for canning. Other merchandise includes Wingspread photo and writing cases for Navy and Army people; PresKloth, a patented pressing cloth; Terrace Toter folding server on wheels; Turchin Glass Half-Blocks for candles and table decorations; Toddlers Gym; U.S. Traveler Scooter; Kem-Tone paints, roller-koter and trims; Bild-A-Set construction kits.

Star Performers



Making good its promise, International Resistance Co. adds a star to previously won Army-Navy E Flag. Shown left to right are Harry Ehle, firm vice pres., and Dan Fairbanks, jobber sales manager.

PREPARING FOR PEACETIME PRODUCTION

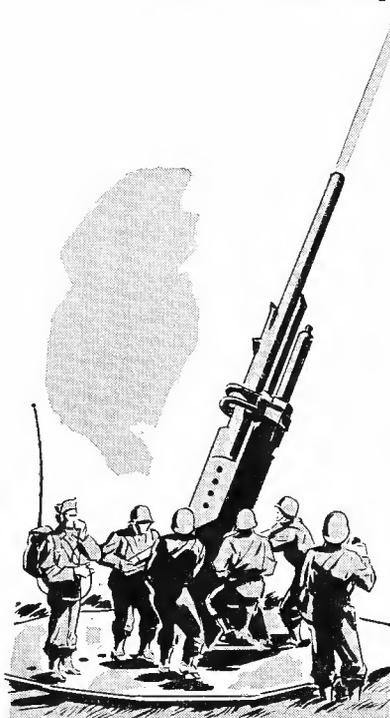
On the PROVING GROUND OF WAR

Out of the fiery crucible of war will come new devices that will amaze the world . . . radio sets that are revolutionary . . . electronic equipment that will create new standards of living. The battlefronts of the world are the proving grounds for these new developments.

Sentinel, pioneer builder of receiving sets since the birth of the radio industry is right in the thick of the battle . . . producing equipment exclusively for the use of our fighting forces—equipment that is meeting the rigorous standards of our Army and Navy. Equipment that is given the acid test of war and is coming through with flying colors.

Meanwhile we can't plan the time of the war's end—But we can plan what Sentinel's going to do and what the new Sentinel Radio is going to be like. This much we can say now: There will be new Sentinels that will surpass every present radio . . . Electronic devices that will stagger the public's imagination . . . Merchandise that promises a new era of prosperity for Sentinel Dealers.

SENTINEL RADIO CORPORATION
2020 Ridge Ave., Evanston, Ill.



Sentinel

Quality Radio Since 1920

RADIO

Wartime Developments in Frequency Modulation Continue at Lively Pace

Another relaxation by the Federal Communications Commission of its FM regulations, is pointed out by FM Broadcasters, Inc., and has to do with the temporary suspension of two rules. The first, Section 3.229, provided that FM broadcasters must make certain field tests at regular intervals to determine whether they

were transmitting a strong enough signal. The other rule, 3.261, insisted that, besides operating a minimum of six hours every day, three of the hours must come before 6 p.m., and three afterward. This meant, points out FMBI, that some FM stations operating only six hours daily—for reasons of missing manpower and conserva-

tion of equipment—had to go off the air right in the middle of the evening.

Under the new slackening order, FM broadcasters, while still obliged to transmit a minimum of six hours a day, with the exception of Sunday, may distribute this time in any way that seems best fitted to their needs.

W49PH, W53PH, W69PH and W73PH, all of Philadelphia, have adopted a plan of mutual operation. Instead of all broadcasting simultaneously, and competing for the audience, they will take turns at giving Philadelphia's 50,000 FM listeners their various programs. The stations will pool their time for the duration. The plan has received the approval of the Federal Communications Commission.

Keep Papers Posted

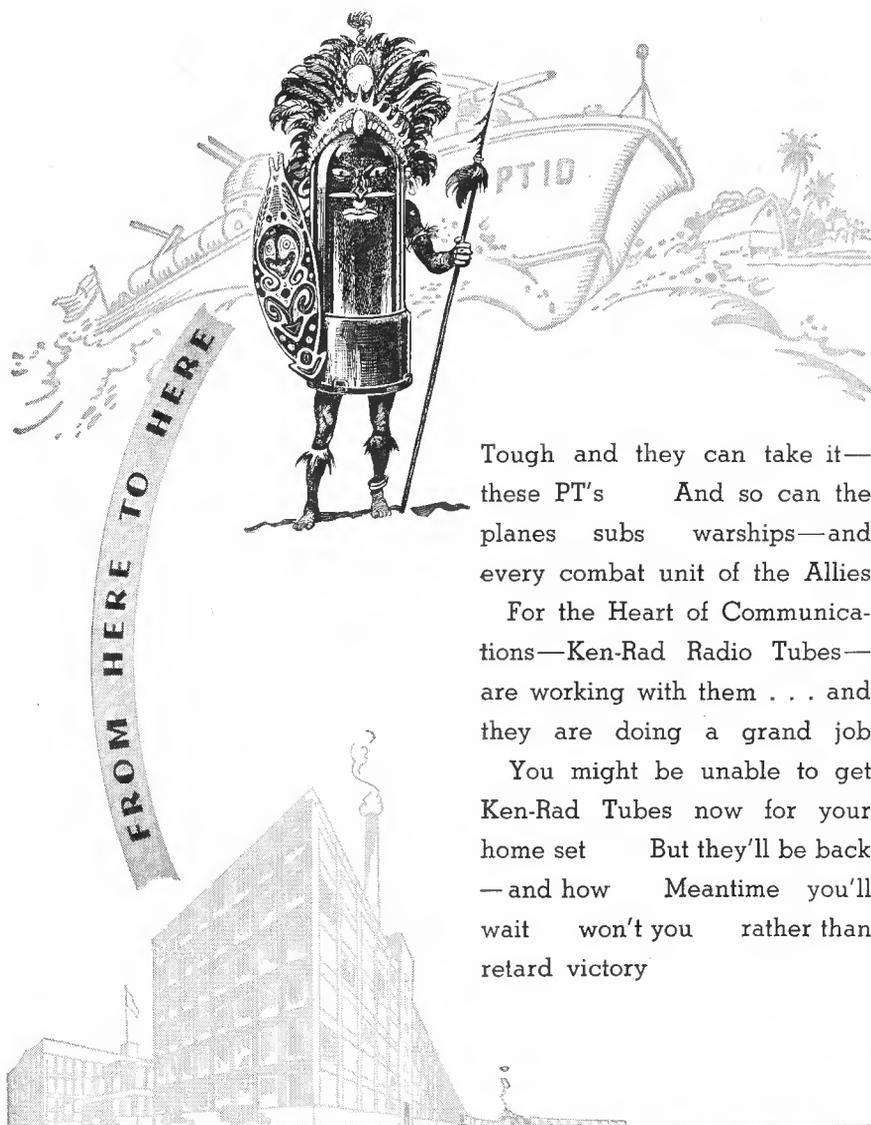
The necessity for the alert radio dealer to help keep his local newspaper posted correctly upon the features of FM, is seen in some very bad publicity, printed recently in editorial form in a New England newspaper.

This newspaper printed the following: "Some frequency modulation stations, often called 'FM,' are still on the air, but they are merely half-hearted ventures of big broadcast stations that operate them as a sideline. When the war is over, FM will become a serious factor. At present radio engineers argue that the same lack of static can be obtained by use of conventional shortwave broadcasting similar to that employed on transmissions to distant countries."

FMBI points out that this is "pretty silly commentary," as not only "some" FM stations are "still on the air," but that the number has steadily increased with sixteen more FM transmitters operating today than at the time of Pearl Harbor, and points out that not a single FM station has gone off the air.

The radio dealer and repairman, eying FM from an intelligent viewpoint, and realizing its future sales possibilities, can serve the industry and himself by correcting erroneous impressions about FM, or better yet by contributing material for local publication, before some uninformed editorial writer presents his side of the story.

Another FM transmitter has begun operation in New York. This is W39NY, operated by the Municipal



Tough and they can take it—
these PT's And so can the
planes subs warships—and
every combat unit of the Allies

For the Heart of Communica-
tions—Ken-Rad Radio Tubes—
are working with them . . . and
they are doing a grand job

You might be unable to get
Ken-Rad Tubes now for your
home set But they'll be back
—and how Meantime you'll
wait won't you rather than
retard victory

KEN-RAD

RADIO TUBES • INCANDESCENT LAMPS • TRANSMITTING TUBES

OWENSBORO • KENTUCKY

Broadcasting System, and becomes the ninth FM outlet to serve New York.

Because of its status as voice of New York City, the station is authorized to cover an area smaller than the regular 8,500 square miles generally required of New York FM outlets.

Meanwhile a new survey was conducted in Wisconsin on "Who listens to FM?" Figures were gathered by Marquette University students for W55M, the Milwaukee Journal radio station.

68 per cent of the listeners are in high income homes, 23 per cent in wealthy homes, and 9 per cent in middle income homes. It is interesting to note also what the present-day tastes of FM listeners are; the survey disclosed the fact that 53 per cent want semi-classical music, 46 per cent want classical music, with 26 per cent representing the "popular" music group wanters, leaving 14 per cent who demand serials.

Results of the survey showed that 65 per cent listen to W55M regularly, and that the listening peak, as in standard broadcasting, is between 7 p.m. and midnight.

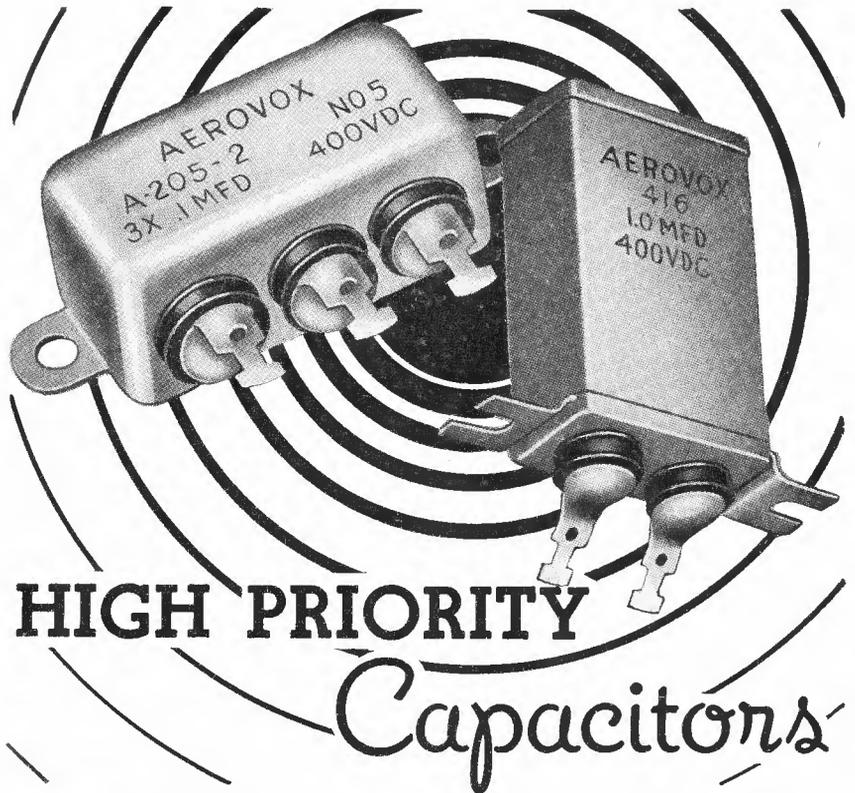
NEW BOOKLETS

Popular radio replacement parts are listed in a new catalog issued by Radio Warehouse Market, 362 Wooster Ave., Akron, Ohio. A feature of the catalog is that replacement parts offered do not require priorities.

Anticipating government standardization requirements, the Solar Capacitor Sales Corp., Bayonne, N. J., announces the adoption of a new policy of capacitor standardization. In this connection it has issued two new catalogs, V-1 and V-2. These list a minimum number of types of Solar capacitors designed for a maximum number of uses.

A new 12-page booklet containing hints on how to braze with phosphor-copper, a brazing alloy which saves time, machines and manpower, has been announced by Westinghouse Electric and Mfg. Co., East Pittsburgh, Pa. The booklet shows gas, incandescent carbon, electric furnace and dip brazing methods, and contains hints on good brazing and proper joint designs. Butt, scarf, shear and lap joints are considered, and diagrams show correct designs.

Among advantages of phosphor-copper listed are its low melting point, uniformity of brazing material, high tensile strength and stress cycle, 98 per cent electrical conductivity of joint.



Our War Effort . . .

From January 1941 to December 1942, Aerovox

- Stepped up production output 500% for our armed forces.
- Increased production floor space 300%.
- Sought, hired, trained and put to work additional workers — a 300% increase in productive personnel.
- Opened second plant in Taunton, bringing work to available workers there.
- And—doing more and more; growing week by week!

● Oil-filled capacitors such as the popular "bathtubs" and rectangular-can units are now available on high priorities only. And logically so, because such heavy-duty capacitors play a vital part in wartime radio and electronics.

Remember, heavy-duty capacitors are still available through Aerovox jobbers—if your orders are backed by *high priority ratings*. Indeed, Aerovox jobbers these days are serving not only local Government agencies but also local manufacturers, instrument-makers, sub-contractors, development laboratories, technical schools, training centers, etc., as *expeditors*.

If your radio or electronic work is directly tied in with the war effort, or if you are servicing civilian radio, continue to count on that local Aerovox jobber.

See Our Jobber . . .

● Consult him about your capacitor requirements whatever they may be. He's there to serve you and to make certain that the war is won on the home and battle fronts alike. Ask for latest catalog—or write us direct.



Capacitors

INDIVIDUALLY TESTED

AEROVOX CORPORATION, NEW BEDFORD, MASS., U. S. A. • SALES OFFICES IN ALL PRINCIPAL CITIES
Export: 100 VARICK ST., N. Y. C. • Cable: 'ARLAB' • In Canada: AEROVOX CANADA LTD., HAMILTON, ONT.

Sorenson Gets New Westinghouse Post

Ralph Z. Sorenson of Chicago, has been appointed manager of the table appliance department of Westinghouse Electric Appliance Division, Mansfield, O., as announced by T. J. Newcomb, sales manager. Mr. Sorenson will succeed John A. Sullivan who recently resigned to receive a commission in the U. S. Naval Reserve.

Joining Westinghouse as supervisor of major accounts for the Northwestern district, he later became appliance supervisor for the same district, handling the sales of heating appli-

ances, fans and vacuum cleaners in ten midwestern states.

Prior to his association with Westinghouse, Mr. Sorenson was connected with public utility companies in Wisconsin.

Sylvania Wins Safety Award

Employees of the Boston Street, Salem, plant of Sylvania Electric Products, Inc. have received the Grand Trophy plaque awarded by the Massachusetts Safety Council. Originally presented to the management by Governor Saltonstall at a state Safety

Council luncheon, Sylvania's officials presented the award to the employees at a recent plant ceremony.

Speakers at the plant meeting were Major Alex Smith, head of the Industrial Section of the Ordnance Department, Russell Tirrell, Sylvania's safety engineer and Robert E. Barrett, manager of the Boston Street plant.

A group of five Sylvania employees who have worked for the company more than 25 years without a lost-time accident received the plaque for the workers, and all employees received commemorating pins.

Other speakers were Lewis E. MacBrayne, New England director of a national commission for the conservation of manpower in war industries, Mayor Coffey, and president of Sylvania, B. G. Erskine.

U. S. Financing Radio Plants

Secretary Jesse Jones has disclosed that the Defense Plant Corporation, a subsidiary of RFC, has financed 54 plants for "radios and radio equipment," involving an investment of \$60,000,000, which also included plants designed for scientific radio equipment.

The announcement, made in his "Army Day" address, contained the statement that government business and private business must work together in post war utilization of the war plants, and that neither should the government own or operate the facilities it has built.

Sickles Co. Gets Army-Navy "E"

In impressive ceremonies recently held at the company's plant at Chicopee, Mass., the F. W. Sickles Co. and its employees, were presented with the Army-Navy "E," for excellence in the production of radio equipment. The award was accepted on behalf of the management by Roy F. Sickles, company president and son of the founder.

In addition to the hundreds of Sickles employees, about 200 subcontractors, suppliers and customers of the Sickles Company, were on hand for the ceremonies.

Earl Patch Appointed Sales Manager

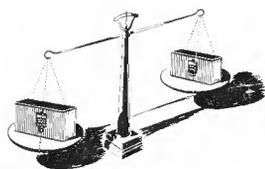
Earl S. Patch, formerly an executive of the Moraine Products Division of General Motors, at Dayton, Ohio, has been appointed sales manager of Henry L. Crowley & Company, West Orange, N. J., manufacturers of the Crolite line of steatite, powder metal parts, bearings and high-frequency iron cores.

Well known in the field of powder metallurgy, and with a background of research, engineering, and application experience, Mr. Patch will make his headquarters in the company's main office.

"THANKS FOR YOUR COOPERATION"



SEZ HOMER G. SNOOPSHAW: "Thanks, folks! You sure do appreciate our problem! We're distributing, as evenly as we can, the relatively few batteries we're able to make for civilian use. And you dealers are helping us distribute 'em fair and square..."



THE FAIR-DISTRIBUTION PLAN, employed by distributors in co-operation with Burgess, assures absolute fairness to all dealers who handle the present limited civilian supply of Burgess Batteries. Free battery-saving aids for consumers are also available. Address Homer G. Snoopshaw, care of this company.

BURGESS BATTERY COMPANY, FREEPORT, ILLINOIS

BURGESS BATTERIES



**Philco Corp.
Names Executives**

James T. Buckley, president of Philco Corp., Philadelphia, has been elected to the newly-created office of chairman of the firm's executive committee. Former vice president in charge of operations John Ballantyne becomes president of the company. M. W. Heinritz was



John Ballantyne, new Philco president

named vice president in charge of the storage battery division, previously general manager. Assistant secretary Charles F. Steinruck, Jr., replaces George E. Deming, deceased.

FM and Television Boom a Certainty, Says W. M. Angle

"Frequency Modulation broadcasting has hardly started," said W. M. Angle, president of Stromberg-Carlson Co., in a recent broadcast over NBC short-wave facilities. "Millions more FM receiving sets and hundreds of FM stations are surely going to be needed," Angle said. Commenting on television, the radio executive said, "Television, reported just around the corner as far back as 1930, made an auspicious start three or four years ago but has been dormant since the war. After the war television is sure to become a large factor in the business of communications apparatus manufacturers."

**Don N. Dulweber
Killed by Accident**

Head of the Supreme Instruments Corp., Greenwood, Miss., Don N. Dulweber was accidentally shot at his home last month. Opening a closet door he inadvertently knocked over a shotgun. The resulting shot from the falling fire-arm struck him in the head and death was instantaneous. In addition to being president of the Supreme Instruments Corp., Mr. Dulweber was also a director of the Bank of Greenwood.

**WHEN YOU NEED AN
UNBREAKABLE
RECORDING BLANK**



USE THE PRESTO MONOGRAM

... a paper composition base disc that will safely withstand mailing, all ordinary handling, shipment anywhere. Monogram discs are lightweight, unaffected by temperatures above 40°F. or excessive humidity, have a remarkably long shelf life.

While the composition base is not as smooth as the glass base used for the highest quality recording discs, the coating material is exactly the same, giving the same cutting qualities, frequency response and long playing life. Surface noise is slightly higher than that of glass discs but at the same time well below that of the best commercial phonograph records.

With metal discs withdrawn from use, the Presto Monogram has become the most practical disc for recording in the field, for recordings to be mailed to distant points and those subjected to frequent handling. Thousands of monograms are used by the military services of the United Nations and by the larger radio stations for delayed broadcasts. Made in all sizes, 6, 8, 10, 12 and 16 inches. Order a sample package of 10 discs today.

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

In Other Cities, Phone . . . ATLANTA, Jack. 4372 • BOSTON, Bel. 4510
CHICAGO, Har. 4240 • CLEVELAND, Me. 1565 • DALLAS, 37093 • DENVER,
Ch. 4277 • DETROIT, Univ. 1-0180 • HOLLYWOOD, Hil. 9133 • KANSAS
CITY, Vic. 4631 • MINNEAPOLIS, Atlantic 4216 • MONTREAL, Mar. 6368
TORONTO, Hud. 0333 • PHILADELPHIA, Penny. 0542 • ROCHESTER,
Cul. 5548 • SAN FRANCISCO, Su. 8854 • SEATTLE, Sen. 2560
WASHINGTON, D. C., Shep. 4003—Dist. 1640

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

Maloney Bill Meets Opposition

The bill of Senator Maloney of Connecticut, which would provide for the establishment of an independent Office of Civilian Economy, and which would involve civilian radio replacement equipment, has the backing of Joseph L. Weiner, present director of the WPB Office of Civilian Supply. The bill is being opposed by Chairman Nelson of WPB, Chairman McNutt of WMC, and others described as "strong administration and industry forces."

Described by RMA as an "apparent attempt to offset congressional favor for an independent agency," was the

issuance by WPB of a summary of its action in providing essential goods and equipment for civilians, included in which was the following reference to radio tubes, batteries and replacement parts:

"WPB has kept production of radio tubes available for replacement in civilian sets almost as high as in peace time. The industry has also been requested to concentrate its civilian production on certain types most in demand, even though they be low-profit items. Through care-scheduling of production, WPB is attempting to provide a sufficient number of batteries to take care of farm radios. To conserve materials for farm radio battery produc-

tion, the manufacture of batteries for portable sets has been prohibited."

Sylvania Opens In Philadelphia

Garlan Morse, recently appointed manager of the Philadelphia sales division of Sylvania Electric Products, Inc., will have his headquarters in the new sales office to be opened in the Lincoln-Liberty Building in Philadelphia, is the announcement made by Don G. Mitchell, vice president in charge of sales. The office will be opened June 1st, and will also house a group of Sylvania lighting product sales representatives.

Walter E. Poor, Sylvania president, has announced the appointment of F. J. Healy to the position of vice president in charge of operations. Mr. Healy was formerly vice president in charge of the lighting division. Chester F. Horne, manager of operations at the fixture and appliance plants in Massachusetts, has been made general manager of the lighting division.

Both men have been with the company since its early days.

Whiteside Appointed to WPB

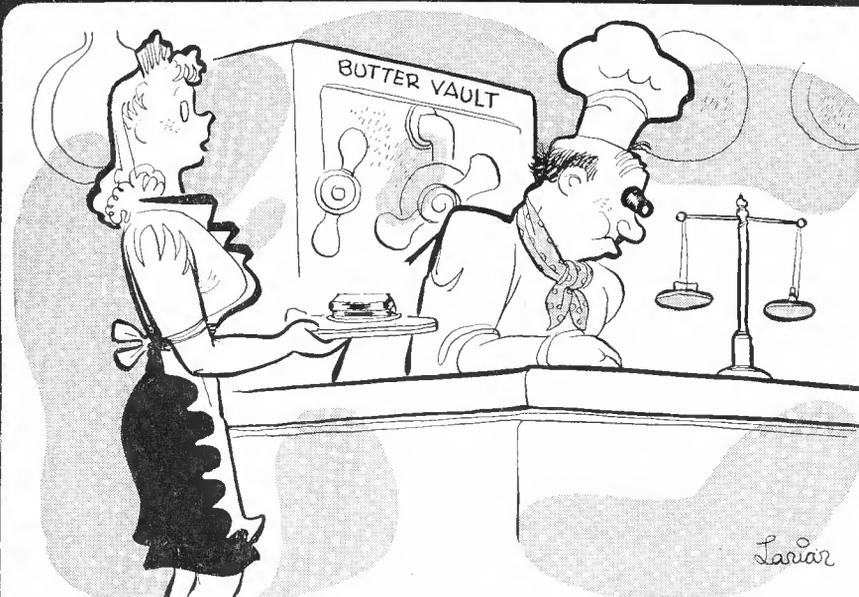
Recalled to government post from his position as president of Dun & Bradstreet, New York, Arthur D. Whiteside, resident of Westport, Conn., has been appointed by Donald M. Nelson to the vice chairmanship, in charge of civilian requirements.

Mr. Whiteside has had extensive experience in government, both in the Office of Production Management and before that in the National Recovery Administration. His connection with NRA was the direction of one of the organization's four major divisions: textile and distributive trade codes. Mr. Whiteside later was head of the Defense Commission's Commercial Aircraft Branch, serving as consultant to Mr. Nelson when he was Director of Purchases in the OPM, subsequently taking charge of aircraft priorities and later serving as chief of the OPM Iron and Steel Branch.

Belmont Radio Gets First White Star

Proof that the Belmont Radio Corp. of Chicago is keeping up its excellence in the production of war material is disclosed by the fact that the firm has just received the white star to add to the Army-Navy production award flag won six months ago. Belmont's president P. S. Billings reports this is the first white star to be awarded to a Chicago radio plant. A letter to the employees from Under Secretary of War Robert P. Patterson personally commended them on their achievement.

Some Things are REALLY Scarce Right Now*



*(Especially Radio Servicemen)

THERE are no substitutes for some things that are scarce today. There are no "ersatz" servicemen to take the places of those called to the colors.

But, there are just as many, and more, sets needing repair. And you, brother 3A or 4F, have to see that they're repaired.

Today it's your patriotic duty to ration your time; use it so you get the utmost production out of each unit of labor.

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
Hour-A-Day-with-Rider Series— On "Alternating Currents in Radio Receivers"— On "Resonance & Alignment"—On "Automatic Volume Control"—On "D-C Voltage Distribution"	90c each

JOHN F. RIDER PUBLISHER, INC.

404 Fourth Avenue • New York City
Export Division: Rocke-International Electric Corp.
100 Varick Street New York City. Cable: ARLAB

RIDER MANUALS
SPEED REPAIRS — AND VICTORY

RMA Plans Survey of Post War Problems

One of the highlights of the recent annual spring meeting of the Radio Manufacturers Association, was the ordering of an extensive survey of the industry's post war problems, including resumption of civilian radio production as the military program declines, and special committees will be appointed by President Galvin on planning for post war activities in many fields, including future radio services such as television, frequency modulation, disposition of inventories, termination of war contracts, and peace time employment problems.

Questions involving the maintainance of civilian radio sets during the war period were also considered by RMA, and reports of meetings made between WPB and the tube industry to provide about 2,000,000 replacement tubes monthly during the current quarter, was said by tube division Chairman M. F. Balcom to have resulted in the tube manufacturers assuming such a program, and that production was now under way.

Production Increased By Workers' Suggestions

Suggestions recently submitted by factory workers in the Zenith Radio Corp. plant at Chicago resulted in the saving of more than 1,000 man hours per week, according to an announcement made by W. E. Fullerton, the factory manager.

Special awards were made to the workers who responded to the company's employee-suggestion system.

Katherine Altman visualized a simple machine which would greatly speed up the production of coils. This idea worked out so well that it saved 400 man hours each week. Ann Alexander suggested a machine for skinning the insulation from the tips of wires, and twisting them preparatory to soldering, thus doing away with an older, tedious method.

WPB Committee Meets on Radio Problems

WPB Radio Industry Advisory Committee, at a recent meeting in Washington, considered war production problems, with Director Ray C. Ellis, of the WPB Radio and Radar Division of the government, presiding. The committee also held conferences with Gen. Roger B. Colton of the Signal Corps, Director Frederick R. Lack of ANEPA and others. The committee includes W. P. Hilliard, Bendix Radio Company; A. S. Wells, Wells-Gardner & Co., Chicago; E. E. Lewis, RCA Manufacturing Co.; W. S. Hosford, Western Electric Co.; Percy L. Schoenen, Hamilton Radio Corp., N. Y.; Max F. Balcom, Sylvania Electric Products, Inc., and Monte Cohen, of the F. W. Sickles Co., Springfield, Mass.



Look for those
GREEN cartons

★ Although Clarostat is now 100% on war work, Clarostat jobbers still have a stock of essential Clarostat replacements. And those civilian Clarostats fully reflect the performance, dependability and reputation demanded by our armed forces.

★ So look for the green Clarostat carton. It is your guarantee of getting "tops" in controls and resistors.



R. G. Sceli

**430%
INCREASE**
WITH

AMPLICALL

INTERCOMMUNICATION & PAGING SYSTEMS

In any man's language, a sales increase of 430% over the past 12 months is something to be proud of! R. G. Sceli Co. of Hartford, Conn., one of the many alert Rauland jobbers, did it with **AMPLICALL**, during a period of sharp restrictions in "business as usual". **AMPLICALL** Intercommunication, Paging and PA popularity among war plants is helping jobbers all over the country set new sales records now and build up an excellent future. Write today for full details of the highly successful Rauland FB Distributing plan.

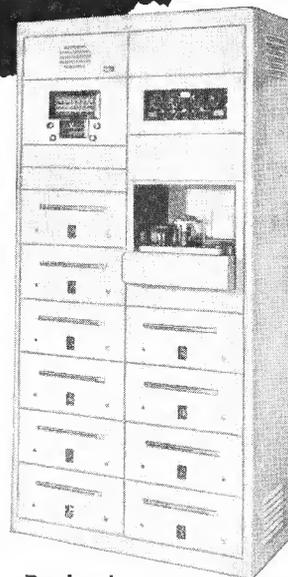
THE RAULAND CORPORATION
(Rauland-Webster Sound Division)

4245 North Knox Avenue • Chicago, Illinois

Electroneering is our business

Rauland

RADIO . . . SOUND . . . COMMUNICATIONS

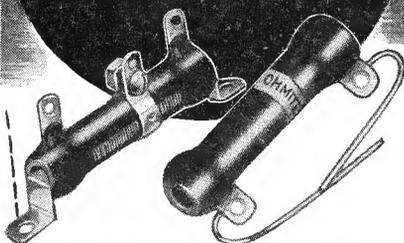


Rauland Industrial Sound Unit

The heart of the **AMPLICALL** Industrial Sound System, combining all the latest electronic engineering features that supply the instantaneous inter-department, inter-building communication and sabotage and fire protection so vitally needed today by war plants.

for Permanent
Resistance
Today and
Tomorrow...

OHMITE Resistors



Consistent performance day-after-day under a wide range of operating conditions has proved the dependability of Ohmite Resistors. This rugged quality has enabled Ohmite Brown Devils and Dividohms to keep existing installations going longer. It has also made them especially well fit for today's wartime applications... and tomorrow's peacetime needs.

Handy Ohm's Law Calculator

Figures ohms, watts, volts, amperes—quickly, accurately. Solves any Ohm's Law problem with one setting of the slide. Send only 10c in coin for handling and mailing. (Also available in quantities.)



10c



OHMITE MANUFACTURING CO.
4872 Flourney St. • Chicago, U. S. A.

Basic Principles of Electronic Science Defined for Radio Men

• Listeners to Station WGY, Schenectady, N. Y., were treated to an interesting explanation of the fundamentals of electronics, when W. C. White appeared on the Science Forum program recently. Mr. White is chief of General Electric's Electronic Laboratory. The address is of sure-fire interest to all radio men who want to be sure they understand the basic principles of the new science. The prominent engineer spoke as follows:

"Electronics is defined as 'the science which deals with the behavior of electrons.' Like many definitions, this one is not very helpful and one must go a step further. Recently I saw a definition which I rather liked and which read 'electricity freed from the bondage of wires.' That, I think, is better because at least it is descriptive and somewhat intriguing.

Basic Unit

"The electron, of course, is the basic unit of electricity. Just as a drop of water can be considered a sort of basic unit in measuring amounts of water, so the electron is the unit by which we could measure the quantity of electricity. I say 'could' because it is not a convenient measure. Again using the drop of water analogy, if we are talking about small amounts of liquids, such as a teaspoonful, it is logical to express the amount by the number of drops. However, when speaking of large amounts of water, such as go over Niagara Falls per hour, it would be absurd to express them by the number of drops.

"The same thing is true of electrons. Even the number of electrons that make up the small current used in the filament of a household incandescent lamp is so huge and, therefore, runs into so many significant figures that we don't talk about the electric currents we use in such terms.

"However, the electron is a very real thing and its mass and charge were accurately measured by scientists many years ago.

"In addition to the extremely small charge it carries, the other unusual property of the electron is the enormous speed at which it can travel un-

der proper conditions; a speed that can approach that of light. Here again, we do not express this speed in such terms as miles per hour because the number of zeros involved after the figure would make it too bulky to use. Instead we speak of the voltage used to accelerate the electrons.

Vacuum Tube

"Now, let's go back to the idea of free electrons because that is important. Until scientists created the so-called vacuum tube for these electrons to perform in, they were not free to be moved about as desired and their interesting and useful properties could not be studied and made use of.

"Right here, let us bring up the point that the words "electron tube" and "vacuum tube" are used to describe the same device, it being largely a matter of personal preference which term is used.

"What goes on inside a high-vacuum electron tube utilizes two basic components. The first is some source of free electrons and the second includes elements so that the motion of the electrons can be definitely guided.

"The first we can liken to heating water to the boiling point to liberate steam. Heating a metal red hot liberates electrons from the surface in a somewhat analogous way.

Liberated Electrons

"Now, if that red-hot piece of metal is inside of a highly evacuated bulb, then this cloud of electrons coming out from the surface is very mobile.

"Then comes the second step. You have all noticed that, when a comb becomes charged electrically, it will attract dust and bits of paper. In a somewhat similar way, the liberated cloud of electrons may be caused to move toward a positively charged terminal placed inside the bulb. Therefore, electrons pass from the hot plate, which is called a cathode, to the cold plate, which is called an anode, and the resulting continuous transfer of electrons constitutes a flow of electric current.

"If this were all there was to the matter, one might well ask, why all

this complication simply to provide a flow of electric current when an ordinary piece of copper wire might seem to accomplish the same purpose? However, this electronic method of conducting electric current offers possibilities of controlling the current in ways that are totally impossible in an ordinary conductor like a piece of wire. This possibility arises from the fact that these electrons may be started, stopped, and deflected very easily. This is done by putting additional electrodes in the tube and operating them at a certain combination of voltages which determines how many of these electrons travel across the space and at what speed and how often they are started and stopped.

Acceleration and Direction

"Here again, it is well to remember those two separate steps in this process of electrons moving through a vacuum. The first is getting the electrons out of the metal and the second is getting them across the space to the other electrode. It is only during this second step, their trip across the space, that they are subject to control by additional electrodes.

"Because such a huge number of electrons are required to carry an appreciable amount of current and because they move so rapidly, the flow of current through the tube can be subject to variations of an extraordinary degree as regards speed and nature of the variation.

"This means that, if a wire carrying a small current is cut and this elementary vacuum tube is inserted in this gap in the circuit, you have great opportunities for unusual control of current in that circuit. When I say, cut the wire and insert the tube, I mean that one of the free ends of the cut wire, the negative one, is connected to the hot-cathode terminal of the tube and the other, the positive, is connected to the cold anode plate.

Control Element

"That in its simplest form is an electron tube in an electrical circuit. During the split second when the electric current in this circuit is in the form of a stream of free electrons leaping across the gap through the vacuum of the tube, you can control this current with great speed and accuracy. The control element in the

THIS NEW BULLETIN gives you the sales edge on equipment vital to war plants WRITE FOR COPY

BELL VOICE PAGING SYSTEM

BELL SOUND SYSTEMS, Inc.
1186 ESSEX AVENUE
COLUMBUS, OHIO

Paging by Voice More Efficient!
Employees Respond More Quickly

To Employees Speeds Output!

SPECIAL BELL INDUSTRIAL SYSTEM MEETS BOTH SOUND REQUIREMENTS!

Surprising increases in production as a result of the broadcasting of continuous music programs to workers, have been reported by numerous industrial and commercial firms.



"MR. C. E. JONES IS WANTED IMMEDIATELY IN THE ENGINEERING DEPARTMENT"



"WE INTERRUPT THE MUSIC FOR A SPECIAL MESSAGE TO ALL EMPLOYEES"

You can now gain the *double* advantage of speedier paging and faster production with a high quality sound system designed *especially* for industrial requirements! The new BELL Industrial Voice Paging System broadcasts musical recordings, announcements, alarms, and paging calls to any or all departments, offices or buildings in any plant. It consists of rugged, widely adjustable, precision-built *standard* units that can be grouped to fit any need. Also designed for quick, easy expansion or rearrangement to meet changing needs. Get details on this new BELL Industrial Sound Equipment—write for bulletin 37!

Ads like this appear in leading business papers!



BELL SOUND SYSTEMS, INC.
1186 ESSEX AVE., COLUMBUS, OHIO
EXPORT OFFICE: 5716 Euclid Ave., Cleveland, Ohio

Safeguard your

"GUARANTEE"

USE **STANCOR**

STANDARD TRANSFORMER CORPORATION
1500 NORTH HALSTED STREET... CHICAGO

Motorola Radio Gets Star

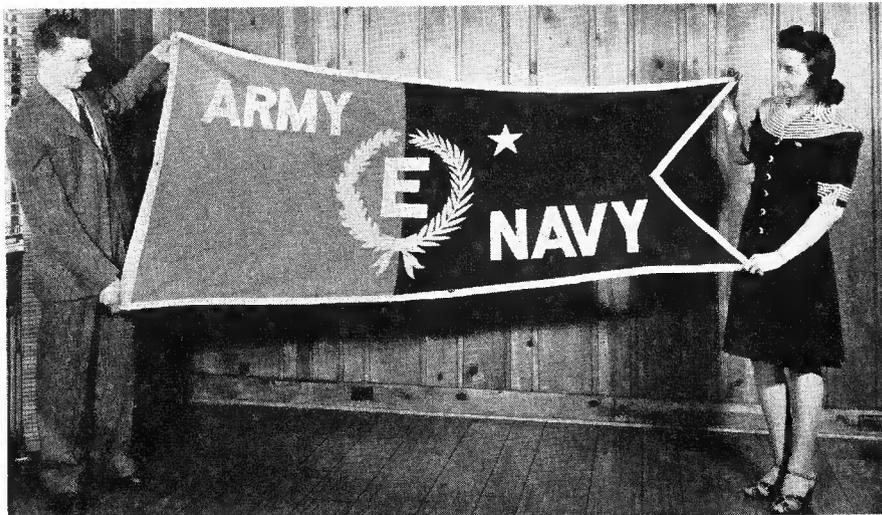
tube is usually like a screen or grid which is placed directly across the stream of electrons.

"If to this grid or control electrode a proper voltage is applied, the current through the tube, and thus the current in the circuit, may be varied. The kind of tube used depends on the magnitude of the currents and voltages involved and how fast the control has to be, and it can easily be up to a billion times a second.

"It is natural to ask why, year after year, we continue to use electron tubes both in our radio receivers and radio transmitters. Is it not possible to substitute for them other devices that will do the job as well or better? The answer is 'no' and will probably continue to be 'no' in radio for a very long time to come because electron tubes perform certain functions that just cannot be done in any other way.

Electron Tubes and Radio

"There are several reasons why electron tubes are the heart of radio equipment. The first of these results from their almost complete independence of electrical frequency. As you well



Galvin Mfg. Corp. employees display new star for continued excellence.

know, many electrical devices are suitable only for use on direct current or only on the one frequency of 60-cycle alternating current. However, as we have seen, an electron tube can function at millions of cycles a second just as well as at 60 cycles. It can do this because the myriads of electrons

in the evacuated space inside the bulb can move at such enormous velocities that the frequency range mentioned above is slow compared with the time required for them to move from one electrode to another.

"The second reason that electron tubes are unique is their ability to

MICROPHONES * PLUGS * SWITCHES

GOVERNMENT SPECIFICATION ITEMS

AR-IM	PL-54	SW-141
CU-1	PL-55	SW-217
CU-2	PL291	CD-318
1700-U	JK-26	CD-508
PL-68	JK-48	M-199

EARLIEST DELIVERIES

UNIVERSAL MICROPHONE CO., LTD.
INGLEWOOD, CALIFORNIA, U. S. A.

control electrical currents smoothly. Most devices that are used to vary an electric current do it step-by-step. The charge carried by each electron is so exceedingly small that the rhythmic increases and decreases of current to reproduce music or the human voice are easily, accurately, and smoothly accomplished.

"The third feature is their ability to control the movement and velocity of the speeding electrons by merely changing the electrical potential of one of the electrodes inside the tube. This requires only a very small amount of electrical power. This is just another way of expressing the well-known fact that electron tubes are amplifiers and can reproduce, at a greatly increased power level, the impulses fed to them.

"The fourth feature is their ability to pass current only in one direction or, as it is often expressed, to act as a rectifier.

Needed in Modern Radio

"If one considers electron tubes from the light of these four unique characteristics, it is readily seen why they are so absolutely essential to modern radio. It is because these tubes possess and can utilize simultaneously some or all of these properties. In turn, modern radio needs just these properties. It is easy to understand this when we remember that radio is inherently a science of very high electrical frequencies; that it requires complicated wave forms, and that at the receiver one must pick up the very minute amount of power received from space by a few inches of wire and increase it to a point where the reproduced sound is at a relatively high power level or, as we say, has been greatly amplified.

Endless Uses for Tubes

"Electron tubes are now available in an almost bewildering array of kinds and sizes and are now in use for many purposes in addition to radio. However, in all their applications, they represent that vital link in the electrical circuit where the current flowing in that circuit is no longer in a wire but rather of such a nature that it can be controlled in unique and useful ways 'free from the bondage of wires.' Such is the essence of electronics."

How One Jobber Gets His Dealers to Collect Record Scrap

A novel plan for getting in scrap records is being used by Bruno-New York, Inc., and is tied in with radio announcements to the public, reaching the entire metropolitan field.

The dealer is offering one Victor Long Life needle, valued at one dollar, in exchange for 10 solid stock phonograph records. The jobber has provided, in addition to the radio advertising, a streamer to identify the dealer with the campaign.

The jobber sent the dealer on memo, 48 Long Life needles, as an initial allotment for the opening of the sixty-day campaign. Each needle will produce 10 scrap records, which means that the dealer will obtain a total of 480 scrap records, but he is only required to send the jobber 200 pounds, at which time the needles will become his property. To make everything easy for the dealer, he is also furnished with a postcard notifying the jobber that a shipment is ready, and even a printed shipping tag to go on the package.

★ DEDICATED TO

Victory

ANTENNAS & RADIO PARTS
BRACH
100% WAR PRODUCTION

BRACH Antennas and other radio and electrical products are now enlisted for the duration—serving, as in the First World War, to hasten the day of Victory. Their high peacetime standards, today applied to the needs of war, reflect our 36 years' experience in "QUANTITY-plus-QUALITY" manufacture.

L. S. BRACH MFG. CORP.

World's Oldest and Largest Manufacturers of Radio Aerial Systems

55-65 DICKERSON STREET • NEWARK, N. J.

FOR VICTORY Buy
United States War
Bonds and Stamps



**POLYMET
CONDENSER CO.**

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

CONTINUOUS
DEPENDABLE
SERVICE



FOR
JOBBER &
DISTRIBUTORS

READRITE

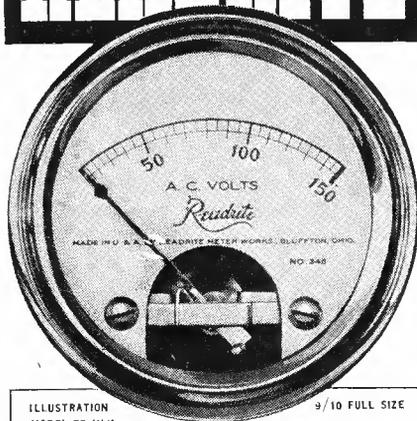


ILLUSTRATION
MODEL 55 "L"

3/10 FULL SIZE

**A.C. METERS
D.C. METERS**

Available in all catalogued models and ranges

Scale — 80° — 1 1/2" 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 — 2 3/8" diameter hole. 7/8" depth behind flange.

Specify
Range
A.C.
or D.C.
Add "L"
after cata-
log model
number



READRITE METER WORKS, Bluffton, Ohio

**RCA Winner to
Christen Ship**

RCA Victor workers are taking an active interest in a campaign launched by the company in the form of a drive for the suggestion of ideas, with the grand prize consisting of the honor of launching a new Victor ship from the ways of the Alabama Dry Dock and Shipbuilding Co., at Mobile, Alabama.

In addition to being sent to the ship launching at the company's expense, winners will receive cash awards, in the form of war bonds, based upon the value of each suggestion. RCA Victor also announced to its workers that the basis for computing cash awards on all practical suggestions had been substantially increased.

The drive, sponsored by the Labor-Management War Production Drive Committee in each plant, embraces RCA Victor works at Camden and Harrison, N. J., Bloomington and Indianapolis, Ind., Lancaster, Pa., and Hollywood, Cal.

**New Thordarson
President**

Formerly vice president and general manager of Thordarson Electric Mfg. Co., Chicago, R. E. Onstad has been made president and general manager. This follows the resignation of the company's founder, C. H. Thordarson, as president, who will continue to be associated with the firm as technical consultant only.

Coincidentally, L. G. Winney, former treasurer, was named vice president and treasurer and W. R. Mahoney, formerly connected with Arthur Anderson & Co., was elected assistant treasurer.

**Radiomarine Corp.
Wins "E" Flag and Star**

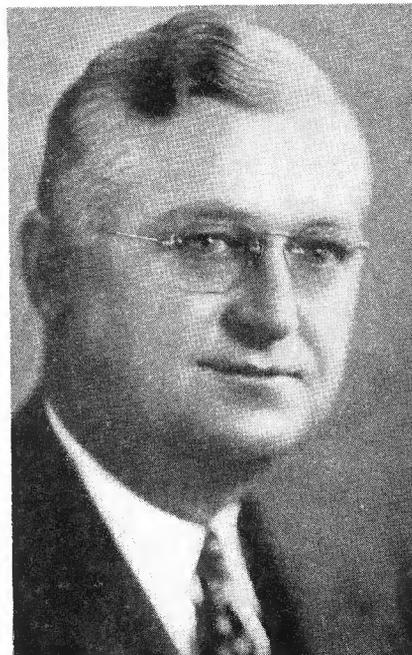
Presentation of a new Army-Navy "E" flag bearing the six months' continued production achievement star to the Radiomarine Corp. of America, affiliate company of the Radio Corp. of America, was announced by Admiral C. C. Bloch, chairman of the Navy board for production awards. The company also has received the U. S. Maritime Commission "M" pennant for production record in supplying radio equipment to cargo vessels.

**Calkins Promoted
By Bendix**

C. V. Calkins, who has been associated with Bendix Home Appliances, Inc., South Bend, Ind., since 1937 in a sales-executive post, has been elected vice president, according to an announcement made by J. S. Sayre, president. The company is actively engaged in war production work, having ceased production of its automatic laundry machine about a year ago.

**W. E. Poor Becomes
Head of Sylvania**

At the organization meeting of the board of directors of Sylvania Electric Products, Inc., W. E. Poor, who has been serving as executive vice president, was elected president. Noel E. Keeler, formerly controller, was made treasurer and six new directors



W. E. Poor, former executive vice president recently elected president of Sylvania Electric Products.

were added to the board, increasing the membership from nine to fifteen. Mr. Poor succeeds B. G. Erskine who was elected chairman of the board.

William J. Wardall and Chester F. Hockley, newly elected directors of the company, were elected as members of the executive committee. F. J. Healy, M. F. Balcom and Don G. Mitchell were re-elected vice presidents. The re-election of John S. Learoyd as secretary and assistant treasurer and E. P. Larson as assistant secretary was also announced, and Philip P. Borden was elected assistant secretary.

**Sentinel Radio
Totally Converted**

The Army-Navy, Coast Guard and Marine Corps are the destination of Sentinel Radio Corp.'s entire output at Evanston, Ill., where the four Sentinel plants are now engaged completely in war production of communications equipment. The plants are operating at a greater peak than during peacetime. They will return to radio set production after the duration and believe their increased production methods during wartime will contribute to the efficiency of future sets.



E·L IS OUT THERE, TOO...

Out where the "fighting front" becomes grim reality instead of a glib phrase, *E·L* units are powering the "Walkie-Talkie" that serves as the voice and ears of our advance forces.

It's a marvelously efficient two-way radio, of course. But the Signal Corps knew that it couldn't be the useful, reliable instrument it is, unless it had a power supply that would keep it operating, under all conditions . . . whether in the destructive heat and grit of the desert, the paralyzing arctic cold, or the corroding humidity of the jungle.

Such a power supply did not exist until Electronic's engineers designed a special, high-voltage vibrator power supply, combined with storage battery, in a single, incredibly light and compact unit.

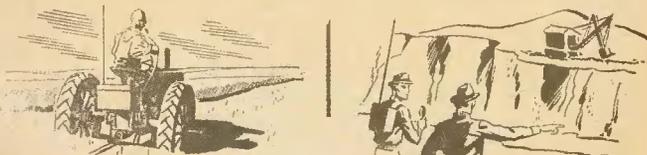
Behind this and other *E·L* power supply achievements are years of intensive development of the technique of vibrator type power supplies, and the most extensive research anywhere on power supply circuits. They have not only produced amazing advances for many military purposes, but promise revolutionary benefits for products of peace.

When the war is over *E·L* Power Supplies will be important parts in many products you sell. Then they will offer you an attractive and profitable market both for replacement and original installations.



Power Supply using rechargeable, non-spill storage battery for operation of "Walkie-Talkie" radio equipment. Input Voltage: 4 Volts; Output: Numerous Voltages, supplying plate and filament requirements of the equipment. Width, 3½"; Length, 6½"; Height, 4¾".

... AND *E·L* WILL BE HERE WHEN PEACE COMES!



● Mobile, two-way radio telephones will be at work in peace-time on big construction projects . . . on farms . . . in countless other places. *E·L* products will be on the job then, too, solving the power supply problem!

Electronic

LABORATORIES, INC.

E·L ELECTRICAL PRODUCTS—Vibrator Power Supplies for Communications . . . Lighting . . . Electric Motor Operation . . . Electric, Electronic and other Equipment . . . on Land, Sea or in the Air.

INDIANAPOLIS





WHEN THE GO ON AGAIN

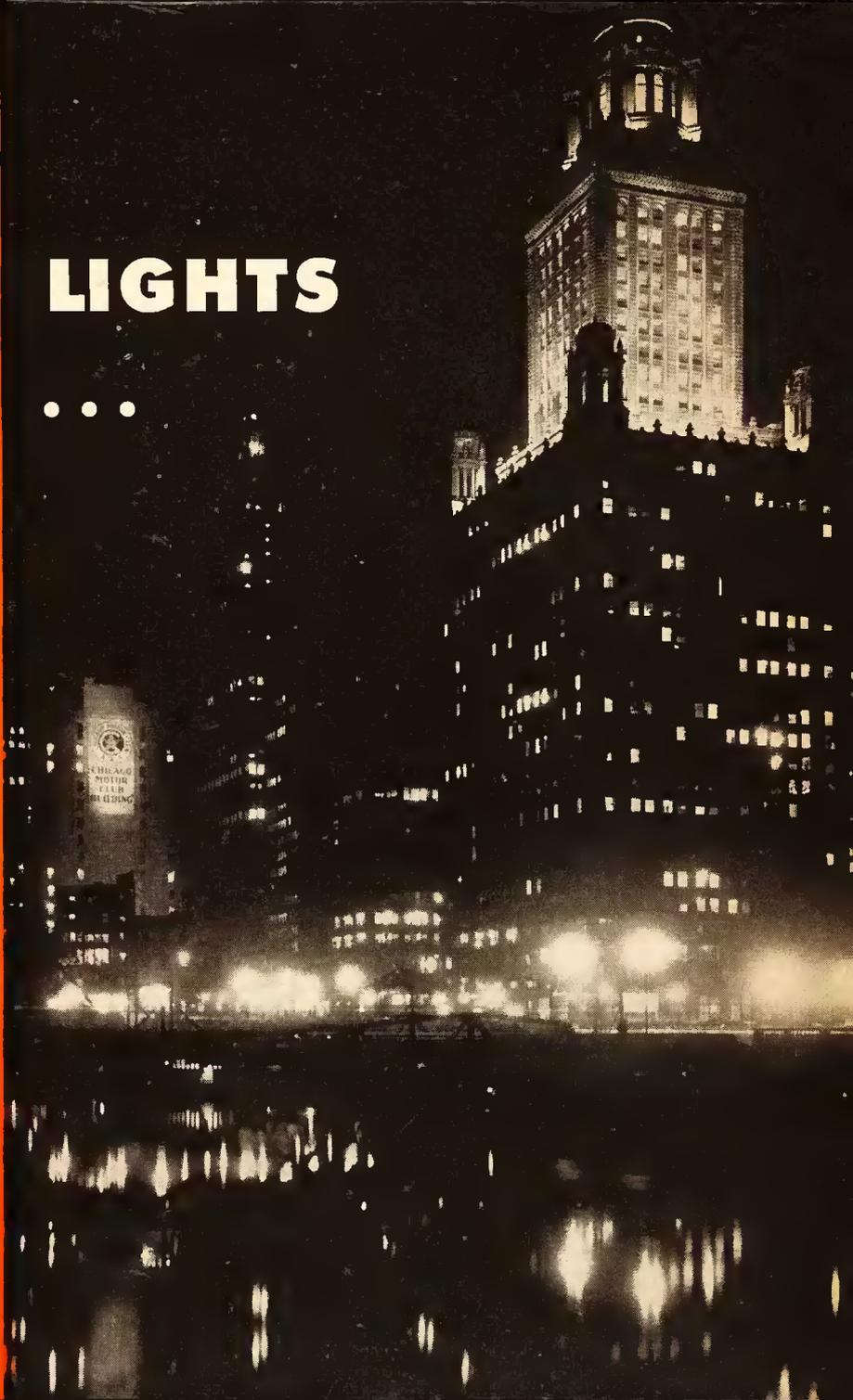
★ To hasten the day when victory will once again restore the cherished blessings of peace . . . the entire resources of both great Admiral plants, including a competent designing and engineering staff, are devoted to a single purpose: the building of vital communication equipment for our Armed Forces.

**CONTINENTAL
RADIO & TELEVISION
CORPORATION**

Peacetime Makers of

LIGHTS

...



Admiral. RADIOS

AMERICA'S SMART SET

3800 W. CORTLAND ST.,
CHICAGO, U.S.A



New Week Has "8" Days to Assure Post War Jobs

With "tide," "time" and the war waiting "for no man," production men, salesmen and engineers in American industry are spending the "eighth day" of the week—representing time snatched from their personal lives, to assure the men in the armed forces jobs when they return home.

The message containing this bright news went out to the armed forces recently, as one of a series of such messages by leading industrialists.

Wesley M. Angle, president of the Stromberg-Carlson Co. also told service men, in his message to them, that not only would his own company be ready for the job of replacing civilian commodities now rapidly wearing out, but so would his competitors, and so would all American industry — now on the production end of the battle line.

Concluding his transoceanic broadcast, Mr. Angle assured the fighting men that the skills they are now learning in the armed services are going to make them better workmen, whose services will be much sought after.

Television Station Offers Study of Technique

While now of necessity a war casualty, television is continuously preparing for postwar activity. One of the questions to be worked out is how television programs will be paid for. Allen B. Du Mont Laboratories, Inc., New York, is inviting broadcasters, advertisers and advertising agencies to participate in study and experimentation with telecasting technique without cost for studio and station facilities. It is believed these agencies will add the development of the sponsorship angle to the engineering and programing phases already worked out.

Oxford-Tartak Elects Vice Presidents

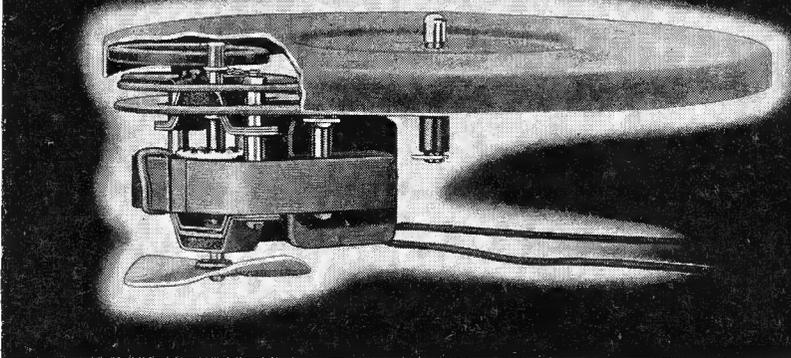
The Oxford-Tartak Radio Corp. of Chicago, now actively in war work, and which during peace times was one of the country's leading manufacturers of loud-speakers, has announced the election of Alexander M. Arnt and Karl A. Kopetzky as vice-presidents.

The announcement, made by Paul H. Tartak, president, states that Mr. Arnt is in charge of production, and Mr. Kopetzky, in addition to continuing his executive duties, will take charge of electronic development work, connected with war conversion and expansion.

Network Official Speaks

"Radio in the War and After," was discussed by Edgar Kobak, executive vice-president of the Blue Network, at the recent Fourteenth Institute for Education by Radio, sponsored by Ohio State University, and held in Columbus.

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



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

Parts by
Centralab
Div. of Globe-Union Inc., Milwaukee, Wis.

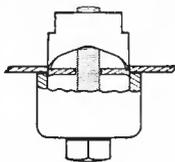
HERE'S HOW TO CUT HOLES IN RADIO CHASSIS



No Filing, Reaming or Tedious Drilling

Here's a handy tool that saves many hours of work when cutting holes for connectors and other receptacles in radio chassis. A cap screw is inserted in a small drilled hole and by a few turns with an ordinary wrench the head cuts thru metal up to 1/8" thick in 1 1/2 minutes or less.

● The cross-section view of the punch illustrates how the tool cuts through the metal. Note how the metal is supported by the die, preventing distortion.



Ten punches are available to essential users for cutting 3/8, 7/8, 1, 1 1/8, 1-5/32, 1-3/16, 1/4, 1 3/8, 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.

Write for Greenlee Catalog 33E.

GREENLEE TOOL CO.
1905 Columbia Ave., Rockford, Ill.

Majestic Names Foster Vice President

Dudley E. Foster has been named vice president in charge of engineering and Arthur W. Freese vice president in charge of production of the Majestic Radio & Television Co., according to an announcement made by E. A. Tracey, president and general manager of the corporation.

Mr. Foster has had long association with the radio industry, beginning in 1913. He was at one time chief engineer of the Case Electric Co., Marion, O., and later held the same office with the U. S. Radio and Television Corp. In 1934, he joined the RCA License Laboratories as division engineer. Prior to his joining Majestic, he had been vice president of Rogers-Majestic, Ltd., Toronto, Canada. He holds over 40 patents in radio and television fields.

Mr. Freese was general works manager for Zenith Radio Corp. from 1930 to 1940 and prior to coming to Majestic was vice president and general works manager of the Automatic Instrument Corp.

Bondmobile for Stromberg-Carlson

The Stromberg-Carlson Co. in Rochester, N. Y., has hit on an idea to relieve hard pressed Rochester bank bond departments. The "bondmobile" picks up stenographers and typewriters at the war plant each week and carries them to the Rochester Savings Bank where the war workers' bonds are then typed up. This has facilitated the receipt of bonds by workers, reducing the time between payroll deductions and delivery of the bonds from five weeks later to a period of only one week.

The other six days in the week the bondmobile is a station wagon performing rush production-speeding errands.

Stewart-Warner Board Members Re-elected

The annual meeting of Stewart-Warner Corp. stockholders took place last month and all seven officers were re-elected by the stockholders to their directorships. The seven are: Robert J. Dunham, Irving S. Florsheim, Frank A. Hiter, James S. Knowlson (president and board chairman), Frank A. Ross, Ralph M. Shaw and Gardiner Symonds.

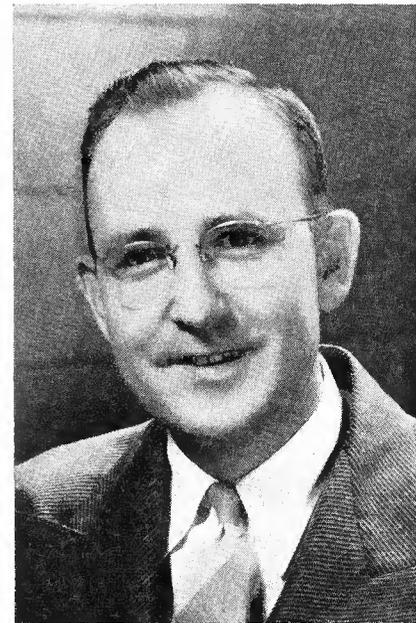
Zenith Names New Executives

It has been announced by the Zenith president, Commander E. F. McDonald, Jr., that four new officers have been elected for Zenith Radio Corp.

G. E. Gustafson, who has been with the company since 1925, has held the

post of chief engineer since 1933, and has been assistant vice-president since 1940, was elected vice-president in charge of engineering.

Karl E. Hassel, engineering executive, who with Commander McDonald and Ralph Matthews was the original founder of the company and who has



G. E. Gustafson of Zenith.

been a director of the corporation since 1932, was elected assistant vice-president.

J. E. Brown, Zenith's engineer specialist in television and frequency modulation since 1937, was elected assistant vice-president.

R. D. Burnet, who joined the company in 1924 and has been controller and assistant treasurer since 1929, was also elected secretary, replacing Lieutenant-Colonel John R. Howland, who resigned to enter the Army.

Shure Brothers Awarded "E" Flag

In what was stated to be the first "E" awarded to an exclusive microphone manufacturer, Shure Brothers, Chicago, recently received the Army-Navy "E" banner, in a ceremony held at Thorne Hall, Northwestern University. The "E" Burgee was presented to S. N. Shure, general manager, by Lt.-Col. Nathan Boruszak.

Indicative of the spirit of cooperation among the Shure workers, was the reciting of a pledge to do their utmost to aid the war effort, and stressing their consciousness of the full meaning of the award.

Over 800 workers and guests crowded into the hall, where the affair was capably handled by Jack Berman, Shure sales manager, who acted as master of ceremonies.

WHEN A RECORD NEEDS A FRIEND

PEERLESS ALBUM

Brilliant New
deLuxe LIBRARY RECORD ALBUM

illustrating the
LIBRARY EDITION

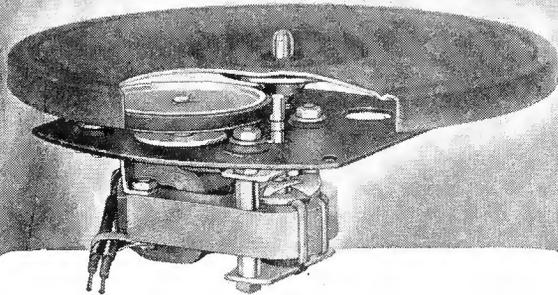
with
PROTECTO FLAP

● The World's finest Record Album, with genuine gold embossing on luxurious Saffian-grained leather-like fabric. Matches finest Library volumes . . . and biggest sales volumes.

PEERLESS
Album Co., Inc.
38-44 W. 21st St., New York, N.Y.

GENERAL INDUSTRIES

Smooth Power MOTORS



WHEN WE STOP PRODUCING FOR VICTORY . . .

• When Victory is ours, we shall again resume the production of smooth-power motors, record changers and home recorders for civilian use, just as in the old days. Of course, there will be some changes, but they will all be for the better. And it will make us happy to resume our pleasant relations with the trade to help supply the call that is sure to come from millions of homes.



THE GENERAL INDUSTRIES CO.
Department 15, ELYRIA, OHIO

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



MORE THAN

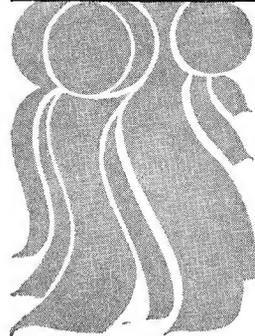
1/2
SOLD

Fidelitytone*

De Luxe

**FLOATING POINT
PHONOGRAPH NEEDLE**

WHEN DEALERS GET THEM



The name of Fidelitytone DeLuxe Floating Point Phonograph Needles is well known to phonograph owners everywhere through constant national advertising, attractive counter and window displays and as original equipment on many new phonographs. Cash in now on Fidelitytone's reputation as the nation's favorite long-life phonograph needle. A Fidelitytone DeLuxe counter salesman will identify you.

PERMO PRODUCTS CORPORATION
6415 Ravenswood Avenue, Chicago, Illinois

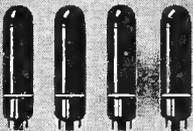


"I'M GLAD WE
HAVE THOSE
MONARCH
INSTRUMENTS"
... IN THE PLANT FOR
FASTER PRODUCTION

Giving Real Service

• Our calibrating equipment, special measuring instruments, special transmitter coils . . . small machine parts . . . all are being utilized by manufacturers of radio and electronic products now, in war-time to an even greater degree than in peace-time. If you have a special problem involving such instruments or materials, consult with us, without obligation.

MONARCH MFG. CO.
2014 N. Major Ave. Chicago, Ill.



4 STANDARD TYPES
of Amperite Regulators replace over 400 types of AC-DC Ballast Tubes now in use. Amperites are real REGULATORS . . . have patented Automatic Starting Resistor which prevents initial surge and saves pilot lights . . . Ask Your Jobber.

AMPERITE

THE *Simplest* WAY TO REPLACE **BALLASTS**

WRITE FOR REPLACEMENT CHART
AMPERITE CO. 561 BROADWAY, NEW YORK, N. Y.

Cavalry Unit Visits Sylvania Workers

Men and women making radio tubes at Sylvania Electric Products works at Emporium and Williamsport, Pa., got a chance to associate the importance of their jobs with the grim work of war, when picked groups of soldiers, in full battle equipment, paid the workers a visit. They brought with them an armored scout car fully equipped with arms and communications; two jeeps, one hauling a 37 m.m. gun, the other equipped with a complete field telephone set in its trailer. The caravan also had a new amphibian jeep, a command and reconnaissance car, cargo truck and a military motorcycle.

Between shifts the soldiers put on a vivid show, using the mechanized equipment, and explained the sub-machine guns, machetes, jungle knives, Garand rifles, gas masks, field telephones, and the all-important walkie-talkie radio equipment.

Addresses were made by Army and Navy officers, and the meeting was featured by talks made by veterans of Commando raids and naval engagements.

Belden Speeds Wire Output

Through the introduction of simplification programs in its wire making plants at Chicago and Richmond, Ind., Belden Mfg. Co. reports not only speeded up war production, but large savings in critical materials. In some categories, items have been reduced to around 60 per cent, states H. W. Clough, vice president. The company has reduced its radio line from 467 to 171 items, its automotive line from 249 to 93 items, and made substantial reductions in its other divisions.

More Space to Universal

Last month Universal Microphone Co. of Inglewood, Calif., erected a two-story annex to their second building, which will enlarge the floor space by one-half. The annex will house an extension of the war production department and the administrative force, including a newly installed cost accounting department.

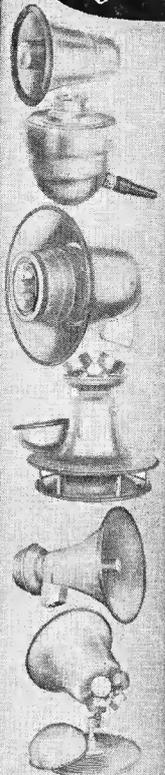
Harry Zellman Loaned by GE to WPB

Harry Zellman, who will direct the scheduling activities of the Office of Program Vice Chairman on the WPB Board, is on leave from General Electric Company at Schenectady. The division headed by Mr. Zellman, is new and was brought about through the reorganization of the office of Program Vice-Chairman, announces J. A. Krug.

INDEX To Advertisers

	Page
AEROVOX CORP.	67
ALLIANCE MFG. CO.	79
AMPERITE CO.	82
BELL SOUND SYSTEMS, INC.	73
BELMONT RADIO CORP.	31
BRACH MFG. CORP., L. S.	75
BURGESS BATTERY CO.	68
CENTRALAB	79
CLAROSTAT MFG. CO., INC.	71
CONTINENTAL RADIO & TELEVISION CORP. 1	
ELECTRONIC LABORATORIES, INC.	8A
FADA RADIO & ELECTRIC CO., INC.	8B
FARNSWORTH RADIO & TELEVISION CORP. 7	
GALVIN MFG. CORP.	Cover 4
GENERAL ELECTRIC CO.	5
GENERAL INDUSTRIES CO.	81
GREENLEE TOOL CO.	80
HICKOK ELECTRICAL INSTRUMENT CO.	45
INTERNATIONAL RESISTANCE CO.	51
JENSEN RADIO MFG. CO.	57
KEN-RAD TUBE & LAMP CORP.	66
MALLORY & CO., INC., P. R.	Cover 2
MECK INDUSTRIES, JOHN	62
MEISSNER MFG. CO.	61
MONARCH MFG. CO.	81
NATIONAL UNION RADIO CORP.	29
NOBLITT-SPARKS INDUSTRIES	81
OHMITE MFG. CO.	72
PEERLESS ALBUM CO., INC.	80
PERMO PRODUCTS CORP.	81
PHILCO CORP.	27
POLYMET CONDENSER CO.	76
PRESTO RECORDING CORP.	69
RADIO CORP. OF AMERICA	2, 3
RAULAND CORP.	71
RAYTHEON PRODUCTION CORP.	9
RCA VICTOR DIV., RADIO CORP. OF AMERICA	37, Cover 3
READRITE METER WORKS	76
RECORDISC CORP.	60
RIDER PUBLISHER, INC., JOHN F.	70
ROLA CO., INC.	8
SENTINEL RADIO CORP.	65
SIMPSON ELECTRIC CO.	33
SONORA RADIO & TELEV. CORP. 39, 40, 41, 42	
SPRAGUE PRODUCTS CO.	53
STANDARD TRANSFORMER CORP.	73
STROMBERG-CARLSON CO.	10
SYLVANIA ELECTRIC PRODUCTS, INC.	6
THORDARSON ELECTRIC MFG. CO.	4
TRIPLETT ELECTRICAL INSTRUMENT CO.	64
TUNG-SOL LAMP WORKS, INC.	59
UNIVERSAL MICROPHONE CO., LTD.	74
UNIVERSITY LABS	82
UTAH RADIO PRODUCTS CO.	35
WATERS CONLEY CO.	63
WESTON ELECTRICAL INSTRUMENT CORP.	55
WILCOX-GAY CORP.	25

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.

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

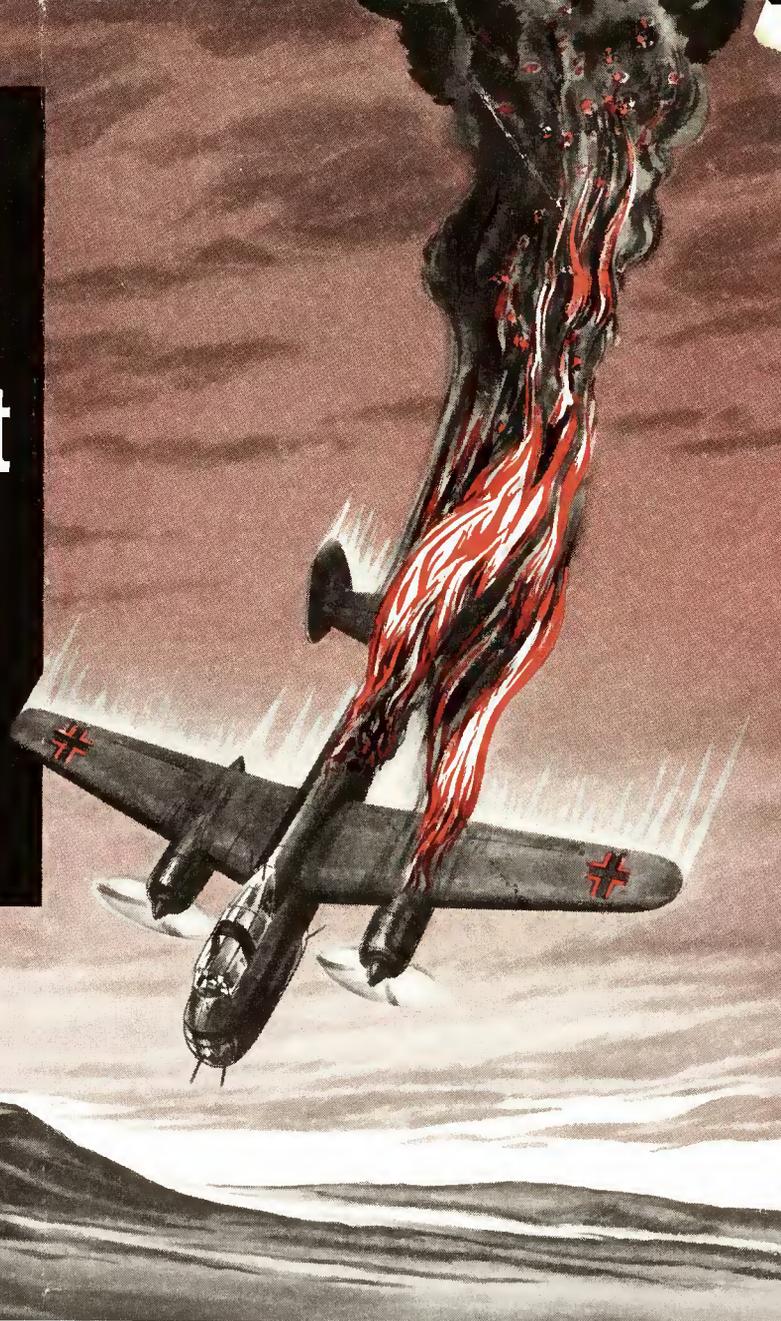
EVERY UNIVERSITY REFLEX the result of years of pioneering research and development

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

Shot down by
the television set
you can't sell
now . . .



But some day—

WHEN critical materials now going into RCA-made instruments for war are available for peacetime production—and when the vast RCA manufacturing facilities can be turned to normal production—you can count on RCA for the most scientifically advanced, most beautiful Television sets on the market.

Today materials that would ordinarily go into the creation of RCA Television sets are helping to shoot Axis planes out of the sky, sink Jap ships, locate enemy forces for our guns and torpedoes. Wherever Radio is doing a war job, you will find RCA equipment is doing the work.



That's where the material is going which under peacetime conditions might have become the RCA Television sets you can't sell now. And the things we are learning on a hundred battlefronts will go into the making of these great RCA Television sets of tomorrow.

Yes, RCA Television in one form or another is being tested *under fire* . . . and some day you, the future dealers in

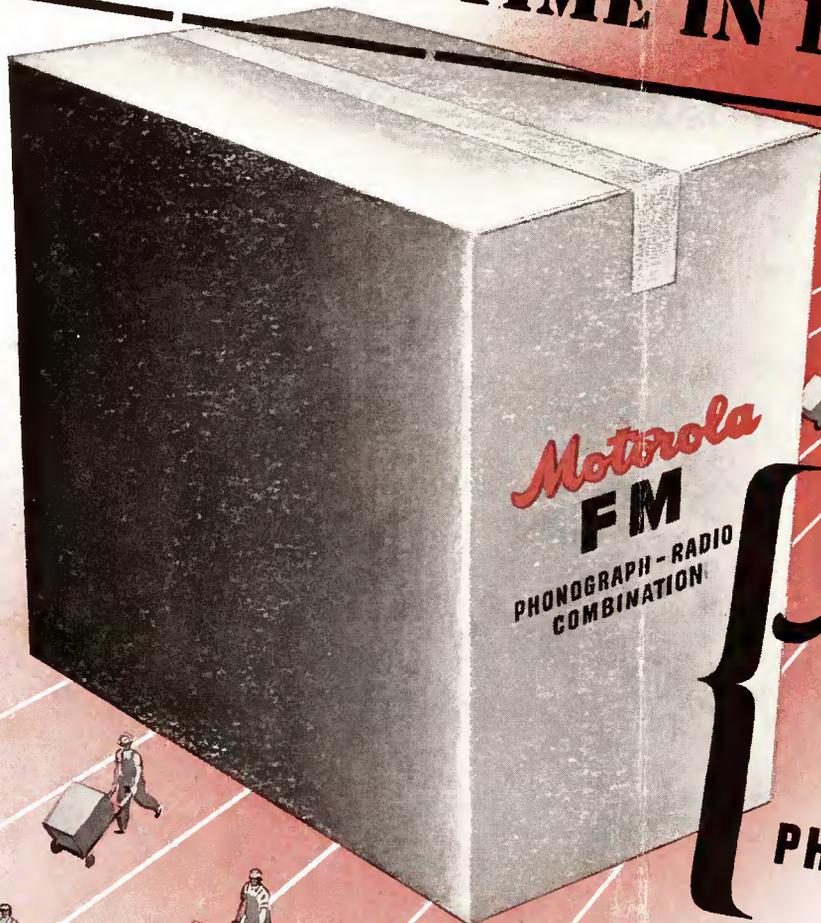
Television, will benefit by it. You will be privileged to be a vital part of a new great industry. As in the past, you can look to RCA for outstanding developments and values!



RCA VICTOR DIVISION
RADIO CORPORATION OF AMERICA

CAMDEN, NEW JERSEY

**SCHEDULED FOR DELIVERY
SOME TIME IN 194?**



A GREAT NEW
Motorola
FM
PHONOGRAPH-RADIO
COMBINATION

A new and distinctly better type of home radio combination was about ready to make its bow to the American public when war drafted the complete Motorola facilities. Had this *static and noise-free* F-M receiver been seen and heard by the general public, it would have aroused unqualified enthusiasm . . . whetted an appetite that will have to be satisfied when Peace once again releases electronic talents and

skills war-sharpened for radio's greatest progress and achievement. In the interests of national defense, Motorola is now delivering the finest in F-M emergency broadcast and receiving equipment. You may look for notable scientific developments in F-M radios from Motorola engineers. We can't say *when* . . . but we can say that no one will be ready sooner.

Expect big things from Motorola!



THE ARMY-NAVY "E"—Awarded for excellence in the production of Communications Equipment for America's Armed Forces

**Motorola Radio Communications Systems
Designed and Engineered to Fit Special Needs**

GALVIN MFG. CORPORATION • CHICAGO